THE FIELD ARTILLERY JOURNAL

JANUARY-FEBRUARY, 1936

PUBLISHED BI-MONTHLY BY

THE UNITED STATES FIELD ARTILLERY ASSOCIATION

January-February, 1936

CONTENTS

VOL. XXVI No. 1

JANUARY-FEBRUARY, 1936

THE FIELD ARTILLERY JOURNAL

EDITED BY
DEAN HUDNUTT
MAJOR, FIELD ARTILLERY, UNITED STATES ARMY

Patron Saint of Artillery

PUBLISHED BI-MONTHLY FOR
THE UNITED STATES FIELD ARTILLERY ASSOCIATION

BY MONUMENTAL PRINTING COMPANY
1918-32 HARFORD AVENUE
BALTIMORE, MD.

Editorial Office, 1624 H Street, N. W., Washington, D. C.

Entered as second-class matter August 20, 1929, at the post office at Baltimore, Md., under the Act of March 3, 1879

Published without expense to the government

The Field Artillery Journal pays for original articles accepted

THE U. S. FIELD ARTILLERY ASSOCIATION
1624 H Street, N. W., Washington, D. C.

Please enroll me as a member of the Association and as a subscriber to *The Field Artillery Journal*. I enclose $3 for subscription and dues.

Name .....

Rank and Organization.....

Street.....

City ..... **State** .....

Please change my address

from .....

to.....

.....
(Signature)

.....

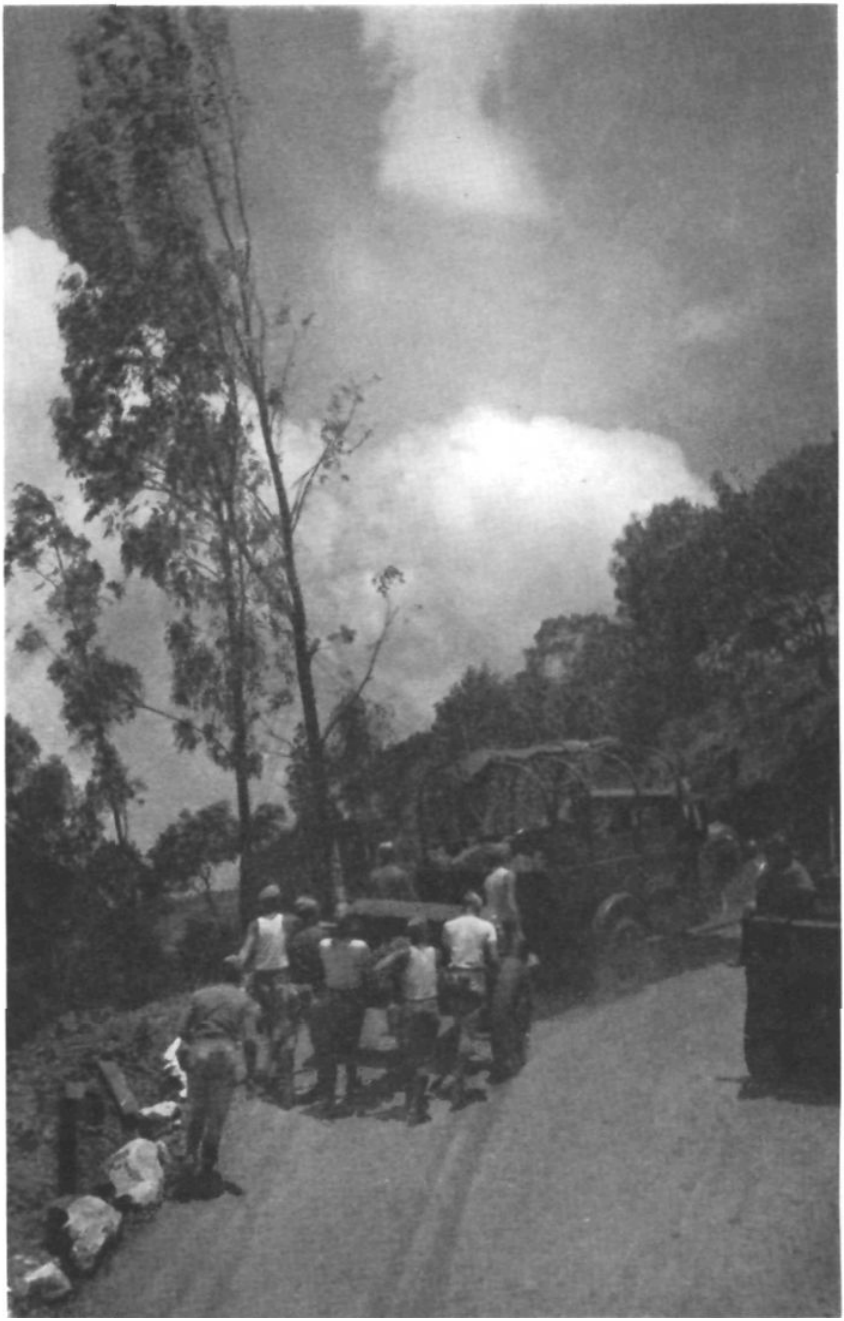


Photo by Captain George B. McReynolds, 13th F. A.

BATTERY "A", 13TH FIELD ARTILLERY, CROSSING KOLE KOLE PASS, HAWAIIAN ISLANDS

THE FIELD ARTILLERY JOURNAL

VOLUME XXVI JANUARY-FEBRUARY, 1936 NUMBER 1

THE ROARING GUNS FROM THE SEVEN DAYS TO COLD HARBOR

BY COLONEL ALLEN J. GREER, Field Artillery

IN STUDYING campaigns it is necessary to consider all elements that have had a material part in producing the result. This fact is self evident, of course, and yet when histories are written, in many cases some of the most basic and important factors are neglected in order to make a romantic narrative of events. For instance, in comparing the relative strength of the two opposing armies in the engagements during our Civil War, it is rare that we see exact figures concerning the numbers of guns on both sides or their effect upon the outcome. The generation of soldiers that saw the World War should especially marvel at this, for the vast importance of artillery and its decisive role in battle became generally recognized. Yet there are few who realize that artillery practically decided several battles during the Civil War, and still fewer who are aware of the numbers and types of guns the opponents possessed, their methods of employment, or why these conditions obtained.

ORGANIZATION AND EQUIPMENT
Army of Northern Virginia

At the time the Southern States seceded, there was very little war material in any of the southern arsenals or in the hands of the state militias. Especially was this true so far as artillery equipment was concerned. Not a gun had been manufactured in the South for fifty years. Virginia was better off perhaps than any of the Confederate States. In its militia there were twelve companies of artillery that had thirty pieces of ordnance, twelve of which were new Parrott rifles. In the entire South there was only one foundry capable of manufacturing cannon, "The Richmond Tredegar Works." Great efforts were made to speed up production in this plant, and other arsenals were established to make gun carriages, harness, and equipment, as well as ammunition.

However, the South lacked skilled labor, and a scarcity of copper and brass to make first class ammunition, greatly handicapped their artillery throughout the war.

The North had available all it's great industrial resources, while the South had always been an agricultural community with few manufacturing plants. The North could also purchase abroad any articles needed, while the blockade of southern ports limited the Confederate armies to local manufactures and to material captured from the Union armies, one of the most fruitful sources of supply. At First Bull Run the Confederates captured 27 guns, during the Seven Days 52, at Second Bull Run 23, at Harper's Ferry 49, and at Chancellorsville 13.

Having no regular army, and only a small force of militia upon which to build its military machine, the Southern army had to be created in almost its entirety from volunteers. While there were thousands of Southerners who were familiar with the use of small arms, and there were many of these on hand, although of antiquated types and always inferior to those possessed by Union troops, still the artillery establishment had almost nothing in the beginning. That so much was done in such a short time then is most surprising, and speaks well indeed for the energy and organizing ability of the leaders.

When the Norfolk Navy Yard was captured, shortly after Virginia seceded, a number of naval guns were obtained, but as there were no gun carriages or caissons great difficulty was experienced in providing them. The Harper's Ferry Arsenal provided machinery for manufacturing small arms, but furnished little assistance in producing artillery material.

At the First Battle of Bull Run the Confederates had 47 guns, mostly 6 and 12 pounder howitzers. The Federal army had 49, about half of which were rifles. The Confederates captured 27 of these guns.

On the Peninsula. Johnston had 160 guns. 64 of which were assigned to brigades, 1 battery to the horse artillery, and the remainder were with the general reserve. Most of these guns were smooth-bore, consisting of 6 and 12-pounder bronze guns, and 12, 24, and 32-pounder howitzers.

There was always a shortage of artillery draft horses, and due to losses in battle, on the march, to exposure, and to the lack of

forage, many batteries were almost immobile. The exposure during the severe winters of 1862-1863 and 1863-1864 caused many losses, and the ever widening territory captured by the Federals in the west, increased the difficulty of obtaining replacements. The Union army, on the contrary, had an almost inexhaustible supply to draw upon. It is not generally appreciated how much the necessity of securing supplies for men and animals affected the operation of the Southern armies. For instance one of the principal reasons for the absence of Longstreet's corps from Chancellorsville was that he was collecting supplies in southern Virginia, and on several occasions detachments of cavalry and artillery were in the rear areas to permit their horses to graze and recuperate, when tactical conditions demanded their presence at the front.

The variety of armament was so great that ammunition supply was always complicated. Even within batteries the guns were frequently of different types. To correct this, in 1862, it was determined to limit manufacture of ordnance to certain types. These were:

Bronze 12-pounder Napoleons, Caliber 4.62,
10-Pounder Parrott rifles, Caliber 2.9,
20-Pounder Parrott rifles, Caliber 3.67,
30-Pounder Parrott siege guns, Caliber 4.2.

The Army of Northern Virginia had two of the last, both of which blew up at Fredericksburg.

Gun ranges were as follows: For the Napoleons a maximum of 1,800 yards, although at 1,200 yards they were quite inaccurate. Shrapnel was more effective from them than from the rifles. The other guns had ranges from 2,800 yards for the 3-inch rifles up to about 8,000 yards for the 30-pounder Parrott rifles. Projectiles consisted of solid shot, shell, shrapnel (then known as spherical case shot), and canister. About 400 yards was the maximum range for using the last.

To officer the Confederate artillery, there were a few former Regular Army officers and some graduates of the Virginia Military Institute, with limited experience. Some officers were provided from the Artillery School established at Richmond College. Nearly all had to learn the theory of artillery by actually handling it in battle, and the long list of casualties among artillery officers in battery and field grade furnish ample evidence of their gallantry

and the proximity of the guns to the front lines.

Army of the Potomac

At the beginning of the War the light artillery of the United States consisted of 8 batteries, 2 from each of the 4 regiments of the Regular Army. Most Regular artillery was converted into field batteries, but when General McClellan assumed command of the troops around Washington on July 27, 1861, the field artillery consisted of but 9 partial batteries, with 30 guns of different calibers. Appreciating the magnitude of the task before him, he made arrangements to have all facilities available put to their maximum capacity to produce artillery material. Arsenals were greatly enlarged and numerous contracts were made with private factories capable of producing guns and equipment.

He had the Regular Army units upon which to base his organizations, and in the Regular Army officers, though limited in numbers, a body of trained artillerists. In addition in many of the regular batteries were a number of old non-commissioned officers and soldiers as cadres of key men. While his problem was an enormous one, it was far simpler than that of the Confederates.

Under General William F. Barry, Chief of Artillery, artillery organization proceeded rapidly. It was decided to have 6 guns to the battery, the guns to be of uniform type. At first one-third were to be rifled guns and two-thirds smooth bore 12-pounder Napoleons. The batteries were not to be assigned to brigades, but four to each infantry division, one of which was to be from the Regular Army, the others from the Volunteers. The Regular Army captain was to be division chief of artillery, but no additional rank was given to him. There was to be a General Reserve of 100 guns, and a siege train of 50 pieces.

When the Army took the field in March, 1862, there had been organized 92 batteries (30 of which were from the Regular Army) with 520 guns, served by 12,500 gunners.

THE SEVEN DAYS, JUNE 26-JULY 1, 1862

When Lee assumed the offensive on the Peninsula in 1862 his total strength was about 85,000 men and about 200 guns. Forty-five batteries including one with Stuart's Cavalry were attached to brigades, the organization inherited from Johnston. The batteries averaged 3 guns of many types. In the General Reserve

under General Pendleton there were 5 battalions of 17 batteries.

The Federal strength was about 105,000 men, with 343 guns. Eighteen batteries of 100 guns were in the Reserve. Twenty batteries were from the Regular Army. The armament for the Reserve consisted of 30 Napoleons (12-pounder howitzers), 14 ten-pounder Parrotts, 20 twenty-pounder Parrotts, 30 three-inch rifles, and 6 thirty-two-pounder howitzers.

The close wooded country of the Peninsula, its swamps, and the poor condition of the roads prevented any extensive use of artillery until the final day at Malvern Hill. Both armies were still amateurs in the game of war. While Lee's general strategic plan was most ably conceived, it required for its successful accomplishment subordinate commanders of high ability and more experience than his division commanders possessed at that time. As this study deals only with the salient artillery features, discussion will be limited to operations affecting them.

The campaign opened with the Battle of Mechanicsville on June 26th. Although it had been planned for an overwhelming force to strike Porter's corps, separated from the main army by the Chickahominy, actually A. P. Hill's division made the first attack alone. Hill used only 8 batteries with no massed fire, while Porter used 6 massed batteries, which inflicted heavy losses on the Confederate infantry.

The history of this battle from an artillery standpoint is very similar to that of Gaines's Mill on the 27th, Savage Station on the 29th, and Frayser's Farm on the 30th. In each case the Confederates entirely failed to mass their artillery and there was no adequate preparation for the infantry assault. The principal reason for this was probably the brigade organization. However, they were acting on the offensive in a region ill suited for the employment of large numbers of artillery. The Confederate success was due to the dash and impetuosity of the infantry which continued its assaults, notwithstanding lack of artillery support and heavy losses. While the Federal Artillery was better handled, and did use massed fire in many instances; this was due to better organization and equipment. Also they were acting on the defensive, which afforded better opportunity for control and choice of positions.

On June 30th, the retreating Union forces were arriving at

Malvern Hill on the James River. On that date Colonel Henry J. Hunt, commanding the Artillery Reserve, reconnoitered for positions for the artillery and placed the batteries. On the next day he rearranged the whole line, and during the battle commanded the massed guns of the reserve. To him is due much of the credit for the result of the battle. 350 guns were placed in position; 100 of which were held in reserve to use as the situation demanded. In some cases the guns were tier above tier, and they were able to sweep the wheat fields and cleared ground in front of the position and over which the Confederates had to advance for several hundred yards in their assault. Also they could range into the woods beyond where the Confederates placed their batteries.

The position was almost impregnable and could not possibly have been carried unless there had been an overwhelming artillery preparation.

However, the Confederate Chief of Artillery was not even consulted concerning the attack, and his 17 batteries of Reserve Artillery were never brought into action at all, but remained idle in rear, clogging the roads. While positions were not numerous, there were at least two where the reserve batteries could have been placed and used converging fire on the Union troops in their rather confined positions. The Confederate brigade batteries came into action singly and were easily crushed by the Union guns. Only in Jackson's division was effort made to mass batteries, but these were outclassed. On July 1st, the assault of the Confederates was shattered by Federal gun-fire, shrapnel being used extensively. The remnants were met at short range with musketry and the entire assault repulsed with terrible carnage. A war correspondent wrote: "Our superiority in artillery has saved the army from annihilation." General D. H. Hill said that more than half of the Confederate losses were due to artillery fire, an almost unheard of percentage at that time.

The assault at Malvern Hill must be considered as one of Lee's most serious tactical mistakes. His order to attack could not be justified unless he believed the Union troops were utterly demoralized by their continued retreat and defeats. This was not true, although there was close to a state of panic in some commands, as evidenced on the retreat to Harrison's Landing the next day,

when vast quantities of equipment were abandoned, including thousands of small arms.

After knowledge shows that Malvern Hill should not have been attacked, but merely observed, while Lee himself took up a defensive position toward Harrison's Landing, and as McClellan could not obtain supplies in quantities needed at Malvern, he would have been forced to assault the Confederates to extricate his army.

SECOND BATTLE OF BULL RUN, AUGUST 29-30, 1862

After the Peninsula Campaign the Confederate Army was reorganized and divided into two wings, which were in effect corps, as they later became. The Right Wing was commanded by Longstreet, the Left Wing by Jackson. The artillery was increased and its organization materially changed. The 52 guns captured from the Federals during the Peninsula Campaign were issued to batteries with a consequent improvement in the armament. Batteries were assigned to divisions, not brigades. Longstreet's corps had 22 batteries, Jackson's 21. Corps chiefs of artillery were appointed. With the cavalry were 2 batteries, and in all there were 175 guns, exclusive of the General Reserve, which did not arrive in time for the battle.

While Pope's army had only 125 guns, nearly all of them were rifles, decidedly outranging and outclassing the Confederate artillery.

During the first phase of the battle, Jackson took up a fine defensive position near Groveton, and awaited the Union attack. Most of his infantry were posted in an old railroad cut, while every gun was in position on the crest of a wooded ridge in close support of the infantry. The Federal artillery did not possess enough guns to effectively counter-battery the Confederates and at the same time support the attacking infantry. Neither mission was accomplished.

Jackson was thus able to hold his position the first day, and when Longstreet came up on the next, the Confederate line was prolonged, forming a re-entrant angle. Longstreet sent ahead of him several batteries under Colonel S. D. Lee, later lieutenant-general, which filled in the gap between him and Jackson and materially assisted the defense by enfilade fire on the assaulting Union troops, which had just reached Jackson's position.

With Longstreet's arrival and the repulse of Pope's attack. Lee assumed the offensive and drove Pope's army from the field, defeated and demoralized.

The important artillery features of this battle were the failure of the Federal artillery to either effectively counter-battery the Confederates or adequately support the infantry. This was partly due to poor handling, but also to lack of strength. The Confederate artillery on the contrary was well handled and cooperated with the infantry, closely supporting the latter with canister fired at short ranges from their smooth bore guns.

BATTLE OF ANTIETAM, SEPTEMBER 16-17, 1862

After his decisive victory over Pope at Second Bull Run, Lee invaded Maryland, but the approach of the Army of the Potomac, again commanded by McClellan, compelled him to take up a defensive position near Sharpsburg, to the west of Antietam Creek. To defend this position Lee had between 30,000 and 35,000 infantry and less than 200 guns. The guns consisted of 6 and 12-pounder smooth bores, with some 10 and 20-pounder Parrotts, and 3-inch rifles, and in addition a few James and Whitworth rifles. The Union army had about 87,000 men and 275 guns. Their infantry was better armed and not only was their artillery more numerous, but had better projectiles and fuzes.

While Lee's position was tactically strong, it gave the Union Army ample space to deploy its greatly superior artillery on a commanding ridge not more than 2,000 yards from the Confederate lines.

On the 16th General Hunt made his reconnaissance and established his artillery on this ridge, and during the afternoon the two artilleries engaged in a duel. The Union Army commenced to deploy, but darkness soon terminated the struggle for that day.

The Union artillery was so placed that it could successfully counter-battery with its 20-pounder Parrott rifles the Confederate artillery and with the lighter rifles and Napoleons support the infantry assault by fire on the hostile infantry lines. General D. H. Hill stated the Union artillery put out of action nearly all the 50 guns in his division.

During the attack on the 17th, the artillery under the able handling of General Hunt most efficiently supported the attack,

and with its fire inflicted such severe losses on the Confederates that Colonel S. D. Lee remarked that "Sharpsburg was Artillery Hell."

Although the Confederates held their ground at the end of the day and remained in position the next, awaiting the attack which was not renewed, their offensive campaign had failed, even though the battle of Antietam was itself tactically indecisive.

McClellan's failure to attack Lee on the 18th, when he had available, besides the 50,000 troops used the day before, some 36,000 fresh troops, while Lee had his back to the Potomac, over which there was only one poor ford, will always remain the severest indictment against his ability as a commander. Not only did he have a strength of almost three to one in infantry, but his artillery was more numerous, outranged and outweighed the Confederate, whose ammunition was almost exhausted.

Outranged as it was, nevertheless the Confederate artillery was well handled, and was particularly efficient when in close support of its infantry, firing canister at ranges less than 300 yards, where the light howitzers were actually more effective than the heavier rifled guns.

During the battle General Pendleton, the Confederate Chief of Artillery, remained on the south side of the Potomac with many of the batteries of the artillery reserve to protect the crossing.

THE BATTLE OF FREDERICKSBURG, DECEMBER 13, 1862

At the Battle of Fredericksburg Lee had about 78,000 men with about 250 guns. Burnside had about 119,000 men and 321 guns.

Lee had taken up a naturally strong position on the hills south of the Rappahannock. He decided it would not be possible to prevent the Union Army from crossing, so determined to accept battle in a defensive position after the crossing was accomplished. On account of the frozen ground not much intrenching could be done, but gun pits were partially dug to secure protection from the fire of the long range Federal artillery.

The Northern troops occupied the hills to the north of the river known as Stafford Heights and here General Hunt posted 149 guns belonging to the reserve and to the Corps. After troops crossed divisional artillery rejoined their commands.

Rifles were gradually supplanting the smooth bores, and the Union armament now consisted of 22 twenty-pounder Parrotts, 7 four-point-five siege guns, 228 light 3-inch rifles and 164 Napoleons.

In addition to the Reserve and Horse artillery the Confederates had with the 1st Corps 16 batteries with divisions and 2 in corps reserve. In the 2d Corps 23 batteries were with divisions and 6 were in corps reserve. The tactics of the Confederate artillery are noteworthy. Having determined that they could not successfully fight a duel with the heavier Federal guns, the batteries remained in the earlier part of the action in pits and under cover behind a crest. Only some of the heavier guns replied to the Union artillery, and the range was too great to effectively neutralize the Confederate guns. Here as at Antietam and in numerous other battles the faulty Confederate ammunition was observed. Particularly were the fuzes defective and unreliable.

Under the protection of their guns the Union forces crossed on the 11th and 12th, and on the 13th advanced against the Confederate positions. The Union assault was met by the fire of the Conferedate guns which were brought forward from sheltered positions, firing canister at close range when the Union artillery was masked by their own advancing infantry, and this fire was supplemented by musketry from well protected infantry. It was almost a repetition of the lessons of Malvern Hill. Infantry in position could not be dislodged by attacking infantry unless the defenders were overwhelmed by artillery fire. Lee actually used only 20,000 of his own infantry, yet the Federals were thrown back with heavy casualties.

After the defeat the Federal troops withdrew across the river under the shelter of their superior and efficient guns, and Lee considered it inadvisable to follow up the retreat and attack an army stronger than his own, supported by Hunt's powerful artillery.

THE BATTLE OF CHANCELLORSVILLE, MAY 1-3, 1863

After the Battle of Fredericksburg, Lee's army was reorganized: the two corps being definitely established. To Longstreet's 1st Corps were assigned 18 batteries of 72 guns, of which 10 were in the Corps Reserve: to Jackson's 2d Corps were assigned 28 batteries of 118 guns, with 10 batteries in Corps Reserve. In the

general reserve there were 2 battalions of 3 batteries each with 26 guns. There was one battalion of horse artillery with 4 batteries of 18 guns.

At the Battle of Chancellorsville, Hooker's army consisted of about 130,000 men with 404 guns; Lee's army was about 60,000 strong with 225 guns.

The Wilderness of Spottsylvania where the battle was fought did not permit of extensive or massed use of artillery on account of the dense woods, which limited choice of positions and fields of fire. Batteries usually had to operate separately and the heavier metal and longer range of the Union artillery was of no great advantage. It was essentially an infantry battle, although artillery firing at close ranges at times played an important part.

On May 1st, toward the close of the day, Jackson completed his famous turning movement and struck the exposed flank of the 11th Corps on the Federal right. Artillery was brought into the lines of the attacking infantry and added its fire to that of the infantry, as the Union right was rolled up. While long range artillery fire was an impossibility, on both sides attempts were made to mass batteries when opportunity occurred.

At Fairview, in attempting to check the Confederate advance, the 12th Corps actually did get 34 guns in position, which fired very effectively. On several occasions the Confederates had 30 or 40 guns firing at the same time, the most notable instance being at the Hazel Grove position on May 3rd. At the small clearings near the Chancellor House, artillery was effectively used. General Hooker himself being injured as a result of a shell explosion.

However, it was the dash and higher morale of the Confederate infantry, in conjunction with the surprise of the Union troops when struck in flank and rear, that decided the day. When artillery was effective, it was when the guns were used in close support of the infantry, firing canister at short ranges.

When Hooker took command of the Army, he ceased to use General Hunt as commander of the reserve artillery, but relegated that officer to administrative duties only. The Reserve took no part in the battle proper, but merely guarded the fords over the Rappahannock. After the battle Hooker retired across the river and took up a strong entrenched position, protected by his guns.

General Pendleton, with the Confederate reserve artillery, was at Fredericksburg protecting the crossings of the river there, and took no part in the battle proper, although when Sedgwick crossed on the 2d, and carried the heights, some of Pendleton's guns were lost.

BATTLE OF GETTYSBURG, JULY 1-3, 1863

After the Battle of Chancellorsville and the death of Stonewall Jackson, the Army of Northern Virginia was completely reorganized. The 1st Corps remained under Longstreet; Ewell was assigned to command the 2d, and A. P. Hill the 3d. The artillery was re-equipped and to a certain extent re-armed. In the three corps there were assembled 103 three-inch rifles. 107 Napoleons. 30 twelve-pounder howitzers, some Parrott rifles, and 4 six-inch Whitworth rifles. In the 1st Corps there were 22 batteries, in the 2d and 3d Corps 20 each. Each battery had 4 guns. Four batteries formed a battalion, each battalion having a lieutenant colonel and a major. In each corps there was a brigadier general as chief of artillery and those batteries not assigned to divisions formed the Corps Reserve. The Army artillery reserve was discontinued and General Pendleton, the Chief of Artillery, became merely an administrative staff officer and inspector. At the Battle of Gettysburg Lee had about 52,000 infantry and 272 guns. However, the ammunition supply was in many cases of poor quality and there were only 150 rounds per gun.

The Federal Army consisted of about 78,000 infantry and 320 guns. The armament was as follows: 142 Napoleons, 106 three-inch rifles, 60 ten-pounder Parrotts, 6 twenty-pounder Parrotts, 4 James rifles, and 2 twelve-pounder howitzers. General Hunt, the Chief of Artillery, had not only provided the full allowance of ammunition, but had in the train 20 additional rounds per gun, so that each gun could have 270 rounds.

July 1st and 2d, 1863, were days of lost opportunities for the Confederates, which if the great "Stonewall" had been present, would have been seen and seized. The battle was opened by A. P. Hill's corps, which was being worsted by the troops of Reynolds and Buford, when Ewell appeared on the Union right flank and turned the tide of battle. Why he did not follow up the fleeing Union troops, as Lee's general instructions directed, is still unexplained. For the third and final day of the battle, Lee ordered

Longstreet to assault the Federal center, and Pickett's division was designated to make the charge, which would have to be across 1,300 yards of open fields, before reaching the Union lines.

To prepare for the charge the artillery of Longstreet's and Hill's corps were placed in a line about two miles long on Seminary Ridge, almost parallel with the Union position. In some instances the guns were within 650 yards of the enemy, and in advance of their own infantry. About 170 guns were placed here under the control of Colonel E. P. Alexander, afterwards Longstreet's Chief of Artillery. Considering the mission of the artillery it is difficult to understand why 25 rifles, 16 Napoleons and 15 twelve-pounders were not used at all. While Longstreet employed all 83 of his guns, Hill and Ewell, who were ordered to assist him in the assault, used 65 guns each, and no infantry cooperated.

On the Union side, to meet the assault, General Hunt had placed 166 guns before the attack commenced, and had 10 more batteries brought into action during the engagement, a total of 220 guns. Batteries not needed remained under shelter behind the crest. All batteries acted as a unit under the direct control of General Hunt.

About noon the artillery duel commenced, the greatest volume of fire ever heard on this continent. After about two hours of the duel, General Hunt was apprehensive that ammunition would run short and ordered the batteries gradually to slacken their fire and await the infantry assault. Although General Alexander was not convinced that the Union artillery had been silenced, nevertheless he informed General Longstreet that if the assault were to be made, it had to be done then as ammunition would soon be exhausted: and so Pickett started his famous charge.

The Union artillery now disregarded the hostile guns and opened on the infantry with shell at long range, and case-shot and canister as the Confederates drew closer, but the latter kept their formations and advanced through artillery and musketry fire, actually penetrating the Union lines. The charge, however, was spent, for being unsupported the remnants were either driven back or captured.

The Battle of Gettysburg has been the subject of many controversies. Many reasons have been given for the Confederate

defeat by Southern writers, and many charges have been made against Lee's subordinates, blaming them for the failure. No doubt many of these allegations have substantial bases, and in the light of after events it appears that at some time during the campaign all of Lee's corps commanders served him badly. Stuart with his cavalry was absent from the time the army crossed the Potomac until July 2d, and much needed information was lacking. A. P. Hill brought on the battle on July 1st, contrary to Lee's wishes and instructions. Ewell entirely failed to seize the opportunity when he was on the exposed Federal right flank on the afternoon of July 1st. Longstreet failed to bring his troops on the field early on the morning of the 2d, as he could have done had he acted loyally and energetically, and he failed to properly support Pickett's charge on the 3d. Had the Confederates, with their full strength, pressed the attack on the 1st, and had Longstreet arrived early on the 2d, as ordered, and had the attack then been a simultaneous one by all three corps, victory would probably have resulted, as the Union Army was still strung out on the roads and the reserve artillery not on the field. As it was, Longstreet attacked about 4 P. M., supported by 62 guns only, while Hunt put in 11 batteries of 60 guns in addition to 80 guns belonging to the corps.

However, this fact remains prominently before us. Lee, at Gettysburg, as elsewhere, made his plans and issued his orders to bring his commands to the designated points at the appointed times. The corps commanders fought the battles and Lee did not hold out a reserve subject to his own orders only. After his initial orders he had very little personal influence on results, and as a natural consequence, cooperation between corps commanders was not assured. He no longer had an army artillery reserve, as the Union army had, and which rendered such powerful assistance. This was largely due to shortage of men and guns, but Gettysburg was the battlefield where such a reserve could have been used as never before or after; in fact in the manner that Napoleon said he employed his artillery. "It is the artillery of the Guard which decides most of my battles, because having it always in hand, I am able to use it wherever it is necessary."

General Pendleton, the Confederate Chief of Artillery, had become a mere staff officer, who visited the artillery positions, but

gave no orders for its employment. Had he directed the batteries of Hill's and Ewell's corps to take position on July 3d, for converging and enfilade fire on the point of assault, as could have been done, owing to the exterior lines of the Confederates, the attack would have had at least a better chance for success. General Hunt, who had Meade's full confidence, on the contrary, personally directed the posting of the Union batteries, and handled them as a unit during the battle. This coordination of artillery fire was one of the most positive causes of the Union success.

Finally, let us summarize the situation of the third day. What possible chance did Lee have to defeat the Union army, when that army was in a strong defensive position about four miles in length, with the flanks reasonably secured on the north by Culp's Hill, and on the south by Round Top, when the defenders had 78,000 infantry and 320 guns, and the attackers had only 52,000 infantry and 270 guns? Moreover, the Union artillery was provided with not only more guns, but these were superior in calibers, quantity and quality of ammunition. Is it not apparent that the Confederate artillery could not possibly have neutralized the opposing batteries and so shake the Union infantry as to permit their own infantry to make a frontal attack across three-quarters of a mile of open fields? Even granting the superiority of Lee's infantry, resulting from their continued successes, still the enemy had to be far inferior to them in fighting qualities and morale for victory to have resulted. Yet the Northern soldiers were of the same racial stock as the Southerners, and there could be no great difference between them. The conclusion seems inevitable, that not only did Lee fail to appreciate the strength of the Union position, but either greatly under-estimated his opponents or greatly overestimated the qualities of his own men, and was unjustifiably over-confident. With the magnanimity that was characteristic of him, he said as the shattered fragments of Pickett's division returned: "It's all my fault, I thought my men were invincible."

BATTLES OF THE WILDERNESS, SPOTTSYLVANIA AND COLD HARBOR, MAY 5-JUNE 3, 1864

After the Gettysburg campaign the Army of Northern Virginia was again reorganized, and to the 1st Corps were assigned 22 batteries of 83 guns; to the 2d Corps, 20 batteries of 81 guns, to the 3d Corps, 20 batteries of 77 guns.

The armament consisted of 12 twenty-pounder Parrotts, 39 tenpounder Parrotts, 64 three-inch rifles, 2 Whitworth rifles, 98 Napoleons, 5 twenty-four-pounder howitzers, and 21 twelve-pounder howitzers. General Pendleton remained as Chief of Artillery, while Brigadier General E. P. Alexander, A. L. Long, and Colonel, afterwards Brigadier General, R. L. Walker were chiefs, respectively, of the 1st, 2d and 3d Corps artilleries. On May 1st, the Confederate army had a strength of 57,000 infantry, 52 light and 5 horse batteries with 213 guns, in addition to the cavalry.

The Army of the Potomac had 119,000 men. With the 2d Corps there were 9 batteries of 6 guns each; with the 5th Corps 8 batteries of 6 guns each and with the 6th Corps 8 batteries of 6 guns each. There were 12 batteries of horse artillery. The general reserve was divided into two brigades. The armament for the entire artillery consisted of 128 three-inch rifles, 36 tenpounder and 12 twenty-pounder Parrotts, 130 Napoleons and 8 mortars, a total of 314 guns.

On May 5th, Grant crossed the Rappahannock and commenced his "Overland Campaign" against Lee's army and Richmond. It was practically one continual battle from May 5th to June 3d. The advance into the Wilderness was particularly pleasing to Lee for the densely wooded country prevented the effective use of the greatly superior Union artillery, and limited the use of any guns, yet General Alexander states that during the fighting every gun in the 1st Corps was engaged, and assigned to positions, either on the line or behind where it could fire over the infantry. Lee's vigorous offensive brought the Army of the Potomac to a standstill after heavy losses, and both sides built breastworks of logs and earth.

On May 7th, Grant concluded that the Confederate position was too strong to be carried by assault, so decided to move by the left toward Spottsylvania Court House.

Lee met Grant's movement to the left by a similar one to his right, and again the Union army found the Confederates in position in their front. Skirmishing occurred daily, and the dense character of the terrain forced the artillery batteries to fight alongside the infantry or not at all.

The Confederate position at Spottsylvania had the usual breastworks of logs and earth. Guns were placed along the entire line

in pits or behind slight epaulements. The Union troops similarly fortified.

The most important combat occurred on May 12. Reports reached Lee indicating that the Union army was again moving to the left, so orders were issued for conforming to this movement, and the artillery was directed to withdraw guns from the line. This was done in Ewell's corps before it became known that the report of the Union movement was a mistake. At daylight Hancock made his famous assault on the salient, later known as the "Bloody Angle." The absence of artillery fire enabled the Union troops to penetrate deeply into the lines and capture a number of prisoners. Elsewhere along the front, artillery firing canister at close range brought the assault to a halt. Ultimately the Confederate counter-attack drove Hancock back from most of the captured ground, and the Confederates rectified their lines, abandoning the salient.

Prior to leaving Spottsylvania, Grant decided he had more artillery than could be properly used, so to relieve the roads and simplify supply, he abolished the artillery reserve as a separate corps. Some of the batteries were assigned to corps, and 100 guns were sent back to the defenses of Washington. Before reaching the James, he again reduced the artillery, and batteries then had 4 instead of 6 guns.

After twelve days before Spottsylvania, Grant concluded that the Confederate position was too strong to be carried by assault, and again side-slipped to the left. Lee conformed, taking position behind the North Anna. Grant again moved to his left, always drawing nearer to Richmond, and Lee countered by moving to his right, taking position along the Totopotomoy. Once more Grant moved to his left, reaching the Chickahominy, finding Lee in position in his front near the old battlefields of two years before in the vicinity of Cold Harbor.

Both sides entrenched and the Confederates, expecting an assault, prepared their lines with great care. Gun positions were selected by General Alexander to give cross and enfilade fire along the entire front. The guns were placed in the front line or in pits close behind.

Suitable positions and extensive fields of fire were not available for the Union artillery, and the great assault, which occurred on

June 3d, had entirely inadequate support. The Union losses during the short period of the assault were among the heaviest during the war. They were largely due to the Confederate artillery fire, and the defenders expended enormous quantities of canister. The various Union corps commanders reported on the severe losses inflicted by the Confederate artillery. General Humphreys said: "The assault of the 2d Corps could not be renewed unless the enemy's enfilading artillery fire could be silenced." Grant, becoming convinced that the position could not be carried by assault, determined on his movement to the south of the James.

Thus ended his "Overland Campaign" against Richmond, for when he crossed the Chickahominy and the James, he was going away from, not toward Richmond, as he had done from May 5 to June 3. The Battle of Cold Harbor was also the last battle in the war of maneuver in Northern Virginia. Siege operations commenced at Petersburg and lasted until the collapse of the Confederacy.

THE CHIEFS OF ARTILLERY

Perhaps it would be pertinent to give a short sketch of the careers of the chiefs of artillery of the two armies.

William N. Pendleton graduated from West Point in 1830 and was assigned to the artillery. After three years' service, during part of which he was on duty as instructor at West Point, he resigned to become a college professor, later entering the ministry. He served as teacher in various schools, and was an Episcopal clergyman at Lexington, Virginia, when that state seceded.

He entered the Confederate service as captain of artillery in May of 1861; was promoted colonel on July 13, and made General Joseph E. Johnston's chief of artillery. He served at the First Battle of Bull Run, receiving high commendation from Johnston, who called him the only educated artillerist in his army. It is not explained where or how he could have acquired such education and experience. He was promoted brigadier general early in 1862, and continued as chief of artillery when Lee took command of the Army of Northern Virginia, retaining this position until Appomatox. After the surrender, he returned to his calling in the ministry.

Pendleton was loyal and energetic, had a good sense of organization, a good idea of artillery positions, but was not skilled in

combat. Lee had affection and respect for him, but there is suspicion that this was more in his capacity as a clergyman than as an artilleryman. He rarely gave him great responsibility in action, leaving him in charge of the reserve only. He never recommended him for promotion, and when President Davis prepared to give him a corps in the Army of Tennessee, Lee said he "could not select him to command a corps in this army."

When Johnston asked for Alexander as chief of artillery for the Army of Tennessee, Lee stated he needed Alexander, but was willing to let Pendleton remain with Johnston, where he then was, assisting in the reorganization of Johnston's artillery.

From reading numerous letters, written by Pendleton during the War, a distinct impression is formed that he always remained very much more of a clergyman than an artilleryman.

Henry J. Hunt, the son and grandson of Regular Army officers, graduated from the Military Academy and was commissioned 2d lieutenant of artillery in 1839. He was appointed first lieutenant in 1846. During the Mexican War he was breveted as captain and major, both for gallantry in action. He was promoted captain, 2d Artillery, in 1852, and major on May 14, 1861, although he commanded a battery at First Bull Run. He was made a colonel of volunteers in September, 1861, and assigned to command of the reserve artillery, Army of the Potomac. He became Chief of Artillery of that army and was promoted brigadier general of volunteers in September, 1862. He became a regular lieutenant colonel in 1863, and was promoted colonel of the 5th Artillery, April, 1869. He was retired in 1883.

During the war he received Regular Army brevet commissions for gallant and meritorious service as colonel, brigadier general and major general, and also Volunteer brevets to the grade of brigadier and major general.

General Hunt's great ability in organizing artillery and handling it on the field of battle, justly entitle him to be considered the greatest American artilleryman. No higher tribute could be paid him than that which General McClellan wrote: "General Hunt retained the position of chief of artillery until the close of the war. I regarded him as the best living commander of field artillery. He was a man of the utmost coolness in danger, thoroughly versed in his profession, an admirable organizer, a soldier

of very high order. As I write this (July, 1882) Hunt is likely to be retired as colonel—a man whose services in any other army would have been rewarded with titles, high rank and ample pension. He is one of the most marked instances within my knowledge of the highest merit and services passed over unacknowledged and unrewarded.

"Hunt's merits consisted not only in organizing his command to the best advantage, but in using it on the field of battle with the utmost skill and power. The services of this most distinguished officer in reorganizing and refitting the batteries prior to and after Antietam, his gallant and skillful conduct on that field, at Malvern, and in fact during the whole Peninsula Campaign, merit the highest encomiums in my power to bestow."

One of the principal reasons for soldiers to study the history of past campaigns is to learn what have been the experiences of others and to deduct therefrom the lessons applicable to future operations. Since the chief of artillery is one of the most important staff officers in a division, corps, or army, therefore, it is appropriate to call attention to the relations between the various commanders of the Army of the Potomac and General Hunt. All of them except Hooker gave Hunt wide latitude and authority, and relied on his great professional knowledge and ability. McClellan at Antietam and Malvern Hill gave Hunt full authority in posting the guns and command of them in action. Lee's attitude toward his chief of artillery at Malvern Hill has been mentioned, and should illustrate what should not be done, for not only was Pendleton not consulted about the attack order, but neither he nor his reserve artillery took part in the battle, where artillery support was so badly needed.

However, Gettysburg is a typical example of what should be the relation between an army commander and his chief of artillery. Neither Lee nor Meade expected a battle at Gettysburg. Meade had reconnoitered and expected to take up a defensive position along Pipe Creek, southeast of Gettysburg. However, when he learned of the conflict of July 1st, he sent Warren, his chief engineer. Sickles, a corps commander, and Hunt to determine whether to continue the action, or to withdraw to the selected position. On their report his decision was made.

Hunt not only posted the guns, but commanded all the artillery

in the battle. When he feared that his ammunition was running low, he tried to find Meade, to recommend suspension of fire, but being unable to find him, on his own initiative gave the orders to cease firing on the enemy guns, and to await the infantry assault. Meade, who had been an artillery officer in his early service, had the same fear about the ammunition that Hunt had, and actually sent the order to suspend firing. However, Hunt's orders had already been put into effect. This harmony of thought and action between a commander and his staff officer is an ideal which we can hope for, but only rarely expect to attain.

CONCLUSION

A final comparison of the methods of employment of the artilleries of the Army of the Potomac and that of the Northern Virginia reveals the following:

1. At all times the Army of the Potomac had a decisive superiority in numbers of guns, in their calibers, and in quantity and quality of ammunition. This superiority tended to produce a result that Napoleon mentions, namely: That infantry having to fight long with superior artillery against them would be disorganized.

2. Superiority in numbers and calibers had a direct effect upon the tactical employment of the two artilleries.

3. Wherever there was sufficient space to put their batteries in position and there was a good field of fire, the Union artillery's fire was massed and dominated that of the Confederates.

4. On those occasions when the artilleries of both sides could be employed in large masses, the great superiority of Hunt, the Union chief of artillery, over the Confederate chief, in leadership, tactical ability, and skill in coordination of fire, was an important element in deciding the battle.

5. Probably the most effective employment of the Confederate artillery, was at Fredericksburg, where the great majority of the guns made no attempt to engage the Union artillery, but remained under cover until the opposing infantry launched its assault, then came into position and at close ranges poured withering fire on the attackers.

6. While both artilleries had more or less the same doctrines and tactical methods, still the conditions of the two forces brought

out two distinct phases in the employment of artillery, quite different in character, although not always so considered.

The Union artillery with its greater proportion of rifles, outnumbering and outranging its opponents, illustrates primarily the massing of batteries under common control, furnishing the army commander with a great reserve of fire power, with which he can neutralize the opposing guns and place destructive fire on his infantry. Such use of massed artillery practically decided the day at Malvern Hill, and at Antietam and Gettysburg was one of the most important factors.

The other phase is best illustrated by the Confederate artillery. Its smooth-bore 12-pounder howitzers were more mobile than the rifles, and gave better results when firing shrapnel and canister at close ranges. At the time they were well suited for the immediate support of the infantry, which divisional light artillery must provide. In all battles in the densely wooded regions of the Wilderness, at Second Bull Run, and at Cold Harbor, the Confederate smooth-bore guns, fighting in line with the infantry, or immediately in rear, using canister at ranges from 100 to 400 yards, gave the infantry close and constant support, and supplied the fire power the inferior Confederate forces badly needed.

A properly organized modern army must have artillery equipped for both of these phases of combat. It must have long range, heavy guns for counter battery, and with that elasticity of fire which artillery possesses, capable of concentration on the point where decision is sought, neutralizing the enemy's fire, introducing the element of surprise, and securing fire superiority. It must also have batteries of highly mobile light divisional artillery in close contact with the infantry, and armed with what artillerymen should be proud to call "infantry guns."

UNITED STATES FIELD ARTILLERY ASSOCIATION

IN Accordance with the call of the Executive Council, the twenty-fifth annual meeting of the U. S. Field Artillery Association was held at the Army and Navy Club in Washington, D. C., at 4:45 P. M. on December 12, 1935. Lieutenant Colonel Thomas J. J. Christian and Colonel Lesley J. McNair, senior members of the old and new Executive Council, present, presided for Major General Upton Birnie, Jr., President of the Association, who was absent on an inspection trip.

A quorum was present in person or by written proxy for the transaction of business.

The Secretary-Treasurer presented and read his annual report and financial statements, which are appended hereto, and made a part of these minutes.

The President had previously appointed Majors Louis E. Hibbs, F. A., and H. B. Allen, F. A., to audit the financial statement of the treasurer. Major H. B. Allen then read the report of the committee, which stated that the auditing had been performed and the financial statement had been found to be correct. A motion was made, seconded and adopted, approving the report of the auditing committee.

The chair stated that there were six vacancies in the Executive Council to be filled. These vacancies were caused by the expiration of the term of office of Brigadier General Charles D. Herron, U. S. Army; Brigadier General Herbert R. Dean, Rhode Island National Guard; Colonel Augustine McIntyre, U. S. Army; Colonel Stephen Elliott, Pennsylvania National Guard; Colonel Robert M. Danford, U. S. Army, and Colonel Leroy W. Herron, Reserve Corps. To these outgoing members of the Executive Council, the Association wishes to express its deep appreciation for the service each has rendered.

The following officers were elected for a period of two years to fill the vacancies: Brigadier General Wm. S. Key, Oklahoma National Guard; Colonel Lesley J. McNair, U. S. Army; Colonel R. McT. Pennell, U. S. Army; Colonel Rene E. DeR. Hoyle, U. S. Army; Colonel Leroy W. Herron, Reserve Corps, and Colonel Hamilton Gardiner, Utah National Guard.

It was decided to continue the "Prize Essay" competition through the year 1936. (Announcement of the conditions of this competition to be published at a later date.) In order to interest the newly appointed Field Artillery officers in the Field Artillery Association it was directed that the following policy be continued during the year 1936:

a. THE FIELD ARTILLERY JOURNAL shall be sent for one year as a gift from the Association to each 1936 graduate of the United States Military Academy assigned to the Field Artillery.
b. To each 1936 graduate of a Field Artillery R. O. T. C. unit commissioned in the Field Artillery section of the Officers' Reserve Corps, one copy of the JOURNAL shall be sent as a gift from the Association.

Suggestions are invited from members of the Association for the disposition of the $252.00 surplus collection over distribution for the pair of Artillery horses purchased for Master Leroy Johnson. The only suggestion offered at the annual meeting was that one-fifth of this amount be presented to each of the next five winners of the Knox Medal, commencing with the 1935 winner, this prize to be cash or a watch, suitably engraved, at the discretion of the Knox Medal winner.

ANNUAL REPORT OF THE SECRETARY-TREASURER

For the year ending November 30, 1935

Assets—November 30, 1934:

Balance, checking account	$4,707.48	
Savings account	3,341.58	
Securities on hand	23,000.00	$31,049.06

Assets—November 30, 1935:

Balance, checking account	$5,986.26	
Savings account	3,425.52	
Securities on hand	23,000.00	32,411.78
		1,362.72

A detailed statement of the receipts and expenditures during the last fiscal year is as follows:

UNITED STATES FIELD ARTILLERY ASSOCIATION

RECEIPTS

Membership dues and subscriptions	$7,261.75	
Interest on securities	535.93	
Interest on savings account	83.94	
Books and magazines	1,279.34	
Miscellaneous	1,425.98	
	$10,586.94	
Cash on hand November 30, 1934	8,049.06	$18,636.00

EXPENDITURES

Printing and mailing FIELD ARTILLERY JOURNAL	$2,829.23	
Office supplies	97.59	
Postage, express and telegrams	334.29	
Rent and telephone	430.57	
Services	1,797.00	
Authors, engravers, photographers	1,273.90	
Books and magazines	1,095.71	
Insurance	12.16	
Trophies	45.00	
Donations	7.00	
Miscellaneous: copyright, refund, collection charge, etc.	1,301.77	
	$9,224.22	
Cash on hand November 30, 1935	9,411.78	$18,636.00
Total receipts for year ending November 30, 1935		$10,586.94
Total expenditures for year ending November 30, 1935		9,224.22
Or a gain of		$1,362.72
This sum includes $252.00 which is the surplus of collections over expenditures for the pair of artillery horses for Master Leroy Johnson		252.00
Net gain of		$1,110.72

Outstanding obligations and amounts receivable are approximately the same as on November 30, 1934. The only outstanding obligation of any importance is the printer's bill for the November-December, 1935, number of the JOURNAL, which has not yet been received. The same obligation was also outstanding on November 30, 1934. Considerable amounts are receivable consisting of dues to the Association. Since the elimination of the pay cut, the collection of accounts receivable has been progressing very satisfactorily.

The past year has seen an increase in membership of 160. A large proportion of this was due to the campaign inaugurated in January, 1935, for new members. In compliance with the directive established at the last annual meeting, the Association is giving one copy of the JOURNAL for one year to each graduate of the United States Military Academy, class of 1935, assigned to the Field Artillery. Likewise there were presented to the graduates of the Field Artillery R. O. T. C. units throughout the United States 1,102 copies of the JOURNAL as a gift from the Association.

The same securities that paid dividends during the fiscal year ending November 30, 1934, also paid during the fiscal year ending November 30, 1935. In addition to this, one bond which made its last payment in 1931 has resumed payment on a modified basis. Favorable reports have been received from other Protective Committees concerning the early resumption of dividend payments. Over a three year period the market value of our securities has increased by more than $1,200.00. As pointed out at the last annual meeting, only time and improved business conditions can restore these securities to a value wherein they can be disposed of to an advantage.

With an increase of 160 members during the last year, the steady income from securities and a net profit of over a thousand dollars per year for the last three years, it would appear that the finances of the Association are on a firm foundation.

DEAN HUDNUTT,
Major, Field Artillery, U. S. Army
Secretary-Treasurer

THE RED GUIDONS OF OAHU

BY CAPTAIN E. PARMLY, III, Field Artillery

HAWAII is a military Mecca to which most field artillerymen make pilgrimage at least once during their careers. During the decade and a half that have elapsed since the first '75 was rolled ashore and the 11th Field Artillery Brigade organized, approximately half the officers of our arm have been carried on its rosters. Now, with foreign duty tours reduced to two years, many more will share in the Hawaiian Adventure before closing up their record of active duty. It should be of interest to those who have served in the Red Dust Legion as well as to those who will be "going Oahu" in the near future to get a report on what service with the Hawaiian Division is like these days.

In the present booming times of modernization the Army presents everywhere a more kaleidoscopic appearance than the old grey mare ever imagined possible, and nowhere more than in Hawaii. With the arrival last spring and summer of the 1½-ton Chevvies for its lights and the 6-wheel Indianas for its howitzers, the brigade is tucking away the faithful tractors in cosmoline moth-balls and burning up the roads at 35 per. Yet, paradoxically, we find one battalion of the Thirteenth skinning mules and mountain howitzers through tropical thickets and along knife-like lava ridges as they try out the old alongside the new.

There is nothing stagnant about service in Hawaii. The business of adapting a seven-fold mobility and new weapons to the defense of the islands keeps everybody on his toes, including the jugheads. Defense plans, even the most time-honored, require radical revision to keep abreast of the first modern equipment the Division has received in fifteen years of plugging along as best it could with the vintage of '17. Moreover, changes in plans must be worked out on the ground. Result: maneuvers and tests aplenty, studies and reports by all echelons, and this simultaneously with the breaking in of men and motors by the hundreds, garrison training, target practice, AND our old friends, the usual guard and fatigue.

The Hawaiian Division is being augmented by over four thousand recruits, its share of the current increase, and from these

Photo by Captain George B. McReynolds, 13th F. A.

BATTERY "A", 13TH FIELD ARTILLERY, CROSSING KOLE KOLE PASS

boatloads of raw material 860 enlisted men will be allotted the field artillery brigade to bring each of its gun batteries up to 116 and its howitzer batteries to 156. With this increase the light batteries will be capable of fire and rapid maneuver where-ever needed on the island, while also furnishing guns and crews for the infantry beach defenses. As soon as their adapters arrive, the Eleventh's four 155-mm howitzer batteries will have the same mobility as the '75s over all-weather roads and will no longer be the relatively "fixed" artillery they have been in the past. Personnel of this regiment will, in addition, man some heavy artillery. If the 75-mm howitzer is found to be the thing for packing into the mountains that rim the island, it is probable that some pack artillery will be stationed here, which will give officers assigned to the brigade three distinct types of armament with which to become acquainted, all in support of an up-to-the-minute infantry division maneuvering over the most varied terrain.

Only in Hawaii can you train and maneuver as a part of a complete regular division, a fact that makes service in the Eleventh Brigade a professional opportunity without equal in peacetime.

Plenty of duty, although Jack should never become a dull boy at Schofield Barracks. Even a couple of years on "The Rock" cannot dull an appreciation of bizarre, beautiful surroundings and an unbelievably perfect climate. The small minority who return to the mainland disgruntled with their Hawaiian tour usually have perfectly sound personal reasons for their disappointment, such as poor health in the family or homesickness. It is unfortunate that the soft trade winds, such a joy to most, are an anathema to a few and that the riotous profusion of flowers and plants that make Hawaii the Paradise of the Pacific bring asthmatic grief to certain susceptibles. However, children flourish like the plant life and men and women who come over in sound health seldom return any other way.

An automobile is as much a necessity at Schofield Barracks as a toothbrush. With plenty of fine paved roads and few severe grades, it is not so much a matter of shiny, new hundred-horsepowers as something to get around in, and with an ample (though relatively high) second-hand market plus the present cost of bringing over your own motor transport, junior officers might do worse than arrive "dismounted."

In your car, Honolulu with its shops and attractive hotels, is only thirty-five minutes away over a fine boulevard. Choice of a score of excellent beaches lie within an hour's drive and, while the highly-advertised scenic wonders of Oahu can be covered in a week of sightseeing, it will take many weekends of casual exploration to discover the off-the-beaten-track spots that you will appreciate at the time and remember all your life. Only those who limit their horizon to Schofield and Honolulu feel the island closing in on them.

At The Barracks, there is everything necessary to an ordered existence. The post is a good-sized city in its own right, with 15,000 inhabitants, commissary, meat and vegetable markets, bakery, and a Post Exchange that is a sizeable department store; while just outside the gates are garages, newspaper offices, photographers and more stores. Its million dollar athletic plant includes an 18-hole golf course and an attractive clubhouse, once an Hawaiian king's hunting lodge, perfect tennis courts, the finest polo field in Hawaii, riding classes for all ages with a fair stable to choose from, a well-equipped gymnasium and bowling alleys.

Your Ike Waltons find Hawaii a piscatorial paradise. By rising just one jump ahead of the sun you can find yourself riding the Pacific swells in a fishing sampan as Old Sol breasts the mountain peaks and only a matter of luck between your reel and a 200-pound swordfish. Seven or eight enthusiasts can share an exciting day of deep water fishing for around ten dollars per, not bad in the light of similar sport off Bimini Bay.

Aside from active participation in the less violent forms of physical exercise, there is presented a twelve-month calendar of competitive sports that would do credit to many a college campus. Athletics at Schofield have been the best in the army for many years and with the high type now in the ranks, young men who in normal times would be making names for themselves in collegiate circles, the caliber of competition here is better than ever before. Each regiment or similar unit in the Division enters a team in every sport and most maintain excellent playing fields.

In the fall (page snow flurries and chrysanthemums!) nine football teams take to the gridirons: not your back-lot stuff, but snappily-uniformed, smartly-coached, smacking football, played

before colorful thousands, with cheering sections, cheer leaders, mascots, bands and all the trappings. No sooner is the pigskin relegated to the shelf for another year than the big, covered boxing bowl opens up of evenings in a blaze of arclights and howling encouragement. No stalling or "fixing" here! Twenty bouts to a card, three times a week, the leather and fur fly as hundreds of clean-conditioned young men prove their ability to dish it out and take it under amateur rules. Then in February come the best bouts seen in the Islands, as those who have earned the right with their two good hands battle for the Division Championships and the right to meet the best of the Honolulu Coast Defenses in the Department smoker at the end of the season.

Last spring the cream of the current army crop invaded the Orient, where they acquitted themselves nobly. The team carried a majority of Division boxers, among whom were three 8th Field Artillerymen.

Simultaneous with leather-pushing through the winter months runs basketball, so that every evening there is some sport event to attend if the spirit moves or if none of the three movies showing that date appeals to the fancy. And with spring arrive track and baseball, the latter continuing through the summer with as many as five games on as many diamonds in an afternoon.

The three regiments of the 11th F. A. Brigade just completed a most successful season in the great American game, the 11th Field Artillery *Dragons* winning the pennant on a record streak of twenty-one consecutive victories, while the 8th Field *Gunners* and 13th Field *Clansmen* wound up in a tie for second place. Last fall the Thirteenth won the football championship. In fact, the Red Legs have been giving the strong doughboy outfits more than a run for their money of late. Esprit is sound and high throughout the brigade and, while arm-consciousness is temporarily forgotten when two artillery teams meet, it rises to the skies when it is a question of taking the infantry, engineers, staff or aviators into camp.

In most sports the material is rather evenly distributed throughout the division, although the artillery outfits share with the staff troops, 3rd Engineers and 18th Pursuit Group a numerical handicap as compared with the four infantry regiments, a discrepancy that becomes even more noticeable with the addition of some six

hundred recruits to each of the foot outfits as compared to the entire Eleventh Brigade's modest eight hundred odd. Accordingly the quality of coaching and morale often is a determining factor.

On these two counts your Hawaiian representatives acknowledge feasance to none. Officers like "Pat" Shea, "Had" Gaston, Harvey Thornton, Charles Glover, "Stew" Barden, "Art" Bliss, "Tiny" Jark, Mahlon Scott and George Gibbs, whether or not they had names for themselves as mentors prior to coming to Hawaii, have recently turned out teams in all sports that are carrying the red guidon proudly among the colors of the army's largest garrison.

One of the things that strikes the *malihini*, or newcomer, at once is the almost collegiate spirit shown in Schofield athletics. In fact the hard-bitten field soldier is apt to regard such "goings on" as inappropriate to the main issue of soldiering. The truth of the matter is that wise heads have given the subject much serious thought over a period of years before authorizing the expenditure of many thousands of dollars of the soldier's money and so many hours of each year to entertainment and recreation. Hawaii is not tropical in the same sense as Panama and the Philippines but it presents a distinct problem in the sameness of its climate and the fact that it is, after all, a group of specks in the middle of a very big ocean, radically different and thousands of miles away from the place where Private John Doe was born and raised.

Homesickness among the younger recruits is no laughing matter. Normal outlets for natural exhuberance, a matter of course on the mainland, are limited with a pay check of twenty-one per. The trip to Honolulu knocks the spots off many a dollar bill and is more apt to lead to grief than pleasure, for Honolulu is a city whose main mission is artificial entertainment and a rigidly-policed city besides. Opportunities for relief from the monotony of one set of surroundings that are open to the officer are not as available to the enlisted man and the only solution assuring saneness is to make those surroundings provide a maximum variety of inexpensive recreation.

Hence the best in movie theaters, libraries, courts and links, athletics, dances at the soldier's Kaala Club. Hence the finest beach on the North Shore set aside for his use and truck convoys

to take him to and from it; a rest camp high up on the island of Hawaii for detached service; field passes to enable groups to furlough under canvas on the beaches, and everything else that the ingenuity of his officers can contrive to make his two-year stay healthful and contented.

The junior artillery officer, upon his arrival, will probably be disappointed in the quarters assigned him, for Schofield's housing has not kept pace with building on the mainland. Captains' and field officers' sets are cool, comfortable, roomy, frame bungalows, built around attractive patios and well-suited to the climate, but most of the lieutenants are still occupying the little bungalows of the Thousand Block, designed as non-coms' quarters and famed in song and story, or living in the slightly larger "duplexes;" a very unsatisfactory condition that all hope may soon be relieved by additional construction.

Social life, as at all large posts, is particularly attractive. No family need feel lonely with so many new friends to make and old acquaintances to renew. Aside from the naturally closer relationships within regiments there are no distinct cliques and the opportunity of broadening one's contacts with fellow officers of the other branches of the service is taken full advantage of, with the hub of events, the Officers' Club. This rambling building in its setting of spacious lawns and tropical foliage is one of the most beautiful clubs in Hawaii. Built by the Field Artillery several years ago for its own use, it was the natural choice for a Post Club as it became increasingly desirable to concentrate all social activities in one establishment and increasingly a financial burden for the artillery personnel to provide for upkeep of the building.

Sentimentally the brigade feels a loss but, as the club's facilities are enlarged as is now possible, it will unquestionably be a pride and satisfaction to all. While adequate accommodations still do not exist for transients, the club has a restaurant with catering facilities, its William Chalmers Library is one of the best military reference collections in the Service and the beautiful, open dancing lanai is never forgotten by those who have tripped the light fantastic there. The 11th F. A. Orchestra is conceded to be one of the best rythm-making groups in the army and plays for Friday night hops, receptions and *alohas*.

Calendars are usually full with a round of bridges, teas, dances,

picnics, calling and parties, formal and informal. While the higher echelons entertain rather extensively the junior officer will find this phase of living no more obligatory than elsewhere. It is not necessary to return hospitality in kind and those in the higher pay periods are as appreciative of waffle suppers and patio hamburger parties as they have always been.

Living costs in Hawaii are slightly higher than in most mainland localities, especially as regards civilian clothing, ladies' wear, haberdashery and such staples as meats and dairy products. This, however, is in the long run partly compensated for by the low cost of uniforms, an abundance of vegetables and native fruits and the fact that clothing the children is a relatively simple matter; they wear little and that cotton. Schooling also is inexpensive if you utilize the public school system.

Oriental servants are available from $15.00 a month up, but you pay for ability and the less experienced are apt to be a problem for the better half. Many families like to break their tour by renting beach cottages for a few weeks and enjoying to the fullest the sunshine and water. Comfortable cottages are obtainable for around $35.00 a month. Ten days D. S. at the Kiluea Military Rest Camp, high on the island of Hawaii, also furnishes a welcome change of scenery and climate if you can weather the voyage on the *"Rolling" T. Frank*.

Service with the Eleventh Brigade is the familiar routine of training, with no time out for snow and ice or scorching heat and with the added incentive of preparing for eventualities as part of a distinct fighting force, the nation's most important outpost. Mammoth reviews for visiting dignitaries are the order of the day. Any defense of a hundred and fifty-miles coastline entails the development of non-commissioned officer leadership and initiative to a high degree; there will never be officers enough to go around. Furnishing the artillery support to a crack infantry division puts the brigade on the spot professionally and keeps it driving hard every minute. Limited ammunition allowances do not prevent stressing direct fire against water-borne targets and as much terrestrial fire on the range as possible. Sub-caliber, the "Train Board" and the "Trainer," have been of assistance in getting the most out of every live round; a problem familiar to peacetime artillerymen everywhere. Deteriorating gas shell has

helped to augment the allowance during the past two years but is fast being expended.

The Brigade has yet to prove its full value as truck-drawn artillery although the June maneuvers gave the powers that be an indication of what may be expected in the way of flexibility from such material here. Defense plans are being rewritten to take fuller advantage of our newly-acquired ability to move and fire, even though in so doing hoary-bearded ideas are taking a beating. Much interest is being shown in the results of experiments with the 75-mm pack howitzer, unquestionably far superior ballistically to the British '75 in terrain that reeks with dead space at important points. Forage and water limitations have caused the four-footed adjuncts to warfare to fall into disrepute in Oahu yet every maneuver proves conclusively that, once off the beaches and hard roads, men do not eat or drink without pack mules. Moreover, "Red" and "Blue" commanders alike have many times been willing to swap their touring cars (if not their horses) for a good old mountain gun. Somewhere along the line the happy medium will be attained, for wherever there is keen interest and experimentation there is progress.

Meanwhile, everyone from Washington who has visited Hawaii recently, and Hawaii is an interesting subject to those in power these days, has been so impressed with the primary need for all-weather interior lines of communication that this basic lack bids fair to be rectified in the very near future. With the division on wheels, a straight line to a critical point will be worth extra battalions any day when things get hot, a premise that recent appropriations seem to have taken cognizance of.

Already the improvement is noticeable. Those who have warily traversed the slippery, serpentine, high-crowned road from Honolulu to Schofield's inland plateau in years past would beam with joy at the wide, sweeping boulevard, three and four lanes wide, that would be perfect were it not that unsympathetic police officers still patrol as effectively as in days gone by and pay as little attention as ever to sailing schedules and dying mothers-in-law! However, it will be of interest to those who are to come as well as to those who served here during more hectic times to know that the army in Hawaii is, at the present writing, as well liked,

as sincerely appreciated and more cordially treated than anywhere else it serves.

Speaking of roads, the Field Artillery Brigade has completed recently a project of far-reaching military influence. Kole Kole Pass, back door to Schofield Barracks and only opening through the saw-toothed Waianae mountain range, had until last spring been negotiable only to foot troops and tractors. A tortuous, dangerous trail used to wind down the seaward side of this precipice, a descent rivaling the famous Nuuanu Pali for sheer, breath-taking beauty, but new transportation made it essential that the route be made passable both ways for trucks and truck artillery. Since the maintenance of the old trail was a function of this brigade, it was assigned the task of constructing the road. Five months was the estimated time for completing the formidable project involving 45,000 man-hours.

Work was started 15 April, under the supervision of Captain Seward Mains, Brigade S-3. Aside from such equipment and operating personnel as the engineer regiment provided, the job from survey to final grading was done by artillerymen and, in order to have the road available for test during the Department Commander's Tactical Inspection, was rushed to completion by 21 June. Tons of rock and earth were blasted and removed by the batteries of the brigade, working double shifts. Culverts and "hairpins" were constructed, units being assigned certain sections as their particular responsibility and taking pride in the results of their back-breaking labor. One battery of the Thirteenth, sweating under the slanting sun to finish their section on the day after pay day, later returned and ceremoniously erected a sign reading, "Hangover Curve!"

How well the artillerymen built was proved during the maneuvers when 2-wheel-drive prime movers hauled 75's up and down with the greatest of ease (though no little trepidation on the part of the higher-ups) and hundreds of troops, including one gun battalion, reinforced the Waianae Pocket via the Pass in the dusk of one embattled afternoon. Since then the sturdy 6-wheelers have hauled the 155's up to the summit, negotiating even the necessarily sharp curves. Kole Kole Pass Road is included in current appropriations for military roads on Oahu. It soon will be a paved and valuable addition not only to the system of interior

lines but equally to the Territory's scenic routes, and again the Field Artillery has pioneered the way.

Under the leadership of Brigadier General Thomas E. Merrill and his commanders of all grades, the 11th Field Artillery Brigade is a solid citizen of its community, carefully guarding the traditions of the arm, reliable and respected. Although not quite fifteen years old, it has matured rapidly under the Pacific sun and is confident of its ability to respond to any call in the spirit exemplified by the blazonries of its three regiments: "Bold and Tenacious," "On Time," "Without Fear, Favor or the Hope of Reward."

THE 1935 KNOX

BATTERY "B"

The Chief of Field Artillery, Major General Upton Birnie, Jr., has announced that the Knox Trophy for the year 1935 has been won by Battery B, 14th Artillery, stationed at The Cavalry School, Fort Riley, Kansas, Captain Maylon E. Scott commanding.

The Knox Trophy is presented annually by the Society of the Sons of the Revolution in the Commonwealth of Massachusetts to that battery of the Regular Army Field Artillery which has the highest efficiency rating—this rating to be based on firing efficiency, tactical mobility, proficiency in the use of Field Artillery means of communication, and on interior economy. The rules for the Knox Trophy Test are promulgated by the Chief of Field Artillery.

The batteries selected to represent the commands of which they form a part and to take the competitive test for the Knox Trophy were:

TROPHY BATTERY

14TH FIELD ARTILLERY

1st Corps Area—Fort Ethan Allen, Vermont—Battery D, 7th Field Artillery.
2nd Corps Area—Madison Barracks, New York—Battery A, 5th Field Artillery.
3rd Corps Area—Fort Hoyle, Maryland—Battery F, 6th Field Artillery.
Fort Myer, Virginia—Battery B, 16th Field Artillery
4th Corps Area—Fort Bragg, North Carolina—Battery E, 4th Field Artillery.
Fort Bragg, North Carolina—Battery B, 17th Field Artillery.
Fort Benning, Georgia—Battery B, 83d Field Artillery.
5th Corps Area—Fort Benjamin Horrison, Indiana—Battery B, 19th Field Artillery.
Fort Knox, Kentucky—Battery B, 68th Field Artillery.
6th Corps Area—Fort Sheridan, Illinois—Battery D, 3rd Field Artillery.
7th Corps Area—Fort Riley, Kansas—Battery B, 14th Field Artillery.
Fort Des Moines, Iowa—Battery F, 80th Field Artillery.
8th Corps Area—Fort Sill, Oklahoma—Battery B, 1st Field Artillery.
(The Field Artillery School).
Fort Sam Houston, Texas—Battery B, 12th Field Artillery.
Fort Sam Houston, Texas—Battery A, 15th Field Artillery.
Fort F. E. Warren, Wyoming—Battery B, 76th Field Artillery.
Fort Bliss, Texas—Battery A, 82nd Field Artillery.
9th Corps Area—Fort Lewis, Washington—Battery A, 9th Field Artillery.
Presidio of Monterey, California—Battery D, 76th Field Artillery.
Hawaiian Department—Schofield Barracks, T. H.—Battery C, 8th Field Artillery.
Schofield Barracks, T. H.—Battery B, 13th Field Artillery.
Schofield Barracks, T. H.—Battery B, 11th Field Artillery.
Panama Canal Department—Fort Clayton, Canal Zone—Battery A, 2nd Field Artillery.

REMARKS FROM THE WINNING BATTERY COMMANDER

Winning the Knox Trophy is the secret ambition of every Battery Commander, and little did I think the wet murky morning when we started the twenty (20) mile march that it would be coming the way of Battery "B", 14th Field Artillery.

The tests were made two (2) weeks after Battery "B" had returned from a two hundred and fifty (250) mile march, the last one hundred and thirty (130) miles having been made in less than sixty-three (63) hours. Upon our return we learned that if Battery "B" were to win the service practice competition it would represent the 14th Field Artillery in the coming Knox Test.

Realizing that to win without any previous preparation would require the wholehearted cooperation of every man in the battery and long hard hours of conscientious teamwork, the noncommissioned officers and officers were assembled and informed of the Battalion Commander's decision. During the first week of October service firing tests were held. The laying of the guns was very accurate but exceedingly slow in time and only by a very narrow margin did Battery "B" win the right to compete for the Knox Trophy.

MAJOR MAYLON E. SCOTT

Tuesday, 22 October, at 8:15 a. m. Battery "B" left the gun park on the twenty (20) mile march, which was completed in excellent time without a mishap. The excellent showing made on the

march was the stimulant needed to carry on. The second part of the test was service practice. The Battery arrived at the firing point at 7:45 a. m. in a down pour of rain. After a delay of nearly two hours the weather cleared sufficiently to permit firing with only poor observation. The three problems were fired within the allotted time limits without a single error on the part of the gun crews. The final part of the test to be given was the "Detail" test. The day prior to this test two key members of the detail were sent to the hospital with the mumps. This necessitated a complete reorganization and filling the vacant positions with recruits of less than one year's service. In order to gain time the older men in the detail started laying wire at a dead gallop and broke the line to the C. P. in three places. However, the cool headedness on the part of the signal sergeant and line guards saved the situation and, working as if they were under shell fire, the line was soon spliced, communication established and all messages transmitted in a fraction under thirteen (13) minutes. The two men computing the deflection obtained surprising accuracy, with instruments the error was 2 mils, while in plotting the error was only 8 mils, as read from the gun positions. The range finder operators read the ranges with great accuracy even with a cold wind in velocity averaging about twenty (20) miles per hour.

To First Lieutenant Cecil W. Land, then Executive Officer and now Battery Commander, too much credit cannot be given. This officer rendered invaluable assistance as Battery Executive and fired practically a perfect problem. Lieutenant Robert C. Baker, Reconnaissance Officer, with only one year's service had complete charge of training the detail. His work in that department demonstrated what excellent results can be obtained by intelligent training and teamwork. Lieutenant Charles M. Peeke out of the 1935 West Point class assisted materially as assistant executive.

The work of 1st Sergeant John Bain, who retires from the Army in February, 1936, was very noticeable in all the departments of the battery. The trophy could not have been won but for the sheer determination to win on the part of every member of Battery "B" and their whole hearted spirit of cooperation and teamwork.

The Knox Medal, awarded by the same Society for excellence as an enlisted student at the Field Artillery School, was won this

SERGEANT GEORGE P. SAMPSON
HEADQUARTERS BATTERY, 1ST F. A.

year by Sergeant George P. Sampson, Headquarters Battery, 1st Field Artillery, stationed at Fort Sill, Oklahoma.

Sergeant Sampson is a native of St. Louis, Missouri, where he was born in 1908. Later he attended the McBride High School in that city. In 1928 he enlisted in the U. S. Army and was assigned to Headquarters Battery, 1st Field Artillery, with which he has served continuously. He has been a member of the Radio Section since 1930 and after a short time he was rated a Second Class Specialist and radio technician. In 1935, with two excellent discharges, he was sent to the Field Artillery School and promoted Sergeant. His rating at graduation last June was superior. Sergeant Sampson is the fourth Knox Medalist from Headquarters Battery, First Field Artillery. Earlier winners were Staff Sergeant Walter Jensen, Corporal Harvey Griffith, and Staff Sergeant Clarence Scott.

HAND-TO-HAND FOR RICKETTS'S GUNS

THE MOST MURDERING BATTLE—MALPLAQUET

BY FLETCHER PRATT

IT is curious how certain weapons appear and reappear in different forms throughout the history of war. The elephants which faced an European army for the first time when Alexander the Great charged into King Porus' lumbering masses on the banks of the Hytaspis twenty-four centuries ago are still with us, only we have plated them in steel and call them tanks now; the burning straw with which Julius Cæsar's men were held back from the assault on the Belgae may be called a smoke-screen, and the flaming arrows of the Vikings an incendiary shell, but the basic weapon remains unaltered. And the principle beneath the weapon remains the same; wherever there is a military need the ingenuity of man will conjure up a weapon to meet it—a weapon differing in superficial character from that of his ancestors as his civilization differs from theirs, but still the same.

Let us not, then, be deceived by mere differences in names. Infantry is and has been the "queen of battles" but no more than the queen of chess can it rule without a king. The infantryman's need, since the beginning of time has been a weapon of speed that will turn a victory, but still more the support of a missile weapon that will enable him to withstand the shock of charging horse. When he has failed to get missile weapon support there has been a period in which cavalry was dominant and intelligence has disappeared from war, for cavalry can only overrun, never achieve solid and permanent results. When he gets this support in too full a measure he is immobilized and a dreary combat of spades and logistics ensues, ending in mutual exhaustion.

Today we call the weapon of detention the machine-gun. Its growing efficiency attained an apogee in the War of 1914 and stagnated everything. It is unlikely that any campaign in that conflict will be studied a hundred years hence, save perhaps Lawrence' Arabian revolt or Von Lettow-Vorbeck's interlude in Africa. War has become uninteresting; it has nothing to teach us but the multiplication table. But the reason is that modern mechanical ingenuity has, in effect, made every infantryman an artilleryman. It is only when the three classical arms are really

distinct, when the weapons of movement, speed and detention are in something like balance, that intellect can have free play in war.

And it is precisely this free play of mind that lends their perpetual interest to the wars of the age of Louis XIV; the leaders were personalities who thought as they fought and found full room for the expression of talent in an art in which many of the great discoveries were still to be made. Gustavus Adolphus had gained his triumphs by the introduction of a new element into war—field artillery. That weapon had been accepted by the world as the 17th century turned into the 18th and the generals of the new age were engaged in working out its possibilities in an atmosphere of perpetual dynastic conflict.

For when William of Orange fell off a horse to his death as he was about to take the field in a new effort against the French king he only sent the contest into a new and intenser stage. The "King of Holland and Stadtholder of England" endured agonies on his death-bed, imagining that he alone possessed the skill and will to hold together the rickety coalition that stood between Louis and the rule of Europe. But if his associates had known what the event would be they would have wished him in his grave years sooner, for there stepped into his room one of the great soldiers of history—a man as subtle in politics as William himself, as bold in war, and a dozen times as intelligent, the very perfect accomplished scoundrel who would serve no cause but his own ambition, yet through that served all others—John Churchill first Duke of Marlborough, who "never besieged a fortress he did not take or fought a battle he did not win."

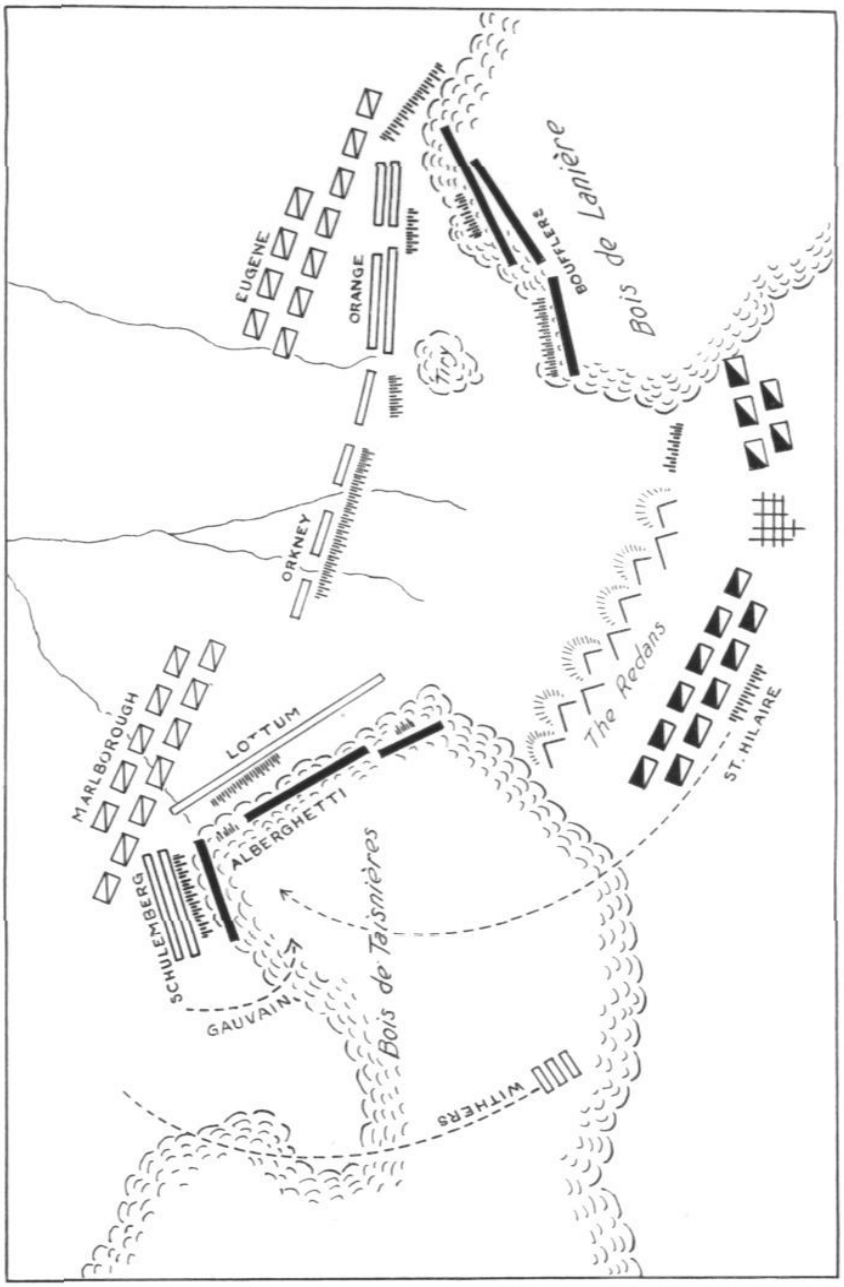
Under his leadership the French were pressed steadily back along every frontier; he destroyed a great army at Blenheim, smashed up another at Ramillies, and captured most of a third at Oudenarde. When the spring of 1709 came Louis XIV had reached the bottom of the pot and the bottom had been scraped dry. There were no more soldiers for the French armies and no supplies for the soldiers already on foot—he sued for peace, but the obstinate, vindictive Dutch held out for a treaty so hard that Louis exclaimed it could be no worse if his nation lay altogether prostrate. He called out the ban and arrière-ban of France; with utmost effort an army of 80,000 recruits was assembled and sent into Flanders to make good the last defense of the nation.

"I have nothing to give you," wrote Louis to Marshal Villars, who commanded the army, "neither men nor supplies. You must do the best you can with what you have." The man was suited to the task; Villars bore and deserved to bear the name of the last of the great line of French generals, the ablest tactician of the army. While still a young lieutenant on the staff of the great Condé, he had stood by that leader's side at the field of Senef when the enemy made some movement, far across the plain at the limit of vision. The older officers of the staff cried they were retreating but young Villars burst out—"No, no, they are only changing front and will charge us on this side presently. This is our weakness." Condé looked round, astonished—"Who taught you so much about war, boy?" he asked, for the youth's estimate of the situation was his own, and as it fell out, the true one. He prophesied that one day Villars would have his marshal's baton; and now he had it, and the grand marshalship of the armies of France but in other circumstances than he had dreamed—not to lead that army to great conquests but to fend off the enemy in almost hopeless defence.

Villars held to his fortress lines that summer, much pinched for corn. Cooperating with Marlborough was Prince Eugene of Savoy at the head of the armies of the House of Austria; they, too, had difficulties with supply, but they had 120,000 men, so overmastering a superiority that they could move and siege as they pleased. They moved against the fortress of Tournai; it fell at the end of August, just as the fresh corn of the summer's harvest filled up haversacks on both sides and movement again became possible.

Villars was then defending the line of a little river, the Haine, with the fortress Mons as the eastern anchor of his line. The Allies having taken their town came swinging down to the river line and forced a passage. Villars was undisturbed; he had already remarked the line of the stream as too long for holding, and retired a little space to a position facing northeast, with his left on the stream, his right on a forest, the Bois de Taisnières. He could take any advance past in flank and crack it back against the walls of Mons.

The Allies had numbers enough to vitiate the plan; they masked Mons, came across the Haine and turned half-right with


EUGENE
ORANGE
BOUFFLERS
Bois de Lanière
Fry
ORKNEY
MARLBOROUGH
LOTTUM
ALBERGHETTI
SCHULEMBERG
GAUVAIN
Bois de Taisnières
WITHERS
The Redans
ST. HILAIRE

the forest in their rear, coming down south of Villars' right with the intention of circling that, his strategic flank. In reply the French marshal slid his whole army rightward. There is another wood southeast of Taisnières, the Bois de Lanière, with a gap between the two. He rested his wings on the forests and his center back between them on a ridge of ground with numerous spurs, a stout defensive position. On the morning of September 9 the armies faced each other, with the village of Malplaquet just behind Villars' center; the heavy artillery did a little long-range firing, but in the Allied camp the Dutch civil deputies were playing the usual part of such marplots, declaring that to fight was dangerous, the position was too strong, so there was no battle. Marlborough spent all that day and the next arguing them round to his way of thinking—that a victory now would break France forever—but it was the night of the 10th before he could get them to consent that the men should be set in order for battle.

That night the moves were made. The attack was to open with the dawn and neither Marlborough nor Eugene doubted it would be a high victory, one of their highest. The total of their field forces was 110,000 men, nearly half again as many as the French, and in artillery they were superior by two to one, with 160 pieces, being especially strong in the light "artillery of campaign." Their plan was a weak center, held refused, with two strong wings to break the salient flanks of the French line round the edges of the woods, the old plan of Hannibal at Cannae. Eugene had the left with German and Dutch troops, the latter under the young Prince of Orange. They were to strike through the Bois de Lanière and straight ahead to get round the French strategic flank and rear.

Meanwhile the heaviest blow would come from the other wing, where Marlborough commanded in person, with Marshal Schulemberg and General Lottum. Nearly half the Allied light artillery, 40 guns, were posted here, arranged under the Duke's own eye to enfilade the salient of the French line. The English and Danish infantry were on this flank and Schulemberg had some Hanoverians; behind lay a heavy force of cavalry ready to burst through when the infantry had made a breech. Behind this wing also, far out to the right beyond Taisnières, was a small force of a few battalions under General Withers; as the attack cramped

the French front, they were to make a wide circuit and fall on the rear.

Lord Orkney, with some English troops, held the weak center, and seems also to have had the Allied heavy guns, for the order of battle for the day reads:

"The infantry will attack on the widest possible front, arranged in three or four lines with wide intervals. The heavy artillery will be placed in the most convenient places to beat into ruins the French trenches. The light artillery will march with the brigades to which it is attached and will follow them according to the development of the situation."

"The light artillery will march with the brigades!"—what a difference from the ponderous movement of guns only fifty years before and what a memory of Turenne and his swift-moving "artillery charge" at the Dunes! But the interesting thing in this order is the note about the heavies; there was only one place where they could play on the French trenches, which were in the center, and that was from the front of Orkney's force. There seem to have been some 52 of these heavies; at least that is the figure we get when we deduct from the Allied 160-gun total the 40 light guns that were to accompany Marlborough in his attack, 15 more which stood on Orkney's flank to fire into the French right, another 20 which accompanied the Dutch in Orange's movement on the Allied left and the 28 light guns Eugene placed out beyond his own left at the edge of the Bois de Lanière to enfilade the French line there.

In the opposite camp the two days accorded by Dutch timorousness had been put to right good use. Villars' troops were mostly green levies, but full of patriotic fervor and in one thing they had been well-trained—the art of field fortification. While Marlborough was arguing with the stubborn Hollanders, they had been hard at work; the whole center on its high ground between the tongues of forest was covered with nine big redans, log-revetted and each emerging on a spur of hill with artillery at the highest point, twenty heavy guns all told. The horn of Taisnières wood was covered with light entrenchments; here stood the famous Regiment Maison du Roi, with ten light guns to hold the position, all that could be spared, with General Alberghetti in command of the wing and Villars in personal supervision.

Two days before the meeting of the armies old Marshal Louis

de Boufflers, sixty-three and with snow-white hair, the last of Turenne's divisional officers, had joined the army. He was senior to Villars but waived his rights to fight as a simple volunteer in this last hope of the French nation, and Villars had given him charge of the right wing, where the heaviest attack was anticipated. The Bois de Lanière throws out a little salient toward a tiny grove, the wood of Tiry; around the rim of this salient were shallow trenches and in the trenches 20 guns. Right of this, facing the Dutch, 10 more; left at the angle of Lanière and the center another 10, all light. As the position was woods and trenches with no open ground, the cavalry was held in reserve behind the center. Behind the cavalry lines Grand Master of Artillery de St.-Hilaire had posted his remaining 10 heavy guns in reserve, all limbered up, a step which excited the startled admiration of his contemporaries, who had never heard of such a thing.

At 7:30 a mist was on the ground; the guns began to tune up and the Allies ranked for their attack, but by eight, when they were formed, the fog was gone. With clear air and good shooting the French cannon were not so overmatched as their numbers might make them; they fired three shots to the Allies' two and more accurately; from the protection of trees and trenches they did heavy execution. Still Marlborough's 40-gun battery beat so hard against the lines at Taisnières it was more than the Frenchmen could stand and St.-Hilaire sent his 10-gun reserve pounding through the trees to Alberghetti's help. Just as they arrived Marlborough sent Schulemberg swinging forward in an infantry charge. Villars met it with the fire of the heavies and a counter-charge from Maison du Roi; Schulemberg's first line broke up and he was hurled back, but General Gauvain, in charge of the Allied third line, swung still further out to the right to avoid the French rush, and when he returned to the attack got round the French flank and rolled up the tip of the line.

On the other slope of the salient Lottum had attacked. He got through and held the French lines on the edge of Taisnières; but only for a few moments. Villars brought some fresh infantry from the center and personally led a counterstroke that threw Lottum out again. It was ten o'clock now and Marlborough's great attack was making little progress. He angrily ordered up the cavalry of his wing and personally led a charge through Lottum's ranks as they went back; the 40-gun battery

had told heavily on the French and as the Duke swept down he found them all disordered with their own rally and rode right through.

The salient of Taisnières was won; Villars, trying to lead one more counter-attack, was hit by a musket ball that went through both his knees and he was carried from the field, fainting with the pain of the wound. The wood was dark with underbrush and the going heavy, but Withers had come into action now, the French left was in air, and broke back slowly through the wood of Taisnières under Marlborough's relentless pressure. By noon the forest was clear. Alberghetti, who took over the left when Villars went, had to form in the fields behind the wood with new infantry from the center and the guns that St.-Hilaire, working like mad, had managed to bring off without loss in the retreat. The new reserves came; the battle hung stabilized. Marlborough had done his part in drawing the French masses to his wing, the moment for Eugene's advance and complete victory had come.

But things had gone wrong with Eugene. He sent Orange and the Dutch forward in a bayonet attack simultaneously with Marlborough's movement, but his 20-gun battery was too far out, it had not hurt the French in Boufflers' line and when Orange came on, the grove of Tiry split his wide column into two branches. The right branch was thin and far and under fire from the French center; it could not close. The left, where Orange himself led, was choked into a solid mass. As it came round the corner of Tiry wood the French light guns, 40 of them, opened up a murderous cross-fire; the heavies from the center joined in at long range. The Dutch plunged gallantly into that inferno, but their gallantry was suicide, the guns cut them down by files and ranks. Of 15,000 men in that column, 10,000 lay dead when they went stumbling back. Boufflers caught the moment for a rally; the French leaped from their trenches and went cheering forward with the Regiment of Navarre in the lead. Eugene plunged in with his reserve cavalry to stop the movement, but he fell wounded, his cavalry broke up and the French went sweeping on till Marlborough himself, brought to the scene by a panting messenger, swung round the heavy guns of the center against the audacious Regiment of Navarre and cut into their flanks with a fierce charge of cavalry. Eugene had his wound bound up,

brought his 28-gun battery to closer contact and the battle stabilized on this wing also, but back at the original lines.

It was after noon now; both left wings were in bad shape, but the Allies were in better case than the French and the battle had frozen into a hot fire fight all along the line. Marlborough, riding down the French position, detected its weakness—the center, stripped of men to supply reserves during the morning's fighting. He changed plans quick as thought to an effort to split and spread the French wings, encircling the left. Orkney had not yet fought; he was ordered straight in on the nine redans, with the 40-gun battery from the Allied right, behind the infantry line, and Marlborough's unbroken cavalry behind them. Eugene was to follow in and complete the rout.

Marlborough estimated correctly; the redans were almost bare, they had been pounded all morning long by Orkney's heavy guns while their own fire had gone to help the hard-pressed flanks. When Orkney came storming in there was a brief interval of hand-to-hand struggle, then the outweighted defense cracked and the position was won. The 40-gun battery poured into the gap at the angle of Taisnière and instantly opened a destructive enfilade against the French horse, shaking them to the core and emptying saddles all down the line. Behind the battery Marlborough himself rode through at the head of his British and Prussian troopers in a heavy column, carrying everything before him. Alberghetti's men began to break, even Maison du Roi, racked by the hard fight of the morning, could not stand the pressure.

But old Boufflers was not done yet. He gathered the cavalry from behind Malplaquet village, with the household guard at the head and himself in the center of them, hat off and his white locks streaming, and hurled them right through the fire of the battery into Marlborough's flank. Marlborough's first and second lines were completely broken up, driven right off the field; the shattered third line tumbled back into the foot, masking and disordering it, and for a few moments it looked as though even the English guns would be swept away before this electric charge. Then Eugene came in with his Imperial horse and restored matters. For an hour or more there was a huge cavalry melee around the crest of the hill behind the redans, perhaps as many as thirty thousand horsemen in it, but neither side could make any impression

on the other and at three o'clock Boufflers pulled out and abandoned the position to the enemy.

But that was time enough for him to reunite the shattered wings and secure the safe retreat of his army—"such a retreat that he left neither cannon nor prisoners in the hands of the enemy and carried off more than 30 standards belonging to them." The Allies were too much spent to pursue; they camped on the field

and spent a week in the melancholy business of refitting. Indeed they were too exhausted to accomplish anything more that year at all—"A very murdering battle, the worst in my experience," wrote Marlborough to his queer, tempestuous wife. He had gained a technical victory and kept his record clear, but it was technical only for in the winning it had cost him upwards of 25,000 killed and wounded while the French had lost only 8,000 and were speedily encamped behind a new fortified line along the Scarpe, strong and ready for another trial.

In some battles it is the largeness of the strategic or political result that attracts, the huge weight of the issue. Malplaquet is not one of these; it was a battle without results except for the poor devils who fell beneath bullet or sabre. To the Allies it brought small advance in their business of invading France; the summer was over and the work must be done again next year. For the French it only postponed the issue till another summer; the task of driving out the invaders must begin all over with resources lessened by the wastage of a year's campaigning. Nor did the battle bring anything new to the science of war, in weapons, tactics, or method. It was fought out on lines perfectly characteristic of the period to a conclusion thoroughly typical. There is no trace of anything like the inventiveness of Gustavus or Cromwell or the happy inspirations of Turenne or Luxembourg.

Yet Malplaquet is one of the most interesting of battles because it is a type. It was fought out with a resolution not to be seen again till Napoleon tried to drive his columns through the Austrian lines round Essling; and hard-fighting battles are always interesting because they are rich in that element of unexpected benefit from persistent effort which it is never unpleasant to read about. But more than this Malplaquet is interesting as the perfect example of the military science of its period—a piece of Louis XIV furniture in the best classical manner.

It is interesting because of the singularly perfect balance among the three arms—infantry, cavalry, artillery, none able to do anything without the others, each invincible in its proper sphere. Infantry fails against infantry and artillery in Orange's attack; cavalry supported by artillery goes swaying through in Marlborough's last charge; artillery alone cannot hold infantry and artillery in Orkney's advance; the three arms together break artillery

and infantry in Lottum's; and as a final touch cavalry cancels out cavalry to end the battle. Moreover, on both sides, the highest degree of skill is shown in the handling of all the arms; there are frontal attacks, flank movements and feints, every hourseman, infantryman and gun appearing in the place where it will do the most good—with the possible exception of Eugene's 28-gun light battery, and even here we may, remembering that the French guns fired so much faster and better, suspect the fault lay with the canoneers rather than with the general.

But chiefest of all Malplaquet is interesting in the enormous growth of artillery science it reveals. It is only fifty years since Cromwell's Ironsides rolled over King Charles' guns at Naseby and with sore labor and much pain got them turned round to fire into their former owners; yet now, instead of being semi-immovable field fortifications, the cannon, like Turenne's at the Dunes, take wings and fly all over the battlefield. Marlborough orders his light artillery to "march with the infantry to which it is attached," that is, keep right up with the skirmish line; and it actually accomplishes this feat. In the successful break-through at the corner of Taisnières wood 40 guns are up with the foot and move so nimbly as to keep out of the way of the cavalry which follows. The French guns stand muzzle to muzzle with the English in Taisnières, blazing into the columns of attack; yet when that attack breaks through and hustles back their supports, they get away without losing a piece. Even the heavies, which so late as Neerwinden, a dozen years before, stand rooted in the ground, now partake of this universal lightness of foot. St.-Hilaire rushes a brigade of them to stay Schulemberg's attack; they do their work and escape without damage.

This is not the behavior of artillery at all by any modern analogy. This is the way machine-guns and trench-mortars operate. And in truth we shall never understand the wars of this age until we drop the apparent analogy and remember that artillery, in the full modern sense of the word, to designate a weapon of relatively great power at great range, does not yet exist. Or rather we should reverse this analogy and consider the modern machine gun, trench-mortar and 37 mm not as additions to the small-arms equipment of the infantryman, but as genuine artillery reduced by a mechanical civilization to a scale that makes nearly every man in the army a cannoneer.

President Roosevelt, Lt.-Colonel E. M. Watson, F. A., ADC, Colonel Kenyon Joyce

THE FORT MYER MILITARY PAGEANT OF 1936

FORT MYER'S colorful and exciting Military Pageant, "The Winning of the West," was presented to the public on the afternoons and evenings of January 10th and 11th and proved to be a tremendous success.

Those participating in the production were the officers and men of the Third Cavalry and the Sixteenth Field Artillery, the debutantes from Washington and the ladies of the Post. The entire production was very ably directed by Lieut. Colonel Jacob L. Devers, Field Artillery.

Among the distinguished guests were the President of the United States, the Secretary and Assistant Secretary of War, the Secretary and Assistant Secretary of the Navy, The Chief of Staff and many other notables.

The program of events included the following:

I. The Grand Pageant.
   Desoto and his Gentlemen; Braddock's Men
   Frontiersmen and Covered Wagon; Continental Artillery
   Spanish Don and Group; Mounted Rifles; Indians
   Cavalry Indian Fighters; Cowboys and Cowgirls

II. Vaqueros of Old California, Troop "E", 3rd Cavalry.

III. Mexican War Artillery, Battery "C", 16th Field Artillery.

IV. Indian Maidens from the Happy Hunting Ground. Tandem drill by Washington Debutantes.
V. Veneer of Civilization, Fort Myer N.C.O. Ride.
VI. Covered Wagons in Warfare of the West.
VII. Civilization Goes West, Hunt Ride, Washington Debutantes and Fort Myer Officers.
VIII. The Circus Comes to the Frontier.
IX. Rodeo, Troop "F", 3rd Cavalry.
X. Grand Finale, E and F Troops, 3rd Cavalry; A and B Batteries, 16th Field Artillery.

Desoto in a shining suit of armor with his gentlemen opened the pageant, followed by rapidly moving events in which Spaniards, Indians, Cowboys and Cowgirls in white satin with red scarfs tied about their throats and ten gallon cowboy hats had part.

The Mexican War artillery brought many thrills. Uniforms of the drivers were blue with gold epaulets and white cross belts. The grey horses were ridden through an intricate drill to music which required the utmost in skilled horsemanship to guide horses, guns and caissons as they tore madly around the riding hall.

The scene, Indian Maidens from the Happy Hunting Ground, was one of the most picturesque acts of the show. Sixteen Indian Maidens, played by Washington girls, dressed in authentic costumes with gorgeous feather headdresses, rode in a tandem

THE FIELD ARTILLERY ARRIVES

COVERED WAGON DAYS

drill. Their management of horses, riding one and driving another, was superb.

Most original was the Covered Wagon act, bringing to life the hardships of the Western trail. Seven covered wagons were driven by frontiersmen. The women and children built fires, boiled water, cooked meals. There was an attack by Indians, with much close range shooting. When all was serene again, a prayer meeting was conducted, the women and children were tucked in their wagons and the cavalcade moved on its way.

In the Veneer of Civilization, the most daring and exciting riding took place. Indians, riding over jumps, removed stirrups, saddles, clothes and finally rode over the last course of the jumps and out of the hall without bridles.

Stepping down through the years at a faster pace, came the Hunting scene. Men in pink coats, ladies in black coats, white breeches and hard hats, took a course of jumps in a manner that would do credit to the most daring of huntsmen.

Next there was a touch of the old time circus with bareback riders, lions, elephants, band and all, in the "Circus Comes to the Frontier." Major Millholand put his trained lion KiKo through his paces. Ladies of the post in gorgeous costumes rode especially schooled mounts with side saddles.

With some clever gymnastic riding and rodeo stunts the Pageant came to an end, the final number being a Salute to the distinguished guests by two troops of cavalry and two batteries of artillery. The Star Spangled Banner and all was over.—A notable success.

THE ARTILLERY SUPPORT OF THE INFANTRY IN THE A. E. F.

BY COLONEL CONRAD H. LANZA, Field Artillery

PRE-WAR TRAINING

WE taught limitations of artillery at all of our schools. The inability of artillery to fight while in march order, the limits of its ranges, the character of its matériel, etc., were all explained. These subjects were beyond dispute, easy to learn; everybody knew about the limitations of artillery.

To a limited extent the possibilities of artillery were taught in theory. This was due to the small amount of artillery we had and the smaller amount of ammunition provided for training. Service practice was by battery, restricted to obtaining a bracket. Except for rare experimental fires, fire for effect was not allowed; most officers had never seen such fire. They knew little as to the number of guns, number and character of projectiles and the time needed to obtain desired effects. With the quantity of ammunition annually available, the mission was to fire as many problems as possible. Consequently fire at night, or during periods of non-visibility, or against concealed targets, which we found later constituted most of our battle fire, was prohibited. Such fire was considered a waste of ammunition. From a training point of view it probably was, but it did not teach the possibilities of artillery fire.

To avoid losing precious ammunition, fire was by observation. As only one battery fired at a time, an OP, with space nearby for observers, was not hard to find. Targets were at least partially visible and time was given to identify them. A serious effort was made to obtain a bracket promptly after the target had been identified; our officers were well trained in this respect.

Tactical instruction was required, and was occasionally with other arms. Sometimes the enemy was outlined by targets and the problem ended with fire by batteries in succession. Targets could be seen from somewhere and it was an amusing problem to determine the places from where they were visible. This led to long reconnaissance, repeated by commanders in inverse order of rank. If the colonel located the right places, he refrained from telling his majors, and when the latter had found them, they avoided telling their captains.

At an annual inspection, the regimental commander in an advance guard problem, took one hour locating sectors for his two battalions. He then ordered his majors to reconnoiter over the same ground, but told them nothing as to the targets he had seen, nor from where he had seen them. The majors took nearly another hour before they solved the riddle, which they turned over in like manner to their captains, who were then carefully watched by their seniors, in observing how long it would take them to discover the place their seniors wished them to go to. About three hours elapsed before fire was ready to be opened. The inspector in his report criticised the regiment for the time taken to solve the problem; he pointed out that if this had been a war situation, the advance guard would have been disposed of before its artillery would have been ready to assist it. In returning the report, the regimental commander invited attention to the fact that he had been a tactical officer at West Point, when the inspector had been a cadet, and that the latter did not begin to have the experience of the officer whom he criticised. It had required three hours to make a reconnaissance and occupation of positions, and that was that; it was in accordance with regulations, and could not possibly have been completed in less time; criticism was entirely out of place, and was wholly due to the ignorance of the inspector. Nobody in the War Department seemed to know what should have been done, and the matter was dropped.

When the targets were set out for tactical problems their number was appropriate to the number of organizations taking part. If infantry was present infantry targets were arranged at short ranges. For the artillery, targets representing hostile batteries were located with part of the carriages showing from behind a crest, or machine guns were placed conveniently near lone trees, or prominent bushes. After all commanders had made a reconnaissance, and the batteries had occupied positions, and were ready to fire, and the range officer had been consulted, and had advised that it was safe to fire, targets were assigned, and fire by battery commenced. It was customary to ask any infantry present, at what targets they desired the artillery to fire. They answered that they would like the artillery to fire at the distant targets, while reserving to themselves the targets which had been placed at ranges suitable for their weapons.

The idea that artillery never entered action until after repeated reconnaissances, and careful occupation of positions, was particularly prevalent with regard to medium or heavy artillery.

In 1916, our 4.7″ gun battalion was alerted for possible use in Mexico. It was arranged to ship the guns and ammunition separately, as it was believed improbable that this type of artillery would be used except upon special occasions, which would be known long in advance. The plan was to use this battalion if the enemy had a fort in a pass, or against some similar objective. The guns were then to be brought to a position where they would themselves be out of range from hostile guns and from where they would fire a limited number of rounds at the target. After this the battalion would not again be used, until another such situation developed. No amount of argument prevailed upon higher authority to believe that such very heavy artillery could be regularly used to advantage in war.

TRAINING IN FRANCE, 1917-1918

The Commander-in-Chief allowed no troops to enter the line, until they had first satisfactorily completed a course of training in modern methods of warfare. For artillery, this was given at schools controlled by the French Army. Instruction was primarily technique and firing. Observation of fire was customary, but map fire, and corrections for ballistic variations were taught. Coordination of fire by battalion and regimental fires was covered. Officers who failed to graduate were classified as unfit for line duty, and were either discharged as officers, or relegated to rear area duties. The course took from 4 to 6 weeks of hectic work and was thorough. Its mission was to teach precision in firing.

The younger officers readily learned the new methods of fire. Some of the older officers found it hard to believe that foreign ways could be better than the good old American way of firing off hand from an OP, without using maps or new-fangled computations. To these older officers the new ideas seemed inadvisable. They felt that possibly here was one of the reasons why the Allies had not previously won the war, and certainly that those methods should not be adopted as a general practice.

After passing through the school, troops entered the line in a quiet sector. Fire was conducted according to rules, which varied in different sectors. In the Vosges mountains, the Germans had service practice in the mornings, and the Americans and French theirs in the afternoon. This was because the two opponents had the sun at their backs respectively at these times of day. Practice was 20 rounds per battery per day. To avoid revealing battle positions, fire was conducted from some other position, usually by a single gun. Targets were cross roads, lone trees, ruined buildings, or similar objects, where no personnel was to be seen or expected. There were occasional problems by air observation; both sides listened to the signals from the planes, so that both profited by this type of problem. The enemy did not interfere with our fire, and we did not interfere with his. A strong argument was that as long as the unwritten rules of the sector were complied with, towns and billets were off limits as targets; this permitted all hands to rest comfortably. Movements of personnel in the open were fair targets; consequently both sides enforced camouflage and concealment, and the OPs never saw any

movements within range. This training was not expensive and had a very considerable value. Such a tour completed the training of organizations recently arrived in France. After a short period for refitting, troops were now ready for battle.

BATTLE EXPERIENCE

Our first idea as to supporting infantry in battle, was that targets should be primarily selected by:

a. The infantry.
b. The OPs.

The solution of this problem, was to arrange good liaison with the infantry, so that it could be advised as to at which targets the artillery could best fire. By taking advantage of a complete system of established observation points it was an easy matter to make a proper assignment of batteries to fire on definitely located targets and to be prepared to fire on fleeting targets within their zone.

In preparation for the battle of St. Mihiel, elaborate arrangements were made to assure the working of such a system. There were conferences with infantry officers, to discuss which targets the artillery should cover, what barrages were needed, where smoke or gas should be placed. As many OPs were established as the terrain permitted; they were supplemented by fixed balloons and observation planes. Battalions and regiments of artillery were assigned to support units of infantry in line; strict instructions required that fire should be delivered promptly during the progress of the attack at whatever the infantry might indicate.

Before the battle started, it became apparent that targets would have to be selected in some other way. Except for belts of wire, old trenches, villages, woods and immovable objects already printed on our maps, the infantry failed to discover any targets. They did indicate a desire that the artillery fire on all of these objectives, but they were not prepared to indicate any priority, as no one knew which places were, or would be, occupied by the enemy at any particular time. The artillery, strong as it was, could not fire at every place on the map. They inquired of the OPs, but these reported that they could see no enemy batteries, machine guns or infantry. None was visible from our lines. The battlefield appeared to be empty of personnel. Everything living

was defiladed, or camouflaged. We did the same, more carefully we thought, because we were trying to surprise the enemy, by starting a great battle unexpectedly.

The battle brought out lessons. The artillery preparation, fired at night, was continued after daylight during fog and mist, with visibility nearly zero. The OPs saw no targets; neither did the infantry report any. As the artillery preparation had been heavy, and accompanied the troops until after the hour they were scheduled to reach their objectives, the battle was a wonderful victory, but neither liaison nor OPs had affected the results of the artillery fire which had assured the gaining of the battle.

During the first stages of the Meuse-Argonne campaign, conferences with the infantry representatives continued, but they became less and less and finally disappeared. Neither the infantry, nor anyone else could tell in advance where the enemy would be next day, and not a sufficient number of targets could be indicated to make it worth while having discussions about them. The relatively small number of enemy installations which were definitely known, could be taken care of by the hundreds of batteries present without taking more than a fraction of their time or ammunition. As the campaign progressed, attacks on our part became frequent and it obviously delayed preparation of plans if conferences had to be held before orders were issued.

It became the established practice to leave to the artillery the decision as to how they would support the infantry. This was an *artillery* problem to be solved by artillery generals and staffs, in the same way that it was a *doctor's* problem to decide what medicine should be administered to a patient. Knowing the amount and character of artillery and ammunition available and having received the necessary orders from the commanding general for the battle, the artillery decided how best to employ the means at its disposal. The supported arms were made aware of what this support would be, by being supplied with a copy of the artillery orders, usually accompanied by a map, or overlay, showing graphically where the artillery fire would fall, and when it would start and stop for each concentration or target. For important battles, separate overlays were issued for different phases, showing the artillery preparation prior to the attack, the rolling barrage, lines for rest and reorganization, accompanying fires for

each phase, etc. It took time to prepare these orders and overlays, but not more time than it took the infantry to deploy and prepare for attack. Orders and overlays started with the highest authority, the army or corps initiating them and furnishing sufficient copies to enable lower echelons to add to the overlays, without need of duplicating them. This procedure was about the same as the German method, except that the latter sent artillery officers to verbally advise the infantry as to the support they would receive. This practice is similar to dictated orders. We never employed it, but there is no reason when time is limited, why it should not be employed in the future. That the infantry not only made no objection to being told what the artillery support would be, but were glad to receive outline plans as a guide for their attack, and the successes uniformly obtained, was proof that the method was practicable and desirable.

LIAISON

All infantry organizations in line had artillery liaison officers attached to their staffs. It was hoped that they would transmit from the infantry information concerning targets and the artillery fire needed. In practice the front line officers notified no one of targets. Except at rare intervals, they were incapable of reporting their own positions. Engaged in a life and death struggle, their efforts and attention were devoted to killing off the enemy before they themselves were killed through momentary lack of attention. They could not take eyes and attention away from the battlefield to write reports, make sketches and instruct messengers. They were fighting. The artillery either received no information from the front line, or received it too late. It was no use to fire a magnificent problem based on late messages, if the target had in the meantime disappeared, or our own infantry had suffered extraordinary losses.

Communication with the infantry was difficult. Lack of wire, continual changing of infantry positions, uncertainty as to the location of infantry units, were some of the reasons. Lateral communications by wire were almost non-existent. With troops moving forward and backward, lateral wires could not be taken up and relaid, and there was insufficient wire to continually lay new lines.

On 29 September, 1918, the 91st Division found itself several kilometers ahead of the divisions on its right and left. Desiring to attack, it sent out couriers and officers to locate adjacent divisions and secure their cooperation. The telephone was freely used. Hours passed without its being possible to discover what adjacent divisions were doing, or even where they were. It being impracticable to delay further, the division attacked without securing the desired information, only to learn later that the divisions on both its flanks had retired. Although the attack gained ground, it left the 91st Division in a precarious position with both flanks exposed.

Liaison was not solely a problem between infantry and artillery. It was a major problem between all units in the same battle, both laterally and vertically. This phase of the problem was frequently overlooked; yet it was most important. Lack of liaison upward, downward and laterally was a serious difficulty. It resulted in a paucity of information, interfered with the correct tactical application of assigned missions and the proper support of artillery.

Great difficulty was experienced in supporting infantry due to inability to determine just where the front line was located. This applied equally to periods between battles, when it might be expected that the front would be easy to locate. The front was never a line after a campaign opened, but an area of some depth, sometimes as much as two kilometers, which was partly, but not wholly occupied by our troops. It was almost impossible to determine just which parts were, or were not, occupied by our forces. There were constant shifts within the area, and front line officers made inaccurate reports as to the positions held. When they received orders to occupy, or to send patrols, to impossible places, they did not like to state that they had failed, or had not even tried. They feared being discharged. Consequently they reported that they had occupied, or had occupied approximately, the desired places, when at times not an attempt had been made to do so. Patrols sent out, to increase the prestige of their leaders, reported advances beyond where they had been.

A patrol sent out nightly in October, 1918, by the 33rd Division, regularly reported that they had carefully searched a particular wood, and that it was not held by the enemy. At the end of this period, a German officer was captured in an engagement in the same sector. After having been warned that he need not answer, he was told of the reports of the patrol, and asked to state whether they were true. The officer reported that he himself had been continuously stationed in that wood, and that no American patrol had ever entered it, or even been close to it. Further investigation showed that the patrol had crawled out into No Man's Land each night and stayed a reasonable time in convenient shell holes, then after having agreed among themselves as to reporting an account of their mission, had returned to their own lines, stating that they had been far beyond the point which they had actually occupied.

To apply to the infantry for its location was frequently useless; there was a tendency, within limits, to report the line as being where it was thought higher authority wanted it to be. If a single patrol reached, for a short interval only, the far edge of the wood, the unit commander would claim his command had captured and held the wood. All this led to great difficulty in arranging for close artillery support.

The final solution was to assign artillery liaison officers to *areas* in addition to those liaison officers assigned to *units*. Area liaison officers had no responsibility for the success of units, and were required to report only observed facts. They were stationed in the front line and reported its position at periodic intervals, with locations of any targets actually seen, always noting the time. Communication was by telephone, messenger to nearest phone, pigeon, or other available means. We did not place this system into operation until towards the end of October, 1918, and it did not have a long trial. For the period it was used it worked well, markedly better than depending on unit liaison officers for front line information. Radio was not available in those days for area liaison officers; the best results were with pigeon messengers, released hourly on the hour, thus facilitating coordination of reports from adjacent areas. The unit liaison officers were depended upon to report intentions of commanders in time to enable proper supporting plans to be prepared by the artillery.

Infantry battalion commanders were generally familiar with the location of their companies, but they did not always report this to their regimental headquarters. Sometimes they reported the line which they hoped to occupy, rather than what they really occupied. Regiments were consequently not always oriented as to the situation. A considerable delay usually occurred in getting reports back from regiments to brigades, and still more from there to divisions, and again to corps. When G-3 of the Corps realized the situation and had notified the corps chief of artillery as to information affecting artillery action, this drifted down through channels to battery commanders, and was received out of date, sometimes over a day late.

A report from an area liaison officer stated:

> Upon information (from brigade and regimental commanders) that Stenay was in our possession, and that (one of their battalions) had established a PC in that town, I went on out there. The car was stopped short of the town under rifle and machine

gun fire. Found that our advanced infantry was just on the edge of the town holding a group of about ten houses in the southeast corner, the Germans occupying the balance of the town, as well as the west bank of the river. A troublesome group of Germans about 300 yards away in a clump of trees at the edge of the town prevented any further advance. I went down to the group of houses held by us, and found our men on one side of a stone wall and the Germans on the other side. The infantry appeared much disheartened; account lack of artillery support, of which they were receiving none, as the real situation was, of course, unknown to superior commanders.

In the above case the infantry battalion had been about 5 hours in the position reported, but had not reported their position, other than to state that they had captured the town. The report of the area liaison officer led to artillery support being supplied within a short time, and to a correct location of the infantry line.

A tendency to report as a fact what was only hoped for led to inappropriate artillery orders relating to artillery fire.

A report by the V Corps, stating that as of 6.00 P.M. 26 September, the line ran through Montfaucon, led the First Army to prohibit artillery fire over the entire front, except to division artillery, on the assumption, subsequently found to have been erroneous, that the enemy was withdrawing, our troops pursuing, and that the latter might be endangered if artillery fire was continued. This order was not lifted until after several days, during which our troops were badly in need of better artillery support.

This type of information was the cause of requiring the artillery to provide their own intelligence data by details of officers and parties to front areas, to report directly the events observed by them.

LIMITATION OF ARTILLERY SUPPORT BY ORDER

Until the middle of October, 1918, our attacks provided for supporting the infantry with a strong artillery preparation, followed by accompanying fires of barrages, concentrations, etc., to be continued until an hour when the infantry was to reach its objective. After this hour had been reached, it was assumed that the infantry would not need further strong artillery support, as there should be no enemy resistance left except from possible isolated detachments which might have escaped our artillery fire. It was also assumed that not many such detachments would be found, and that intervals were certain to occur between them. Attack orders repeatedly set forth that the infantry must not permit itself to be held up by small hostile forces, but must push through the intervals and capture these islands of resistance by maneuver. To enable the infantry to advance more rapidly, all fire by corps and army artillery was stopped inside of a line many kilometers beyond where the infantry was located. In this deep

zone, the infantry was free to maneuver, without being tied to an artillery schedule and without danger of being fired on by friendly artillery. The division artillery remained at the disposition of the advancing forces and was to take care of such few targets as might be discovered.

In no case did the infantry advance beyond the line where the main artillery support ceased. The enemy was not in scattered isolated detachments, but invariably presented a continuous front. This front was sometimes very thin, but a small force with modern weapons stopped greatly superior forces. A standard German line averaged about one automatic rifle, or machine gun, very irregularly sited, to every 20 meters of front. An infantry force of 75 men could, and did, hold a front of a kilometer, and attacks against such fronts by infantry alone, or supported only by light artillery broke down.

Such thin enemy lines did not cause us excessive casualties. Because of the flat trajectories, our infantry could find protection in the folds of the ground. But our attacks became immobilized, and it was impossible to advance. In this situation, it was a question of time before the German artillery, advised of the positions of our line, began to sweep it with severe concentrations. This was what caused our losses, and the failure of the attack. Unable to escape the artillery fire without exposure to devastating machine gun fire, our infantry had to endure severe punishment and was unable to advance at all, until again supported by artillery fire.

As the campaign progressed it became increasingly evident that neither staffs nor line officers were aware of the long range and power of modern artillery. They did not know how to use it. The front line which suffered from the enemy artillery was the first to realize its need. As far as the records show, there is no case where the front line ever asked to have artillery fire lifted to enable them to advance, although there are a great number of requests asking for more fire. The orders limiting artillery support for the infantry originated in the corps and army staffs, without consultation with the front line, based on out of date training regulations which had emphasized the idea that the infantry was an independent arm and dependent on no other arm or service, that while artillery was sometimes useful it was never

necessary, and that when it came to pursuits or exploitation of victories, it was better to allow the infantry to advance unhampered than to be tied down to a slow artillery.

So the Army on 29 September, 1918, stopped all artillery fire south of coordinate 288, other than from divisions for fear that it would prevent the infantry from advancing rapidly. The result was that the infantry did not advance; it did not reach the coordinate before 26 October. On 2 November, on a part of the front, artillery fire was stopped south of coordinate 301, but no infantry reached that line for two days. This kind of order, which was frequent, deprived the infantry, without their knowledge or consent, from the very support that was needed to enable them to advance.

There was an over-confidence as to the possibilities of infantry advancing, which was not borne out by experience, and an unwarranted fear that infantry advancing might suffer losses from friendly artillery, unless the latter was prevented from firing. The latter possibility, often claimed by inexperienced troops, was rarely proven, and was frequently shown to have been utterly impossible. When it did happen, it was not because the advance ran into the artillery fire, but usually through defective ammunition. It was not worth while to stop artillery fire for fear that possibly a few men might be hurt through friendly artillery fire. The invariable result was that if resistance was met the infantry did not advance unless supported by artillery fire, and stopped again as soon as the artillery fire was called off. Artillery and infantry, in modern warfare, are a team, and both are necessary to overcome a determined enemy.

The following extract from a report of an artillery brigade commander illustrates the difficulties created by stopping artillery fire:

> I have been receiving the usual orders about not firing inside of certain lines or places. Among such orders was one on the morning of 8 November, not to fire on Baalon, as our patrols were expected to be in that place. Yesterday evening, about 8.00 PM, (9 November), I visited General ——, at his PC, and inquired about Baalon. He stated that he had not, and never had had, any patrols near that point, which was in his sector, and that he did not consider it practicable for a patrol to get through the forest to Baalon, and would not think of ordering it. This place has not yet been reached by our troops, but it is not being fired upon under existing orders (from the Corps), although it is an important point for the enemy's communications.

The order not to fire on Baalon was never revoked, and the infantry

never took the place. When the Armistice came, the enemy still held it, having stopped repeated attacks made by our men.

Another illustration of the loss of punching power in attacks made without strong artillery support is found in this report:

> With regard to Brandeville and Breheville, I went out there this afternoon and talked to some of the front line infantry. The first infantry officer I met bitterly reproached me for lack of artillery support during the last three days (7, 8 and 9 November). When told about orders not to fire within several kilometers beyond the two points, he expressed the greatest surprise; stated that the attack on these places was not made until this morning, and that they had been, and were, suffering from the enemy's artillery without any support from our own artillery. He further stated that the infantry had never thought of having the artillery fire lifted . . . and have never supposed such a thing was possible. I talked to some of the private soldiers, and all stated that they had attacked only this morning, and gone beyond these two towns about a kilometer into the plain. Here they met machine gun and artillery fire, and then withdrew to the foot of the heights in rear of Brandeville and Breheville.

Orders to stop the fire of corps and army artillery by American staffs, was due to a strong belief that stabilized warfare was wrong in principle, and that open warfare would have to be substituted if the war was to be won. It was thought that the previous lack of success of the Allies was largely due to stabilized methods of fighting, where prepared artillery fires were the most conspicuous and striking feature, and very costly in expense for munitions. Consequently our orders for advances stressed the importance of infantry advancing by maneuver, refusing to be held up by isolated centers of resistance, which they were directed to turn without interrupting their advance. Such advances were to be supported by the division artillery only. It was believed that this would save the time of communicating with other artillery forces, thus preventing the enemy from escaping our pursuit.

Corps and army artillery were recognized as necessary to break the enemy first line of resistance. When this was passed through by our infantry the latter was to pursue relentlessly, under the theory that the infantry could always advance another step and always fire another shot. Under these circumstances, artillery might be useful, but would not be essential. To wait for artillery to come up, or to wait until the fire of heavy batteries could be brought into play, might forfeit the expected advantage of a rapid advance so demoralizing to the enemy. It was realized that with only division artillery support, the infantry was bound to suffer some losses, but it was believed better to accept this than to prolong the war by continuing stabilized fighting, using large

forces of artillery, due to waiting for moving guns forward, and accumulating new stocks of shells, preparatory to another limited advance.

These ideas were found unworkable. The infantry never was able to advance against opposition without support of heavy artillery; they continually asked for it. Division artillery alone was considered too weak in quiet defensive sectors, where it was always reinforced. In active sectors, especially in an attack, the division artillery alone was incapable of handling the situation.

In principle, open warfare should give quicker decisions than stabilized warfare. To bring about open warfare was the goal of whichever side was the stronger. In the latter part of 1918, the Allies sought open warfare by every means at their disposal; training regulations were full of the need for doing this. It was prescribed that stabilized warfare was to be relegated to an initial break through the enemy's lines, recognized as formidable, and also to unimportant sectors where a defensive mission was assigned, in order to release troops for other areas where a decision was to be sought. Here the final victory was to be won in the open through able maneuvers.

The error in these assumptions was that it was absurd to expect a weaker army to abandon defensive lines, and give up the advantages of field fortifications and of numerous weapons and stores which he had accumulated. In the autumn of 1918, the Allies were superior in numbers, guns and munitions. This was well known to the Germans and they had no intention of surrendering the advantages which stabilized warfare offered them. In view of their inferior numbers and poorer supplies, they refused to engage in open warfare and took every advantage of the terrain to force the Allies to a slow advance. Experience showed that they could be ousted from positions, prepared in but a few hours, and having but slight relief, only after artillery had been made available to support the infantry attack. Open warfare was possible only when both sides agreed to adopt it. If the weaker refused to do so, it was impracticable for the stronger to force it with the amount of superiority which we had in 1918.

The artillery could not force its friendly and cooperative assistance upon troops which had staffs who thought so little of the artillery as to bar its use in orders, but it offered its services, and

whenever possible described to other arms what it could do to win battles. Toward the end of the Meuse-Argonne campaign, it was clear that absence of sufficient artillery support was resulting in inability to advance, and the Army Commander, Lieutenant General Liggett, authorized and directed complete use of artillery for the coming battle of Buzancy, fought on 1 November, 1935. The Army Commander having outlined the plan of battle, the detailed plan was made by the army artillery staff and was issued to the infantry. The plan showed where and when artillery fire would fall, the rolling barrage lines for each 20 minute interval, and the lines for rest and reorganization of the infantry, spaced about 1 to 1½ hours apart. These lines were selected so as to secure defilade from sight and fire from the enemy's side. The plan was issued in the form of maps or overlays, which involved considerable work of reproduction, but it was a clear and reliable method and left no doubt as to what each unit was to do, and what would be done for it by assisting units. Enough copies were issued so as to provide that lower units in distributing the plans downward might add thereto any data or instructions desired, without being required to reproduce the base plan. There was not an objection from an infantry unit as to the plan; on the contrary, many expressed their gratification at receiving it. The important fact was that this battle was an outstanding victory, one of the greatest of our history.

The artillery opened special G-3 sections at army artillery and corps artillery headquarters to indicate to and to assist army and corps staffs with the best methods of using the artillery to support the infantry, not by prohibiting its fire, but by concentrating its fire, as and where needed. Long range guns have a wide field of fire. A single brigade of heavy artillery on 1 November, 1918, at different hours supported the infantry of five different divisions, in three different corps. On the same day, brigades located in three different corps zones of action concentrated their fire for two adjacent divisions in the same corps. Battles never required uniform artillery support everywhere at all hours. Variations in terrain and in locations of targets required a corresponding variation in the amount of artillery fire in front of particular infantry units. This permitted the concentration of artillery fire successively on those places which, according to the plan of battle,

were the most critical at the particular time. An artillery organization which provided a reserve of long range guns, whose fire could be controlled and directed by artillery commanders as and where needed, gave better results than a uniform distribution of guns to subordinate units.

Artillery G-3 sections assisted also in logistics, advising army and corps staffs as to the time required for artillery movements and emplacements. Artillery movements within the battle area often stirred a foolish impatience among MPs and G-1s, which was very unworthy and usually due to lack of knowledge of artillery characteristics. Staffs were so little acquainted with modern artillery that they made routings carelessly. Some types of matériel had tracks of 8 to 9 feet; when these were routed over narrow two-way roads, the road became temporarily a one-way road. Weights of matériel affected routings over bridges.

A heavy battery was routed over a bridge spanning an important double track railroad. The bridge broke under the combined weight of a gun and its tractor. A freight train was passing at the time and a first-class wreck resulted. Several cannoneers were killed and wounded, a gun, tractor and valuable railroad material were destroyed, and both road and railroad were interrupted for a considerable time. Investigation showed that it would have been possible by a short detour to have avoided the bridge, without increasing the length of march of the battery.

The artillery CPs were always open. The chiefs of artillery knew their business. They had orders to cooperate freely, undertaking any mission that could be accomplished which did not interfere with missions from higher authority. They were even authorized to suspend assigned missions, on their own responsibility, whenever it appeared desirable to do so. They were equipped and prepared to refer to some other artillery command any requested mission which they could not themselves carry out. They were willing and anxious to do any of these things. They knew the powers of their own weapons and were ready to employ their guns to the best advantage possible to support the infantry. The artillery devised methods of its own to keep in touch with the situation through its own intelligence service, its own lines of communications, and its own area and unit liaison officers. It had constantly increasing success, and as experience showed the wisdom of the measures taken, the infantry received constantly better and better support.

CLOSE SUPPORT OF INFANTRY

In most divisions it was the practice to assign one of the light

artillery regiments to the support of one infantry brigade. The latter had often but two battalions in line, belonging sometimes to the same regiment and sometimes to different regiments. In some divisions, the artillery regiments in direct support had no other mission than to comply with requests from the infantry commanders, and the artillery brigade commander had practically no control over these two regiments. This led to waste of ammunition and incongruous missions.

On one occasion the infantry commander ordered the colonels of the two light artillery regiments to prepare a program of fire, which included a heavy concentration of all twelve batteries lasting for 30 minutes, followed by a barrage lasting for an additional 15 minutes. This order called for a total expenditure of about 4,000 rounds of ammunition at a time when it could be ill spared.

It was the general opinion among division staffs that light artillery designated to direct support of the infantry had no other mission than to deliver any and all fire called for by the infantry. This led to batteries standing idle for long periods when they could have been used if left under the control of the proper artillery commanders, and to improper use of artillery.

Some infantry commanders gave orders to the artillery in direct support in great detail. In many cases the details were not only unnecessary but were unsuitable. The most common violation of proper artillery use was to order the artillery to fire so many rounds or to fire for such a time against locations where targets were supposed to be. Nearly always the designation of number of rounds or of time was based on nothing more than guessing and generally without any reference to the amount of ammunition which the batteries had.

On 14 October, 1918, the 32nd Division had its left battalion stopped by enemy fire. The local regimental commander directed his supporting artillery to fire for 25 minutes at a trench, where he believed the enemy was located. The light regiment of artillery delivered the fire as directed at about 10.00 AM, but the infantry was not thereafter able to advance. Two more battalions of infantry were successively thrown into the attack, and much additional artillery fire was employed irregularly during the day. Only at dark was the trench reached, when it was found that this was not the main source of enemy resistance.

In this case, had the proper chief of artillery been notified, a concentration of artillery fire not only on the trench but also on areas probably containing enemy units engaged in the battle could have been arranged, all to be fired simultaneously.

Some divisions required that the artillery commander in direct

support of an infantry unit have his CP at the same place as the infantry commander. The infantry units established their CPs where they desired and, to avoid shelling or for other reasons, changed the locations of their CPs rather frequently.

One artillery regimental commander, who had established his CP correctly had to move 2 kilometers to join the infantry commander he was supporting. A little later the infantry commander moved and carried along with him the artillery CP. That evening the infantry commander was relieved by another officer who decided the CP was not in the best location. Early the following day he moved it to another place about 3 kilometers away, which was not very far from the original artillery CP. This artillery colonel, due to frequent moves, was unable to take with him a suitable staff or maintain proper communications with his command. With three moves within two days he was able to act only as a liaison agent and advisor to infantry officers. This in spite of his utmost, but unsuccessful, efforts to maintain telephone connections with his battalions.

Occasionally medium or heavy artillery was ordered to the close support of the infantry. Orders for such details often failed to give information as to the character of the mission. A brigade of 155mm GPF guns received an order from the corps to detail a battery to report at 3.00 A. M. at a designated road fork. Examination of the map indicated that this might be a firing position; in this case it was desirable to know what the target was going to be, in order that the proper kind and quantity of ammunition might be provided. It was also possible that the road fork was a rendezvous point preparatory to a movement elsewhere; in this case information was needed as to the distance and route to be marched over, in order that sufficient gasolene, and extra tractors if necessary, might be on hand. The final destination of the battery had to be known, if it was to be kept supplied. Inquiry made to corps headquarters as to the mission of this battery brought the reply that they had issued an order in good English, understandable to anyone of average intelligence, and that the order was to be obeyed without asking questions as to the intentions of the commanding general, which in this case he intended to keep secret. The battery upon arrival found instructions to march with the support of an advance guard. The column marched in rear of the front to another sector. When it started to advance, it was stopped by hostile fire. The battery was not used, on account of the time required to occupy a position with this type of matériel. There seems to have been no valid reason why this movement should have been so secret as to prevent the

proper artillery staffs from being told and allowed to prepare for it. On this occasion it would have been possible to have given the infantry to which the battery was assigned for close support the assistance of numerous batteries of all calibers, already in position and able to fire without delay at any target or area in the sector where the advance was desired. Failure to notify the artillery, coupled with direct detail by corps staffs of artillery troops, resulted in no advance being made.

The infantry needed the close support of artillery mostly to overcome the resistance of machine guns. There were enormous numbers of these in the hands of the enemy, and it was difficult to determine, even when they were firing, just where they were. Enfilade, or oblique fire, was the rule; infantry was generally stopped by fire coming from outside of their own zone of action. It was impossible to see where the fire originated. The infantry stopped and took cover. Scattered in shell holes, subject to severe punishment, they hoped that somehow the artillery would crush the enemy machine guns. Threatened with immediate death if a movement was discovered, they sent neither messages nor sketches, but trusted to their sister arm to save them before they were annihilated.

Artillery staffs were aware of the infantry problem, of severe losses, of the impossibility of obtaining a rapid advance unless enemy fire could be kept down. They were ready and willing to give the assistance of their powerful weapons; they offered their services to their hard pressed associates.

The number of hostile machine guns located was but a fraction of the total, the neutralization of which was of minor importance. If they were neutralized only after they had been located and this information then transmitted to the artillery, the damage was done, our infantry had been stopped and had incurred casualties. We needed to stop the enemy fire, both of machine guns and batteries, before these had revealed themselves and had caused attacks to break down. Prevention of enemy fire, not punishment for having fired, was the problem.

The solution of the close support of the infantry was the firing of a double barrage, of pieces not less than 150mm in caliber, which swept out hostile elements as it moved forward. The inner heavy barrage had the mission of neutralizing elements within

effective machine gun range, around 2,000 meters as a maximum; usually less, as the terrain did not often offer the enemy a field of fire of this depth. The outer barrage extended beyond the inner, to a range of about 7,000 meters from the infantry line, excluding areas unsuited for battery positions or known, from air or terrestrial observation, to be clear of hostile batteries. Excluded areas formed the larger part of the zone. The number of batteries needed to furnish the required mass of fire was large, but they accomplished the mission of closely supporting the infantry by clearing the zone for their advance. We adopted this system after the middle of October, 1918. At the time it was believed to be an original idea. Subsequent investigation indicates that the Germans used a similar method of mass fire on the Russian front during the autumn of 1917. The British used it in the spring of 1918; other nations followed this same system as medium and heavy artillery in necessary quantities became available. The general adoption of breaking enemy resistance by use of medium and heavy artillery led to a steady increase in the proportion of such artillery; it was as large as supply permitted. It rose from 5 to 10 per cent at the commencement of the World War to around 55 per cent at the end, and was then still on the increase. Our own success, during the short period of time we employed heavy artillery in mass fire, together with similar successes reported by other nations for blasting a path for the infantry, point to the correctness of the principles involved.

MORALE

Maintenance of morale was a necessity. It always will be. The following is a brief outline of methods, requiring no explanation, employed in the artillery of the A. E. F. It covers the period in line, at rest and while reorganizing.

1. Maintain the fighting spirit of the troops by:
   - Rest, sleep and warmth
   - Cleanliness and baths
   - Exercise
   - Good mess, plenty of diversified wholesome food
   - Sports and entertainment, when opportunity offers
   - Careful assignment of personnel to suitable duties
   - Prompt and public reward of efficient conduct.

2. Improve discipline by:
   - Snappy gun drills and marches—not too many
   - Exactitude in military courtesy
   - Service practice if possible
   - Inspections (not too many) in connection with exercises.
3. Renew:
   - Matériel of batteries immediately
   - Clothing, especially underwear and shoes
   - Equipment of men.
4. Care for vehicles (or animals) by:
   - Timely evacuations
   - Replacements
   - Greasing and oiling (or grazing and forage)
   - Kind treatment—this applies equally to vehicles and animals
   - Maintain tires (or shoes of animals).
5. Eliminate useless stores and baggage.
6. Decentralize, by encouraging:
   - Initiative
   - Self reliance
   - Decision in all ranks.
7. Have older officers lecture to men on:
   - Explanation of ideals
   - Examples of success
   - Reasons for being at war with the enemy
   - Sacrifices made by women and children at home
   - Illustrate the foregoing by historical examples.

A great deal of time was spent in increasing the interest of the men serving the guns. If the men were given only bare firing data, they worked as automatons, maybe accurately if they had been sufficiently trained, but seldom with enthusiasm. Now enthusiasm is necessary in war, and the interest of the soldier needed to be maintained constantly throughout a battle; otherwise he became weary, reacted slowly and eventually set off the wrong data. If a battery was given data to fire on coordinates 201-397, they would do this mechanically. But if the men were told "our balloon reports they can see a hostile battery firing from coordinates 201-397 against our infantry," the cannoneers would place a maximum of careful effort in every round. And if a round was

observed, and especially if the section which fired it could be identified, and the battery was told "such a round fell in the enemy battery and it has now ceased to fire," the enthusiasm of the men was extraordinary, and they would talk about it for days afterwards.

Interest of this nature was worth creating and preserving, even at the cost of some time and labor in transmitting firing orders. Every unit regarded its immediate superior as a source of information and special knowledge. Every paper and message sent downwards was noted and valued with tremendous interest. The men wanted to know how the war was progressing and particularly about the results of their own efforts. Commanders were instructed never to lose an opportunity to notify their subordinates as to the situation and results of prior activities of their own command. To state the facts was the best way to prevent false hopes, or false fears, to defeat rumors and to improve morale.

COMMENTS

We endeavor to reduce the number of traffic accidents by preventive measures. Punishing violators of traffic rules may be useful, but if the accident has occurred, punishment benefits our posterity only. Punishing enemy machine guns and batteries, after they have been located by firing on our troops, may benefit others following us, but it will not bring back to life dead infantrymen and may fail to bring a victory.

The artillery problem is to neutralize, or destroy, enemy elements *before* they become dangerous to our troops, not afterwards. A light artillery barrage has its uses, but experience has shown that it will not drive out hostile elements, while a heavy barrage will. It is cheaper to the nation to furnish guns and ammunition at the commencement of a war than to wait, as in the World War, through years of deadly, devastating warfare until manufacturers produce the necessary heavy artillery and ammunition. We must be trained in use of heavy artillery and realize the need of employing it in large quantities to support the infantry.

Liaison between arms, and between units of the same arm, is absolutely necessary for successful team work. We need to supplement liaison officers at infantry CPs with area liaison officers having no other function than to report the positions of the front line and targets observed. Information as to events in the front

line is fully as important as information concerning the intentions of infantry commanders. With modern radio developments it ought to be possible to keep artillery CPs oriented as to what is happening at the front. We need this information.

It is inappropriate for infantry officers to specify how many rounds of ammunition should be fired or for how many minutes fire ought to be continued in order to obtain desired effects. It is as inappropriate as it would be to specify to the engineers what material to use to construct a bridge or order them to build one in a designated number of minutes. The mission should be stated and, in the case of the artillery, the latter should report back how long it will take to solve the problem. In artillery preparations, the proper artillery commander should determine its duration, based upon:

a. mission (number of targets, character, etc.)
b. number and kinds of guns available
c. quantity of ammunition available
d. other missions, if any, to be fired at the same time.

The organic division artillery as authorized during the World War was that required for training purposes. It was insufficient for entry into line, even in defensive sectors. In active sectors it was the corps and army artillery which furnished the mass of fire inflicting damage on the enemy. When these were silent no battles were won and no important advances were possible. The quantity of artillery in line in the A. E. F. exceeded in numbers of men and in numbers of units the infantry present, and in value of matériel, communications, etc., greatly surpassed it. Ought not this to be brought out in our training programs and maneuvers?

Support of the infantry in the A. E. F. was sometimes lacking. It was not because the artillery was incapable of supporting the infantry or was unwilling to do so. It was willing and able. There were never as many guns and as many shells as could have been used advantageously, but there were always enough to accomplish essential missions.

Lack of artillery support was due to prohibiting the use of corps and army artillery under the mistaken belief that infantry was independent and could always advance no matter whether or not it had support. The infantry itself did not suggest lifting

artillery fire; they were not even consulted. Prohibition was made by staffs of higher commands, under influence of pre-war training, which stressed the alleged fact that infantry could win without artillery support. The staffs believed that suppression of artillery fire would enable the infantry to advance faster, as there would be no necessity of arranging for such fire and that time thus saved would permit the infantry to advance so fast that more losses would be inflicted on the enemy than could possibly be caused by our artillery fire.

This was the old idea that a pursuit normally followed after a victory. A Cavalry Division was provided in rear of our I Corps, on 26 September, 1918, to start the expected pursuit; and after the battle of Buzancy advance guards were ordered to pursue across the Meuse River after what was supposed would be a retiring enemy. Our pre-war texts did uniformly lay down rules for initiating pursuits immediately after winning a battle, and our staffs, imbued with this spirit and training, considered it necessary to call off the artillery as soon as the objective of an attack had been reached in order to give the infantry an unhampered opportunity of bringing in the fruits of victory.

Our pre-war instruction had taught the limitations of artillery. But its possibilities were almost unknown, as we never had had ammunition to demonstrate the results of fire for effect. This led to an inferiority complex as to the ability of the artillery to do anything decisive—it was always some other arm that was to bring about the decision. The artillery was considered an auxiliary, sometimes useful, never necessary, and sometimes a nuisance. Staffs in France, educated in these ideas, believed that the use of masses of artillery should be limited to set battles, to break through organized positions, and they sincerely hoped and expected that such battles would be, for the Americans, few and far between. They could see no use for corps and army artillery. They were considered great disadvantages except for special occasions. It took much hard work on the part of some of our leading artillery officers to overcome this real inferiority complex as to the value of the artillery.

Bloody losses assisted in proving that driving back the enemy a few kilometers did not then necessarily mean that he would be on the run. The depth of modern defensive systems was such that

it could not be pierced by an advance not involving substantial displacements of artillery and ammunition. We tried to bring about open warfare; so did every other nation strong enough to adopt the offensive. We never succeeded, and no other nation succeeded until towards the end of the war. Then, in Palestine, in the Balkans, and in Italy, the enemy disintegrated and open warfare became possible. At once the war ended in those sectors. Perhaps a similar situation might have been brought about in France, had the war continued, but it did not.

Neither artillery nor infantry is now independent. They must work together under the direction of a common superior, properly a trained general with a competent staff. If the foregoing notes partially illustrate the need for some revision of ideas that the artillery is simply an auxiliary arm to be taken or rejected as desired, they will have fully accomplished their purpose.

Second Battalion
13th Field Artillery

WE'LL BE COMIN' THROUGH THE MOUNTAINS

(*Marching Song, Second Battalion, 13th Field Artillery*)

We'll be comin' through the mountains when we come,
We'll be comin' through the mountains when we come,
    With the Major ridin' Whiskey,
    Steppin' high and feelin' frisky—
We'll be comin' through the mountains when we come.

We'll wear elephant huntin' helmets when we come,
We'll wear elephant huntin' helmets when we come,
    For it's Oahu that we cover,
    But we don't intend to smother,
We'll wear elephant huntin' helmets when we come.

We'll eat tiger's milk and cactus when we come,
We'll eat tiger's milk and cactus when we come,
    When marching down the trails,
    We can chew a keg of nails,
And be spittin' out the shavin's when we come!

We'll be holdin' tails and halters when we come,
We'll be holdin' tails and halters when we come,
    All asweatin' and afussin',
    Marchin' on and on and cussin'—
But we'll be on schedule when we come.

They'll ask us where we came from when we come,
They'll ask us where we came from when we come,
    We've been clear to hell and back
    But we never lost a pack—
That's what we're gonna tell 'em when we come.

We'll have a big bad luau when we come,
We'll have a big bad luau when we come,
    We'll drink the beer by barrels,
    Forget the trails and perils
Of the lonesome, rainy Koolau when we come.

We'll go into Honolulu when we come,
We'll go into Honolulu when we come,
    We'll ride a mule up Fort Street,
    With bells around his forefeet,
And serenade the ladies when we come!
. . . . . Oh, when we come.

THE 116TH FIELD ARTILLERY MAKES HISTORY

BY BRIGADIER GENERAL SUMTER L. LOWRY, JR.,
Commanding 56th Field Artillery Brigade

THE old saying that "the army can do many things besides fight" was clearly demonstrated in the starting of the big canal across the state of Florida. This time it was the Field Artillery that stepped in to do a job that no one else could handle.

The President of the United States has authorized the building of a huge ship canal across the state of Florida connecting the Gulf of Mexico and the Atlantic Ocean. This canal will be thirty-three feet deep and vary in width from 400 to 1,000 feet at the top and will be about two hundred miles in length. It will be the largest canal in the world and will carry three times the traffic that is carried at present by the Panama Canal. The canal is being built under the direction of United States Army Engineers. The President decided to formally launch the undertaking by pressing a key from his home in Hyde Park. New York, which would detonate a blast of dynamite along the canal route near the city of Ocala, Florida, at 1 o'clock p. m. on September 19, 1935.

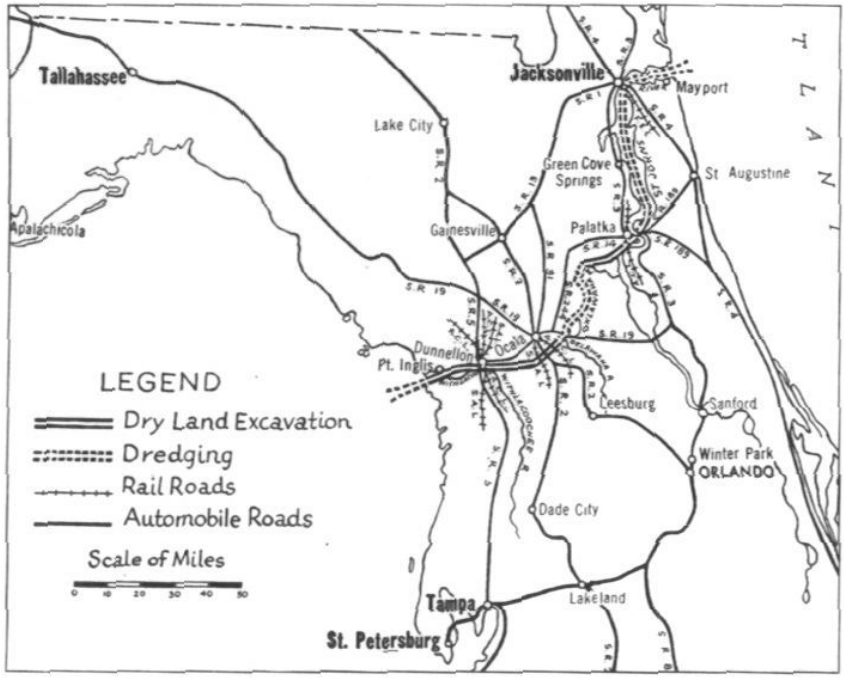
The arrangement for the installation of the necessary wire and equipment was to be made by the Western Union Telegraph Company. The day before the blast was scheduled to occur, Lt. Colonel Behron B. Somervell, the Engineer in charge of the construction of the canal, telephoned me stating that he had just been notified by the Western Union Telegraph Company that they were unable to complete the circuit of wire from Ocala out to the site of the blast, a distance of seven miles, and that unless some one stepped in and laid the wire and completed this part of the installation, the President would be unable to fire the blast at 1 p. m. the next day. I immediately assured Colonel Somervell that the Field Artillery would undertake the job and that he could proceed with his preparation to have the President's plans consummated.

I then telephoned to Colonel H. W. Hesterly, in command of the 116th Field Artillery, Florida National Guard, located in Tampa, Florida, and explained the situation to him. He detailed Lieut. Colonel B. E. Bushnell, Executive Officer of the Regiment and ten men from Headquarters of the Regiment to undertake

the task of collecting the necessary wire and proceeding to the city of Ocala and completing the installation in time for the firing of the blast.

These preliminaries required time and it was after dark when Colonel Bushnell arrived in Ocala with his detail and started work, but before daylight in the morning the wire had been laid and installation completed. This was all done under great difficulties on account of the congested road conditions prevailing in Ocala and vicinity. Promptly at one o'clock p. m. in the presence of thousands of spectators, the President touched a button in Hyde Park, New York, and the blast occurred in Ocala, Florida, with much noise and spectacular appearance.

I feel confident that only the Field Artillery could have stepped into this breach in such a short time and under the conditions prevailing. So we can say that the Field Artillery was responsible for one of the most historic events of the year because this canal when completed will be the greatest artery for waterway traffic in the world. The 116th Field Artillery is due much credit for their part in this undertaking.



THE INSTRUCTOR'S LAMENT

From the Block House, Signal Mountain,
Come straight down three zero mils,
And you see a small black object
In the shadow of the hill.

With that object as a reference,
Go three hundred ten mils right,
And you're on a lonely caisson
That is darned near out of sight.

Coming left about one zero,
At a range that's slightly less,
There's a scared jack rabbit running
For his home behind the crest,

Right a hundred, left nine zero,
Left three hundred ten mils more,
And you're on a small black object
That you looked at once before.

Do you see it, all you students?
Not identified, you say?
I'm so sorry, oh so sorry,
That's your target for today.

—S. L. N.

—Reprinted from "MIF MIF," published by The National Guard and Reserve Class, Fort Sill, Oklahoma, Spring 1935.

FIELD ARTILLERY NOTES

THE Chief of Field Artillery, Major General Upton Birnie, Jr., is very pleased with the response made by Field Artillerymen in contributing articles for the Prize Essay contest. By January 1, 1936, the closing date for submission, seventeen essays had been received. None has arrived after that date. A board of officers has been appointed to select the prize winning essay. It is hoped that the Prize Essay for 1936 can be published in the March-April JOURNAL.

The titles, showing the wide range of thought of these essays, are given below:

CAN YOU TAKE IT?

WHAT PRICE PROGRESS or HOW GOES OUR RUNNING ATTACK?

WORM'S EYE LOGISTICS

BURLAP AND FISHNET

LIAISON ARTILLERY

COLUMN CONTROL OF FIELD ARTILLERY VEHICLES ON CIVILIAN HIGHWAYS

THE OFFICER AS AN EDUCATOR AND LEADER

THE SLIDE RULE FOR PREPARATION AND CONDUCT OF FIRE

WHY 300 MILS

A FIELD ARTILLERYMAN'S VIEW OF THE FIRST ARMY MANEUVERS OF 1935

NOTES ON THE FOURTEEN DAYS' TRAINING OF RESERVE OFFICERS WITH REGULAR ARMY UNITS

THE IDEAL TRUCK-DRAWN BATTERY

YOU AND I ON "M" DAY

THE MILITARY MAPPING PROGRAM

THE CARE AND OPERATION OF MOTOR VEHICLES IN FIELD ARTILLERY

TRACE CHAINS AND CAISSON FAREWELL

OUR FIELD ARTILLERY IN ANOTHER WAR

LUTTIE GOOMBI AND CARRIE POOR BUFFALO SINGING "NEARER MY GOD TO THEE" IN INDIAN SIGN LANGUAGE

Armistice Day Celebration

Armistice Day at the Field Artillery School, commanded by Brigadier General H. W. Butner, was a colorful affair this year featured by the reunion and pow-wow of former members of Troop "L," 7th U. S. Cavalry, which was the Indian Scout troop.

Nearly one hundred Indians under the supervision of George Hunt, famous Kiowa Indian interpreter, were encamped on the reservation near White Wolf Crossing. On Sunday afternoon just prior to the football game between the 18th Field Artillery and the 1st Field Artillery, the braves staged a war dance and made the captains of the two opposing teams chiefs in the Kiowa tribe. From time immemorial the braves have been prohibited from the war dance except just prior to the battle but it was decided that the game of football so closely approaches a war that they could properly hold the dance.

After the battle the Indians returned to their camp where they barbecued a buffalo supplied from the Forest Preserve. The Pow-wow on Armistice Day was held near the camp at 8:00 o'clock in the morning. Hunting Horse, who is the oldest

living member of the famous Troop "L," led the Indians in their war songs and war dances. Another oldster, present, was E - Mau - Ta (Frizzyhead) who is 88 years old and who was a Kiowa scout at Fort Sill in 1878 under General Mackenzie.

The Armistice program, under the supervision of Capt. H. C. Larter, Jr., opened at 10:00 A. M. with invocation by Chaplain Branham, followed by the Boy and Girl Scout Troops singing

GEORGE HUNT, FAMOUS KIOWA INTERPRETER, WITH GENERAL BUTNER AND CAPTAIN W. S. NYE.

E-MAU-TA (FRIZZYHEAD)

"America," which was interpreted in sign language by Miss Luttie Goombi and Miss Carrie Poor Buffalo. Capt. W. S. Nye, who is writing a history of Fort Sill, delivered a welcome address to the old Indians, using the sing language, and Hunting Horse replied in sign language which was interpreted by George Hunt.

Captain Nye then introduced General Butner, following which George Hunt introduced the remaining members of Troop "L." The program was so planned that taps were sounded at 11 o'clock

and Hunting Horse, in sign language, presented a war bonnet to General Butner. A victory war dance ended the celebration and, because no battle was to follow, it was performed by the women of the tribe dressed in warrior's attire.

CHIEF HUNTING HORSE, VETERAN OF MANY FRONTIER BATTLES

The presentation of the war bonnet to General Butner made him a Chief of the Kiowa Tribe and the honor dance by members of Troop "L," 7th U. S. Cavalry, made him a member of the Kiowa Nation. General Butner's tribal name is To-Paw-To-Kee (Chief of the soldier garrison). Captain Larter's name being Haim-Te-Goom-Paidle (Keeper of relics) and Captain Nye's Haim-Te-Kee (Teller of old tales and records).

FIELD ARTILLERY OFFICERS (REGULAR ARMY) OTHER THAN THOSE ON THE TROOP DUTY LIST PUBLISHED IN THE NOVEMBER - DECEMBER JOURNAL AND THEIR DUTIES AS OF NOVEMBER 1, 1935

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Colonels		
G. R. Allin	Insp. Gen. Dept	Fort Shafter, T. H.
B. M. Bailey	Hq. 4th Corps Area	Atlanta, Ga.
J. F. Barnes	Org. Res. Duty	Ft. Bragg, N. C.
J. B. Barney	C.C.C. Duty	Ft. Knox, Ky.
T. P. Bernard	Rctg. Duty	Cincinnati, O.
W. S. Browning	I.G. Dept.	Washington, D. C.
O. L. Brunzell	G.S. with Troops, 1st CA	Boston, Mass.
Wm. Bryden	W.D.G.S.	Washington, D. C.
J. H. Bryson	G.S. with Troops, 8th CA	Ft. Sam Houston, Tex.
R. C. Burleson	O.R. duty, 1st CA	Boston, Mass.
F. W. Clark	G.S. with Troops, 9th CA	Ft. Lewis, Wash.
J. R. Davis	N.G. duty (NG Bureau)	Washington, D. C.
C. R. Day	O.R. duty, 3d CA	Philadelphia, Pa.
G. W. DeArmond	AWC Historical Sect	Washington, D. C.
W. H. Dodds, Jr.	AWC S & F	Washington, D. C.
J. W. Downer	I.G. Department	Governors Island, N. Y.
A. J. Greer	O.R. Duty	Buffalo, N. Y.
E. L. Gruber	W.D.G.S.	Washington, D. C.
F. E. Hopkins	O.R. duty, 2d CA	New York, N. Y.
R. E. D. Hoyle	O.C.F.A.	Washington, D. C.
P. V. Kieffer	N.G. duty, 1st CA	New London, Conn.
H. L. Landers	Hq. 3d CA	Baltimore, Md.
C. H. Lanza	O.R. duty, 2d CA	Syracuse, N. Y.
B. Lyerly	Jr. ROTC	Chattanooga, Tenn.
D. C. McDonald	Bur. of Insular Affairs	Washington, D. C.
M. McIntyre	F.A. Board	Ft. Bragg, N. C.
R. H. McMaster	Hq. 7th CA	Omaha, Neb.
L. J. McNair	O.C.F.A.	Washington, D. C.
S. Miles	W.D.G.S.	Washington, D. C.
B. F. Miller	Duty with QMC	Washington, D. C.
W. F. Morrison	Jr. ROTC	Chicago, Ill.
J. A. Moss	O.R. duty, 7th CA	Minneapolis, Minn.
C. R. Norton	C.O. Troops, USAT	St. Mihiel
T. D. Osborne	C.C.C. Duty	Camp Beauregard, La.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
W. H. Peek	AWC Historical Sect	Washington, D. C.
R. M. Pennell	F.A. Board	Ft. Bragg., N. C.
R. S. Pratt	O.R. 9th CA	San Francisco, Cal.
L. S. Ryan	Rctg. Duty	Oklahoma City, Okla.
W. D. Smith	O.R. duty, 4th CA	Columbia, S. C.
O. L. Spaulding	AWC Historical Sect.	Washington, D. C.
W. S. Sturgill	GS with Troops PID	Manila, P. I.
E. Swift, Jr.	HQ 6th CA	Chicago, Ill.
R. Talbot, Jr.	C&GSS S & F	Ft. Leavenworth, Kan.
W. C. Webb	Rctg. Duty	Salt Lake City, Utah.
E. W. Wildrick	O.R. 3d CA	Baltimore, Md.
W. S. Wood	I.G. Department	Chicago, Ill.

Lieut. Colonels

L. J. Ahern	I.G. Department	Washington, D. C.
J. B. Anderson	C&GSS S & F	Ft. Leavenworth, Kan.
J. W. Anderson	U.S.M.A.	West Point, N. Y.
C. Andrus	F.A. Board	Ft. Bragg, N. C.
F. T. Armstrong	ROTC Yale Univ.	New Haven, Conn.
G. E. Arneman	N.G. duty, 6th CA	Milwaukee, Wis.
D. M. Beere	F.A. Board	Ft. Bragg, N. C.
A. J. Betcher	O.R. duty, 2d CA	New York, N. Y.
A. Boone	O.R. duty, 9th CA	Seattle, Wash.
C. Brewer	ROTC Purdue Univ.	Lafayette, Ind.
W. E. Burr	AWC Student	Washington, D. C.
D. E. Cain	ROTC Princeton Univ.	Princeton, N. J.
T. J. J. Christian	OCFA	Washington, D. C.
L. R. Cole	Hq. 3d CA	Baltimore, Md.
J. L. Collins	G.S. with Troops	Governors Island, N. Y.
L. A. Craig	I.G. Department	Governors Island, N. Y.
J. A. Crane	Military Attaché	Istanbul, Turkey
W. C. Crane, Jr.	Military Attaché	Tokio, Japan
F. T. Cruse	G.S. with Troops, PCD	Quarry Heights, C. Z.
E. J. Dawley	Instr. Inf. School	Ft. Benning, Ga.
L. R. Dougherty	O.R. duty, 9th CA	Los Angeles, Cal.
H. Eager	AWC Student	Ft. Humphreys, D. C.
J. M. Eager	O.R. duty, 2d CA	New York, N. Y.
G. H. Franke	ROTC Ala. Poly. Inst	Auburn, Ala.
B. Frankenberger	O.R. duty, 1st CA	Providence, R. I.
H. H. Fuller	Military Attaché	Brussels, Belgium
F. H. Gallup	O.R. 4th CA	Charlotte, N. C.
G. S. Gay	Duty with QMC	Ft. B. Harrison, Ind.
W. D. Geary	O.R. duty, 9th CA	Salt Lake City, Utah
C. P. George	I.G. Department	Ft. Sam Houston, Tex.
J. A. Gillespie	Duty with QMC	Ft. F. E. Warren, Wyo.

FIELD ARTILLERY OFFICERS

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
T. G. Gottschalk	O.R. duty, 4th CA	New Orleans, La.
J. N. Greely	AWC Student	Ft. Humphreys, D. C.
W. R. Gruber	Naval War College	Newport, R. I.
E. C. Hanford	N.G. duty, 2d CA	New York, N. Y.
A. R. Harris	ROTC Harvard Univ.	Cambridge, Mass.
J. E. Hatch	W.D.G.S.	Washington, D. C.
J. N. Hauser	N.G. duty, 3d CA	Philadelphia, Pa.
C. H. Hayes	O.R. 6th CA	Chicago, Ill.
C. G. Helmick	W.D.G.S.	Washington, D. C.
W. R. Henry	I.G. Department	San Francisco, Cal.
S. R. Hopkins	ROTC, Texas A & M	College Station, Tex.
R. Hospital	N.G. duty, 2d CA	Trenton, N. J.
H. L. C. Jones	C&GSS S & F	Ft. Leavenworth, Kan.
J. T. Kennedy	I.G. Department	Washington, D. C.
R. G. Kirkwood	W.D.G.S.	Washington, D. C.
S. L. Kiser	O.R. duty, 1st CA	Portland, Maine
R. E. Lee	Military Attaché	London, England
J. P. Lucas	W.D.G.S.	Washington, D. C.
J. Magruder	Military Attaché	Berne, Switzerland
H. J. Malony	AWC Student	Ft. Humphreys, D. C.
J. P. Marley	G.S. with Troops PCD	Quarry Heights, C. Z.
A. C. McBride	O.C.F.A.	Washington, D. C.
C. B. McCormick	N.G. 2d CA	Buffalo, N. Y.
G. H. McCoy	N.G. 4th CA	Biloxi, Miss.
J. E. McMahon, Jr.	Off. Asst. Sec. of War	Washington, D. C.
R. M. Milam	O.R. 3d CA	Philadelphia, Pa.
N. P. Morrow	ROTC Colorado Ag. Coll.	Ft. Collins, Colo.
J. E. Mort	Hq. 5th CA	Ft. Hayes, O.
M. Murray	F.A. Board	Ft. Bragg, N. C.
H. R. Odell	ROTC Iowa State College	Ames, Iowa
T. G. M. Oliphant	G.S. with Troops	Ft. Lewis, Wash.
H. Parkhurst	N.G. duty, 4th CA	Raleigh, N. C.
R. S. Parrott	ROTC Princeton Univ	Princeton, N. J.
G. M. Peek	O.R. 7th CA	Kansas City, Mo.
K. S. Perkins	I.G. Department	Ft. Sam Houston, Tex.
B. R. Peyton	ROTC Stanford Univ.	Stanford Univ., Cal.
W. C. Potter	N.G. 9th CA	Oakland, Cal.
F. A. Prince	O.R. 3d CA	Pittsburgh, Pa.
M. Proctor	N.G. 2d CA	Newburg, N. Y.
M. G. Randol	ROTC Missouri	Columbia, Mo.
C. K. Rhinehart	O.R. 6th CA	Chicago, Ill.
J. A. Rogers	O.R. 2d CA	Newark, N. J.
A. L. P. Sands	N.G. 4th CA	Tampa, Fla.
C. A. Selleck	Hq. 1st CA	Boston, Mass.
W. H. Shepherd	O.R. 3d CA	Richmond, Va.
G. W. Sliney	Jr. ROTC	Los Angeles, Cal.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
J. E. Sloan	C&GSS S & F	Ft. Leavenworth, Kan.
I. Spalding	W.D.G.S	Washington, D. C.
L. C. Sparks	W.D.G.S	Washington, D. C.
E. T. Spencer	O.R. 9th CA	Los Angeles, Cal.
A. C. Sullivan	Rctg. Duty	Columbus, Ohio
M. H. Taulbee	O.R. 7th CA	Des Moines, Ia.
H. Templeton	O.R. 9th CA	Los Angeles, Cal.
P. L. Thurber	N.G. 9th CA	Seattle, Wash.
C. M. Tuteur	O.R. 2d CA	East Orange, N. J.
H. C. Vanderveer	Instr. Cav. School	Ft. Riley, Kans.
J. D. von Holtzendorff	Jr., ROTC	Chicago, Ill.
F. C. Wallace	AWC Student	Ft. Humphreys, D. C.
J. J. Waterman	F.A. Board	Ft. Bragg, N. C.
E. M. Watson	Mil. Aide to the President	Washington, D. C.
J. S. Wood	ROTC Culver Mil. Acad	Culver, Ind.
I. T. Wyche	G.S. with Troops	Atlanta, Ga.

Majors

J. C. Adams	O.R. duty, 7th CA	Wichita, Kans.
C. C. Alexander	AIC	Washington, D. C.
Wm. Alexander	N.G. duty, 9th CA	Tacoma, Wash.
H. B. Allen	O.C.F.A.	Washington, D. C.
B. C. Anderson	N.G. duty, 4th CA	Enterprise, Ala.
J. J. Atkinson	N.G. duty, 8th CA	Dallas, Tex.
S. Bacon	O.R. duty, 9th CA	Portland, Ore.
J. H. Ball	F.A. Board	Ft. Bragg, N. C.
C. C. Bank	ROTC Utah	Salt Lake City, Utah
R. G. Barkalow	C&GSS Student	Ft. Leavenworth, Kan.
C. Bassich	Jr. ROTC	Beloit, Wis.
R. M. Bathurst	N.G. duty, 8th CA	San Antonio, Tex.
S. D. Bedinger	N.G. duty, 4th CA	Memphis, Tenn.
W. W. Belcher	N.G. duty, 1st CA	Norwalk, Conn.
C. A. Bennett	ROTC Florida	Gainesville, Fla.
G. S. Beurket	O.R. duty, 5th CA	Indianapolis, Ind.
W. L. Bevan	N.G. duty, 3d CA	Wilkes-Barre, Pa.
J. R. Bibb	N.G. duty, 5th CA	Louisville, Ky.
L. H. Bixby	O.R. duty, 1st CA	Manchester, N. H.
H. W. Blakeley	C&GSS Student	Ft. Leavenworth, Kan.
W. P. Bledsoe	Hq. 7th CA	Omaha, Neb.
E. R. Block	Jr. ROTC	Joplin, Mo.
C. W. Bonham	O.R. duty, 7th CA	St. Joseph, Mo.
H. C. Bowman	N.G. duty, 5th CA	Louisville, Ky.
C. E. Boyle	ROTC Cornell Univ.	Ithaca, N. Y.
S. G. Brady	N.G. duty, 2d CA	Jamaica, L. I., N. Y.
W. C. Brigham	N.G. duty, 1st CA	Providence, R. I.
E. H. Brooks	ROTC Harvard Univ.	Cambridge, Mass.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Majors		
A. Brumage	N.G. duty, 8th CA	Anadarko, Okla.
R. L. Burnell	ROTC Illinois	Champaign, Ill.
J. C. Butner, Jr.	O.R. duty, 6th CA	Milwaukee, Wis.
H. E. Camp.	ROTC Ohio State	Columbus, Ohio
A. L. Campbell	O.R. duty, 8th CA	Ft. Worth, Texas
W. A. Campbell	N.G. duty, 9th CA	Salt Lake City, Utah
J. H. Carriker	N.G. duty, 7th CA	Duluth, Minn.
F. G. Chaddock	Rctg. Duty	Spokane, Wash.
S. F. Clark	N.G. duty, 4th CA	Lakeland, Fla.
W. Clarke	N.G. duty, 2d CA	New York, N. Y.
C. B. Cole	ROTC duty, Illinois	Champaign, Ill.
D. A. Connor	ROTC Florida	Gainesville, Fla.
J. G. Cook	Jr. ROTC	Hays, Kansas
M. R. Cox	O.R. duty, 9th CA	Oakland, Cal.
D. L. Crane	N.G. duty, 8th CA	Tulsa, Okla.
W. W. Crawford	O.R. duty, 5th CA	Fort Wayne, Ind.
F. M. Crist	O.R. duty, 3d CA	Philadelphia, Pa.
G. H. Cushman, Jr.	Jr. ROTC	Memphis, Tenn.
S. J. Cutler	Rctg. Duty	Dallas, Texas
H. B. Dawson	Duty with QMC	Ft. Bliss, Texas
M. A. Dawson	O.R. duty, 1st CA	Boston, Mass.
B. A. Day	C&GSS Student	Ft. Leavenworth, Kan.
J. M. Devine	U.S.M.A	West Point, N. Y.
J. M. DeWeese	N.G. duty, 9th CA	Ogden, Utah
R. H. Dixon	N.G. duty, 7th CA	Boone, Iowa
W. C. Dockum	N.G. duty, 2d CA	Binghamton, N. Y.
C. R. Doran	N.G. duty, 4th CA	New Orleans, La.
S. J. Downs, Jr.	C&GSS S&F	Ft. Leavenworth, Kan.
S. F. Dunn	N.G. duty, 4th CA	Andalusia, Ala.
R. E. Dupuy	Hq. 2d CA	Governors Island, N. Y.
E. B. Edwards	N.G. duty, 7th CA	Columbia, Mo.
H. R. Evans	Duty with QMC	Ft. Sill, Okla.
W. S. Evans	N.G. duty, 5th CA	Indianapolis, Ind.
E. C. Ewert	Duty with GS	Hq. 5th CA, Ft. Hayes, Ohio.
E. D. Ferguson	O.R. duty, 5th CA	Cleveland, Ohio
A. C. Fitzhugh	C&GSS Student	Ft. Leavenworth, Kan.
P. C. Fleming	Jr. ROTC	Montgomery, Ala.
L. J. Fortier	AWC Student	Ft. Humphreys, D. C.
J. M. Fray	ROTC V. M. I.	Lexington, Va.
J. H. Fye	O.R. duty, 4th CA	Raleigh, N. C.
C. W. Gallaher	N.G. duty, 1st CA	Boston, Mass.
J. L. Gammell	N.G. duty, 2d CA	New York, N. Y.
J. M. Garrett, Jr.	O.R. duty, 4th CA	Montgomery, Ala.
O. I. Gates	N.G. duty, 5th CA	Cleveland, Ohio

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Majors		
W. C. Goessling	N.G. duty, 1st CA	Presque Isle, Me.
A. M. Goldman	Jr. ROTC	Aurora, Ill.
G. A. Greaves	Duty with QMC	Fort Hoyle, Md.
R. L. Greene	Jr. ROTC	Newport, R. I.
A. M. Gurney	Liaison Officer, Signal School	Ft. Monmouth, N. J.
R. T. Guthrie	O.R. duty, 6th CA	Chicago, Ill.
T. T. Handy	Naval War College	Newport, R. I.
L. R. Hanley	C&GSS Student	Ft. Leavenworth, Kan.
H. R. Hanson	Jr. ROTC	Savannah, Ga.
A. M. Harper	C&GSS Student	Ft. Leavenworth, Kan.
R. V. K. Harris, Jr.	O.R. duty, 6th CA	Wausau, Wis.
L. W. Hasslock	N.G. duty, 1st CA	Manchester, N. H.
G. R. Hayman	ROTC Oklahoma	Norman, Okla.
L. M. Haynes	ROTC Iowa	Ames, Iowa
E. A. Henn	O.R. duty, 2d CA	Elizabeth, N. J.
J. F. Hepner	Jr. ROTC	Sewanee, Tenn.
W. W. Hess, Jr.	N.G. duty, 3d CA	Pikesville, Md.
L. E. Hibbs	O.C.F.A.	Washington, D. C.
S. C. Hilton	O.R. duty, 8th CA	Houston, Texas
W. Hitzfeldt	Duty with QMC	Ft. Sill, Okla.
F. H. Hollingsworth	Jr. ROTC	Gary, Ind.
J. O. Hoskins	N.G. duty, 9th CA	Stockton, Cal.
R. M. Howell	ROTC Oklahoma	Norman, Okla.
D. Hudnutt	O.C.F.A.	Washington, D. C.
J. C. Hughes	Jr. ROTC	Long Beach, Cal.
J. B. Hunt	N.G. duty, 9th CA	Portland, Ore.
R. G. Hunter	N.G. duty, 6th CA	Chicago, Ill.
C. E. Hurdis	C&GSS S&F	Ft. Leavenworth, Kan.
F. S. Inglis	N.G. duty, 7th CA	Hutchinson, Kans.
S. L. Irwin	O.R. duty, 3d CA	Washington, D. C.
A. R. Ives	N.G. duty, 5th CA	Columbus, Ohio
H. D. Jay	AWC Student	Ft. Humphreys, D. C.
W. E. Jenkins	N.G. duty, 1st CA	Boston, Mass.
D. F. Jones	ROTC Oklahoma	Norman, Okla.
W. J. Jones	O.R. duty, 2d CA	New York, N. Y.
P. V. Kane	U.S.M.A.	West Point, N. Y.
J. Keliher	N.G. duty, 8th CA	Denver, Colo.
J. Kennedy	O.R. duty, 2d CA	New York, N. Y.
T. R. Kerschner	O.R. duty, 1st CA	Worcester, Mass.
J. D. Key	Rctg. Duty	Memphis, Tenn.
A. F. Kibler	C&GSS S&F	Ft. Leavenworth, Kan.
C. B. King	O.R. duty, 7th CA	St. Louis, Mo.
H. W. O. Kinnard	O.R. duty, 7th CA	St. Paul, Minn.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Majors		
S. Knopf	N.G. duty, 6th CA	Chicago, Ill.
G. O. Kurtz	C&GSS Student	Ft. Leavenworth, Kan.
Z. E. Lawhon	C&GSS Student	Ft. Leavenworth, Kan.
A. H. Lee	N.G. duty, 8th CA	Enid, Okla.
J. A. Lester	Military Attaché	Paris, France
J. W. MacKelvie	AWC Student	Ft. Humphreys, D. C.
R. G. Mangum	O.R. duty, 5th CA	Louisville, Ky.
N. C. Manley	N.G. duty, 3d CA	Wilkes-Barre, Pa.
W. H. Maris	ROTC Purdue	Lafayette, Ind.
O. F. Marston	C&GSS Student	Ft. Leavenworth, Kan.
J. D. Matthews	O.R. duty, 1st CA	Portland, Me.
C. W. Mays	ROTC Purdue	Lafayette, Ind.
H. L. McBride	AWC Student	Ft. Humphreys, D. C.
R. B. McBride, Jr	N.G. duty, 5th CA	Indianapolis, Ind.
N. E. McCluer	N.G. duty, 1st CA	Caribou, Maine
C. I. McClure	ROTC Ohio State Univ	Columbus, Ohio
J. J. McCollister	N.G. duty, 9th CA	Salt Lake City, Utah
T. C. McCormick	O.R. duty, 6th CA	Detroit, Mich.
J. McDowall	Liaison Officer, Phil. Govt.	Manila, P. I.
S. McLeod	O.R. duty, 5th CA	Lafayette, Ind.
W. Michener	N.G. duty, 1st CA	New London, Conn.
G. R. Middleton	O.R. duty, 4th CA	Columbia, S. C.
J. H. Milam	N.G. duty, 6th CA	LaCrosse, Wis.
S. F. Miller	ROTC Stanford Univ	Stanford, Univ., Cal.
T. R. Miller	O.R. duty, 8th CA	Waco, Texas
M. A. S. Ming	O.R. duty, 7th CA	Sioux City, Iowa
M. M. Montgomery	C&GSS Student	Ft. Leavenworth, Kan.
B. Moore	N.G. duty, 4th CA	Savannah, Ga.
E. S. Ott	C&GSS S&F	Ft. Leavenworth, Kan.
C. C. Park	N.G. Bureau	Washington, D. C.
H. B. Parker	N.G. duty, 8th CA	Oklahoma City, Okla.
J. C. Patterson	O.R. duty, 6th CA	Springfield, Ill.
M. V. Patton	Jr. ROTC	Portland, Ore.
B. H. Perry	AWC Student	Ft. Humphreys, D. C.
G. A. Pollin	O.R. duty, 8th CA	Oklahoma City, Okla.
F. B. Prickett	W.D.G.S.	Washington, D. C.
A. S. Quintard	N.G. duty, 4th CA	New Berne, N. C.
J. P. Ratay	AWC Hist. Sect.	Berlin, Germany
G. R. Rede	O.R. duty, 2d CA	Albany, N. Y.
A. R. Reeves	N.G. duty, 4th CA	Sumter, S. C.
L. E. Reigner	Jr. ROTC	Davenport, Iowa
S. E. Reinhart	AWC Student	Ft. Humphreys, D. C.
H. H. Ristine	Instr. AC Tact. School	Maxwell Field, Ala.
E. R. Roberts	N.G. duty, 6th CA	Lansing, Mich.
M. Ross	C&GSS Student	Ft. Leavenworth, Kan.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Majors		
F. Royse	O.R. duty, 4th CA	Augusta, Ga.
D. S. Rumbough	C&GSS Student	Ft. Leavenworth, Kan.
J. W. Russey	Jr. ROTC	Guthrie, Okla.
R. C. Rutherford	O.R. duty, 8th CA	Denver, Col.
D. J. Sabini	O.R. duty, 1st CA	Boston, Mass.
J. M. Sanderson	O.R. duty, 5th CA	South Bend, Ind.
O. N. Schjerven	N.G. duty, 6th CA	Monmouth, Ill.
D. C. Schmahl	O.R. duty, 5th CA	Dayton, Ohio
H. A. Schwarze	N.G. duty, 9th CA	Boise, Idaho
A. C. Searle	N. G. duty, 1st CA	Salem, Mass.
G. P. Senneff	ROTC Princeton Univ	Princeton, N. J.
G. D. Shea	C&GSS Student	Ft. Leavenworth, Kan.
P. E. Shea	O.R. duty, 9th CA	San Francisco, Cal.
J. A. Sheridan	O.R. duty, 4th CA	Macon, Ga.
A. W. Shutter	N.G. Bureau	Washington, D. C.
L. M. Skerry	ROTC Colorado	Ft. Collins, Col.
A. Smith	O.R. duty, 5th CA	Huntington, W. Va.
W. Spence	ROTC Oregon	Corvallis, Ore.
J. A. Stewart	N.G. duty, 3d CA	Harrisburg, Pa.
G. H. Stuts	N.G. duty, 5th CA	Columbus, Ohio
C. H. Tate	O.R. duty, 8th CA	Fort Worth, Texas
J. S. Tate	N.G. duty, 2d CA	Kingston, N. Y.
P. G. Tenney	O.R. duty, 5th CA	Toledo, Ohio
R. D. Terrell	N.G. duty, 4th CA	Atlanta, Ga.
F. H. Timmerman	Jr. ROTC	Marion, Ala.
H. E. Tisdale	Duty with QMC	Madison Barracks, N.Y.
D. E. S. Trenholm	N.G. duty, 4th CA	Greenville, Miss.
H. W. Turner	O.R. duty, 8th CA	Norman, Okla.
P. T. Vance	ROTC Chicago	Chicago, Ill.
Y. D. Vesely	O.R. duty, 7th CA	Omaha, Neb.
A. B. Wade	Jr. ROTC	Charleston, S. C.
A. W. Waldron	LO Ord. Dept.	Aberdeen Prov. Ground, Md.
J. H. Wallace	O.C.F.A.	Washington, D. C.
N. P. Walsh	Duty with QMC	Ft. Lewis, Wash.
M. C. Walton	N.G. duty, 8th CA	Dallas, Texas
O. Ward	AWC Student	Ft. Humphreys, D. C.
A. L. Ward	Jr. ROTC	Tacoma, Wash.
R. B. Warren	O.R. duty, 3d CA	Pittsburgh, Pa.
J. J. Waters	C&GSS Student	Ft. Leavenworth, Kan.
J. G. White	N.G. duty, 7th CA	Maryville, Mo.
J. J. B. Williams	N.G. duty, 3d CA	Pittsburgh, Pa.
A. R. Wilson	C&GSS S&F	Ft. Leavenworth, Kan.
J. S. Winslow	G.S. with Troops, 6th CA	Chicago, Ill.

FIELD ARTILLERY OFFICERS

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Majors		
J. B. Wogan	W.D.G.S.	Washington, D. C.
V. R. Woodruff	O.R. duty, 8th CA	Phoenix, Ariz.
W. R. Woodward	AWC Historical Sect.	Ft. Humphreys, D. C.
R. W. Yates	O.R. duty, 9th CA	Salt Lake City, Utah
M. L. Young	N.G. duty, 2d CA	Camden, N. J.
A. J. Zerbee	O.R. duty, 5th CA	Cincinnati, Ohio
E. A. Zundel	N.G. Bureau	Washington, D. C.
Captains		
R. T. Adams	F.A. Board	Ft. Bragg, N. C.
G. B. Adamson	ROTC Ohio State	Columbus, Ohio
E. H. Almquist	ROTC API	Auburn, Ala.
J. G. Anding	ROTC Oklahoma	Norman, Okla.
E. Y. Argo	C&GSS Student	Ft. Leavenworth, Kan.
W. B. Avera	ROTC Missouri	Columbia, Mo.
J. D. Balmer	ROTC Purdue	Lafayette, Ind.
E. A. Banning	Duty with QMC	Ft. Bragg, N. C.
A. P. Barnes	Duty with QMC	Ft. Robinson, Neb.
C. J. Barrett	ROTC Colorado	Ft. Collins, Col.
G. B. Barth	C&GSS Student	Ft. Leavenworth, Kan.
W. H. Bartlett	U.S.M.A.	West Point, N. Y.
L. W. Bassett	Duty with JAGD	Washington, D. C.
S. A. Beckley	C&GSS Student	Ft. Leavenworth, Kan.
W. G. Bennett	ROTC Missouri	Columbia, Mo.
R. T. Bennison	Duty with QMC	Holabird Motor School Baltimore, Md.
C. S. Berrien	Duty with QMC	Langley Field, Va.
W. H. Bertsch, Jr	ROTC Ohio State	Columbus, Ohio.
R. T. Beurket	Dtld. CWS	Edgewood Arsenal, Md.
S. M. Bevans	Dtld. AGD	Baltimore, Md.
T. E. Binford	Jr. ROTC	Thomaston, Ga.
J. J. Binns	ROTC Texas A & M	College Station, Texas
J. F. Bird	ROTC Stanford	Stanford Univ., Cal.
E. A. Bixby	U.S.M.A.	West Point, N. Y.
L. B. Bixby	ROTC Harvard	Cambridge, Mass.
J. W. Black	U.S.M.A.	West Point, N. Y.
W. P. Blair	N.G. duty, 1st CA	Providence, R. I.
Charles C. Blakeney	ROTC Ohio State	Columbus, Ohio
Creswell G. Blakeney	ROTC Princeton Univ.	Princeton, N. J.
C. C. Blanchard	C&GSS Student	Ft. Leavenworth, Kan.
A. Bliss	Rctg. Duty	Ft. Slocum, N. Y.
C. L. Booth	N.G. duty, 3d CA	Norfolk, Va.
C. H. Brammell	O.R. duty, 5th CA	Akron, Ohio
A. Bratton	Dtld. QMC	Ft. Oglethorpe, Ga.
H. C. Brenizer	O.R. duty, 7th CA	Davenport, Iowa

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Captains		
F. B. Brisack	Jr. ROTC	St. Joseph, Mo.
W. D. Brown	U.S.M.A.	West Point, N. Y.
B. M. Bryan, Jr.	C&GSS Student	Ft. Leavenworth, Kan.
W. S. Bryant	O.R. duty, 8th CA	Tulsa, Okla.
M. Buckley, Jr.	ROTC Purdue Univ.	Lafayette, Ind.
J. J. Burns	U.S.M.A.	West Point, N. Y.
E. C. Burkart	ROTC Princeton Univ	Princeton, N. J.
J. R. Burrill	U.S.M.A.	West Point, N. Y.
J. E. Bush	N.G. duty, 6th CA	Jackson, Mich.
M. C. Calhoun	Dtld. QMC	Ft. Bragg, N. C.
J. M. Callicutt	ADC Gen. Darrah	Brooklyn, N. Y.
B. Campbell	C&GSS Student	Ft. Leavenworth, Kan.
R. M. Cannon	ROTC Utah	Salt Lake City, Utah
F. F. Carpenter, Jr.	Jr. ROTC	Santa Barbara, Cal.
L. H. Caruthers	ROTC Oklahoma	Norman, Okla.
C. Cavelli, Jr.	Dtld QMC	Ft. Ethan Allen, Vt.
J. A. Cella	ROTC Oregon	Corvallis, Ore.
J. L. Chamberlain, Jr.	ROTC Cornell	Ithaca, N. Y.
R. P. Clay	ROTC Illinois	Urbana, Ill.
J. W. Clyburn	ROTC Ohio State	Columbus, Ohio
H. M. Cole	ADC Gen. Cole	New York, N. Y.
G. B. Conrad	U.S.M.A.	West Point, N. Y.
R. H. Coombs	Dtld. Ordnance Dept.	Benicia Arsenal, Cal.
H. A. Cooney	C&GSS Student	Ft. Leavenworth, Kan.
M. A. Cowles	C&GSS Student	Ft. Leavenworth, Kan.
F. W. Crary	O.R. duty, 6th CA	Chicago, Ill.
H. Crawford	N.G. duty, 6th CA	Stevens Point, Wis.
H. J. Crigger	O.R. duty, 4th CA	Birmingham, Ala.
G. D. Crosby	U.S.M.A.	West Point, N. Y.
N. C. Cureton, Jr.	Dtld. QMC	Ft. Niagara, N. Y.
R. L. Dalferes	ROTC Illinois	Urbana, Ill.
C. L. Dasher, Jr.	U.S.M.A.	West Point, N. Y.
B. L. Davis	O.R. duty, 6th CA	Detroit, Mich.
C. H. Day	O.R. duty, 7th CA	Minneapolis, Minn.
F. M. Day	U.S.M.A.	West Point, N. Y.
G. DeGraaf	U.S.M.A.	West Point, N. Y.
W. H. DeLange	Jr. ROTC	Tampa, Fla.
H. C. Demuth	ROTC Oklahoma	Norman, Okla.
G. J. Deuterman	Dtld. CWS	Edgewood Arsenal, Md.
F. T. Dodd	ROTC Florida	Gainesville, Fla.
A. C. Donovan	N.G. duty, 7th CA	Aberdeen, S. D.
F. Dorn	Language detail China	Peiping, China
L. B. Downing	ROTC Cornell	Ithaca, N. Y.
T. A. Doxey	Dtld. CWS	Aberdeen Prov. Ground, Md.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Captains		
C. C. Duell	ROTC Purdue	Lafayette, Ind.
M. P. Echols	U.S.M.A.	West Point, N. Y.
H. G. Elliott	N.G. duty, 7th CA	Ottawa, Kans.
E. B. Ely	ROTC Princeton Univ.	Princeton, N. J.
L. B. Ely	ACTS Student	Maxwell Field, Ala.
P. H. Enslow	ROTC Texas A&M	College Station, Texas
W. J. Epes	Jr. ROTC	Oakland, Cal.
E. A. Erickson	Jr. ROTC	Walla Walla, Wash.
W. J. Eyerly	ROTC Culver	Culver, Ind.
L. O. Field	O.R. duty, 2d CA	New York, N. Y.
C. G. Follansbee	Jr. ROTC	Elizabethtown, Tenn.
I. L. Foster	C&GSS Student	Ft. Leavenworth, Kan.
A. E. Fox	C&GSS Student	Ft. Leavenworth, Kan.
J. J. France	N.G. duty, 7th CA	Hiawatha, Kansas
L. C. Friedersdorff	Jr. ROTC	St. Petersburg, Fla.
B. Furuholmen	Jr. ROTC	Winder, Ga.
T. L. Futch	ROTC API	Auburn, Ala.
H. J. Gaffey	C&GSS Student	Ft. Leavenworth, Kan.
R. G. Gard	U.S.M.A.	West Point, N. Y.
F. A. Garrecht, Jr.	ROTC Oregon	Corvallis, Ore.
L. R. Garrison	C&GSS Student	Ft. Leavenworth, Kan.
C. R. Gildart	N.G. duty, 3d CA	Philadelphia, Pa.
E. C. Gillette, Jr.	U.S.M.A.	West Point, N. Y.
A. R. Ginsburgh	Dtld. JAGD	Cambridge, Mass.
V. C. Gomez	AdvC, Motors-FAS	Ft. Sill, Okla.
L. J. Greeley	Dtld. CWS	Edgewood Arsenal, Md.
H. Y. Grubbs	ROTC Stanford	Stanford Univ., Cal.
A. M. Gruenther	U.S.M.A.	West Point, N. Y.
C. M. Hallam	ROTC Purdue	Lafayette, Ind.
E. F. Hammond	Dtld. Signal Corps	Ft. Monmouth, N. J.
J. L. Hardin	U.S.M.A.	West Point, N. Y.
H. Harding	O.R. duty, 1st CA	Pittsfield, Mass.
C. E. Hart	U.S.M.A.	West Point, N. Y.
R. K. Haskell	Dtld. Ordnance Dept.	Watertown, Mass.
A. J. Hastings	C&GSS Student	Ft. Leavenworth, Kan.
B. F. Hayford	ROTC Purdue Univ.	Lafayette, Ind.
D. F. Healy, Jr.	Jr. ROTC	Jackson, Miss.
T. B. Hedekin	ROTC Yale Univ.	New Haven, Conn.
G. Heninger	O.R. duty, 7th CA	Little Rock, Ark.
W. R. Hensey, Jr.	U.S.M.A.	West Point, N. Y.
P. B. Herrick	ROTC Colorado	Ft. Collins, Col.
H. B. Hester	Dtld. QMC	Philadelphia, Pa.
D. O. Hickey	C&GSS Student	Ft. Leavenworth, Kan.
W. H. Hill	ADC Gen. Parker	Manila, P. I.
J. H. Hinds	ADC Gen. Dorey	Schofield Bar. T. H.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Captains		
J. Hinton	ROTC Ohio State	Columbus, Ohio
K. W. Hisgen	ROTC Utah	Salt Lake City, Utah
R. P. Hollis	Dtld. QMC	Ft. B. Harrison, Ind.
H. W. Holt	ROTC Chicago	Chicago, Ill.
E. O. Hopkins	ROTC Cornell	Ithaca, N. Y.
C. A. Horne	Duty with GS, Troops	Manila, P. I.
H. L. Ingham	Dtld QMC	Ft. F. E. Warren, Wyo.
F. C. Jedlicka	Off. Asst. Sec. of War	Washington, D. C.
H. J. John	U.S.M.A.	West Point, N. Y.
D. V. Johnson	Jr. ROTC	West DePere, Wis.
E. L. Johnson	Jr. ROTC	Cornwall-on-the-Hudson, N. Y.
L. M. Johnson	Dtld. CWS	Edgewood Arsenal, Md.
H. M. Jones	C&GSS Student	Ft. Leavenworth, Kan.
L. McC. Jones	ROTC Oklahoma	Norman, Okla.
F. E. Kauffman	N.G. duty, 6th CA	Detroit, Mich.
W. L. Kay, Jr.	ROTC Purdue	Lafayette, Ind.
T. F. Keefe	ROTC Princeton Univ	Princeton, N. J.
H. D. Kehm	U.S.M.A.	West Point, N. Y.
E. V. Kerr	Jr. ROTC	Waynesboro, Va.
H. E. Kessinger	U.S.M.A.	West Point, N. Y.
A. L. Keyes	ACMFAS	Ft. Sill, Okla.
W. J. Klepinger	ROTC A.P.I.	Auburn, Ala.
W. L. Kluss	Dtld. AGD	Governors Island, N. Y.
E. F. Kollmer	Dtld. QMC	Philadelphia, Pa.
S. S. Koszewski	Jr. ROTC	Savannah, Ga.
C. B. Leinbach	C&GSS Student	Ft. Leavenworth, Kan.
J. M. Lentz	C&GSS Student	Ft. Leavenworth, Kan.
L. L. Lesser	Jr. ROTC	New Bedford, Mass.
J. H. Lewis, Jr.	ROTC Iowa	Ames, Iowa
J. M. Lewis	C&GSS Student	Ft. Leavenworth, Kan.
H. N. Lockwood, Jr.	O.R. duty, 5th CA	Muncie, Ind.
R. C. Mallonee	O.R. duty, 3d CA	Harrisburg, Pa.
J. S. Mallory	ROTC Missouri	Columbia, Mo.
R. S. Marr	ROTC Illinois	Urbana, Ill.
J. Massaro	Dtld. QMC	Madison Bks., N. Y.
L. Mathewson	U.S.M.A.	West Point, N. Y.
J. B. Matlack	ROTC Iowa	Ames, Iowa
A. C. McAuliffe	ADC Gen. Gowen	Schofield Bks., T. H.
D. S. McConnaughy	Dtld. QMC	Monterey, Cal.
E. J. McGaw	C&GSS Student	Ft. Leavenworth, Kan.
O. C. McIntyre	C&GSS Student	Ft. Leavenworth, Kan.
J. L. McKinnon	ROTC A.P.I.	Auburn, Ala.
L. T. McMahon	C&GSS Student	Ft. Leavenworth, Kan.
E. H. McManus, Jr.	U.S.M.A.	West Point, N. Y.

FIELD ARTILLERY OFFICERS

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Captains		
A. S. Miller	ROTC Purdue	Lafayette, Ind.
P. R. M. Miller	Dtld. QMC	Ft. Sill, Okla.
E. S. Molitor	U.S.M.A.	West Point, N. Y.
R. O. Montgomery	O.R. duty, 2d CA	New York, N. Y.
A. P. Moore	ADC Gen. Wells	Honolulu, T. H.
E. A. Niblack	O.R. duty, 4th CA	Nashville, Tenn.
C. P. Nicholas	RCFAS	Ft. Sill, Okla.
T. North	With Engr. Board	Ft. Belvoir, Va.
W. T. O'Reilly	U.S.M.A.	West Point, N. Y.
C. D. Palmer	ROTC Harvard	Cambridge, Mass.
E. Parmly, III	ADC Gen. Merrill	Schofield Bks., T. H.
G. E. D. Pence	U.S.M.A.	West Point, N. Y.
J. V. Phelps	ROTC A.P.I.	Auburn, Ala.
A. L. Price	ROTC Univ. of Chicago	Chicago, Ill.
G. S. Price	U.S.M.A.	West Point, N. Y.
G. P. Privett	ROTC Oklahoma	Norman, Okla.
R. K. Quekemeyer	ROTC Florida	Gainesville, Fla.
E. M. Quigley	ROTC Illinois	Urbana, Ill.
R. R. Raymond, Jr	ROTC Cornell Univ.	Ithaca, N. Y.
L. M. Riley	ROTC Oregon	Corvallis, Ore.
P. H. Ringsdorf	Dtld. QMC	Madison Bks., N. Y.
P. P. Rodes	C&GSS Student	Ft. Leavenworth, Kan.
H. M. Roper	U.S.M.A.	West Point, N. Y.
E. A. Routheau	ROTC Illinois	Urbana, Ill.
W. A. Samouce	ACHFAS	Ft. Sill, Okla.
J. H. Sampson	U.S.M.A.	West Point, N. Y.
P. Sather, Jr	ROTC Utah	Salt Lake City, Utah
W. R. Schaefer	O.R. duty, 8th CA	Houston, Texas
W. W. Scott	ACM FAS	Ft. Sill, Okla.
W. E. Shallene	Dtld. QMC	Ft. Hancock, N. J.
F. D. Sharp	Military Attaché	Buenos Aires, Argentina
M. C. Shea	O.R. duty, 4th CA	Jackson, Miss.
J. R. Sheetz	C&GSS Student	Ft. Leavenworth, Kan.
A. L. Shreve	ROTC Oklahoma	Norman, Okla.
R. C. Singer	ROTC Purdue	Lafayette, Ind.
R. H. Slider	Jr. ROTC	Detroit, Mich.
L. H. Slocum	C&GSS S&F	Ft. Leavenworth, Kan.
G. S. Smith	ADC Gen. Parker	Manila, P. I.
N. H. Smith	Rctg. Duty	Ft. McDowell, Cal.
L. E. Snell	Dtld. QMC	Baltimore, Md.
E. L. Strobehn	ROTC Yale Univ.	New Haven, Conn.
A. N. Stubblebine	Dtld. QMC	Ft. Sheridan, Ill.
J. F. Sturman, Jr	ADC Gen. Cole	New York, N. Y.
J. A. Sullivan	N.G. duty, 7th CA	Minneapolis, Minn.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
Captains		
C. P. Summerall, Jr	U.S.M.A.	West Point, N. Y.
A. Svihra	Dtld. JAGD	Univ. of Virginia, Va.
C. H. Swartz	ROTC Utah	Salt Lake City, Utah
K. S. Sweany	Jr. ROTC	Rochester, N. Y.
L. J. Tacy	Rctg. Duty	Ft. Slocum, N. Y.
F. J. Tate	C&GSS S&F	Ft. Leavenworth, Kan.
A. R. Taylor	Dtld. JAGD	New Haven, Conn.
M. D. Taylor	Language Detail	Tokio, Japan
B. A. Tormey	Language Detail	Peiping, China
J. J. Turner	Dtld. QMC	Canal Zone
H. Van Wyk	U.S.M.A.	West Point, N. Y.
G. W. Vaughn	Dtld. QMC	Ft. Des Moines, Iowa
A. Vepsala	Rctg. Duty	Ft. McDowell, Cal.
W. B. Walters	O.R. duty, 8th CA	Denver, Col.
L. V. Warner	ROTC Iowa	Ames, Iowa
W. E. Waters	ROTC V.M.I.	Lexington, Va.
H. L. Watts, Jr.	ROTC A.P.I.	Auburn, Ala.
C. S. Whitmore	ROTC Missouri	Columbia, Mo.
R. M. Wicks	ROTC Yale Univ.	New Haven, Conn.
J. F. Williams	ROTC Florida	Gainesville, Fla.
E. V. Williamson	ROTC Ohio State	Columbus, Ohio
G. M. Williamson, Jr	ROTC Cornell Univ.	Ithaca, N. Y.
T. R. Willson	Rctg. Duty	Ft. Slocum, N. Y.
L. R. Woods, Jr.	Dtld. Finance Dept.	Ft. Hayes, Ohio
W. M. Wright, Jr.	Rctg. Duty	Baltimore, Md.
First and Second Lieutenants		
W. H. Allen, Jr.	R.C. FAS	Fort Sill, Okla.
D. P. Armstrong	U.S.M.A.	West Point, N. Y.
V. B. Barnes	R.C. FAS	Fort Sill, Okla.
D. E. Beach	ADC Gen. Brees	Ft. Leavenworth, Kan.
K. P. Bergquist	Dtld. AC	Randolph Field, Texas
J. A. Berry, Jr.	U.S.M.A.	West Point, N. Y.
J. L. Beynon	R.C. FAS	Fort Sill, Okla.
H. F. Bigelow	Letterman Gen. Hospital	San Francisco, Cal.
R. H. Booth	R.C. FAS	Fort Sill, Okla.
H. E. Brooks	R.C. FAS	Fort Sill, Okla.
R. L. Brunzell	R.C. FAS	Fort Sill, Okla.
J. K. Bryan	R.C. FAS	Fort Sill, Okla.
W. J. Bryde	Dtld. AC	Randolph Field, Texas
C. F. Buck, Jr.	ACM FAS	Fort Sill, Okla.
J. M. Burdge, Jr	ACM FAS	Fort Sill, Okla.
R. L. Cardell	Dtld. CWS	Edgewood Arsenal, Md.
P. Clark, Jr	R.C. FAS	Fort Sill, Okla.

FIELD ARTILLERY OFFICERS

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
First and Second Lieutenants		
E. A. Clarke	Dtld. AC	Randolph Field, Texas
W. P. Connally, Jr	R.C. FAS	Fort Sill, Okla.
R. C. Cooper	ADC Gen. Bolles	Omaha, Neb.
T. J. Counihan	R.C. FAS	Fort Sill, Okla.
H. J. Coyle	ROTC V.M.I.	Lexington, Va.
A. V. Dishman	R.C. FAS	Fort Sill, Okla.
P. H. Draper, Jr	U.S.M.A.	West Point, N. Y.
G. C. Duehring	R.C. FAS	Fort Sill, Okla.
G. S. Eckhardt	Dtld. AC	Randolph Field, Texas
E. H. Eddy	R.C. FAS	Fort Sill, Okla.
W. P. Ennis, Jr	U.S.M.A.	West Point, N. Y.
K. H. Ewbank	R.C. FAS	Fort Sill, Okla.
E. G. Farrand	U.S.M.A.	West Point, N. Y.
A. A. Fickel	Dtld. AC	Randolph Field, Texas
E. Flanick	Dtld. AC	Randolph Field, Texas
G. G. Garton	Dtld. Ord. Dept.	Ft. Sam Houston, Tex.
E. J. Gibson	Dtld. AC	Randolph Field, Texas
J. E. Gill	Dtld. QMC	Fort Mason, Calif.
W. J. Given, Jr	Dtld. Signal Corps	Ft. Sam Houston, Tex.
R. W. Goldsmith	R.C. FAS	Fort Sill, Okla.
A. C. Goodwin, Jr	R.C. FAS	Fort Sill, Okla.
A. Graham	U.S.M.A.	West Point, N. Y.
A. A. Greene	U.S.M.A.	West Point, N. Y.
W. M. Gross	Dtld. AC	Randolph Field, Texas
J. Hagood, Jr	ADC Gen. Hagood	Ft. Sam Houston, Tex.
B. Hamlett	ACM FAS	Fort Sill, Okla.
R. J. Handy	U.S.M.A.	West Point, N. Y.
J. P. Hannigan	R.C. FAS	Fort Sill, Okla.
J. W. Hansborough	Dtld. Ord. Dept.	Aberdeen Prov. Ground, Md.
J. G. Harding	R.C. FAS	Fort Sill, Okla.
R. H. Harrison	ADC Gen. Bundel	Ft. Lewis, Wash.
R. E. Hattan	R.C. FAS	Fort Sill, Okla.
J. C. Hayden	R.C. FAS	Fort Sill, Okla.
B. P. Heiser	ROTC Texas A. & M	College Station, Tex.
C. L. Heitman, Jr	U.S.M.A.	West Point, N. Y.
J. J. Heriot	U.S.M.A.	West Point, N. Y.
A. Hero, III	U.S.M.A.	West Point, N. Y.
F. C. Holbrook	ADC Gen. Holbrook	Manila, P. I.
J. P. Holland	ROTC Oklahoma	Norman, Okla.
W. J. Holzapfel, Jr	Dtld. AC	Randolph Field, Texas
W. H. Hoover	R.C. FAS	Fort Sill, Okla.
S. W. Horstman	Dtld. AC	Randolph Field, Texas
C. E. N. Howard, Jr	ADC Gen. Hagood	Ft. Sam Houston, Tex.

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
First and Second Lieutenants		
C. R. Hutchison	ACM FAS	Fort Sill, Okla.
C. I. Hutton	R.C. FAS	Fort Sill, Okla.
D. E. Ingram	Dtld. AC	Randolph Field, Texas
W. E. Johns	R.C. FAS	Fort Sill, Okla.
P. H. Lash, Jr.	R.C. FAS	Fort Sill, Okla.
G. F. Lillard	U.S.M.A.	West Point, N. Y.
D. C. Little	U.S.M.A.	West Point, N. Y.
R. W. Mayo	U.S.M.A.	West Point, N. Y.
C. R. McBride	R.C. FAS	Fort Sill, Okla.
C. W. McConnell	R.C. FAS	Fort Sill, Okla.
J. A. McFarland	ROTC Ohio State	Columbus, Ohio
E. H. McLemore	R.C. FAS	Fort Sill, Okla.
R. K. McMaster	U.S.M.A.	West Point, N. Y.
J. A. Meeks	Dtld. Ord. Dept	Watertown Ars., Mass.
F. P. Miller	R.C. FAS	Fort Sill, Okla.
J. M. Moore	Dtld. QMC	San Juan, P. R.
S. L. Morrow, Jr.	R.C. FAS	Fort Sill, Okla.
M. Moses	R.C. FAS	Fort Sill, Okla.
F. P. Munson	Language Detail	Tokio, Japan
E. J. Murphy	ROTC Purdue	Lafayette, Ind.
W. H. Neal	Dtld. AC	Randolph Field, Texas
J. S. Neary	Dtld. Ord. Dept.	Aberdeen Prov. Ground, Md.
C. G. Nelson	R.C. FAS	Fort Sill, Okla.
J. S. Nesbitt	U.S.M.A.	West Point, N. Y.
F. C. Norvell	Dtld. AC	Randolph Field, Texas
H. B. Packard	U.S.M.A.	West Point, N. Y.
J. W. Park	Dtld. Eng.	Port Angeles, Wash.
D. Parker, Jr.	ADC Gen. Scott	Ft. Hoyle, Md.
T. W. Parker	U.S.M.A.	West Point, N. Y.
B. C. Patrick	American Battle Monuments Commission	Washington, D. C.
D. M. Perkins	R.C. FAS	Fort Sill, Okla.
M. O. Perry	R.C. FAS	Fort Sill, Okla.
H. M. Peyton	R.C. FAS	Fort Sill, Okla.
J. R. Pitman, Jr.	ROTC Cornell	Ithaca, N. Y.
R. S. Pratt, Jr.	R.C. FAS	Fort Sill, Okla.
D. G. Presnell	Dtld. AC	Randolph Field, Texas
C. W. Raymond	ACM FAS	Fort Sill, Okla.
E. C. Reber	Dtld. Ord. Dept.	Aberdeen Prov. Ground, Md.
F. R. Redden	R.C. FAS	Fort Sill, Okla.
J. H. Rothschild	R.C. FAS	Fort Sill, Okla.

FIELD ARTILLERY OFFICERS

NAME AND RANK	PRESENT ASSIGNMENT	LOCATION
First and Second Lieutenants		
H. L. Sanders	Dtld. AC	Randolph Field, Texas
T. J. Sands	U.S.M.A.	West Point, N. Y.
F. H. Sinclair	Rctg. Duty	Fort Slocum, N. Y.
S. Smellow	R.C. FAS	Fort Sill, Okla.
D. S. Somerville	U.S.M.A.	West Point, N. Y.
W. C. Stanton	U.S.M.A.	West Point, N. Y.
F. M. Steadman	Dtld. QMC	Fort Bragg, N. C.
R. M. Stillman	Dtld. AC	Randolph Field, Texas
M. F. Stober	U.S.M.A.	West Point, N. Y.
A. G. Stone	ACH FAS	Fort Sill, Okla.
W. S. Stone	Dtld. AC	Randolph Field, Texas
H. P. Storke	ROTC Iowa	Ames, Iowa
J. F. Stroker	U.S.M.A.	West Point, N. Y.
R. W. Sumi	Dtld. AC	Randolph Field, Texas
D. N. Sundt	S&F Course	Philadelphia, Pa.
F. G. Terry	R.C. FAS	Fort Sill, Okla.
W. J. Thompson	R.C. FAS	Fort Sill, Okla.
R. W. Timothy	R.C. FAS	Fort Sill, Okla.
D. W. Traub	U.S.M.A.	West Point, N. Y.
D. F. Walker	R.C. FAS	Fort Sill, Okla.
J. S. Walker	Dtld. Ord. Dept.	Watertown, Mass.
D. C. Wallace	Dtld. AC	Randolph Field, Texas
J. H. Walsh	Dtld. AC	Randolph Field, Texas
T. M. Watlington, Jr.	U.S.M.A.	West Point, N. Y.
A. Watson, II	ACH FAS	Fort Sill, Okla.
J. H. Weber	Dtld. Ord. Dept., Watertown Ars.	Watertown, Mass.
R. D. Wentworth	U.S.M.A.	West Point, N. Y.
G. N. Wertz, Jr.	ACM FAS	Fort Sill, Okla.
R. J. West, Jr.	RC FAS	Fort Sill, Okla.
J. K. Wilson, Jr.	RC FAS	Fort Sill, Okla.
J. V. Wilson	Dtld. AC	Randolph Field, Texas

MILITARY BOOKS

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

	Price (*Domestic postage included*)
FIELD ARTILLERY: The King of Battles—*Maj. Gen. H. G. Bishop*	$2.00
WITH NAPOLEON IN RUSSIA—*Gen. de Caulaincourt*	4.00
R. E. LEE—*Freeman* (4 vols., each)	3.75
INFANTRY IN BATTLE	3.00
ITALY'S PART IN WINNING THE WORLD WAR—*Colonel G. L. McEntee*	2.00
THE NATION AT WAR—*Gen. Peyton C. March*	3.00
THE GUNNERS' MANUAL—*Capt. Arthur M. Sheets, F. A.*	1.50
FOCH: THE MAN OF ORLEANS—*Capt. Liddell-Hart*	4.00
SPIES AND THE NEXT WAR—*Rowan*	2.50
RIDING AND SCHOOLING HORSES—*Chamberlin*	10.00
MY EXPERIENCE IN THE WORLD WAR—*Pershing*	10.00
VERDUN—*Petain*	4.00
REMINISCENCES OF A MARINE—*Lajeune*	4.00
JULY, 1914—*Ludwig*	3.50
FOCH SPEAKS—*Bugnet*	3.00
IT MIGHT HAVE BEEN LOST—*Lonergan*	3.00
THE OLD ARMY: MEMORIES—*Parker*	4.00
ULYSSES S. GRANT—*McCormick*	5.00
REMAKING OF MODERN ARMIES—*Hart*	3.50
INTRODUCTION TO MILITARY HISTORY—*Albion*	2.25
AMERICAN CAMPAIGNS (2 vols.)—*Steele*	10.00
FOCH: MY CONVERSATIONS WITH THE MARSHAL—*Recouly*	3.00
GERMAN STRATEGY IN THE GREAT WAR	4.00
COLOSSAL BLUNDERS OF THE WAR—*Woods*	2.50
POLO PONIES—*Cullum*	5.00
ROBERT E. LEE, THE SOLDIER—*Maurice*	4.00
FIFTEEN DECISIVE BATTLES—*Creasy*	1.00
ORDEAL BY FIRE—*Pratt*	3.00
MAP RECONNAISSANCE	1.60
OFFICERS' MANUAL (Revised)—*Moss*	3.00
OFFICERS' GUIDE, 1930	2.75
HINTS ON HORSEMANSHIP—*Lt. Col. McTaggart*	2.50
ARTILLERY TODAY AND TOMORROW—*Rowan Robinson*	2.00
SOME ASPECTS OF MECHANIZATION—*Rowan Robinson*	1.50
THE FELLOWSHIP OF THE HORSE—*Lt. Col. Goldschmidt*	5.00
LIFE OF GRANT—*Fuller*	5.00
THOUGHTS OF A SOLDIER—*Von Secht*	2.50
HORSE SENSE AND HORSEMANSHIP—*Brooke*	5.00
INEVITABLE WAR—*Lt. Col. Richard Stockton, 6th*	7.50

(Less 35% to members of all components of the services.)

A reduction of 10% will be made to JOURNAL readers who purchase any of the above books through the U. S. Field Artillery Association, with the exception of INEVITABLE WAR, on which 35% is allowed.

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

The United States Field Artillery Association

ORGANIZED JUNE 7, 1910

THE FIELD ARTILLERY JOURNAL

EDITER BY

DEAN HUDNUTT
Major, Field Artillery, U. S. Army

PUBLISHED BI-MONTHLY FOR
THE UNITED STATES FIELD ARTILLERY ASSOCIATION

BY MONUMENTAL PRINTING COMPANY

1918-32 HARFORD AVENUE

BALTIMORE, MD.

Editorial Office, 1642 H Street, N. W., Washington, D. C.
Entered as second-class matter August 20, 1929, at the post office at Baltimore, Md., under the Act of March 3, 1879

Published without expense to the government

The Field Artillery Journal pays for original articles accepted

---

Subscriptions to *The Field Artillery Journal:*

Domestic, $3 per annum.
Single copies, 75 cents.
Canada, $3.25 per annum.
Countries in the postal union, $3.50 per annum.

Checks drawn on banks in the Philippine Islands, Hawaii and Canada should include 25 cents for collection charges—from the Canal Zone 35 cents.