

29TH YEAR OF PUBLICATION

THE FIELD ARTILLERY JOURNAL

JULY-AUGUST, 1939

NEW APPLICATIONS OF OLD PRINCIPLES

—Colonel Conrad H. Lanza

A SYMPOSIUM ON LEADERSHIP

—Captain Charles L. Gildart

WHY 300 MILS?

—Captain Douglas C. McNair



**PUBLISHED BIMONTHLY BY
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July-August, 1939

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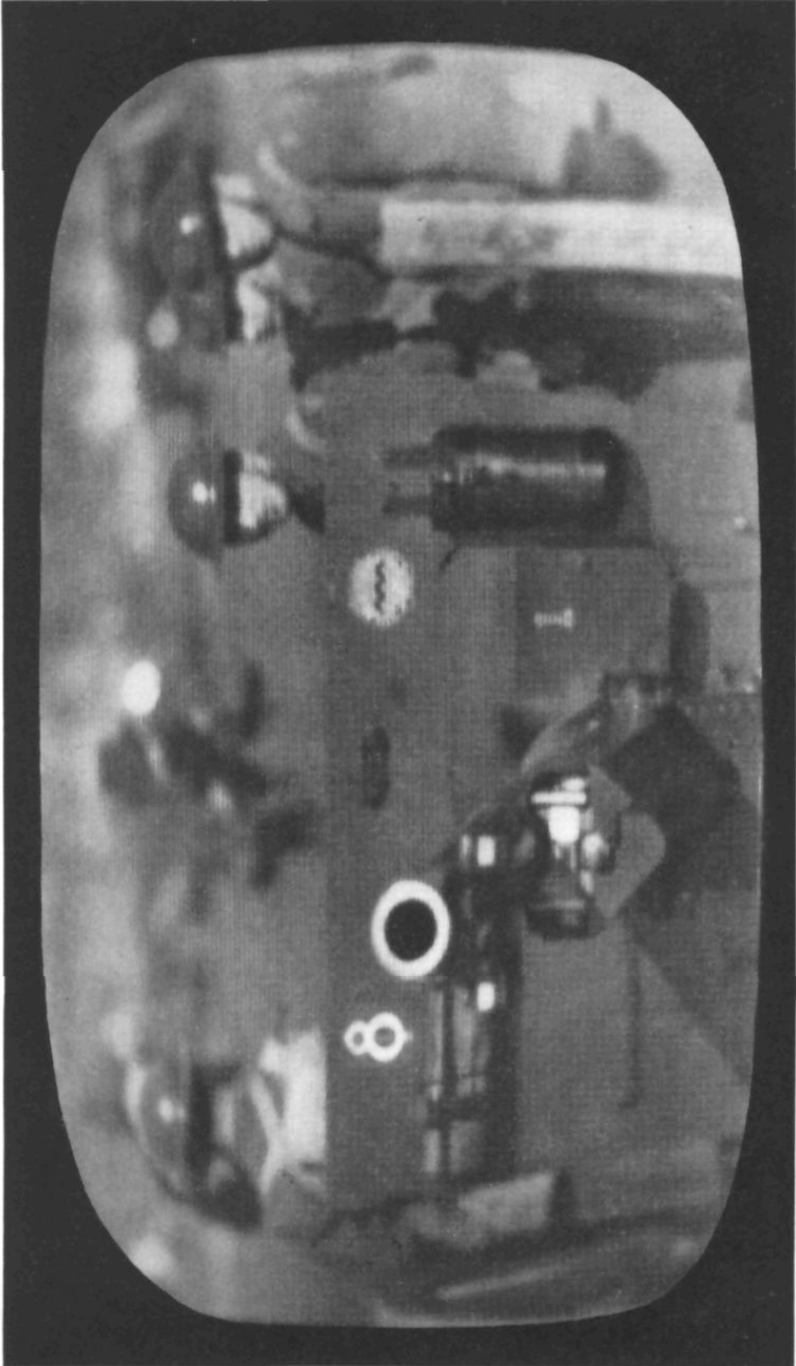
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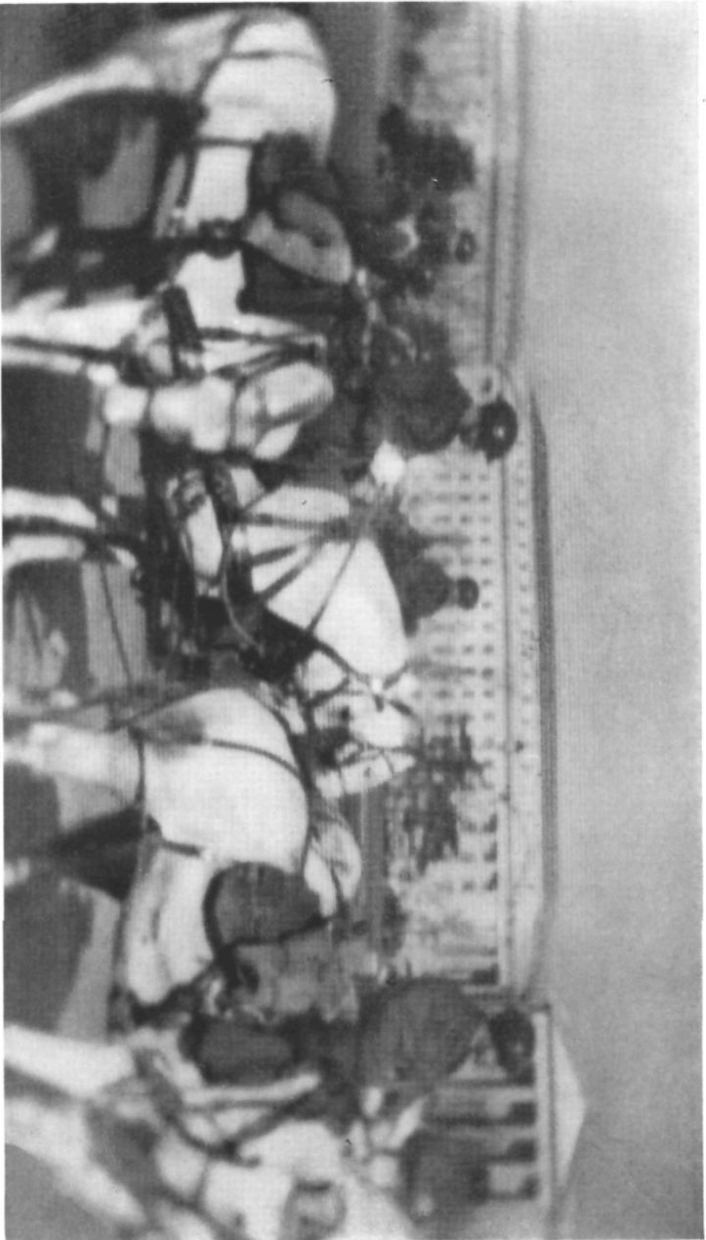
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A SEVENTY-FIVE GLARES AT YOU FROM THE TELEVISION SCREEN
(See next page)



THE OLD IS CAPTURED BY THE NEW

On this and the preceding page, the Sixteenth Field Artillery, Fort Meyer, Va. (Lt. Col. W. C. Crane), casts a very modern shadow on the television screen. The occasion was the first telecast from a portable transmission unit in this country. National Broadcasting Company's cameraman did the job on January 31, 1939. Readers are warned not to judge television by the comparative dimness of these reproductions. The horizontal lines which break up the picture are illuminations which change with unbelievable rapidity. The human retina, which retains a picture after it has disappeared—else we could have no movies—gathers a much clearer impression from these screens than the camera, whose lens stops their action. And further: This printing is from a halftone, made from a photograph of a receiving screen whose impressions originated with the scanning eye of a television portable camera.

THE FIELD ARTILLERY JOURNAL

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New Applications of Old Principles

BY COLONEL CONRAD H. LANZA, FA

An Artillery Principle:

It has long been a well-established principle that artillery is primarily for support of the infantry. This is true; but the application of this idea has changed. When the principle was first recognized, artillery formed less than 5 per cent of the strength of armies—a small fraction of the whole, causing but a fraction of the casualties. Ranges were short, targets visible, maneuvers were in plain view, fire was direct. All could see which targets were dangerous; which were firing on the infantry. There was no difficulty in determining when artillery should start firing; what the results were; when fire should be lifted, or changed. The days when artillery fire was completely controlled by such direct observation, and when infantry could determine where fire falling upon them was coming from, will never return—this belongs to a past generation.

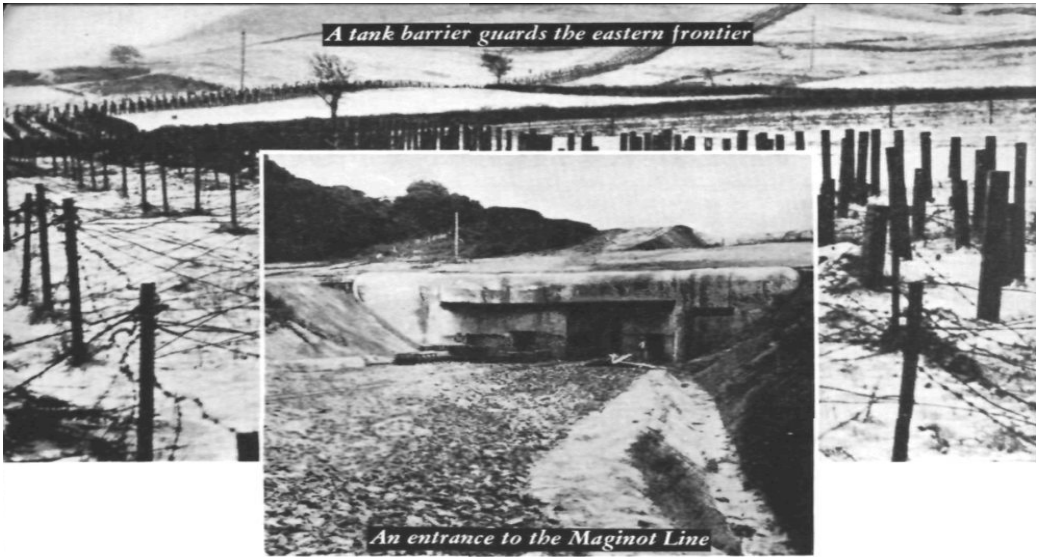
In modern war artillery in numbers surpasses the infantry on the battle field. It causes seven or eight times as many casualties as the infantry does. It is the army of fire; indispensable and decisive if properly used. Targets are now rarely visible; those seen generally not very important. Due to camouflage, indirect fire, training in taking cover, location of targets is difficult. Few are observed. There has been no war in this century, where the OP's saw very much. In areas they can see, and within their field of fire, they can adjust fire on fixed objectives. Even when the enemy is attacking, the defensive has seldom been

able to observe the advancing hostile infantry. Controlling artillery fire by direct observation, on targets not fixed has nearly disappeared. Too little is seen.

It is useless to expect the infantry to identify enemy elements firing upon them. At present infantry can seldom determine, with even approximate accuracy, where fire falling upon them is coming from. Frequently they are unable to tell the direction. The number of targets located by infantry is few, and require the attention of but a small part of the artillery.

Notwithstanding difficulty in locating targets, it was amply proved during the World War, and repeatedly in later wars, that infantry must have artillery support, and plenty of it, if it is to succeed. Artillery fire must be delivered in volume, regardless of what the OP's and infantry see, or fail to see.

Stating the principle as to the role of artillery as *to assist the infantry*, led to a false psychology. It was believed that the missions of the artillery should be normally indicated by the infantry. This used to be the case, in the days when both infantry and artillery saw their targets, and direct fire was the only method of fire. But with indirect fire, and few targets visible, the statement of the principle led to wrong ideas, and to a lack of initiative on the part of the artillery—it was an auxiliary arm, of secondary importance, used if and when the infantry asked for it. Artillery fire during the World War was frequently suspended on the ground that infantry not having asked for it, it ought not to be used without their consent, due to possible



Courtesy The Infantry Journal

EXAMPLE OF "CONTINUOUS FRONT"

interference with infantry maneuvers.

When artillery fire was suspended, infantry stopped advancing. It could not again be started until arrangements had been made assuring artillery support. At times, infantry asked — sometimes, through general officers, ordered—artillery to fire for a certain number of minutes, or a designated number of rounds, at some objective. Often the objective was a line, or a coordinate, and the artillery knew absolutely nothing as to the nature of the target. Seldom was the fire thus asked for appropriate to the mission desired. It led to waste of ammunition, waste of time, subsequent losses by the infantry, complete failure of attacks; all because of improper artillery support. It is the business of the artillery to decide how many rounds, or how many minutes, are necessary to accomplish artillery missions.

It took until just before the end of the World War to convince staffs that artillery fire was necessary to win battles, and that plans for artillery fire could best be determined by the artillery. The infantry are no longer in a position to direct artillery

fire; the days when they could see what, or who, was firing at them are gone.

To assist the infantry is a correct principle for artillery. But it is wrong to assume that artillery is dependent upon infantry for selection of targets, for determination as to length of artillery preparations, or for quantities of ammunition required. This would be as reasonable as to claim that because physicians are "to assist the patient," doctors should act as the patient indicates.

Artillery is the most numerous force on the battle field. It inflicts around 80 per cent of the casualties. It is the decisive arm of the offensive. Without artillery, plenty of artillery, and plenty of ammunition for artillery, attacks against modern troops cannot succeed. The best method to assist the infantry, the only method that will enable attacks to succeed, is to destroy or neutralize enemy defenses. This is the correct application of the principle "to assist the infantry." The artillery is the judge as to how best to apply this principle.

The war in Spain has shown that artillery

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fire must be employed to win. It must be used, in spite of any absence of requests for fire, and notwithstanding incomplete knowledge as to the friendly and hostile situations. Artillery commanders must exercise initiative; must do it without hesitation. They must assume risks; must accept responsibility for firing at the right targets at the right time. Modern artillery fire is largely mass fire. There are not enough small targets suitable for a battery to fire at to occupy more than a few batteries in a modern battle. The greater part of the artillery fires against areas. The selection of areas is an artillery duty. It must be done intelligently; must be timely; must accord with the plan of battle.

The quickest method by which a commander can intervene in battle is to concentrate artillery fire. A commander must know the power of his own artillery. He must not delay to await advice before he feels free to act. He needs not a general knowledge; he must know. In the new German army, more than half of its infantry divisions, and of its corps, are commanded by general officers promoted from the artillery. Modern generals must know their duties, their arms and services, or but few battles will be won.

It has taken many years of untold suffering and blood, to bring out the rule that infantry and artillery are a team, and should act in conjunction with one another. Neither arm wins battles alone; neither is in a position to dictate to the other. Each has its missions; each needs to aid the other. And there can be no infantry maneuver in modern warfare, if artillery fire in volume is lacking.

It is an artillery duty to select the targets for its fire. Certainly infantry, the air service, the OP's, every source of information should be utilized. All sources will not locate all targets; may locate but a fraction. Based on whatever information is available, the artillery must divine the

locations on which its fire should be directed best to assist the infantry; best to further the plan of battle; and then deliver the fire.

The principle as to the artillery mission being to assist the infantry has not changed; the application of this principle has.

Motorized and Mechanized Troops:

Serious use of motor vehicles for tactical purposes started in 1914, with troop-transportation movements. The taxicab march near Paris in September of that year to rush men forward to meet an invading enemy demonstrated the possibilities of this method.

During 1915, motor movements were common. At first limited to infantry, motor transportation for other arms began in the following year. By 1918, most of the heavy artillery, and some of the light artillery had motor transportation. There were also motorized trains. But there was no complete motorization of large units. The same divisions contained foot units, animal-drawn units, motorized units. When changing station, each class moved separately, arriving at the common destination at a different hour and date.

The idea of employing motorized fighting vehicles was conceived by the British in 1916. To camouflage their manufacture, they were designated as tanks, an appellation which has since been retained. First employment of tanks in war was in 1917; was not very successful. However, the experience gained permitted determining a modified tactical doctrine, which later in the same year, at Cambrai, gave good results.

During 1918, American, British, and French armies utilized tanks in increasing numbers. According to German reports, the tanks were a prime cause of their disasters, the Allies were so well pleased that they adopted tanks as permanent units. By the Versailles treaty. Germany was prohibited from having

fighting motor vehicles. By this, and other similar prohibitions, it was expected that Germany would be at such disadvantage with relation to other armies that it would be unable to risk a war, and consequently would comply with the conduct and principles prescribed by the Powers, whose armies and navies were not subject to limitations of armament. It is now seen that this hope was vain. All Powers are confronted with the fact that in the next war, their tanks will be opposed by hostile tanks, a condition which did not, on a sizable scale, occur during the World War.

Success of the motorized vehicles and tanks in the World War soon led to new ideas. Divisions with all units motorized, and capable of moving as a single element, were organized, and are now common. Their advantage lies in their ability to move rapidly, and to greater distances. This is a strategic advantage. To improve tactical efficiency, mechanized divisions were conceived, to be equipped with motorized fighting vehicles. This brought up a new requirement. For road purposes, commercial motor vehicles were suitable enough, but for combat purposes, a good cross-country vehicle of fair size was needed, and for this the commercial car and truck were quite unsuitable. The caterpillar drive solved the problem. This was not a new invention; as early as 1790 a patent for it was issued in London to an Irishman named Edgeworth. But the application of the caterpillar was changed and improved by the demand for fighting vehicles to move over rough country. There are now available, besides tanks, various kinds of armored cars for reconnaissance and combat, all capable of good cross-country travel. Artillery fire for mechanized divisions operates readily over any terrain where it might ordinarily be necessary to move it. For transportation motor vehicles are now furnished for all arms and services.

What is the proper tactical doctrine for mechanized units? There are several opinions. Until recently the only war experience related to 1918, to use of tanks as separate units, and operations against an enemy having no tanks, and not many antitank weapons. Twenty years later, the problem has changed. Excellent antitank weapons are available in quantities; the enemy can be expected to have as many, and as good, tanks as our own.

Two principal schools for employment of mechanized forces have been presented. The first recommended organization of large units—the mechanized division. It was for penetration of continuous fronts, and thereafter in exploitation of a breakthrough, involving a deep advance into hostile territory. It was hoped, and believed probable, that the power and mobility of mechanized forces would enable them to obtain decisive results. The possibility of using mechanized forces in wide turning movements was not lost sight of. Motorized units were to follow the mechanized units to support them when they were finally opposed by superior forces, or to reduce enemy centers of resistance, around which the mechanized forces had advanced. This is the *independent* method.

The second proposed method of employment was to lead infantry in attacks, and for reconnaissance. This is the *auxiliary* method.

Nations have been divided in opinion as to whether their mechanized forces should be used as independent units, or as an auxiliary to some other arm. Until the past year there had been insufficient war experience against an able enemy to settle this. Let us see how some modern armies prepared themselves on this subject.

The British have believed that there are places for mechanized units, both for operation independently, and for auxiliary purposes. In their opinion the

NEW APPLICATIONS OF OLD PRINCIPLES

ideal mechanized division should consist almost entirely of armored vehicles, with artillery, but a minimum number of motorized infantry, the latter to be heavily armed. British mechanized troops are normally at war strength, with a view to instant employment on outbreak of war. Their tactical doctrine is to advance on a wide front both on roads and across country. Their trains carry sufficient supplies to last at least a week, rations and equipment being reduced to enable a large amount of gasoline to be carried.

British mechanized troops have been obtained from two sources; transformation of the cavalry, and the Royal Tank corps. Of 22 cavalry regiments, only 4 are now mounted on horses; 18 have been mechanized. These regiments are primarily for reconnaissance and security duties. The Royal Tank Corps consists of 7 battalions in England, and 8 companies in India. One mechanized division was organized in 1938, and consisted of,

- 2 mechanized cavalry brigades, each of 2 regiments; each regiment has 3 or 4 squadrons, of 40 to 60 armored vehicles of various classes.
- 1 brigade. Royal Tanks, having one battalion of about 60 light tanks; and 3 mixed battalions, each containing 22 light, 19 medium, and 8 heavy tanks. The latter carry antitank weapons, and are equipped to lay smoke screens.
- 1 battalion of infantry, mounted on motorcycles.
- 1 cavalry regiment, armored cars.
- 1 communication (Signal) battalion.
- 1 regiment motorized artillery.

This mechanized division is the modern replacement for the old horsed cavalry division. The British planned to organize five more of these divisions, but it is not yet known whether recent events have resulted in modifying this intention.

The French have had no mechanized divisions prior to 1938. French tactical doctrines have not favored independent action by mechanized forces. As to

tanks, they have limited their use to opening a path for the infantry in an attack. They have 11 regiments of tanks in the GHQ reserve, available for issue to armies and corps. Four additional battalions are in Africa, or in the colonies. In all, about 1,500 tanks are available in France; 300 more if battalions overseas are recalled.

France has made considerable progress in mechanizing her cavalry. She has three, possibly more, divisions organized and designated as *light* cavalry divisions, but which are nevertheless rather heavily armored. Each division contains separate sections for motorized reconnaissance, armored reconnaissance, and for combat. These divisions are not for independent action; they are to precede infantry divisions, strictly for security and information purposes. They are well equipped with artillery.

In view of the fact that other nations have mechanized divisions for combat. France recently ordered the organization of one such division. It was to have been ready for test in the autumn of this year—1938. Due to war threats, and measures incident thereto, the division was not ready; is to be ready for the 1939 maneuvers.

Forbidden by the Treaty of Versailles from having armored vehicles, but remembering her experience of 1917 and 1918, Germany has favored organization of mechanized forces, and since open rearmament started, has provided such a force.

The latest information is that Germany has one mechanized corps, of 3 divisions, and 1 separate brigade. Each division contains about 500 armored vehicles, 1 brigade of motorized infantry, and 1 regiment of motorized artillery. The separate brigade is reported to have about 300 armored vehicles. This gives around 1,800 fighting vehicles in the

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corps, a formidable force. It was to have been used in connection with penetration of continuous fronts, where the necessary artillery preparation would be furnished by an independent artillery command. Events in Spain have led to a reconsideration as to the tactical employment of mechanized troops, and it is now uncertain how this corps will be used.

Germany has also 7 regiments of tanks, organized into 2 battalions of about 100 tanks each. These tanks are in GHQ reserve, to be issued to corps in line, as and when needed. In all Germany has about 3,200 armored fighting vehicles. The latest information is that based on experiences in Spain the Germany army is replacing light fast tanks with heavy slower ones and is completely revising tactical doctrines on employment of mechanized forces.

Italy appears to have about 1,200 tanks. Light fast tanks were used in Ethiopia, and gave excellent results in very difficult country. It has since been shown that this was not a fair test, as the enemy in that war had no tanks and had but few antitank weapons; besides he was badly organized, poorly equipped and his leadership inferior. Mechanized columns in Ethiopia were extensively used, and notwithstanding exceedingly rough terrain gave superior results.

In Spain, Italian tanks have not done well. Both sides in Spain have had tanks, and for the first time, battles of tanks against tanks have occurred. The light tanks were uniformly destroyed, or driven off the field, including the small fast Italian tank. Antitank weapons have been liberally provided in Spain. Tanks have had a rather strenuous time. Italy has decided that the light tank has only limited use in modern war. The Italian light tanks are in process of replacement by new, heavy, better tanks.

Italian mechanized forces appear to be organized into 2 independent brigades, each containing one regiment of about 150

tanks, plus 1 regiment of motorized infantry, which has a tank company of its own of 20 tanks. These brigades have no organic artillery. Artillery is to be added as needed, and in accordance with the mission assigned. For supporting infantry, there are 5 tank regiments, with about 500 tanks.

Of the four countries considered, mechanized forces have been provided, by France, mainly for auxiliary purposes; Germany, mainly for independent action; Great Britain and Italy, partly for independent action, and partly for auxiliary purposes. Two of the foregoing nations, who have had experience in Spain, are in process of discarding previous ideas as to employment of mechanized forces, and are specifically withdrawing their light tanks and replacing them with heavier ones. Let us consider what the war in Spain has taught as to employment of tanks and mechanized forces.

Following the conclusion of the World War, the tendency was to develop a tank with high cross-country mobility. Necessarily it had to have a light armor and light armament. Where there was but inferior opposition, as in Ethiopia, this type of tank was unusually efficient. The light tank has not been successful in Spain, where tank has had to fight tank, and where the enemy opposed to the tanks an efficient artillery, antitank weapons, and obstacles.

A very fast tank has been found unnecessary. Infantry on foot can not follow fast tanks. If the tanks arrive at the objective ahead of the infantry, they must stand fast or move. On account of their size, they are excellent targets if at rest; easily put out of action. If they move, they become exposed to antitank weapons, attacks, obstacles. Tanks well in advance of the infantry have suffered heavily.

Light tanks have been unable to stand up against either heavy tanks or antitank

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weapons; and have been of little combat value. Heavy armored tanks have been able to dispose of their small antagonists while able to support themselves against opposing infantry and antitank weapons. The result of experience has been that it seems impracticable to make an attack until the artillery has first destroyed or neutralized the enemy's defensive position. To protect the tanks from observation and antitank weapons, a rolling barrage with considerable smoke is often necessary. The rate of advance of the barrage and the tanks must be related to the possibilities of the infantry not falling too far behind. German recommendations have been that infantry in attack might well be mounted on cross-country armored trucks, able to make more speed than infantry on foot. Assuming that one truck could carry two machine guns with their crews, 25 trucks per kilometer of front, not necessarily evenly distributed, would be sufficient, if arriving at the objective, to hold it against counter-attacks until reinforcements were received. This plan has not, so far as is known, been yet tested in war, but its trial may possibly be expected in the near future.

The possibility of mechanized divisions acting independently, when effective opposition is to be expected, has not been proved. It is very promising on paper, and in war games; very difficult in reality. In Ethiopia the Italians used mechanized columns for deep penetrations, and for turning movements. Japanese have had successes in China. In both cases, the enemy had no mechanized, and only few motorized troops, few antitank weapons, poor equipment, poorer leadership. In Spain, both sides in that unhappy war, had about the same mechanized equipment, and it has not been possible to use mechanized troops as independent forces.

The supply of a mechanized, or a motorized, division, operating independently, is another problem, which has not been solved. It is important. In

Ethiopia, due to not having to do much fighting, involving deployments, it was practicable to carry gasoline for a two weeks' march. It is doubtful whether this could be done if an able enemy were met.

In maneuvers in Europe, there has been a tendency to employ mechanized divisions for quick reenforcement of a front. This has been criticized as an improper use of troops, who were intended for deep advances after penetration of a continuous hostile front; or for wide turning movements. Naturally this latter maneuver would be possible, where fronts are not continuous.

The explanation has been that in order to confine maneuvers to a territory, within limits of reservations or leased areas, they have been based upon the idea of an interior force which is a part of a larger hypothetical force, extending outwards to both flanks. Commanders had no opportunity to make enveloping movements. The mechanized divisions would have been used for exploiting a *penetration* of the enemy front, but umpires regularly ruled, that while fronts were driven back no penetration had occurred. In order to give the mechanized division some training, it was sent to reinforce the front—this not to be considered in any way as ideal tactics.

Rulings as to absence of penetration have been due to insufficient artillery to smash through defensive fronts. If this mission cannot be accomplished, mechanized divisions will have only a restricted use. To solve the artillery problem, and enable the mechanized troops to obtain a start, an increase of artillery is under way. France is doubling the previous table - of - organization strength of division and corps artillery, and increasing the army artillery. Italy is leaving the artillery strength of divisions as at present, but is decreasing the infantry components. In the 1938 maneuvers. Italian divisions were tested

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having 7, 8, and 9 battalions of infantry. Any change in this line increases the relative strength of artillery to infantry; the decrease of infantry can be absorbed by new artillery units. Germany is reported to be engaged in experimental firing to determine the amount of artillery and ammunition required to break through a fortified frontier within a few hours, and thus open a way for mechanized troops, to be followed in turn by motorized units. No information is yet available as to the results of these experiments, except that it requires heavy artillery, and very much ammunition.

Present tendencies regarding mechanized forces are to discontinue the light tank. It is too vulnerable for combat purposes, and its high cross-country speed has not been found of much value. The modern combat tank is heavier, with armor protection sufficient to protect it, at usual ranges, against the present antitank weapons. It carries both a small cannon and machine guns, for use respectively against hostile tanks and against infantry. By reason of its heavier armor and better armament the heavy tank has less speed. For security and information, armored cars with lighter armament, and correspondingly more speed are being provided. These have cross-country ability, but will operate largely on roads.

Whether large mechanized units—mechanized divisions—can be used as an independent force against an able enemy has not yet been proved. Latest experiences have not been encouraging. Its possibility appears to rest on the ability of the artillery to force a way through a defensive front, of sufficient width to permit complete divisions to pass safely. This also has not been done. The future of mechanized war depends largely on solving this problem.

Railheads:

There is growing opposition to *railheads* near the front. They are

vulnerable to long-range shelling and to bombing. They are being largely replaced by motorized heads. Any available space can be used for these, and they can change location, and hours of issue, nightly.

If *railheads* are used, they should be a stretch of track bordering a highway, along which trucks can park. Any kind of prepared terminal will run grave risk of serious losses.

Long-range batteries are now regular equipment for troops in line. The new issue of 240-mm. French batteries are railroad-mounted, have all-around fire, have a range of well over 50,000 meters, and fire a 365-lb. shell—excellent weapons for tearing up terminals. In the future *railheads*, and *motorroad* heads will be farther to the rear than heretofore. This means more vehicles in front areas to cover increased distances.

In view of the changed circumstances, it might be better to designate the place where divisions receive ammunition and supplies as a SUPPLYHEAD, without regard to the method of transportation, rail or motor, used.

Ground vs. Air and Sea Strengths:

The World War proved that very superior forces were required to overcome the defensive. Some have since thought that this had been due to continuous fronts, and trench warfare—special situations not at all likely to occur again. After the war, it was decided to take measures to see that it would not occur. Open warfare, with battles won by maneuver was desired; trench warfare and continuous fronts were to be avoided. In some nations, new materiel provided was designed for open warfare; light mobile artillery for example, in place of heavier batteries, considered too clumsy for open warfare.

Everybody would like to have his country win its wars quickly, and if open warfare would do it, would favor this method. They dream about the maneuvers of Napoleon, Washington, Lee,

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Grant, Can campaigns such as these generals waged be repeated now?

The great military masters of the past centuries fought with small forces, operating in large areas. They had space for maneuvers, and possibilities for concealing them. Such conditions no longer exist. Wars are now fought by entire nations, who place huge armies in the field; continuous fronts over long distances are common. Possibilities of securing information as to the enemy and for rapid transmission of communication have improved. Each side now ascertains in advance a proposed maneuver of the other side; immediately knows when it has commenced. Because of modern weapons, the defense is strong; small forces stop a maneuver until reserves arrive.

Open warfare now occurs in sparsely settled regions, such as Irak and Palestine during the World War; or when one of the contestants is manifestly inferior as to equipment or leadership, as in Ethiopia and China.

The World War was not an exceptional war. It was a logical development, observed since the commencement of this century, of the employment of large forces and modern weapons, giving extraordinary increase in strength to the defensive. It is doubtful whether large armies can hereafter engage in extensive open warfare. A maneuver, after proper precautions, may be started, but it can no longer be changed overnight. It must either continue on the original line or stop for another and better occasion. Until the enemy's reserves and resources are exhausted, maneuvers are apt to be confined to a main mission of destroying or exhausting the enemy, through a succession of attacks.

However desirable in theory, it has not been demonstrated that open warfare is possible for modern major forces when confronted by a competent army.

It is supposed that on the outbreak of war, nations plan to provide a relatively

small number of men to hold sectors selected for defense. For offensive sectors, strong forces of artillery with quantities of ammunition probably organized as an independent force with the mission of smashing through an enemy defensive line within a minimum of time, are to be provided. Following the artillery preparation, mechanized and motorized troops will be utilized for penetration. These latter must be supplied with steady and ample supplies of ammunition, materiel, and stores. However well the penetration may go, wars in the Chaco and in Spain support the experiences of the World War, that the maneuver will sooner or later be stopped, and cannot be renewed until a complete new operation has been prepared.

Modern wars are wars of attrition. They may last for years. Consider the Chaco, a war between two small states; and Spain, a war between medium-size states or forces. In both of these cases, the armies engaged were of comparable strength and equipment, and it was not possible for either side to win within a short time through open warfare. Open warfare is now possible in major wars only after the opponent's reserves and resources have been nearly or entirely exhausted—slow; difficult; expensive; bloody.

No nation desires a long war. This destroys all that is cherished regardless of who wins. Predictions are that the next great war will end civilization. If this is an exaggerated statement, it is quite probable that the next war will be frightful. No one wants to prolong a war.

For the next major war, there will be initially more manpower available than can profitably be employed on land. This manpower could be trained and retained as reserves to replace losses incurred in a succession of offensives, possibly extending over many years. This was the method used in the days of the

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World War. If it took over four years to end that war, with the fortified fronts and defenses now common, it may take longer to end the next war. Very serious proposition for nations having ample resources; most serious for those with limited resources, unable to maintain a long war. Can the next war be ended more speedily than by the old method, long and dangerous, of a land war of attrition?

If there is small opportunity for open warfare on land, it still is possible to maneuver in the air, and on or under the sea. Will it be possible to shorten the next war by these kinds of maneuvers? It is going to be tried. If materiel can be manufactured in time, there is manpower available for air and naval forces greater than anything now conceived. More men assigned to air and naval missions will not in initial stages materially affect armies. The latter have manpower resources sufficient to carry on successive offensives for years, too long a period for nations with limited resources.

For countries with limited wealth, lacking essential resources, anything which will shorten the next war will be to their advantage, provided they can use maximum strength on land from the beginning. Wealthy countries, having necessary resources, have no necessity for an early decision. Although this would be desirable, it might be to their advantage to have a longer war of attrition, not necessarily very bloody, but where by depending on blockade, and gradual exhaustion of enemy resources, the latter can be reduced to a condition of impotence.

From both points of view armies are needed; one side by forcing the offensive to seek an early decision in his favor; the other side to contain the enemy, and by taking fewer risks, trusting to time to enable it more to effectively use its greater wealth and resources. Poorer nations are seeking larger air forces to supplement their expected offensives on land, and on

sea to enable resources to be brought in. Their naval forces are being expanded to prevent the wealthier nations from maintaining an effective blockade, and from using the sea for their own uses. Wealthier nations are increasing air and naval forces to meet expected air and marine offensives. Manpower is available for additional air and sea forces, but additional materiel and training must be provided. Whether there will be time to create new forces on air and sea to supplement land forces is a question.

Increasing appropriations for air and naval forces is therefore to be expected. The mission is to shorten the next war by initial employment of more forces, and greater opportunities for maneuver. The hope is that air forces, through frequent and ruthless bombings, which will spare nothing of the slightest military importance, and without regard to any man, woman or child, will destroy resources of men and materiel, and incidentally terrorize inhabitants, to an extent sufficient, in connection with ground operations, to force a demand for peace on the terms of the attacker. For marine forces, reduction of enemy resources, through blockades and interception of commerce, to include food as well as munitions, with a mission of reducing the enemy supply of raw materials, and causing starvation and malnutrition conditions, will be attempted. Whether these views, these intentions will succeed, no one knows. They will be tried.

All this does not mean that ground operations will lose importance, or not be pushed. They will be. But the crying need of the ground forces is for more materiel—artillery, ammunition, armored vehicles, all kinds of implements, in quantities greater than now available, or until recently even thought of. At the moment, guns and ammunition are needed more than men.

To shorten the next war, ground, air,

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and sea forces, will in general be assigned missions as follows:

- a. *Ground forces.*
 - (1) Offensive sectors: Strong artillery, probably an independent force to smash an opening through the enemy defenses; mechanized and motorized troops to exploit gaps made by the artillery; very large reserves, of ammunition especially, to maintain the offensive.
 - (2) Defensive sectors; Limited forces; fortified fronts; machine guns and artillery. Reserves for counterattacks, should enemy unexpectedly assault.
- b. *Air forces.*
 - (1) Independent; Bombing; destruction of hostile air forces.
 - (2) Auxiliary; Reconnaissance; minor bombing.
- c. *Sea forces.*
 - (1) Blockades, probably distant, including interception of enemy commerce.
 - (2) Destruction of enemy naval forces to enable (1) to be accomplished.

A common superior authority is required to coordinate ground, air, and sea forces, and properly to apportion among them national resources and reserves. Some states have such authority, with a staff which in peace selects the war missions, and in war supervises operations on ground, air, and sea. Nations which have not done so, need such a command. War comes suddenly, and it is too late to wait until it arrives, before coordination of the three services is undertaken and decided. It should be planned in advance. This is most important.

Leadership and Psychology:

Military schools teach psychology; insist on its importance. As to applying

principles of psychology to concrete cases, not very much is done.

Principles of war have been reduced to brief statements. Application of these principles may be difficult, but they are not hard to understand. Can principles of psychology be reduced to easily understandable rules? Some of the principles are of major importance; their application may gain or lose a war, or valuable national rights.

Totalitarian states during the past ten years have had startling successes. They are advancing in strength and power. We have only to remember Japan in Manchukuo, and again in China; Italy in Ethiopia; Germany in Austria, and again in the Sudeten. In each of these instances the World expressed universal disapproval; sometimes undertook to apply sanctions, and diplomatic pressure; and occasionally made significant military moves, not involving, but threatening war. Yet the totalitarian states always succeeded. Why?

In the autumn of 1938, two events occurred about one month apart, which illustrated the application of principles of psychology to nations on a mass scale. The first in September was the threat of Germany to wage a major war, if her demands as to the cession of the Sudeten territory were not complied with by a specified date. Everyone will recollect the anguish which occurred, the terror of peoples at an impending catastrophe, the flight of inhabitants from London and Paris, the mobilization of troops, the general war measures. The whole world was aroused. The coolest people appear to have been the Dictators of the totalitarian states. Reports agree that the leaders of Germany and Italy were not excited; acted calmly, with deliberation. Their leadership was of superior quality. It had an astounding success.

Whether Germany intended really to wage war had her demands been refused, can probably only be answered by its Chancellor, and he may never tell. But

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he instilled such fear among other interested nations as to cause them to bend to his will. Not one dared to risk what may have been a bluff, but which might also have been a great war. The German Chancellor, the Italian Duce, foresaw the probable results of the measures they had taken, of the great fear among nations, the reactions of other governments. They reaped their reward. Not until the crisis was over, did the World realize what had been lost to the democratic nations.

The second event in October was a broadcast, alleging and describing an invasion of the United States by an assumed hostile force from Mars. The broadcast lasted but one hour. It instilled terror in large numbers of people. Homes were evacuated, members of the National Guard rushed to their posts, police stations were overwhelmed with inquiries, hostile forces were reported as observed at various places. Perhaps the people were nervous from the previous month's war scare, but they gave a wholly unexpected reaction to what had been expected to be an hour of radio entertainment. Accidentally, the broadcast announcer had applied principles of mass psychology.

The dictators of the totalitarian states, and the broadcast announcer, both instilled fear into the hearts of their audiences on a national scale. The difference between the two events was, that in one case it was intentional, and in the other case entirely unintentional. The dictators designedly intended to instill fear among nations, and then taking advantage of the psychological condition established, at the right moment secured the prize. The poor broadcast announcer had neither a mission nor an intention to instill fear. The next morning, horrified by the totally unforeseen reaction he expressed his regrets, apologized profusely, promised never to do it again. The dictators had no regrets, submitted no apologies, made no promises

not to apply again the principle of psychology involved.

During the lifetime of Napoleon, he defeated one opponent after another by applying the principles of war, which were not understood, or were not thoroughly understood, by his antagonists. The latter did not know why they suffered defeat. It was not until afterwards, when Napoleon's campaigns had been analysed, that it was ascertained just what had happened. To use a common expression. Napoleon kept one jump ahead of the other side.

May it not be that the dictators have been able to secure their success by a superior knowledge of how to apply principles of psychology, as yet but imperfectly understood by their opponents, who to use the same common expression have regularly been one jump behind?

What was this principle of psychology: Can it be expressed briefly? The evidence shows that when the masses of a nation were unexpectedly threatened with a war of apparently catastrophic proportions, they were brought to a state approaching panic. They sought to avoid the danger in one case by abandoning principles of justice for which they had previously stood. In the other case, flight appeared to be the sole method of preservation. The dictators took advantage of the situation created to act before full reflection was had. They won.

This is what happened in September, 1938. Czechoslovakia, directly threatened for some time, had had time for reflection. Their honor and independence were involved. They were aware of the danger of war; of their inability successfully to fight the dictators alone; were however prepared to fight if support were forthcoming from Allies, as they understood had been promised by treaties.

Until just before the crisis arose, the expected allies of Czechoslovakia had not considered war to save that nation.

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They were not directly involved in the controversy as to the fate of the Sudetens; quickly realized that if they did resort to war the main burden would fall upon them. Through appropriate propaganda, ably directed by the totalitarian states, it was explained, very plausibly, that if the Allies did go to war, they would,

- a. Violate their own principle of self-determination, which Germany was merely attempting to apply;
- b. That it would be impossible to save Czechoslovakia anyway;
- c. If war broke out, it would result in great cities being subjected to frightful bombings, loss of life to women and children, terrible devastations;
- d. The war might end civilization.

There is no doubt but that the people did fear the threatened war. A plausible excuse that there was some justice in the claims of Germany having been presented, the dangers of war having been vividly described, the cup of bitterness was thrust aside; the people refused to drink therefrom; they withdrew; allowed the dictators to win.

In the broadcast of October, the people were frightened by a war totally unsuspected, and for which they believed no provision for defense had been made, or was even possible. It is useless to say that this conception was too fantastic; it was believed; people recoiled in terror.

A nation can be instilled with fear; can, by sudden and unexpected crises, also be surprised. The more sudden, the greater the apparent danger, the greater the fear. Unexpectedly threatened with a catastrophe, the first instinct is to avoid it. To determine the application of this principle, an analysis of the methods used by the totalitarian states shows:

a. A decision was first made as to the mission—securing territory; removing treaty restrictions, and the like.

b. Carefully, thoroughly, secretly, a plan of action was determined, to be

carried out by a Propaganda Department, to include:

(1) Through the press, radio, addresses by prominent men, the mission was explained to own people. It was shown to be just, reasonable, absolutely necessary, worth while, that there were available means to win a war if it must be, but government would do everything possible to avoid this.

Propaganda was gradual, unobtrusive; took months, sometimes years. Possibility of war was not brought out until own people were convinced as to the justice of the mission, of its being fully worth while, and it had been shown that war might be avoided, but in any case would not be very dangerous.

(2) Care was taken not to alarm other nations prematurely, which might have given time for reflection and preparation. Propaganda among foreign nations sought to show, first—the justice of the mission; second—that its achievement would in no way be to the disadvantage of others; third—until the last moment, no war was contemplated.

(3) An appropriate date was selected for a crisis; attention being given to political, industrial and economic conditions in all countries concerned. *Incidents* in line with the mission and with previous propaganda were exploited.

(4) The crisis having been prepared, and the date selected for carrying it out having arrived, everything possible to instill fear of probable irreparable results among nations who might object was taken. Time for investigation was denied. An alleged intolerable situation, demanding an immediate solution was insisted upon.

(5) The crisis was solved with the party creating it prepared; others, some partially prepared, some not prepared.

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Advantage was taken of a state of fear, with insufficient time for reflection and preparation of countermeasures, to secure abandonment of rights, in order to avoid what appeared to be the greater evil of a catastrophic war.

Through application of the foregoing methods the totalitarian states have accomplished important missions. The world has expressed its disapproval, without, however, influencing the course of action disapproved of. The methods and principles of psychology used to such great advantage may be applied at any time when convenient to do so.

What has been described may seem to be complicated. It is, in fact, very complicated. Totalitarian states have their ablest men to direct their propaganda. Propaganda employs large forces; is granted large appropriations for home and abroad; has great authority, including coordination of other government departments, especially the military and diplomatic services; it is responsible that its director be at all times fully informed as to the state of public opinion; finally that everyone regardless of office held does the right thing at exactly the right time.

The word propaganda has no sinister meaning. It is derived from the Latin verb *propagare*, to propagate. It can be legitimate, entertaining, and instructive. For this reason, in totalitarian states, propaganda is ordinarily charged with state supervision of news, broadcasts, and public addresses. It arranges ceremonies for public holidays, and by suitable displays and entertainment endeavors to obtain maximum usefulness and pleasure to its own people. Propaganda must be their friend with a major mission of enlightenment and diversion. Political missions are mixed with other subjects; are not given undue prominence before the people have been properly prepared.

Good propaganda has a powerful effect. Note the influence of advertising, which is a special form of propaganda.

Propaganda requires considerable control over the press and broadcasts to assure that desired viewpoints are properly presented at the correct times. This need not extend to prohibiting contrary viewpoints from being discussed. It is partly possible in a totalitarian state to prevent undesired opinions from being circulated, but this would not be practicable in democratic countries. The latter type of state must trust to its ability to convince its citizens by suitable presentation of the facts and appropriate explanations as to the justness of the mission. There are other requirements as to propaganda which will not be considered in this article.

If some nations use propaganda, especially on a large scale, and other nations do not, the latter are certainly handicapped. Propaganda can act against propaganda, but to be successful must be on a comparable scale.

To protect one's own people against foreign propaganda, often artfully disguised and broadly propagated; to avoid surprise; to avoid the danger of having one's own people being rushed out of their senses by sudden presentation of dangerous problems; demands a protective service which will provide opportunities for reflection, the adoption of countermeasures, and the prevention and risk of being caught unawares.

Propaganda is an application of rules of psychology. It is an important element of leadership. Totalitarian states have efficient propaganda departments, most ably conducted. These departments may have been expensive as to appropriations, but they have secured results which otherwise could not have been had without war. Are the democratic states going to allow the totalitarian states to win again, in the next clash, by failing to follow an important principle of psychology?

The principle of psychology discussed may be summarized as:

If fear be instilled on a national

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scale, the party creating the situation, if prepared, may, by quick action, secure decisive results.

This is the same principle as that involved when a fire starts in a building. People suddenly threatened fail to act rationally; they are overwhelmed by a fear of disaster; their instinctive mission is self-preservation by flight.

To date France is the only democratic nation which has a government propaganda department, and it was started only in 1938. It is under a cabinet officer. Great Britain, especially through its radio-broadcast system, engages in some propaganda. Democratic nations which do not avail themselves of what has been demonstrated to be a most powerful weapon, involving no loss of life or property, are allowing totalitarian states a considerable advantage.

There has been no change in the principles of psychology. There has been a change in the application of the principles. To date, the dictators of the totalitarian states are the ones who have understood the change, have correctly applied the principles, and have obtained the advantages therefrom.

SUMMARY

1. Artillery must supply its own leadership. It supports the infantry, but the artillery is responsible for organizing this support.

2. Artillery must exercise initiative. In accordance with the plan of battle, it selects its targets, and is responsible that fire is delivered in volume, and in time, as best supports the intentions of the commander.

3. Modern warfare permits the observation of but few targets. Artillery must carry on regardless of how incomplete the information may be. It must support the infantry no matter what the situation.

4. The previous rule results in fire being delivered in part on areas where there may be no targets. This involves large expenditures of ammunition. This condition is general in modern warfare, and can be

solved only by furnishing the ammunition. Failure to do so means deficient artillery support, and possible loss of battles.

5. The light tank with high speed, but light armor and armament, appears to be unsuited for combat against an opponent equipped with heavy tanks and antitank weapons.

6. The possibility of using mechanized troops in large units, acting independently, remains to be proved.

7. Railheads, which might better be renamed *Supplyheads*, will hereafter be further from the front than has been customary.

8. Open warfare between large forces, for more than short periods of time, appears to be of doubtful practicability. As impossibility of open warfare prolongs a war, the present tendency is to seek to correct this by action elsewhere, in the air and at sea, with the mission of so intensifying the next war as to materially shorten it.

9. A superior authority to direct and to coordinate ground, air and sea forces, and to allot reserves and resources between these arms, is a modern necessity.

10. National ideas and sentiments are affected by propaganda; sometimes sufficiently so as to decide between victory and defeat.

11. Psychology is a major factor in modern wars and preparation for wars. Certain states apply rules of psychology on national scales, through ably organized departments. States not provided with means to combat foreign propaganda, sometimes adverse to their interests, are subjecting themselves to a serious handicap.

12. All states, while deploring war, are preparing for the next war on the most stupendous scale ever known. To shorten the expected war, and to protect one's own territory, every possible means is being tried. Any nation which fails to prepare itself against the coming storm by as complete preparations as possible is risking national disaster.

General Danford's Visits to Field Artillery Posts

MAJOR General Robert M. Danford, Chief of Field Artillery, was out of his office on visits to Field Artillery posts and stations during the period May 23-June 18 as follows:

Camp McCoy, Wisconsin—80th Field Artillery and 3d Field Artillery—May 24-26.

Fort Riley, Kansas—84th Field Artillery—May 27-June 1.

Fort Sill, Oklahoma—Field Artillery School and School Troops—June 1-11.

Oklahoma City, Oklahoma—70th Field Artillery Brigade, National Guard of Oklahoma—June 11-12.

Fort Sam Houston, Texas—2d Field Artillery Brigade—June 12-14.

Fort Benning, Georgia—63d Field Artillery—June 15-17.

The Chief stated that points which impressed him on this series of visits may be summarized in the following:

(1) General excellence of the enlisted personnel in appearance, intelligence, esprit, and training. The Field Artillery has never had a finer quality of enlisted man than it enjoys today.

(2) The very evident good spirit of the commissioned personnel in striving for the highest possible degree of efficiency in training, in spite of a 32% shortage in officers, a too rapid turnover in officers, and a serious shortage in transportation.

(3) The general excellence of the Field Artillery School and the very evident pride taken in it by all ranks and grades. The building program of the past few years has so favorably affected the facilities and comfort of the garrison as to make it a station of selective rather

than punitive assignments. It is hoped that this building program may be pushed to completion.

(4) A National Guard organization whose commissioned personnel and Regular Army instructors radiate a lot of Field Artillery pride and enthusiasm.

On June 11 General Danford presented the diplomas to the graduating classes at the Field Artillery School. Extracts from his address follow:

"Colonel McIntyre, Officers and Men of the graduating class, ladies and gentlemen:

"It is always an inspiration to visit Fort Sill and see the Field Artillery at its best*** To look in upon a group of young Field Artillerymen such as composes this class should gladden the heart of any of our older officers not privileged to serve at Fort Sill, for it should encourage in their minds the hope that lieutenants may still survive in the ruthless struggle for progress*** In 1907 we had in the Field Artillery four lieutenants for every field officer, while today we have eight tenths of a lieutenant for every field officer. Thus you see how rare and valuable is the present day lieutenant.*** But you men are fortunate in other ways also. Great progress has been made over the past thirty-five or forty years. If this progress continues, and I see no reason why it should not, you are only past the threshold of a busy and interesting life. Just for a moment, let's compare the outlook of a lieutenant today and one of thirty-five to forty years ago.

"When your Commandant and I faced the future on first commission as second lieutenants, our field gun was of the vintage of the Civil War. The most important command after firing was 'By hand

GENERAL DANFORD'S VISITS TO FIELD ARTILLERY POSTS

to the front,' thus to gain the ground lost by the whole carriage as the recoil kicked it to the rear. We did not have, and we studied no literature on: The field telephone, the radio, the motor vehicle, the airplane, antiaircraft weapons, the tank, poison gas, and other lesser items of equipment.

"You yourselves can thoroughly appreciate how tremendously these items have complicated the business of war, and you can further readily appreciate that we have not yet learned to use these items to their maximum of efficiency. Much improvement remains for you to achieve.

* * *

"I am certain that you esteem it an unusual privilege to have attended this school. Your military education here consists not only of the technique you have learned in the classroom and on the range, but also in your opportunity to observe and associate with the highly selective group of field artillery officers who constitute your commanders, your instructors, your leaders. There are plenty among them whose fine personal and professional qualities you can profitably seek to emulate.

"As you young officers are now rapidly approaching the day when you will be Captains, may I tell you, that to have a field battery is rated the finest command in the Army.

"Your success as a battery commander will depend not only upon your technical knowledge and ability, but also upon your ability to handle the tools of your profession—men.

"Whether you possess native leadership ability, or not, study, observation, and sound common sense, will develop it in you, and there is no good reason why you as a Captain should not be regarded affectionately as the "Old Man" of your battery. Remember that the laws of the country stand behind you in forcing your men to give you the obedience of their

hands, but to be a success, you must win the loyalty of their hearts.

* * *

"The first drill regulations of the United States Army were written by a man who was trained under Frederick the Great, and who, from his writing thoroughly understood the principles of leadership.

"The interesting feature of this, our first book on drill, is that it devotes 13 of its 80 pages, or one-sixth, to matters of leadership, the relationship that should exist between the officer and the enlisted man. There is advice for all grades of the regiment, from Colonel to private, inclusive.

"The author of the book is Baron von Steuben, Washington's Inspector General and Drill Master combined. Here is his very interesting and very sound advice to the Captain:

"A captain cannot be too careful of the Company the State has committed to his charge. He must pay the greatest attention to the health of his men, their discipline, arms, accoutrements, ammunition, clothing, and necessaries. His first object should be to gain the love of his men by treating them with every possible kindness and humanity, inquiring into their complaints, and, when well founded, seeing them redressed. He should know every man of his company by name and character. He should often visit those who are sick, speak tenderly to them, see that the public provision, whether of medicine or diet, is fully administered, and procure for them beside, such comforts and conveniences as are in his power. The attachment that arises from this kind of attention to the sick and wounded is almost inconceivable; it will, moreover, be the means in war of preserving the lives of many valuable men.

"What a wonderful thing it would be for our country today, if the human relationship that we foster in the Army, between

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commander and men, were built up in industry between employer and employees! A new era of prosperity and happiness would dawn upon our nation.

"I would be remiss if I did not express the appreciation and gratitude which the Field Artillery holds for the arms and services that contribute so loyally and wholeheartedly to the efficiency of this school. Chief of these of course is the Infantry—our inseparable companion in battle. We hold in highest esteem the unit, and the officers and men of the Infantry, stationed here as an essential part of our School and post. The Cavalry has been so creditably and ably represented here that Major and Mrs. Coe will be greatly missed when they leave Fort Sill this summer. We regard them as really belonging to the Field Artillery. The Air Corps, the Medical Corps, the Quartermaster Corps, the Ordnance Department. Signal Corps. Finance, and Chaplains all deserve our praise and thanks for their contributions toward the maintenance of the very highest standards of service and efficiency at the Field Artillery School.

"I note with pleasure that the Marine Corps is again represented in this class. We are delighted to have you here and may the mutual friendship here formed persist throughout your service. And we would like every one to know that at Fort Sill the Marines, both officers and wives, are horse marines.

"Representatives from the Philippine Army are always welcome at the Field Artillery School.

"In closing, may I say, to all officers and men of this class that your happiness in the Service, and your success in, and achievements for, the Field Artillery, constitute my most profound good wishes in your behalf."

The following officers were graduated from the school:

Regular Class

1st Lieuts. Robert H. Adams, Robert C. Bahr, Howard M. Batson, Raymond C. Brisach, William R. Calhoun, Gerald Chapman, Logan Clarke, James A. Costain, J. Paul Craig, Thomas L. Crystal, Jr., Donald C. Cubbison, Jr., Kermit LeV. Davis, John J. Duffy, Charles B. Elliott, Thomas C. Foote, Stacy W. Gooch, Charles L. Heitman, Jr., Percy T. Hennigar, Henry W. Herlong, Edwin G. Hickman, William R. Huber, Cornelis D. W. Lang, Clark Lynn, Jr., Ronald LeV. Martin, Thompson B. Maury, II, Richard L. McKee, James P. Pearson, Jr., William S. Penn, Jr., Mathew V. Pothier, George T. Powers, III, James R. Pritchard, Charles R. Revie, George Ruhlen. William F. Ryan, Horace L. Sanders, Jonathan O. Seaman, Franklin G. Smith, John F. Smoller, Duff W. Sudduth, Joe F. Surratt, Robert P. Thompson, Robert N. Tyson, David C. Wallace, Paul R. Walters, Gordon G. Warner, Richard E. Weber, Jr., William P. Whelihan, Charles H. White, Jr., Charles L. Williams, Jr., Urquhart P. Williams, James R. Winn, Samuel K. Yarbrough, Jr., all Field Artillery: Captain Thomas V. Webb, Infantry: Captains James H. Brower, Edward H. Forney, Jr., George R. E. Shell, 1st Lieuts, Kenyth A. Damke, Thomas S. Ivey, Floyd R. Moore—USMC: 1st Lieut. Alfonso Arellano, Field Artillery, and 2d Lieut. Joaquin B. Hidalgo, Field Artillery—Philippine Army.

Advanced Course in Horsemanship

1st Lieuts. Harrison King. Robert B. Neely, Samuel E. Otto, and Charles A. Symroski—Field Artillery.

Advanced Course in Communication

1st Lieuts. Leo W. Cather, William J. Daniel, John J. Davis, Philip H. Draper, Jr., John W. Ferris, George G. Garton, Francis Hill, Thomas J. Sands.

Seventeenth Annual Field Artillery School Horse Show

BY IVAN OFFELITCH

A VERY imposing title for a very imposing event. Random remarks overheard in the stands: Why did I wear my new sport checked coat in this downpour, when I might have been sensible in a raincoat—why must I try to make an impression? Whatinhell will they do about the open handicap jumping in Rucker Park if this rain keeps falling? I see that Andy finally made one show without his arm in a sling or his foot in a cast There go Highland Chief and Peat Moss—they're older than I am now, and will still be going over the brush when I have retired No. Oswald, Miss X isn't a remount any longer I know now why they call that kind of a jump an "Aching" I ought to be home watching the packers Hope I don't forget to turn in my plane table and alidade Wonder if the QM will clear me after he sees that spot on the apartment wall below my ice box? Do you suppose Jack Oakes is ready to sell Dancers Merrylegs? I bet Colonel Arnold will be sorry to leave all this There is just a bare chance that my old mess jacket is good for one more hop

* * * * *

There are three classes of people who attend the big horseshows at Sill. Riley, and Leavenworth: First, that select crew of superhorsemen (and their relatives) who have been on a polo or horseshow trip as far as Mexico City—or, well, anyway, Anadarko. Whether these birds are more interested in horses or people we do not know, for we ken not what they talk about. But it is fairly certain that they know all about horses, what they should wear, and what the people who associate with them should wear. They

are up on whether it is correct this year to stand with your feet apart, vigorously slapping your boot with a riding crop while you intently study the performers, or whether you should lean gracefully on a fence and pay no apparent attention to the show.

Then there is the second class, who know very little about horses, but talk about them a lot. And cry out with wild enthusiasm when some nag goes by which they have ridden in a beginners' class, and which they claim to recognize by a spavin on the near hind leg. They practice the mannerisms which the select crowd used (and discarded) last year. They really, if they told the truth, are more interested in people than in horses, but don't ever let me hear you breathe a word of this dreadful thing!

There is also present at the show a third and degraded lot of spectators who really should not be considered at all, for they do not even save the fancy red programs. They are totally unable to understand the complicated maps of the labyrinthian courses in Rucker Park which are printed for their special benefit. They have even been known to attend a horseshow in slacks!

And now, for the record, here are the results of the Fort Sill Seventeenth Annual Horse Show:

Class 1—18th FA Enlisted Men's Jumping: 1. Yakima—Sgt. N. R. Brown; 2. Spooks—Corp. D. S. Conlee; 3. Mack—Corp. H. L. Henderson; 4. June Bug—Sgt. N. Sampson.

Class 2—Family Groups: 1. Jacquin—Lt. Col. A. V. Arnold; Pender—Mrs. A. V. Arnold; Slim Jim—Mr. A. V. Arnold, Jr.; Half Fast—Miss Peggy Arnold;

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Bay, Leaf—Miss Joan Arnold; Lulu Long—Master Charles Arnold; 2. Hono—Lt. Col. J. B. Wogan; Bombardier—Mrs. J. B. Wogan; Bonnie Lad—Miss Patsy Wogan; Midland—Master Jackie Wogan; 3. Tarzan—Mrs. R. P. Shugg; Domineer—Miss Blanche Shugg; Majestic—Miss Frances Shugg; Dryad—Miss June Shugg; 4. Entry—Maj. W. L. Bevan; Faux Pas—Mrs. W. L. Bevan; Tip Top—Miss Betty Bevan; Uproar—Miss Sally Bevan.

Class 3—Master's Plate: 1. Dynamo—Mrs. W. L. Bevan; 2. On the Way—Mrs. H. W. Brimmer; 3. So Big—Mrs. Ed Crabtree; 4. Agate—Mrs. A. E. Kastner.

Class 4—Polo Mounts: 1. Georgia K—Capt. A. E. Solem; 2. Billy Acker—Capt. A. R. S. Barden; 3. Reno Haggler—Lt. D. W. Sudduth; 4. Bay Leaf—Lt. Col. A. V. Arnold.

Class 5—Regular Class Handicap Jumping: 1. Missy—Lt. R. LeV. Martin; 2. Big Train—Lt. R. E. Weber, Jr.; 3. Adajan—Lt. S. K. Yarbrough; 4. Bay Chief—Lt. R. LeV. Martin.

Class 6—Hunters, Privately Owned: 1. On the Way—Col. M. G. Randol; 2. Reno Hunter—Capt. L. J. Stewart; 3. So Big—Mrs. Ed Crabtree; 4. Agate—Mrs. A. E. Kastner.

Class 7—Artillery Hunt Plate: 1. Drummer Boy—Capt. A. E. Solem; 2. Xyldegrey—Capt. V. B. Barnes; 3. Missile—Lt. A. Watson, II; 4. Santee—Lt. C. Lynn, Jr.

Class 8—Gentlemen's Hacks: 1. On the Way—Col. M. G. Randol; 2. Reno Jasper—Capt. A. E. Kastner; 3. Rockabye—Lt. A. Watson, II; 4. Xyldegrey—Capt. V. B. Barnes.

Class 9—The George Cup—Officers' Chargers: 1. Missile—Lt. A. Watson, II; 2. Reno Hunter—Capt. L. J. Stewart; 3. Drummer Boy—Capt. A. E. Solem; 4.

Reno Heavens—Capt. V. B. Barnes.

Class 10—Open Handicap Jumping: 1. Trooper*—Lt. S. K. Yarbrough; 2. Hiflier—Lt. D. Parker, Jr.; 3. Santee—Lt. C. Lynn, Jr.; 4. Dynamo—Mrs. W. L. Bevan.

Class 11—Academic Remounts: 1. Barricade—Pvt. L. Bryant; 2. Trail Rose—Pvt. H. J. Brown; 3. Bunker—Pvt. C. L. Lyons; 4. Irish Bard—Pvt. R. D. Hoskins.

Class 12—Modified Three Day Event: 1. Big Train—Lt. R. E. Weber, Jr.; 2. Bay Chief—Lt. R. LeV. Martin; 3. Norion—Lt. J. A. Costain; 4. Red Edwards—Lt. G. Ruhlen.

Class 13—Pairs of Hacks: 1. Reno Jed—(Mrs. M. W. Brewster) and Greta (Mrs. A. E. Kastner); 2. Kitty—(Mrs. A. Watson, II) and Missile—(Lt. A. Watson, II); 3. On the Way—(Mrs. M. G. Randol) and Ricky Boy—(Lt. S. E. Otto); 4. Vixen—(Mrs. H. W. Brimmer) and Entry—(Capt. H. W. Brimmer.)

Class 14—Fanny Malony Memorial: 1. Dynamo—Mrs. W. L. Bevan; 2. Quicksand—Mrs. H. W. Brimmer; 3. So Big—Mrs. Ed Crabtree; 4. Santee—Mrs. N. C. James.

Class 15—18th FA Remounts: 1. Pagan—Sgt. G. Barnett; 2. Bracket—Corp. J. C. Leonard; 3. Rock and Rye—Corp. L. F. Head; 4. Unconcerned—Corp. D. Stevens.

Class 16—Quadruple In and Out Fault and Out: 1. Agate—Capt. A. E. Solem; 2. Hiflier—Lt. D. Parker, Jr.; 3. Metwood—Lt. E. G. Hickman; 4. Yakima—Lt. E. A. Bailey.

Class 17—Green Hunters: 1. Adajan—Lt. S. K. Yarbrough; 2. Vitonet—Lt. R. H. Adams; 3. Norion—Lt. S. E. Otto; 4. Prince Mentor—Lt. R. E. Weber.

Class 18—Polo Bending Race: 1. Bailey Acker—Capt. A. R. S. Barden; 2. Dancer's Merrylegs—Capt. J. C. Oakes; 3. Sonny—Capt. J. C. Oakes; 4. Bay Leaf—Lt. Col. A. V. Arnold.

Class 19—Pairs of Hunters: 1. Hopeful

*Retired after winning this class—age 22 years.

SPECIAL NOTICE

(Lt. A. Watson, II) and Bumper Lass (Capt. A. E. Kastner); 2. Dynamo (Mrs. W. L. Bevan) and So Big (Mrs. Ed Crabtree); 3. Yellow Chief (Lt. T. C. Foote) and Reveille (Lt. C. Lynn, Jr.); 4. Aladdin (Capt. G. R. E. Shell) and Drummer Boy (Capt. A. E. Solem).

Class 20—Ladies' Hacks: 1. On the Way—Mrs. M. G. Randol; 2. Reno Jed—Mrs. M. W. Brewster; 3. Reno Hunter—Mrs. V. B. Barnes; 4. Vixen—Mrs. H. W. Brimmer.

Class 21—Team Handicap Jumping: 1. Instructors, Dept. of Animal Transport: Capt. L. S. Griffing on Fireworks; Lt. A.

Watson, II, on Missile; Capt. A. E. Solem on Drummer Boy; Capt. A. E. Kastner on Agate; 2. 18th FA: Kyte (Lt. Harvey), Yakima (Lt. Bailey), Bryan (Lt. Parker), Hiflier (Lt. Parker); 3. Regular Class: M.P. (Lt. T. B. Maury, III), Aladdin (Capt. G. Shell), Dryad (Lt. Thompson), Judge (Lt. Winn); 4. Regular Class: Santee (Lt. Lynn), Prince Mentor (Lt. Weber), Jackstraw (Lt. Ruhlen), Missy (Lt. Martin). Winner high individual score—Agate (Capt. Kastner).

Class 22—The Commandant's Cup: Won by Lt. R. V. Martin.

Class 23—The Lorillard Cup: Won by Lt. C. A. Symroski.



SPECIAL NOTICE

U. S. FIELD ARTILLERY ASSOCIATION PRIZE ESSAY, 1940

A prize of \$100 is offered by the United States Field Artillery Association for the best essay submitted by any Field Artillery officer of the Regular Army, National Guard, or Reserve Corps, on any subject of current interest pertaining to the Field Artillery.

The Executive Council of the Association, in announcing the essay prize, offers, in addition, a prize of \$50 to that student of the 1939-40 Regular Course of the Field Artillery School whose required thesis shall be adjudged best by the Commandant of the School or by his delegates.

The following rules will govern the essay competition:

(1) The award of prize to be made by a committee of three members to be nominated by the President of the Field Artillery Association, voting by ballot and without knowledge of the competitor's names or of each other's vote.

(2) Each competitor shall send his essay to the Secretary-Treasurer of the Association in a sealed envelope marked "Prize Essay Contest." The name of the writer shall not

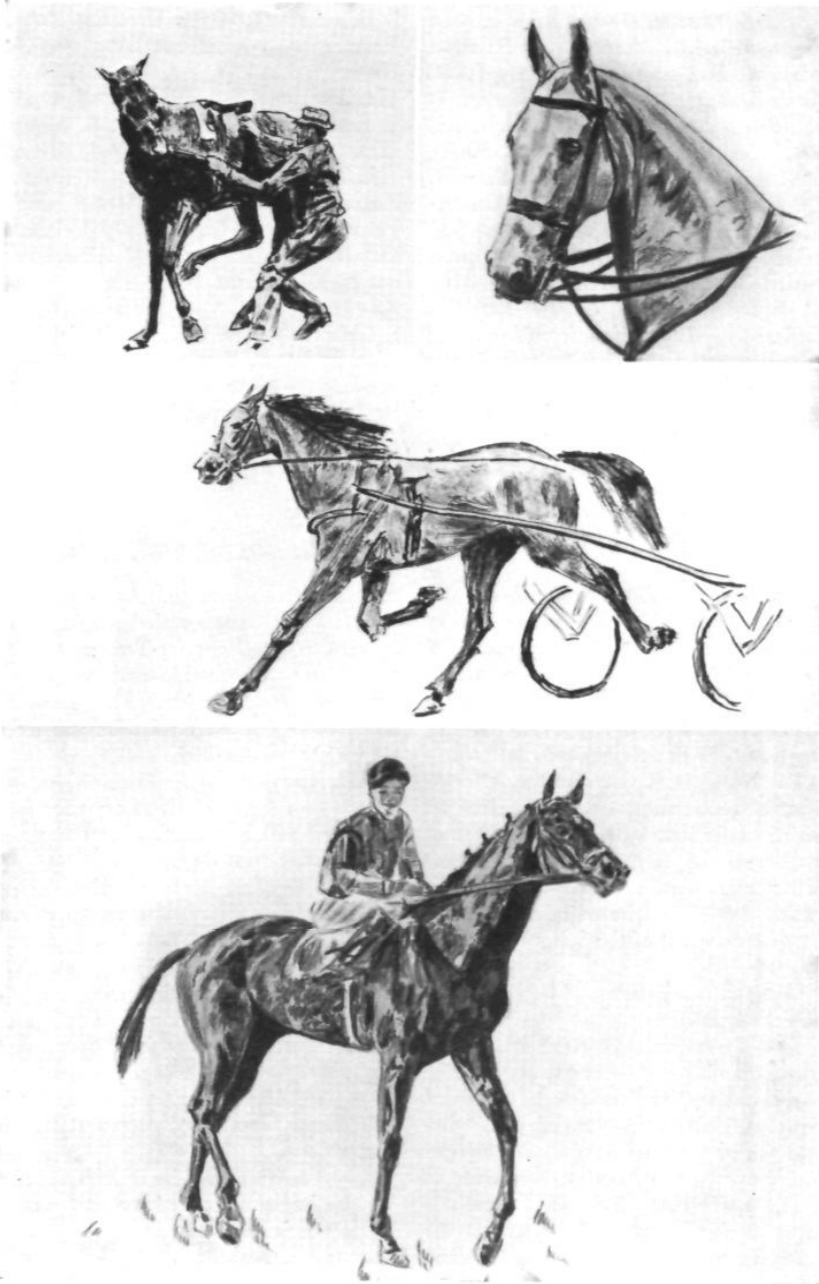
appear on the essay, but instead thereof a motto. Accompanying the essay, a separate sealed envelope will be sent to the Secretary-Treasurer, with the motto on the outside, and the writer's name and motto inside. This envelope will not be opened until after the decision of the Committee.

(3) Essays must be received on or before January 1, 1940. Announcement of award will be made as soon as practicable after that date.

(4) The essay awarded the "United States Field Artillery Association Prize" will be published in THE FIELD ARTILLERY JOURNAL as soon as practicable. Essays not awarded the prize may be accepted for publication in THE FIELD ARTILLERY JOURNAL at the discretion of the editor and the writers of such articles shall be compensated at the established rate for articles not submitted in competition.

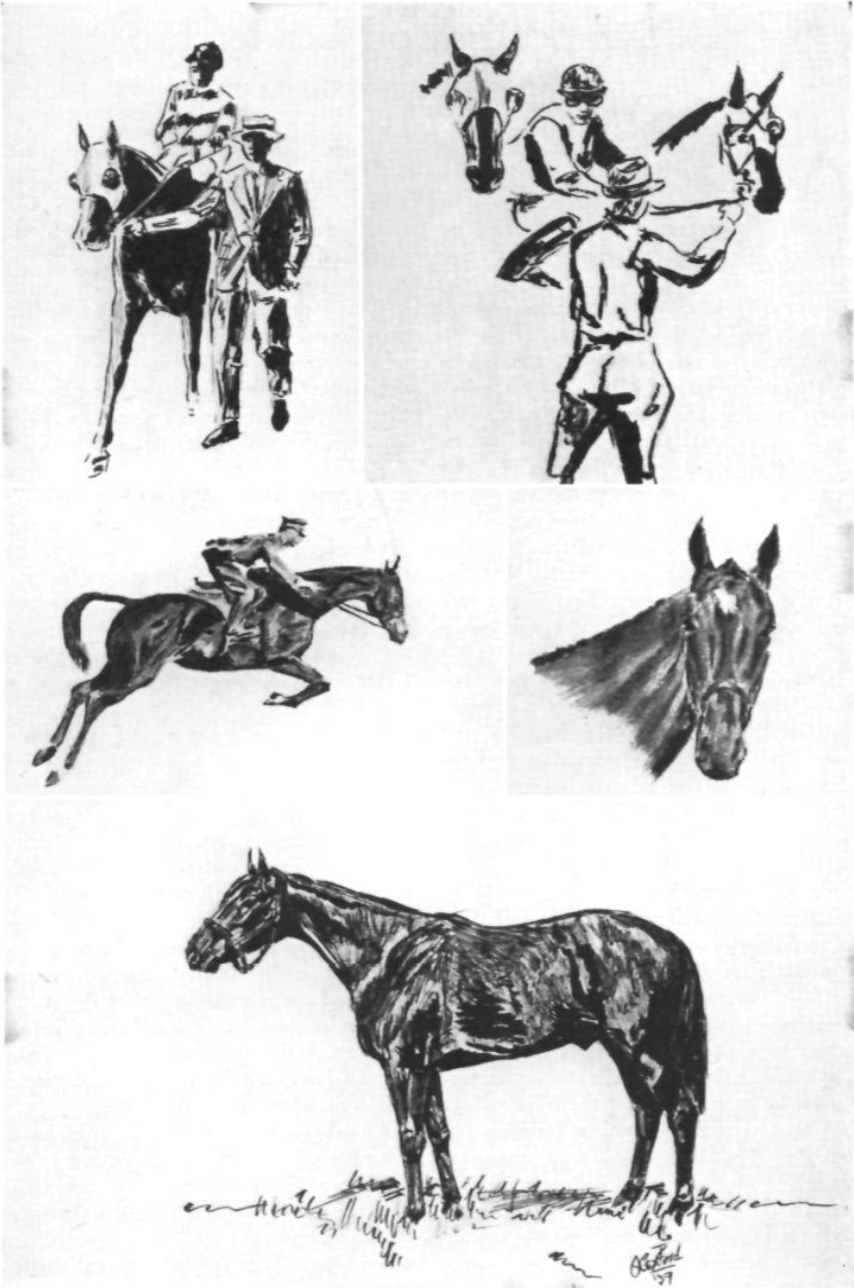
(5) Essays should be limited to 8,000 words, but shorter articles will receive equal consideration.

(6) All essays must be typewritten, double spaced, and submitted in triplicate.



SKETCHES FROM LIFE

THE FIELD ARTILLERY JOURNAL



BY ALEX FORD

A Symposium on Leadership

BY CAPTAN CHARLES R. GILDART, FA

A FEW years before the Mexican War, 1st Lieutenant Braxton Bragg found himself stationed on a battalion post commanded by a field officer. The battery commander was away on leave and young Bragg was temporarily in command of the organization. Besides that, he enjoyed the responsibility of one of those "in-addition-to-his-other-duties" jobs which were then, as now, the bane of a junior officer's existence; and no doubt young Bragg mournfully regarded the practice of multiple assignments as the beginning of the ruination of the army, complaining bitterly to himself that the War Department didn't seem to know that the Florida War was over. For Bragg was also post quartermaster and commissary officer.

One day, in a particularly contentious mood, the young BC made out a requisition on the quartermaster, himself, for some item of property which seemed indispensable to the efficient maintenance of his organization. As quartermaster, he summarily disapproved it, endorsing on the reverse side a statement giving the reasons for his noncompliance. By this time the battle war was in full tide, so as battery commander he returned it to himself by a hot indorsement, setting forth, in no uncertain terms, his right to the items requisitioned, and his determination to see that the quartermaster justified his existence. As the quartermaster he took offense at the implication that he was not performing "service for the line" in the traditional manner, placed another adamant indorsement below the last, clipped all papers neatly together and personally dumped the matter into the blue-clad lap of the post commander. The exclamation of

the field officer, after a study of the nature of the communication is historic: "My God, Mr. Bragg, you have quarreled with every officer in the army and now you are quarreling with yourself!"

This story of the army of antebellum days, recounted from the writings of one of the famous participants in the war,¹ delineates, as hardly any other combination, of equal length, of words could do, the fundamental characteristics of General Bragg which led, first to high command, and then to complete and disastrous failure. And so the memoirs of the leaders of the Civil War form a reservoir of estimates of the famous personalities of that conflict; from these appraisals, in turn, a study may be made of the qualities which prosper, and the attributes which blight the full flower of generalship.

Not all of the great leaders of the war left memoirs, even in fragmentary form. The surprising thing is how many of the old professional survivors were articulate about their roles. Fortunately, many were sufficiently outspoken in their personal criticisms to furnish an anthology of expressions on the characteristics of the great and near-great, which—being based upon the intimate associations of class and corps-mates at West Point, the close relationships of small posts before the war, and the contracts of comradeship in Mexico—constitute source material at once unique and reliable.

An inherent defect of map problems as a means of imparting instruction in the art of war, is that they must necessarily slight the great spiritual factors that play so important a part in action. When these intangibles are introduced, the effect

What Some Civil War Generals Thought of Others

A SYMPOSIUM ON LEADERSHIP

is forced and lacks reality. Yet the personality of his antagonist was the most important part of Lee's estimates of the situation and largely governed his plans. To Grant it was, as aptly put by General J. F. C. Fuller of the British Army, a "plummet line" by which the Union commander checked his designs. Can it be said that Beauregard's intimate knowledge of his classmate, McDowell, had no bearing on his dispositions at the first Bull Run? Or that Jackson made no use of his four years' acquaintanceship with his classmate, McClellan, when he moved to strike the latter's right in the Seven Days? Or that Sherman was not prepared for Hood's impetuosity largely by the advice of the Confederate's Union classmates, Schofield and McPherson, army commanders in the campaign against Atlanta?

Histories of civil wars are entwined with vignettes rooted deep in the personal friendships of opposing leaders. The mutual admiration of Longstreet and Grant is well-known; each in his memoirs pays to the other a great and feeling tribute. Even the American Revolution, which had distinct civil aspects, held similar incidents. It opened with old friends and comrades of a former campaign commanding the opposing forces. Gage and Washington had marched together on Braddock's ill-fated expedition, a souvenir of which—a musket ball—the British general carried for the remainder of his life. They had been intimate friends, Washington and Gage, maintaining a correspondence for twenty years. That their missives must now change to missiles, must have been to the mutual regret of both when they faced each other at Boston. One of the dramatic incidents of American military history is the capture of Charles Lee near Trenton in 1776, by the command he had led in Portugal in 1762, an organization of which Burgoyne had also been a member.

In all the famous controversies growing out of the war, the Lee-Longstreet. Pope -

Porter, Bragg - Polk, Johnston-Hood, to cite notable examples, personalities were more completely discussed, and here the researcher is able to pounce upon not a few morsels of invective and recrimination to reward his quest for the true character of the leader studied. In narratives of campaigns where issues were less numerous, expressions are correspondingly less invidious. But even in the arguments, many of which are still unsettled from the standpoint of general opinion, seldom is it apparent that charges of disloyalty to the country and cause represented were advanced or hinted. So it may be said at the outset that the great attribute of loyalty to government, was, by common consent of all contemporaries, a universal quality of generalship on both sides. Since all the figures were Americans, and the teachings to be gained from their lives are the general heritage of the present generation, the side espoused in the great conflict is of no consequence in a military treatment of individual qualities of generalship. The characteristics which bore the leaders like a friendly breeze to the safe haven of success, or those which dashed them against the rocks of failure, are the items which furnish the professional interest to the reader of Civil War biography.

The personalities that develop from these opinions tell us what a great American wartime general should be. This composite general, this paragon of all military virtue, the "General A" of this article, will be an American officer of first rank, who, through genius and study, has learned to capture the effectual and avoid the mistaken. Early in life he will start to make friends among cadets, candidates, and subalterns of his own age group. This process begins in developing in himself qualities universally recognized as admirable: Honesty, generosity in judging others, dependability, physical and moral courage, loyalty,

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love of country, kindness of spirit, "square-shooting," vigor of mind and body. As a cadet, only horsemanship distinguished Grant in a strictly military way; he was "subgoat" sergeant during his second class year, and served out the rest of his time as a private. But he won the highest possible regard of his class- and corps-mates, and formed friendships that held fast through four years of war in which many of these private comrades were his public enemies. "When our school days were over," says Ingalls, "if the average opinion of the members of the class had been taken, every one would have said: 'There is Sam Grant; he is a splendid fellow, a good, honest man, against whom nothing can be said, and from whom everything may be expected'."² Ewell is reported to have said at the beginning of the war: "There is one West Pointer, I think in Missouri, little known, and whom I hope the Northern people will not find out. I mean Sam Grant. I knew him well at the Academy and in Mexico. I should fear him more than any of their officers I have yet heard of. He is not a man of genius, but is clear-headed, quick and daring."³ While a good impression on his seniors is essential, a good reputation among his fellows is equally so, for if he is to be a great general he will have to command officers who are now his comrades, and to secure their confidence, he must evidence integrity in the humdrum of ordinary life, and ability in duties of minor importance.

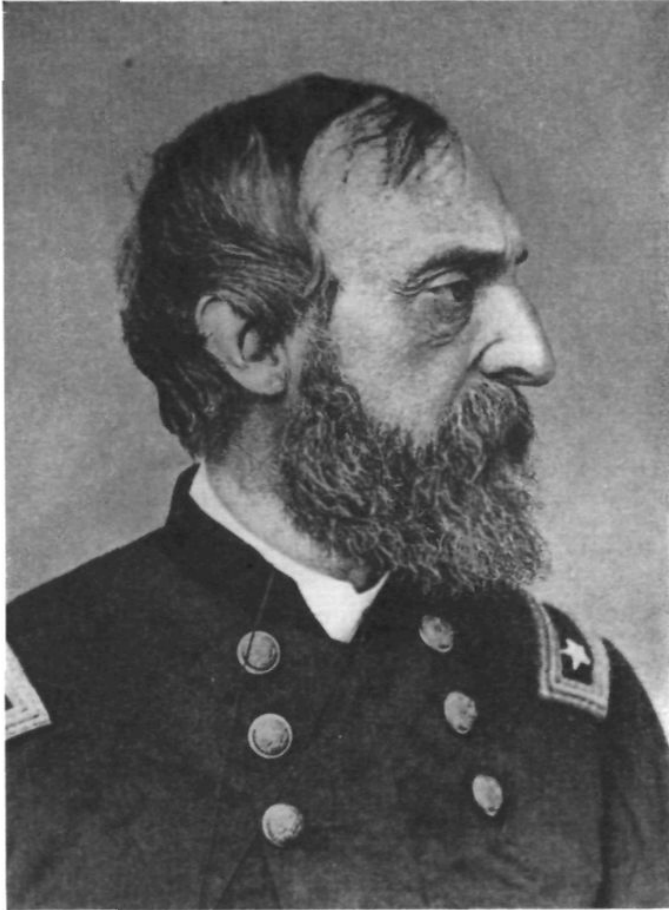
He must be fortunate. Before five years are passed, he must have met seniors who have interested themselves in his progress, and he must be gradually relieved from the fossilizing influence of counting socks and walking horse lines. If he cannot be promoted, by the limitations of law, to field rank by the time he is thirty, he must have promoted his intellect, by educational facilities furnished by his seniors, to the grade of brigadier general. Grant. Hooker,

Halleck, Burnside, McClellan, Jackson, Buckner, Rosecrans, D. H. Hill, Buford, Sherman, Meade, Bragg, Early, Crittenden, A. S. Johnson, Pope form an imposing array of officers who resigned, and prepared themselves for the high command that later developed upon them, not by the stagnating procedure of long service in lower grades, but by reflective study in civilian life, or the development of executive ability incident to nonmilitary duties that required vision higher than the detection of spots on barracks floors. He will indeed be fortunate, if, remaining wedded to his military career, his mind is sublimed above guard and property while it is still nimble and resilient.

Having thus laid the foundations for independent command in war, he should accede to it before he is forty-five. Scott, not McDowell, lost the first Bull Run, because he was too old to take the field. "The old and distinguished officer was, in fact, controlling the operations."⁴ Even Lee complained of the handicap of sciatica, and Grant says he (Lee) "was almost too old for active service."⁵ Sheridan, who outdistanced him to Appomattox, was thirty-four. If older, our general must be active and robust below his years, and be able to sleep under a caisson if his new-fangled trailer-Pullman gets left behind. Of Early, Gordon writes: "It is due General Early to say that his physical strength was not sufficient to enable him to ascend Massanutten Mountain and survey the field from that lofty peak. He had not, therefore, the opportunity to take in the tremendous possibilities which that view revealed."⁶ The fatal halt of the Confederates at Cedar Creek, the dashing turning of the tide by Sheridan, and the rout of earlier victors were the far-reaching results of Early's physical incapacity.

The selection of his subordinates must be based on observations that have extended throughout his career, though he must be quick to recognize genius

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GENERAL MEADE

however inadvertently it may pop up. He must not be deluded by showmanship. The incursion of brass polish dates from contact with the British on the Rhine, and if it becomes the objective and not the by-product of soldiering in an American army, it automatically excludes generals of the Grant type who were more concerned with how they did their jobs than how they were dressed when they did them. There will be encountered rare ability among nonprofessional officers of the John B.

Gordon type, who rose from a junior officer, to the successful command of a corps, and the great general will be adept like Grant, in winnowing the Logans from the McClemands.

"The first quality a general should possess is courage, without which others are of little value; the second is brains, and the third good health," says Marshall Saxe. The negligible casualties among general officers during the World War indicates how far the rearward march of brigade and division

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CP's has progressed, and is a commentary on the decline of personal leadership since the Civil War. D. H. Hill's comments on Stonewall Jackson are apropos to this quality of generalship: "When the time came for him to act, he was in the front to see that his orders were carried out, or were modified to suit the ever-shifting scenes of battle. Jackson leading a cavalry fight by night near Front Royal in the pursuit of Banks, Jackson at the head of the column following McClellan in the retreat from Richmond to Malvern Hill, presents a contrast to Bragg sending from a distance of ten miles, four consecutive orders for an attack by daylight, which he was never to witness."⁷ "No general even won a permanent fame who was wanting in these grand elements of success, knowledge of his own and his enemy's condition, and personal superintendence of operations on the field."⁷

And Gordon, on Ewell and Early, concerning the first day at Gettysburg: "No battle of our Civil War—no battle of any war—more forcibly illustrates the truth that officers at a distance from the field cannot with any wisdom attempt to control the movements of troops actively engaged. On the first day neither General Early nor General Ewell could possibly have been cognizant of the situation at the time I was ordered to halt. The whole portion of the Union army in my front was in inextricable confusion and in flight. It is not surprising, with a full realization of the consequences of a halt, that I should have at first refused to obey the order. Not until the third or fourth order of the most peremptory character reached me did I obey."⁸

In the study that the writer has made of the characteristics of Civil War leaders, twenty-three division and higher commanders were described as brave men by twenty authorities of similar rank, and in language which indicated that physical courage in the face of grave

danger was meant. Such words as "brave," "plucky," "gallant," "heroism," "courage," "fighter," "indomitable," "unflinching," "daring," "coolness in danger," occurring again and again throughout these memoirs indicate what an important attribute to generalship was personal gallantry in action. In those days no general was successful as such unless he was proven to be physically brave. The proposed new division should be a step in the right direction, if for no other reason than to check the rearward and downward career of division and higher command posts. A general should be the master and not the creature of his staff, but obviously the ponderous size of present brigades, divisions, corps and armies always offers a logical excuse for failure to make reconnaissances and be seen by men under small-arms fire.

Moral courage, though less conspicuous, is equally important. Grant, possessor of a moral courage of rocklike solidity, is a character whom our composite general might well emulate. "So Grant was alone;" says Badeau in discussing the Vicksburg campaign, "his most trusted subordinates besought him to change his plans, while his superiors were astonished at his temerity and strove to interfere. Soldiers of reputation and civilians in high places condemned, in advance, a campaign that seemed to them as hopeless as it was unprecedented. If he failed the country would concur with the government and the generals. Grant knew all this . . . but . . . having once determined in a matter that required irreversible decision, he never reversed, nor even misgave, but was steadily loyal to himself and his plans. This absolute and implicit faith was, however, as far as possible from conceit or enthusiasm; it was simply a conscientiousness or conviction, rather, which brought the very strength it believed in—which inspired others with a trust in him because he

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was able to trust himself."⁹

Calumny from the zone of the interior and opposition from superiors are hazards which leadership in war must frequently meet. But that Grant did not suffer even the advice of his best-loved, most trusted friends to jar loose the purpose he had fixed to the foundation of his inner confidence, reveals the genius that has made him immortal.

But physical and moral courage may be carried to a disastrous extreme, as a study of the career of General John B. Hood will certainly demonstrate. Having lost a leg in battle, and being offered a civil appointment, his reply was characteristic: "No sir; no bombproof place for me. I propose to see this fight out in the field."¹⁰ When news came to Sherman in 1864 that Hood had replaced General Joseph E. Johnston, he at once consulted with two of his army commanders, Schofield and McPherson, who had been classmates of the new Confederate commander. "We sat discussing Hood's general character" relates Sherman. "We agreed that we ought to be unusually cautious and prepared at all times for sallies and hard fighting, because Hood, though not deemed much of a scholar, or of great mental capacity, was undoubtedly a brave, determined, and rash man. . . . The character of a leader is a large factor in the game of war and I confess I was pleased at this change."¹¹ The result is well known—Johnston refers bitterly to "the slaughter . . . near Atlanta, . . . the useless butchery at Franklin," and "the rout and disorganization at Nashville."¹²

Gordon says: "Courage and dash are not the sole or even prime requisites of the commander of a great army. There are crises, it is true, in battle, like that which called Napoleon to the front at Lodi . . . when the fate of an army may demand the most daring exposure of the commander-in-chief himself. It is nevertheless true that care and caution in handling an army,

the forethought which thoroughly weighs the advantages of instant and aggressive action, are as essential in a commander as courage in his men. In these high qualities his battles at Atlanta and later at Franklin would indicate that Hood was lacking, . . . Hood, like Jackson, thought battle a delightful excitement; but Jackson with all his daring and apparent relish for the fray, was one of the most cautious of men."¹³

Sherman, Lee, Gordon, Hardee, A. P. Stewart, Grant and Schofield all agree that it was an error on the part of the Confederate government to replace the defensive, war-protracting policy of Johnston by the rashness of Hood. The student of military history finds much to admire in the latter officer, but he is bound to reach the conclusion that it was a costly mistake to entrust him with a separate command. He, more than any one man on the Southern side, was responsible for the turning of the Confederate strategic left and the clearing of the way for the wide envelopment led by Sherman.

This truly great American general will not pass the buck downward like Pope, who made Porter the scapegoat of the stampede back to Washington in 1862, nor like Bragg, "possessed of an irascible temper and naturally disputatious,"¹⁴ who was prone to want "papers that throw the responsibility of delay upon other shoulders."¹⁵ "The disposition to find a scapegoat for every failure and disaster . . . made his officers cautious about striking a blow when an opportunity presented itself, unless they were protected by a positive order," says D. H. Hill.¹⁶ After Chickamauga, when Polk was relieved by Bragg, the former, under date of October 3, 1863, thus aired his feelings over the injustice: "It is a part of a long cherished hope to avenge himself on me for the relief and support I have given him in the past, and the jealousy that has been generated in the mind of the commanding

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general. . . . The truth is General Bragg has made a failure, notwithstanding the success of the battle, and he wants a scapegoat."¹⁷

Neither will he pass the buck upward, like Sherman, who, when he cut loose from Atlanta, severing communication with Thomas, dumped his problem child, Hood, into his commander's lap, already occupied by the bouncing Bobby Lee. Sherman was on the ground, and Grant rightly relied on the judgment of his lieutenant: but Sherman, knowing Thomas as intimately as he did (they had been West Point roommates), should not have subjected his commander to the forebodings, mental anguish and dismay that are revealed by the record of Grant's frantic attempts to galvanize Thomas into action. To "break up" Hood's army had been Sherman's very own unaccomplished mission for months. "When Sherman cut loose and started for Savannah on November 12." Schofield pointedly remarks, "he had not, as events proved, sufficient reason for assuming 'Thomas' strength and ability to meet Hood in the open field'¹⁸ or even hold Nashville against him, much less 'hold the line of the Tennessee River firmly,' which was the condition upon which Grant at first consented that Sherman might make 'the trip to the seacoast.'"¹⁹

General A will be thoroughly familiar with the life and generalship of Robert E. Lee, but he will give greatest credence to biographies which, brushing past Lee the icon, have poked about in musty nooks and crannies, discovered and dusted off the true likeness of the great Southern soldier. This likeness has only recently come to light, for soon after the war there grew up a popular cult of thinking, tutored by the writings of Lord Wolseley, whose detached viewpoint gave them weight, that created only the most idealized portrait—one of heroic size and never a blemish to be seen.

"A true biography we trace

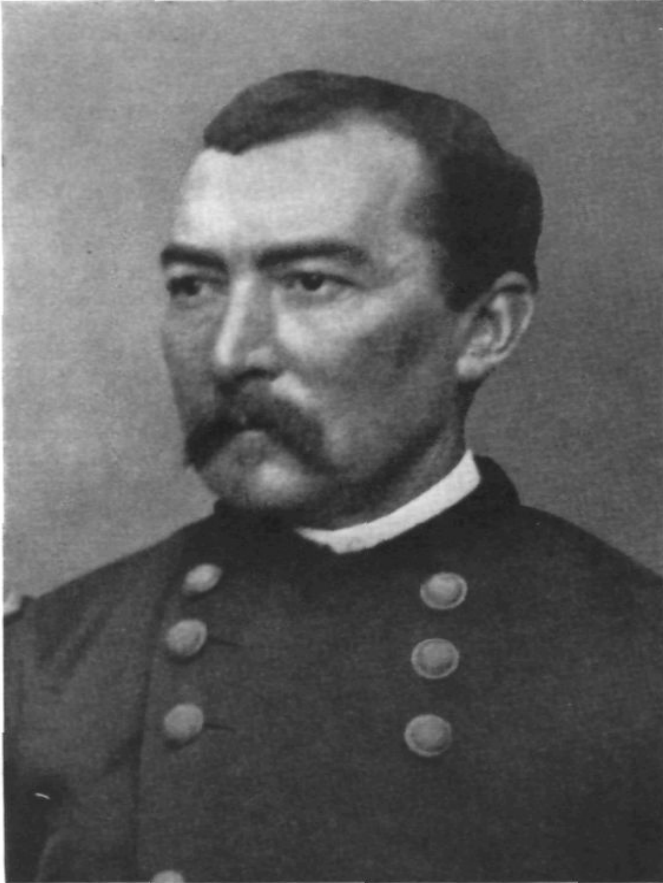
Our method's honest, plain and simple:
Let others paint the noble face!

We concentrate upon the pimple!"—thus satirizes Arthur Guiterman the "debunking" school of biography. The present writer realizes that in calling attention to what might be termed the blemish, and leaving to Lee's many excellent biographers the "painting of the noble face," he runs the risk of being classified according to the implications of Guiterman's verse. His excuse is that he takes for granted that everyone is familiar with the qualities that made Lee immortal—may he have the temerity to make reference to characteristics which plagued the efficiency and marred the genius of this truly great American?

As McClellan may be said to have lacked audacity, and Hood to have been too bold, so may the example of Lee be given as one having an excess of kindly generosity. Early in the War, during his West Virginia campaign, the man who was to become the South's foremost soldier gave evidence of a disposition which was to limit the success of his operations throughout the war. Two subordinates, Wise and Floyd, were engaged in a heated argument over the question of who should command whom, but instead of bringing the dispute to a forceful close, Lee appealed to the participants "for the sake of the cause" to "permit no division of sentiment to disturb its harmony." According to his own nephew, Fitzhugh Lee, he had a "reluctance to oppose the wishes of others, or to order them to do anything that would be disagreeable and to which they would not consent." There is a limit beyond which such forbearance becomes a military sin—then must the general rear up and paw the air—or thump a desk like Pershing.

Like a bad penny this trait came back to help accomplish the South's defeat at Gettysburg. On the first day, Longstreet argued as vigorously as a subordinate

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GENERAL SHERIDAN

may, against what seemed to him the folly of attacking so strong a defensive position, that the heights now facing them were not the objective of the invasion, that better ground for battle could be secured by filing past the Union left. Lee was impatient of further discussion, but the importunity with which his foremost lieutenant pressed his objections must have told him that Longstreet's heart was not in the hazardous undertaking for the morrow—an undertaking in which the latter's corps was to play the leading part.

Longstreet, who after the war incurred the disfavor of many of his comrades by accepting a federal appointment under Grant, has been accused of disobeying an order to attack at sunrise on the second day. Pendleton is one of the originators of this sunrise attack theory, and Gordon holds the failure as an established fact. But Longstreet adduces the statements of four members of Lee's staff, all of which deny the knowledge of any such order. The order was, according to Longstreet, issued at 11:00 A.M. The considerable march was made,

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and the attack launched as soon as the troops were in position. Longstreet says that the distance was about five miles and admits that the march was slow due to efforts to maintain a covered route of approach. As the attack took place at 3:30 P.M., accepting Longstreet's account, the rate was somewhat less than the one and half miles per hour expected of troops marching across country. It seems strange that a coordinated attack could not have been launched before that hour, and the conjecture is warranted that had Lee even temporarily placed in command of the I Corps an officer more in sympathy with his plans, might not the new commander have been more eager to anticipate his chief's wishes, the preparations been more vigorously made, and the final result less disastrous to the Confederate aims?

When ordered to attack on the third day. Longstreet again ventured the opinion "that fifteen thousand men who could make successful assault over that field had never been arrayed in battle; but he (Lee) was impatient of listening, and tired of talking, and nothing was left but to proceed."²⁰ Of Lee's statement, as contained in his report of the battle, that Longstreet was ordered to attack on the morning of the third, and that the assault was not made as early as expected, the latter replies: *"He knew that I did not believe that success was possible; and he should have put an officer in charge who had more confidence in his plan. . . . If the movements were not satisfactory in time and speed of moving, it was his power, duty and privilege to apply the remedy. . . . He held the command and was supported by the government. If his army did not suit him his word would have changed it in a minute. If he failed to apply the remedy it was his fault. Some claim that his only fault as a general was his tender, generous heart. But a heart in the right place looks more to the cause intrusted to its care than for hidden ways by which to*

shift its responsibility to the shoulders of those whose lives hang upon his word."²¹

In view of the close official and personal connection, that existed throughout the war, between these two generals, these measured opinions of Longstreet are most striking, and entitled to the closest consideration. The truth is that Lee more than once made the mistake of "despising his enemy," an error which General A will do well to avoid. McClellan, Pope, Burnside and Hooker, to his sagacity were open books, and Meade, with whom he had been a fellow-engineer in the old army, he thought he also knew. But Meade at Gettysburg, and Grant in Virginia he did not comprehend. His surprise must have been great, after four years of defending Richmond by racing armies up the Shenandoah Valley, when Early's presence in 1864 on the ground where Walter Reed Hospital now stands, did not perturb the tanner's son then pounding his way toward the Confederate capital.

The personality of "Fighting Joe" Hooker will furnish a most profitable study for General A in the effort he will make to avoid the mistakes that led to the undoing of that officer. To Pope, at the Second Bull Run, "Fighting Joe" was a very gallant and devastating creature, as he saw him on his white horse, "riding in rear of his line of battle."²² Burnside had been Hooker's predecessor in command of the Army of the Potomac, and responding to the urgent wishes of his friends, had accepted the duty only to prevent the disaster of its going to Hooker. After Fredericksburg, the latter was guilty of what in modern parlance might go by the term "skullduggery," his disloyalty to his chief became evident, and Burnside wrote out an order dismissing him from the service. Whatever misapprehensions may have existed in the minds of the Secretary of War and the President at the time of Burnside's relief of McClellan,

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concerning the new commander's ability to handle the Army of the Potomac, that officer himself was not deluded by his new grandeur. He had modestly disavowed that capacity again and again. But now that the command had been virtually thrust upon him, he was going to have discipline, "or else."

Burnside's order dismissing Hooker, before publication was submitted to the President, as a test of the latter's confidence in his chief commander in the field. The result was that Burnside was relieved of command, and Hooker, his most active critic, was given the post. Paradoxically, the President accompanied the promotion with a severe reprimand, accusing Hooker of an unmilitary ambition to succeed Burnside, of having "thwarted him (Burnside) as much as he could . . . a great wrong to the country and to a most meritorious and honorable brother officer," and expressing the fear that the spirit of disloyalty which Hooker had spread through the army would now be felt by the new commander.

Hooker "had fine qualities as an officer," but not the weight of character to take charge of that army. Nevertheless under his administration the army assumed wonderful vigor, and depressed morale was sublimed into eagerness for battle. Then came Chancellorsville, and "Fighting Joe" was, like his ill-fated predecessors, to feel the force of the superior ability of Lee and Jackson. In this battle, Couch "became disgusted at the general's vacillation. . . . It only required that Hooker should brace himself up to take a reasonable, commonsense view of things. . . . But Hooker was very despondent. I think that his being outgeneraled by Lee had a good deal to do with his depression."²³ (One might well remark: "No kidding!"). The charge was made that "Fighting Joe" was unfit for duty because he was intoxicated, but there was nothing to this, according to Couch, Hooker simply expected Lee to

retreat without risking the fate of the Confederacy on a battle at that point, and when it appeared that he was mistaken, and had to take up the defensive, he became "demoralized by the superior tactical boldness of the enemy."²⁴

General Hooker then followed McClellan, Pope and Burnside to the limbo of cast-off army commanders, but like his immediate predecessor, stayed with the active army in a junior capacity. As a corps commander he gained the encomium of Grant for his brilliant attack around the point of Lookout Mountain and into the valley at the Battle of Chattanooga. But Grant, Sherman, McPherson and Schofield all regarded him as a "grand-stand artist" of the first magnitude. In the Atlanta campaign. Hooker's corps, a part of the Army of the Cumberland, was as large as Schofield's Army of the Ohio; the erstwhile commander of the Army of the Potomac felt no deference for the rights of the young commanders of the Armies of the Tennessee and of the Ohio, and was wont to cut in ahead on roads that had been assigned to Schofield and McPherson. He became the subject of Sherman's severe censure for a message in which Hooker seemed to have inferred that Schofield could not be trusted to support his right at Kolb's Farm. In his Memoirs, Grant frankly regards him "as a dangerous man. He was not subordinate to his superiors. He was ambitious to the extent of caring nothing about the rights of others. His disposition was, when engaged in battle, to get detached from the main body of the army and exercise a separate command, gathering to his standard all he could of his juniors."²⁵

The philosophy that General A will capture from a study of "Fighting Joe" will be to avoid an ostentatious effort to live up to a romantic sobriquet. He will not emphasize his individuality at the expense of teamwork and loyalty to

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his seniors, neither will he distinguish himself by trampling the rights of his juniors on a stampede to the head of the parade. This philosophy, which is truly American, becoming a part of himself, will give him that "weight of character," which in the present example was lacking. And then, when he fights his Chancellorsville, and the enemy does not fall in and obey the mandates of Plan A, he will not be disconcerted, but will tie a knot like Wellington, and go on to his objective.

The successful general will not scorn the judgment and information possessed by proven subordinates. According to Gordon, on whose remarkable talent for leadership any commander might profitably have leaned, the example of General Early is a fruitful study. He "possessed . . . characteristics . . . which were the parents of more or less trouble to him and to those under him: namely his indisposition to act upon suggestions submitted by subordinates and his distrust of the accuracy of reports by scouts."²⁶ The lost opportunity of Ewell's corps on the first day at Gettysburg, a similar one discovered by Gordon's reconnaissance of Sedgwick's rear in the wilderness on the 6th of May, 1864, and the fatal halt of the Confederates at Cedar Creek, on the occasion of Sheridan's famous ride from Winchester, showed not only a woeful lack of the courage of his own convictions, but a want of faith in proven subordinates. The repression of initiative and the ruination of efficiency on the part of juniors are the certain results of serving under a commander who will not repose trust in the intelligence of others. The commander need not, and should not invariably act upon the advice of his subordinates, for there is no hope for him to achieve greatness if he does not possess the genius of accurate thinking that gives him an inner courage in the face of the opposition of his friends. Neither should he, like Early,

accept non-action as an alternative for possible faulty action, for nothing risked is nothing gained, and the sins of omission are greater than the sins of commission. And he should cultivate his own initiative even though there may be above him an unsympathetic Halleck to repress and discourage.

To be great, the general must take into consideration the political situation, the objectives of his executive and the temper of his country. While mastering field strategy, he will not neglect grand strategy. McClellan, hating politicians, was out of sympathy with the tenets of the party in power; the result was that Lincoln returned the lack of faith, although he must have appreciated the fact that his general was otherwise great. Grant, seeing the uselessness of kicking against the pricks, modified his plans to suit policy. When McClernand, urging his political influence, intrigued against Grant and procured for himself an independent command on the Mississippi. Grant solved the problem, not by means of a paper war with Washington which might have involved him with the party in power, but by the simple process of tying a Wellington knot in his plan, moving to the McClernand theatre and ranking out the incompetent. Similarly he put up with Butler, a Democrat with a following, and a potential critic of the government, until the time was ripe. That time came when Lincoln was safely reelected. The end of Butler's military career followed closely on the heels of this event.

General A must possess certain qualities which distinguish him from successful leaders of foreign armies, for almost exclusively in war, and increasingly so in time of peace, he commands the citizen soldier—a liberty-loving, self-reliant, independent unit, undisciplined by the standards of foreign armies maintained by peacetime conscription, wasteful of his life, profligate

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of his courage, responsive to confident leadership, intolerant of oppression, cocksure—a famous warrior. General Gibbon tells us that many regular officers failed to achieve success because of their contempt for volunteer troops,²⁷ and being himself a regular officer, his opinion should bear weight. Experience of present day officers who have commanded troops in the World War, or maintained order in a CCC camp, justifies the opinion that standards must be made to fit the well-known difference in discipline between regular and temporary troops. "General Buell . . . was a strict disciplinarian, and perhaps did not distinguish sufficiently between the volunteer who 'enlisted for the war' and the soldier who serves in time of peace."²⁸

Knowing when to admonish and when to punish, and how severely, is an art that the great general must have cultivated through years of observation and practice. It is a case of imposing the amount and kind of discipline the traffic will bear, and he will find that the American nonprofessional soldier is capable of so much discipline and no more. Beyond that depressed morale of his organization will work the commanding officer's own undoing, no matter how much the manual of court-martial may be in his favor. The composite American soldier wants to be led to victory, he is willing to do his bit if others do theirs, and he recognizes that discipline is needed for cooperative effort. However, he reacts less perfectly to an iron, unrelenting, Puritanical control, than to the fatherly interest in his welfare, and kind but firm check on his misdeeds that characterized the leadership of "Old Pap" Thomas. "He gained the confidence of all who served under him, and almost their love. This implies a very valuable quality. It is a quality which calls out the most efficient services of the troops."²⁹ "It was 'Old Pap' Thomas, not General Thomas,

who was beloved by the Army of the Cumberland."³⁰

Burnside once made this statement: "If there is any quality for which General



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Grant is particularly characterized, it is that of magnanimity.³¹ The incident of Pickett's visit to Washington after the war, and his call on his old friends Grant and Ingalls, as related by the great Confederate in a letter to his wife, shows us that Grant's magnanimity sprang from his inmost soul, and was not a public gesture calculated to heighten his popularity. "He took in his the hand of your heart-sore soldier . . . said slowly: 'Pickett, if there is anything on the top of God's green earth that I can do for you, say so.' . . . When I started to go Grant pulled down a cheque book, and said, 'Pickett, it seems funny, doesn't it, that I should have any money to offer, but how much do you need?' 'Not any, old fellow, not a cent, thank you,' I said. 'I have plenty.' 'But Rufus tells me that you have begun to build a house to take the place of the one old Butler burned, and how can you build it without money? You do need some!' 'I have sold some timber to pay for it,' I told him."³² No wonder that Longstreet says of Grant: ". . . of noble, generous heart, a lovable character, a valued friend,"³³ and that Grant speaks of his own feelings at Appomattox as being "sad and depressed. I felt like anything rather than rejoicing at the downfall of a foe who had fought so long and valiantly, and who had suffered so much for a cause."³⁴

His rank and file will love and be loved by our composite general. He may not be the magnanimous Grant, the dashing Jeb Stuart, the personable McPherson, the magnetic Lee, the picturesque Forrest, the fatherly Thomas, the witty D. H. Hill, the charming McClellan, or the hotspurring Sheridan, but some such quality will be innate in him, and he will err if he represses it with cold dignity, irascibility or unapproachableness. Meade is the best illustration of acerbity in high places. "He was unfortunately of a temper that would get beyond his control, at times, and make

him speak to officers of high rank in the most offensive manner. . . This made it unpleasant at times, even in battle, for those around him to approach him even with information."³⁵ Well might Grant call this disposition a "drawback to his usefulness," and Sheridan speak of a "peppery temper" that "got the better of his good judgment."³⁶

This American general must be calm under the fire of artillery and the press; considerate of the advice of subordinates, yet self-reliant and self-confident; never scorning by rule the intelligence of others; ambitious to do his best for his country, yet not so intensely ambitious for personal exaltation as to cause him to regard his comrades with suspicion, as contenders for his place. He will not be a great general, if in rising to his heights, he steps on the necks of others to reach his goal. Imitating the magnanimity of Grant and Lee will prevent him from the suspicion of Early, the jealousy of Halleck, the irascibility of Bragg, the asperity of Meade, the egoism of Hooker, the unpleasantness of Buell.

He must be temperate in all things, except devotion to his cause and to the welfare of his troops—temperate in habits, temperate in praise and censure of subordinates, balanced in intellect, and unswayed by the empty, fickle rewards of popularity. He must be bold with the boldness of Lee, Grant and Jackson, but not to the point of rashness as Hood was rash. He must cultivate the intelligent caution of Jackson, but not the shadow-boxing of McClellan. He must tutor his mind with the age-old principles of strategy, but invent for himself new tactics to fit the unforeseen conditions of his war, which will be different from any that has preceded it. But he must be neither the "educated emptiness" that was Halleck, nor the untrained pomposity that was Pope, nor the bluff incompetence that was Fremont.

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Our general must be able to size up the personality of the leaders by whom he is opposed, as did Lee. But like Grant, he will use the product of this sagacity as a check on his plan rather than as the framework of the plan itself. He must have, like Grant, a determination, a bulldog tenacity that will enable him to hang on, never despairing of victory. His must be a magnetic personality that will turn defeat into success as did Sheridan's. He must have a talent for organization that will enable him to bring order out of chaos, as had McClellan and Albert Sidney Johnston. And he must have a facility for the employment of the combined arms with the best economy of force—which no Civil War general ever had.

He must profit by his mistakes, particularly in the realm of tactics. Every major war is a step in the evolution of tactics, resulting from the developments in weaponry that have taken place since the last war. So he must correct, not only his own mistakes, but faults in hitherto-accepted doctrines now being subjected for the first time to the fire of a brand-new war. He must therefore be adaptable, a further argument in favor of his youth.

At the time of the Civil War the training of our officers was left to chance, and to their own capacity to absorb and reflect upon the lessons of the past. No general or special-service school existed for their guidance; they emerged from West Point hardly more than embryos, inheriting from their Alma Mater moral fibre and ordered minds, but ignorant of the tremendous tasks they would be called upon to face. Jackson's own intellect was his War College, and Sheridan's quick perception his Leavenworth. Genius abounded, but there had been in time of peace no means of bringing the pay dirt to the surface, nor refining it when found. That the war did produce generalship of a high order under these circumstances is no

more remarkable than we should have a Ford or an Edison in the industrial world.

But it was a wasteful process, and the war dragged on for four years while the search for the right men continued. No one will contend that we should now junk our army schools and again leave all to the fortunes of war, simply because that system honored our country's name with such enlightened generalship as Grant's or Lee's. The argument would immediately be refuted by the careers of Foch, Petain, Fayolle, Debeney, Maistre and others who stepped from their professor's chairs at the French War College to army CP's in the World War. General A will have a far better foundation for high command than our examples of seventy-five years ago, but again his personality will govern his selection from others of equal experience and education.

Logistics he will know, and the rules of the game he will be ordered to play. But he will have also a flair for the imponderables—there are times when the rules should be broken, and his teachers may have avoided this dangerous ground and played safe with average conditions. The formalized education that he has benefitted by will not groove the train of his thought, regiment his decisions, nor dull the edge of his genius. And so like Jackson, he too will have to read and reflect, study vicariously the examples of the past and present, and weigh for himself the intangibles involved.

Last, the composite American wartime general will be truly great in proportion as he is truly American. He must believe in the United States, cherish its institutions, appreciate its history, confide in its government, believe in its soldiery. "Each epoch creates its own agents, and General Grant more nearly than any other man impersonates the American character of 1861-65." says Sherman. The soldiers of each side in the Civil War fought like Americans

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for Americanism as they saw it.

"Every battlefield of the Civil War beheld the deadly conflict of former friends with each other." writes D. H. Hill. . . . However . . . if we had to be beaten, it was better to be beaten by our former friends. . . . The temporary estrangement cannot obliterate the recollections of noble traits of character."³⁷

Besides the qualities that have made generals of other lands immortal, the American general must have an understanding heart, vibrant to the self-respect of every liberty-loving American within his ranks.

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CONTEST FOR SMALL-ARMS HISTORIANS

The American Military Institute of Washington, D. C., has announced a contest to be held this summer in the field of historical weapons. Three prizes of \$100, \$50, and \$25 will be offered for the most adequately substantiated replies to a questionnaire on the physical, functional, and tactical characteristics of a series of about twelve models of infantry shoulder arms. Each of the weapons has been selected as being the most typical of its period.

No writing ability is necessary, since the answers themselves are required to be in as few words or figures as possible. Substantiation of these answers may also be limited to a simple citation of the sources consulted or of actual firing performed.

The contest is open to anyone except officers of the Institute and there are no entrance fees or other expenses. If you know anything about the French Charleville

musket, or the Spanish matchlock of 1540, or the American rifle of the Revolution, you should enter your name in the competition. It is not necessary that you answer all questions to compete or, perhaps, to win one of the prizes.

The contest will be judged by a committee consisting of Brig. Gen. Oliver L. Spaulding, former Chief of the Historical Section, Army War College; Lieutenant Colonel Calvin Goddard (Ord. Res.), nationally known authority on ballistics and historical arms; and Mr. John K. Scofield of the staff of the *American Rifleman*, an expert on the firearms of the sixteenth to eighteenth centuries. All who consider competing should write at once to the Secretary, American Military Institute, Box 382, Benjamin Franklin Station, Washington, D. C., for the necessary forms. The competition will probably close sometime in August.

Attack in Spain

A translation of an article in L'Illustration (France) (Jan. 28, 1939 Issue)

BY BRIGADIER GENERAL HENRY J. REILLY, ORC

(Translated by 1st Lieutenant T. L. Crystal, Jr., FA)

WHEN the World War of 1914-1918 ended under the dull sky of November, on that memorable morning of the eleventh, an important unanswered question was the role of the tank in future wars.

The tanks, a product of the needs of the World War, arrived too late and in too few a number on the actual field of battle to receive a definite category as to either their possibilities or defects. Nothing was proven, other than that a new arm had been added to the panoply of Mars.

And so, two schools of thought developed.

One, struck by the possibilities that the tank had offered, notably during the battles of Cambrai in 1917 and in August, 1918, predicted for it a future comparable only to the most glorious days of knights in armor when opposed only by the simple infantryman before the invention of gunpowder. This school claimed that mass attacks of tanks, accompanied by motorized infantry, artillery and sometimes by aviation, formed a virtually independent force and appropriated from the Infantry its title of "Queen of Battles." The leading proponent of this school is without a doubt the brilliant English General Fuller. It was to his theories that

Brig. Gen. Henry J. Reilly, who was as a lieutenant, an instructor in history at the United States Military Academy, and at the end of the World War commanded an American light artillery regiment on the French front, and later a brigade of Infantry, has just spent several months in Nationalist Spain; a part in the general area around Saragossa, and more on the active fronts of the Northern or the Eastern Armies. He brought back with him many observations, and especially the account of the attempt made by a hundred armored cars to break through a line of trenches. This feat, although now fourteen months old, still taught a notable lesson.

the English subscribed in the postwar years, and they were the first to develop this new arm.

The three German "Panzerdivisionen," which constituted an independent army corps, were originated along similar lines. The speedy triumph of Italy over the Ethiopians was due, in a large part, to the tanks and air corps.

The other school was convinced that the Infantry was still the "Queen of Battles," and that the artillery remained its "Prince Consort," while the tanks were only another servant of the pair. This is, in a general way, the view held by both the United States and France.

The Spanish Civil War has lasted two and a half years. The Italians and Germans have tried out many types of tanks and calibers of antitank guns, while the great majority of armored cars and antitank weapons used by the Government forces were of Russian manufacture, or of Spanish make patterned after the Russian. The two adversaries made a complete trial of these Russian tanks, because the Nationalists have captured many of them and even used them against their former owners.

The more the war in Spain drags out, the more the combatants, the high command and even the infantrymen, tend toward the adoption of tanks armed solely with a cannon (in this case of a caliber of 45-mm).

General Monasterio, Commander in Chief of the Nationalist Cavalry, told me one day while speaking of armaments and military tactics: "The war would have been terminated already were it not for the power of our enemy being

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made so great by the possession of many armored cars equipped with cannons."

The Battle of Fuentès de Ebro on the 13th of November, 1937, definitely established, at least for this war, the role evolved for the tank.

Before this battle opinions differed, mainly with respect to one point. This was relative to light cars armed only with machine guns. In combat it was definitely established that these cars were not able to overcome either the difficulties of the terrain or the fire of the enemy. Confronted with a tank armed with a cannon, they were on a par with the foot soldier of the middle ages clothed in his leathern jacket, opposed to a knight in armor.

Ever since the battle of Fuentès de Ebro, neither the government troops nor the nationalists had the slightest doubt as to the role to be played by the combat cars.

In this attack, the government army relied on the strategic success of a breach in the Franco front formed by the valley of the Ebro River, and on the tactical success of an assault of armored cars against nationalist infantry holding an entrenched position at that point.

Approximately ninety to a hundred government tanks attacked seven nationalist companies entrenched on both sides of the national highway between Tarragone and Saragossa at a point 27 kilometers from the latter.

For an account of what happened, I can do no better than to give the exact words of one of the men there engaged. 2nd Lieutenant Antonio Quarte Alfarez:

"The attack took us by surprise." said Quarte. "Suddenly, we heard the noise of the approaching tanks. It got louder, coming from the other side of the crest occupied by the enemy some 500 or 700 meters to our front. Then a column of tanks, which seemed endless, began to form, coming out of a breach in the enemy trenches, and headed for the spot which I held with my platoon.

"After going about 100 meters on the slope in front of us, the car which formed the head of the column obliqued towards the right, and travelled thus parallel to our line of trenches in the direction of the national highway.

"At the instant that the end of the column executed the same movement, a red flag was waved from the leading car. At this signal, every ninth or tenth car made a half turn to the left, toward our position.

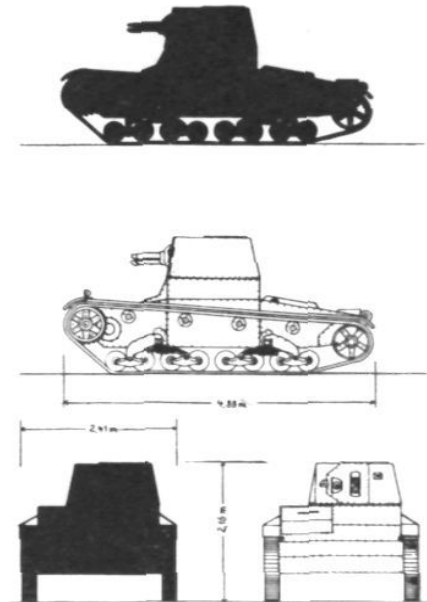


FIGURE 1

NOTES BY THE TRANSLATOR.—Throughout this article, as with nearly any other non-professional magazine either in France or any other country, no distinction is made between the words "tank," "char d'assaut," "char léger," and the like.

All these apparently refer to the same type vehicle.

From other sources and to the best of my knowledge, this attack was made with Russian tanks modeled after the English Vickers-Armstrong 6 ton light tank, profiles and dimensions of which are given in Figure 1. According to German sources its crew is 3 men, and it carries a 47-mm. cannon and a 7.69-mm. machine gun. It has a maximum speed of 35 km.

ATTACK IN SPAIN

"These cars were each followed by five or six others, thus making nine or ten columns or about six vehicles each headed for us.

"The other tanks, to the number of about thirty, ranged themselves in a single line and fired on us with their cannons.

"The enemy artillery batteries did not open up; these thirty cars armed with cannon and the cannon carried by most of the others advancing on us, constituted the only artillery supporting the attack.

"We had no artillery, but only three antitank guns of 37-mm caliber, one on a small hill on the right of the enemy company and to the left of mine, another on the Saragossa national highway and the third on the extreme left, on the bank of the Ebro. My company, the 51st of the Thirtieth Division, was on the right of the highway. The 19th Company was on our right. On the left of the road were two companies of Phalangists and two companies of regulars. These four last held the line between the Saragossa highway and the Ebro. The tank attack to which they were subjected was less intense than ours. On their side, had the terrain not been so irregular, it would have been more suitable for the attack than ours. The terrain in front of my company and half of the 19th Company close to ours, was perfect for the combat cars. Here came the main attack.

"About half of those which attacked carried sandbags on them behind which crouched soldiers. Those men behind these barriers who were not knocked off by our machine guns were effectively dislodged by hand grenades when the tanks got within good throwing distance. Very few of the tanks reached our trench. Their crews were rapidly killed or taken prisoner. Many attackers jumped out of their wheeled coffins as soon as they were within range of our grenades and fled.

"The closer the tanks got the more they lost their beautiful formation. They

avoided the places where our resistance was the greatest or where the trenches were on a slight rise, and headed always towards the least cut up sections of our line.

"We stopped several by throwing glass canteens of sulphur and of gasoline in their caterpillar treads, their gas tanks and their ventilators and by hurling hand grenades at them.

"When the first tanks had broken through the several openings which were in our line, we waited without fear the thirty others, which had, with their artillery, supported the movement and now were advancing on us. The enemy infantry had also come out of their trenches and seemed ready to charge.

"We left the tanks which had succeeded in getting through our defenses to the attentions of the companies in reserve, who were holding the ravines behind our trenches.

"We could hear the din of a violent struggle behind us, principally, in the hollow separating our little crest from the village.

"Soon we saw two tanks in flames emerge from the village, come down the main highway, and retire towards the enemy lines. Then others, which had not yet been disabled, tried to return through the breaches and the more level portions of our defenses. Several escaped, but the others were burned while returning and destroyed without having attained their objective. On the right of the 19th Company an antiaircraft gun annihilated one tank which tried to fire on that side and stopped those which formed the left flank of the thirty others, all enfiladed in their support formation.

"As soon as the retreat was definitely underway, these reenforcing tanks retired, and the infantry returned to their trenches.

"We then led about half of our men to the rear to complete the destruction

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of those vehicles which were still trying to make good their retreat. We captured sixteen. Two had reached the village, but the stone houses and narrow winding streets had not proven a favorable place for maneuvering the cars. The command-post personnel of the battalion commander, the rear echelon, and the cooks, set them on fire."

Several months later the cars still remained in the spots where they had been disabled. You could still see the half-burned bodies which the sun and air of Spain seemed to mummify rather than decompose.

Ever since, except for minor sorties, and those attacks well supported by infantry and artillery, the tanks stayed out of range of the 37-mm guns, and carefully avoided too close contact with the nationalist infantry. They have taken advantage of the longer range of their cannons to put these

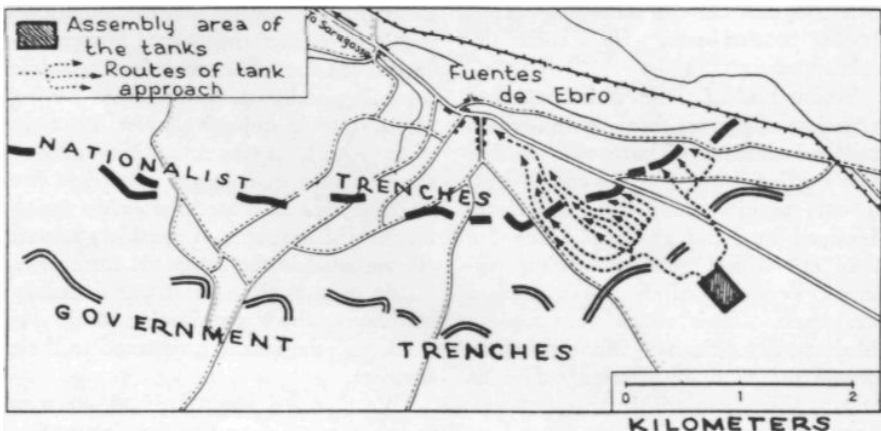
37-mm guns out of action and of their great mobility to avoid becoming an ideal target for the 45-mm mountain guns.

The nationalists themselves always use their cars to assist the assault of the infantry. First comes the artillery preparation, and then the aviation gets a crack. Then, in several lines, but well-spaced, come the combat cars, followed by infantry. If there is a sufficiency of tanks mounting cannon, only they are used, or the numbers are split half and half with light tanks, but these latter are used only to cover the flanks of the normal attack formation. The infantry follows immediately after the tanks.

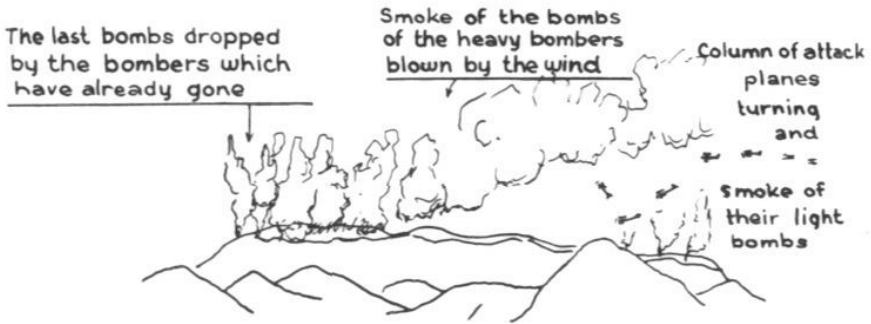
This method of fighting, which has been proven by two and a half years of war, shows that if Infantry is to be always the "Queen of Battles" she has still, to repeat my first metaphor, two princes consort: the artillery and the combat car.

FIGURE 2

Dispositions for an attack made by Government troops at Fuentes de Ebro. About one hundred combat cars or light tanks made a mass attack at the point shown and were repulsed with great losses.



ATTACK IN SPAIN



The bombardment planes drop their bombs while the infantry and tanks get into their jump-off positions.

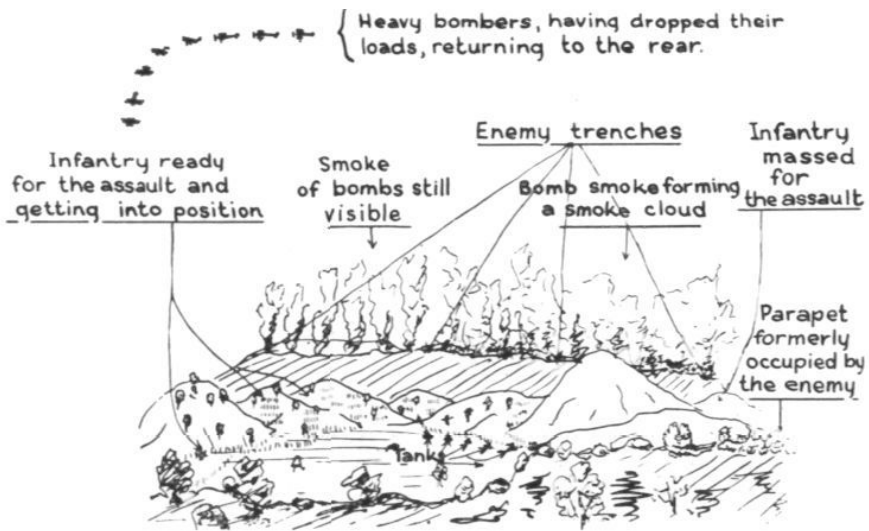


FIGURE 3

PREPARATION OF AN OFFENSIVE AGAINST GOVERNMENT TRENCHES IN THE SPANISH CIVIL WAR

Attack aviation starts its first attack on the left of the enemy at the instant that the last bombs of the heavy bombers fall on the right.

(Sketched by Brig. General Reilly, USA, an eyewitness, on a battlefield to the east of Teruel.)

"First came an artillery preparation, then an aerial attack by bombardment planes, immediately followed by another bombardment by attack aviation, aided by their machine guns and power dives. During this phase the tanks and infantry occupied their jump-off positions. The bombers and attack ships repeated their attacks several times. At the moment that the attack planes finished their last attack, the tanks, in a single line, followed by the infantry in a formation of small columns, began the assault."

Why 300 Mils?

BY CAPTAIN D. C. McNAIR, FA

Angle i was less than three hundred,
He thought it was more and therefore he
blundered,
Vo do, vo do de o do.

THE above ditty, sung over a gallon of corn whisky in the pine forests of Georgia, was my initiation a few years ago, to the mysterious procedure called "conduct of fire." I was a brand new shavetail with shiny bars and full of youthful desire to be what the Germans call an "artillerist". I soon found that my way to fulfilling this ambition was to be a long and rocky one. We commenced battalion schools in which it was pointed out that, until one had been firing for several years and had graduated from the Field Artillery School, he could not hope to achieve even reasonable proficiency in the art of slinging the elusive cannon ball. The mystery surrounding this highly complicated procedure was so great that we were not even taught the conduct of fire with lateral methods because that was beyond our comprehension at our present stage of mental development and we would "get that when you get to Sill".

I maintained at the time that this method was wrong and there were evidently many others, eminently more qualified so to state than I, who believed the same thing. This seemed, however, to be the sentiment of a minority in the service at the time. As a result, however, of continuous agitation and development, we have gone a long way toward simplifying our methods of conduct of fire. We have at present good garrison schools, and I believe that the mystery has been largely removed from the delightful sport of shooting. I do not believe, however, that we have yet arrived at the simplest possible form of firing and I also

feel that we are still too technical in our methods. We still try to make things hard by theoretical discussions and by injecting rare and improbable situations into our instruction.

It is not the purpose of this article to criticize any individuals or to maintain that our system is basically wrong. It is believed that our system and methods in general are basically correct. It is the purpose of this discussion to attempt to point out a way in which we can simplify our technique so as to make the acquisition of a working knowledge of our methods less complicated for a newly commissioned officer. It is conceded that the regular officers in time of peace can be taught to use any method, by any means of instruction. In wartime, however, the problem is entirely different. In that case we have thousands of new officers who must be taught enough to qualify them as battery commanders in a period as short as three months. This is believed to be the foundation upon which all of our methods should be based.

Conduct of fire is defined, in Field Artillery Book 161, as the technique of placing fire on the target. Since we can place fire on target both by observed and by unobserved fire, conduct of fire is generally construed as the conduct of observed fire. This is the subject to which this discussion will be confined.

At the present time, conduct of fire is termed axial when the observer is on or near the lines of fire; that is, when the target offset is not more than 100 mils. Deflection errors can be measured accurately, and compensating corrections can be made. Range errors cannot be measured accurately.

Conduct of fire is termed lateral when

WHY 300 MILS?

the target offset (angle T) exceeds 100 mils. Deflection errors cannot be measured accurately as in axial conduct of fire. Procedure during adjustment consists, in general, of two operations; bringing the burst into line with the target, as viewed by the observer; and keeping the burst in this position during the changes incident to adjustment.

When T is small (100-300 mils), range adjustment is more difficult than deflection adjustment; hence the procedure is designed to facilitate range adjustment. When T is large (more than 300 mils), deflection is more difficult than range adjustment; hence the procedure is designed to facilitate deflection adjustment. Accordingly, when T is small the target is bracketed for range; when T is large, the target is bracketed for deflection. These brackets (range or deflection) are established by shots which are on the observer-target line or are computed thereto. The bracket is split until a point is reached where fire for effect may be commenced.

There are believed to be no major faults in our present system of teaching axial conduct of fire nor in our present methods of axial firing. With lateral methods, however, difficulty is encountered and it is believed that they can be further simplified so as to eliminate much of the difficulty at present encountered.

In this study it is proposed to consider our present methods of lateral conduct of fire and to offer some proof that they can be still further simplified.

If we consider a setup in which the angle T , or observer-displacement, is small, it may readily be seen that the deflection is simply adjusted by measuring the deviation and moving the burst this full amount. The range adjustment is the difficult part and can only be made by sensing the burst and applying certain well-defined and logical principles.

If, on the other hand, we consider a setup in which the angle T is 1600 mils, we

see that deflection has become the difficult element to adjust since the range deviation may readily be sensed and corresponding changes made. In this case deflection, therefore, is the controlling element.

Consequently, somewhere between 0 and 1600 mils, there should be a point at which we should cease to seek a range bracket and begin to seek a bracket in deflection. At present the dividing point is prescribed as 300 mils. It is proposed in this study to determine whether 300 mils is the correct point or whether some other angle would be more correct.

As far as can be determined, there is no definite reason why 300 mils should be the critical point. Our present methods of lateral conduct of fire have been developed from a War Department publication entitled "Artillery Firing", published in 1918. This was based on a French manual published in 1917. In this publication it is stated that "bringing the shot to the observing line and trial fire are executed in a manner which depends on whether the observer displacement is less or greater than 300 mils". Training Regulations 430-85, which was the forerunner of the present Field Artillery Book 161, retained this idea. Accordingly it would seem that 300 mils has been arbitrarily accepted from the French as being the dividing point between the use of small- and large- T methods. As far as can be learned, there never has been any conclusive proof of the correctness of this figure. The best answer that it is possible to obtain from anyone is that this is the point at which range dispersion becomes excessive and affects the accuracy of the factor r/R .

In conducting this investigation, only the precision adjustment will be considered, since the bracket adjustment follows approximately the same general procedure. In a precision adjustment, an attempt is made to obtain a bracket of one fork in range and one s in deflection,

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s in this case is the deflection shift necessary to keep the shot on the observer-target line when a range change of one fork is made. If s is greater than 16 mils, a deflection bracket corresponding to a one-fork range bracket requires further adjustment for deflection. Hence a 16-mil deflection bracket is sought if s exceeds 16 mils, 16 mils was chosen as the controlling factor because, with that value of s, the deflection will usually be correct after the second series of six rounds, provided that a sensing in deflection is obtained in each series of three rounds.

If we consider large-T methods, then the correct value of Angle T which should be the critical point to determine their use would be the one which would give a maximum value of 16 mils for s.

This may be illustrated graphically in Figure 1. T is an angle for which s is 16 mils. With any angle, such as T prime, greater than T, s would be greater than 16 mils. In this case, large-T methods would be applicable. For any angle less

formula will give the value of s in mils for a 100-yard range change. Assuming that s is 16 mils we can obtain from the formula and also from Figure 1. Tangent

$$T = \frac{s \times R}{100} = \frac{16 \times R}{100}$$

From the mil relation ($W=m/R$, $16 \times R$ is the width, in yards at the target, of a shift of 16 mils at the gun. Since we are considering a range change of one fork, we may substitute the size of a fork for 100 in the above equation. In this case, of course, the resulting s will be somewhat smaller and is known as "modified s" in our present system. Continuing this line of reasoning, we find that T is the angle whose tangent is

equal to $\frac{16 \times R}{1 \text{ fork}}$ or, in other words,

$$T \text{ is the angle whose tangent} = \frac{\text{the width of a 16 - mil shift (in yards)}}{1 \text{ fork (in yards)}}$$

From this it would seem that the critical T

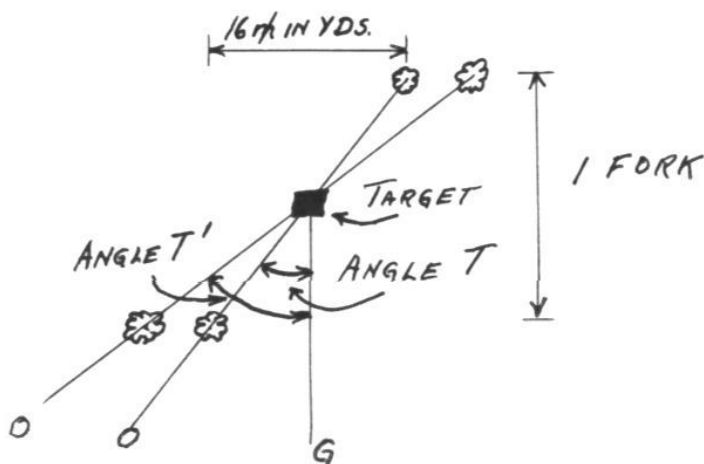


Figure 1.

than T, small-T methods could be used. (From FAB 161. $s = \frac{100 \text{ Tangent } T}{R}$) This

would depend on the range, since both the fork and R correspond to the firing range.

The following table shows the values of T at different ranges, as deduced from

WHY 300 MILS?

the foregoing formula, using the range table for the French 75-mm. gun. Shell Mk. I, fuze long.

Range	Fork (yards)	16 mils (in yards)	Tan T	T
1000	40	16	.40	387
2000	48	32	.67	600
3000	60	48	.80	690
4000	80	64	.80	690
5000	108	80	.74	650
6000	148	96	.65	585
7000	192	112	.58	540
8000	244	128	.52	490

Examination of this table shows the critical value of T to be between 400 and 700 mils. However, the occasions in which indirect fire is conducted with ranges less than 2000 yards, and over 8000 yards, are rare. Consequently it may be said that the critical value of T in this analysis is between 500 and 700 mils.

Now let us consider the relative advantage of the small- and large- T methods with respect to changes in range and deflection necessary to secure an adjustment. Since the object of an

adjustment is to hit the target or to inclose it in a very small bracket, the smaller the shifts of the controlling elements the more expeditious the adjustment.

In any adjustment with lateral methods, the shot must be moved to the observer-target line to obtain a sensing. This movement may be accomplished in either of two ways—by a deflection shift or by a range change. In small- T , it is accomplished by deflection shifts; in large- T , by range changes. In many cases, with these methods, the shot must be moved farther away from the target in order to put it on the observer-target line. This wastes both time and ammunition. Consequently if we could determine which of the two—range change or deflection shift—were smaller for any value of T , we should have another means of determining the critical value of T heretofore mentioned.

Consider Figure 2. A is a shot whose deviation *in yards* from the OT line is equal to AD . By similar triangles, angle $T = \text{angle } T'$. AB is the deflection shift *in yards* necessary to put the shot on the OT line. AT is the range change *in yards*, necessary to put the shot on the

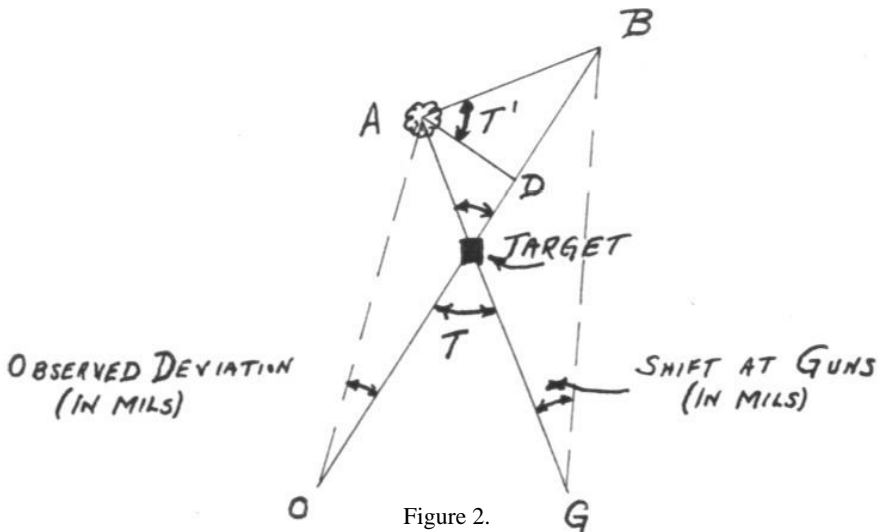


Figure 2.

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OT line. From the Figure 2:

$$\sin T = \frac{AD}{AT}$$

$$AT = \frac{AD}{\sin T}$$

$$\cos T \text{ prime} = \cos T = \frac{AD}{AB}$$

$$AB = \frac{AD}{\cos T}$$

From the foregoing formula we see that, for any value of AD, say one yard: The deflection change in yards to bring the shot to the OT line =

$$\frac{1}{\cos T}$$

The range change in yards to bring the shot to the OT line =

$$\frac{1}{\sin T}$$

The following table shows these quantities for values of angle *T* from 100 to 1500 mils.

<i>T</i>	Cos <i>T</i>	Deflection change (yards)	Sin <i>T</i>	Range change (yards)
100	.995	1.01	.098	10.20
200	.98	1.02	.195	5.13
300	.96	1.04	.29	3.45
400	.92	1.09	.38	2.63
500	.88	1.14	.47	2.13
600	.83	1.21	.56	1.79
700	.77	1.30	.63	1.59
800	.71	1.41	.71	1.41
900	.63	1.59	.77	1.30
1000	.56	1.79	.83	1.21
1100	.47	2.13	.88	1.14
1200	.38	2.63	.92	1.09
1300	.29	3.45	.96	1.04
1400	.195	5.13	.98	1.02
1500	.098	10.20	.995	1.01

A study of this table reveals that for an angle *T* of 200 mils and a deviation of 100 yards, the deflection shift necessary to bring the shot to the line is 102 yards, while the range change necessary is 513

yards. In some cases it would endanger our own troops to shorten the range by 500 yards. Consideration of an angle *T* of 300 mils and a 100-yard deviation shows the necessary shift in deflection to be 104 yards and the required range change to be 345 yards. This would seem to indicate that 300 mils is too small to be the critical value of angle *T*. Further examination of the table shows equal shifts in both range and deflection for an angle of 800 mils. This, then, would seem to be the critical value.

Still another aspect of the situation to be considered is the tactical disposition of units in combat. Normally a battalion of light artillery supports a regiment of infantry. The frontage of the latter is usually between 1200 and 3000 yards. As a general rule, two battalions are placed in line. Normally the zone of action of each infantry battalion is assigned to a battery as its zone of action. This would give each battery a zone of action from 600 to 1500 yards wide. The artillery battalion is normally assigned a position area in the zone of action of the supported infantry regiment. It will not often be able to go outside the lateral limits of this zone of action to establish battery OP's. Any locations suitable for OP's in adjacent areas would already be in use by adjacent artillery units. Hence, assuming the worst possible setup for OP's it would appear that, at medium and long ranges, the greatest values of angle *T* which we may expect will not exceed 700 or 800 mils. Usually they will be much less. Accordingly, if we can simplify our methods of lateral conduct of fire so that, in such a setup, we need use only one method, we have advanced a long way toward simplifying the training of wartime officers.

The results of this study of lateral methods may be summarized as follows:

1. Considering the relation of the deflection bracket sought to the range

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bracket sought in adjustment, the critical value of angle T appears to be between 500 and 700 mils.

2. Considering the distances, in yards, required to move the shot to the OT line, the critical value of angle T is 800 mils.

3. Considering the tactical disposition of units in combat, the desirable critical value of T seems to be between 500 and 800 mils.

As shown in the foregoing discussion, there appears to be no defense of the apparently arbitrary selection of 300 mils as the critical value of angle T to determine the use of small- and large- T methods. The results of this analysis point to a critical value of angle T from 500 to 800 mils. As a matter of fact, by actual firing it has been found possible to fire lateral adjustments with small- T methods with angles up to 500 and even 600 mils. Beyond that point, observed dispersion in range becomes so great that the use of large- T methods is

more efficient. It would seem feasible, however, to use small- T methods with angles up to 500 mils.

Accordingly a change in our present procedure suggests itself and is offered for thought and consideration:

Change the critical point separating the use of small- and large- T methods from 300 to 500 mils.

This will largely eliminate the necessity for large- T methods. The present methods of large- T precision could be retained for occasional use by the medium and heavy calibers when combined observation is impossible. In the few cases where large angles are encountered in bracket fire from forward OP's liaison methods can be used. If desired, with the latter, the observed deviation can be converted into a shift for the guns by using the mil relation.

It is believed that this change would greatly simplify the problem of training the wartime officer.

PRINTER AND ENGRAVER—JOIN US IN A BOW

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Reviews

The Army Officer's Annual Pocket Reference Book and 1939-40 Calendar. Compiled and published by Captain Peter Rodyenko, CE (Res), Manhasset, Long Island, N. Y. \$1.00.

Contained in a small pocket-size volume is a mass of information invaluable to the newly commissioned reserve officer, or to one who is about to report for a tour of active duty. In it also is much information which the regular officer would like to have available in handy form. The data contained in the book include practically everything official *and social* that the reserve officer needs to know, except, of course, the detailed matters of professional knowledge gained by training, experience, and study. There is much on the organization of the Army, the location of all units and stations, and even a list of the congressional committees on military affairs and related matters. Valuable too are the hints on Army Extension Courses, and transportation and mileage. In the back is a miniature "Reference Data" of the Leavenworth type. And even the inside cover has been made useful, for on its edge are printed various scales. While most of the material, having been extracted from official publications, is probably already available to many, the form in which it is here presented, as well as the other useful hints not found in the AR's and TR's, makes the book well worth its price—S. T. C.

Bombs Bursting in the Air: The Influence of Air Power on International Relations. George Fielding Eliot. Reynal and Hitchcock, N. Y. \$1.75.

Despite its title, this short book by the author of *The Ramparts We Watch*, is no scare story designed for the Sunday supplements, but rather a sane, serious discussion of a question uppermost in the minds of all citizens alive to the present international situation. It is "a study of the

effect of air power on present European conditions, and of the essentially different character which air power assumes when regarded from the point of view of the defense of the United States." In some respects Major Eliot's latest work might be considered a primer for the layman; the first chapter is devoted to a brief clear exposition of the fundamentals of war and the principles involved in its conduct. After thus laying a groundwork for his discussion the author goes on to present air power as the third great and revolutionary invention of all times (the other two being *discipline* and *gunpowder*). He poses the following interesting question:

"Can Germany afford such a gamble (a major air attack on Great Britain), in which she throws on the gaming board all that her present rulers have gained, all the fruits of years of effort, in the hope of winning a military victory which even if won may prove but fleeting and illusory in its benefits?"

To this he concludes: "Not, one would say, unless there is no other way to achieve German ends. Not unless a desperate Germany, driven to bay, has no option but to fight or to surrender.

"The masters of modern Germany are not fools.

"Why should they take the risks of war, and undergo the strains which it will impose upon their none-too-assured economic and social structure, while they have a better and safer method of achieving their objectives?

"That better and safer method they . . . are using with great success. And of that method, their air power is the foundation and the source of their strength.

"The method may be very briefly described by a short and unpleasant word—Blackmail."

In the second portion of the book Major Eliot shows how this type of blackmail can never be applied to the

REVIEWS

United States if we are careful to prevent any possible enemy from gaining a base in the western hemisphere from which an air attack could be threatened or launched. This solution is discussed with reference to the amount and type of air force required by this nation for such defensive purpose.—A. H.

Road to Empire, The Life and Times of Bonaparte the General. By Fletcher Pratt. Doubleday, Doran and Company, New York. \$3.75.

Here is a new book by Fletcher Pratt, who needs no introduction to readers of THE FIELD ARTILLERY JOURNAL, for his splendid articles on military history have often been enjoyed in these pages. Mr. Pratt begins with the launching of Bonaparte's career in 1795, shows him winning battle after battle, ruthlessly flaunting authority for the sake of victory, becoming increasingly important in French political circles, until finally he became First Consul. This is a story—often told in history ancient as well as modern—of how a people's revolution, surging out of the cauldron to destroy unbearable autocracy and establish government by the masses, is itself presently overwhelmed by a popular hero who makes himself dictator through his messianic properties and military victories.

This is a book which will be enjoyed by military students because of its accurate, analytical presentation of Bonaparte's early campaigns, the study of which is facilitated by a series of simplified maps of the theater of operations. But it also will be liked by the average reader for its crisp, sparkling sentences. Every paragraph is a brief word picture, conveying the sense of action, movement, weather, terrain, and, above all an illuminating picture of the personalities involved. Here is one, for example:

"M. Delacroix, a man with a bloated white face that bespoke internal maladies, but easy and gracious in manner. . . ."

Road to Empire carries excellent sketches of Bonaparte's chief subordinates, and how they developed under his leadership. It is as full of emotion as a novel; you will wish to finish the story even though you know how it ends. It contains also many enlivening and enlightening incidents of human interest, as:

"Young Lasalle, who had ridden on into the backs of Ocskay's men, came into headquarters late to make his report, and stood for a moment, white and shaking with fatigue. Bonaparte looked up, then pointed to the corner where eleven battle standards, stiff with the gold embroidery worked into them by the Empress of Austria, lay in a heap.

"Sleep there," he said. "You have the right."

Or his speech to two demibrigades which had broken in battle:

"Soldiers! I am not satisfied with you. You have shown neither discipline, constancy nor courage. . . . Chief of Staff have it inscribed on the standards of these men, *They are no longer of the army of Italy!*"

"Down the line old veterans caught their breath, burst into protest and tears, as the general rode away from them with his face set like ice."

Or his methods of obtaining military intelligence:

"Mathieu Dumas . . . had his suspect stripped and tied to a table, then brought in a couple of camp butchers with their bloody aprons and cleavers, indicating where they should make the first cut. The messenger was not that much of a hero; he shrieked a confession and, a dose of purge having extracted the metal capsule from its hiding place. Bonaparte learned the Austrian plan."

Mr. Pratt describes Josephine as an adventuress who attempted to use Bonaparte as a stepping-stone to social respectability and security, but in failing to return a small measure of the devotion

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which he first lavished upon her, finally lost him.

The latter part of the book presents an interesting theory as to the motivation back of Napoleon's Egyptian adventure.

A series of excellent pen-and-ink illustrations adds greatly to the value of the work. Though bibliography is specifically omitted with cogent reasons therefore, a

definite air of authority is injected by an indirect suggestion of source reference, and the use of a novel device which the author calls "Worm's-eye view," consisting of a short sketch at the close of each chapter culled from contemporary sources, chiefly press, which imparts an excellent flavor of the life of the times in addition to that given in the narrative itself.—A. C. L.



DISPLACEMENT OF 18TH FA VIA WHITE WOLF FORD, GFX-8

WASHINGTON ARTILLERY 101 YEARS OLD

Reading in the last issue of THE JOURNAL that another National Guard Regiment, which had just celebrated its centennial, was the oldest such organization outside the original thirteen states. Lieut. Walter J. Ledig, 141st Artillery, of New Orleans, points to the official history of his own unit, the famous Washington Artillery, and quotes therefrom: "The earliest date the United States war department officially will concede for the organization of the Washington Artillery as this is written is 1838. Since that official notification,

research has uncovered documentary proof that the Washington Artillery was a military unit under that name as early as 1838.

"The obscurity surrounding the exact date of origin of the Washington Artillery under that name is because in 1862, when New Orleans fell before the attack of Admiral Farragut's fleet and the advance of General Butler's army in the War Between the States, one of the early acts of the Union forces holding the city was to burn the Washington Artillery Armory. In that fire were destroyed all the old records of the command."

Rounds Per Man Per Minute

BY MAJOR CHRISTIANCY PICKETT, FA

ANYONE whose funny bone is not atrophied must have been delighted with the subtle manner in which Mr. William Hazlett Upson in his recent article mixed sly wit with sound common sense to turn our imaginations toward new angles of the problem of increasing the ratio of fire power to personnel in our branch.

Expressing this ratio as a fraction whose numerator is the number of enemy personnel we can neutralize and whose denominator is the tabular, organizational war strength appears to be a logical procedure. Let us then assume for the purpose of argument only, that our average target is an enemy machine gun section containing twenty-three men, vulnerable more or less, to the effects of a concentration.

Under this assumption our ratio would be 23/152 for a horse-drawn 75-mm. battery, 69/705 for a battalion, or 138/1699 for a regiment. The relative fire power, of course, diminishes with the size of the unit, due to increasing overhead. If we were to apportion to a firing battery its share of the battalion and regimental overhead, we would get a ratio for the battery of 23/282. By similar computations we would find that, for a truck drawn 75-mm. battery, this ratio is 23/226.

How efficient are we in terms of percentage? How efficient, in such terms, is it possible for us to become? No one can answer these questions precisely; endless argument would ensue as to what perfection consists of. All should agree, however, to another assumption, admittedly arbitrary, provided it is understood to be for the purposes of comparison only. Let the assumption be that perfection, or 100%, consists of

ability to eliminate from action in crucial phases, a force half the size of our own. A perfect ratio would then be 23/46 and we compute that, under present organization, a horse-drawn battery is 16.3% efficient and truck-drawn battery 20.2%. This essay has nothing to do with a comparison between the two types but is aimed at ways and means for raising the efficiency, in terms of fire power, of both types.

In experimental maneuvers, commanders have attempted to increase the ratio of fire power to personnel strength by issuing additional guns to firing batteries and have found that the number of guns that could be added without serious loss of mobility and combat efficiency was quite limited, owing to the necessity of manning these extra pieces with personnel of only one subdivision of the organization—the firing battery.

In certain situations and for certain purposes, such as increasing the weight of a preparation directed against a well-organized enemy zone defense, there is no doubt that a unit at full strength could handle additional guns that might be available to be brought up for this purpose, using temporarily the truck drivers and higher-numbered cannoners. Captured guns were thus employed at times during the World War. But the minute we reduce gun squads below the minimum number of men necessary for efficient service of the piece, we lose in speed and teamwork whatever advantages we may have gained through the addition of guns. Moreover, these expedients are justified for temporary use only, and break down when war of movement develops.

Mr. Upson's semiautomatic, self-loading, one-man gun, though cleverly depicted

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by a witty cartoonist in THE FIELD ARTILLERY JOURNAL as doing heroic execution, is a goal which we can merely approach, and that only by improvements in material of types developed for antiaircraft units. Meanwhile we have on hand too many of present types to hope that they may be junked in the manner that the Navy is able to junk obsolescent equipment.

Why, moreover, should we seek to improve our fire power by reductions in the personnel of only one group—the firing battery?

The figures quoted above seem to accuse "overhead" of progressively adding to the top heavy denominator of the fire power ratio. Let us, therefore, study ways and means of making more efficient use of other elements of our organizations.

Considering first a gun battery by itself, we do not find any reason for supposing that its headquarters can be reduced in size. The members of its detail, as now composed, are often entirely committed to action in reconnaissance and occupation of position or forward displacement; those not required for constant duty during stabilized phases of action are needed for reliefs.

There are arguments, however, in favor of increasing the number of guns in a battery. A six-gun battery has proved to be a little large and unwieldy, but as far as the writer knows, little experiment with a five-gun battery has been made, due no doubt to our aversion to odd-numbered units such as gun sections which could not be divided into equal-sized platoons. With the advent of truck-drawn units and consequent declining importance of mounted maneuvers other than those for entering and leaving position, the platoon organization of a firing battery has become less important. The firing battery is an entity; its operation does not require that the first two guns be classified as the "1st platoon" and the others as the "2d platoon." If five guns can be handled by the executive, the following considerations

would indicate the desirability of such an arrangement:

(1) A 20% increase in fire power of a gun battery at a cost of only 7% increase in personnel.

(2) Ability to cover a front of 150 yards instead of 120 without the necessity for sweeping. (How we all hate to figure out how many rounds and how many turns of the handwheel when we are pressed for time!)

(3) Simplification of that bugbear, distribution. Yes, actually, this is true! It does not sound reasonable to suppose, but let us take an example, a very common one, too. We have been adjusting with a closed sheaf on infantry weapons in the vicinity of a bush or stump (the only kind of target we will ever have at a rear OP except a check point). Do we have to stop and compute. "Ninety divided by three is thirty and divide that by 2.7 is about eleven, that we'll have to open and then I'd better shift right a half of that to center my sheaf and open on number two"? No. by jiminy! We just say "Open 10"! We don't even have to say "On number three open 10" because we'll *always* open on number three unless specifically stated otherwise! What a relief to those cannoneers, too! How much nicer for them than "Right six. On number two open eleven (or thirteen)."

Let us now consider the battalion. Its detail has grown in size of late, because of developments of methods of communication and the employment of liaison sections coordinated with a fire-direction

*Yes, I know: open 10 is not exactly correct, but I hate odd numbers and so do the gunners. Ninety yards divided by four gun intervals is 22 and 22 divided by 2.7 is nearer 9 than 10, but what the heck! This is based upon (1) the assumption that a target of unknown width is 90 yards wide and (2) the vague argument that a projectile's effect is 30 yards in width. Both these assumptions are guesses. Any veteran would rather be lying prone five yards from a burst than standing up twenty-five yards from it. We are less apt to have gaps in the effect when we simply open 10 than we are if we give Right 6 or 7 and on No. (So-and-So) open nine.

ROUNDS PER MAN PER MINUTE

center. The FDC has, in a way, usurped some of the functions of conduct of fire that were formerly reserved for battery commanders. No argument here, because it seems to work. But doesn't it seem too bad that this large, smooth-functioning tactical element is serving only three gun batteries? Why couldn't it handle four? As a matter of fact, it is admitted that the battalion commander or S-3 frequently has to forego fulfilling the demands of the two liaison officers (both buzzing back "Request Battalion") because of a lack of sufficient fire units. It is often difficult to select from two simultaneous requests for a battery when only one of the three is clear and available. The alternative of switching an occupied battery to a more important mission certainly has disadvantages, moreover.

Can the battalion command post handle four gun batteries? That will not have to be put to the test; it has already been done. The French artillery did it and it has been done in maneuvers.

Finally, the regimental headquarters comes up for discussion, with its aggregate of ninety-five people. This installation fulfills a valuable mission in time of peace and does it with reduced personnel. In time of war, its tactical functions are secondary, include neither fire direction to any extent, nor conduct of fire. Many serious persons believe that this installation overburdens the channels of command and communication in the light, divisional artillery, without contributing commensurate services. The lessons of the war caused us to divest it of its functions in the supervision of direct support and assign it a coordinating mission. It is easy for this coordinating function to become just plain interference with the combat duties of the battalions. In maneuvers it had been concerning itself with collection and transmission of intelligence, putting another OP on the already crowded crest and, on finding that this OP reports little in

comparison with what comes from front-line echelons, its staff officers occupy themselves with calling on battalion staffs to send them back information. This practice would often become intolerable in war.

Its sole indispensable functions are probably administrative: The expediting of reports to the rear and of supplies and ammunition to the front. This leads us to consider the possibility of reducing this headquarters or of doing away with it and subdividing sections of it to the battalion headquarters batteries and combat trains. This latter proposition would have the added advantage of reducing the overhead for messing, and cutting out a wire net. We might well consider a proposal to break up regimental headquarters of light regiments upon taking the field for War, promoting the colonel to a brigadier general and distributing the remaining personnel among the battalion details to bring them up to strength.

Concerning the medium regiments, some of the foregoing might be applicable. Certainly there is no compelling reason for having them organized into three battalions of only two batteries each.

During the last few years, fresh thought and imaginative research have been envisioning future trends and anticipating developments to meet them. This has been a healthy trend, but it has enlarged command-and-communication groups in proportion to fire units and has emphasized the importance of the battalion as the principal tactical unit. Our organization is becoming efficient but top-heavy.

The importance of field artillery has not diminished but increased, as evidenced by the experiences in foreign campaigns, notably that in China where the Japanese artillery, probably less efficient than ours, has nonetheless proved its effectiveness by contrast with the Chinese who had little of it. A low ratio

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of fire power to personnel in the Jap army had little significance in a struggle where materiel is considered expensive and manpower cheap. In this country, the opposite situation exists and should be dealt with.

Returning to the subject of ratios discussed earlier in this article, let us see what increases in fire power could be attained by applying the changes suggested above.

With gun batteries of five guns, battalions of four gun batteries and added sections of the service battery, the light field artillery battalion, truck-drawn, would contain 777 officers and men and 20 guns, only four less than the present regiment. Computing ratios and expressing efficiency in terms of percentage by the method previously

discussed, and crediting a battery with 20% more fire power, we would find that the truck-drawn battery had become 30% efficient, a gain of 50% over its present efficiency.

If it is feared that these schemes would place too many units under the brigade commander's control, we can get around this objection by having less than four light battalions in the brigade. If there were only two, we would have 40 guns, only 8 less than at present.

We do not have to go to war to try these things out. Provisional organization can be made and tested during maneuvers at large posts such as Fort Sam Houston or Schofield Barracks. Not all of the ideas may work out in practice; if any of them do, we will have made a big step in the direction of conservation of man power.

SPECIFICATION

He must be wise—for dull men love their
ease,

He must be gay, for sorrow's ever near,
And he must live each day to be his last,
And cast without his heart the thought of
fear.

He must have youth, for youth counts not
the cost,
And jests and games, though life be peace
or strife,

And he must love and be beloved of one.
His blood must stir at call of drum and
fife.

He must have faith—whatever be his
cause—

And honor, too, be held within his soul
Nor must he be a niggard with his gifts,
But count them fair exchange to reach his
goal.

And his reward? A sodden field, perhaps,
Dead arms outflung against a bloody
sod—

A silent face turned to a silent sky—
A spirit winging free to meet its God.

—MRS. THOMAS WADELTON.



THE WINNING PISTOLEERS

University of Utah Wins 1939 Pistol Competition

The Field Artillery Reserve Officers' Training Corps Pistol Competition was inaugurated in 1930 under the sponsorship of the Chief of Field Artillery.

The National Rifle Association prescribes the rules and supervises the competition. Teams consist of five men. The match consists of three parts, first, ten rounds slow fire at 50 feet on a target whose ten-ring is only ninety-ninths of an inch in diameter. Second, ten rounds fired in two strings of five, each string in twenty seconds, at 50 feet on a target whose ten-ring is 1.8 inch in diameter. Third, ten rounds fired in two strings of five, each string in ten seconds, at 50 feet on a target similar to the preceding one. Targets carry a serial number and must be returned to the National Rifle Association where the scores are computed.

One team from each of the twenty-eight Field Artillery R.O.T.C. units in the

United States are invited to enter the competition which is fired on or about April 15th each year.

Since the inauguration of this competition, it has been won by teams representing the following R.O.T.C. units.

1930	Purdue University
1931	Princeton University
1932	University of Missouri
1933	University of Oklahoma
1934	University of Oklahoma
1935	Purdue University
1936	Purdue University
1937	Colorado State College
1938	Purdue University
1939	University of Utah

In 1938 the University of Utah was third.

The members of the team which won the Field Artillery Match and their individual scores were as follows:

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Name	Slow fire	Timed	Rapid	Total
J. S. Alley	92	95	96	283
Orin Webb	90	96	94	280
Wellington Webb	89	98	98	285
William Boucher	77	89	97	263
Arthur Rathofer	78	94	99	271

Total1,382

Wellington Webb with an individual score of 285 was high man in the entire competition.

J. S. Alley with an individual score of

283 was third man in the entire competition.

Captain William E. Watters, Field Artillery is the Faculty member in charge of Pistol Marksmanship.

Private First Class William H. Ebelst is the Coach to whom must go much of the credit for the fine showing which has been made by all pistol teams of the University of Utah during recent years.

During the current season the following matches have been fired:

RESULTS—PISTOL MATCHES, UNIVERSITY OF UTAH, 1938-39 SEASON

		Team	Opponent	Utah
Feb.	4	Colorado State College.....	Varsity	1295 1378
Feb.	11	Xavier University.....	Varsity	1311 1362
Feb.	18	Arkansas State College.....	ROTC	1121 1367
Feb.	18	Iowa State College.....	Varsity	1274 1368
Feb.	25	Eastern Kentucky State.....	Varsity	1255 1369
Feb.	25	St. Bonaventure College.....	Varsity	1305 1369
Feb.	25	Virginia Military Institute.....	Varsity	1285 1369
Mar.	4	University of Missouri.....	Varsity	1329 1372
Mar.	4	Yale University.....	ROTC	1309 1336
Mar.	4	University of Florida.....	Varsity	1328 1372
Mar.	11	Tank, Rifle and Pistol Club.....	Varsity	1381 1384
Mar.	11	Michigan State College.....	ROTC	1340 1375
Mar.	11	Ohio State University.....	Varsity	1300 1384
Mar.	25	University of Wisconsin.....	Varsity	1270 1387
Mar.	25	Purdue University.....	Varsity	1390* 1387*
April	1	University of Oklahoma.....	Varsity	1376 1395
April	1	Cornell University.....	Varsity	1355 1395
April	1	University of Illinois.....	Varsity	Forfeit 1394
April	15	Texas A. & M.....	ROTC	Forfeit 1382
April	15	Field Artillery Match.....	ROTC	1382—1st Place
April	22	Princeton University.....	Varsity	1226 1391
April	29	University of Santa Clara.....	Varsity	1291 1411
April	29	Harvard University.....	ROTC	1211 1403
Feb.	25	Massachusetts Institute of Technology.....	Varsity	1251 1396

The Varsity team included three members of the ROTC. Won 23; Lost 1.

*Won by Opponent.



A new regiment, the 179th Field Artillery, Georgia National Guard, was formed from the former 122d Infantry July 1st. The new wagon soldiers, on July 16th, headed for Fort McClellan, Alabama, to become acquainted with their change of weapons. They are accompanied by several officers of FA-Res, who volunteered for active duty, including Major Garret B. Drummond, of Atlanta.

The Light Artillery Battalion Functioning as a Fire Unit

BY CAPTAIN JOHN J. BURNS, FA

AN opportunity to observe and study the light artillery battalion, functioning as a fire unit, was provided during some combined maneuvers in May, 1939. Some deficiencies observed are believed due to a failure to make the present organization conform to the modern conception of the artillery battalion as a fire unit. These observations and this study are based on a conception of the battalion as a fire unit which is capable of placing effective fire quickly on one or several points simultaneously with any number of guns from one to twelve, also of detaching one or more of its batteries for independent missions.

The adoption of the fire direction center (FDC) was the first important step forward in the realization of this conception. However we have gone only part of the way; we are still influenced by our previous conception of the battalion as three batteries capable of coordinated effort under the direction of the battalion commander.

It is the FDC (under the battalion executive) which should direct the fire of the battalion so as to accomplish its tactical mission as enunciated from time to time by the battalion commander. It is an agency whose functions are purely technical. Its location accordingly should be determined primarily by technical considerations.

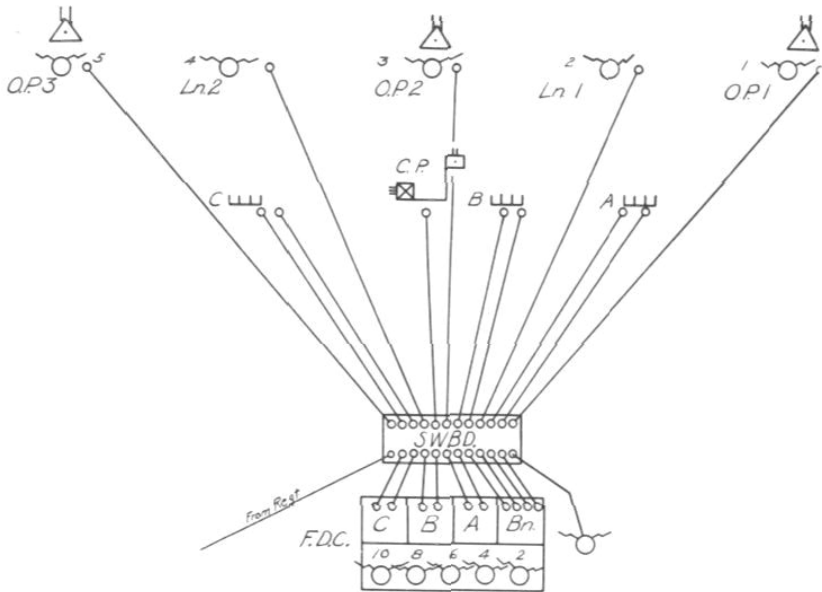
A tendency was observed to locate and displace the FDC with the battalion command post. This most often resulted in long telephone lines to the batteries with a consequent delay in opening fire. I believe that the FDC should be centrally located as

close to the three batteries as good cover and concealment will permit. The CP can be located forward with the infantry commander or wherever the battalion commander desires. It is much easier to move his command post, extending his telephone line if necessary, than to change and interrupt the whole battalion communication system as happens when the FDC is displaced. When the FDC is near the batteries all elements of the battalion may be quickly installed as an operating team, for as soon as the short lines to the batteries are laid, missions sent from liaison officers by radio to the FDC may be executed. These lines are not only quickly installed but easily maintained. In case of interruption of service, messengers can easily carry on until it is restored.

The FDC should direct the technical fire of the battalion. That is the purpose of its organization. It was observed that for several reasons it was inefficiently carrying out this function. One cause is that at present the FDC is not the sole agency to receive, evaluate and act on reports and information received from the various elements of the battalion and other headquarters. While reports from battalion liaison officers and observers were expeditiously received, those from battery commanders and observers were slow or failed to arrive because of communication difficulties.

These difficulties have given rise to the practice of permitting a battery commander of his own initiative to conduct fire on a target of opportunity, provided his battery is not engaged at the time on a battalion fire mission. This often

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SCHEMATIC DIAGRAM OF
ARTILLERY BATTALION IN POSITION

resulted in two batteries firing on the same target if it had already been noted and reported by a liaison officer or battalion observer to the FDC. Usually the battery observer was slow or unable to get communications to the FDC, or to his own battery, especially if the latter was engaged on a battalion fire mission. Consequently important targets of opportunity slipped away.

Now it is obvious that information evaluated and acted upon by four different elements of the same unit will be inefficiently exploited. The FDC is the only element in a position to evaluate the importance of fire missions and targets in relation to each other and to the tactical situation. The delegation of part of its supervision and control of fire direction to a battery commander does not solve the communication problem. It does result in confusion and a decrease in firing efficiency.

Nor is the efficiency of the FDC enhanced by its assuming duties other than those of directing fire. The FDC is not only calculating data for targets but even conducting the fire of various batteries on them. These are duties which properly belong to the batteries.

While this failure of the FDC to concern itself only with the complete job of fire direction contributes to confusion, the present cumbersome communication system almost bogs it down. It is slow both of installation and operation; it is difficult to maintain, to extend and to displace. The radio and telephone squads being organized and trained as separate units do not obtain that team play which would make of them complementary means of communication. These faults may be attributed to too many switchboards, unnecessary telephone lines, a tendency to extend lines ad infinitum, and an operating personnel which though they work in a team that requires the highest type of coordination

REQUEST FOR OLD STANDARDS

are being trained in different groups by different commanders.

The first step that might be taken to overcome these difficulties is to make the communication of the whole battalion the responsibility of the battalion communication officer. He should command a communication platoon consisting of four or five similarly organized sections. Each of these sections would include a telephone and radio squad. They would be trained to work with liaison officers, observers and batteries detached for independent missions. An additional radio section for work with airplanes and higher headquarters would be necessary. This organization would insure uniformity of training, better operation, complementary radio and telephone communication, together with an increase in flexibility for the whole system.

Second to the creation of the FDC, the next most important step to be taken to realize our conception of the battalion as a fire unit, is the elimination of the battery CP's as such and their incorporation in the FDC as battery sections operated by the battery personnel. This is the real key to avoiding all of the faults and weaknesses described above. The schematic diagram accompanying illustrates the effect of this change in the battalion setup. Note the simplification of the telephone system, the elimination of switchboards, the short

lines from FDC to the batteries. All the observers now report directly to FDC which alone evaluates, reports, and by word of mouth assigns missions to the batteries. If desired, any observer can conduct directly the fire of any battery. The radio and telephone nets are really complementary. All command elements of the battalion are kept constantly familiar with what is going on without especial effort. A tremendous amount of business now carried on over the telephone is handled directly. Since the FDC remains close to the batteries the battalion CP can be moved at the pleasure of the battalion commander without interrupting fire. The locations of OP's is coordinated with those of liaison officers to bring the battalion front under as complete observation as possible. All this is obtained with an increase in the flexibility both for the detachment of batteries for displacement or independent missions and for the employment of the battalion as a whole.

In conclusion, by incorporating the battery CP's as sections of the FDC, by locating the latter as close to the batteries as cover and concealment will permit and by centralizing responsibility for communication in one officer, we will speed up the installation of the battalion, improve its operation as a fire unit, increase its flexibility and eliminate a great deal of confusion.

REQUEST FOR OLD STANDARDS

The Commandant. The Field Artillery School, requests that those who have custody of old field artillery standards, now unserviceable and no longer required by them, forward such standards to the Field Artillery School for display in the chapel at Fort Sill.

Army Regulations 260-10, paragraph *b* (1) specifies that the regimental commander is the custodian of all such

standards, and that when they have become unserviceable to such an extent that repair is no longer warranted, they will be placed in such repository as he may designate.

It is hoped that many organizations will take advantage of this invitation to add their standards to the rapidly growing collection of smaller organizational emblems now deposited at the Field Artillery School.

A Method of Teaching Preparation of Fire to Field Artillery Students in the ROTC

BY CAPTAIN R. A. ELLSWORTH, FA

WE teach the average enlisted man sufficient firing data to pass the expert gunner's examination. Why should we not give a course in preparation of fire for the *basic* Field Artillery students in ROTC units and thus really qualify them, technically at least, as noncommissioned officers in time of mobilization?

This can be done. The methods outlined in this article have been tried and proved practicable and workable. The results obtained exceeded the expectations of the instructors and the original experiment has been adopted as sound procedure.

Preparation of fire is commenced in the freshman year, in conjunction with the map-reading course. Map reading is thus made a field artillery subject for field artillery students. At the completion of the instruction in the fundamentals of map reading, practical exercises involving the "map picture" of firing data are taken up. Two type-problems are covered in detail: The aiming point or B.C. Scope problem, and the *Y*-azimuth or compass problem.

These two problems not only give excellent instruction in map exercises, but furnish also a very clear picture of these two types of firing data. No previous explanation of firing data need be given except that officers are usually confronted with the problem of computing an angle for the guns which are some distance away from the OP or point of measurement.

In a B.C. Scope problem the target, guns, AP and OP are located on the map from given coordinates. Lines are drawn from the OP to T and AP, and from the guns to T and AP. The distances are

measured from OP to T and AP with a scale. The measured angle and T and AP offset angles are measured with a protractor, and recorded.

The principles taught in the elementary gunnery course are now ready to be applied—namely, applying the mil relation and computing the value of the offset angles. Perpendiculars are drawn from the OP to the G-T and the G-AP lines and measured with the scale. When the guns are in front, the perpendiculars are drawn from the guns to the OP-T and OP-AP lines. By dividing these perpendicular distances by "*R*" and "*r*" the offsets are computed and compared with the angles which have been measured with the protractor. This procedure clearly shows what the offset angles are and shows the reasons for and the accuracy of the computation.

The signs of the offset angles are then determined by drawing lines parallel to the O-T and O-AP lines. These show plainly whether the measured angle is being increased or decreased. The simple geometric proof of angle relation shows clearly that the angles made by the parallel lines at the OP are equal to the offset angles. This fact can be demonstrated also by measuring these two angles with the protractor.

Thus the final step in applying the total of the two offsets, with the proper sign, to the measured angle and getting the value of the firing angle at the guns is demonstrated. The convincing proof of measuring the firing angle with the protractor as a check against the computation gives a clear picture and indicates the "how and why" for all steps taken in the problem.

The *Y*-azimuth or aiming-circle problem

A METHOD OF TEACHING PREPARATION OF FIRE

is simpler in that only the target offset must be computed, applied, and proved in order to arrive at a compass to be sent to the guns. This instruction is extremely valuable as part of the map course in that it demonstrates clearly the application of Y-azimuth as used in computations.

The angle of site is computed by tracing the contours for elevation and getting the difference in altitude between the plotted gun position and the target. The simple application of the mil relation and the decision that the site is plus or minus is facilitated by the use of the map picture.

With the final five hours of the 12-hour map course devoted to this map picture of firing data, where actual distances and angles are in evidence, the freshmen are given a foundation for taking up preparation of fire with instruments as sophomores. Such procedure fits hand and glove and is a distinct addition to the mapping course.

For the sophomores, the map picture is used again as an early review and as an explanation of the "hand-rule" for determining the signs of offsets. This rule is—pointing to the target or aiming point and moving the hand away from the guns—if the hand starts to fall inside the measured angle the offset has a minus sign. If it starts to fall outside, the sign is plus. This rule is clearly demonstrated on the map and quickly grasped by the students.

Ten hours of the sophomore course are devoted to classroom instruction by the regular army instructor on the setting up, nomenclature, and the operation of instruments, together with a repetition of the mechanics of firing data. This instruction stresses the handling of instruments and step-by-step practice in their operations.

Ten more hours are devoted to the computation of indoor data. All available instruments are used (10 B.C. Scopes, 10

aiming circles, 10 plane tables, and 4 range finders). Permanent stations are assigned each instrument in order that computed data may remain unchanged for each drill period. This plan provides for individual instruction by having not more than two students per instrument and not more than four instruments per instructor.

During this instruction five operations are conducted in rotation: (1) Aiming point problem with B.C. Scope, (2) compass with aiming circle, (3) laying the guns parallel with initial compass using the aiming circle, (4) rapid plotting of target offset with the plane table, and (5) finding ranges with the range finder.

By applying the principles of explanation, demonstration, application, and repetition, and the rotation of small groups with individual instruction, these five operations, involving all the principles of the mechanics of firing data, are presented in a surprisingly thorough fashion.

All of this instruction is done by the senior students, who are cadet officers, assisted by the junior students, who are cadet NCO's, under the supervision of the regular army instructors. This is a part of the practical instruction given during a two-hour battery drill period. This work is also "practical" for the advanced students because it gives them practice in the demonstration of instruments and explaining the processes of figuring data.

The indoor data consists of giving targets, aiming points, and gun directions and of assuming ranges and perpendicular distances. Prepared problems with the correct answers are given the advanced students for their use in checking the correct procedures. Methods of instruction are given the advanced students by initial demonstration and explanation of the step-by-step method, by the regular army officer in charge. The instructor has prepared the sophomores for this

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practical instruction during the one-hour section periods.

As a final test on the thoroughness of the instruction, a practical examination is conducted by the advanced students as part of the examination for gunners' qualification. Sophomore rolls, grading sheets, and newly prepared problems with answers for each station are furnished the advanced students. These provide for quick checking and grading. A time element is used for all problems and the examination as a whole compares closely with the prescribed examination for expert gunners. The regular army instructors merely supervise this work. As many as 40 students can be examined on all five operations during a 2-hour period.

The examinations for the last two years show that about 90% of the 400 sophomores under this plan have gained a clear working knowledge of the operations involved. It might be added that the large majority of the students came from the agriculture and forestry schools and their mathematical foundation was below average.

With this vital and important work completed in the sophomore year, it has been found that, for the juniors, eight hours of figuring data outdoors is sufficient to complete the picture of rapid calculation of all types of data and to prepare these NCO's as instructors. During this instruction, the picture of perpendicular distances and angles on the

ground is stressed as well as the figuring of data without instruments. Later in the course the use of deflection fans and corrections of the moment are taken up.

Instruction on overlays, concentrations, the filling-out of work and command sheets, and the use of observed—and unobserved—fire charts, is begun with sophomores during RSOP periods and completed during the junior year. On the whole, it is felt that these methods give a complete and thorough understanding of preparation of fire of all types and bring the student to the point where he can apply his knowledge successfully during summer camp. By this build-up system of teaching firing data, more time is available for conduct of fire during the junior year. This better prepares the juniors for camp.

Finally, the advanced students are greatly benefited by having the opportunity of assuming the responsibilities of instructing and of conducting the examinations. This not only gives them confidence and improves their leadership and ability to put over instruction, but also completes their knowledge of preparation of fire to the point where it is indelible. The cadet officers put the finishing touches on their own acquisition of knowledge by telling others how. This procedure makes for a better-qualified reserve officer, one who is well-equipped to organize and train the instrument section of a detail in time of mobilization.



Major General Hugh Drum goes on air to analyze importance of First Army maneuvers. To be broadcast over NBC-Blue Network at 6:45 P. M., EDST on August 13. Maj. Gen. James K. Parsons also to be heard. Similar broadcast August 18, at 10:30 P. M., originating at Plattsburg, to present program of the type indissolubly associated with wartime France—entertainment by officers and men themselves.

— An Army Wife on DOL —

BY ROSALEE G. PORTER

UNTIL she found herself on DOL, the army wife had not realized how much the service meant to her. The Post Exchange, Commissary, War Department Theater, and Officers' Club assumed an importance to her after she was away from them that they had never held when they were available. The lack of those ordinary facilities, and what they implied, blotted out many compensations, and her first year away from an army post was a lonesome one.

Her husband's detail was with a large Field Artillery ROTC unit. There were a dozen or so other officers and their families stationed at this unit, so perhaps the first-year loneliness was only a hard case of DOL blues. In spite of the fact that the families were living in different parts of the city, the military department carried on its post traditions gallantly.

Calls were made upon the newcomers to the department and exchanged with other members of the group. Each family made an effort to entertain everyone for dinner, at least once, during the school year. The Military Ball in the fall and the Scabbard and Blade dance in the spring were high-lights of the social year.

In addition to the formal parties, the military people met once a month for a "dutch" dinner. Twice a month the ladies had their Tuesday afternoon together. Some played bridge, others brought along the family sewing, and visited. The visits were the usual exchange of information on the housing situation, the servant problem, and the latest illnesses in the community.

Meeting the civilians presented a problem to the lonesome army wife. Social calls have become obsolete in middle-western towns. Even neighbors in

the same block neglect to make friendly advances. Later she learned that many civilians thought army people were drinking spendthrifts, and a bit loose morally.

After living for a year in their little street, during which time no one staggered home and there were no brawls to disturb the midnight calm, the neighbors started speaking. When the furniture was not carried away by creditors and a garden flourished in the back lot, some of them even started conversations over the fence. In the course of time, they would have become friends. (Army posts have become the last stronghold of old-fashioned neighborliness: taking care of each other's children, and back-door butter-lending are no longer a part of community living anywhere else, it seems.)

Through a well-organized Newcomers' Group and a splendid Women's Club, the army wife met faculty wives. When her husband's orders had come for DOL, he received a book of instructions for his conduct while on the detail. It was a neat little book full of helpful information; one point however was misleading. His wife was requested not to spend money lavishly on clothes because, said the instructions, faculty members were often underpaid and their wives should not be embarrassed by the sight of military people who were all dressed up! The army wife accordingly had her other dress cleaned and pressed and stepped out to her first faculty party—to find herself the only woman not dressed in new and fashionable clothes.

The Women's Club program covered a number of activities. Language, music, drama, and creative writing groups

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for those whose taste appreciated them; golf, tennis, badminton, and swimming for women who did not take their exercise in rocking chairs: crafts, quilting, and gardening for those with a creative urge. It was a matter of making a choice and finding other women interested in doing the things she liked to do. Erstwhile hobbies proved themselves wonderful bonds of interest and friendship.

New friends and activities made the years pass busily and quickly. With her husband's orders to take them back to

post duty, the army wife was startled to realize how much such service would mean to her happiness. DOL had been an exile and the exile was over. She would have again the morning visits with her shopping friends in the Post Exchange and the Commissary; there would be Friday night dinners and dances. She felt that as a DOL wife she had been a modest success and had earned another service stripe, but DOL wives, like faculty wives, did not have the fun enjoyed on an army post; they only had its responsibilities.

ONE OF FOUNDERS OF ASSOCIATION RETIRES

Colonel Oliver Lyman Spaulding retired June 27th as a Brigadier General. He was one of the charter members of the Association, a member of its first Executive Council, and its Secretary-Treasurer-Editor in 1911 and 1912.

That first Council included Brig. Gen. M. M. Macomb as president. Lt. Col. E. St. J. Greble as vice-president. Capt. W. J. Snow (later first Chief of Field Artillery) as secretary, and Captains Spaulding, Fox Conner, John F. O'Ryan, and Robert H. Tyndall. The first signature on the original constitution was that of the late Brig. Gen. (then Lt. Col.) Eli D. Hoyle, after whom Fort Hoyle was named, and whose son, Col. R. E. D. Hoyle, now commands that post.

General Spaulding's service includes China during the Boxer Rebellion, the Philippines during the Insurrection, and with the 161st FA Brigade and the 1st FA Brigade in France. His latest assignment was as Chief of the Historical Section, Army War College. Holder of the D.S.M., and the Order of the Black Star (French), he has been awarded degrees of Bachelor of Arts, Bachelor of Laws, and Doctor of Laws from Michigan, and Master of Arts from Harvard.

General Spaulding is the author of a number of works, notably "The United States Army in War and Peace."

An editorial in the *Army and Navy Register* speaks of him as the Army's most distinguished student and historian in the military field. He will join the faculty of George Washington University to give courses in military history.

One of these courses will be a seminar in the military history of the United States, covering a study of the background, development, relations to the civil government and larger implications of the American military system; the relationship of war to the economic and social life of the nation; and war as a component part of the national experience.

Enrollment will be restricted to a small number of selected students having the historical background and a special interest in the subject. The lectures will be open to officers of the army, however, without payment of any tuition fee, and should be of particular interest to officers stationed in or near Washington. Those wishing to register for the course should consult Professor Wood Gray of the History Department, George Washington University. The seminar will meet Thursdays during the school year 1939-40. from 8 to 10 P. M., and will carry six semester-hour credits.

Plotting a Point From Coordinates

BY CAPTAIN MURRAY O. KLINGAMAN, FA-RES

THE established procedure for plotting a point from coordinates (Field Artillery Book 161, Paragraph 121*a*) is based on sound theory. However, it has the disadvantage of requiring time consuming effort, which tends to offset the theoretical advantages. In addition, and despite its averaging feature which reduces the potential effect of certain possible errors, it is subject to the general run of drafting errors in application. The elaborate character of the method does not establish the ideal solution. This situation makes desirable the search for a different method.

The coordinate square naturally is the first thing that comes to mind. This is a satisfactory device, giving in a single setting a controlled, direct determination of the point to be plotted.

A coordinate square, designed to operate on the materialized Y-000 line and not elsewhere (on small scale grids. Y-5000 line), and having a Y-line base extending one grid square on either side of the Y-line (vertical) scale, may represent an advance in coordinate scale construction and use; possibly sufficiently so to warrant consideration. Such a scale is illustrated in Figure 1.

As will be seen in the illustration, the scale as designed depends for the establishment of the X-ordinate of the point on setting the X-scale against the X-000 line at the right of the grid square in which the point is located, and the numbering of the graduations of the X-scale from right to left.

The square illustrated is designed for right-handed users, for this is a right-handed world. Working across the Y-scale arm of the scale is avoided. Square setting is a two-handed operation, and point location requires the use of a pencil (or

map pin). Normal handling involves the holding of the pencil in the right hand and the square with the left; making rough placement of square with the left hand; making final placement of square with the left hand assisted by the right; and finally, the marking of the point, using the right hand.

Pencil marking to establish a point requires a pencil with a long conical point. The user must be sure that the pencil *point* meets the grid against the instrument scale at the proper place.

Left-handed users would prefer the scales in the left angle. A left-handed square would operate by setting the X-scale against the X-000 line at the left of the grid square instead of at the right.

Of course, scales can be made to work both ways. In this case the sides of the base line would be of uneven length; for right-handed use, the left side of the base line would be longer than the right by the width of the Y-scale arm; and vice versa. This and the fact that the base length would be increased by the width of the Y-scale arm are unimportant. Worth considering are the possible objections that the availability of two scales might lead in some cases to the development of undesirable work habits; that sooner or later someone might make a bad mistake by attempting to use the base as a 2000-unit scale; and that double graduation would increase the cost in some types of manufacture.

The standard method provides for the accentuation of the construction lines in the vicinity of the point, but not extending to it—four operations. This is useful for subsequent ready location, which is desirable. These lines also are used sometimes for subsequent restoration of an obscured point, not so desirable. A

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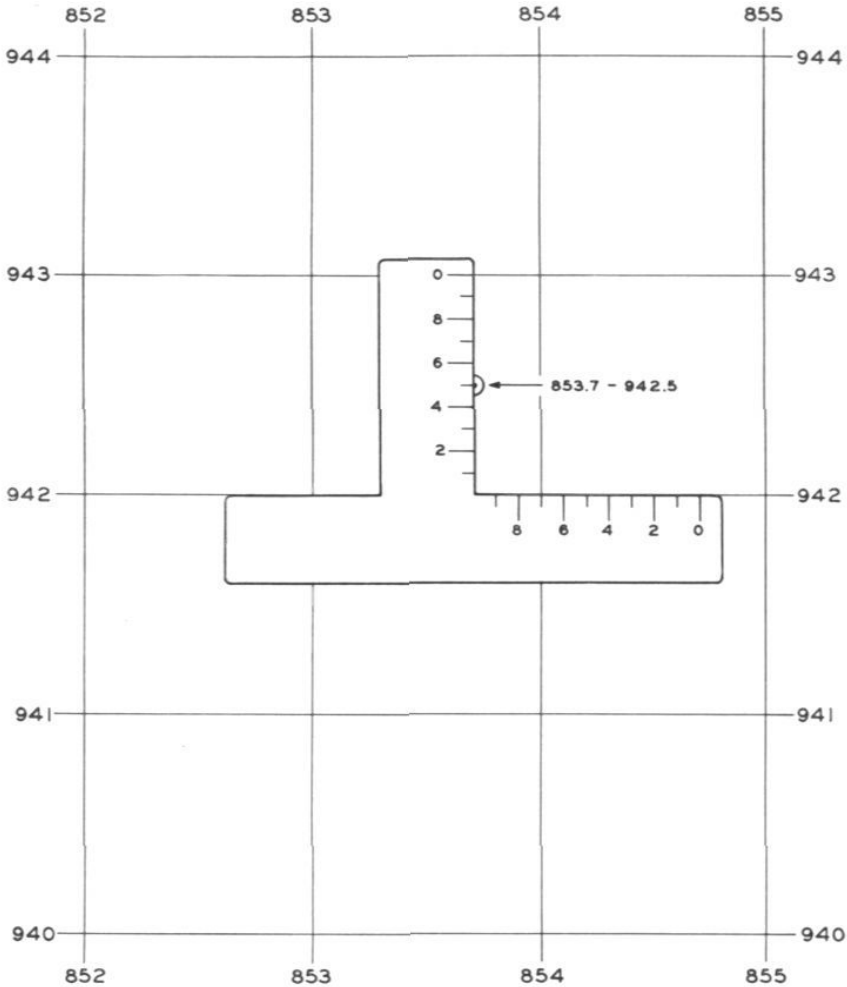


FIGURE 1

free-hand circle, roughly centered on the point, will serve for ready location. This should not be unduly large, but should be big enough to permit its erasure without disturbing the point. If the point is lost, replotting is in order.

Before leaving the subject of plotting on normal grids there is one matter concerning the text example that deserves attention. This example calls for plotting

to single units (204.729—186.684) and outlines the method by which the plotting may be accomplished. On normal grids for field artillery use we expect to use yards, one to twenty thousand. On this grid a single unit, one yard, amounts to approximately .0018 inch. Even on the unlikely one to five thousand grid a yard still is less than .008 inch. Field plotting cannot be carried

PLOTTING A POINT FROM COORDINATES

to such fine limits. Illustrative examples which tend to create the impression that it can be done should be revised.

Taking up the question of the non-standard grid we find two methods prescribed; one for grid lines closer than normal, the other for grid lines farther apart (FAB 161, Paragraphs 121*b* and *c*). For the first case, the familiar draftsman's diagonal scale method is used; for the other, estimating using the scale as a guide. Either method may be used for either case depending on the amount of difference between scale and grid.

The diagonal scale method may be used for grid lines farther apart than normal by mentally adjusting values on the scale used. With the present issue triangular scale instruments there are several choices of scales. It may be found more convenient to use for this purpose some scale other than the one most nearly like the grid. Note that the diagonal scale illustration shows a substantial difference in the 1000-unit measurement on the scale and on the grid.

The illustration for grid lines farther apart than normal is of a different kind—a small difference between scale and grid. For differences of this kind, can't we determine our ordinate lines by estimating, just as well when the grid lines are closer together as when they are farther apart?

Scale measurements may be made with any scale on any grid by conversion with a slide rule—if a slide rule is available. (See FAB 161, Paragraph 134*c*(2) concerning conversion of photo measurements to true distances.)

The general answer to the nonstandard grid problem when differences between instrument scale and grid are small, which is an ordinary occurrence, appears to be: *Make a scale measurement and adjust it.* An alternative to the book method is: (1) Zero the scale at the grid line intersection normally used as a base

point and make a scale measurement; (2) mentally adjust the scale measurement, taking the full proportional allowance at once; and (3) mark the point. As applied to coordinate square measurements it works this way: (1) Make the scale measurement for the X-ordinate as usual; (2) determine the amount of adjustment and adjust the square setting accordingly—this establishes the X-ordinate; (3) make scale measurement for Y-ordinate; (4) mentally adjust this measurement; and (5) mark the point.

When we come to a grid for which we have no measuring instrument that can be used without resorting to the diagonal scale method (or unwise estimating), the answer appears to be: *Make a coordinate square*, and a scale, for the grid. If there are any measurements to make, there are many. If there are points to plot, there are distances to measure. While any available materials may be used to construct such coordinate squares and scales, it would be worth while to have in plotting board outfits ready-cut blank scales of celluloid-type material, surfaced to take and hold pencil marks, which could be cleaned and reused. Pencil-graduated instruments made from blanks should be marked to identify the grids to which they pertain. Association of such instruments and grids should be maintained as far as practicable.

But how are we going to graduate these blank instruments? Here the method we think of first is the method illustrated in Basic Field Manual, Volume I, Chapter 5, Map and Aerial Photograph Reading, Paragraph 26 (or better, in the obsolete TR 190-5, Paragraph 19*b*). This involves the division of an ungraduated line by a series of short parallel lines from a graduated connecting line (Figure 2). This type of solution is difficult to accomplish accurately. This method (also used for time-distance scales, and the like) and the draftsman's

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diagonal scale method are individualized applications of the proposition illustrated by the eleven equally spaced parallel lines in Figure 3. The narrowest space that can be divided into ten equal parts by this series is equal to the length of a line joining

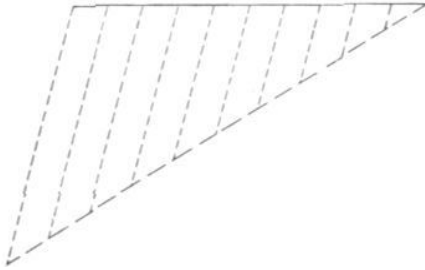


FIGURE 2

the outside lines of the series and crossing the series at right angles. The widest that can be divided similarly is equal to the longest diagonal that can be constructed across the series.

A better method is found in an application of the proposition that when a series of parallels is cut by a series of lines radiating from a point, and these lines divide any given parallel joining the outside lines into equal parts, they will likewise divide any other similar parallel in the same series into equal parts. This is used extensively, and with variations, in making dividing scales for statistical chart construction. For use with military grids this may be applied better with an outside-line base rather than a center-line base, generally used.

To make such a dividing scale, which will be a universal rather than an individualized scale, proceed as follows:

1. On a piece of overlay paper, more or less rectangular, draw a line Y-Y' with a straight edge the long way of the paper near one edge. This will be the base line of the scale.

2. Superimpose this overlay on a grid so that the base line will be toward the

bottom of the overlay, and place it so that this base line will coincide with a grid line.

3. From the base line construct a short line X-X' at right angles, somewhere to the right of center. This line should be at least equal in length to a 1000-unit for which a scale is available. The construction of a perpendicular may be assured by constructing this line coincident with a grid line perpendicular to the base.

4. With the available scale lay off, on this perpendicular from the base line, a scale of equal parts (1000 by 100's, for example).

5. From a center at Y draw lines through each point on the perpendicular. The scale is now complete (Figure 4).

Now any line at right angles to the base line, joining the base line and the other

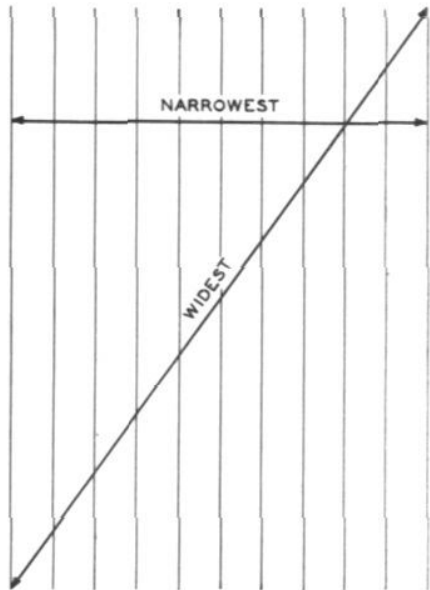


FIGURE 3

outside line of the scale, will be divided into equal parts.

To divide the interval between grid lines on any grid within the limitations of the scale as determined by the lengths

PLOTTING A POINT FROM COORDINATES

of the lines drawn, proceed as follows:

1. Place the scale on the grid for which divisions are to be established, with scale base line coincident with a grid line.

2. Note the point at which outside lines of scale are coincident with adjacent grid lines.

3. Slide the scale along the base grid line until this coincidence is obtained at grid-line intersections.

4. Mark at the upper and lower edges of the overlay the points through which the intersecting grid line passes.

5. Fold the scale back on itself (scale on outside), using these marks to establish the folding point.

6. Check accuracy of folding by determining whether the two sections of the folded base line coincide.

The divisions for the grid are established at the folded edge and may be transferred to the coordinate square and scale. Don't throw the dividing scale away—it'll be just as good for the next nonstandard grid.

Several refinements can be made. Since the lines converge at the point of origin, there is quite a line mass that is not useful; the space divided is too small. In this area the lines need not be materialized; or, after construction, this part of the scale may be cut off. Certain lines may be accentuated: For example, the middle (500) line may be heavier, with a division of 1000 into 100's; if there are more divisions, 100's might be heavier than lesser divisions. On a scale for

all-around use, the divisions may be increased as the scale becomes larger. Longer scales are more desirable than shorter scales because the rate of change is less. Minor errors in placement, marking, and folding make less difference; also, for repeated use with a variety of grids, folding points are farther apart. On scales for statistical chart use, parallels sometimes are established for standard spaces and labeled. Because of the expected paper variation, and so forth, under field conditions this seems to have little value for military application. After transfer some additional graduations on coordinate squares and scales can be made by inspection, if required.

The printing and issuance of dividing scales having the proper range to cover all probable grids may be worth consideration.

In the construction of a scale for measurement of distances the blank scale should be set against a grid ordinate line, grid line and scale edge coincident.

The 000 markings of the scale should be determined from the grid. This will establish control against the carrying forward of possible errors which may occur with repeated laying off of graduations by the use of a dividing scale.

After 000 markings are placed on the scale, check the uniformity of gridding by test measuring with the scale against other grid lines on the same axis and on the other axis. Should gridding be so irregular that scale measurements cannot

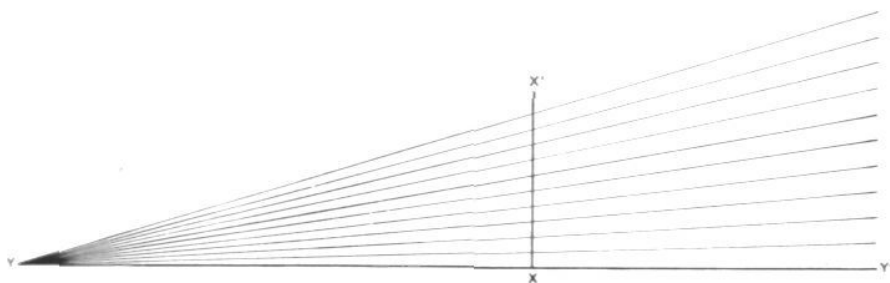


FIGURE 4

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be made with requisite accuracy, there are other available methods of measuring distances. The coordinates of terminal points of lines may be determined and recourse had: (1) To some mathematical form of right triangle solution; or (2) to the transfer of points to a uniform grid on which a direct-scale measurement may be made.

If gridding of X and Y ordinates is different, but for each axis is uniform, the coordinate square may be used to determine points. If other irregularities occur, the dividing scale will be useful as a measuring instrument, applied in accordance with the standard method of ordinate determination.

In connection with this kind of work, and for dividing scale operations generally, a chart room "dodge" which avoids folding

and which facilitates determination of grid line-scale line coincidence (and which makes unnecessary obtaining coincidence at grid-line intersections) may be used. The dividing scale is looped around a rectangular holder and the ends are fastened together tight enough to keep the scale taut but allowing sufficient play to permit adjustment. Side projections at the holder edges over which the scale passes prevent side slip and afford protection. In other words, the holder is an H fixture with a cross bar extending almost to the tops and bottoms of the side pieces. The cross bar, in the clear, is only enough wider than the scale sheet to avoid binding. This is a simple form of holder, and one that is satisfactory. Transparent cellulose acetate, 20-gauge, has proved to be a serviceable material for the holder.

MILITARY BOOKS

Following is a list of books on military subjects which are recommended for their professional value as well as interesting content:

	<i>Price</i>
<i>(Domestic postage included)</i>	
THE UNITED STATES ARMY IN WAR AND PEACE— <i>Col. O. L. Spaulding</i>	\$6.00
WARFARE— <i>Spaulding, Nickerson and Wright</i>	3.00
PEN AND SWORD IN GREECE AND ROME— <i>Col. O. L. Spaulding</i>	2.00
ELEMENTS OF ORDNANCE— <i>Lt. Col. T. J. Hayes</i>	6.50
SECRET AND URGENT— <i>Fletcher Pratt</i>	3.75
FIELD ARTILLERY: THE KING OF BATTLES— <i>Maj. Gen. H. G. BisHOP</i>	1.00
CARBINE AND LANCE, A HISTORY OF FORT SILL— <i>Nye</i>	3.00
R. E. LEE— <i>Freeman</i> (4 vols., each).....	3.75
A MODERN DICTIONARY— <i>Col. Max B. Garber</i> —CLOTH.....	2.50
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ROAD TO EMPIRE— <i>Fletcher Pratt</i>	3.75
ARMY MESS MANAGEMENT SIMPLIFIED— <i>Maj. E. A. Hyde</i>	2.00
TOMORROW'S WAR— <i>Stephen Possony</i>	2.50
NOTES ON FRENCH ORDNANCE, 1717-1936— <i>Hicks</i>	3.50
BOMBS BURSTING IN AIR— <i>Elilot</i>	1.75

A reduction of 10% will be made to JOURNAL readers who purchase any of the above books through the U. S. Field Artillery Association.

The Association is in a position to obtain for its members not only books on military subjects but biographies and fiction as well, at a reduction of 10%.



This recruiting poster, reproduced from "The Gunner," official organ of the Royal Artillery, gives an interesting illustration of modern British trends in field artillery.

All-Component Force Makes Night River Crossing

CINCINNATI, Ohio, citizens, who are interested in national defense, believe that during the week-end, June 3-4, 1939, they had the privilege of witnessing the first military problem in which units of the Organized Reserves, the Reserve Officers Training Corps, and the National Guard, combined to increase their military knowledge and to further the cause of national defense.

A week-end march and maneuver was held. Units making up the maneuvering force were:

a. Provisional Light Artillery Battalion, made up of Cincinnati Field Artillery Reserve Officers and Xavier University Field Artillery ROTC students, using materiel and equipment from Xavier University.

b. 308th Combat Engineers, Organized Reserves.

c. 359th Observation Squadron, Organized Reserves.

d. All Cincinnati units of the 147th Infantry, ONG.

e. Co. B, 112th Quartermaster Regiment, ONG.

f. Regular Army officer and enlisted instructors of the various components.

In general the problem consisted of a twenty-mile combined truck and foot march from Cincinnati to the banks of the

Little Miami River, north of Kings Mills, a late afternoon bivouac by the river, an after-dark crossing of the Little Miami in combat boats, the attack and securing of a bridgehead, and the return march to Cincinnati.

Major James W. Glore, 147th Infantry, was in command of the maneuvering force; Major Gordon Wolf, FA-Res, commanded the Provisional Battalion of Artillery; Colonel Thomas Morris, Eng-Res, commanded the Engineers; Captain John Gullede, Air-Res, commanded the planes of the 359th Observation Squadron.

Plans for this maneuver were started in October, 1937. Participation of the Field Artillery Provisional Battalion was made possible through the efforts of Major A. M. Harper, FA, PMS&T, Xavier University; Major Frank Camm, FA, Instructor, Xavier ROTC; Captain G. E. Wrockloff, FA, Instructor, Xavier ROTC; Captain Selby F. Little, FA, on duty as Instructor. Organized Reserves, Cincinnati; Major Gordon Wolf, FA-Res, and 1st Lt. W. S. Ibold, FA-Res.

Station WKRC. of the Columbia Broadcasting Company, carried two broadcasts of the event, one at 4.45 PM and one at 9.45 PM. During the second program a liaison shoot was sent out over the air.



Pistol teams from 156th FA win first and fourth places in Sayre Trophy Match at New York State matches for 1939. Lt. J. R. Herron is high man with score of 297 out of 300. 156th also wins second place in State Pistol Match, Lt. Herron again being high individual shot.

Master Sergeant Swett Retires



Three hundred field artillerymen, several prominent citizens of Lawton, Oklahoma, and two full-blood Kiowa Indians assembled at a Dutch lunch and smoker in the mess hall of the Field Artillery School Detachment on the evening of June 28 to honor Master Sergeant Morris Swett two days prior to his retirement from the service. Following farewell talks delivered by the Commandant and several department heads, responded to by Sergeant Swett, friends and comrades of the retiring soldier presented a number of valuable gifts.

A man who has devoted twenty-four years to the development of Fort Sill's 60,000-volume library, Morris Swett is also an authority on Oklahoma history and is known as a friend of the Indians. Not only has he been instrumental in preserving old records of Fort Sill and the School, but also

through winning the confidence of the Chiricahua Apaches he learned the final resting place of the famous old chief Geronimo and had it marked with a suitable monument.

Sergeant Swett has spent more than thirty years of continuous service in the army, first at Fort Slocum, N. Y., later at West Point where he was on duty in the library under the late Dr. E. S. Holden. In 1915 he was transferred to Fort Sill as photographer for the School of Fire, and to organize a library.

"Our first few years were rather difficult. The War Department sent us a few mail packs of old books to begin with," the librarian recalled. "We virtually made a house-to-house or attic-to-attic canvas."

During the war and afterwards the library received a big boost, both in appropriations and in receipt of some 5,500 volumes from the old Camp Doniphan library.

Since then the library has had a continuous growth. It was moved to its present quarters in the new administration building October 15, 1935. Last year the circulation was 26,000 volumes.

Sergeant Swett will be greatly missed at the Field Artillery School, especially by students and instructors, who are accustomed to solicit his assistance in quickly locating material for theses, lectures, or other studies. After his retirement he departed with his family for an extensive visit in Washington, D. C. His future plans are indefinite, but his many friends at Fort Sill and Lawton hope that eventually he will settle in that locality.

Staff Sergeant Frank Stanley, for several years Sergeant Swett's able assistant, has taken over his duties in the library.

Some Forward Observations



CAPTAIN WILBUR S. NYE, FA, will be the new editor of the JOURNAL. Biographical data on JOURNAL editors can be found in the Army Register. However, for those who wonder whether the editor always understands everything he prints—a doubt in which we frequently concur—it is only fair to remark that Captain Nye. USMA 1920, is also a graduate of the FAS. basic and advanced courses; of the Command and General Staff School, and holds the degree of M. S., University of Pennsylvania. He has been an instructor at the FAS, and joins this detail from command of a battery in the Observation Battalion. By a happy coincidence, the second edition of his admirable history of Fort Sill and the Southwest. "Carbine and Lance," has just arrived on this desk.

New and retiring editors have much in common, including a desire to attain collector value for their photographs. By special arrangement between them, no photographs of either will appear herein. Fingerprints are on file in the A.G.O.

The Association is fortunate to have so capable an officer on its staff, and the new editor is extremely lucky to be assigned to deal with the membership, as tolerant, friendly, and cooperative a group as can be found anywhere. A stone flung at random among them would strike one and ricochet on several others who would rally 'round and assist the editor with any project that occurs to him. Our sincerest thanks go to them.

As this number of the JOURNAL is put to bed, we are reminded of an extract from an ancient work, a military treatise from the hand of the Emperor Maurice, of Byzantium, whose introduction

included the following: "If anything of value be found in this work, thanks be to God, who has given us the skill to express it. But if any commander, through his own diligence and experience, shall find a better guide—thanks be again to God, the Giver of all good things."

An erudite friend, who pondered over this citation from Colonel O. L. Spaulding's "Pen and Sword," remarked: "That's what I call feinting 'em off balance."

To our predecessors at this desk, who encountered conditions which we were fortunate to escape, such as a major depression, and who established the Association on a sound and enduring basis, *Salud*.



WITHIN THE week in which this is written, two statements have been returned, with accompanying checks, and a cheerful note scrawled on each. One was, "Great Stuff!" merely that and nothing more. This could be interpreted in a variety of ways, but we naturally prefer to look upon it kindly. Another was, "The only bill I *enjoy* paying." Since the signature was that of a gentleman not personally known to us, but, according to the records of the Association, a continuous subscriber since 1917, we are happy to accord his astonishing remark—for who of us enjoys paying *any* bills—the respect and gratitude to which it is entitled.

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