

The
FIELD ARTILLERY
Journal



DECEMBER, 1945

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The Field Artillery Journal

DECEMBER, 1945—Vol. 35, No. 12

WITH THIS ISSUE a new editor officially takes over the *Field Artillery Journal*. At a meeting of the Executive Council of the Association held November 2nd, 1945, Colonel Devere Armstrong, O-17533, was elected Secretary-Editor and Treasurer *vice* Lieutenant Colonel John E. Coleman, O-256251, who has served in those capacities for more than three and a half of these war years.

Colonel Armstrong brings to the *Journal* a background and experience that assure foresighted leadership and a vigorous, healthy future for the Association and its *Journal*. Since graduating from the United States Military Academy in 1929 he has had varied troop service, including tours of duty with the 24th FA in the Philippines, the 18th FA at Fort Sill, the 7th FA at Fort Ethan Allen, and the 6th FA at Fort Hoyle and later at Fort Bragg. He is a graduate of both the Field Artillery School and the Command and General Staff School, and taught economics and government at West Point from 1935 to 1940.

The outbreak of war found him a Brigade S-3 at Fort Bragg. G-4 of the 96th Inf Div when it was born, he was soon transferred to the War Department General Staff with duties relating primarily to strategic war planning. He was a charter member of the Joint War Plans Committee, organized in the spring of 1943 as a permanent supporting agency to the Joint Chiefs of Staff. This duty took him, as a delegate, to the Quebec and Cairo Conferences and led to a short tour of duty in the war plans section of Admiral Nimitz's joint staff. Leaving Pearl Harbor in the spring of 1944, Colonel Armstrong returned to Field Artillery duty as Executive Officer to the First Army Artillery Officer; in that capacity he participated in the cross-channel assault and all subsequent First Army operations on the Continent.

THIS MONTH'S COVER is an excellent picture of a German 17-cm gun, seized near Verdun and here shown in action against Metz.

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The Changing Present . . .

A New Editor Thinks Out Loud

In view of all that has been written and spoken in recent months and weeks by our leaders, both public and private, perhaps it is trite again to observe that these are tremendous and confusing times for the Nation, for the Service, and for most of us as individuals.

Today, our Nation stands in an unprecedented position in modern history — enviable in the extreme. Politically sound, militarily victorious, foremost in the family of powers, our great people are the sole possessors in a punch-drunk world not only of a tremendous productive capacity but also—and perhaps more important—of a deep reservoir of good will among tired people everywhere. The enormity now confronting us is to reconvert our genius to an orderly process of "normalcy," both at home and abroad. We seem to have all the essentials for continuing greatness and world leadership, including the will. As we move into the task, however, it is most sobering to realize that in the hour of its greatest success the democratic process faces its greatest challenge. That we not fail is vital to our destiny and to the security, dignity and welfare of mankind — the great immutables for which this war was fought and won.

These are likewise tremendous times for the Military. Necessarily, the broad pattern of the future defensive establishment now awaits definition by the Congress. Only when certain highly controversial issues—of which universal military training, the size and composition of the air, ground, and naval forces, and the proposed amalgamation of the War and Navy Departments, now hold the spotlight of public interest — are resolved by legislative enactment, can our military leaders design a suitable organizational framework for defense. All hope that in building for the future the Congress will heed well the lessons of the past—another great challenge to the democratic process.

Coming closer to home, these are also critical times for field artillerymen, particularly in our thinking. Individually and collectively artillerymen did a magnificent job in the war just won. No branch did better. Our superior weapons, techniques, personnel,

transport, communications, and organization for combat all added up to the irrefutable conclusion that our artillery was the most flexible and most powerful ever employed in battle. This is the judgment of those best qualified to know—namely, the combat infantrymen in both the European and Pacific Theaters, friend and foe alike. We may take great pride in this achievement, both in our writing and in discussion. It was a job well done, very well done indeed.

However, the future and not the past lies ahead. What is our future? Can we orient ourselves clearly in these dynamic times? Probably not, to any accurate degree, and for several reasons.

First off, of course, is *that bomb*, the awful awareness of which we cannot shove to one side. Nor, obviously, should we try to do so. It is here, and we must not relax our professional vigilance until such time as science either bends the atom to artillery purposes or provides the antidote. Some say, with a broad sweep of the arm, that we soldiers are through. Others think not, with equal conviction. Certainly none but the most reactionary will deny that, sooner or later, this new weapon may have the most far-reaching effects on currently accepted tactical, technical, and organizational doctrine. Unfortunately, conclusive appraisal is beyond our capacity at the moment.

Further, until the Congress acts, there is no basis for appraising our circumstances as field artillerymen in the peacetime Army. It may be that the "branch" system will be discontinued and that we will slough off our crossed cannons and rifles and sabers and become "ground soldiers" only. There is much to be said for this proposal, in logic, as well as for the popular current thought that our peacetime officer training must be along much broader lines than was the case between the wars. Admitting the logic, these proposals are not without some disquieting aspects. What makes a good combat team in battle? It seems to me that it is a good artilleryman supporting a good infantryman; something more, in other words, than merely two good leaders getting together. Is more or

less specialization indicated in a military era of supersonic rockets, proximity fuzes, and atomic bombs? Granting the impelling need for well-rounded officers, it would seem that the new Army will have the greatest need for many specialists and much specialization, regardless of its size and shape.

The foregoing is not written in worry that the Nation, the Army or we field artillerymen are all going to pot. Quite the reverse, it is written in the conviction that, despite our perplexity, we face a challenging future. We are at a major crossroad in our military history, unquestionably, and the pieces don't fit together nicely in clear pattern at this time. It is reasonable to assume, however, that the artillery role in wars of the future will remain powerful and generally unchanged—that is, to support the infantry by fire and to give depth to combat. So long as man meets man in deadly combat, it seems that such principles will stand. To be sure, we cannot visualize the "depth" of future battlefields nor can we foresee whether the artillery of the future will employ rifled weapons or rockets or some atomic something or other. Such answers rest in the field of future developments.

Future developments—that is the over-riding problem of the changing present; that is the challenge right now to field artillerymen and to this JOURNAL. Lacking the cohesive influence, as we do, of a Chief of Field Artillery, it is my deep feeling that THE FIELD ARTILLERY JOURNAL can serve a most useful and constructive purpose not only in the hurly-burly present but also during the positive development stage to follow. We field artillerymen speak a language all our own, take pride in that fact, and like to express our views. There is no other medium so admirably suited to satisfy that commendable urge and to provide a meeting ground for artillery ideas as the pages of this magazine. In this connection, I think it both significant and stimulating to note that, although it was written in 1909, no group of present day artillerymen could improve upon the objects of the Field Artillery Association as stated in Article II of the Constitution:

"The objects of the Association shall be the promotion of the efficiency of the Field Artillery by maintaining its best traditions; the publishing of a JOURNAL for disseminating professional knowledge and furnishing information as to the field artillery's progress, development and best

use in campaigns; to cultivate, with other arms, a common understanding of the powers and limitations of each; to foster a feeling of interdependence among the different arms and of hearty cooperation by all; and to promote understanding between the regular and militia forces by a closer bond; all of which objects are worthy and contribute to the good of our country."

The Field Artillery Association has come through the wartime period with colors flying proudly and in a relatively strong financial position. With the end of combat, however, and the rapid separation from the service of many thousands of officers and men, the Association now faces a difficult period—a period when we will need the help and support of all members. The objects of our Association "are worthy and contribute to the good of our country." I am confident that, like our Nation and our Army, we face a good future.

A word as to editorial policy. I expect that like everyone else I shall have brainstorms now and then which will result, no doubt, in some changes. These will unfold gradually, in any event. Reader criticism is encouraged. Editorials will appear from time to time. Lastly, I shall welcome most heartily an increase in the number of contributions from enlisted men—battle experiences, cartoons, letters, rhymes, or just plain soldier yarns, be they serious or funny. The shooting war is over and we are due more fun in life.

I would be remiss if I failed to take this opportunity, in the name of the Association and all its members, to acknowledge with thanks the most splendid work that has been accomplished by Lieutenant Colonel John E. Coleman, the retiring Secretary-Treasurer, who will soon return to civil life. Under his stewardship, which has covered a period of more than three years, the Association not only reached its greatest size and strength but also served well indeed the objects for which it was formed. Colonel Coleman may leave the Service with the comforting satisfaction in mind and heart of having made an outstanding contribution during the terrible war just won.

A handwritten signature in cursive script, reading "John E. Coleman". The signature is written in dark ink and is positioned above the typed name.

Colonel, Field Artillery



**Season's
Greetings from
General Devers**



At this, our first peacetime holiday in five years, may I wish every soldier in Army Ground Forces a Christmas rich with memories and a New Year abundant with continued peace, prosperity and contentment.

Jacob Devers

A German Reflects Upon Artillery

Interrogation of Karl Thoholte, General der Artillerie*

FIELD ARTILLERY'S ROLE IN THE DEFENSIVE BATTLES IN THE EAST (1942-44)

Beginning in 1943, in an ever increasing degree, the defensive operations in the war against Russia developed into battles of materiel. In view of the high degree of commitment of materiel, the costly large-scale battles (for example, on Lake Ladoga¹) demanded that ways and means be found to reduce the loss of manpower to a bearable and replaceable amount. This question became more pressing for Germany than for Russia, for the former was not and the latter was in a position to make good indefinitely her personnel losses.

At the outset one must recognize that at the time under consideration the German air force was not strong enough to be a decisive factor in any battle. The Russian air force was still weaker, and therefore less capable of defensive action, than the German. Furthermore, German armored forces did not exist in sufficient strength to be able by their disposition to equalize the fire-power at all threatened points on the Eastern Front. This was true even though the Russians had not yet mastered tank tactics and failed to obtain the maximum efficiency from armored weapons.

While it is true that German air power was always superior to that of the Russians, the air arm alone—even in the strength in which it later appeared on the American side on the Western Front—was never in a position to influence the ground battle to such an extent that some other arm could be ignored or neglected. Meteorological conditions alone precluded daily commitment of the Luftwaffe. Similar conditions affected the armored forces. Armor plays a decisive role only if it comes into battle in a moving situation. Other arms have first to provide the basis for such a situation. In the main, the burden of defensive battle is borne by the infantry, and by the artillery which supports it.

Owing to the bloody losses and the uninterrupted, maximum psychological strain in the heavy defensive battles, each several weeks in duration, the German infantry continuously lost in combat power. More and more the defense depended upon the artillery. In many cases it decided the issue. It was

*Equivalent to U. S. Lieutenant General.

¹During and after the siege of Leningrad the Ladoga Campaign developed into a huge artillery duel. The Germans outnumbered the Russians 2:1 in total number of pieces, but the Russians had at least twice as many large caliber weapons (that is, larger than 220-mm). For the siege of Leningrad in early 1942 the Germans had accumulated approximately 220,000 tons (avoirdupois) of artillery ammunition; the Russians had an equal if not slightly larger amount. On the days of all-out German offensive their daily expenditure of ammunition in a corps sector 20 km. in width was 3,300 to 3,800 tons. Even with these concentrations the Germans failed to gain superiority and their infantry could make no gains. Russian rocket-launched projectiles succeeded in interdicting almost every German infantry attack.

estimated that the artillery bore from 60% to 80% of the combat burden. (The battles around Aachen in the winter of 1944 were of the same nature.)

If the discussion here concerns the defense for the most part, it is because Germany found herself on the defensive on almost all fronts. In the offensive situations (late 1942), conditions were much the same: artillery had also to lighten the burden of infantry and armor in the attack. Aside from a very few surprise actions, no Russian attack succeeded unless it was heavily prepared and supported.

In general, it has been proved by practical experience on all fronts in this war that the fire of the infantry of all armies of the world is no longer decisive, as it was in many battles in World War I. (In the present decade this statement applies to Poland, France, England, the United States, and Germany. At times Russia seems to be an exception, the reasons for which lie in other considerations.) One explanation for the lowered combat efficiency and ruggedness of the infantry is that the foot soldier, trying to keep pace with machines, sees in them an assistance which he desires to use to lighten his most onerous task, that of hand-to-hand combat. Propaganda in word, picture, and film has fostered this attitude. The long duration of the war, especially in Germany, contributed to it. Regardless of this indisputable fact it must be said that the infantry still has the final word in a decision, and this will probably continue to be true in the future. Terrain is taken and held only if the infantryman stands on it, even if the enemy force is destroyed before that time.

On occasions when the enemy's artillery was the principal factor behind his power to attack, counterbattery fire became a primary mission of all artillery. (That these missions could no longer be carried out in the later battles in the West was a primary reason for the German failure. They called for enormous amounts of ammunition, which at that time were unavailable.) On the Eastern Front in three or four months one German army knocked out 4,000 enemy batteries during the course of continuous and heavy defensive fighting. Many times, by timely defeat of the enemy artillery, German artillery succeeded in preventing the execution of planned attacks. At other times, by intensive barrage, so much force was taken from an attack that it could later be easily repulsed by the infantry. In the course of the war the Russians drew some conclusions from this: they never attacked at any point where the Germans were strong in artillery.

German artillery was never mobile enough to be able to move as an artillery strongpoint with sufficient speed. One of the most important lessons of the eastern campaigns is that reinforcement artillery must be kept as mobile as possible. It is self-evident that only completely motorized artillery capable of cross-country mobility should be considered



If you're going to dig in, dig deep! This German battery in Italy seems to have read a book about emplacements, communication trenches, etc., but it just didn't use enough sweat and muscle to gain the protection any battery should have.

as reinforcement artillery. Units to be used for this purpose must be so organized and equipped that they dispense absolutely with all superfluous weight, regardless of its origin, so that they have maximum fire-power with the minimum weight and volume. (In this the Russians were exemplary.) Preparation for action and march order, service of the piece, and road marches were always subjects of much thought for higher artillery commanders. In order to serve the four pieces of a battery an exceedingly great amount of apparatus is required. Amount of equipment and motions of personnel could be decreased here and there by appropriate measures without detracting from the combat power of the unit.

At this point one must distinguish between division artillery and reinforcement artillery. The former finds itself fighting in a small area, and often independently. The battalion (and for most purposes the battery as well) must be so armed and equipped that it has at its disposal everything which it needs for an independent mission. Reinforcement artillery, on the other hand, fights only as part of a larger unit, and several smaller units can be concentrated into one group.

In the defensive actions against Russia the missions, in order of importance, were (1) to engage the enemy artillery as the principal factor in his power to attack; (2) to break up concentrations of infantry and armor and prepared positions of the enemy before he could launch an attack; and (3) to beat back enemy infantry when it was in the assault. (NOTE: the term *infantry assault* is used here in the American sense.) Secondary (but little less important), and in close collaboration with the air force, was the crippling of the enemy supply and transport system and the disturbance of his leadership and command by attack of headquarters and command posts.

Division artillery with three light and one medium battalions in each division could not fulfill its tasks when the infantry division had the very broad sector so common on the Eastern Front. When this situation obtained and when larger combat operations presented themselves, GHQ Pool Battalions² — 105-mm guns, 150-mm howitzers, 210-mm howitzers, or heavier calibers — were introduced and placed under the command of division, corps, or army artillery commanders. GHQ Pool Battalions were placed under division artillery where no *Artillerie Kommandeur*³ was actually in a position of command. In other situations, where commitment was correctly handled, reinforcement artillery was placed without reservation under the artillery commander of a corps as a strongpoint weapon. In more extensive situations an unattached artillery regimental staff (*Artillerie Regiments Stab z.b.V.*) was introduced and committed to control directly the reinforcing battalions. These staffs,

together with the units assigned to them, were always placed under the artillery commander.

The division of labor between division artillery and concentrated GHQ artillery was this: the former undertook without reservation the direct support of the infantry—e.g., preparation for attack, interdiction of enemy attack, and fire upon any suitable target coming under observation; the latter undertook all targets at great range, including counterbattery. Often in defensive situations there was no difference in the mission: both kinds of artillery under the same ARKO undertook the same task.

The terrain, the situation, and the possibilities of ammunition supply conditioned the extent of introduction and use of GHQ artillery. In the battles on Lake Ladoga, for example, so much of this arm was committed on the German side that space did not permit bringing in more even though it was available. In that swampy terrain every possible battery position was occupied, and in addition supply was so strained that no more ammunition-gobbling tubes could be allowed. It follows that an increase in the effect of the artillery could be accomplished only by a very flexible

²The term "GHQ Pool Artillery" is the accepted translation of *Heeres Artillerie*.

³*Artillerie Kommandeur* (abbreviated ARKO) is the name applied to a defined group of artillery officers of the rank of Oberst or higher. It is not necessarily a generic term for "artillery commander." Each ARKO had a permanent serial number between 1 and 200, which he retained whether he was assigned with a divisional or a corps staff.

Hoherer Artillerie Kommandeur (abbreviated HARKO) is the name applied to a defined group of artillery officers of general grade. It should not be translated merely as "higher artillery commander." Each HARKO had a permanent serial number, usually in the 300 or 400 series. Both ARKOS and HARKOS were organic only with the Army High Command, and not with any unit.

leadership; that is, the commanders had to strive for the maximum effect of each piece already in use. In a certain respect there existed for the artillery no boundaries of division, corps, and army sectors: regardless of boundaries, each tube had to shoot where its greatest effect could be obtained, so that fire superiority would be gained as often as possible and at as many points as possible. This, incidentally, is the vital point in modern artillery leadership.

The multiplicity of artillery missions and the lack of manpower for them demanded not only a very flexible leadership but a flexible unit as well. Only if the unit can rapidly execute commands for fire and shifts of fire can the artillery leader bring his unit to its maximum fire effect. The unassigned regimental staffs which went from one front to another were always confronted with strange GHQ battalions under their control. And from the point of view of those battalions, after every change of higher command they had to learn the procedures and idiosyncrasies of the new staff. It is obvious that a closely-knit organization which has a standing operating procedure and whose components know each other's capabilities is better for certain tasks than is a loosely connected group of GHQ battalions. On the basis of these conclusions and of the knowledge that only massed artillery could cause a decisive effect, the first German artillery division was established as an experiment. (At this time the Russians already had a large number of artillery divisions, with various tables of organization.)

ACTIVATION OF A MEDIUM FIELD ARTILLERY DIVISION—SOME BASIC POINTS⁴

Creation of the artillery division was based upon the necessity for its use as a strongpoint weapon both in attack and in defense. Therefore it had to be completely motorized and capable of cross-country movement, so that it could be transferred over great distances at will. Moreover, it had to be so armed and equipped that it could cope with any situation without outside assistance.

With regard to caliber, only those pieces came into question which were suitable for artillery as well as infantry battle—that is, only 150-mm and 210-mm howitzers. (That the 18th Artillery Division was armed essentially with 105-mm howitzers was due to industrial shortage. At the time of its activation, production and delivery of the 150-mm howitzer was interrupted by the bombing of the factories. For the same reason a 170-mm gun battalion was substituted for an additional 210-mm howitzer battalion.)

⁴Artillerie Division 18 was the only artillery division activated or committed by the German Army in World War II. Its table of organization was drawn up in September, 1943; it was activated in October, 1943, from remnants of GHQ Pool units. It was deactivated in August, 1944, not because it failed to fulfill its mission or because battle losses destroyed it, but because its strength was dissipated by detachment of battalions to other units. Its strength was 148 pieces (including infantry assault guns and tanks) and about 11,000 men.

Consistent with its strength in both weapons and men, the division had to develop the maximum firepower—but the unified, flexible leadership had to remain undisturbed. For communication it had to be so equipped that all needed connections could be accomplished by either wire or radio organic to the unit. Let it be said here that the success of the unit stood or fell with its communications. The division signal unit was equal in strength to that of an infantry corps.

The division had to have its own antiaircraft battalion, because it had to reckon with an air attack every time it was committed. The Russians considered it a priority bombing and strafing target.

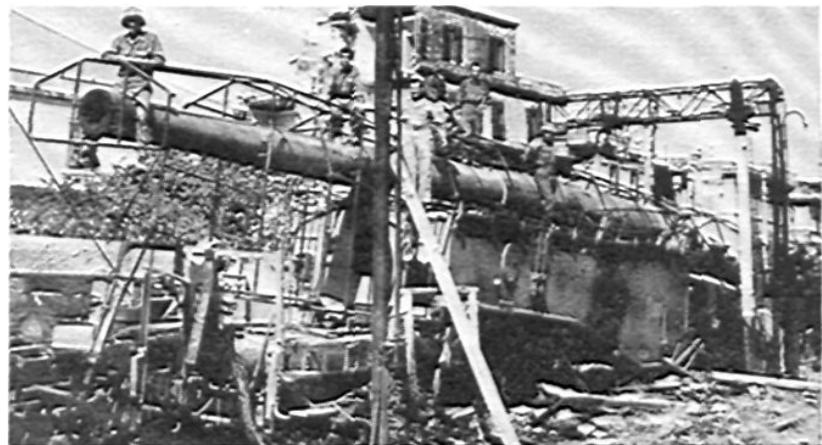
Special value was placed on good, exact, and rapid reconnaissance. For this purpose the division had an observation battalion. Organic in the staff of the division was an "artillery information center," which was in a position to assemble and evaluate all reconnaissance reports, whether from the committed batteries, the observation battalion, or aerial observation.

In order to be independent in all problems of supply, the division used its own service troops in the zone of communications.⁵

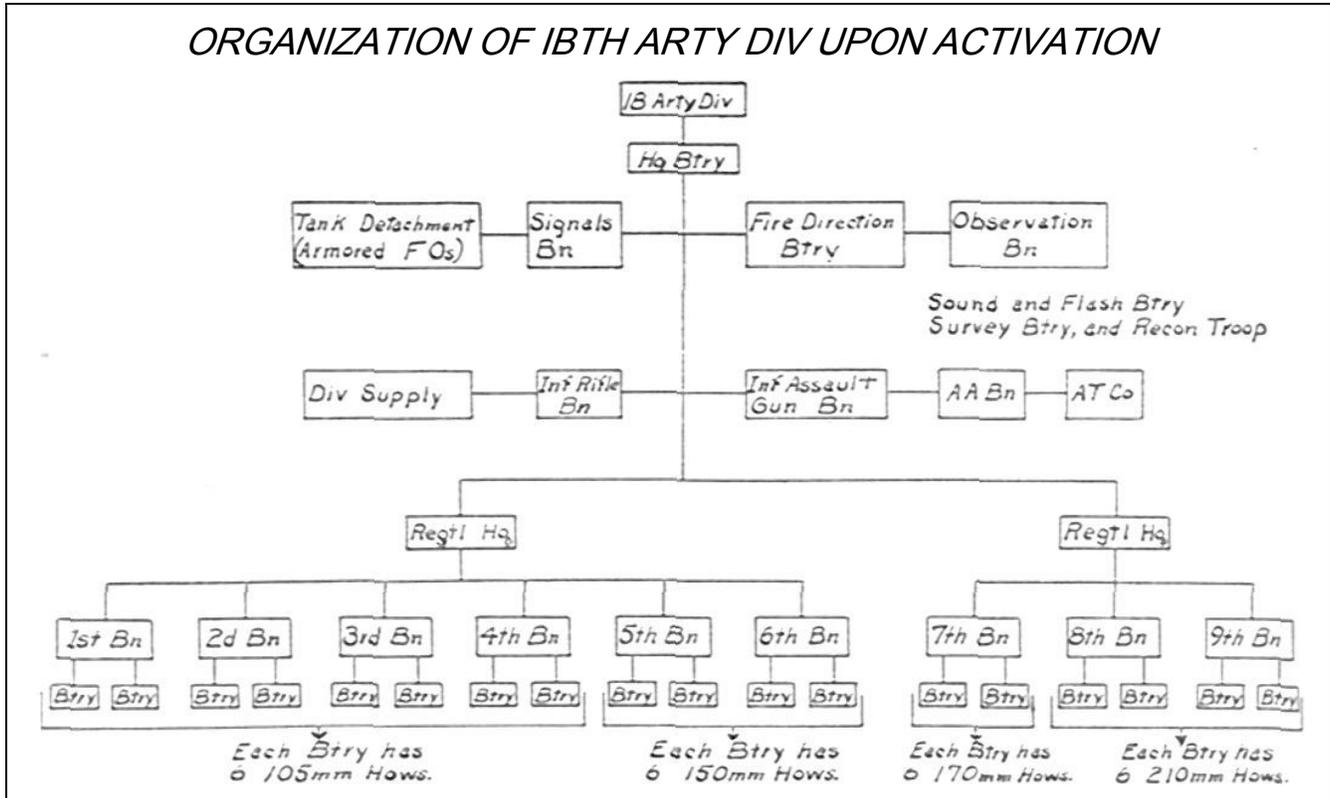
In addition to all normal artillery units, the organization had its own infantry rifle battalion. This unit had the mission of infantry defense in all dangerous situations. In the course of the ensuing battles this battalion saved the division from total destruction no less than three times, and from partial destruction numerous times. It was thoroughly trained in rear guard action so that it could plug any breakthrough for a short time.

An infantry assault gun company and an armored observation detachment (four to six medium tanks) were assigned. The object of this addition was to make it possible for forward observers to move about the battlefield in

⁵Division supply was based upon seven complete railway trains operating between the zone of communications and the combat zone. It had its own ammunition, ordnance, motor repair, quartermaster, butcher, baker, and depot units. Supply (as well as combat) units were completely motorized so that a displacement by the firing batteries of 100 km. in 24 hours caused no break in the continuity of supply.



In its own production, Germany went in for a fair amount of extremely specialized artillery, such as the 280-mm railway gun shown here. Camouflage netting was draped over its pipe framework.



1. The tank detachment was supposed to have 6 medium tanks, according to the T/E. Actually it had only 4.
2. The Signal Battalion was equal in strength to the signal unit of an infantry corps.
3. Basic transport equipment of Division Supply consisted of 7 railway trains.
4. The Infantry Assault Gun Battalion had 34 self-propelled guns, mostly 75-mm.

tanks. The infantry assault guns had the mission of protecting the movements of these armored forward observers. Each observer in a tank was so equipped with radio that at all times he could reach all the battalions as well as the division command post. (The division commander himself was often in a hull-down tank between the battery positions and the main line of defense or attack.) If an important target became apparent to any of the forward observers, a radio message designating it as a division target and giving its location was sufficient. If the commanding officer approved, it took only about four minutes to place on the target the fire of the entire 148 pieces.

The premise for such rapid and flexible conduct of fire was the fire direction battery (*Feuerleitbatterie*), which was under the direct control of the commanding general or his executive.⁶

Armored forward observers provided the only means for

⁶The *Feuerleitbatterie* made its first appearance with 18 Arty Div. It was equipped with the first *koppelungsgeraet* (automatic reckoning apparatus). This machine operated in connection with a firing chart or map, computed the range and deflection for each battery and transmitted the data by means of wire or radio teletype. Only one person plotted the target, no hand computing was done, and no voice transmission was used; hence, the only error possible was in the plotting.

This machine is a German invention. The author met the inventor in the artillery section of the Army High Command in September, 1943, and after a brief demonstration took the first apparatus with him into the new division. He was responsible for its inclusion in the equipment of the *Volks Artillerie Korps* in November, 1944.

observation of fire of non-armored artillery in support of armored attack, and the best means for observation of fire in support of infantry in the attack. A forward observer attached to an attacking infantry battalion or regiment is taxed beyond his physical power if he must carry a two-way radio, field glasses, compass, map or firing chart, side arm, entrenching tool, etc., and if he must at the same time observe the terrain and protect himself from enemy small arms fire. The forward observer in the tank, accompanied by several organic assault guns, brought with him not only the fire-power of the division but also the fire of these auxiliary pieces, which have a striking power peculiar to themselves.

The armored forward observer was not a young lieutenant, as is often the case in battalions and regiments, but an experienced tactical commander, usually of field grade. His task was to observe all artillery targets in the assigned sector and to recommend some of them as appropriate divisional targets. This required a knowledge of the situation of all enemy and friendly troops in the sector, knowledge of the capabilities of and limitations of his own unit, liaison with infantry and armor commanders, and knowledge of the tactics of these supported arms. This responsibility was too great for any but a battle-experienced tactical commander.

As a rule, these observers worked in twos or threes, with the aid of radio intercommunication. Thus, if one of the observers could break through further in the attack, or if he was left farther out than the others in the defense, be

could aid them by helping to pin-point and estimate the value of their targets as seen from the flank or rear. The supported arm always praised these observers highly.

Mobility of the artillery division was to all intents and purposes equal to that of an armored division. On several occasions it was able to close station, march 150 km, and fire a mission in a new position, all within 24 hours.

Although the unit was supposed to receive helicopters as observation planes, they were never delivered. Only when it could borrow them did it have ordinary artillery liaison planes. Earlier experiments with helicopters had proven them to be ideal for observation of fire because of their ability to ascend and descend rapidly.

A battalion or regiment of rocket launchers (*nebelwerfer*) was to have been assigned or at least attached as an area-or zone-covering weapon, but they were always needed elsewhere.

A BRIEF CRITIQUE OF RUSSIAN FIELD ARTILLERY

"Mass" is the word which most adequately describes Russian artillery. Almost any attack receives a short but extremely intense artillery preparation. There is no exaggeration in the reports from various sources that the Russians have committed as many as 200 pieces in a sector only one kilometer wide, but this was a rare occurrence.

Usually Russian artillery was stronger than the German in number of pieces, although not necessarily in caliber; in the most successful battles the ratio was about 2:1. Under favorable weather conditions German air power made up the difference, because it always had superiority, but in times of bad weather the Russians had a definite advantage. The Russian army has a large number of artillery divisions with basic weapons ranging in caliber from 150-mm howitzers to 190-mm guns. Many times two or more of these divisions were grouped with one or more rocket launcher regiments under one command; the combined firepower was almost unbearable.

Leadership is from the top down, by artillery officers and not by infantry unit commanders. This chain of command is more defined in the Russian than in the German army. The infantry division artillery commander is responsible to the corps artillery commander and not to the infantry division commander; upon this a whole hierarchy is built.

It is always impossible to determine infantry unit sectors by the concentrations of supporting fires, because the artillery sectors seldom correspond exactly to the sectors of the supported units. It is also the custom of the Russians to give more weight to the tactical decisions of the artillery commander in a situation where his arm is to bear the principal burden, just as a general of armor or infantry has the greatest part in the decision if his arm is to bear the principal

burden. In many large infantry units the second in command is an artillery officer.

The success of this scheme has been proven beyond doubt. Leadership is the strongest point in Russian artillery.

Russian artillery was always slightly more mobile than the German. The Russians have more horse-drawn units than the Germans had, but they dispense with excess weight to the utmost degree. They have always experimented with various forms of transport, trying to find shortcuts. (On more than one occasion infantrymen in a prone position were transported in trucks with five or six shelf-like separations. Sometimes they were forced to lie on each other two deep, even though up to one per cent, were injured thereby.)

Technology appears to be behind the Germans,



Germany supplemented its own artillery with a great amount of captured materiel. A good bit of it, like this Russian 152-mm gun, was in quite good condition when our troops "liberated" it.

notwithstanding the fact that several innovations like the rocket launcher were first used by the Russians.

The Russians always excelled in camouflage and deception. Battery positions were always extremely well camouflaged, movements were concealed or made deceptive, and radio security was carried out to a degree formerly considered unattainable. Only in early registrations did the battery positions expose themselves, and this fault was never eliminated. Often, the day before an attack, widely separated batteries would fire into the same area. It then followed that most of the artillery emplaced in the sector between them was to be concentrated into the area used for registration, and that the main effort would be made at that point within a few hours. This was the only weak point in security.

Although the average Russian artillery officer is highly trained in the conduct of fire, Russian precision fires as a rule were not quite so accurate as the German ones. Massed fires also fell somewhat short of the German standard for accuracy.

Without protracted study of the various battles it is impossible to make any general statement concerning supply of Russian artillery units.

GERMAN FIELD ARTILLERY IN THE ARDENNES OFFENSIVE (DECEMBER 1944 TO JANUARY 1945)

The order for this offensive did not originate in the OKW or OKH, but came from the Fuehrer himself. It

was an order to break through and go as far as possible.

Feldmarschall Rundstedt at first thought Army Group "H" was ideally situated for breaking through, perhaps as far as the Belgian coast, but in November he decided upon Army Group "B" because its logistical situation appeared better. Feldmarschall Model wanted to envelop Aachen and an area containing 25 Allied divisions, but this was turned down by Supreme Command West as being inconsistent with the Fuehrer's order.

Model gave to the author the entire leadership of the army group's artillery. He was assigned GHQ Pool artillery units equal in total strength to 12 brigades (a German artillery brigade had a maximum of 80 pieces), 7 Volks Artillerie Korps, and 3 Volks Werfer Brigaden, and a large number of independent battalions.

Preparations for the offensive were in progress for four weeks, during which time the HARKO brought directly under his command the army artillery of the three subordinate armies, reorganized and reequipped the units of brigade strength, and modernized the Volks Artillerie Korps. Modernization included the introduction of armored forward observers, an increase in radio equipment, the addition of the Kommandogerat and Koppelungsgerat together with technical personnel capable of operating the apparatus, introduction of the "artillery information centers," and indoctrination of commanders of all units down to battalions in the art of massing fires. Great stress was laid upon the last. Unit commanders were thoroughly impressed with several basic principles: (1) whenever possible GHQ artillery must fire only concentrations of brigade mass or greater; (2) its units must be mobile enough not only to follow closely the main line of attack but also to move as an artillery strongpoint over great distances in a short time; (3) without undue sacrifice of flexibility and initiative of leadership, each unit had to feel a contact with the highest artillery commander; and finally, strength must not be dissipated by the detachment of battalions on separate missions.

Almost from the outset it was obvious to the HARKO that ammunition and fuel supplies were inadequate for an operation of the contemplated size. Even though a large number of prime movers had been cannibalized from other units, there were not enough of them to provide the expected replacements. There was also a definite lack of anti-aircraft units.

Owing to the lack of fuel and ammunition, only four of the Volks Artillerie Korps were committed before the breakthrough, and they were unable to follow after the main line of attack had advanced 50 km. Infantry and artillery commanders finally prevailed upon the HARKO to detach, to reinforce division artillery, the battalions which were still mobile and supplied with ammunition. Thus the Korps were destroyed piecemeal and the principles of leadership of that form of artillery were violated. U. S. air power destroyed the combat power of many units which did not have a single anti-aircraft weapon. To add to the confusion, the Sixth SS Panzer Army disregarded commands of the Army Group commander and carried on its own private campaign.

Number of pieces and average caliber of the German artillery were about equal to those of the U. S. artillery, but U. S. expenditure of ammunition was at least ten times as great. The effect of the U. S. fires was not commensurate with the expenditure, however, and if German and American air power had been equal, German artillery could for the most part have performed its mission.

A BRIEF CRITIQUE OF U. S. ARTILLERY

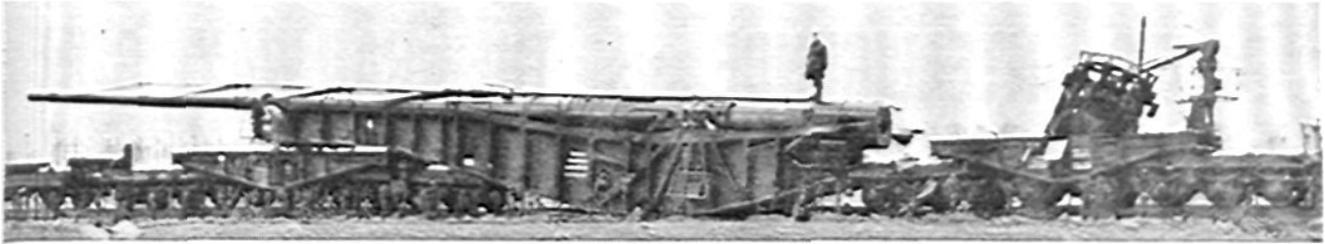
This subject is discussed with considerable reservation, as the author fought against the Americans for only half a year.

It was immediately obvious to a German artillerist committed against the Americans that he was facing a large number of medium pieces with a still larger amount of ammunition, and a very small number of heavy pieces, but an overwhelming air force. The substitution of air power for heavy artillery proved devastating to German ground forces on fair-weather days, but bad weather gave them a welcome surcease. This situation was on the whole favorable to the Allies, but it will not always be so. To slight one arm in favor of another is to take a great risk and, unless flying technique in the future makes it possible to cover tactical targets in support of ground forces both day and night in good weather and bad, the U. S. Army would be wise to build up the arms equally.

Corps and army do not have enough control over division artillery. Division artillery concentrations are accurate and flexible and fires are delivered with speed, but there appears to be no unity of action with the contiguous divisions. Almost invariably the German observers could plot the divisional sector lines upon the terrain merely by making notes of gaps between zones of fire of division artilleries. At times German tanks and infantry made use of this information and aimed their attack at a sector line, knowing that the zone would not be covered by either division. Lateral liaison will not solve this problem; it must be solved on corps or army level.

The U. S. practice of firing to saturate an area has been criticized adversely by many German officers, because they have witnessed at some time the firing of hundreds of rounds, not one of which caused a German casualty. This criticism is not completely justified. The fact that the U. S. had a huge supply of ammunition as compared with Germany, made it profitable to saturate an area now and then, just to prevent enemy action and pin him down. If, however, the Germans had had an equal amount of ammunition, U. S. artillery would have been required to choose targets more judiciously. A thoroughgoing study of the effect of this type of fire, particularly with a view to using rocket weapons for the purpose, should be made by American artillerists.

The fact that all U. S. artillery is motorized is good. It is the most mobile artillery of all first-rate powers. The whole army is the most motorized in the world. The only weak point was the lack of tracked (and the use of wheeled) prime movers in many division artillery units. If prime movers capable of cross-country travel had been used



German 21-cm. K 12 (E), extra-long railway gun. The rear part of the carriage has been severed by demolition and is seen extending above the rear bolster; the carriage has dropped to the roadbed. Mounted on the extreme right of the rear bolster is the damaged ammunition crane. Note that each of the two front trucks has five axles. This particular specimen was recovered by the British in Holland.

in all units, the mobility would have been overwhelmingly superior to the German.

Camouflage and security of U. S. troops were poor. It is true that camouflage served no great purpose, since German air power was so weak, but neglect of camouflage discipline on the part of an artillery unit is never excusable. Radio security was weak. On one occasion during the Ardennes Campaign a contemplated rapid movement of a U. S. armored division was learned when German radio monitors overheard a message to the military police ordering them to give the unit a traffic priority over certain named roads at a named time. Against an extremely secretive enemy such a low degree of security would be costly.

In technology, the American excels. The standardization of pieces, the quality of ammunition, the quality of communications equipment, and the adjustment of fires on battalion and division artillery level are superior. Self-propelled weapons such as the 155-mm gun are indications of what the future will bring. Use of the proximity fuze before any other nation brought it into action needs no further praise. The only visible weak point in U. S. technology is the slight use of rocket-propelled or fired projectiles. (Jet propulsion will be a basic factor for artillery in the future.)

ABOUT THE AUTHOR

Gen. Thoholte was born in 1893 of a family with no special military tradition. At eighteen he volunteered for the regular army, becoming a Leutnant of artillery in 1913. After serving as a battery officer on the Western Front he was placed on the inactive list as Oberleutnant in 1921. In 1923 he returned to active duty with the 100,000-man army, serving as a regimental adjutant until 1931, in which year he became a Hauptmann. Until 1936 he divided his time between the duties of commander of a special experimental battery (*Versuchs Batterie*) and those of instructor in the *Kriegsschule* in Munsich.⁷

⁷The *Versuchs Batterie* served not only as an experimental unit but also as a special school troop for the *Kriegsschule* in Munich. In violation of the Treaty of Versailles, the unit was armed with various large caliber and heavy weapons.

From 1936 to 1938 he commanded a separate heavy motorized battalion in Bremen, where he attained the rank of Major. In 1938 he was promoted to Oberstleutnant and assigned to the Army High Command in Berlin as a special adviser on questions relating to railway artillery. Early in 1940 he was given command of 36 Arty Rgt (mtz). In January, 1941, he became Oberst and led this regiment into battle against the Russians. In 1942 he became an Artillerie Kommandeur (ARKO) and was assigned as a corps artillery commander. In February, 1943 he was promoted to Genetalmajor and the next month became Hoeherer Artillerie Kommandeur 303 (HARKO 303) and served as an army artillery commander. Both as ARKO and as HARKO, he served in the Ladoga (or Leningrad) Campaigns.

In October of 1943 he drew up the table of organization for and became the commanding officer of 18 Arty Div. He was promoted to Generalleutnant in March, 1944, and continued to command the division (in continuous action on the Eastern Front) until it was deactivated in August. During August-September, 1944, he served as army artillery commander in the defense of Warsaw. In October he became General der Artillerie z.b.V., was recalled to the Army High Command, and was assigned to the Supreme Command West (Rundstedt). The Army High Command ordered Feldmarschall Rundstedt to use him as army group artillery commander of that group which was to make the main effort. He was first the artillery commander of Army Group "B", then "G", later "H", and finally "B" again. He served as HARKO of Army Group "B" under Feldmarschall Model from about the first of November, 1944, until the war ended for him in Haan in the latter half of April.

Thus it appears that this author has had exceptionally wide and varied experience with artillery, and speaks also with the rounded knowledge which results only from intimate contact with the high command. His words probably reflect his own considered views. Always, however, what the vanquished says for the "benefit" of the victor should be carefully assayed and analyzed. The same is true of these reflections.

One of the "hidden" causes of spare parts shortages is the fact that many a simple repair which would not require a replacement part is left undone and the equipment is operated until the maladjusted part breaks down. That is why preventive maintenance must be constantly called to the attention of using troops. They must be made to realize that it is vitally important that they pay attention to these "minor" repairs.

PHOTO INTELLIGENCE vs THE RAILWAY GUN

By Lt. Edwin Hartrich

As the XXth Corps, attached to the U. S. Third Army, was battling for the control of the western semi-circle of fortresses protecting Metz in October, 1944, a report was received from a friendly agent behind the enemy lines that a 380-mm railway gun had just been moved into the city.

The Third Army at that time was already plagued by an elusive 280-mm railway gun that was firing from the deep rear of the Metz battle zone and was harassing CPs and lines of communications. So the services of all intelligence-collecting agencies were called on to confirm this new report.

The Corps Artillery Photo Interpretation Team, under command of Capt. John Whittlesey, was ordered to locate the new gun on the latest photo cover. As the accompanying pictures illustrate, a railway gun with its component parts is not easy to hide or to camouflage. The train usually consists of five cars—the gun in its special mounting, an ordnance and generator car, two cars to carry the disassembled track for turntable and spurs, and a crew car—plus the locomotive.

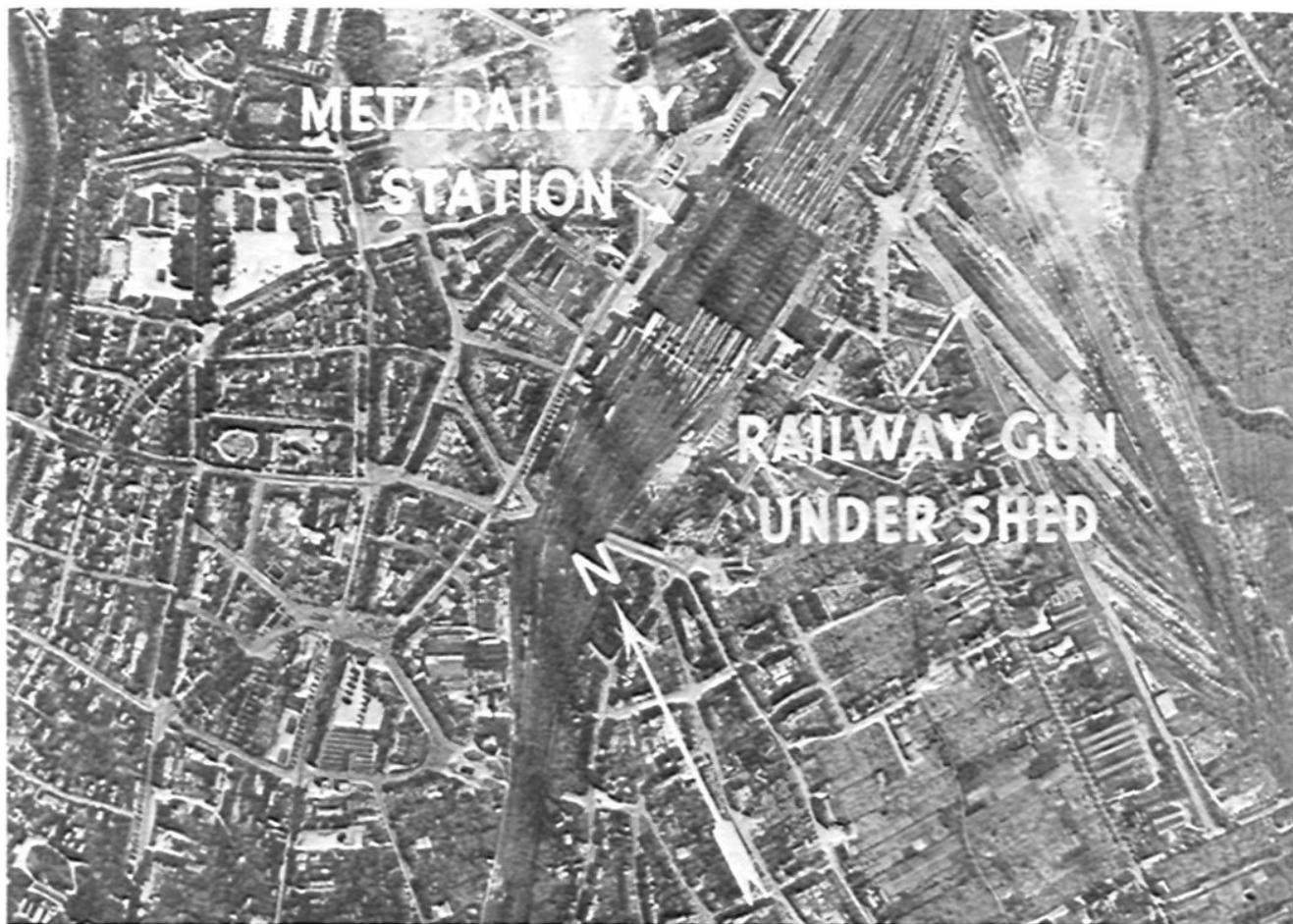
However, the latest sorties revealed no trace of the 380-mm

gun or of its train. Relying on the accuracy of the agent's report and estimating the train to be about 500 feet in length, Capt. Whittlesey found on the photos of Metz what he considered the only likely place where the train could be hidden.

Immediately to the south of the main railway station in Metz was a narrow, 1,000-foot-long freight station or warehouse. On the west side of the building a railroad track led in under a weather over-hang which completely covered the track from above and provided ample concealment for the reported gun and train.

The conclusion was also based on the premise that the Germans would probably keep the train intact, rather than break it up and hide the individual cars in the Metz rail network, for the 280-mm gun which had been firing into the American zone had been constantly on the move so that it never could be located by sound and flash or on aerial photos, at least not long enough for counterbattery or air attack to knock it out of action.

On receiving the photo interpretation report with the freight station as the recommended target, corps artillery



arranged for an Arty/R shoot. The shells were adjusted on the target from a P-51 recon plane hovering above Metz. Approximately 150 rounds were fired.

The warehouse was reduced to a shamble, with considerable damage also inflicted on the neighboring railroad station and the track network in the area. Within 24 hours a report was received from the same secret agent in Metz that the 380-mm and its train had been completely wrecked in the shelling, without ever having been in action.

This incident discloses the increasing handicaps attached to the use of heavy-caliber railway guns, now that photo reconnaissance has been developed to such a high tactical point. Air superiority would seem to be the only insurance available for those who favor the use of this type of gun.

When the situation requires it, a German gun crew can set up its own spur with turn-table that gives the gun a 360-degree radius. However, as the pictures illustrate, such an installation is easy to spot from the air. To avoid being caught out in the open by photo reconnaissance, the tedious operation of laying track and turn-table, firing the gun (approximately one shot every five minutes is considered high-performance), picking up the track, and leaving the area, must all be completed within the hours of darkness.

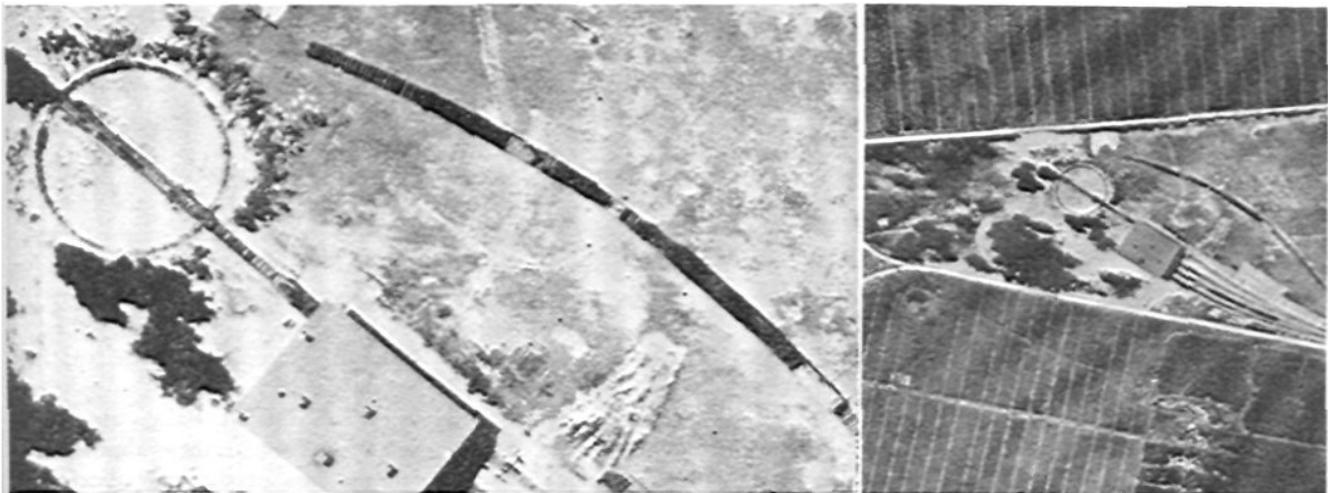
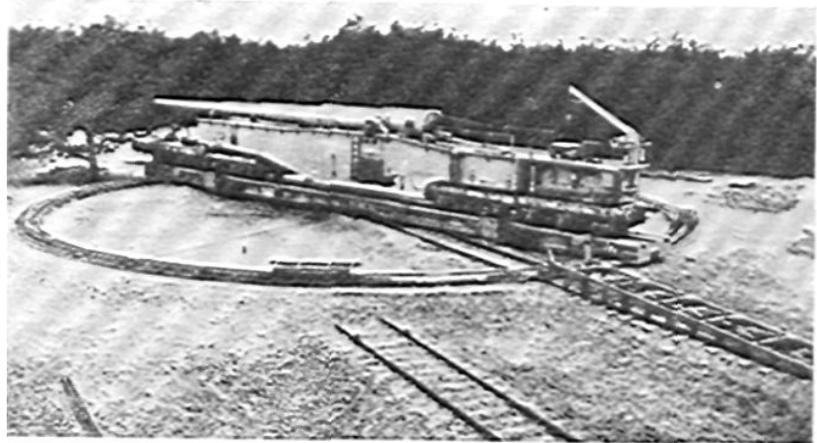
Obviously, wherever possible the enemy attempted to circumvent this by operating his gun on a stretch of railroad with sufficient curves to give him the desired angle of fire, plus the opportunity to move in and out of the area with a minimum of trouble. Daytime hiding places were tunnels or caves, but curved stretches of track and tunnels are not hard to find and to keep under surveillance with both day and night photo reconnaissance.

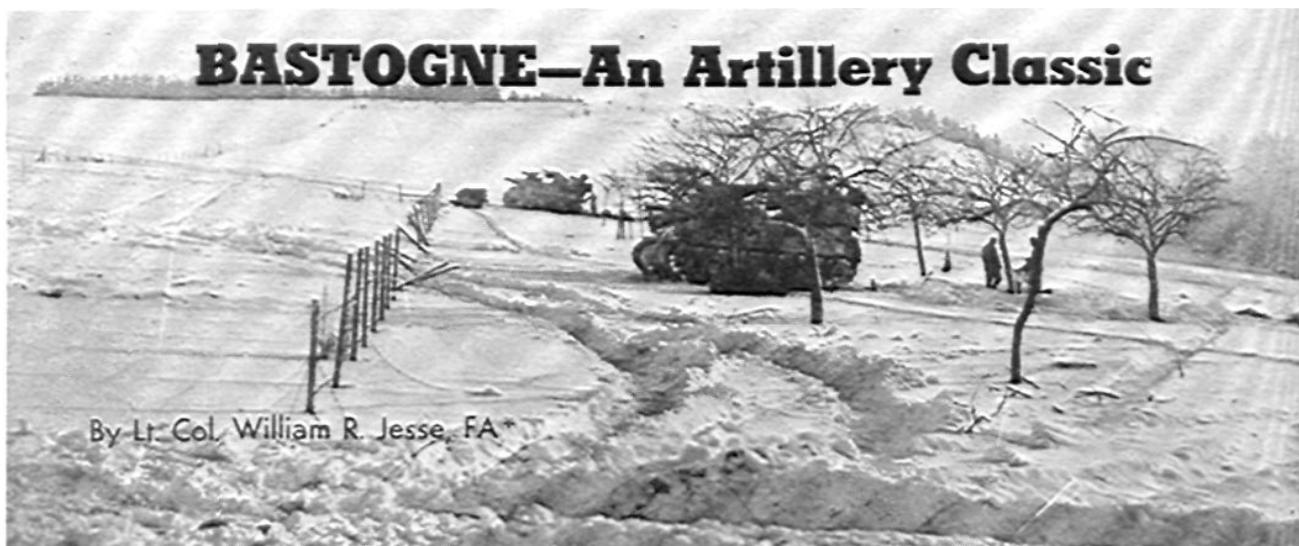
During the siege of Sevastopol, when the Luftwaffe enjoyed decisive air superiority in the Crimea, German railway guns were used with telling effect against the Soviet naval base. But that Nazi air superiority did not last through the war in Russia, nor did the railway guns.

During the fight for the Anzio beachhead, two German railway guns were particularly harassing to the American VI Corps. The guns were hidden in caves during the daytime and fired only at night. However, in some of the first night photographic missions the guns were located, then bombed and put out of action.

The industrial Saar Basin and the Rhineland with their well-developed railroad networks were the scenes of the last stand of the *Eisenbahngeschütz*. Once those areas fell to the Americans, the railway gun became a white elephant in the enemy's arsenal.

Captured enemy photos show heavy-caliber railway guns in a position that could not be identified. The whole is quite elaborate and seems to be semi-permanent. At right is the gun with its carriage on the turn-table. In the aerial photos below can be seen the general lay-out of the spur and turn-table, with the circular section of track on which the gun carriage operates.





105-mm self-propelled howitzers occupied positions in deep snow near Trois Vierges, Belgium, in stopping the Boche in the Battle of the Bulge.

After 150 consecutive days of active combat operation in support of the advance of the 6th Armored Division across Brittany and France to Saragumines, Germany, the artillery battalions of the 6th Armored Division marched to Metz, France, on December 24, 1944. Orders were received at 1315A Christmas Day to proceed to the vicinity of Nommern, Luxembourg, preparatory to relieving the 10th Armored Division. This was accomplished on 26 Dec. On 29 and 30 Dec, after relief by the artillery of the 5th Infantry Division, plans and reconnaissance were rushed for employment of the three organic 105 S.P. artillery battalions of the Division (the 128th, 212th, and 231st, with attachments) for future operations in the vicinity of Bastogne, Belgium.

Due to the critical aspect of the tactical situation then prevailing, and the urgent need for immediate movement to positions from which the attack of a Combat Command, scheduled to occur on the morning of 31 Dec, could be properly supported, the battalions marched under cover of darkness to their previously surveyed positions, occupied them despite snow, cold, and unfavorable road conditions, and were ready to support the attack. The artillery was the first element of the Division to be in position and ready for the fight.

Orders were received on 29 Dec attaching the 193d FA Group to the 6th Armored Division for the forthcoming operations. This group—composed of the 253d and 696th Battalions (105 S.P.) and the 177th and 776th Battalions (155 howitzers)—was placed under the Division Artillery Commander. The organization for combat was as follows:

6th Division Artillery Headquarters with direct control of the 212th, 231st, and 177th Battalions, called Group Riley, was in support of CC "B."

The 193d Group Headquarters, called Group Cooney, was composed of the 128th, 253d, and 776th Battalions. This group was in direct support of CC "A."

The 696th AFA Battalion, under Group Riley, was initially in general support of both Combat Commands.

Thus the planning and responsibility for the tactical employment of all of the organic and attached artillery was centralized, but for speed and effectiveness each of the two major artillery headquarters was assigned a direct support mission.

The initial attack was launched on 31 Dec by CC "A." Although each group was disposed primarily for the mission of rendering close support to its particular combat command, by careful selection of positions, close liaison, and the installation and maintenance of a workable and efficient system of communications all battalions were able to fire in mutual support of either Combat Command. This was done with extremely good effect on the first day of the attack. Prior to the "jump off" fires were placed on Wardin, Mageret, Arloncourt, and Oubourcy. During the attack enemy artillery positions were neutralized, road junctions in rear of the German lines interdicted, and enemy infantry assemblies in woods subjected to accurate and devastating fire. Tanks, machine guns, and personnel of a determined and well equipped enemy were subjected to repeated artillery fire that was in most cases observed and known to be effective. Including harassing and interdiction fires that were maintained throughout the night, a total of 3,272 rounds was fired on the first day of the battle.

During the period 1-8 Jan 1945 a great artillery battle of the war was fought. Moving to positions on the outer fringe of the bulge into the southern flank of the German spearhead, with headquarters of both groups in Bastogne, the artillery fought ceaselessly day and night, without rest or respite, in bitterly cold weather. Biting winds, blinding snow and sleet, and ice-covered supply roads drifted high with snow created tremendous difficulties of supply and ammunition. Observation was difficult; liaison air activity was restricted to a minimum. Despite these almost insurmountable difficulties in the face of the most determined

*6th Armd Div Artv.

efforts on the part of the best troops in the German army to crack the Bastogne defense, the artillery time after time inflicted extremely heavy casualties on enemy personnel and equipment. Artillery fire repeatedly broke up counterattacks as they were being formed. PWs complained of the accurate and devastating nature of the artillery fires, singling it out as the most damaging factor in their inability to press any attack to a successful breach of our defense.

Every artillery battalion was shelled repeatedly, so the habitually selected and surveyed alternate positions were occupied many times under the most trying conditions of enemy shellfire, weather, and terrain restrictions. Bastogne itself was under continuous shellfire from all calibers of German artillery. It was bombed by planes of the Luftwaffe, as were the positions of the battalions. In battle vernacular, the whole area was "red hot" during this entire period, but not once did supported units find the artillery, for any reason at all, unable to give them the fires they wanted, whether of a planned or emergency nature—and of the latter there were many instances of extreme urgency.

Close liaison with the artillery supporting the 101st Airborne Division, and with the III Corps artillery, enabled the fires of the artillery supporting the 6th Armored Division to be effectively intensified on occasions when it was imperative that all available supporting fires be delivered. Similarly there were many calls from the 101st AB Div and from III Corps Arty for fires outside the 6th Armd Div zone to assist in repulsing dangerous enemy attacks. Shifts of 3200 mils in response to these calls were accomplished on several occasions. So important was the need for immediate delivery of fire to assist adjacent units to stop counterattacks that one battery in a battalion would remain laid on an azimuth approximately 3000 mils from its normal direction of fire for several hours at a time.

On 3 Jan the artillery of the 6th Armd Div fired 16 missions on call from the 101st AB Div Arty in repulsing the counterattacks in their zone. On 5 Jan, 11,655 rounds were fired by the artillery in support of the 6th Armd Div. During the seven days from 1 to 7 Jan, inclusive, this same group fired a total of 53,054 rounds. While the total amount of ammunition fired is in itself significant in that it is indicative of the violent and continuous nature of the fighting, it was even more important in showing the extent of reliance placed in the artillery to stop the enemy. The

artillery literally saved the day, not once but on numerous occasions.

From 8 to 20 January the battle raged with unabated fury. This period was marked by repeated attempts on the part of the Germans to break through our defenses by launching attacks against the near-circle around Bastogne from all sides except the south, where a narrow supply corridor leading into the city was held by American troops. Attacks and counterthrusts were launched daily by both sides.

This called for extreme versatility in the use of the artillery. From tactical dispositions inside the bulge, every conceivable type of fire was delivered. Except for the effectiveness of the artillery, the enemy would undoubtedly have surged into the battered area held by our harassed troops. Repeatedly requests were received from the 35th Infantry Division on our right and the 101st Airborne Division on our left, in addition to those in our own zone. Air OPs operated constantly despite frequent snow flurries, snow-and ice-covered landing fields, and bitter cold weather. Their bravery and determination were of paramount importance because by observation our fires were made more effective and were known definitely to be inflicting enormous casualties on both enemy personnel and equipment. Because of the flexibility of operations (involving certain task forces' passing through others), despite the difficulties of relief and the constantly changing situation the artillery was confronted with, it solved the most trying problems of any of the five campaigns in which it participated. Every available officer was used for observing and conducting artillery fires in foremost positions. During the entire period each battalion employed from nine to twelve observers with forward elements, although the Tables of Organization for Armored Artillery Battalions provided only three. The Division Artillery expended 50,413 rounds during the 12-day period.

From 21 Jan to 25 Jan the "see-saw" battle of the preceding three weeks changed to one of pursuit. Every effort of the German troops to wipe out the bulge had been met with such determined resistance and devastating and damaging artillery fire that they were completely frustrated. The battalions displaced rapidly, close on the heels of their supported commands, harassing the retreating foe and inflicting casualties on their depleted personnel and equipment.



Armored infantry, supported by their tanks, move in to attack German troops surrounding Bastogne, Belgium.



Taken 29 Dec 44, while Bastogne was still under siege, this photo shows members of the 101st Airborne Division moving out of Bastogne to drive the besieging Germans from a nearby town.

The effectiveness of the artillery fires during the preceding phases was evident on all sides. Destruction was not the only accomplishment of the artillery, however, as during the offensive operations one of its most important roles was the screening of our movements by the extensive employment of smoke. That this was skillfully done is evidenced by the reduction in casualties to our infantry and tank battalions where smoke was employed in conjunction with their attacks. It was an important factor, and in each case contributed greatly to the success of our operations.

Because of the weight of the German attacks, the possibility of a successful penetration, and the narrowness of the escape corridor, the decision as to whether the position areas for the artillery battalions should remain inside the bulge or be changed to relatively safer areas farther to the south presented itself to the Artillery Commander. Should the Germans succeed in their efforts to achieve a breakthrough, much if not all of the artillery would be over-run. On the other hand, by being concentrated within the bulge, better all-around support could be given; greater range was afforded for interdiction

and harassing missions; more prompt and effective support could be given to adjacent divisions; and shorter lines of communication provided more constant and better control.

From the very beginning the battle had the unmistakable earmarks of "winner take all." The role of the artillery was so indispensable and so all-important, and the issue so desperately contested by both sides, that it was decided the artillery would stay inside the bulge where it could make its power felt best and quickest, regardless of danger to personnel or loss of equipment. That

decision may well have been the margin by which the enemy's will was broken, as the ceaseless punishment inflicted on the German army by the artillery was, according to their own PWs, the most devastating single factor in their defeat.

As the battle progressed the telling effect of our counterbattery fires was notable in the gradual decrease in the volume of enemy fires falling in our own areas. Using American weapons and captured ammunition that had been seized during the early stages of the Ardennes offensive, the Germans fired on our front lines while our own artillery was in action, hoping to create the impression among our front line units that their own artillery was firing short. This fact was established by shell reps and the discovery of fuzes in the shell craters that were still set on "safe."

While the "Battle of the Bulge" could never have been won by the artillery alone, it was the superhuman effort of the artillery that prevented it from being lost on repeated occasions. By the intensity and accuracy of its fire the way was paved for the final breakthrough and rout of the cream of the German Army. This marked the real beginning of the end of the war in Europe.

GOT ANY SOUVENIRS?

If you do, and especially if they include any firearms, you'll do well to heed the following words of Joseph D. Nunan, Jr., who is Commissioner of Internal Revenue. His statement is based squarely on the mandatory provisions of the National Firearms Act of 1934 and the regulations issued thereunder. Here's what he says:

"We have hesitated to do anything to hinder service families in the enjoyment of their richly-earned trophies of war. However, our attention has been called to several instances in recent months where criminals have stolen or otherwise acquired war trophy guns and have used the weapons for criminal purposes. I am issuing these cautions for the safety both of service families and the public at large.

"Under the law, registration must be made at once by every possessor of any firearms of the automatic type, such as machine pistols, machine guns, sub-machine guns, or any type gun from which a number of shots or bullets may be discharged with one continuous pull of the trigger. I urge all servicemen, veterans, and their families having such guns to communicate at once—in person, by telephone, or mail—with the nearest office of an Investigator in Charge, Alcohol Tax Unit, Bureau of Internal Revenue, or to write to me in Washington. A representative of the Bureau will call and assist them with the registration without charge.

"At the same time, I urge possessors of these weapons to accept the assistance of the Bureau representative in rendering them permanently inoperative. This will not affect the souvenir value of the weapons, but will prevent accidents and keep them out of the hands of the criminal element."



THE STORY OF THE GUN

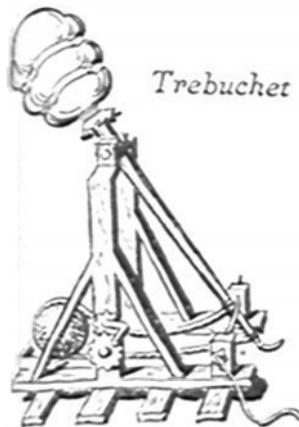
By Lt. A. W. Wilson, RA

Part I: 1242 to 1650

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BEFORE GUNPOWDER

Gunpowder and Artillery are terms regarded today as inseparable, but this has not always been so. It seems that up to the middle of the 16th century any weapon discharging a projectile of any kind and by any means was a piece of artillery. In France and England (13th century) the word artillery meant bows and arrows. Henry VIII in 1537 granted a charter to the "Guylde of St. George," later to become the Honourable Artillery Company, a fraternity "to be overseers of the science of artillery, that is to witt, long bowes, cross bowes and handgonnes for the better encrease of the defence of our realme," and a chronicler in 1571 says "Artillerie nowadays is taken for two things, gunnes and bowes." The machines used by the Normans and Romans (shown here) for



throwing huge stones and discharging large arrows were the forerunners of siege artillery, but it was not until the invention of gunpowder that artillery began to have the possibilities of our present day achievements. For this reason the story of guns begins with the invention of gunpowder.

ROGER BACON

Great discoveries or inventions have not been the work of one man alone. Men inspired by the same desire have worked independently toward a common end, and it is left to one of these men, who by luck or superior knowledge, or both, has produced the finished article. So it was with gunpowder. Claims for its invention have come from all over the world, but the honor seems to go to the English friar and alchemist Roger Bacon (1214—1294). At any rate his recipe is the earliest known to us.

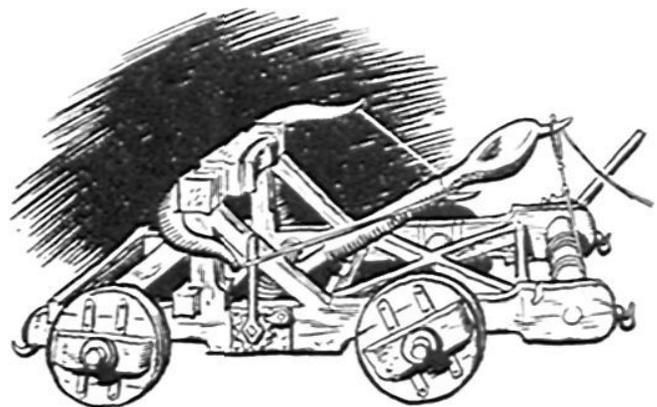
The date of the invention is somewhat obscure, since Bacon did not make his discovery public but instead concealed his findings in cryptic writings only recently solved. One of these works suggests that the discovery was made in the year 1242 or even earlier. Bacon apparently used his gunpowder to make crackers for children. Though he may have envisaged its use in guns, he did not live to see it put into practice.

BIRTH OF THE GUN

Within 20 years the secret was out, but it was not until 1313 that a German monk, Berthold Schwarz, who lived in Flanders, made the first gun with gunpowder as a propellant. They were manufactured in Ghent immediately afterward and one of them was sent to England in 1314. They were called Vasi or Pot de Fer; a study of the drawing (p. 722) explains why. This shows an arrow being shot out of a vase-shaped receptacle into which has been placed powder, fired by means of a hot iron applied to a touch-hole, a method to be used with minor improvements for the next 500 years or more.

It is quite obvious that the new weapon could not be expected to throw the weight of projectile possible with the trebuchet and similar machines, and consequently the gun did not immediately supplant these more primitive methods which continued in use for some 100 years or so. Cannon are believed to have been used by Edward III in his campaigns against the Scots in 1327, but apart from the information that they were "Crakys of War" we know nothing about them. Certainly they must have been very ineffective. A contemporary account of the Battle of Crecy, 1346, speaks of the English using bombards "which with fire throw little balls to frighten and destroy horses." There is no doubt that the effect of these guns was purely moral and their destructive power negligible. The illustration shows a bombard reputed to be one of three used at Crecy.

The use of cannon was established beyond doubt in the



Catapult



1346
Crecy Bombard



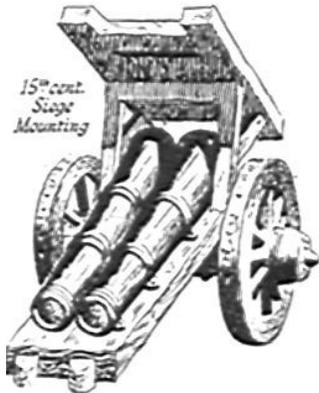
Siege Mounting
14th cent.
The gunner holds a shield for protection against arrows

siege of Calais by Edward III in 1347, but due mainly to the daily ration of gunpowder of 3 to 4 ounces their effectiveness must have been small.

TEETHING YEARS

For the next hundred years the desire for cannon large enough to project missiles as heavy as those thrown by trebuchets was very marked. Siege warfare was almost the only method of fighting known, so what was required was a piece large enough to provide the means of knocking down the walls of a town. These early cannon were made of wrought iron and

had an effective range of a few hundred yards. One such, made by Henry VI in 1440, was composed of 14 long bars in a circle like staves in a barrel (hence the word "barrel" applied to the piece) imperfectly welded together and strengthened by hoops of iron shrunk on to the staves, typical of the general method of manufacture. Its piece, the bore of which measured 4.25 inches, was 7' 6" in length, and

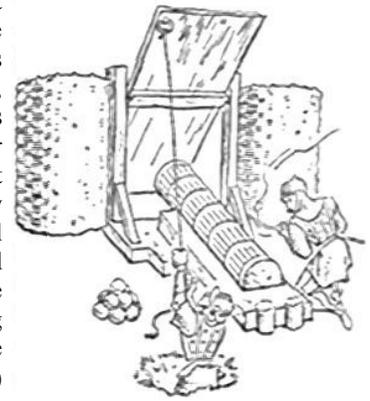


15th cent.
Siege Mounting

Siege operations, 15th century

weighed 8 cwt. Owing to the increase in the size of cannon, the method of firing the charge by applying a hot iron (which was obviously inconvenient) was superseded by a plan of priming the vent with loose powder, fired by means of a match.

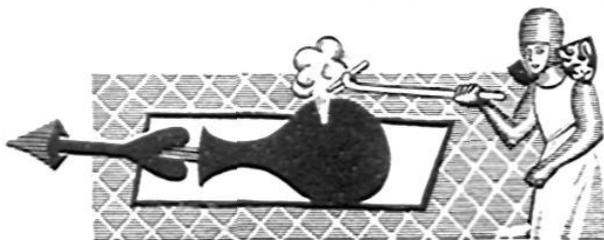
The illustration shows how siege warfare was conducted. Notice the fixed mounting of the gun and the gunners' shield for protection against arrows. Sometimes the guns were fired in pairs and had shields of wood, fixed or movable. (It is interesting to consider that when in the latter part of the 19th century shields were again used for field artillery a loud outcry came from the Press against something that was not in the true tradition of the artillery.) Even so, most of these cannon had no special carriages, for a Scots Act of Parliament in 1456 speaks of "Carts of War" for conveying light artillery.



Siege operations, 15th century

HEAVY GUNS

The most famous of heavy siege guns of this period is the bronze cannon of 12 palms (25 inches) caliber made by Mahomet II for the siege of Constantinople in 1453. It weighed nearly 19 tons and was 17 feet long. It required a frame or carriage of 30 wagons to move it and was drawn by a team of 60 oxen; in addition, 200 men had to march beside it to support the weight, while 250 workmen went ahead to smooth the roads and strengthen bridges. With all this preparation, however, it took two months to most it 150 miles. When fired, the piece rested on the ground the breech being embedded. Handspikes were placed in the sockets to facilitate the laying of the piece. Its stone



Vasi or Pot de Fer (from a 1326 manuscript)

pellet weighed over 600 lbs., with a range of one mile—and the fastest rate of fire achieved was seven times in one day. Though ridiculously cumbersome it showed an ambitious spirit in the desire for really heavy artillery.

Another famous piece of large caliber is Mons Meg, now in Edinburgh Castle, and believed to have been forged at Mons in 1461-83. It has a 20" bore and fired a 330-lb. stone shot. According to an old record Mons Meg or "Munce," if discharged with 105 lbs. of powder well rammed in the chamber and set at an angle of 45°, could project an iron ball 1,408 yards or a stone one 2,876 yards. This gun was constructed on the principles given above, that is, of long bars welded together, with hoops of iron shrunk on to them. This can clearly be seen (p. 724) at the point where the outer hoops have broken away.

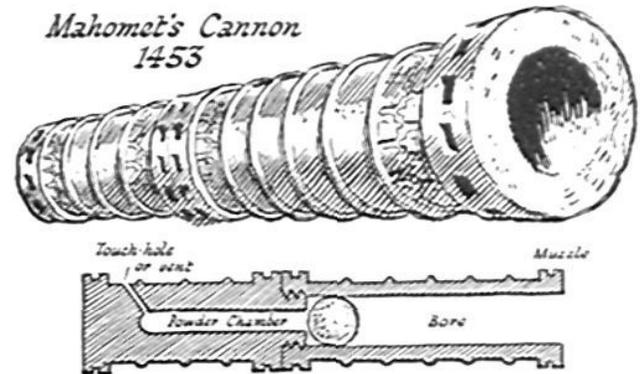
At the same time many experiments were made in producing



Breech Loading 'Petrieroe' 1461

breech loaders—one of which is shown here. The charge was small enough for this to be practical, but when charges and pieces became larger due to increased requirements, the breech was no longer strong enough to withstand the increased strain. This problem was not solved until the middle of the 19th century.

Most of these guns were treacherous and unreliable. On record are many instances of unfortunate accidents. Perhaps the most notable is the rather charming account of the death in 1460 of James II of Scotland during the siege of Roxburgh Castle: "While this prince, more curious nor became the Majestic of any Kinge, did stand near-hand where the Artyllaire was discharged. His thigh-bone was dung in two by a piece of a miss-framed gune that brake in the shutting, by the

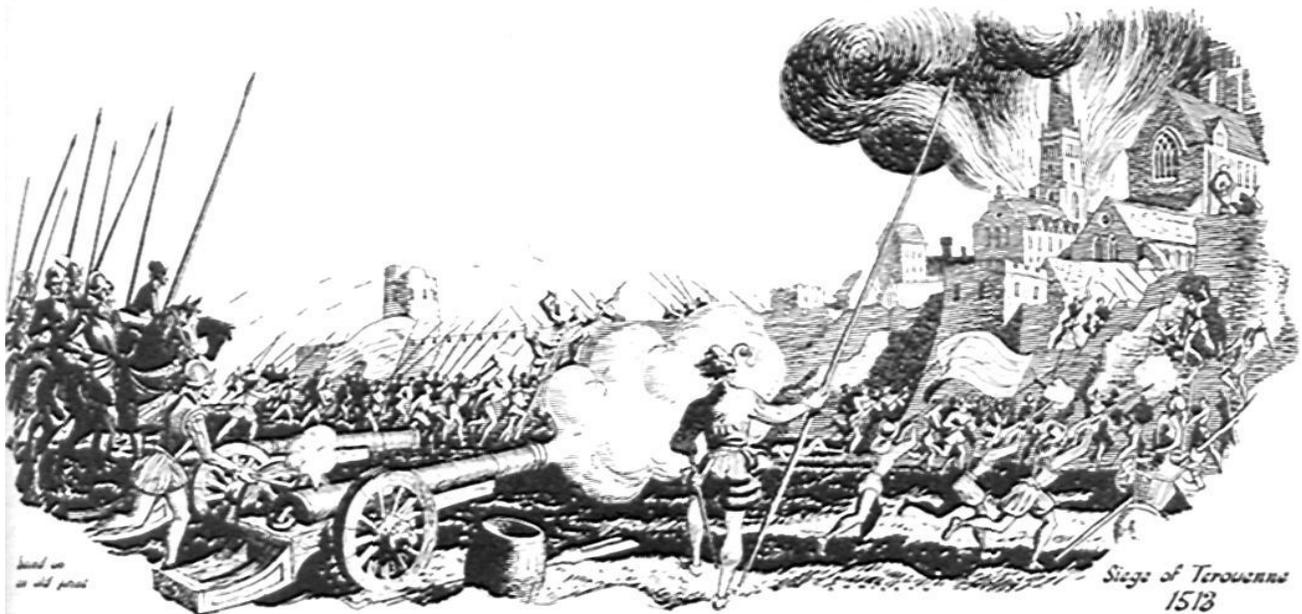


which he was stricken to the ground and died hastilie." Not until the end of the 15th century was an effective control of gunpowder achieved.

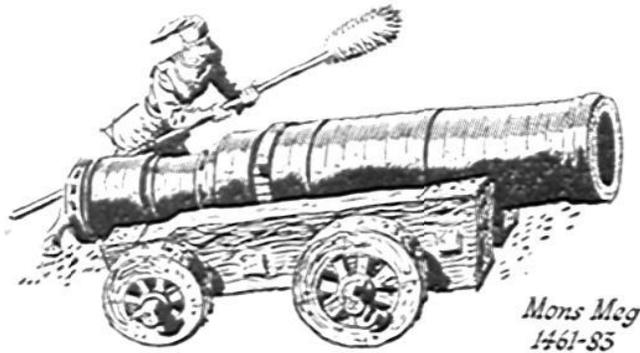
Guns developed very slowly after the initial impetus of invention had slackened, but the attempt to design really heavy pieces still showed itself up to the 16th century. One illustration here, based on an old print, shows the use of heavy cannon in the siege of Terouenne, 1513. "The wallis of Turwyne (Terouenne) are sore beaten with gunnes and many houses broken and destroyed. Our gunnes lie within a birbolt shote to the wallis and our miners are also near them," says an extract from a soldier's letter. It is possible that these guns were part of Henry VIII's twelve huge pieces which he called the Twelve Apostles. It is recorded that St. John disgraced himself by getting stuck in the mud and was captured.

CAST IRON

The next great step forward was marked by the introduction of cast-iron guns. The first is supposed to have been made by Ralph Hog of Buxted, Sussex, in 1542. Casting had been known from the 14th century, but due to our imperfect knowledge it had not been possible to apply it to the making of cannon. The cast-iron gun was an important advance, for it enabled the makers to produce guns much more speedily. The present 58th (Sussex) Field



Siege of Terouenne 1513



Regiment R.A. claims direct descent from these old Sussex gunmakers who produced most of the cast-iron guns which out-shot the brass cannon of the Spaniards in the battle of the Armada.

AMMUNITION UP TO 1500

Mention must be made at this point of the various kinds of ammunition used up to this time. The earliest projectile was the arrow or iron dart, weighing about 7 oz. and bound with leather to fit the bore of the gun. Though experience proved them to be worthless as firearms they dragged on a lingering existence for over 200 years. Stone shot had been used in machines for many centuries; though they were on trial for cannon in France during 1346 it is doubtful whether the following ballad of the battle of Crecy refers to guns:

"Gunners to shew their art
 Into the Town in many a parte
 Schot many a fulle great stone,
 Thankes be to God and Mary mild
 They hurt neyther man, woman or childe;
 To the houses though, they did harm."

Although stone or iron shot was ideal for battering down the walls of a town, it proved to be less effective when used against troops in the open. What was required was a hail of shot with a spreading effect. This was produced either by mounting a number of small bombards on one carriage and firing them all together (the forerunner of the Gatling gun and machine gun) or by filling a canister with small missiles fired from a single piece, called case shot. In its original form canister or case consisted of old iron, nails, bolts, flints, and gravel loaded loose into the barrel of the gun. This curious assortment, known as "Langridge," must have been very effective at short ranges. Later the case or canister was introduced, and in this form was used as early as the siege of Constantinople in 1453.



Grape shot introduced at about the same time was similar to case except that the missiles (small round shot) were contained in nets or sacks and resembled bunches of grapes.

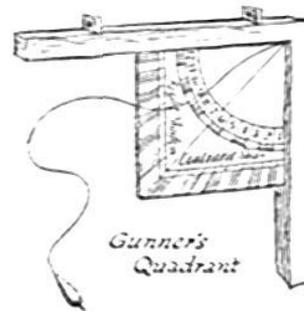
Chain and bar shot were used at this time mainly by the Navy, their primary function being to bring down the rigging of enemy ships. Twin cannon were sometimes used for chain shot, one ball in each with the chain dangling between them. A single touch-hole fired both barrels simultaneously.

After the firing of any of these missiles it was found that a proportion of powder was left burning in the chamber. It was obviously inadvisable to ladle fresh powder into the bore until this smoldering mass had been swabbed out. The sponge shown here is typical of those that performed this service. It was a familiar sight with the guns up to the end of the 19th century.

The earliest mention of iron shot in England is in 1350. The accounts of John de Sleaford, Clerk of the King's Privy Wardrobe, prove that in 1372-74 men were employed in the Tower in making leaden "pelottes" for guns. No doubt the high cost of producing such metal shot and the fact that a higher charge of gunpowder was necessary in order to throw them over required distances, limited their use considerably. It was not until almost a hundred years had passed that the use of iron shot became general.

QUADRANTS AND BALLISTICS

Even though most activity had been directed toward the making of large pieces and the largest amount of noise, it must not be supposed that the science of gunnery had been neglected. A book written by Nicholas Tartaglia (an Italian) in 1537-43 and dedicated to Henry VIII gives some interesting information about the use of guns at that time. In it he suggests means for causing "any great piece of artillerie to make in his discharge an exceeding great noyse and marvellous rore." Again, the noise made by the gun was considered of far greater importance than the effect of the shot.



The gunner's quadrant shown here is an instrument for measuring angles, or as Tartaglia puts it: "This instrument will help us to judge of all the variable positions or elevations that may happen in any peece of artillerie whatsoever . . . The whole square (right angle) shall contain 144 equal parts which I call minutes." Twelve of these minutes equalled "one point." It could also be used for measuring angles of sight and plotting the position of targets. It should be mentioned that the English divided the right angle into 90 degrees as they do today.

His diagram of ballistics contains most of what we know today, the "visual line" being our present line of sight and the "way of the pellet" (a rather poetic description of trajectory) showed that he was fully conscious of what happened to the projectile in flight. Mention is made too

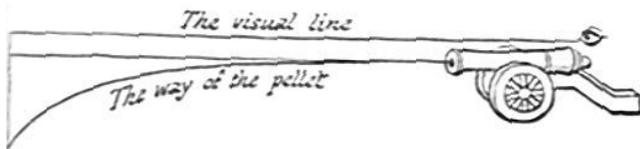
of night-laying and cartridges, and the accompanying drawings show that the use of "firewoorkes" (as well as the use of incendiary arrows) had by no means been discontinued.

FIRST PERMANENT FORCE OF ARTILLERY

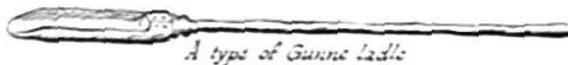
While Tartaglia was concerned chiefly with the science of artillery, Henry VIII bent all his efforts to its organization. He was very artillery-minded and established the first permanent force of gunners in England when he appointed a master gunner and 12 paid gunners at the Tower. The idea was extended and master gunners held permanent positions in all the main towers and castles where, in addition to caring for equipment, they trained their gunners and taught certain civilians who were paid a retaining fee and came up for service when called upon. The master gunner at the Tower of London was called the Master Gunner of England. When artillery was required for a campaign it was organized as a "Trayne" to which certain pieces of ordnance were allotted together with master gunners, mates, and mattrosses, these latter being gunners' assistants. With the "trayne" wherever it went were many wagons following behind and carrying all the comforts of life, even including hired women. The term "Son of a Gun," originally one of abuse, is supposed to have sprung from this practice.



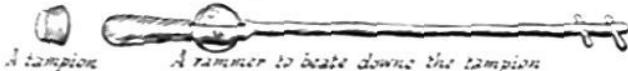
A firewoorke which may be shotte out of great ordnance.



The "trayne of artillerie," unlike the rest of the army, was controlled and administered by a Board of Ordnance, at the head of which was the Master (later Master General) of Ordnance. He signed all artillery and engineer officer commissions and it was this fact that resulted in the wide distinction between these officers of ordnance and officer of other arms, whose commissions were signed by the King. From this it can be seen that engineers (or pioneers and miners) were on the same footing as the gunners. Today they wear the same combination of colors as the R.A., perhaps the only visible reminder of this bygone fellowship.

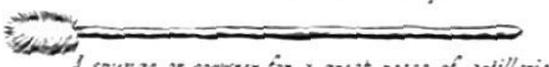


A type of Gunner ladle



A tampon

A tammer to beate down the tampon



A sponge or scower for a great piece of artillerie

NAMING OF GUNS

Guns of the "trayne" were called "pieces of Ordnance" (hence the word "piece" as applied to the gun today) and were named individually and according to size after all kinds of monsters.

The following table gives names, diameter of the bore, and weight of the shot of typical pieces. The diameter of the shot was 1/4" less than the bore in each case:

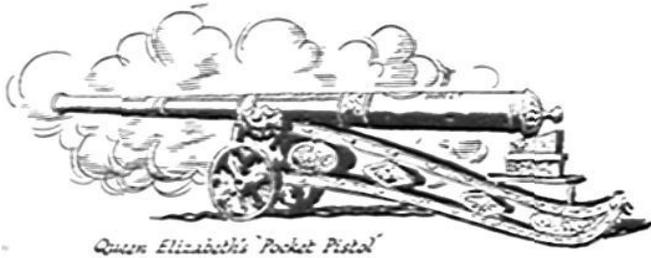
Double Cannon (eldest and biggest sorte).....	8 1/4"	70	pr.
Double Cannon (ordinary)	8 "	64	pr.
Demy Cannon (eldest and biggest sorte).....	6 1/2"	38	pr.
Demy Cannon (ordinary)	6 1/4"	33	pr.
Culverings (eldest and biggest sorte)	5 1/2"	20	pr.
Culverings (ordinary)	5 1/4"	17	pr.
Demy Culverings (eldest and biggest sorte) ...	4 3/4"	12 1/2	pr.
Demy Culverings (ordinary)	4 1/2"	10	pr.
Saker (eldest and biggest sorte)	4 "	7 1/4	
Saker (ordinary)	3 3/4"	6	pr.
Minyon.....	3 1/4"	3 3/4	pr.
Faucon.....	2 3/4"	2 1/8	pr.
Fauconet.....	2 1/4"	1 1/8	pr.

In addition to these guns, mortars were used extensively by the artillery, the word "mortar" derived from the German "Meerthier," meaning seabeast. They had very short barrels and only very small propellant charges were used in them. In action they were employed to drop large shells over the walls of a besieged city into the town. Henry VIII obtained two



gunmakers from the Continent, Peter Bawd and Peter Van Collen, to make large mortars and shells for him in 1543. Some of these mortars measured 11 inches and 19 inches in diameter, and the shells were stuffed with "wild fire or firewoorkes and a match (fuze) that the firewoorke might be set on fire for to break in smal peeces, whereof the smallest peece hitting any man would kill or spoile him." Whether they were successful or not is difficult to say, but by 1588 explosive shells were used to good effect, though it must be understood that they could only be fired from mortars or bombards with small propellant charges. The method of igniting the fuze was either by placing the shell in the bore (fuze toward the charge so that on being fired it would ignite the fuze) or by placing the fuze toward the muzzle, when it was lighted by a match thrust down the bore. It needs no imagination to appreciate the high mortality among those gunners who had to perform this latter task.

Heavy bombards in Germany gave place as early as 1385



Queen Elizabeth's 'Pocket Pistol'

to lighter ones mounted on wood and supported on a fork or hook, hence the word "Hakenbüsche"—corrupted by the English to Hackbut, Hagbush and finally to Harquebus. A later improvement was the fitting of a stock to the piece, the whole small enough to be carried by hand. Thus the rifle was a development of the gun and not vice versa, as might be supposed.

Ranges for the heavier guns had not increased very much since the early days. Nicholas Tartaglia gives a table of ranges (circa 1588) possible with two guns, the Faucon and Saker:

Faucon: poynte blank 320 yds. Utmost Randon (extreme range) 1280 yds.

Saker: poynte blank 360 yds. Utmost Randon 1440 yds.

Compare these with the inscription on Queen Elizabeth's "pocket pistol," a bronze gun for coast defense at Dover Castle:

"Load me well and keep me clean
I'll carry my ball to Calais Green."

This must have been wishful thinking on the part of the maker. Notice above the method of applying elevation, which had been used with one or two exceptions from very early times: a quoin or wedge placed under the breech and put into position by means of handspikes. The gun was cast at Utrecht in 1544 and presented to Henry VIII. Its total length was 24 ft. 6 in., with a caliber of 4.75 inches, but for all its size its shot weighed only 12 pounds.

Guns had developed very little since the introduction of cast-iron. Breech loading was not used at all for heavy pieces which, with their smooth bores and round shot, had still to be perfected as really efficient weapons. The following extracts from personal accounts of old wars will give some idea of their capabilities.

The Siege of Havre de Grace (Newhaven, Normandy), held by English and stormed by French, 1563: "The next morning after the departure of Mr. Fisser, our knight porter, the bartrey (battery) beganne at our grene bulwark . . . which as yet hath done small hurt to that place, but they have beaten down our steple on which stode iii (3) fayre Demi-Colveryns to skowre the topp of the hills, but now dispaced, and so are almost all the peeces on the same bullwarke . . . They (the French) entrenche along the beache to beate downe our castel. Dick Saunders is killed, so is our water-bayly, whose braynes were streken out going in the stretes, the master of the ordnance is hurt of the face and foote. . . ."

Siege of Elfsborg, Sweden, by Danish and English in 1612: "Parts of the English forces came before Elsborough Castell in

Sweden on Thursdayer the 14 of Maye and landed on Satterdayer the 16 of the said month. Then was the ordinance planted, and on Friday 22th by 7 a clocke in the morning the King (James I) began to playe with 7 peeces upon one of the towers of the castell contynually tyll ten a clocke, at which tyme he had beaten downe parte of the tower, having spent 200 shot.

. . . . at 2 a clocke the same day . . . he commanded the cannon to playe agayn, and before 5 a clocke (having drawne downe more greate peeces) he had with 286 shott made a breache for 3 to enter abreast. . . ."

If seven guns had fired continually for 3 hours and expended 200 rounds, the rate of fire must have been something like one round per gun in 6 or 7 minutes, a slow rate of fire as we know it today. Consider too the amount of ammunition (286 rounds) required to make a breach in the wall to allow three men to pass through abreast. Even allowing for miss-hits, this is a terrific expenditure of ammunition for such a small beach.

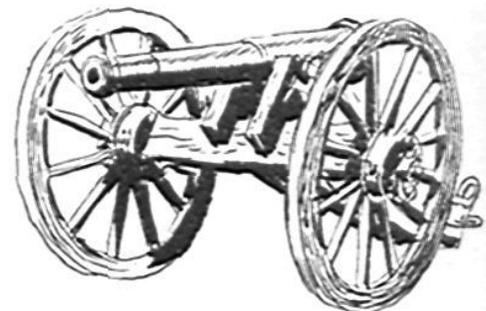
The next extract concerns an action which was quite different from the form of warfare so far experienced.

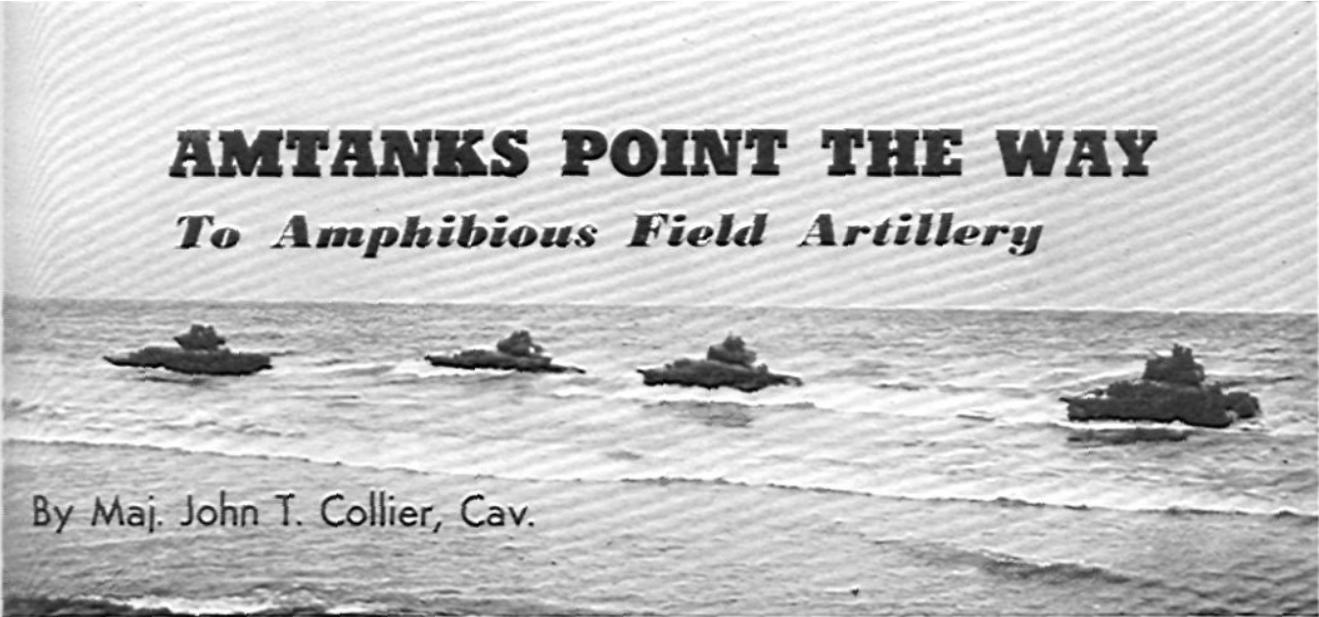
Fight at Southam, Warwick, in 1642, recounted by a subaltern in the Earl of Essex's army: "Monday morninge wee marched into Warwickshire . . . until wee came to Southam . . . in the morninge early our enemise, consisting of about eight hundred horse and three hundred foote, with ordinance . . . intended to set upon us before wee could gather our companies together, but beinge ready all night, early in the morninge wee went to meet them with a few troopes of horse and sixe feild pieces, and being on fier to be at them wee marched thorou the coarn and got the hill of them, whereupon they played upon us with their ordinances, but they came short. Our gunner tooke their owne bullet, sent it to them againe and killed a man and a horse. After, wee gave them 8 shott more, whereupon all their foote companies fled and offered their armies in the townes adjacent for twelve pence apiece."

This stirring and humorous account of what was simply a skirmish shows that cannon fire was not very effective at anything but point blank range. The reported conduct of the infantrymen, if taken literally, seems to indicate that there was considerable lack of discipline in the army of that time; but it may be that the writer was only poking sly fun at them.

(To be continued)

*Falconet
1600*





AMTANKS POINT THE WAY

To Amphibious Field Artillery

By Maj. John T. Collier, Cav.

When his battalion was issued forty-eight new-type amphibian tanks in August of 1944, Lt. Col. O'Neill K. Kane, appraising the virgin vehicles, observed that they didn't look like tanks to him. Not even amphibian tanks. Nor did they look like tanks to his officers and vehicle crews. These men ought to know: they had manned and maneuvered M4 mediums and M5 lights all over Fort Riley, and the marks of their tank tracks crisscrossed the western desert for hundreds of miles. And at Fort Ord they had become equally at home in amphibian tanks, turreted and armed very much like the M5s they once manhandled on land.

While still in the Mojave Desert, the 776th Tank Battalion distinguished itself by scoring the highest of any battalion to take the Armored Force Crew Gunnery Test up to that time. The marksmanship of ex-cavalrymen and the gunnery of ex-land tankers were combined in the unit's tradition when it took to the surf as the 776th Amphibian Tank Battalion at the beginning of 1944. In Hawaii six months later, vehicle crews were getting the feel of new vehicles equipped with 75-mm howitzers.

The new amphibian tank was not entirely unfamiliar to the crews of the 776th. A combination of two principal component parts which, separately, had figured in the battalion's past experience, it came to be known as the "amtank." (This distinguishes it from its cargo-carrying counterpart, the amphibian tractor—nicknamed "alligator" or "amtrac.") The vehicle itself is an LVT—landing vehicle, tracked (Mk IV (A) (4)). Drivers of the battalion were already skilled in driving LVTs overland, launching or landing them through heavy surf, and piloting them on open sea. The turret, with 75-mm howitzer and panoramic sight (M12A5), is that of the M8 assault gun, a platoon of which is in each land tank battalion.

Entirely new, however, were the concept of employment of the new equipment and the changes in organization necessary to put this concept into effect. Amphibian tanks were developed expressly for the purpose of leading assault waves

ashore during landing operations in the Pacific. The original amtanks were armed with 37-mm cannon; using gyro-stabilizers, gunners could shell the beaches during the ship-to-shore phase of an assault. Such fire on the beaches was to prevent the enemy from re-manning beach positions after the naval and air bombardment had been lifted to allow our landing forces to move ashore. On the beach the amtanks could function to a limited extent as land tanks. However, necessarily light armor precluded their extensive employment on land tank missions, and as a result the scope of use of these specialized vehicles was very narrow.

Col. Kane conceived a much wider employment of his newly equipped battalion, and determined to exploit the capabilities of the 75-mm howitzers to the maximum extent in providing artillery support for assault infantry. The account of the conversion and re-training of this entire battalion two months prior to its embarkation for combat is a pertinent commentary on the rapidity with which it is possible to teach new techniques to well trained and well disciplined troops.

For its first operation the 776th Amphibian Tank Battalion was attached to the 7th Infantry Division, veteran Pacific fighters under the command of Maj. Gen. A. V. Arnold. To Gen. Arnold the battalion commander presented his plan to train the 776th in field artillery methods, and to provide artillery support for the division's assault regiments as soon as they needed it ashore. An artilleryman himself, Gen. Arnold fully appreciated the value of having such fire support immediately available upon landing. Considering this new idea an important contribution to the technique of amphibious warfare, Gen. Arnold provided the instruction and facilities for training which made it possible.

The time for this training was short: it was begun in July, 1944, and on 9 September the battalion embarked with the division for Leyte. Moreover, there was not then (and is not now) a single officer or man in the battalion

who ever served in the Field Artillery. Finally, the tables of organization and equipment under which the battalion must operate were designed for a tank battalion, not an artillery unit. No fire direction or communication personnel for fire control are provided for in the T/O & E,

and some necessary fire control equipment is not provided for in the allowances. These are a few of the difficulties which faced the Battalion Commander and his staff for the task ahead.

On the credit side of the ledger were the battalion's flair

In planning for re-entry into Europe, to give immediate support to water-borne infantry the British developed swimming tanks. Known by the code letters "D.D." (for "Duplex Drive"), they were of course soon nicknamed "Donald Duck." Air cells were packed between the upper half of the tank and a collapsible rubberized

wall that extended above the turret. Jointed shafts permitted the propellers to fold out of the way on land. The crews wore a modified version of a submarine escape apparatus. These vehicles rumbled and swam not only from the Normandy coast to Berlin, but also up Italy to Rome and beyond.



"Valentine D.D." tanks, their rubberized walls folded down, wait to board landing craft. In still water they reach a speed of four to five knots. Note their high exhaust stacks.

This wading "Sherman D.D." is towing a float, called a "porpoise," for carrying supplies and ammunition.



A "Sherman D.D." crosses the Adige River in Italy.

A Canadian driver tests his escape apparatus.



Passing the ammunition to amtank howitzers in the Philippines.

for gunnery, and the receptiveness and enthusiasm of its officers and men. The battalion's proficiency in tank gunnery has already been mentioned. A number of its officers had attended advanced gunnery courses of the Armored School at Fort Knox, and many were already familiar with the basic principles of indirect fire. Morale among the troops was singularly high, and rapid absorption of new techniques was old stuff to most of them. Through previous reorganizations many of the officers and men had successively been skilled horse cavalymen, light tankers, medium tankers, and amphibian tankers. They were ready and anxious for a try at becoming skilled artillerymen. Their goal was high and the time was short.

The 7th Division Artillery, commanded by Brig. Gen. J. L. Stewart, took the battalion under its wing, gave direction to the training program, and secured fire control equipment. The reorganization of the battalion within the limitations of an incompatible T/O & E, however, was purely an internal problem for the battalion commander and his staff. It was not easy. Fire direction center personnel had to be taken from other duties, as did wire parties and telephone operators. The basic organization of the unit and apportionment of equipment were drastically changed.

Capt. Ernest Elliott of the 7th Division Artillery was detailed as unit instructor. His first task was to train the officers, to accomplish which he established a school at the battalion's camp on Oahu, T. H. Enlisted personnel were schooled concurrently in their new specialized duties, and finally gun crews and fire direction personnel were exhaustively trained in gun drill and simulated fire missions. "Final exams" were given at Schofield Barracks, where the battalion bivouacked for a week and fired service ammunition for the forward observers who would fire the units in combat. Inspected by Gen. Arnold and Gen. Stewart, the battalion passed its tests.

Although the battalion has been reorganized along conventional field artillery lines, its nomenclature differs. The four-gun batteries are platoons. Three of these platoons comprise a company, which is the equivalent of a battalion of 75-mm artillery. There are four companies—a total of forty-eight guns—in the battalion. In each company headquarters are FDC and communications vehicles.

Due to the lack of time prior to the Leyte campaign, only platoon fire direction personnel were trained. Forward observers fired individual platoons. As soon as the tactical

situation on Leyte permitted, training was resumed under the 7th Division Artillery and was supervised by Capt. Willis Hauser. Company FDCs were set up; they operate exactly like artillery FDCs with the exception that no VCOs are provided. VCOs are not necessary because any time fire delivered by the battalion is with ammunition using the new VT fuze.

Communication between FOs and FDCs is by wire or radio. The artillery furnishes SCR-609 radios to the companies. If overlapping channels common to the amtank 500 series radios and the artillery 600 series radios were made available for fire control, the amtank units would need no radios that they do not already have.

The battalion less Co D was attached to the 7th Division for the initial phase of the Leyte campaign, and elements of the battalion worked with the division throughout the operation. Co D was attached to the 81st Infantry Division for a concurrent operation in the Palaus. The combat experience of the battalion is significant, and fully justified the time and effort invested in its artillery training.

The landing on Leyte was made in accordance with the pattern which has become familiar. The amtanks constituted the first wave of LVTs, and covered the division front. Noteworthy in this connection is the technique of firing from the water developed by the battalion. Unlike the amtanks armed with 37-mm guns, those armed with the howitzer are not equipped with gyro-stabilizers. Gunners were taught to fire on the upswing of the bow when the shoreline was observed between the zero and 400-yard line



Dug in to its gunwales, this amtank added fire to heavy barrages on Okinawa. A maintenance amtrac is in the background.



Getting set for "Fire mission!" on Leyte.

in the telescopic sight reticle. By this method accurate area fire was placed on the beach during the assault.

Ashore the amtanks reduced by direct fire the pillboxes and a few Jap positions before the infantry passed beyond them. Amtank units went into battery positions about 200 yards inland, and thenceforth fired only indirect fire as directed by forward observers. Amtank companies were in direct support of assault regiments until the Division Artillery came ashore; thereafter they reinforced artillery battalions. The battalion always operated as a part of the Division Artillery. Missions included all types of fire—normal barrages, preparations, neutralizations, and precise adjustments.

After the 7th Division had moved across the mountains to the west coast of Leyte, elements of the 776th made a spectacular movement

boosted the water mileage to 125, and some units accrued a total of more than 300 miles by the end of the operation.



Amtanks prepare for indirect fire immediately after landing.

The 7th Division was pushing up the coastal mountain range toward Ormoc against stubborn resistance. Strong Japanese defenses on reverse slopes, well defiladed from our artillery fire, were making the advance costly. It was in this situation that the amtanks undertook to by-pass the front lines by water, land in rear of the enemy, and shell his positions on reverse slopes which were exposed to the beach. The first such strike was made at dawn on 5 December, and achieved complete surprise. As they advanced by water up the coast, the amtanks shelled the Jap-held villages of Balogo and Tabgas from the



Battery positions were carefully dug in on Okinawa, where the Japs too had artillery.

water. From favorable positions farther north, they poured many hundreds of rounds of HE and WP into enemy positions in the hills. The enemy positions, while on reverse slopes to our artillery, were on forward slopes in relation to the amtank positions. On 7 December the enemy-held town of Albuera was shelled from the water; on the following day a landing was made at Albuera and enemy supply and communication installations were shelled at point-blank range. After shelling Albuera on the 8th, the amtank force made a second landing south of the town and fired observed fire for the infantry. The previous landings on the west coast had been made by amtanks unaccompanied by infantry, and the missions were accomplished by direct fire.

On 7 December other elements of the battalion attached to the 77th Infantry Division landed with that division below Ormoc and participated in the drive which captured the city. Members of the battalion were the first American troops to enter Ormoc. The amtank units furnished artillery support to the 77th Division by operating as part of the Division Artillery. One of the noteworthy achievements of the amtanks in Ormoc was the heavy fire which they placed on a Japanese ship attempting to land reinforcements. This was achieved by indirect methods, and resulted in the ship's being set ablaze. Other units subsequently took this ship under fire and it was sunk in the harbor.

Especially significant from the standpoint of the artilleryman was the operation against Palompon by an amphibious task force of the 77th Division. This task force staged at Ormoc on Christmas Eve for a movement across Ormoc Bay with the mission of seizing Palompon, the last enemy escape port on Leyte. The operation was unique in that *all of the artillery support provided for the task force was rendered by amphibian tanks*. The operation was unique in two other respects: it was the first time assault infantry ever made a shore-to-shore movement in LVTs, and the 38-mile crossing was the longest movement across open sea ever made by amphibious vehicles.

In January an amtank-led task force of the 7th Division, with infantry embarked in amtracs, made a similar overwater attack to liberate the Camotes Islands. As at Palompon, the artillery

consisted of the amtanks which led the assault on the landing beaches and set up ashore for observed indirect fire. Stiff resistance from strong enemy positions made this a difficult operation. The amtank batteries fired a tremendous quantity of ammunition day and night until the Japs were pounded out of their positions and were defeated by 7th Division infantrymen in the open. Both ground observers and air spot were used.

Okinawa was the greatest artillery battleground in the Pacific war to date: here were massed the largest concentrations of U. S. and Jap artillery employed in this theater. Here all four companies of the 776th successively supported the 7th and 96th Divisions with all types of artillery fire. Firing one close preparation for the 7th Division, three companies of the battalion expended 6,000 rounds in 90 minutes. Except for the bombardment of the beaches in the initial assault, all of the firing done by the battalion on Okinawa was in reinforcement of field artillery. The battalion fired 41,297 rounds in support of the infantry in this operation.

The organization and firing techniques adopted by the 776th have been officially recognized by higher headquarters as the best means of employing amtanks, and the other Army amphibian tank battalions have adopted them. These units have sent members of their staffs to this battalion to study the new methods first hand; uniformity of methods and capabilities among Army amphibian tank battalions should result. The T/O & E has not yet been changed to meet the new requirements of such battalions, but this problem is now receiving attention and study.

The employment of amtanks as field artillery may be prophetic of future developments. Even in its present form, the amtank is a self-propelled amphibious artillery piece. Each vehicle carries 200 rounds of 75-mm ammunition in its hold. An amtank unit is capable of leading the infantry ashore in amphibious assaults, and providing *immediate* artillery support in the critical period following the landing of the first waves. These capabilities point to the possibility of developing self-propelled amphibious 105s which may become a new type of organic field artillery for divisions which must wage extensive amphibious warfare.

NOTICE OF ANNUAL MEETING, U. S. FIELD ARTILLERY ASSOCIATION

In compliance with Article VII, Section 1, of the Constitution, notice is hereby given that the Executive Council has fixed 5:30 P. M. Monday, December 17, 1945, as the time of the annual meeting of the Association to be held at the Army and Navy Club, 1627 Eye St., N. W., Washington, D. C.

The business to be disposed of will be the election of six members of the Executive Council (three Regular Army, two National Guard, and one Organized Reserve), and the transaction of such other business as may properly come before the meeting. Nominations may be made by proxy, or from the floor of the meeting.



THE 136th FIELD ARTILLERY BATTALION

By Maj.
Archibald M. Rodgers,
FA

A section of Battery C of the 136th Field Artillery Battalion, 37th Division, dug in and defiladed near Baguio, Luzon, P. I.

The 136th Field Artillery Battalion, medium artillery of the 37th Infantry Division, embarked for overseas service among the first troops to be sent to the Pacific. Leaving San Francisco on 26 May 1942, the battalion disembarked at Auckland, New Zealand, on 12 June 1942. The generosity and hospitality of the New Zealanders were comparable only to the beauty of their picturesque country; it was all too soon when we had to reluctantly bid adieu to Auckland and set our course for the islands farther north.

Sailing on the luxurious U. S. S. *President Coolidge*, the battalion left Auckland harbor on 31 July 1942. The prospect of new experiences in the none too highly recommended Fiji Islands was faced with mixed anticipation and foreboding. Disembarking at Suva on 3 August 1942, the men were pleasantly surprised to find a most colorful and typically tourist guide South Seas paradise. Despite the boarded windows, barricades, and barbed wire on the beaches, it was hard to believe that war could reach this remote and beautiful island. The scenery and climate are the finest to be found in the Pacific Islands, but there were those who longed for the bright lights, paved streets, and night clubs of the cities to which they were accustomed. There was little of which to complain in Fiji, and during the eight months spent in constructing defensive positions over the island of Viti Levu many an American soldier succumbed to the charm of the island paradise. Even those who felt that Fiji was too close to the end of civilization soon had the opportunity to discover what a desirable place it really was. For by comparison with the Solomons or New Guinea, Fiji was indeed the paradise of the Pacific.

Sailing from Lautoka, Fiji, on 2 April 1943, the battalion reached Guadalcanal, Solomon Islands, on 6 April 1943, and began what few suspected would be a twenty-month stretch in the Solomons. That night the battalion experienced its first air raid; by the time enemy air activity was finally neutralized in the Solomons in February of 1944, unofficial counts disclosed that the 136th had endured approximately five hundred enemy air raids. During the

period of this aerial activity the battalion witnessed many spectacular attacks, among them the battle over Guadalcanal on 16 June 1943 when the Japs lost approximately 100 planes of an estimated 120 while our units suffered the loss of only 6 or 7 planes. Until it departed Guadalcanal on 2 July 1943, the 136th participated in securing Guadalcanal and simultaneously equipping and training for further operations in the Solomons.

With the completion of plans for the New Georgia operation the 136th was attached to the 43d Infantry Division, which was to make the initial assault and secure Munda Airfield. The battalion disembarked from LSTs onto Kokorana Island near Rendova on 4 July 1943, after being subjected to heavy enemy air attack during the day. The unloading continued into the night, and the following day the battalion moved by LCM to positions on a small island near New Georgia known as Baraulu. From these positions the 136th could fire in support of the landings on New Georgia and could also fire on the Munda Airfield. After the field was secured the battalion moved on 7 August to positions near the airfield. Subsequently an extremely difficult move through swamps and over jungle trails to Zieta was accomplished with the assistance of tractors from the Marine Defense Battalion.

After seventy-two days of continuous action, supporting the 43d, 25th, and 37th Divisions, the 136th was relieved and returned to Guadalcanal via LCI and LST. Numerous commendations were received for the manner in which the battalion had performed its mission during the operation. On one occasion, when a division command post was attacked by a strong enemy force under cover of darkness, the 136th had adjusted its howitzers individually in a tight protective barrage enclosing the command post and driving off the attack with heavy enemy casualties. Two days after leaving New Georgia on 13 September, the battalion arrived in its previous area on Guadalcanal. Again the men returned to advanced training and re-equipping for further operations. They had not long to wait: the Marines landed

on Bougainville on 1 November 1943 and the 37th Division landed to reinforce them on 8 November.

On 17 November 1943, after an eventful trip during which the convoy underwent a heavy night attack by enemy aircraft, the 136th Field Artillery Battalion landed on the beachhead at Empress Augusta Bay, Bougainville, Solomon Islands. Immediately the battalion occupied positions, clearing sufficient jungle to permit coverage of a 6400^{yd} field of fire. Resistance by the enemy was strongest in the sector of the 3d Marine Division, and the 136th was called upon to fire heavily in support of both the 3d Marine and the 37th Infantry Divisions which constituted the First Marine Amphibious Corps. Later, when the First Marine Amphibious Corps was relieved by the XIV Army Corps, the 136th continued to deliver fires in support of the Corps. in a single day's firing during the Jap counterattack in March 1944, the battalion expended 2,500 rounds. Bougainville continued to be an active area even after the 136th had departed for the Philippines on 11 December 1944, but the bloody defeat the Japs took in March 1944, had insured the security of the Torokina Perimeter and its airfields so essential to winning the air war in the Solomons and New Britain area.

On 9 January 1945 the 37th Division participated in the Sixth Army assault landing at Lingayen Gulf, Luzon, Philippine Islands, as a part of the XIV Corps. The 136th actively supported the division in its drive to Manila, and became heavily engaged in the action at Fort Stotsenburg. Here the battalion was subjected to heavy counterbattery fire, one howitzer received a direct hit by a dud from a Jap 120-mm dual-purpose gun, one other howitzer was damaged, but the Jap guns got by far the worst of the exchange. The 37th Division rapidly pushed on toward Manila, and the 136th kept the pace despite the aggravating difficulties encountered in crossing river after river where the Japs had destroyed the bridges in the face of our advancing troops.

The 136th reached positions near La Loma Cemetery in northern Manila on 7 February 1945. From that time until the last Nip stronghold in Manila was destroyed on 3 March the battalion fired continuously, engaging targets under conditions peculiar to fighting in a large modern city. The enemy had converted a number of modern, steel-reinforced, concrete buildings into veritable fortresses against which infantry weapons and indirect artillery fire had little effect. To destroy these strong points which blocked the division advance it was decided to employ the 155-mm howitzers of the 136th in direct fire. Using concrete piercing fuzes and unfuzed shell at ranges from four hundred to as little as one hundred yards, the 136th poured 5,940 rounds into the Jap-occupied buildings between 20 February and 3 March. All sections participated at one time or another, serving their howitzers in necessarily exposed positions under a hail of enemy small arms and mortar fire. One officer and four enlisted men were killed in action and six officers and fifty-three enlisted men wounded, but the invulnerable fortifications of the Intramuros, Legislative Building, Finance Building, Agriculture Building, and other structures

were breached, permitting the infantry to eradicate the fanatical Jap defenders and end the bloody battle for Manila.

With the end of the Manila battle the men of the 136th settled down for a short rest to enjoy the social life of the once great metropolis of the Orient. Despite the destruction of the major portion of the city, there remained much to regale battle weary soldiers who had spent long months in the Solomons. And the men made the most of it.

But the gay life of the big city was not the lot of men like these. On 29 March 1945 the 136th moved to positions near Pugo to support I Corps in the attack on the mountain stronghold of Baguio. With the commitment of the 37th Division in the Baguio operation the battalion returned on 10 April to support the division, firing continuously in that capacity throughout the advance through the rugged mountains covering the approaches to Baguio. With the capture of Baguio by the 37th Division the 136th proceeded to a rest area near San Jose the first week in May.

On 30 May 1945 the battalion occupied positions south of Santa Fe in the vicinity of Balete Pass to support the attack of the 37th Division north from Santa Fe along Highway 5. Despite the rapid advance of the division to Aparri, in the course of which 225 miles were covered in twenty-six days, the 136th maintained continuous supporting fires. The problems of ammunition resupply, rapid movement over bad roads and destroyed bridges, and infiltration by bypassed enemy forces taxed the utmost efforts of the battalion. When the Japanese surrender came on 15 August 1945, the 136th was in positions east of Highway 5 between Aparri and Ilagan, firing on enemy forces retreating into the unexplored fastness of the Sierra Madre Mountains.

When the cease firing order came on 15 August the 136th had fired a total of 80,940 rounds in almost continuous operations over a period of two years. Of these, 42,757 rounds were fired in the Solomons, 38,183 rounds were fired on Luzon, and 5,940 rounds of the total had been delivered by direct fire.

With forty-one months overseas, nearly all of it in the Solomons and Philippines, the men of the 136th consider themselves acclimated to the tropics and the Japs. There is a noticeable attitude of veteran artillerymen in their manner. There is also the satisfaction of having seen a rough job through from the beginning to end and having performed throughout in an outstanding manner.

The present 136th Field Artillery was activated in the Ohio National Guard with Brigadier General Leo M. Kreber, Commanding General 37th Division Artillery since 1940, commanding. Colonel Kenneth Cooper, who has been 37th Division Artillery Executive Officer since the 136th became a battalion with the triangularization of the division, succeeded Gen. Kreber and commanded the regiment during its first year of Federal service at Camp Shelby, Mississippi. Since its formation the battalion has been commanded successively by Lieutenant Colonel Henry L. Shafer, who succeeded Col. Cooper, Lieutenant Colonel Wilbur Fricke, and Major Howard W. Zurcher, the present commanding officer, who enlisted in the 136th eight years ago.

WHAT, ANOTHER INTERVIEW!

By Capt. C. Raymond Van Dusen, AGD

"Interview . . . interview . . . interview . . . it's been that way ever since I left my foxhole in Germany! Now, here I am at a Separation Center, and they're *still* interviewing me! I'll be glad when all this red tape is piled in the corner and I can jump into my civilian job."

Oh, so you think that's all you'll have to do . . . just "jump into your civilian job." And you think your interviewing days will be over when you're out of the Army. Brother, you "ain't" even started! You're going to be interviewed until you're blue in the face.

Here's what you're up against. If you're going back to your old job . . . it'll be simple. First, you'll go to sort of a homecoming interview, where a personnel man will welcome you back and bring your records up to date. Next, your status as far as employment and seniority rights will have to be studied . . . another interview. Then there will be one on your placement (plus, possibly, some testing); there may be another on individual problems; and, when you heave a sigh and think "Well, that's that!" one of the boys from the front office will be around to interview you on the job—sort of a follow-up. There may be several of these. Do you call that "jumping back into the old job"?

Now, if you're looking for a new position, that'll be different! You'll get most of these plus the number it takes to land the dog-gone job.

Actually, it's not the number of interviews that should worry you—your concern should be your ability to get results. You're out to line up room and board for yourself and perhaps a wife and kids. You've got to make good, or else.

After all your experience in uniform, you probably think you'll do all right. But interviewers (who talk to others like you day in and day out) disagree, and they ought to know. Remember, it's their business. So keep these tips in mind.

Any GI knows that he should shine his leather, polish his brass, and put on a well-pressed uniform before he goes in to see the CO. But will this training carry over when he goes back into civilian life? It should. If he is going to ring the bell, it must.

Look your immaculate best when you go back for that old job or start your search for a new one. The interviewer is

going to gain immediate impressions of you, and you want these to be the best, especially if you're looking for a white collar job. He doesn't want men in his office or behind his counters whose cuffs are frayed, shoes are run down at the heel, shirt collar soiled, or pants baggy. He is going to expect you to look smart. So, to put it briefly, dress soberly and be neat and clean.

If you're after a job in the trades or as a laborer, you may decide that it would be wise to appear in your working clothes so you can go on the job right away. Give the matter careful consideration and use your best judgment. But remember, there's no excuse for shaggy hair or a stubble on your chin.

When the results of an interview mean getting the job you want, naturally you will be "on edge" and you may be awkward. Tell yourself, "Relax! Be calm!" But it won't do any good. As soon as you step into that interviewer's office—if not much sooner—your knees are going to get weak, your heart is going to start pounding like Gene Krupa's drums, and you're going to get plenty ruffled.

In any case, alert yourself for the interview. Go over your civilian and military qualifications for the job you have in mind. It will add to your confidence and prepare you to answer questions without hemming and hawing.

Keep your mind on the interviewer and what he says. Remember that you are talking *with* another man and that his main interest is in abilities. It is just as important to him that this interview be successful as it is to you. He has a job to do. His responsibility is that of finding the right man for the position. The spotlight is focused on him as well as on you. Look at it that way and it will put you less on the defensive. Chances are, your knees will lose their shakes.

If the interviewer is a pretty important fellow in your estimation, don't let it floor you. Look at him as a man. You'll probably find that he has a crooked nose, a pimple on his chin, or a bald pate. He's just a human who would be as uncomfortable as you are if he were in your shoes. And remember, as Knute Rockne once said, "He pulls on his pants one leg at a time, just as you do."

Put these techniques to use and you'll find that you avoid some of the action-errors on his score card. You'll be able to keep your head; your mind will be working and your body relaxed.

Remember, interviews are not all cut and dried. Most anything can happen—the interviewer's wife may drop in on him, he may have to answer the phone, he may be called out of the office—and you've got to be ready to make a quick and suitable decision as to what to do. Perhaps you should excuse yourself and go to the waiting room until he is free, or maybe it will be best to occupy yourself by looking out the window. In any event, do the thing that is

ABOUT THE AUTHOR

Capt. Van Dusen, Chief Personnel Consultant at the Army Ground and Service Forces Redistribution Station at Hot Springs, Arkansas, has personally interviewed and counselled over 10,000 enlisted men from every walk of life during his four years of service. As a civilian, he was a professor at Michigan State College, where he taught courses in Speech and Psychology. He holds the Doctor of Science Degree from the University of Michigan. In addition to a textbook entitled *Training the Voice for Speech*, he has published numerous professional and scientific articles in the journals and considerable poetry. He is author of *Cup Your Ears and Speak*, published in *Coronet* in November, 1939.

easiest on the interviewer and don't listen in on his conversations. He'll estimate your ability to handle unexpected happenings as well as those that are routine.

Some of the interviewers have little tricks they use to size up a man. One, with a Detroit automobile company, leaves an open letter on his desk facing you. He watches to see if you'll get nosey, to see if your mind and eyes wander far enough away from him to read it.

A personnel manager in a California aircraft plant tests his callers by laying one of his fountain pens on the floor so it can be seen easily. Then he observes whether or not the prospective employee will pick it up. If it's left on the floor, he thinks that the applicant is careless, slovenly, or too backward to interrupt routine by retrieving it.

Another uses the technique of having an inviting chair in his office and waits to see if you sit down of your own accord or will remember your status as a visitor and wait for an invitation to be seated. These are little things but they tell interviewers much about how their applicants will conduct themselves once they are on the job.

Your speech tells the interviewer about your thinking process. Speak in a slow, dull voice and he's apt to think that you are empty-headed. Ramble, and he'll decide that you are a scatter-brain. Try to present your thoughts and ideas in an organized manner. Make him say to himself, "Here is a straight thinker!"

Talk in a friendly, homey way and watch your loudness. Speak so he can hear you easily, but don't overdo it. Chances are he isn't hard of hearing. If he is, he'll let you know and you can step up the volume. Of course the tone should be pleasant, but if you have a rasping voice, there's not much you can do to change it. You'll have to make up for it in action and words.

Listen to that man! Don't let your mind wander for a moment. He will know when this happens and discount your value as a result. Every word he speaks is important to you. Hear and think what he says, and your remarks will be quicker and much more sensible.

Don't waste his time! At the beginning he is going to "establish rapport"—that means he's going to get acquainted and set you at ease. He will probably hand you a cigarette and talk with you about some unrelated matters for a while, before he gets down to business. Let him do this and don't try to keep him talking to you on the "rapport" angle. If he wants to just "chew the fat," okay . . . don't force him to talk about you or the job even though this part of the discussion is what really counts.

He probably will bring up your military experience. If he does, what he wants to know is the training you've received and duties performed. While he's interested in your decorations, he's not going to hire you solely because of them. Of course, you've earned the right to wear them—but don't let them weigh you down. By all means don't wear them "on your sleeve." Avoid the attitudes that you-owe-me-a-job-for-all-I've-been-through and what-did-you-do-to-win-the-war? His own uniform may have had so many ribbons that it looked like a fruit salad. If not, you're still on dangerous ground and

likely to antagonize him. Remember, you're a civilian now—but a more valuable civilian because of your experiences and training in uniform. That's what counts, not the medals.

Make a wise selection of terms and watch your phrasing. Use short sentences and simple, direct words. If you've got a few sentences in mind that you intend to use at the interview, forget about them. Canned phrases usually fall flat; they seldom fit into the situation neatly, and the trained interviewer recognizes them immediately. Remember, too, this is not the place to show off your mastery of language. Of course, if he wants to get technical, give him "the works." It'll be your opportunity to show him that you are on speaking terms with your trade or profession.

This interview is just another conversation, only it's on a higher level than ordinary "scuttle butt" or "gaff." This is business—not a quiz. The interviewer wants to know you. He can't if you merely answer his questions. If he says, "How long have you worked at such-and-such a trade?" you might say, "Six years." He gets his answer, but chances are there is more you can say that would interest him. Wouldn't a few more details be better? For instance, "Six years in all—two years with the Goshen Veneer Factory and four years with the Sash and Door Company." This statement gives him a lead for further questions, and also helps to make the discussion flow.

Feel free to converse, but stick to the subject and don't talk endlessly. Speak for half a minute, let the interviewer have a few words, and then speak for half a minute again. Try to keep your part of the discussion lively, but let the other person take the lead. He's the one who's after the bulk of the information and this confab is his responsibility, not yours. Perhaps toward the end you'll lead with a question or two about hours, pay, chances for advancement, etc. He will expect you to want such matters settled and will probably give you the opportunity to do some bargaining before you accept or reject an offer.

Be careful to leave at the proper moment. Don't make it necessary for him to tell you that the conference is over. But on the other hand, don't jump the gun and start for the door before he's through. Be alert, listen, and watch for cues. Inflections in his voice, hints he may drop in what he says, and things he does, will tell you it is time to make your exit. Perhaps he will put his papers away or stand up. When the end comes, get to your feet, extend your hand, say your goodbyes, and take off. Don't dally for some extra talk. You might undo all that you have accomplished.

If after one or a half-dozen interviews you're still looking for a job in spite of your efforts to do your best in these sessions, don't be discouraged. It may be that the employers you've seen aren't in need of a man with your qualifications. You've got to remember employment's big picture. American business is built on a solid foundation of keen competition, and it's going to stay that way.

No business man is going to hire a flock of employees simply because they've won the war. To stay in business, he's got to meet competition. To meet competition, he's got to hire the *best*. And there's your first civilian mission: you've got to convince your future boss that you're the best man for the job.

ROYAL ARTILLERY BARRACKS

Woolwich

A water color drawing of the Royal Artillery Barracks and parade ground at Woolwich, England, was presented to Major General Louis E. Hibbs (second from left), commandant of the Field Artillery School, Fort Sill, Oklahoma, as a gift from the Royal Artillery Mess at Woolwich to the Field Artillery School, by Colonel Peter Gregson (left), head of the Royal Artillery section of the British Army staff in North America, with headquarters in Washington, D. C., on September 24, 1945. Looking on (left to right) are Lieutenant-Colonel N. Robert Grimston, retiring field artillery representative of the British Army staff in North America; Lieutenant-Colonel Bryan Wyldbore-Smith, new field artillery representative; and Lieutenant-Colonel R. Harry Fisher, liaison officer between the School of Artillery, Larkhill, England, and the Field Artillery School and the Field Artillery Replacement Training Center, Fort Sill.





F. A. S. EVENTS

NOTES FROM DEPARTMENT OF AIR TRAINING

Although the Field Artillery Pilot short course and the Field Artillery Mechanics short course have been canceled, no change has been made in the authorized capacities of the regular 14-week Pilot and the 10-week Air Mechanics courses. These latter are running at somewhat reduced strength due to recent separations of students from the service under the point system.

Lt. Col. Claude L. Shepard, Jr., formerly Artillery Air Officer of the American Seventh Army, is the new executive of the department. Maj. Thomas L. Hendrix, formerly Artillery Air Officer, Air Force Headquarters, is the new assistant engineering officer.

A large number of combat returnee officers are undergoing flight instructor training in the department under the supervision of Maj. Ted F. Schirmacher, formerly Artillery Air Officer, 87th Division Artillery.

Instruction is being carried currently on with the L-4 and L-6 type airplanes. Several L-56-VW model airplanes have been received. These are equipped with a two-position propeller, an improved carburetor, and VHF radio, as well as a receiver in the 200-400 kc band. The pilot's seat is equipped with throat type microphone and push-button microphone control on the stick.

* * *

The Field Artillery School will be kept in operation permanently by the War Department, Army officials announced in Washington, and all elements associated with the training program developed by the school both before and during the war, with the possible exception of balloon observation, will be continued.

The Field Artillery School has been a "big experimental center for all artillery training" for the last several years, the officials declared, pointing out that part of these experiments had consisted of artillerymen and infantrymen working together on tactics and operations.

* * *

General Jacob L. Devers, together with a number of his staff, made a brief trip to Fort Sill and the Field Artillery School late in October. Visiting Fort Sill for the first time since he succeeded General Joseph W. Stilwell as

Commanding General, Army Ground Forces, he conferred with Maj. Gen. Louis E. Hibbs, Commandant of the School, and with Maj. Gen. John W. Millikin, who commands the F.A.R.T.C.

Formerly a field artilleryman, General Devers spent many years of his earlier service at Fort Sill, and regards each visit in the nature of a home-coming. He served as an instructor and Assistant Director of the School during World War I, and upon graduation from the Command and General Staff School in 1925 he returned as Director of Gunnery, which post he held until September 1929.

* * *

Col. Carl H. Jark, a veteran Fort Sill field artilleryman, who was the commanding officer of the Field Artillery Officer Candidate School at the time of its inception in July 1941, returned to the Field Artillery School to assume duties as executive officer of the school, relieving Col. Russell G. Barkalow, who has been assigned to headquarters of the Alaskan department at Fort Richardson.

Col. Jark recently returned from the European Theater of Operations, where he was executive officer of division artillery in the 63rd Infantry ("Blood and Fire") Division, the unit then commanded by Maj. Gen. Louis E. Hibbs, now commandant of the Field Artillery School.

* * *

PERSONNEL CHANGES, 16 SEPTEMBER-15 OCTOBER

<i>Name</i>	<i>Arrivals</i> <i>New Duty</i>
Col. James K. Wilson	Department of Communication
Lt. Col. Elmer H. Almquist	Department of Materiel
Lt. Col. Dean M. Benson	Department of Observation
Lt. Col. Francis B. Harrison	Department of Materiel
Lt. Col. Evel J. Morris, Jr.	Department of Observation
Lt. Col. Herbert C. Plapp	Department of Combined Arms
Lt. Col. Claude L. Shepard, Jr.	Department of Air Training
Lt. Col. Frank L. Street	Department of Gunnery
Maj. Duff Green, Jr.	Department of Combined Arms
Maj. Harold L. DeSonier	Department of Communication
Maj. Thomas L. Hendrix, Jr.	Department of Air Training
Maj. George H. Kitchen	Department of Gunnery
Maj. Raymond W. Millican	Department of Observation
Maj. Robert Peebler	Department of Communication
Maj. James A. Poindexter	Department of Gunnery
Maj. Wilton K. O'Neal	Department of Combined Arms

The warrior saint was prepared for emergencies and had accumulated a quantity of explosives in one of the subterranean passages of the convent. At the crucial moment a deafening explosion was heard and both conquerors and vanquished were crushed beneath the debris of masonry. Thus did the Saint with her companions escape the outrages of a licentious soldiery.

II

SAINT BARBARA—SAINT, VIRGIN, AND MARTYR

There is no reference to St. Barbara by early Christian authorities, neither does her name appear in the original of



ST. BARBARA (from an old Italian Print) *St. Barbara was the daughter of a rich nobleman of Heliopolis in Egypt, martyred by her father about A.D. 303 for becoming a Christian. As he descended the mountain where he had cut off her head with his own hands a "fearful tempest arose with thunder and lightning, and fire fell upon this cruel father and consumed him utterly, so that not a vestige of him remained." St. Barbara then became "patron saint of armourers and gun-smiths." She is invoked against thunder and lightning, and all accidents arising from explosions and gunpowder. It was thought possible that she was selected as patron saint for artillery because in early days cannon usually blew up on discharge and therefore artillerymen were always liable to sudden death from explosions of gunpowder.*

St. Jerome's Martyrology. Veneration of the saint was common, however, from the 7th century on.

About this time there were in existence legends of her martyrdom which were inserted in the writings of Symeon Metaphrastes and which were used as well by such authors as Ado, Usuordus, Boronius, Mombritus, and others during the 9th century. According to these narratives, which are essentially the same, Barbara was the beautiful daughter of a wealthy, bad tempered, and heathen Greek named Dioscorus.

Dioscorus in his wicked and pagan mind conceived the idea of using his beautiful daughter to increase his worldly wealth. For this purpose he allowed her very little liberty, so that she might grow up free from worldly contamination. She was only allowed to have with her, her hand-maiden Juliana, and to receive at stated intervals her tutors, who were selected from old and repulsive looking men.

In her youth Barbara embraced Christianity, the teachings of which she had no doubt obtained from the tutors who were provided for her.

Among Dioscorus's many friends was a magistrate named Marcian, a wealthy and wicked man like Dioscorus. One day Dioscorus, for the purpose of evading punishment for his many misdeeds, offered his beautiful daughter Barbara to Marcian.

Upon informing his daughter of his intentions to part with her to Marcian, Barbara told her father that she had

embraced Christianity and therefore could not consent to the arrangement, having dedicated her virginity to God. This so enraged Dioscorus that he imprisoned her in a very high tower which concealed her from the view of the outside world.

Some time after her imprisonment her father was called away, but before his departure Barbara persuaded him to gratify her wish for three windows to be constructed in the tower, in order to admit light. In reality, Barbara's intentions were that the windows should be a symbol of the Trinity and the admission of Light the emblem of Christianity. Her desire was to openly make known her conversion, and this was her only way of showing it to the outside world.

On account of her open acknowledgment of Christianity she received a Spiritual Blessing. This Blessing made her even more beautiful than she had previously been. She therefore prayed for a bathing pool in which to disport herself and while away the tediousness of the long hours of her incarceration.

One day upon drawing her finger in the form of a cross on the floor of the tower, the rocks were parted and in the midst of a blaze of light through the three windows a pool appeared, the cross remaining permanently furrowed in the stone at the edge of the pool.

Upon her father's return from his journey he discovered the great light streaming through the three windows onto the cross. This greatly angered him, and he remonstrated with her.

Barbara took this occasion to preach to her father. She told him of the mystery of the Trinity and used her persuasion with a view to converting him to Christianity. Dioscorus became furious on account of Barbara's pleadings. He drew his sword and rushed upon Barbara to kill her. Barbara avoided her father and miraculously escaped from the tower, where she left him striking furiously on the flinty floor in an endeavor to obliterate the cross.

Accompanied by soldiers, the enraged parent scoured the mountain side for his daughter, who had taken refuge in a leafy glade some distance from the tower. Encountering two shepherds during his search, he asked them if they had seen his daughter. The first one, being a godly man and fearing for Barbara's safety, to shield her told an untruth to Dioscorus and said she was not in the forest; the other shepherd being of evil mind told him where she was hiding. Her father found her, beat her unmercifully, and dragged her by the hair before the magistrate, Marcian.

When Marcian saw her he was captivated by her beauty and did his utmost to persuade her to give up her Christianity and marry him. She steadfastly refused, and repulsed all Marcian's advances, whereupon he ordered her to be

stripped and beaten in front of him. Still resisting his entreaties she was taken to prison, where a blaze of light streamed upon her and healed her wounds.

Next day she was again brought before Marcian. She still persisting in refusing his entreaties, he then ordered her to be torn with iron combs and her saintly head to be hammered. On witnessing these barbarities, her handmaiden Juliana burst into tears and was promptly arrested and treated in the same cruel manner.

Marcian was at a loss for further tortures to exercise on Barbara without destroying her beauty, so in revenge for having all his advances refused he ordered her to be led naked round the town accompanied by her hand-maiden Juliana.

Notwithstanding the beating on her "Venerable Head" Barbara preserved her faculties and was able to address to Heaven an eloquent prayer, which was answered and a mantle was cast about her body. This enabled her to lift herself and preach to the people whom she implored to embrace Christianity. So thoroughly enraged was her father at this that in a fit of violent temper he struck off her head together with that of her hand-maiden Juliana. At this moment a vivid flash of lightning fell which completely consumed Dioscorus; a moment later a second flash reduced Marcian to a heap of smoking ashes.

For this reason Barbara is held to be the patroness of Fire, Cannon, and Firearms. She is also invoked against the thunder and lightnings of Heaven, for just previous to her death Barbara prayed that whosoever should invoke her aid might receive protection against implements of war and lightning.

A pious man named Valentinus buried the bodies of the virgins. At this grave the sick were healed and the pilgrims who came to pray received aid and consolation.

It is certain that before the 9th century she was publicly venerated both in the East and in the West, and that she was very popular with the Christian populace, being called upon as intercessor to assure the receiving of the sacraments and the Holy Eucharist at the hour of death.

An occurrence in the year A.D. 1448 did much to spread the veneration of the Saint. A man named Henry Kock was nearly burned to death in a fire at Gorkum. He called on St. Barbara, to whom he had always shown great devotion. She aided him to escape from the burning building and kept him alive until he could receive the last sacrament. A similar occurrence is related in the "Legenda Aurea."

The Emperor in whose reign the martyrdom is placed is sometimes called Maximinus and sometimes Maximianus, but there is not sufficient evidence to ascertain whether Maximinus Thrax (A.D. 235—238) or Maximianus Daza is meant.

Traditions vary as to the place of martyrdom. Symeon Mataphrastes and Mombritus, the Latin scholar, make Heliopolis in Egypt the site. Usuordus and Ado in their martyrologies mention Tuscany. And Boronius, whose account might be considered the most reliable, in his "Martyrologium Romanum Paruum" (about A.D. 700), quotes "In Tusia Barbaræ Verginis et Martyris." Saint Jerome and Bede say "Roame Barbaræ Virginis" or "Apud Antiochiam Passio Saint Barbaræ Virg," while others give the place as Nicomedia. These various statements prove, however, only the local adaption of the veneration of the saintly martyr.

In the Greek and Roman Calendars the Feasts of St. Barbara fall upon the 4th of December, while martyrologies of the 9th century (with the exception of Robanus Maurus) place it on December 16th, which is now the English date for the festival; the United States observes December 4th.

It is quite possible to suppose, however, that the period from the 4th to the 16th of December was the time of her escape from the tower until her death on the 16th.

Saint Barbara has often been depicted in art, always carrying the palm of a martyr in her hand and often with the chalice and sacramental wafer. She has been represented standing by a tower with three windows and sometimes fire, cannon, firearms, and lightning are displayed near her.

General Officers From The Field Artillery

Outstanding among the service of the Field Artillery in World War II was its contribution of a large number of general officers. Their duties often ranged far afield from purely artillery matters. Their adaptability, fostered in part by long background and training in manifold duties of their arm, led to outstanding performance in many fields. All Field Artillerymen salute these leaders from among their ranks.

Their roster is constantly changing. Some officers are promoted, others retire, and with demobilization a good many will undoubtedly revert to field grade. In compiling the following list, an effort has been made to indicate the highest grades attained, regardless of whether or not they are the current ones. If errors or omissions are noted, correcting notes will be most welcome.

GENERAL OFFICERS KILLED OR DIED IN WORLD WAR II

Lieutenant General Lesley J. McNair, former Commanding General, Army Ground Forces, killed in action in France, July 25, 1944.

Major General Edwin M. Watson, Military Aide to President Franklin Delano Roosevelt, died at sea enroute from Yalta to this country on February 20, 1945.

Brigadier General Allen C. McBride, Chief of Staff, Philippine Department, Manila, reported prisoner of war of the Japanese government in Taiwan Camp, Island of Formosa. Reported died in Japanese prison camp, May 9, 1944.

Brigadier General Edmund W. Searby, Artillery Commander, 80th Infantry Division, killed in action in France, September 14, 1944.

GENERALS

Jacob L. Devers
Thomas T. Handy

LIEUTENANT GENERALS

Raymond S. McLain**

MAJOR GENERALS

John B. Anderson
Jonathan W. Anderson
Clift Andrus
Archibald V. Arnold
Ray W. Barker
Julian F. Barnes
Harold W. Blakeley
Carlos Brewer
Edward H. Brooks
William Bryden
Louis A. Craig
John A. Crane
Donald C. Cubbison
Ernest J. Dawley
John M. Devine
William C. Dunckel
Roger W. Eckfeldt**
Horace H. Fuller
Hugh J. Gaffey
Alfred M. Gruenther
C. C. Haffner**
Arthur McK. Harper
Robert W. Hasbrouck
Philip Hayes
George P. Hays
Louis B. Hershey
Louis E. Hibbs
Rene E. DcR. Hoyle
Charles E. Hurdis
Stafford LeR. Irwin
Henry L. C. Jones
Lloyd E. Jones
Edward P. King, Jr.
James A. Lester
Frank E. Lowe*
John P. Lucas
Carter B. Magruder
Harry J. Malony
Anthony C. McAuliffe
Horace L. McBride
Maxwell Murray
Cortlandt Parker
Edwin P. Parker Jr.
George D. Pence
Ralph McT. Pennell
Vernon E. Prichard
Fay B. Prickett
Stanley E. Reinhart
Ben M. Sawbridge
William F. Sharp

John E. Sloan
Edward White Smith*
John P. Smith
Joseph M. Swing
Maxwell D. Taylor
Albert W. Waldron
Fred C. Wallace
Orlando Ward
Arthur A. White
Lester J. Whitlock
Arthur R. Wilson
John B. Wogan
Wood, John S.
Wyche, Ira T.

BRIGADIER GENERALS

Leo J. Ahern
Clyde C. Alexander
George R. Allin
Carl A. Baehr
Jesmond D. Balmer
Carl C. Bank
Harold R. Barker**
Charles J. Barrett
Robert M. Bathurst
Rex W. Beasley
William A. Beiderlinden
John T. B. Bissell
Ernest A. Bixby
Frederick H. Black
William P. Bledsoe
James F. Brittingham
Ronald C. Brock*
Charles C. Brown
Blackshear M. Bryan, Jr.
Theodore E. Buechler
Ray L. Burnell
Charles M. Busbee
Frank Camm
Boniface Campbell
William A. Campbell
Ralph J. Canine
Robert M. Cannon
Ellerbe W. Carter**
Herbert S. Clarkson
Ralph W. Coane**
William H. Colbern
James L. Collins
G. Bryan Conrad
Hugh Cort
Miles A. Cowles
William C. Crane
Maurice W. Daniel
Charles L. Dasher, Jr.
Lester A. Daugherty
Frank Dorn
John M. Eager
Henry C. Evans**

Francis W. Farrell
Charles S. Ferrin
William W. Ford
Louis J. Fortier
Ivan L. Foster
Theodore L. Futch
Robert G. Gard
Charles P. George
William N. Gillmore
Einar B. Gjelsteen
William R. Gruber
Augustus M. Gurney
Horace Harding
Arthur R. Harris
Charles E. Hart
Sherman V. Hasbrouck
Bertram F. Hayford
Loyal M. Haynes
Townsend R. Heard
Charles G. Helmick
Norman E. Hendrickson**
Frank A. Henning
Walter W. Hess, Jr.
Doyle O. Hickey
Thomas F. Hickey
John H. Hinds
Ralph Hospital
Reese M. Howell
Joseph C. Hutchinson**
Henry D. Jay
Paul V. Kane
John T. Kennedy
Rodmond F. Kernan, Jr.**
George V. Keyser
A. Franklin Kibler
Homer W. Kiefer
Guy O. Kurtz
Raymond E. Lee
John M. Lentz
James M. Lewis
John E. Lewis
Thomas E. Lewis
Kenneth P. Lord
Jay W. Mackelvie
John Magruder
Marshall Magruder
Hamilton E. Maguire
Pierre Mallett
Robert V. Maraist
Francis A. March
Ward H. Maris
Lemuel Mathewson
Robert B. McBride, Jr.
Mark McClure
Edward J. McGaw
John E. McMahan, Jr.
Leo T. McMahan
Henry J. D. Meyer

Vincent Meyer
Eric S. Molitor
Robert M. Montague
John B. Murphy
Thomas North
Edward S. Ott
George H. Paine
Charles D. Palmer
Williston B. Palmer
Richard C. Partridge
Alexander G. Paxton**
Basil H. Perry
Joseph V. Phelps
James A. Pickering
Waldo C. Potter
John P. Ratay
Peter P. Rodes
Francis W. Rollins**
Morrill Ross
David L. Ruffner
David S. Rumbough
Dominic J. Sabini
William H. Sands**
Clyde A. Selleck
William T. Sexten
George D. Shea
Josef R. Sheetz
Roland P. Shugg
Edwin L. Sibert
Julius E. Slack
George W. Sliney
LeCount H. Slocum
Isaac Spalding
William Spence
Albert C. Stanford
LeRoy J. Stewart
Charles H. Swartz
Kenneth S. Sweany
Ralph Talbot, Jr.
Foster J. Tate
Clarence P. Townsley
John F. Uncles
Harold C. Vanderveer
Harry H. Vaughan*
George D. Wahl
Jerome J. Waters, Jr.
William E. Waters
Roger M. Wicks
John M. Willems
Edward T. Williams
Robert W. Wilson*
John S. Winn, Jr.
William R. Woodward
Edwin A. Zundel

*Reserve Officers

**National Guard Officers

FIRST TO FIRE INTO CZECHOSLOVAKIA

WITH THE 90TH INFANTRY DIVISION EAST OF THE RHINE.—The first official American artillery mission was fired into Czechoslovakia on the morning of April 17th, when the 345th Field Artillery Battalion, 90th Division, opened fire with 155-mm howitzers.

Observing Nazi vehicles approaching a crossroad just inside the Czech border, Lt. Russell Pardee, 90th Division Artillery liaison pilot, directed the fire by radio from his cub plane. Thus Lt. Pardee chalked up another first for the 90th Division Artillery.

The duty of shelling the Nazis in Czechoslovakia was assigned to the 2nd section of "C" Battery, commanded by Capt. Leon Crenshaw. Chief of the Second Section was 1st Sgt. La Von Avres, and the gunner Cpl. Olen Daugherty.

Lt. Col. Frank Norris commanded the 345th Field Artillery Battalion at the time.

Age of American Army Leaders*

When Nazi Germany unleashed its fateful blitzkrieg in Europe six years ago, the Regular Army of the United States comprised less than 200,000 men under the leadership of about 100 Generals. It was not long thereafter, however, that our country, recognizing the ominous meaning of that move to our own security, began to mobilize its resources and man power. By the time Germany capitulated early in May of this year, our Army, including the Air Forces, numbered well over 8,000,000, and when the surrender of Japan brought the war to a close in mid-August the total in this service was not very appreciably smaller. During the war period the top leadership had increased to more than 1,500 Generals. The great majority of these men were promoted from lower ranks in the Regular Army, but an appreciable number came also from the Army retired list, the Reserve Corps, the National Guard, and even from civilian life, these latter to serve mainly in professional and technical capacities.

On July 1, 1945, there were 1,539 Generals in our Army. Their average age was 51.4 years. Almost 35 per cent of the Generals were under 50 years of age, a slightly higher proportion were concentrated in the age group 50 to 54, while an additional 20 per cent were in the age period 55 to 59; 8 per cent were 60 to 64, and less than 2 per cent were 65 years or over.

The relation between the rank of the Generals and the distribution of their ages is shown in Table 1. As would be expected, the higher the rank the higher the average age. The ages of the five-star Generals of the Army averaged 60.5 years. The youngest of these is Dwight D. Eisenhower, former Supreme Allied Commander in Europe, who is 54. Second youngest is Henry H. Arnold, Commanding General of the Army Air Forces, who is 59 years old. George C. Marshall, Chief of Staff, is 64. The oldest of the five-star Generals is Douglas MacArthur, 65 years of age; General MacArthur was recalled to active duty several months before Pearl Harbor; with the defeat of Japan he was appointed Supreme Commander for the Allied Powers to receive her surrender. At the lower end of the list of the Generals are the Brigadier Generals, who constitute 70 per cent of the total number; their average age on July 1st was 50.3 years, or ten years below that for the Generals of the Army and five years below the average for Lieutenant Generals.

The promotion of younger men to positions of high responsibility has been common practice in the Army, particularly in the Air Forces, during the wartime expansion program. An outstanding example of this practice is the case of Richard C. Sanders, who was appointed Brigadier General last year at the age of 28. Another instance is Brigadier General Clinton D. Vincent, who was 29 when he won his high commission a year ago. Both of these men are in the Army Air Corps. The youngest man of General rank outside of the Air Corps is Brigadier General Frank S.

Besson, Jr., of the Army Service Forces, who was 34 at the time of his appointment early in 1945.

The average age of the 322 Generals in the Army Air Corps on July 1st was just short of 47 years, or 4½ years below the average for the Army as a whole. This fact reflects itself in the high proportion of Air Corps Generals at the younger ages. Whereas the Air Forces had one-fifth of all the Generals in the Army, they accounted for all five Generals under age 35, for almost three-fourths of those in the age period 35 to 39, and for fully one-half of those at ages 40 to 44 years. On the other hand, at 50 and over the Generals in the Army Air Corps comprised little more than one-eighth of the total at those ages. In view of the exacting physical qualifications required for air service, and the increased emphasis on aerial warfare in the training of younger officers, it is little wonder that even in the top ranks of the Air Corps the accent is on youth.

TABLE 1.—Age Distribution of Generals, by Rank, of the Army of the United States, Including the Air Forces, on Active Duty July 1, 1945

Age Group	Total of Generals					
	General Rank	of the Army	Generals	Lieutenant Generals	Major Generals	Brigadier Generals
25-29	1	—	—	—	—	1
30-34	4	—	—	—	—	4
35-39	58	—	—	—	7	51
40-44	142	—	—	—	20	122
45-49	326	—	1	9	51	265
50-54	555	1	5	12	158	379
55-59	306	1	4	19	98	184
60-64	118	1	2	7	52	56
65-69	21	1	1	3	10	6
70-74	3	—	—	—	1	2
Unknown	5	—	—	—	—	5
Total number in each rank	1,539	4	13	50	397	1,075
Average age in years	51.4	60.5	56.6	55.3	53.5	50.3

TABLE 2.—Age Distribution of Generals, by Rank, in the Air Forces of the Army of the United States on Active Duty July 1, 1945

Age Group	Total of Generals					
	General Rank	of the Army	Generals	Lieutenant Generals	Major Generals	Brigadier Generals
25-29	1	—	—	—	—	1
30-34	4	—	—	—	—	4
35-39	42	—	—	—	5	37
40-44	72	—	—	—	10	62
45-49	73	—	—	5	12	56
50-54	100	—	2	4	33	61
55-59	23	1	1	3	8	10
60-64	5	—	—	1	2	2
65-69	1	—	—	—	1	—
Unknown	1	—	—	—	—	1
Total number in each rank	322	1	3	13	71	234
Average age in years	46.9	59	53.3	52.4	49.7	45.6

*From the *Statistical Bulletin* of the Metropolitan Life Insurance Company.

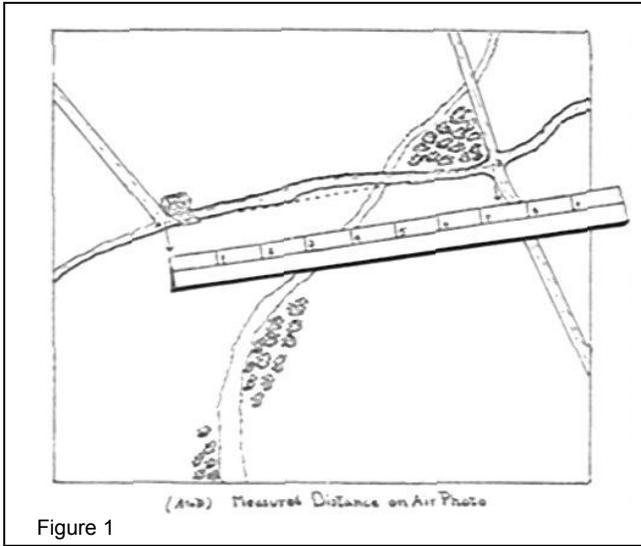


Figure 1

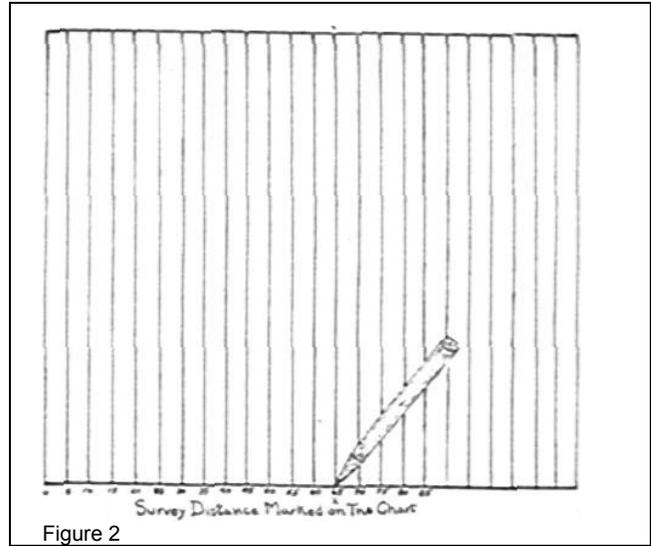


Figure 2

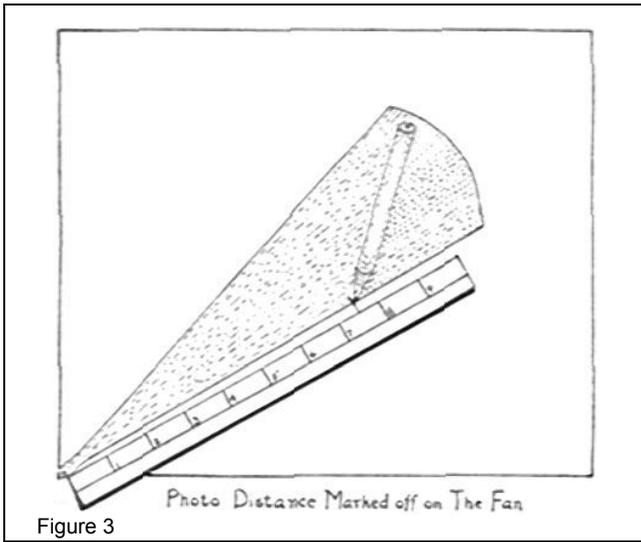


Figure 3

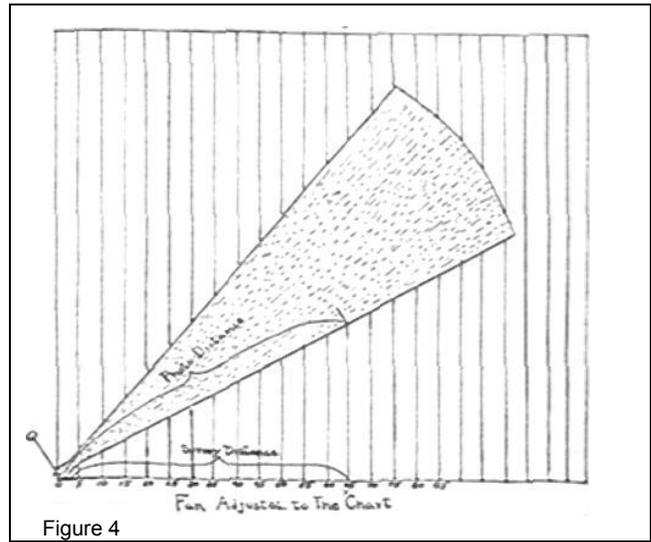


Figure 4

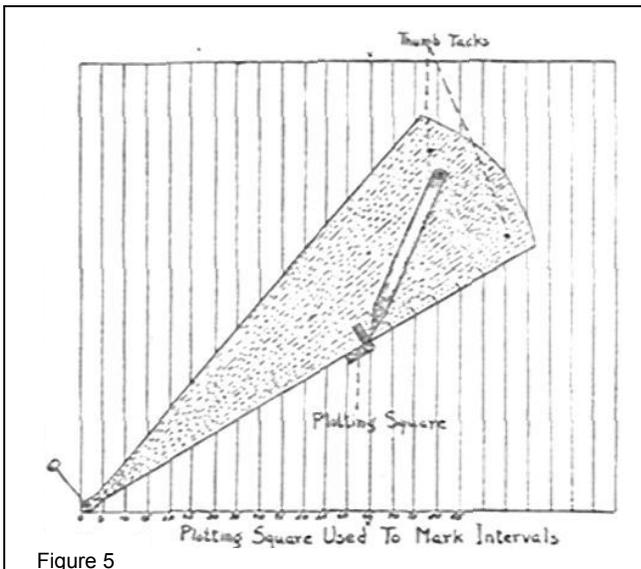


Figure 5

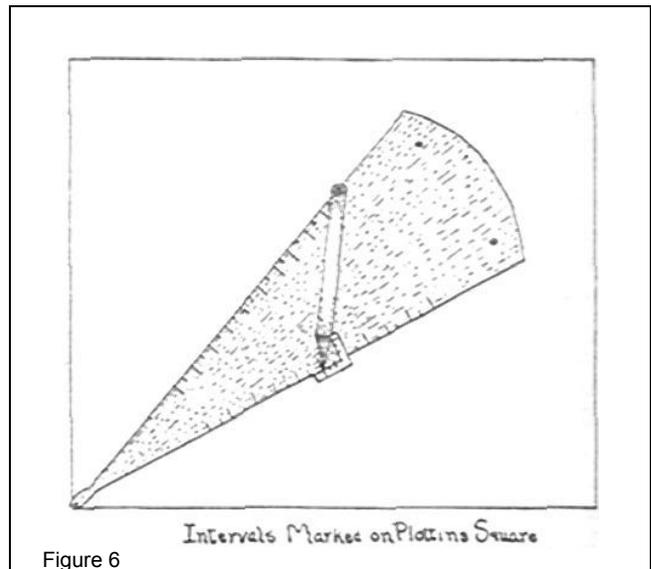


Figure 6

USING OFF-SCALE CHARTS AS FIRING CHARTS

By T/4 Joseph P. McKenna, FA, T/5 James N. Hadley, FA, and
Pvt. Chauncey R. Ketchum, FA

The primary difficulty in using off-scale charts arises from the inability to procure readily plotting equipment, especially range deflection fans and plotting squares, scaled to these charts. This results in a loss of time in each step of preparation of fire.

This difficulty can be solved. For this solution the basic principle is that a line intersecting two sides of a triangle and parallel to the third side will divide the two sides proportionately. Therefore, if a triangle is constructed of which one side represents a known distance at a known scale, and a second side represents the same known distance at an undetermined map scale, it is possible to project scale intervals from the known to the map scale.

For ease in plotting a right triangle is used, with the known distance as the base and the map distance as the hypotenuse. Thus any perpendicular to the base is parallel to the third side. It is necessary that the known scale be smaller than the map scale. For example, on the only available aerial photograph of a target area, a known distance of 4,500 yds. measures exactly 10 inches. A base scale is constructed at 1/20,000, representing the distance of 4,500 yds. This distance may be divided into 50-yd. intervals. A perpendicular is erected at one end of the scale, and a 10-inch line rotated from a point at the other end of the base line until it touches the perpendicular. Perpendiculars erected at the 50-yd. intervals on the base line will divide the hypotenuse into 50-yd. intervals at map scale. Both base line and hypotenuse can be extended to reach maximum range. It is not necessary to determine the representative fraction of map scale, but only the single known distance which may be obtained by survey.

Considerable time can be saved in the field by previous preparation of the following items:

a. A chart with base line divided into 50-yd. intervals at a known scale and perpendiculars erected at each interval. For ease in reading it is desirable that a distinction in color or thickness of lines be made to distinguish 50-yd. intervals and 100-yd. intervals, and both from 500-yd. intervals. This should be supplemented by indicating at the bottom of the chart the distance in yards at the base scale. For use in most instances where the map scale is smaller than the base scale, it will be found useful to reverse the chart and inscribe at the other end a reading which gives double the yardage values to the same intervals. The chart should preferably be drawn on a durable material to increase its life. Use of large size commercial graph paper with appropriate divisions will save time and increase accuracy in preparation.

b. Two range deflection fans (one for the HCO, one for the VCO) with a 500-mil scale divided into 5-mil intervals permanently inscribed thereon. The two long sides of these fans, which normally carry a range scale in yards, are purposely left blank and frosted for ease in marking

with a pencil. Two holes just large enough for a plotting needle or thumb tack may be provided near the upper right and left extremities of the fan. Such fans can be constructed from heavy acetate or light weight plexiglass. Permanent lines can be cut by using a needle point held against a straight edge. These lines should then be filled with India ink. Frosting may be accomplished by roughening the surface with the lightest grade abrasive paper available.

c. Two plotting squares (one for the HCO, one for the VCO) with inside edges frosted as were the sides of the deflection fans.

As soon as survey data is made available for any identifiable distance shown on the map or photograph, the distance is measured with any available scale, as shown in Figure 1. Taking the chart described in *a* above, the survey distance is laid off along the base line scale (Fig. 2) and the map distance laid off on the range deflection fan with a pencil (Fig. 3). The range deflection fan is then placed at the zero interval point of the base line, and rotated until the pencil mark on the range deflection fan coincides with the perpendicular of the scaled distance on the base line (Fig. 4). Two thumb tacks should be inserted in the two holes provided in the fan to hold it in place. Distances can then be scaled off from the parallel lines on the chart onto the frosted edge of the fan (Fig. 5). A straight edge should be used in marking the intervals for the sake of future accuracy and neatness. Care should be taken that the lines are perpendicular to the edge of the fan. In most cases interval marks for a distance of 2,000 yards above and below the base point range will be sufficient. By placing the other range deflection fan over the first one, first one side and then the other side of the second fan can be marked at the same scale interval. The first fan can then be placed over the second and the other side marked. This avoids the danger of slight differences in scale which might arise in repeating the original process for all four sides. If the known distance is less than 3,000 yards it must be multiplied by any convenient number (3-10): a short distance exaggerates any possible error in alignment.

By placing the plotting squares on top of and along the marked edge of the range deflection fan the frosted edges of the plotting squares can also be marked at the same scale intervals as the fans (Fig. 6). Care must be taken to insure that the inside corner of the plotting square coincides exactly with an even 1,000-yd. tick mark on the fan.

If the aerial photograph covers only the target area it can be securely fastened in the middle of a grid sheet and battery positions back plotted onto the grid sheet from the base point upon registration. This will also allow for the possibility of plotting targets of opportunity beyond the edge of the aerial photograph.

Introduction of this system has the following advantages:

- a. Direct use of the aerial photograph as a firing chart.
- b. Use of the graphical firing table without a map correction, thereby reducing possibility of error in applying metro and registration corrections, and permitting full use of $\frac{100}{R}$ and $\frac{33-1/3}{R}$ scales for deflection changes and openings.
- c. Elimination of conversion of scale each time a new range is fired, thereby saving time and reducing possibility of error.
- d. Simplified computation of site by the Vertical Control Operator. Since site is computed by the mil relation formula,

mils equal width over range ($\mu = \frac{W}{R}$), it is essential that the true range be known. The true range can be measured directly by use of this deflection fan, but not by the methods currently in use.

- e. Since there are available both range reflection fans and plotting squares, use of aerial photographs for both registered and adjusted fire.
- f. Application to any map or aerial photograph of known or unknown scale.
- g. Simplified target area survey, since only one distance and no azimuths must be known.



The remote control unit RM-29, now issued on the basis of one per radio, was welcomed as a distinct advantage in that it allowed radios to be moved away from installations in the field. In some cases, however, it has several disadvantages: there must be a radio operator at the set to push the anti-howl button permitting the person at the telephone to transmit. This requires a large measure of coordination between the radio operator and the person transmitting, otherwise the transmission is hindered and either the words "through" or "transmit" would go out over the air; or the first part of the transmission would be cut off.

Technician 4th Grade Donald A. Ross of our 882nd Field Artillery Battalion devised a remote control unit for use with the SCR-610 which eliminates the radio operator at the set, the RM-29, and the EE-8 telephone. It permits direct surveillance and operation of the radio from a distance of several hundred yards. It can be built with scrap parts in a short time by any able radio technician. To make one identical to those being used in this battalion, the following parts are required:

Remote Control for SCR-610

By Lt. John M. Wynne, FA, and
Maj. Paul Dickson, FA



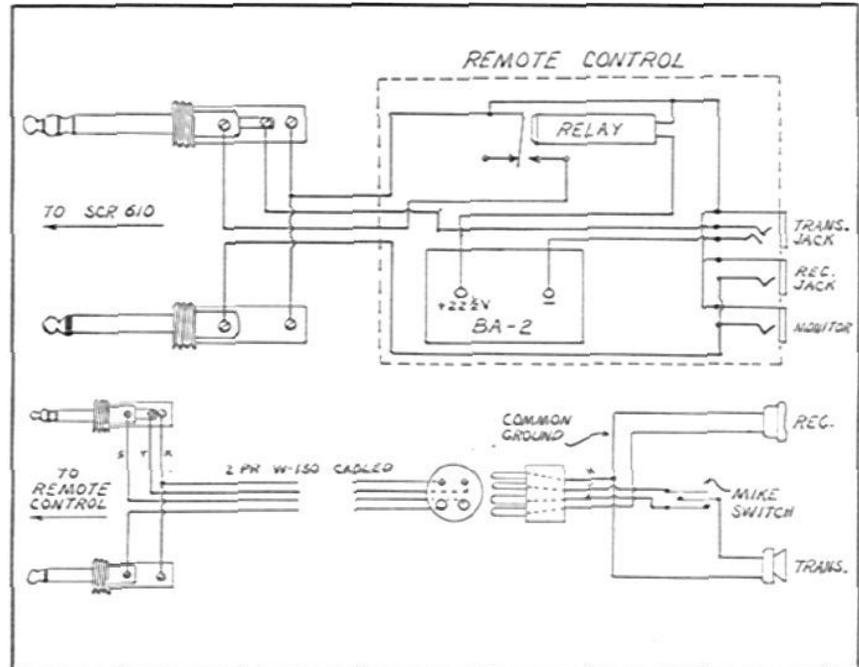
- 1 Case from a BA-43 (SCR-284 battery—latest type)
- 1 Relay BK-7-A
- 1 Battery BA-2 (or any 22½-v battery)
- 1 Three-contact plug
- 1 Three-contact jack
- 1 Two-contact plug
- 1 Two-contact jack
- 1 Four-prong tube base
- 1 Four-prong tube socket
- 1 Reel
- 400 to 600 yards W-130 (or W-150)

Relay BK-7-A is the one recently replaced in the telegraph set TG-5 by relay BK-7-B. Signal companies that made the modification should have plenty of old BK-7-A's on hand. The plugs and jacks are the same as or similar

to PL-55 (2-contact) and PL-68 (3-contact) used on all SCR-610 handset cords, and are usually available in the local second-hand radio parts store. A 4-prong tube base of course is not hard to find and the socket may be taken from an old BA-40 battery. The reel may be the government issued RL-39 or a similar home-made device.

The accompanying diagram is self-explanatory. Other methods of wiring have been tried, but this hook-up was found to be the most efficient. It will be noted that the common ground in the transmitter and receiver eliminates one lead in the transmission lines.

In August, 1943, this JOURNAL described a revised remote control designed to overcome the disadvantages of the RM-29 already mentioned. However, that circuit did not include a relay and also required a booster of batteries to offset the resistance placed in the filament circuit by the W-130 transmission lines. This required six lines between handset and remote control unit. In the circuit designed by T/4th Ross the battery serves only to operate the relay which completes the filament circuit and turns on the transmitter. The transmitter circuit is used to conduct the current which operates the relay, therefore only four transmission lines are required.



The RM-29 is still the most versatile remote control unit. It can be used with all field artillery radios for voice transmission. It is probably better suited for forward observers since tactically it is often desirable to have a radio operator at the radio for monitoring and operating while the observer moves about. But for the base sets in fire direction center and the executive's position in the firing battery, this revised remote control has proven its superiority.

GUNNERS VERSUS JAPS

During the coastal corridor offensive down the Bay of Bengal, a small reconnaissance party was sent forward to locate new positions for the guns. The remainder of the regiment and the guns were to come up that night, under cover of darkness, but the collapse of a bridge over a wide tidal river held them up until the following morning. Just after midnight three men were on guard in slit trenches when they heard a party of screaming Japanese rushing towards them. Some shouted the "Banzai" battle-cry, others called in English: "Johnnie, you're surrounded." The gunners sat right, held their fire until the Japanese were almost on top of them, and then lobbed hand grenades at the enemy, who fell back.

Until the dawn the Japanese tried to draw fire by shouting "charge" and stamping their feet, but the gunners were not tricked into giving away their positions. The enemy made three separate charges, firing rifles and machine guns; each time they were repulsed by grenades. At dawn the Japanese retired, carrying with them two wounded. According to the vallyagers two Japanese lay dead less than 20 yards away from each of the three trenches. The gunners suffered no casualties.

—The Gunner (England)

A GOOD OUTFIT!

"Thanks again for the articles presented in the JOURNAL. They helped very frequently between D+2 and VE-Day.

"Incidentally, the 790th FA Bn, of which I was a member for three years, fired a total of 65,681 rounds of 155-mm gun ammunition in combat, and was never even suspected of dropping a round on or near any friendly troops or installations."—Lieutenant, FA.



PERIMETERS in PARAGRAPHS



(BASED UPON LATEST INFORMATION AVAILABLE AT DATE OF WRITING, AND SUBJECT TO CORRECTION AS MORE COMPLETE REPORTS ARE RECEIVED.)

By Col. Conrad H. Lanza

THE SOUTHEAST ASIA COMMAND (19 Sep to 18 Oct 45)

THE GENERAL SITUATION

By agreement among the Allies, the Southeast Asia Command continues to have charge of military operations in Southeast Asia. The Supreme Commander is Admiral Lord Louis Mountbatten. The area of the command includes all former British possessions, Thailand, French Indo-China (less the sector north of Latitude 18°) and certain former Netherland colonies, including Sumatra, Java, and other islands west of the Banda Sea.

That part of Indo-China north of Latitude 18° has been assigned to China, under American supervision. East Indies islands in and beyond the Banda Sea are assigned to the former Southwest Pacific Command, now taken over by Australia. No announcement has been made as to Borneo.

In making the foregoing assignments it seems to have been the intention to restore British, French, and Dutch rule as it existed prior to the war. Vigorous objection has arisen generally throughout the area, with definite military opposition developing in Indo-China against the return of the French, and in Java against the return of the Dutch. Calling attention to the avowed principles for which the war was fought, and particularly to the Atlantic Declaration of 1941, the natives consider that the end of Japanese domination affords an excellent opportunity to acknowledge their independence.

Neither the French nor the Dutch had any troops to fight the natives. Neither had they ships to bring troops in. Arms for troops and ships to transport them have been furnished by the Allies, and at the end of the period French and Dutch military units were commencing to arrive. In the meantime British troops have held certain key positions in French and Dutch areas, to which the natives made no objection on representations that they would not take part in a conflict between natives on one hand and the French and Dutch on the other.

Japanese troops still hold large sections. It has been reported they have been asked to oppose native organizations—above all not to surrender to them, but on the contrary to fight until they can surrender to the Allies. There seems to be no doubt that the Japanese have in places fought off native units. Elsewhere the evidence indicates

that the Japanese made little or no resistance. An unknown number of Japs have deserted to the natives. Under these circumstances, native organizations have obtained substantial armaments.

It seems certain that if the French and Dutch bring in strong military forces, including armor, and with the backing of the United States and the British Empire to assure their communications and furnish supplies, the natives cannot maintain their opposition for long. They have neither the training, the organization, nor the equipment to meet in combat the efficient and superbly equipped Allied forces. However, the terrain is such that it would be practicable for the natives to take to the mountains and jungles common in Southeast Asia, and from there conduct a guerrilla warfare which might last for years and which in the meantime might thoroughly disorganize large areas. To avoid this unpleasant possibility the British, French, and Dutch are endeavoring to negotiate some kind of settlement.

Details of hoped-for arrangements have been left open for discussion. In general the Dutch are willing to authorize Dominion status, and the British and French more local government than in the pre-war years. As this account closes little progress has appeared in this direction, the natives demanding complete independence.

On their side the British, French, and Dutch governments claim that, while they favor freedom of peoples, this principle is to be construed only as applying to those states suited for exercising such a privilege. In their opinion the natives of Southeast Asia are not prepared at present to cope with the grave problems that would result from independence and therefore can not be authorized to have it at this time. This is the essence of the dispute, as the natives believe they are both able and willing to maintain a self-governed and independent series of states.

The headquarters of the Southeast Asia Command has been moved from Kandy, Ceylon, to Singapore. American forces previously present in considerable numbers are being withdrawn rapidly and are being replaced by British troops (for general operations) and by French and Dutch (for special operations) in their former colonies.

THE BRITISH AREA

On account of censorship restrictions, available information is meager. So far as is known the situation appears as follows.

Burma. A civil administration has been established and has relieved the Southeast Asia command throughout Burma, less Tenasserim. In this province the Japanese had not surrendered. Elsewhere the capitulation of the Japs is reported as completed.

Malaya. On 26 September armed natives appeared about Singapore and in the adjacent state of Johore. Some Japanese, believed to be deserters, were cooperating. An Indian Division was detailed to restore order and is believed to have done so.

To avoid further Japanese desertions to native organizations, Japanese troops (estimated as 200,000 strong within Malaya) are to be concentrated in Johore. After turning in their arms they are being moved to three uninhabited islands in the Bintan Riouw Archipelago, which is just off Singapore. Movement was being made at the rate of 2,000 men a day, at which rate it will not be completed until the end of the year.

The Japanese have been issued seeds and are to raise their own food. It is presumed some farm tools have been given them. Two months' Jap rations are issued for each man, it being expected that within that time the Japanese force can become nearly self sustaining since they will have nothing to do on the barren islands except to raise food for themselves. Medical stores (including insect-control supplies, toiler and mess ware) and tents or suitable material for erecting light shelters will be issued by the British. Eventual evacuation to Japan is expected, but due to lack of shipping no date for this has been envisaged.

On 10 October the British Colonial Secretary (Mr. George Hall) announced in the House of Commons in London that Malaya would be organized into a self-governing Dominion. In compliance with this mission, on 14 October Mr. Harold MacMichael reported at Singapore, to negotiate (with the Sultans and various separate colonies now composing Malaya) the necessary treaties and agreements for establishing a Dominion. This is the first grant of partial independence in Southeast Asia by a European Power. Whether this will satisfy native aspirations remains to be seen.

On 16 October a similar announcement was made with regard to Dominion status for Burma.

Thailand. The Allies have not occupied this country. Thailand was an ally of Japan but took no active part in the war. After the war, the Thai Government repudiated Japan, and its claim that events had forced it to a limited association with Japan was acknowledged.

Negotiations with the Southeast Asia Command have been under way throughout the entire period. No conclusion has been reached. It is understood that the Allies (or at least one of them) desire to exercise military and economic control over Thailand. There are also boundary disputes with Burma and Malaya on the west and with Cambodia and Laos on the east. Thailand has expressed a desire that the points in dispute be settled as provided by the United

Nations Charter, contending that this presents an excellent opportunity not only to implement the provisions of the Charter but also to demonstrate the good faith and intent of the signatory powers.

Minor fighting has been reported between Thailand and Chinese troops near their boundary but on the Thailand side. The nature of this fighting, and what the Chinese are doing inside Thailand, are not yet known.

THE FRENCH AREA

Indo-China

Indo-China has two organized centers of opposition against the return of the French, with strong possibility that others may develop later. Three states and two colonies jointly compose Indo-China, which has no united administration. In all the area exceeds that of Texas. In general the population (near 24,000,000) are well civilized and have considerable development.

The two colonies are Tonkin at the north and Cochinchina at the south. Each has extensive agricultural developments based upon two valleys—in Tonkin it is the Red River (which flows southeasterly into the Gulf of Tonkin), in Cochinchina the delta of the Mekong River. Tonkin is about the size of New York state, with a population of nine million; Cochinchina, about half that size, has a population of about five million. In both colonies the people belong mainly to the Annamite race.

Prior to the war both colonies were occupied and governed by the French. Early in 1944 the Japanese drove the French out, and thereafter controlled the colonies.

In between Tonkin and Cochinchina are three native kingdoms—Cambodia, Laos, and Annam. These were autonomous under the French and continued to be so during the war. They were not occupied by Japanese troops, although Japan utilized certain facilities. In French times all three kingdoms ran themselves, subject to French control of foreign relations and of military forces (which were largely native), and supervision over tariffs so as to favor French commerce.

Throughout Indo-China there were large French investments. Indo-China was the most prosperous, the most valuable, and the largest in area and population of all colonies in the French Empire. France does not desire to lose it.

Operations in Tonkin

At the beginning of the period Chinese troops under General Lu Han, coming from Yunnan, had with assistance of American air transport reached and occupied Hanoi, the capital. This is a city of some 100,000 people. Haiphong is the port for Hanoi and has about the same population. These two cities are industrial centers; their activity is based upon valuable mines in the hills bordering the Red River valley.

The Japanese did not immediately surrender, but finally did so to the Chinese on 28 September. At the ceremony the Chinese commander would not allow the French representative to participate, and has since forbidden the display of the French colors. The natives had organized a republic, and the Chinese claimed that as they were disinterested they

could favor neither the French nor the natives; consequently they determined to take over the country and administer it themselves.

The native "republic" is headed by Nguyen Hai Than, whose CP is in the hills about 80 miles north of Hanoi and close to the frontier with China. Nguyen appears to have been organizing a revolt against the French ever since the summer of 1941. He has been in liaison with the Kuomintang party in China, and sought their aid. Chinese troops in Tonkin were from the Kuomintang. They have occupied without resistance Hagiang, Caobang, and Langson, all near the border and covering the location of Nguyen's CP and provisional government. Nguyen claims an understanding with the Chinese that his government will eventually be formally recognized and the French duly ousted.

Although the Allies have furnished shipping and other aid to France to enable French troops to reach Saigon, no such aid has been given with regard to Tonkin. France has been required to send an envoy to Chungking to negotiate with Generalissimo Chiang Kai-shek, who was authorized by General MacArthur to take over Tonkin at the time of the Japanese surrender.

Nguyen has been raising troops. They wear green shirts. How they are armed is not known. According to French advices Nguyen has completed arrangements with the Chinese, and is to be recognized by them as the head of an independent Tonkin. Nguyen has a Minister of Foreign Affairs who has been in Chungking as ambassador. This gentleman, Dr. Phan Tran, advised correspondents in Chungking on 3 October that Generalissimo Chiang Kaishek had assured him that China would do everything in her power to win independence for Indo-China.

Other French reports state that on 8 October some of the Chinese troops in Tonkin renounced allegiance to Chungking in favor of their local commander, General Lung Yun. Fighting is reported to have followed, but is unconfirmed.

At his press conference in Paris on 12 October General de Gaulle announced that the negotiations with Chungking over Tonkin were not progressing, and that China's attitude was not in conformity with assurance previously given by the Allies that all of Indo-China would be returned to France.

At the end of the period the joint forces of China and of Nguyen had nearly completed the occupation of all of Tonkin, and part of adjacent Annam. From this latter country no reports have been received on this point.

Operations in Cochin-China

At the beginning of the period British troops under Major-General Douglas S. Gracey had occupied Saigon, the principal city and capital of Cochin-China. The inhabitants of Cochin-China are Annamites by race, and the fact that Annamites are in arms against the French and British is not to be construed as meaning that they are from the state of Annam. However, Annam is in sympathy with the resistance movement against the return of the white races.

At 0400 hours on 23 September the Annamites opened hostilities against the occupying forces, using machine guns

and rifles. The Allied garrison consisted of about 2,500 British troops and a small detachment of French. The Japanese garrison, which had not surrendered, numbered about 5,000 men and was ordered to aid the Allies. Confused and disorderly fighting lasted through the 26th. The Annamites captured the meat depot, destroyed several public buildings, and took 100 European prisoners, including civilians. The Allies, being better armed and trained, cleared most of the city, which with adjacent Cholon numbers about 250,000 people. It appearing that the Annamites were armed with Japanese weapons, allegedly obtained from "deserters," the Japanese command was severely reprimanded for insufficient support. The Japanese replied that they were supporting the Allies and had suffered casualties in doing so. The weapons in the hands of the Annamites, they explained, had been regularly issued following Japanese recognition of the independence of Cochin-China on 9 March, 1945. What had since been received from "deserters," it was alleged, were negligible. No record could be found as to what ordnance and ordnance stores had been issued from Japanese depots to native contingents. In this fighting one American officer was killed and another wounded. The officer killed was Lt. Col. A. P. Dewey, commanding a detachment of OSS troops.*

At the outbreak of the fighting the local British commander had radioed for reinforcements. Due to weather none were flown in, but on 30 September the first contingents (which were all British) arrived, furnished by the Southeast Asia Command. About 1,700 Dutch freed from a Japanese PW camp were released, armed, and added to the Allied command, which now consisted of contingents of American, British, French, Dutch, Chinese, Indian, and Japanese troops, the latter outnumbering all others.

The Allies estimated the enemy as having just north of Saigon 15,000 armed men whose outposts included part of the city. About 5,000 replacements were in reserve. South of Saigon the Annamites had road blocks on all avenues of communication, but their strength in this direction had not been ascertained. Allied casualties up to 30 September were 100 killed and an unstated number of wounded; Annamite casualties were possibly double this number. The Annamites had no artillery but they did have infantry weapons, including mortars.

On 1 October an armistice was arranged and fighting ceased. Two days later the French battleship *Richelieu* and a light cruiser arrived. Seven other cruisers, a dozen destroyers and small ships, and a detachment of the French naval air service were reported to be following.

On 3 October the Annamite leaders at their request met the British commander at a secret rendezvous arranged by the Japanese High Command. The Annamites were represented by Dr. T. V. Back, leader of the National Independent Government, and Dr. Cham Ngoc Thac, who appears to have been a principal executive. The results of the meeting were not announced. French representatives were present.

*OSS: Office of Strategic Services.

By 10 October the conferences between the Annamites and French had failed to agree. The Annamites recommenced hostilities and attacked a sector held by the Japanese, who repulsed the assailants. Eleven more European prisoners were captured, however. By this time the British garrison numbered 7,000 men, and with other Allies there were available 10,000 troops exclusive of the 5,000 Japanese. The Annamites also received reinforcements.

Using Japanese planes with British personnel, a French detachment was flown to the Cochin-China air base (100 miles west of Saigon) on the 10th. British and Dutch aided the French, and the base was taken without opposition.

On the 12th French troops attacked west of Saigon. They were supported by British artillery and made considerable progress, taking 800 prisoners. Minor fighting occurred north of Saigon. On the 14th an Annamite attack on the air base was repulsed, partly by Japanese troops under British officers. Desultory firing occurred around Saigon, where the Annamites succeeded in several raids which resulted in burning down substantial sectors of the city and parts of the Cholon suburb.

On 15 October the French 2nd Armored Division commenced to arrive. With this important reinforcement the Allies felt that from now on they could dispense with Japanese aid. The Japanese were willing to surrender to the British but not to accept orders or surrender to the French, whom they stated had not defeated them.

Outside of the 5,000 Japanese in Saigon, an estimated further Japanese force of at least 70,000 men were believed to be within Cochin-China. Some of these were acting with the Annamites. The British announced the policy that captured Annamites would be turned over to the French authorities as rebels and traitors, but that Japanese taken in arms would be held as enemies continuing resistance.

Operations in Laos

This state has been autonomous, as a French protectorate. It was not occupied by the Japanese, and no Japanese troops have been reported there. Laos now desires independence. According to French reports, American officers brought by air from China were dropped in Laos, and have been cooperating with Chinese troops in the north, in disarming isolated French contingents.

THE DUTCH AREA

Operations in Java

Japan had arranged to grant Java independence. It had been agreed that elections for establishment of a Republic would be held in September, 1945. After Japan surrendered on 15 August the inhabitants of Java, who are Moslem Indonesians, promptly proclaimed themselves independent on 17 August. Without waiting for elections they organized a government under Dr. Sockarno. A constitution was adopted and it was announced that a return of the Dutch would be opposed, by arms if necessary.

On 19 September a British force of the 5th Cruiser Squadron from the Southeast Asia Command, had landed a small detachment at Batavia on representations that it was to take over the surrender of the Japanese troops present and

that the British would remain neutral in the dispute between the Javanese and the Dutch.

On 28 September one battalion from the British 23d Division, plus Marines, were landed at Batavia, forming a total force of about 2,250 men. Rear Admiral W. R. Patterson, commanding the 5th Cruiser Squadron and senior British officer present, issued a proclamation that the British had landed "to maintain law and order until the time that the lawful government of the Netherlands East Indies is once again functioning." It was announced that the Japanese troops in Java (estimated at 30,000 men) would continue temporarily to remain in authority. A small Dutch detachment arrived by air from Borneo, where it had been part of the expeditionary force previously engaged at that place. The Southeast Asia Command ordered Lt.-Gen. Sir Philip Christinson, commanding the XV Indian Corps, then at Singapore, to proceed to Batavia and assume command as Allied Commander for the Netherlands Indies. At this date the Japanese forces were estimated as consisting of:

75,000 troops, trained and equipped by the Japanese;
35,000 militia, armed
10,000 replacements, not armed

120,000 total.

It was not known whether all of these would follow the Java Independent movement.

On 3 October hostilities started with skirmishing near Batavia, between Javanese and Japanese fighting for the Allies. Two Dutch cruisers with four submarines arrived at Batavia's port. The Javanese disarmed some Japanese near Bandoeng (the summer capital) and at Soerabaja, (main air and naval base). They captured some armor. Several thousand Europeans, and it is believed a few Americans, were seized and confined as Prisoners of War.

On the 4th the Indian XV Corps landed a brigade at Batavia, and about a battalion of Dutch infantry arrived. With these reinforcements the Japanese in Batavia were relieved on 5 October. The British command endeavored to arrange a conference between Dr. Soekarno and the Dutch, but the latter refused. The Dutch do not like Dr. Soekarno, who had been active in independence movements before the war. For that activity he had been exiled to Timor, where the Japs found him and brought him back.

By 9 October a confused situation existed throughout Java. British, Dutch, Japanese, and Javanese troops were all operating. Each claimed that its sole mission was to preserve order. Actually, there had been no disorders of importance. In certain sectors Japanese were protecting the Dutch; in others, British or Javanese were protecting Japanese. Anticipating trouble, most Europeans (including women and children) had reported in to Japanese garrisons for protection and had been placed in PW camps. However, many Japanese had surrendered to the Javanese without fighting, and the latter were accumulating military supplies. The Japanese had burned the naval base at Soerabaja before surrendering, which seems to have an exceptional case. Even in Soerabaja the Javanese maintained

order, and public utilities (including the railroads) continued to function. The Javanese secured intact the only arsenal in Java; this manufactured infantry weapons and ammunition.

On 13 October the Javanese captured Serang from the Japanese. As the latter reported only two killed and two wounded, their resistance appears to have been nominal. The Japanese withdrew toward Bandoeng, at which place their garrison held against other attacks, Lt.-Gen. Stephenson, who had arrived at Batavia and assumed command as ordered, issued an order directing the Japanese to stamp out the native uprising.

Next day the British Military Governor at Batavia (Maj.-Gen. D. C. Hawthorn) issued a proclamation reading in part,

"All services operated by the Japanese will continue to be operated by them until taken over by the military administration. Until such time, control will be exercised by me through the Japanese civil administration, whose orders will be accepted by all as coming from me."

On this day Japanese G-2 advised that the native insurrection had spread to Bali, an island just east of Java. The inhabitants of Bali are neither Javanese nor Moslems, but Hindus and Buddhists. Under stimulation from Javanese agents the Balinese commenced to organize for resistance to European domination. Throughout Java a general attempt was under way to arouse Moslems to war against Christians. In the past Javanese, although belonging almost universally to the Moslem church, have never been fanatical over religious matters and have raised no objection to freedom of religious worship.

The British retaliated by orders publishing a death penalty for natives found guilty of carrying arms, going on strike, establishing road blocks, or refusing to sell food to Europeans. Notwithstanding, road blocks were general all around Batavia and skirmishing continued between Javanese, and the British and Dutch garrison holding that city.

More British and some Dutch troops having arrived, the British advanced inland to Buitenzorg. A Javanese force estimated as about a reinforced battalion withdrew without fighting. Preparations were started to send amphibious expeditions to capture Semarang and Soerabaja, both on the north coast.

As this account closes the general situation in Java was:

1. The Javanese forces have a going administrative organization. Their military forces are estimated at 100,000 men. How well these are armed, and how much assistance they have from Japanese "deserters," is unknown.
2. The Allied forces in Java consisted of approximately
 - a. Japanese—about 25,000 troops, well equipped.

- b. British—23d Division, of the Indian XVI Corps, 14th Army.

- c. Dutch—about three battalions.

3. Troops en route to Java consisted of two Dutch battalions of 800 men each. 5,000 Dutch replacements, who are released PWs without arms, are in Malaya. The Dutch are trying to obtain British arms and equipment for this force.

4. Four battalions of Dutch troops are in Holland, without tropical equipment. The Dutch are negotiating to send these to England for equipment and training. Eight other battalions are being organized. Eleven other battalions are yet to be organized, all in Holland, as soon as the earlier levies are disposed of.

5. In all, the Dutch forces will amount to about 28 battalions of infantry of 1,000 men each. If all goes as planned, and provided the British furnish the equipment, training, and transportation, the movement of this force to Java should be completed by 1 March 1946.

6. On 16 October the Dutch Minister for the Colonies, in an address to the Dutch Parliament, laid the blame for the uprising in Java partly to the Combined Chiefs of Staff at Washington. He charged that this agency had neglected to arrange for occupation of the Netherlands East Indies, upon Japan's surrender, by providing proper forces to maintain order. "Order" is assumed to mean Dutch authority. The Dutch make the point that since their country has been a loyal ally since May, 1940, it is now up to the Big Powers to help her in her difficulties. The Minister stated, "It is a serious thing that we, who in this war gave all we could, to our sorrow must say that we have not found the Allies ready, and only hesitantly prepared, for this common duty."

7. The Javanese have officially announced that they will not agree to Dominion, or a colonial form of government under Dutch supervision. They demand independence.

Situation in Sumatra

There have been no operations, and the Japanese in this great island have not surrendered. Reconnaissances by Americans showed that the refineries at Palembang were badly damaged through Allied bombings. They had not been stopped. The Japanese commander reported that they had been producing about 30,000 barrels a day up to 5 September. He had closed down at that time, as there was no longer transportation available to take the oil away. He stated that he could produce 40,000 barrels a day. Normal pre-war production was about 100,000 barrels a day.

An independence movement has been organized. As of 19 October, the Independents are stated to be in complete charge of the civil administration and of public utilities.

Sumatra differs from Java in that in pre-war days it was largely ruled by Sultans. Some of these came under Dutch rule only in this century. Dutch authority was looser than in Java.

CHINA (19 Sep to 18 Oct 45)

THE GENERAL SITUATION

On 1 September (when Japan signed its formal surrender) there were three Chinese parties, each having its own military forces.

The Kuomintang, headed by Generalissimo Chiang Kaishek with headquarters at Chungking, is the party

recognized and favored by the United States. It has been the recipient of large quantities of lend-lease goods, and some of its divisions are American-trained and American-equipped. According to an official statement by Lt. Gen. Albert C. Wedemeyer, their commander, the mission of U. S. troops in the China sector is to maintain order and

facilitate the control of the Central Chinese Government (the Kuomintang) in areas that have been occupied by the Japanese.

On paper the Kuomintang had several million troops. They have been unable to take over from the Japanese except as aided by American forces, upon whom they rely particularly for transportation.

The Koumintang has its major strength south of the Yangtse valley. North of the valley the Han River is an approximate boundary of their influence.

The Communist Party, headed by General Mao Tsetung with headquarters at Fushih (or Yen-an), is not recognized by any foreign government. It maintains its own administration, collects taxes, and supports its own troops in the territory north and east of the Han and Yangtse Rivers and on the south side of the Yangtse east of Hankow.

The Communists have received no lend-lease aid. Notwithstanding, their troops have been able to move about with considerable maneuvering ability.

The pro-Japanese party has lost its headquarters at Nanking, but in large part its troops, estimated at between 500,000 and 800,000 men using Japanese equipment, have continued to function. They are scattered along the railroads and the large cities, mixed with Japanese troops who have not yet surrendered.

These mixed Japanese and Chinese forces have been authorized and instructed by the Allies to maintain their present positions, with a particular mission of not allowing the Communists to either seize key points or take over Japanese arms until such time as the Kuomintang can relieve them. In general the mixed forces have complied with this request and have continued to engage in minor operations of a defensive character against the Communists.

Operations of a detached Chinese force in Indo-China are discussed under the heading of Southeast Asia.

NEGOTIATIONS BETWEEN THE KUOMINTANG AND COMMUNIST PARTIES

Although not officially recognizing the Communist Party, the United States has made a leading effort to arrange a reconciliation between it and the Kuomintang. The American ambassador, Maj. Gen. Hurley, personally visited Communist headquarters and brought back with him to Chungking Mao Tse-tung (the Head of State) and General Chou En-lai (C-in-C) under promise of neutrality, which has been observed. A conference followed which lasted from 29 August to 20 September, when the Communist chiefs were returned to their own headquarters.

The negotiations were not completed, but an agreement was reached not to start a civil war pending further negotiations. An announcement was made as to the general acceptance of certain principles relating to the eventual organization of a single Chinese government. There never was any disagreement on this. The dispute between the two parties concerns by whom, when, and under what conditions a central government is to be established.

From unofficial sources it appears that it was tentatively agreed that:

a. Neither party will attack the other.

b. Certain key points within Communist China held by the Japanese have refused to surrender to the Communists, who are unable to oust the Japs by their own troops; in this situation the Communists will not oppose Kuomintang troops taking over these places, provided they do not cross Communist territory, and provided further that they will remain within the key points taken over and not attempt to seize adjacent territory.

c. If the above is faithfully carried out, the Communists will not blockade the key points and will permit food and supplies to enter freely.

In an address to the Communist Congress at Fushih (Yen-an) on 13 October, Mao Tse-tung accused the Kuomintang of preparing to attack the Communist forces and thereby start a civil war. It was charged that the Kuomintang was organizing two Japanese volunteer divisions to fight the Communists. Regardless of the truth or falsity of these charges, which have been denied by the Kuomintang, it seems that no real agreement has been reached between the two major Chinese political parties.

At the close of the period Communist GHQ announced that orders had been issued withdrawing to the north side all their troops south of the Yangtse River. Militarily, an attempt to hold the south side of the Yangtse valley would not be justified unless a campaign toward the south was intended.

THE MILITARY SITUATION IN NORTH CHINA

Prior to this period the American commander in China had flown the Chinese 6th and 92nd Armies to Nanking and Shanghai, respectively. These forces have since occupied those cities, with Communist forces outside. How effective the Communist control is has not been ascertained.

Kuomintang troops from the 92nd Army occupied Hankow and the adjacent cities of Hanyang and Wuchang on 29 September, the Japanese force of 34,000 surrendering. This assures to the Kuomintang the holding of the key points along the Yangtze River.

Efforts to send Kuomintang troops to the northern cities of Peiping and Tientsin failed due to Communists holding blocks on railroads leading from the south to those cities. In order to establish the Kuomintang American troops were employed.

The 1st Marine Division, coming from Okinawa, debarked near Chingwantao on 30 September. The sea is shallow in this area and transports can not approach within 15 or more miles of the coast. Landings are necessarily slow. Chingwantao is just south of the Great Wall, the boundary between the American and Russian spheres. It is well known to Americans, as in pre-war days it was a summer resort and a recreation and rest area for American troops in north China. It is about 120 miles northeast of Tientsin, with a good road and a railroad connecting the two places.

After leaving appropriate guards the 1st Marine Division proceeded to Tientsin, where it arrived without incident and on 6 October received the surrender of the local Japanese garrison of slightly over 50,000 men. By agreement, the Japanese were authorized and directed to continue in charge of Peiping and the railroad to that place from Tientsin, pending further arrangements.

Our 10th Air Force now commenced to fly Kuomintang 92nd Army troops from Hankow and Nanking to Tientsin. The Kuomintang 6th Army from Shanghai took over Nanking.

According to statements by two reliable American correspondents, the north China area is decidedly hostile to the Kuomintang. The general sentiment of the people is that they will fight rather than submit to the Kuomintang. The Communists claim that they control the entire country, less American- and Japanese-held cities. The people are not Communists, although the leaders are. But the Communist party, although receiving no foreign support, maintains law and order, and taxes are levied justly. Communist troops are well disciplined and do not maltreat the inhabitants.

The Communists have organized local organizations somewhat resembling our National Guard system, by which considerable numbers of citizens receive training. They are ordered to active duty as necessary to supplement the Regular troops. The armament of these is being increased from sources not certainly known. Preparations to fight the Kuomintang are being made.

To further install the Kuomintang in north China the 7th Amphibious Force under Vice Admiral Daniel E. Barbey was ordered to Chefoo, an important port at the south side of the entrance of the Gulf of Chili (Po Hai). This place is also well known to Americans for it used to be the rest and recreation area for the American pre-war China Squadron.

Chefoo was abandoned by the Japanese on 23 August, the garrison proceeding by sea to Tsingtao, whereupon the Communists (who were just outside) moved in. When Admiral Barbey arrived by sea with a preliminary reconnaissance force on 7 October, there were no Japanese to surrender. The Communists refused to get out. To force them to do so might have been easy for the experienced American amphibious troops. To do so, however, might have precipitated the war between the Kuomintang and the Communists, which is just the opposite of the established American policy. Admiral Barbey thereupon withdrew, leaving the Communists in control. His report stated that an orderly regime had been established and apparently was working.

According to Communist sources, three Kuomintang armies crossed the Han River about 15 September and advanced northeastwardly. No details of this movement are yet available. The Communists charge that the invaders are indulging in general plundering.

In Shantung strong Japanese garrisons are located at Tsingtao, Tsinan, and Tehchow. They have been instructed to maintain their positions against the Communists pending arrangements for their surrender to the Kuomintang, who can not reach them at this time on account of Communist-held road blocks.

The Japanese general commanding at Peiping requested on 4 October speedy arrangements for the surrender of Japanese troops and the return of his men to Japan. He reported that his men were deserting in increasingly large numbers, but did not state where the deserters were going. According to Communist sources the deserters, with their arms, are joining with them.

Fighting is reported in Chekiang, which is due south of Nanking and Shanghai. On 6 October a Communist brigade from their 4th Army was moving north, ostensibly to avoid a battle with Kuomintang forces. The brigade started crossing the Fuchun River. Its advance guard completed the movement without noticing anything unusual. Then the main body started over. At this moment the Kuomintang 79th and 70th Divisions, respectively north and south of the Fuchun River, attacked in a northeasterly direction. The outcome of this battle is unknown. Since neither side claimed a victory it may well have been inconclusive.

Fighting is reported in Anwei between Communists and Kuomintang, but no details are known.

THE MILITARY SITUATION IN SOUTH CHINA

There is no important Communist element in this area. Consequently Kuomintang movements have proceeded more smoothly.

By 29 September the Japanese forces in and about Swatow and Amoy had surrendered.

On 3 and 4 October heavy fighting occurred at Kunming between outgoing and incoming Governors of Yunnan. The incoming Governor won. Kunming is the capital of Yunnan. It is also the site of large American air establishments. The American troops were able to avoid becoming entangled in the Chinese fight, which was reported as being short but bloody.

MISCELLANEOUS

On 5 October General Chen Yi with a staff of 50 arrived in Formosa to take over that large island.

The Kuomintang has halted the return of the government headquarters to Nanking as originally intended. The explanation offered is that Peiping may become the new capital.

Negotiations are under way to transfer to the Kuomintang surplus American military stores in China, valued at \$150,000,000 and including 10,000 motor vehicles and over 300 planes. The Kuomintang claims that since 1 January, 1945, it has expended 128 billion dollars without reimbursement for reverse lend-lease purposes. These are Chinese dollars whose value is problematical, but the Kuomintang claims that it much exceeds the value of the surplus American stores and that these should be turned over as part payment of a just debt.

KOREA (19 Sep to 18 Oct 45)

Korea north of Latitude 38° is occupied and administered by Russian forces. The area to the south of that line is the

responsibility of the U.S. XXIV Corps, with the 7th Inf Div. It was originally intended to have the 40th Inf

Div added to the American occupying forces, but this plan appears to have been changed.

Japanese troops in Korea are being sent back to the homeland. To date 40,000 are reported as having been returned. An additional force of 60,000 Japanese troops was located on Saishu To (also known as Quelpart Island) off the tip of south Korea. These surrendered on 28 September. Saisho Tu was found to be a large air center from which Japanese planes flew to cover the seas between Kyushu and the Ryukyu Islands on the east and China on the west.

The division of Korea into two zones divided by an arbitrary line approximately across the center of the state, has caused economic and political complications. During

the Japanese occupation Korea was nearly self-supporting economically. Unfortunately, however, neither of the two halves into which the state is now split are self supporting. The north one has important mines, a large steel plant, and most of the hydro-electric plants; the south raises food. Since Japan's surrender there has been no liaison between American and Russian forces in Korea, and no commerce nor travel over the separating boundary. Contending that their country is throttled, the Koreans have made representations asking that both the Americans and Russians withdraw and let them run their own country as an independent state, as was officially promised them in the Cairo Declaration.

MANCHUKUO (19 Sep to 18 Oct 45)

Manchukuo, which will probably resume its former name of Manchuria, is occupied by Russian armies. A total of 594,000 Japanese troops, including 20,000 wounded, have surrendered. The disposition of Japanese prisoners is unknown but none have been reported as repatriated.

According to a Russian announcement of 29 September, the evacuation of Manchukuo by Russian armies was to start on 15 October and be completed by 30 November. The number and the direction of movement of the large Russian forces were not stated. According to the August treaty with Chungking, Russia will retain port Arthur as a military and naval base and Dairen as a commercial base. China is to have the right to use both bases for its own forces. Russia also reserved the right to garrison any points considered necessary for the proper defense of these two ports. Presumably, the evacuation of Manchukuo does not include Dairen and Port Arthur.

To date, no Chungking China troops have arrived in Manchukuo. All routes are covered by road blocks maintained by Communist China troops. The absence of Chungking troops will not interfere with Russian movements. In this regard the above-mentioned Treaty with China provided that Russian evacuation would commence with the surrender of Japan and be completed within three months. The date fixed—30 November—complies with the Treaty requirements.

According to the French Consul at Mukden the Russians are dismantling all Manchukuo factories and shipping the machinery and stores to Russia. Japanese prisoners of war are being used for this purpose, and also for mining the coal which is necessary to keep the railroad operating. The Mukden arsenal, which used to be one of the largest in all

China and which prior to Japanese occupation manufactured infantry weapons and ammunition and light artillery and its ammunition, has been allotted to Mongolia. It is in process of being removed to that distant state, as a reward for the aid furnished by the Mongolian First Army, under Marshal Choy Balsan, in the one-week war with Japan.

In so far as is known the Mongols have no means of operating a modern arsenal. It is understood that it will be reestablished under Russian supervision.

Refugees from Mukden who have arrived in Peiping, still under Japanese rule, confirm the statements of the French consul. They report that following the surrender of Japan a general condition of anarchy developed but that the Russians are making headway in restoring order.

According to reports from American correspondents in north China, mostly with Japanese forces which have not yet surrendered, Communist China troops in large numbers have been moving north into Manchukuo. They are stated to have been rearmed by the Russians with Japanese weapons. Some of these troops so reequipped, in bodies of 6,000 men each, have returned to China. An estimated 100,000 men have not returned. These are reported to have been posted on both sides of the Chinese Eastern RR from the west Manchukuo border at Manchouli to Muling (near Vladivostok), and on both sides of the South Manchuria RR from Dairen to Harbin (or Pinkiang). These troops are training to take over from the Russians when they depart.

The Communist troops are reported as in complete possession of Jehol, less Mongolian troops passing through.

Chungking China officials (but not troops) have been flown into Manchukuo. A "governor" has been reported as having arrived at Mukden.

CENTRAL PACIFIC AREA (19 Sep to 18 Oct 45)

The only change reported is the occupation by American forces on 20 September of Woleai, a small coral type atoll located half way between Truk and Palau. The Japanese garrison numbered 1,650 undernourished men. After the

surrender a Japanese hospital ship was allowed to proceed to Japan with the Japanese troops and such natives as desired to go with them. It is reported that 90 natives elected to remain behind and accept American rule.

JAPAN (19 Sep to 18 Oct 45)

Demobilization of the Japanese Army was reported as completed on 15 October. Japanese GHQ and the General Staff were demobilized with considerable ceremony on the day before.

According to Japanese reports, there had been 2,253,000 men under arms in Japan, as of August 15th. Of these, 670,200 had been demobilized prior to 2 September, when the formal surrender of Japan took place. In the following 43 days an average of nearly 40,000 men a day were demobilized. These figures refer to the Japanese homeland only. Elsewhere large bodies of Japanese troops have either not surrendered (in most instances due to the lack of suitable arrangements for their relief) or have been continued on active duty for the convenience of the Allies. (See sections on China and southeast Asia.)

In Japan the Allies have kept 30,000 Japanese of the navy on active duty to man merchant ships. An unstated number of other Japanese from the army and navy have likewise been continued on active duty to assist the occupation forces in various shore establishments.

Railroads in Japan were functioning, with minor exceptions, on date of surrender. At that time the condition of the rolling stock was:

	Locomotives	Passenger Cars	Freight Cars
Serviceable.....	3,891	8,635	9,274
Bad Order.....	1,314	1,765	9,302
Total	5,205	10,400	18,576

"Bad Order" in the list includes fair wear and tear as well as damages due to bombing attacks. Bombing attacks, all since April, 1945, are stated to have destroyed 1,425 locomotives, 2,228 passenger cars, and 9,557 freight cars.

The railroads have been able to handle all traffic offered. Surprising though it sounds, American Engineer officers have reported that the railroads are in better shape now than they were in 1938, the last pre-war date for which data are available.

Due to the rapidity of the Japanese demobilization a rearrangement of American occupation forces has been made. Main air bases are being established in the vicinity of Seoul (in Korea), Shimoneseki, Kyoto, Tokyo, and Sapporo (on Hokkaido).

SOUTHWEST PACIFIC AREA (19 Sep to 18 Oct 45)

Reoccupation of this area has been assigned to the Australian commander-in-chief.

New Britain

It is now known that the Japanese garrison at Rabaul reached 250,000 by the end of 1942. On the official surrender, which occurred on 6 September 1945, approximately 140,000 troops remained. These men were scattered over the island, and at latest reports only part of them had been rounded up. The loss of 110,000 men is supposed to have been due primarily to sickness.

The Japanese had elaborate tunnel and cave positions. One report states that the tunnels are estimated as having a total length exceeding 300 miles. Much of this was utilized as a depot and was crammed with stores of all kinds. The evidence available indicates that the large Japanese army and its correspondingly large depot had been assembled for offensive purposes; whether the objective was to be New Zealand or Australia has not been ascertained.

The American counter offensive which started with the battle of the Coral Sea in June, 1942 and was followed by

American advances into the Solomon Islands forestalled further Japanese offensive operations. In fact, thereafter the Japs could neither withdraw from New Britain nor properly supply the forces on that island. Consequently, they wasted away to less than 60% of their strength. At date of surrender the Japanese had only six planes in operation, which had permitted only occasional liaison with other Japanese commands. There were 1,800 trucks and automobiles.

Timor

Part of the Japanese garrison in this island did not surrender but took to the timber and mountains, when Australian forces arrived on 5 September and received a formal surrender. It appears that many Japs had taken Malay wives and gone native. The Australians are attempting to capture these Japs, who have been reinforced by 400 Javanese. These Javanese had been brought to Timor as labor troops. They seem to be anti-Ally, presumably on account of the attitude of their countrymen on Java.

THE "AMERICAL" USED US

"Some of the articles that I have read recently have been excellent and we used some of them in our last operation. The JOURNAL is excellent reading material."—*Captain, FA. writing just after VJ-Day.*

BOOK REVIEWS

PERSIAN GULF COMMAND. By Joel Sayre. 140 pp.; illustrated. Random House. \$2.00.

This may be one of the smallest of the war books, but it's far from the least. There are many reasons for its importance.

For one thing, it is one of the very few which deals with logistics. The only other that comes to mind is the late Maj. Peter Rainier's *Pipeline to Battle*, a saga of Britain's Eighth Army, which incidentally was produced by this same publisher.

Lest that word "logistics" make you shy off, I hasten to point out that Mr. Sayre's stuff is so readable that a good bit of it was first published by *The New Yorker* magazine. His easy-going style and penetrating view and wit make *P. G. C.* outstanding among books of any kind, war or otherwise.

The story itself is fascinating. Were it not for the Persian Gulf Command, it is very questionable if Russia could have turned back the Germans at Stalingrad. Although far from the battle fronts, the men of this outfit affected the war's outcome just as much as did any who fought and died. They handled over four and a half million long tons of what an army uses. They set up assembly lines in the desert, and put knocked-down trucks together in five minutes with the help of natives who never had seen a motor vehicle before this operation began. They operated a decrepit railway over the mountains with such dispatch that even they were astounded. A motor transport service was established—over a road these men built themselves—to speed supplies to the Russians. And all this was done in temperatures that consistently hit 140° F.

Their work is told here without fanciness. There's no effort to blow up the tale into an epic. There's no need for that—for the bare facts speak for themselves. But here are the sidelights as well as the highlights, in a top-notch book.

SELECTED SPEECHES AND STATEMENTS OF GENERAL GEORGE C. MARSHALL. Edited by Maj. H. A. DeWeerd. 259 pp.; index. *Infantry Journal*. \$2.75.

Never before has a Chief of Staff had to solve problems of the immensity and complexity of those faced by General of the Army Marshall. Never before has a Chief of Staff developed and prepared in time of peace the army he was to direct in war. General Marshall's work demanded the utmost foresight, judgment, skill, and political acumen—not to speak of patience.

In these excerpts much of the man appears. Thirty-three examples pre-date our entry into the war, some of them going back to a year before General Marshall became Chief of Staff. Fifteen addresses, statements, and remarks are from the war years, one being as late as

the middle of last June, before the House of Representatives's Select Committee on Postwar Military Policy. Together, they show the American character and the American tradition at their very best.

ALBUM OF AMERICAN HISTORY: Volume II, 1783-1853. James Truslow Adams, Editor-in-Chief. 418 pp.; illustrated. Charles Scribner's Sons. \$7.50.

Compiling this *Album* must have been a lot of fun, in addition to hard work. It is a history which dovetails text and illustrations into an integrated and flowing whole. Words are at a minimum, the main effort being to show graphically the events of the period, the clothing and furnishings, the towns and the countryside, implements, conveyances, battles and social events—in short, to bring our history to life.

Mere collection and selection of the illustrations was a monumental task. There are over 1,300 (count 'em!) reproductions of photos, drawings, sketches, and maps, all authentic and of the period covered. They ideally implement the text, and graphically tell what in most books is tortuously put into words. Thus in most cases they replace text, rather than supplement it, and do the best possible job of giving the "feel" of the subject.

This is a book for enjoyment, for reference, and most decidedly for every school youngster. It deserves wide distribution.

ENCYCLOPEDIA OF SPORTS. By Frank G. Menke. 628 pp. A. S. Barnes & Co. \$3.50.

As sports statistician and historian, Mr. Mencke occupies a unique niche. His interest and research through 20 years have made him an outstanding authority on sports facts. These he has put in book form, under different names and through many editions, since 1930. This latest version gives the background, rules, and certain "vital statistics" (although not the complete records, by any means) of no less than 118 sports—from angling to yachting.

A question-answerer and argument-settler it surely is. The author figures it will answer half a million to a million questions. Bob ("Believe It or Not") Ripley goes a lot farther; he says the number is four million. Any way you take it, it's a big one. And as the basic material has stood the test of fifteen years of publication, you can be sure that these are the straight facts.

MY BROTHER AMERICANS. By Carlos P. Romulo. 204 pp.; index. Doubleday, Doran & Co. \$2.50.

Shortly after the event General Romulo wrote *I Saw the Fall of the Philippines*, one of the war's most graphic narratives. In this country he was impelled to tell all the people he could reach,

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*Here is J. B. Powell's
long-awaited book
on China*

My Twenty-five Years in China

By
John B. Powell

Reporting civil wars and invasions, kidnapped by bandits, imprisoned and tortured by the Japanese, in direct touch with political and economic developments throughout the Far East—"J. B." was in the thick of things in China for a quarter-century. His book is an informed appraisal of contemporary Chinese history. **\$3.50**

- J. B. Powell was editor and publisher of the *China Weekly Review* in Shanghai, managing director of The China Press, and Far Eastern correspondent for American and British newspapers. He was repatriated on the *Gripsholm* in 1942.

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of the gallant defense waged by our troops and their Philippine allies. That led to a two-year lecture tour which took the general 89,000 miles to 466 cities in every state of the union. This is the story of that trip.

It is more than that story, however. It is the story of America at war and of Americans with near and dear ones in the hands of the Japs. It is America opening its homes and its hearts and its thoughts to a dynamic friend. It is a picture of America at war.

SOLUTION IN ASIA. By Owen Lattimore. 138 pp. Infantry Journal. To members of the armed forces only, 25c.

Despite Japan's capitulation, the solution in Asia has not yet been found. Mr. Lattimore's book of last year, now reprinted in pocket format, is not obsolete. Its background and current information will be needed by all who are connected with Far Eastern affairs. Asia's world importance is far from on the wane; indeed, it is but on the threshold of its development. Mr. Lattimore is at his best in his final chapter, in which he considers the essentials of an American policy in Asia. He knows whereof he speaks.

GOVERNMENT JOBS AND HOW TO GET THEM. Edited by Sterling D. Spero. 325 pp.; index. J. B. Lippincott Co. \$2.95.

Anyone wanting or considering work with the government should get acquainted with this book. As far as possible it considers only those positions which will be permanent—the wartime, temporary jobs have been culled out. More than 500 types of work are left, and covered here. For each there is information on the required education and experience, duties, age and physical requirements, locations of the jobs, starting salaries. Equally important, the book sets forth the entire procedure of getting into the government service, from the first steps of making application and preparing for examination to the offer of appointment. Sample examination questions and answers are given. And there's a chapter on state and municipal merit systems. In an appendix are information as to where federal examinations are given, a list of federal civil service regional offices, and sample forms, including those used to obtain veteran's preference.

PINE, STREAM AND PRAIRIE. By James Gray. 312 pp.; index; illustrated. Alfred A. Knopf. \$3.50.

Wisconsin and Minnesota in Profile is the subtitle given this book. Unlike a good many profiles, "studies," or regional accounts, it is an integrated, thorough-going account of those states. Whether scenery, history, politics, or individuals are being discussed, there is a flow and a sweep reminiscent of the streams of the area. Timber, iron, Scandinavians, Frank Lloyd Wright, fishing lakes and industrial cities, flour mills and winter carnivals—these are but a very few of the facets of these sister states standing at the threshold of our northwest. It's a good study, this—good reading and eye-opening.

DICTIONARY OF WORD ORIGINS. By Joseph T. Shipley. 400 pp.; indexes. Philosophical Library. \$5.00.

Dr. Shipley doesn't go into the factual meanings of words, as do more conventional dictionary writers. Instead, he tells the story behind a word, its origin, history, background, psychological usage. Word change and growth comes to life. And the whole is enlivened by a rich and real humor that persists in cropping up in the most unexpected places. It's sheer fun, as well as educating, just to browse in this volume or even to read straight through it.

For example, in discussing the modern bazooka there is first a reference to Bob Burns and his famous instrument. This leads into *bassoon*, base and its compounds, *basi-* and variants, *bas* (whence *bas-relief*, among others), *bass* (both fish and trees), another trail linked to the French *bastir* (whence *bastion*, etc.), *baste* (meaning to beat), *bate*, and finally *abate*—with again a reference to what should be done about the Burns bazooka! That will give you a rough idea. To some it will never appeal, but to those who like words and delight in following their trails, this is

a never-ending fount of sound, scholarly writing.

In appendixes are collected together doublets, words that arose from names (as *ampere*, from the French physicist), and the source and meanings of given names.

I DREAM OF THE DAY . . . By Caleb Milne; with an introduction by Marjorie Kinnan Rawlings. 122 pp.; Longmans, Green & Co. \$2.00.

For about a year Caleb Milne served with the American Field Service. These are his letters to his mother, in the period from his joining up until a mortar shell killed him in Tunisia in May, 1943. They are personal letters, intensely so, yet at once they are also all letters from all who serve their conscience and their country. If they are not the letters that all have written, they are those that each might well wish he could have composed. They have a permanence that transcends the headlines of the moment. They truly reveal an individual, a soul.

THE U. S. MARINES ON IWO JIMA. By Five Official Marine Corps Writers, 312 pp.; illustrated. 25c.

KEEP 'EM ROLLING; A Driver's Handbook. By Richard McCloskey. 270 pp.; index; illustrated. 50c.

SOLDIER ART. 200 pp. 25c.

CARTOONS FOR FIGHTERS. Edited by Sgt. Frank Brandt, *Infantry Journal*, 25c.

From their own experiences and what they learned from others, three Marine Combat Correspondents and two PROs teamed up to tell a complete, graphic, factual account of the conquest of Iwo Jima. These men were trained as Marines. They lived and fought with the outfits to which they were attached. Their story is that of eye-witnesses and participants, supplemented where necessary by what men in other parts of the island experienced and repeated to them. Bloody and bitter as the fighting was, both directly and indirectly it did much to break Japan's back. This is its saga.

Mr. McCloskey's handbook is no stilted manual. It is the straight dope, and draws analogies with everyday matters so that the prospective driver (or the developing one) will know readily just exactly what the point is. It covers not just driving, but specialized work as well—cross country work, "duck" driving, motorcycles, winter work; and maintenance, trouble shooting, camouflage, towing—pretty much the whole ball of wax.

Soldier Art is a complete pictorial record of the exhibition of the same name held at the National Gallery of Art this past summer. Entries came from all service commands. They were done in all mediums. Most are reproduced here in black and white, but a few are in full color.

In *Cartoons for Fighters* are found around 350 cartoons and gags. Some (as *Male Call*) are from civilian sources. Others are from Army and Navy instruction manuals or movie stills, which in side-splitting fashion tease and tickle while teaching aspects of modern warfare. It's a good sampling of a little bit of most everything.

SON OF THUNDER: Patrick Henry. By Julia M. H. Carson. 240 pp.; bibliography. Longmans, Green & Co. \$2.50.

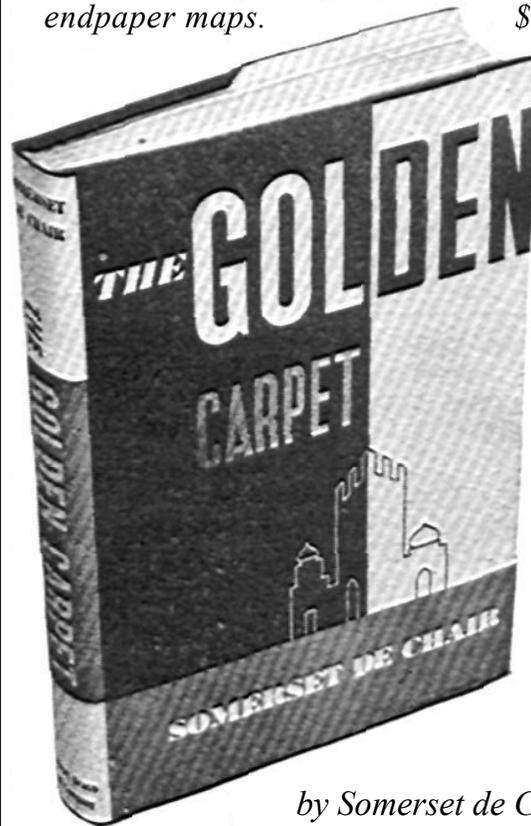
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BETWEEN HEAVEN AND EARTH. By Franz Werfel. 252 pp. Philosophical Library. \$3.00.

The noted author of *The Song of Bernadette* and *The Forty Days of Musa Dagh* expresses his philosophical problems in *Between Heaven and Earth*, a documentary expose of his fight against the "naturalistic nihilism" of the past two decades.

The book is divided into four chapters, the first three of which represent lectures given by him when National Socialism was still struggling for power. Werfel, even in the early 'thirties, represented the movement to his listeners as an ersatz religion and was practically booed from the platform. In *Theologoumena* there are thoughts, statements, and concepts on such diverse subjects as the Mystery of the Incarnation, Christ and Israel, the Sacredness of Property, etc.

Between Heaven and Earth is not a book for easy reading. The reader must pay attention, else he will be lost in a mystic maze. However, for the thoughtful there is much fruit for discussion and contemplation within the pages. C. P.

THE HOME MECHANIC'S HANDBOOK: An Encyclopedia of Tools, Materials, Methods, and Directions. 790 pp.; index; illustrated. D. Van Nostrand Co. \$5.95.

Planning to remodel that hunting shack? Figuring on remodelling a place in the country? Or afraid there'll be lots of repairs to make when you get home? If any of those are the case, or if you want to broaden your household tinkering, here's *the* book for you.

It covers the home front, for both repair jobs and new projects. Six sections describe painting and decorating, woodworking, metalworking, plumbing, masonry, and electricity. The authors are industrial and vocational school teachers, an architect, and a teacher in the War Industry Training Program. They describe and fully illustrate tools, materials, their uses and applications, and a wide range of specific and practical uses.

Theory is limited to just what will actually help the handyman. Varieties and types of woods and pipe, for example, "mixes" of paints and cements, principles of color blending, hanging of wallpaper on ceilings, circuits for electrical signal systems—these are but a bare starter in mentioning the scope of the book. "Tricks of the trade" are given as well as sound, craftsmanlike operations. The whole is copiously illustrated by more than 700 illustrations, some of them photographs and others clear line drawings. It's a book for *use*.

ARE MEN EQUAL? By Henry Alonzo Myers. 183 pp.; index. G. P. Putnam's Sons. \$2.50.

Henry Alonzo Myers has added a dash of humor and a jigger of literary quotations to the discussion of a ponderous problem which has baffled the philosophical experts for centuries.

In his first two chapters Mr. Myers outlines the general problem, and in the following three traces the development of the idea of equality in this country. In his summation the author concludes that the story of American democracy is the discovery of new ideals for personal freedom and the transformation of these ideals into realities. Throughout there is the recurrent thread of our uncompromising faith in human equality; the Four Freedoms, he points out, are only several of an indefinite number of private rights, and all private rights are founded on the bedrock principles of free society.

Mr. Myers is well equipped for his work. He is a Doctor of Philosophy and an Associate Professor of English at Cornell University, where his discussions on American civilization have long been popular. He not only understands his problem but interprets it clearly and weaves into his analyses the thoughts on equality of such Americans as Thoreau, Emerson, Hawthorne, Justice Holmes, Lincoln, and others. C. P.

POWER IN THE PACIFIC: A Navy Picture Record. Compiled by Capt. Edward Steichen, USNR. 144 pp. U. S. Camera. In paper, \$1.00; in cloth, \$2.00.

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photographic equipment about the battlefields in a wagon. His was the first photographic record of a war.

In the past few years an astounding number of photos have documented every aspect of this complex war. Besides recording events, many are superb camera work. From the best of these a selection was made for exhibition at the Museum of Modern Art in New York. They form the bulk of this book.

With a minimum of text or captions, here are large-size reproductions that give the very spirit of the Navy's complex and far-flung operations. Pig boats and carriers, bombardments and air strikes, assault troops and Seabees, rockets and 16-inch guns, recreation and hospitalization—the whole gamut is covered. It's a good job, well done.

SPORT FOR THE FUN OF IT. By John R. Tunis. 326 pp.; general bibliography; index; illustrated. A. S. Barnes & Co. \$3.00.

SPORTS FOR RECREATION AND HOW TO PLAY THEM. By the Staff of the Intramural Sports Department, University of Michigan. 460 pp.; index; bibliography. A. S. Barnes & Co. \$3.00.

Both these books are fine for their purpose. Each complements the other. A single volume incorporating the virtues of both would be even better, but apparently a person can't have everything, even in a book.

Mr. Tunis considers 20 different sports, ranging from archery to volley ball when considered alphabetically. In the other volume 28 are dealt with; the list is about the same, but there aren't just eight additions: some of Mr. Tunis's games are omitted. His, in detail, are archery, badminton, bowling, deck tennis, fencing, golf, handball, horseshoes, lawn bowls, paddle tennis, roque, shuffleboard, figure skating, skiing, squash racquets, squash tennis, table tennis, tennis, and volley ball. The other book adds basketball, boxing, canoeing, equestrianism, football (touchball), ice hockey, lacrosse, riflery, rowing and sculling, soccer, speedball, swimming and diving, water polo, winter sports, and wrestling.

In *Sports for the Fun of It*, each sport is presented under Origin and Background, Equipment, Playing Area, Official Rules, and Bibliography. A distinct help to many people will be the approximation of cost of clothing and equipment required or customarily used for the sport in question.

The University of Michigan staff, on the other hand, has prepared a much more thoroughgoing book so far as helping the amateur is concerned. It goes into both the generalities and the fine points of how to handle oneself; for instance, how to execute the various tennis strokes is both described and well illustrated. It is much more concerned with the principles of the games and how to play and enjoy them than with the "official" rules, which in some cases are "subject to change without notice."

But for their respective purposes, each book is excellent.

SMOLDERING FREEDOM. By Isabel de Palencia. 264 pages; index. Longmans, Green & Co. \$3.00.

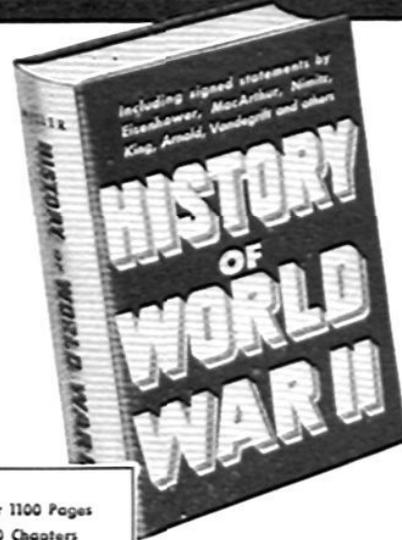
This spirited account of the Spanish Republicans in exile emphasizes the importance of the Spanish struggle against fascism, which the western world did not recognize until it too was forced into the fight.

Mrs. de Palencia was the Spanish Minister to Sweden when the war broke in 1936. In 1939, when the Republicans had to admit defeat, she went to Mexico, along with a majority of the exiled Spanish Government. From there the fight against Franco was continued, culminating in the recent nomination of Martinez Barrio as the Provisional President of the Spanish Republic.

Eschewing many of the political complexities of the exiled Government, Mrs. de Palencia presents a clear account of the origins of the struggle, a summary of the war itself, and an excellent story of what the Republicans have done and are doing to regain control of their country.

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THE COUNTRY CRAFT BOOK. By Randolph Wardell Johnston. 191 pp.; bibliography; index; illustrated. A. S. Barnes & Co. \$1.50.

Mr. Johnston talks about working with wood, clay, metals, stone, and color. He does it in an easy, thorough way that plainly shows his familiarity with doing the things he describes. What's more, he's so interested and interesting that your fingers itch to try out the things he mentions.

Primarily he's interested in the craftsmanship itself, the feel for materials and their proper handling. He doesn't care whether, for instance, you are refinishing furniture for your own pleasure or want to make picture frames in quantity. The important thing is the easy and right way to go about the job so the result will be an honest bit of workmanship.

Throughout, too, he has practical suggestions about how to make jigs or even more complicated pieces of equipment from the simplest materials, scrap stuff that can be found 'most anywhere with just a bit of looking about. He is always right down to cases, giving the details as well as the general procedure. Whether you're thinking of restoring a run-down house or making an outdoor fireplace, you'll find considerable help here.

SILVERSIDES. By Robert Trumbull. 217 pp. Henry Holt & Co. \$2.50.

This is a story of one submarine on duty in the Pacific, of its crew and exploits.

Trumbull writes in an easy fashion and as a result his story is compact and well done.

The characters of the crew are very well defined and it is odd to notice the variety of men who live together in the rather small confines of a submarine, and who function perfectly in emergencies almost as reflex action.

Some of the stories told by Trumbull are fairly well known from the newspaper accounts of them, but drawn into the story of one ship give a clear picture of the diversity of things that make up a war patrol. C.V.C.

THE PORTABLE MURDER BOOK. Selected and introduced by Joseph Jackson. 568 pp.

THE PORTABLE NOVELS OF SCIENCE. Selected and with introductions by Donald A. Wollheim. 737 pp.

THE PORTABLE F. SCOTT FITZGERALD. Selected by Dorothy Parker; introduction by John O'Hara. 835 pp. All by The Viking Press. \$2.00 each.

For anyone who travels, or likes always to have a good book handy, Viking's "portable library" is a boon indeed. These books are readable. They're sturdy. And they're books of the kind people want to have around. These latest additions are typical.

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Differing considerably, the novels of science deal with scientific speculation. Science-fiction is as old as *Gulliver's Travels*. More recently it has been widely found in the comic strips—many of whose weird absurdities were turned into first-rate weapons of World War II. These stories, however, are not just "thrillers," such as (for example) the *Tarzan* books, but are even more fascinating. What are they? *The First Men in the Moon* by H. G. Wells; *Before the Dawn* by John Taine (in private life Eric Temple Bell, Professor of Mathematics at the California Institute of Technology, past-president of the Mathematical Association of America, member of the National Academy of Science); *The Shadow Out of Time* by H. P. Lovecraft (who can well be

called the Edgar Allan Poe of this century); and *Odd John* by Olaf Stapledon (rather in the "Superman" tradition).

F. Scott Fitzgerald, in case you're too young to recall, was the arch-chronicler of the jazz age. His tremendous acclaim in his (and the century's) early twenties went quite to his head; then in his thirties came depression from literary attacks; finally came a dismally unfortunate end to his life. Now there is a resurgence of interest in the man and his writings. His work was good, much of it very good; and of course, some inevitably wasn't up to par. Dorothy Parker has chosen mostly from the excellent, some from the other stuff: she picked two complete novels (*The Great Gatsby* and *Tender Is the Night*) and nine short stories. John O'Hara's introduction is enthusiastic—uncritically so, in fact, so that he's apt to do his hero as much harm as good. There's good reading here, though, from the pen of a man who is returning to the position and general appreciation he deserves.

BATTLE BELOW: The War of the Submarines. By Robert J. Casey. 380 pp.; illustrated. The Bobbs-Merrill Co. \$3.50.

Casey's enthusiasm and admiration for the men of the submarine service and their activities during this war certainly make this book easy reading.

Of great interest is the amount of ingenuity and quick thinking that seems inherent in the character of submarine skippers. Especially recommended are the stories of the early submarine warfare in the Pacific shortly after Pearl Harbor, when the lack of equipment was so apparent. Particularly well done are the descriptions of depth charges as experienced by the young and sometimes green submarine crews.

All in all, label this as good reading. C.V.C.

LAST LEAVES. By Stephen Leacock. 213 pp. Dodd, Mead & Co. \$2.50.

To some people Stephen Leacock was a distinguished Canadian economist. To others he is best known for his delightfully humorous writings. His last products, sparkling with true wit and humor, are here collected. And beneath each bit of merriment runs some shrewd wisdom.

There are discussions on such subjects as to whether witty women are attractive to men, what Isaak Walton can teach us (he needed a ghost writer most of all!), and walking (in mock-serious vein). More sober are several pieces on Canadian-American relations, and discussions on such things as inflation and the gold standard where the author combines utter clarity with welcome humor. Finally, closing the twenty-one bits, are two on *Alice in Wonderland* and Gilbert's "Bab" ballads.

Both sides of the border suffered a distinct loss when extreme age finally closed Stephen Leacock's unusual life and career. Fortunately we still have mementoes of the man.

MY FAVORITE WAR STORY. Compiled by the Editors of "Look." 155 pp.; illustrated. Whittlesey House. \$2.50.

Thirty-four war reporters contributed to this volume the short war story which was his (or her) favorite, an incident out of his own experience. Richard Tregaskis, Vincent Sheean, Ira Wolfert, Larry Lesueur, Stefan Heym, and Robert St. John are just a few of the writers represented, but they'll give you an idea of who's represented. Each tale is illustrated, and accompanied by a biographical sketch and photo of its author. It is a diversified collection, indeed.

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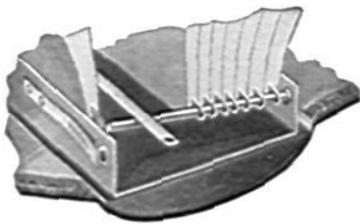
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