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JULY-AUGUST

**THE
FIELD ARTILLERY
JOURNAL**

EDITED BY

WILLIAM C. HOUGHTON

MAJOR, FIELD ARTILLERY, UNITED STATES ARMY

**THE UNITED STATES FIELD ARTILLERY ASSOCIATION
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MAJOR-GENERAL CHARLES P. SUMMERALL
Commander of the First Division at Soissons.

THE FIELD ARTILLERY JOURNAL

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THE FIRST FIELD ARTILLERY BRIGADE AT SOISSONS

AN HISTORICAL CONFERENCE DELIVERED BY MAJOR LOUIS A. CRAIG, F. A., AT THE FIELD
ARTILLERY SCHOOL, APRIL 23, 1924

THE period of one hour allotted is too short for a detailed or statistical presentation of the subject. I want to present a general idea of the engagement, with special reference to the First Division and to its artillery; a refreshment in your minds of your recollection of the environment of war and one or two thoughts of immediate and progressive interest.

The Marne salient was the result of the great German offensive of May 27, 1918. It was roughly bounded by lines joining Château Thierry with Soissons and with Rheims. The northern boundary was about sixty kilometres long. Paris was at about seventy kilometres from the southern apex, in the general direction of the eastern boundary prolonged. This operation had cut the important railroad line joining Paris-Château Thierry-Chalons, the latter an important railroad hub.

The German situation in the salient was not a comfortable one for them. An examination of the channels of communication for supply will make this evident. All supplies for the troops in the salient had to be routed through Soissons, and from there shunted to Fere-in-Tardenois, and through Fismes toward Rheims and Verneul. There were about forty divisions to be supplied, possibly 400,000 or more men. From the viewpoint of an allied offensive, Soissons was the key to the salient. Its possession by allied troops meant a forced evacuation by the German troops. On the other hand, a German offensive through the salient was almost out of the question, if not impossible, because the difficulties of normal supply overtaxed the existing communication lines. A branch railroad was under construction connecting with the Meziers-Rheims railroad north of Rheims and running southwestward into the salient. It was not completed before the German evacuation of the salient. If it had been, the difficulties attending the reduction of the salient would have been greatly increased, possibly beyond the point of overcoming them.

The German situation could have been eased in two ways. Their

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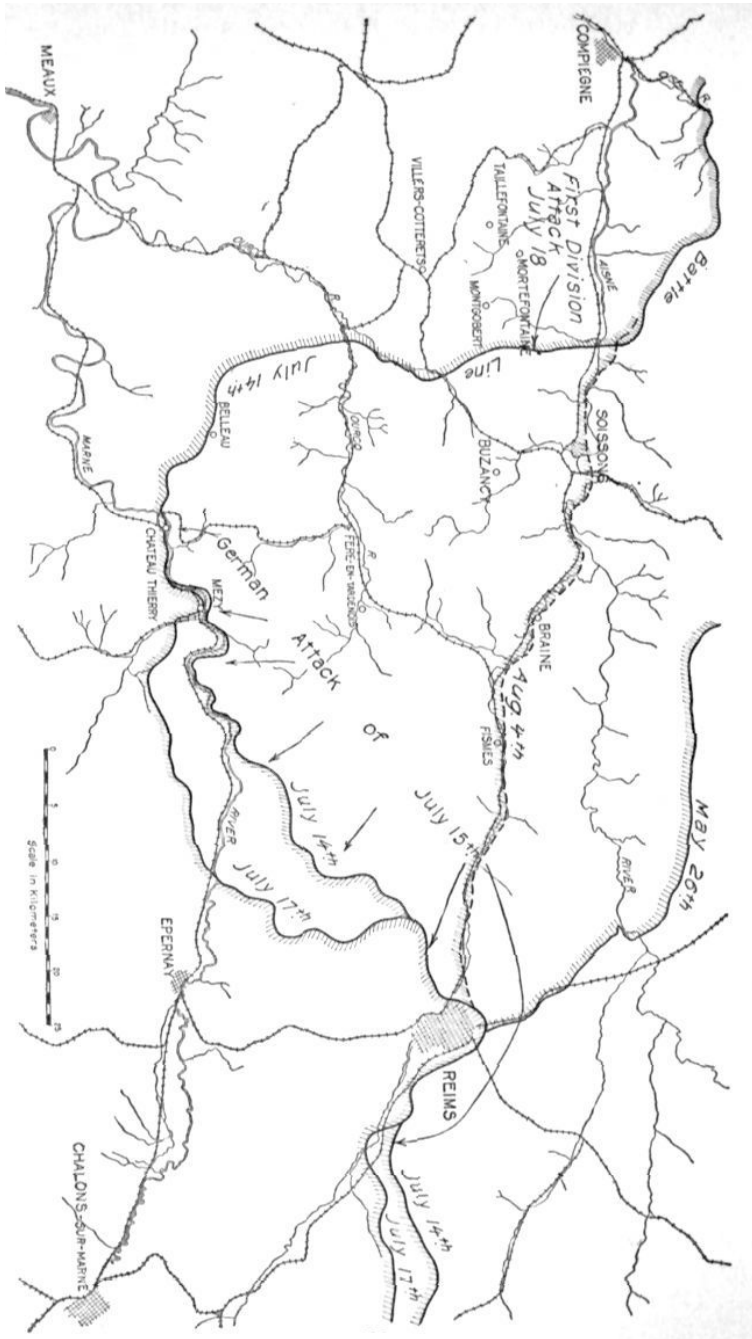
situation would have been somewhat improved by the capture of Compiègne, which connects directly northward by rail. This extension was attempted June 7th, but was defeated by a determined counter-attack of the French. The second, and the more important possibility, would have been the capture of Rheims. This was the purpose of the offensive of July 15th, and it did not fall far short of attaining its object. The Germans penetrated to within seven miles of Chalons, the securing of which latter centre would have been a dire calamity on account of the railroad lines that would have been so controlled. Fortunately, that attack had been anticipated, and the measures to meet it were so effective that the German slaughter was tremendous, and the few troops that had forced the crossing of the Marne were without artillery and had little transport, so the attack was called off. Its only result was to increase the difficulties of supply by increasing the area within the salient. It should be noted here, as of interest in connection with the operation that we are considering, that great masses of allied troops were moving into position for the attack on the west and south of the salient during the general offensive on the other side. Notwithstanding the great masses of troops that were being moved to concentration points under cover, the Germans apparently had no suspicion of the impending attack. Orders had been issued for the transfer of much extra offensive matériel to another front and great numbers of the German troops were put into the fields in and near the salient to harvest the grain.

The situation was much more favorable to the allies from the viewpoint of supply and communications for concentration. There were separate lines from Paris through Compiègne to Soissons, from Paris to Château Thierry through Meaux, and from Paris to Rheims through Troyes and Epernay. Certain of these routes entered the salient so as to greatly assist troops engaged in its reduction.

From the viewpoint of cover, the front from Rheims to the Marne offered little concealment for concentration. From Epernay the country was well wooded. However, the lines of communication from Epernay to the east of Château Thierry did not favor rapid concentration. The area beyond Château Thierry, to the west and northwest, offered excellent facilities from all viewpoints. This area being adjacent to Soissons, the weak point in the salient, again greatly favored the allied plans.

The general allied plan was to attack with the Tenth Army toward Braine and the Sixth Army toward Fere-en-Tardenois, the former from the west and the latter from the south. The 20th Corps formed the centre of the Tenth Army attack. It was to attack with three divisions in order from north to south, the 1st American Division, the 1st Moroccan Division, and the 2nd American Division.

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It is of interest to know, at this point, that the Third American Corps was to have participated, composed of the 1st and 2nd American Divisions, but due to unavoidable causes, the staff arrived too late to assume control.

The mission of the 20th Corps was to secure the high plateau south of Soissons as its immediate mission, thus cutting the highways from Soissons to Château Thierry and Paris and the railroad from Soissons to Paris. Its eventual mission was to cut the Soissons-Fismes railroad, which was the single line rail supply for the German troops in the salient.

THE CONCENTRATION

Following the relief of the 1st Division from the Cantigny Sector, their losses of 152 officers and 4772 enlisted men were made good. All confidently expected a long period of rest in the rear areas, and the division staff had laid plans for extensive training in warfare of movement. This last was never realized. On July 11th, orders came placing the division at the disposal of the 10th Army and ordering its movement. This commenced the next day. The dismounted troops proceeded to their destinations in trucks. The bulk of these troops were concentrated in the Compiègne Forest by the morning of the 16th, with division headquarters at Mortfontaine.

The mounted troops proceeded by road with their own transportation.

ARTILLERY

At the time of the relief from Cantigny the men were tired and needed a rest, but they were in a state of splendid efficiency and the spirit of the organizations very high. The condition of the horses and the equipment was excellent. The plan of the division staff for training in open warfare found the artillery commanders in hearty accord. They saw the need of training in reconnaissance, and in the rapid determination of firing data to meet the requirements of the open warfare that seemed to all to be just ahead. So a schedule of instruction had been framed to meet the above requirements, including an intensive training in draft to wake up the drivers and their teams. It is of great interest here to note that the artillery recognized its goal, even though the opportunity to reach it failed to materialize at this time. This clear vision of our commanders, their refusal to accept the standards set by our allies as the last word in preparedness for warfare, reflects great credit upon them as well as upon the doctrine of war developed by our schools in peace.

The march commenced on the 12th. Its severity is well brought

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out in the following schedule of the daily marching hours of the 5th Field Artillery:

10 P.M. 12th to noon, 13th—14 hours.

8 P.M. 13th to noon, 14th—16 hours.

7 P.M. 14th assembled on road. March order rescinded and bivouac on the road overnight.

8 P.M. 15th to 3 P.M., 16th—19 hours.

7 P.M. 16th to 10 A.M., 17th—15 hours.

3 P.M. 17th to 3:30 A.M., 18th to position—12 hours, to immediate support of the attack without rest.

The road hours did not cover continuous marching, of course. It will be remembered that the great German drive of the 15th was on during part of this period, and so, in addition to the masses of troops marching to concentrate for the counter-offensive, others were being rushed to the vicinity of Château Thierry to reënforce the line in that vicinity, and the troops had to wait at crossroads for hours, waiting for the apparently endless columns of men and transport moving at right angles to the division line of march.

On July 15th it appeared definite that the horses would be unable to haul the guns to their positions in time for the attack, so that night the 75s and their gun crews were placed on trucks and, after two night hauls, arrived at concealed areas near the positions that were to be occupied. The animals, with their reduced loads, were forced along and reached the guns in time to get them in. The 155s were taken in tow by trucks on the morning of the 17th, and were hauled directly to their positions. All 75s opened fire at H hour. Four of the 155s were able to open fire at H hour and the remainder were in within thirty minutes thereafter.

PREPARATION FOR THE ATTACK (See Map at the End of the Article)

In the discussion that follows there is insufficient time to touch on the infantry except where the artillery is directly affected.

Orders were received in the late evening of the 16th for regimental and battalion commanders, with their orienting and telephone officers, to report to Mortfontaine where a conference was held around midnight. The light of one day remained before H hour, D day.

The following extracts from Field Order 27, 1st Division, July 16th, will generally cover the plan of the attack:

4. * * *

Objectives.

1st: Road running east of north through La Glaux Farm-Tilleul de la Glaux.

2nd: Eastern side of ravine east of Montplasilr Farm—eastern

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edge of Missy aux Bois, eastern edge of Cravancon Farm.

3rd: Paris—Soissons road at northern sector limits—eastern edge of Chaudun.

5. The attack will be at J day and H hour to be announced later. There will be no artillery preparation. The attack will be covered by a rolling barrage and by a dense artillery covering fire.

* * * *

8. Infantry.

Normal formation: Brigades abreast, regiments abreast and echeloned in depth with 1st, 2nd, and 3rd line battalions. Interior third battalions brigade reserve, exterior third battalions division reserve.

Original placement of battalions—1st and 2nd battalions on east side of Ru du Retz. The wooded ravine north of Cutry will not be used for the emplacement of troops as it is full of Yperite and badly shelled.

Third line battalions on west side of ravine east of Ru Fe and ravine of Ru du Retz. Both ravines are badly shelled. * * *

9. Artillery.

The divisional artillery as reënforced will protect the movement. Reënforcements: 253rd R. A. C. P.; one sub-groupment (105s or 155s) to be furnished later by General Commanding 20th Corps Artillery.

The 75-mm. batteries will furnish rolling barrage to cover advance to first objective and consolidation. The cadence of the barrage will be 100 metres in three minutes. It will halt for 15 minutes beyond the first objective.

After 15 minutes all available artillery will cover the advance of the infantry to the second objective at the initial cadence. It will rest in front of the second objective for 45 minutes, and then cover advance at the initial cadence to the third objective and cease.

The 75-mm. batteries, being unable to cover the movement to the second objective, will move forward to positions where they will be able to protect further advance of the infantry. One battalion of divisional 75s will be assigned to act with the infantry in each regimental zone.

The 155s will pay special attention to the ravine north of Missy aux Bois, but otherwise will endeavor especially to protect the advance of the 1st Brigade, which has the most important mission.

* * * *

17. General Instructions. * * *

THE FIRST FIELD ARTILLERY BRIGADE AT SOISSONS

Surprise is the essential factor in this operation. There must be no preliminary *reglage* from new positions. * * *

In addition to the above extracts, the administrative order showed the ammunition refilling point to be at the corps dump, 2000 metres south of Taille Fontaine,—the division refilling point after H hour, at the road junction at the southern exit of Roy St. Nicholas.

It was decided at a later conference of brigade and regimental commanders, held at 4.00 P.M. of the 17th, the next afternoon, that:

The barrage would start 300 metres in front of the infantry jumping off line, and would stand for five minutes because of the uncertainty as to the position of that line.

A battery of superposition would rest on the right 100 metres of the barrage in front of the first objective because of the enemy organizations at that point.

Artillery battalion commanders would be with infantry regimental commanders.

Detachments of engineers would accompany the forward movement of the artillery to repair roads and bridges.

Three days' rations would be carried on the men and three more would follow on wheels.

The Artillery Brigade issued a barrage and concentration chart. The 75s were to cease firing at H plus 122. All guns were to cease fire at H plus 248 and resume fire only on request of the infantry.

The limbers and caissons of the 6th Field Artillery and two batteries in each group (battalion) of the 7th Field Artillery, were to leave their positions at H plus 60 and proceed to the batteries for the movement of the guns. The remaining batteries of the 7th Field Artillery and the 253rd Regiment were to move only on brigade order.

The forward reconnaissance was to leave the battery positions at H plus 120 and select positions between roads Farm La Glaux and Orme St. Amand and the ravine of Missy aux Bois inclusive, as much as possible each in its own zone.

A liaison officer would be sent to the brigade immediately by each regiment. Group commanders were to be in close liaison with the infantry in order to open fire promptly on request, considering that all conditions from the present become those of open warfare. Whenever groups open fire this fact was to be reported to the brigade.

155s were to move only upon orders from the brigade.

Roads were assigned to the light regiments for their movement forward.

All means of liaison were to be utilized; a liaison detachment

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from each regiment was to be at the disposal of the division. A liaison officer was to be sent by the 5th Field Artillery to the brigade supported.

During the night of the 16th–17th, the next to last night preceding the attack, all elements of the division reached the rear area of the 20th Corps except the 5th Field Artillery. This regiment, it will be remembered, had received no assistance in hauling its guns up to this time. Its guns were 25 kilometres from their positions the next day, the 17th, at 3:30 in the afternoon. The bulk of the infantry was in the Compiègne Forest. Infantry battalions to be used in the initial assault were advanced to the vicinity of Mortfontaine. The guns and crews of the 6th arrived in trucks at La Raperie at dawn of the 17th. The first six limbers to arrive moved one directing gun for each battery into position in daylight. The guns of the 7th were moved into position by trucks and all were in position by 1:00 A.M. of the 18th. The remaining guns of the 6th moved into position at dark of the 17th and the combat trains started for ammunition. The initial ranges were about 2500 metres.

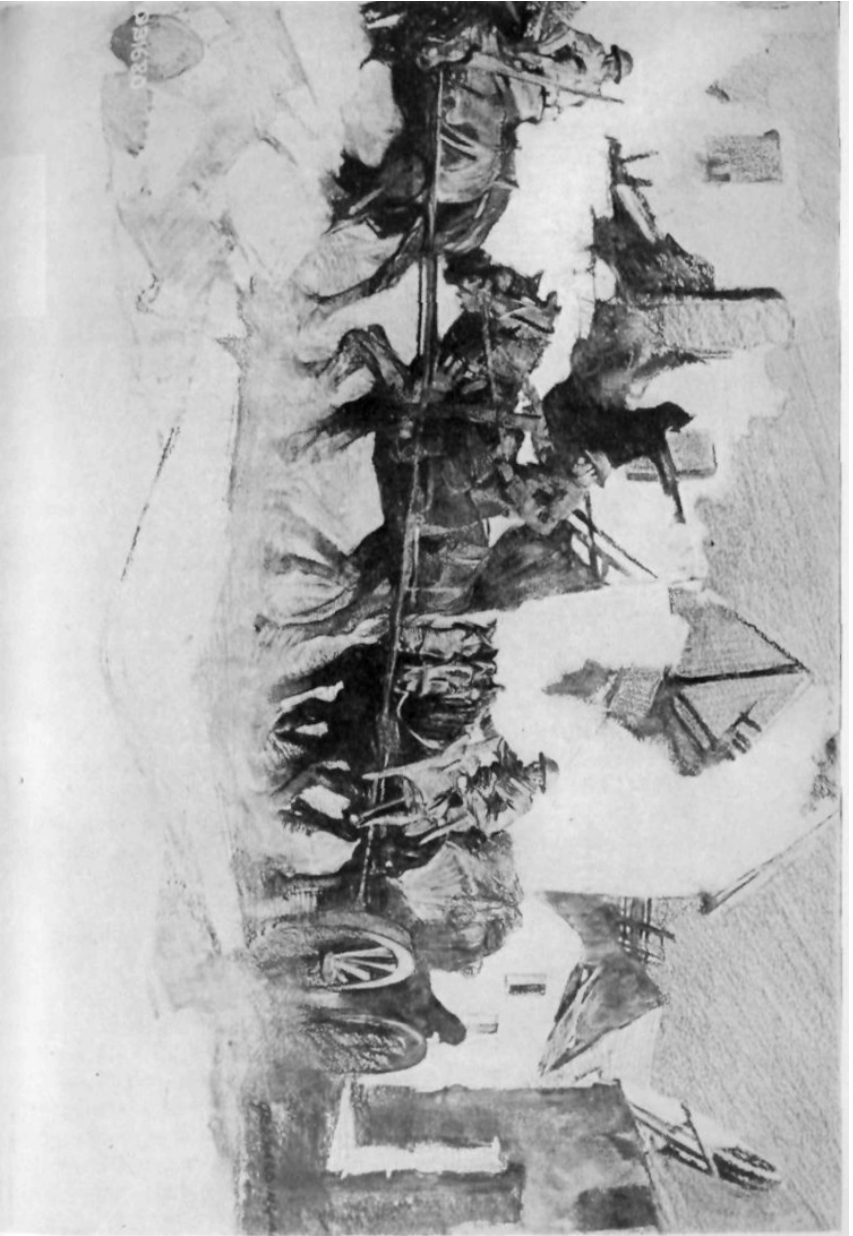
The artillery regimental and battalion commanders and their orienting and telephone officers, following the midnight conference of the 16th–17th, applied themselves to reconnaissance, orientation, instalment of communications, and to many other details necessary in order that the guns might be ready to perform their missions at the time set.

The 155s were placed in position, guns practically in a continuous line, in a well defiladed and easily accessible position in a ravine about 2000 metres to the southwest of Cœuvres, apparently just outside of the division sector.

The 6th Field Artillery, supporting the 1st Brigade, was located some 800 metres to the southwest of Cœuvres, on the extreme right of the brigade sector.

The 7th Field Artillery, supporting the 2nd Brigade, took positions just east of Laversine, on the extreme left of their brigade sector.

So, all was set for the attack. The troops of the division had suffered, and were suffering hardships, that beggar any adequate description. Fatigued with long night marches, or with uncomfortable rides in trucks, piled together like sacks, eating cold food (for fires were prohibited), they were all ready to go into the inferno that awaited them, filled with enthusiasm at the idea of finally going *after* the Boche. With the fall of night they started their last march before the battle. It was the blackest of nights, and soon the skies let loose in a torrential fall of rain usually equalled only in the tropics. And so the mass of men, and tanks, and trucks, and guns, plodded forward in the mud and wet, the men holding to the clothing



ARTILLERY
From a drawing by Captain George Harding.



MISSY RAVINE FROM POINT 173.9-291.7 LOOKING NORTH



LOOKING TO THE RIGHT OF THE PICTURE ABOVE

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of those in front to maintain contact as the guides of the Moroccan Division led them to their assembly areas. And the artillery commanders sweated a cold sweat as their communications were torn out, time and time again, with the movement of troops over them, notwithstanding the feverish efforts of the communication details to keep the lines open, waiting for the word that the batteries were in position and laid, and that ammunition was ready to blast the way of the infantry forward. It was war, with all of its confusion and uncertainty, straining every body and mind to its limit, and beyond that limit,—a not abnormal condition that we tend to forget more and more as our memories fade and we strive in the present for "solution" in our many tactical problems.

THE ATTACK

July 18th

The direction of the advance of the 1st Division lay eastward, and its zone included the deep and swampy Missy, Ploisy, and Chazelle ravines. Still further on lay the Crise Valley with extensive marshy areas, and the heights of Buzancy, which gave the enemy command of the battlefield. The Paris–Soissons Road, and the railroad and road from Soissons to the point of the salient, two important arteries, both crossed the zone. The terrain was generally rolling, and was covered with grain, waist to breast high. With the exception of the ravines and swampy areas mentioned, it was well adapted to the employment of the rolling barrage.

The 1st Brigade, on the right, following the barrage for the greater part of the time, pushed on to its objective, although it met very stiff resistance toward the end of its advance. The progress of the 2nd Brigade was close to schedule until it reached the edge of the Missy Ravine. This ravine was so deep and its walls so steep that the barrage failed to reach enemy organizations on and near its western face. Its swampy bottom was difficult to pass, and worst of all, effective flanking fire was brought to bear down the ravine from enemy organizations in the adjacent sector. It finally passed this obstacle at a terrific cost in casualties, but was unable to pass much beyond the eastern face of the ravine. On account of its position, over a kilometre in rear of the right brigade, it became necessary to refuse the flank of this brigade in order to maintain contact.

In accordance with the order cited before, rolling barrage was fired by the light guns, preceded by concentrations of the howitzers, to just east of the Missy Ravine line. This last had been the objective of the howitzers before the arrival of the rolling barrage. Beyond the Missy Ravine, the barrage was continued to the final objective by the heavier calibres while the 75s displaced forward to

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closer support of the infantry. One of these regiments was in its advanced position and had opened fire by 10:00 A.M. The 6th Field Artillery was now at La Glaux Farm, the 7th just in rear of the first objective. Two battalions of the 5th moved to the south of Cœuvres at 5:30 P.M. The reënforcing 75 regiment was moved forward from time to time, so utilized as to take over the missions of the divisional regiments during their movements, thus avoiding shifting missions between them. Its positions were in the sector of the right division because of the likelihood of a strong counter-offensive from the opposite flank.

Communication with the infantry regiments was in operation in the evening. There was no direct communication by wire with the assault battalions. Barrages were prepared for the night of the 18th–19th, but it was most difficult to obtain the required data. Lieutenant-Colonel John Crane, commanding a battalion of the 6th, states: "Except for the time I was actually moving, liaison with the guns and with Colonel Parker (28th Infantry) was in perfect working order. However, by eight or nine (A.M.), there was no information as to the location of the infantry front line. From personal knowledge gained while locating the positions of the batteries, I knew that a gap had occurred between the 18th and the 16th Infantry. Information as to the location of the infantry was imperative, but it was not to be had at the infantry regimental command post, nor could I obtain it from the commanding officer of the leading battalion in a form sufficiently accurate for me to lay down a barrage,

"We had an artillery officer and a detail of runners with the assault battalion, but he either did not send back any message or the runners became lost. The information was so urgently needed that I took a reel cart and made a rapid dash toward the front and by good luck managed to get a wire within two hundred yards of the front line, over which communication was established. How long it lasted I do not know, as I was wounded shortly after this while getting the exact location of our line."

There is no record of any observed fire by artillery except for registration.

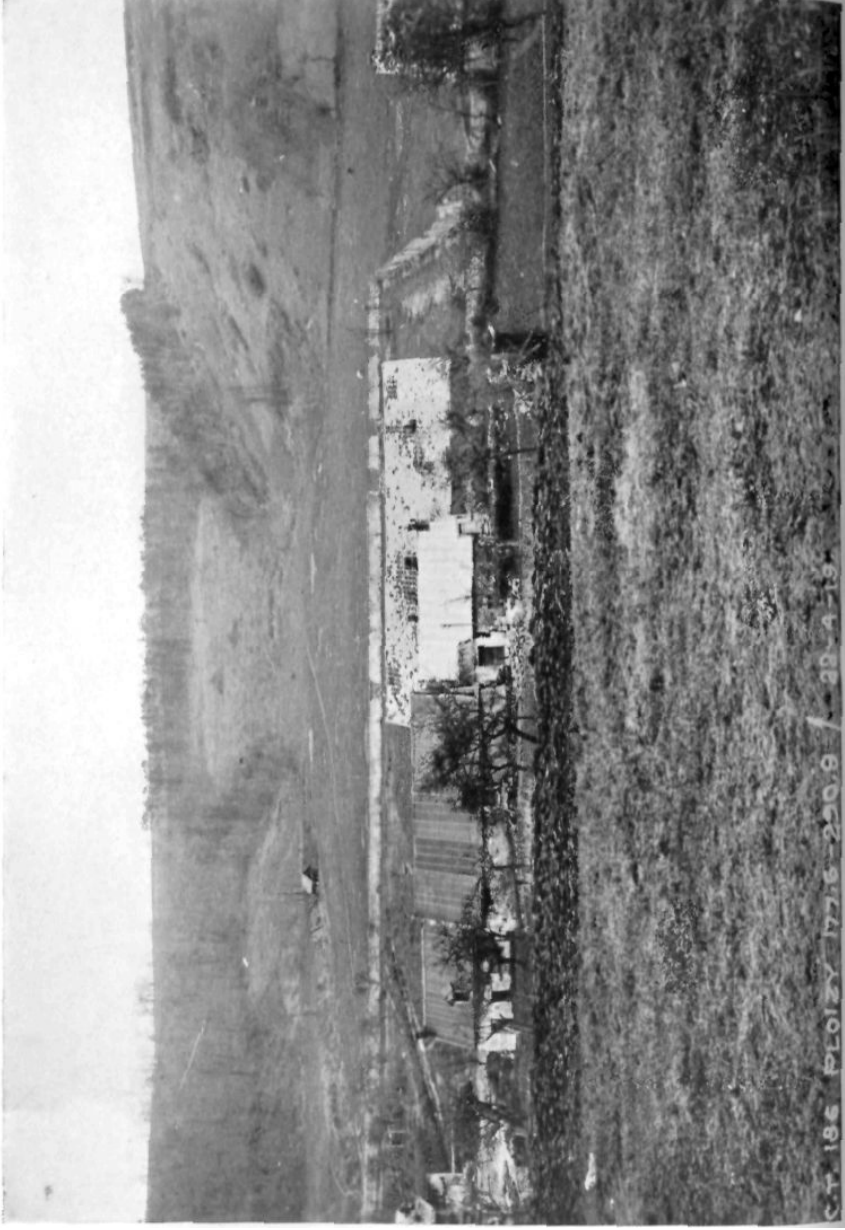
July 19th

The following are extracts from Field Order 28, 1st Division, issued in the early morning of the 19th:

1. The 10th Army attacks this morning at 4:00 A.M.
2. The Moroccan Division on our right holds a position somewhere close to the railroad. The 153rd Division on our left holds a position somewhere on the Paris–Soissons Road.
3. In liaison with flanking divisions the 1st Division will



FRENCH LIGHT TANKS AND FRENCH COLONIAL INFANTRY AND AMERICAN ARTILLERY MOVING FORWARD IN THE REGION OF PLOISY ON
THE MORNING OF JULY 19, 1918
From a drawing, by Captain W. Morgan.



LOOKING NORTHWEST ACROSS THE PLOISY RAVINE FROM POINT 177.6-290.9

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take and hold the line Buzancy (exclusive) to Berzy le See (exclusive). * * *

5. Infantry.

The position of the infantry is: 2nd Brigade has attained second objective; 1st Brigade has attained final objective prescribed for yesterday, * * * Rate of advance 100 metres in three minutes. * * *

6. Artillery.

There will be no artillery preparation. Our artillery starts a rolling barrage at a safe distance before yesterday's third objective. This barrage will stand for 45 minutes and then advance at the rate of 100 metres in three minutes. It will respond to infantry rocket signals as follows:

Demand for artillery barrage: six white stars.

Lengthen the fire: caterpillar rocket.

The rolling barrage will move to cover the final objective and consolidation thereon. Protective fire on sensitive points in advance of the infantry movement.

The attack went off at the scheduled time, although the order was barely received by some of the units in time to reach their forward battalions. Although the ground was more even than the previous day, the enemy was ready this time and resisted inch by inch. The attack finally came to a standstill with the right advanced about a kilometre and the left about half that amount.

The situation was most serious. The weak gap between the brigade was exposed to counter-attack, and the enemy could form up for this purpose in the Ploisy Ravine within a kilometre of the weakest point. The only hope of relief was to drive the left forward abreast of the right, giving a strong point of support for the left in the Ploisy Ravine and greatly shortening the front.

Orders were issued for the renewal of the attack at 5:30 P.M. All 75s were to support the attack of the 2nd Brigade by rolling barrage. 155s fired concentrations on the known enemy organizations on the left flank and in the Ploisy Ravine.

In preparation for this attack one battery of the 6th moved to a position to the south of Missy. The two advanced battalions of the 5th moved one to the northeast and one to the southeast of Cutry. The rear battalion advanced to the position vacated by these two.

The attack went off on schedule. The left brigade advanced two kilometres to the objective set by the division. The right brigade conformed to this movement which required only a slight advance on its left, shortened its line, and pinched out the troops required in the refusal of the flank.

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The artillery points of interest in this last advance are in connection with the concentration of the fire of the artillery on a single brigade front. Two instances of observed fire occurred on the 19th. Officers of the 6th climbed poplars of the Paris–Soissons Road and conducted fire against an enemy battery in action. Again, about noon, the Battalion Commander, 1st Battalion, 7th Field Artillery, caught a counter-attack from his observation post and brought down a barrage to meet it. He also requested and got assistance from the other battalion.

The 5th Field Artillery fired in the Ploisy and Chazelle Ravines and on Berzy, Ploisy, and Buzancy in the morning. It fired on reported concentration of troops in the Ploisy Ravine, reported by the air service, after the attack.

July 20th

The following are orders issued on the morning of the 20th:

1. The Corps has ordered this division to take and hold Berzy-le-Sec.
2. The attack will be delivered at 2:00 P.M. for the purpose of taking the town and the heights to the north. * * *
4. * * *.

Artillery.

The artillery will deliver strong and powerful concentrations for two hours before the assault. A barrage will stand from 1:15 to 2:00 P.M. on the line 8415–8406. At 2:00 P.M. it will advance at the rate of 100 metres every four minutes to the line 9215–9806. The barrage will stand there one hour.

It should be noted here that the town of Berzy had been taken from the division on the left and presented to the 1st Division. It lay in the sector assigned to the left brigade and presented a formidable obstacle, on a prominent knoll, almost surrounded by ravines, and flanking the advance of the division. The right brigade had the flanking fire from Berzy to contend with, in addition to the deep Chazelle Ravine, the marshes and brush of the Crize Valley, and the heights of Buzancy to their front.

In order to support the infantry to best possible effect, four batteries of the 6th moved to the east of Chadun. One of the batteries of the 7th moved to join the battery southwest of Ploisy, and one battalion of the 5th moved to the west of Missy.

In the attack the right brigade moved forward two kilometres, cutting the Paris–Soissons Railroad and advancing some hundreds of metres beyond. The left brigade met a deadly fire at the jump-off that was practically continuous. It was finally checked on a knoll three hundred metres west of Berzy. Again the 1st Brigade had to refuse its flank over a line perpendicular to the front and extending

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about a kilometre in order to maintain contact with the left brigade. The losses of the infantry now amounted to about seven thousand, including of course most of the officers and experienced noncommissioned officers.

July 21st

The following are extracts of Field Order 29, issued on the 20th:

1. The 10th Army attacks tomorrow at 4:45 A.M.

* * * *

5. Infantry.

The position of our infantry is indicated by the blue lines on the map attached. If there are any elements in advance of these lines they should be withdrawn during the night to avoid artillery fire. Rate of march 100 metres in three minutes. Halt at first objective one hour.

Special instructions to 1st Brigade.

It will follow the rolling barrage and advance to the first objective in liaison with the French Division on our right. After the first objective there will be no rolling barrage. * * *

Special instructions for the 2nd Brigade.

It will not be accompanied by rolling barrage. A powerful fire for destruction will, however, be effected on Berzy-le-Sec, and neighboring ravines. At 8:30 A.M. the fire will lift and the brigade will advance and occupy the ground outflanked by neighboring troops. * * *

6. Artillery.

There will be no artillery preparation. The artillery will fire rolling barrage for the 1st Brigade. On arrival of troops on the first objective standing barrage will be fired in front of the first objective for one hour to protect consolidation. It will respond to infantry signals as follows:

Demand for artillery barrage: 6 white stars.

Lengthen the fire: Caterpillar rocket.

* * * *

155s will be used for counter-battery in liaison with aviation.

The only movement of artillery on the night of the 20th was that of one battalion of the 5th to the Missy Ravine. Preceded by barrage and concentrations fired by all of the divisional guns, the right brigade, with its already threatened flank, moved forward and finally came to a halt on the heights of Buzancy. At 5:30 A.M. the 155s came down on Berzy with a crushing preparation lasting for three hours. As it lifted, at 8:30, the remnants of the left brigade

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swept through Berzy and finally came to a halt on their objective east of the town.

Remaining Operations

On the 22nd the left brigade made a slight advance to improve position only. The same night the division was relieved by the 15th Scottish Division, the artillery remaining in position to support them.

The 15th Division attacked on the morning of the 23rd but were unable to progress. Due to the confusion attending relief they were not placed close enough to the barrage at its commencement and were unable to advance under its protection.

A local counter-attack was made against this division during the day. On appearance of the six star rocket the 6th brought down their fire, one battalion firing barrage and the other counter-preparation. It was later reported that the artillery fire had been most effective in assisting the repulse of the attack. The regimental commander states: "I was at the time looking at the area attacked, could see the smoke from the bursting shells through the willows in the valley of the Crise, but could see no Germans."

The artillery brigade was relieved this night and the night following by echelon.

COMMENTS

Ammunition Supply

Ammunition supply was a great problem, especially for the 155s. The combat train idea, by regiment or by battalion, was used generally, these trains being formed of all of the ammunition carrying vehicles of the batteries grouped under one officer, as now actually provided in the Tables of Organization. About ninety per cent. of the ammunition was delivered by the ammunition train of the brigade to the near vicinity of the guns. The regimental combat trains were largely utilized to pick up ammunition left behind by the batteries and bring it forward. In the 5th Field Artillery, where the movement forward was largely by battalion, the battalion moving forward was accompanied by the regimental combat train which dumped its load, about 1200 rounds, at the new position and then returned to the park, to reload and be ready to accompany another battalion.

The brigade ammunition train was composed of four truck companies of some twenty trucks each, and of three wagon companies with about the same number of wagons per company. It is interesting to note that the wagon section employed only three wagons at an advanced distributing point to answer emergency calls. The remainder of the horsed battalion was utilized in the division



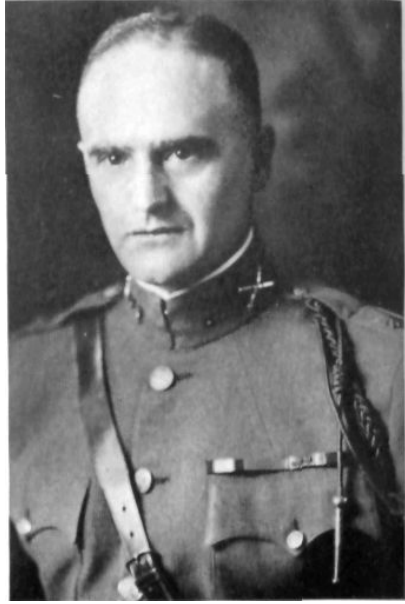
BERZY LE SEC FROM POINT 179.3-290.3



LOOKING TOWARD ROZIERES FROM 179.3-290.3



COLONEL LUCIUS R. HOLBROOK
Commanding the First Field Artillery Brigade at
Soissons.



MAJOR CORTLANDT PARKER
Commanding the Sixth Field Artillery at Soissons.



MAJOR MAXWELL MURRAY
Commanding the Fifth Field Artillery at Soissons.



MAJOR A. L. P. SANDS
Commanding the Seventh Field Artillery at Soissons.

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reserve for salvage duty. It is understood that a part of the personnel of these companies was formed into an emergency battalion, with other miscellaneous personnel, to be used as an improvised infantry battalion.

The ammunition trucks ran night and day, men fed on the road, and vehicles were supplied with gas systematically as they passed a certain point on their route. The reservation of one road for ammunition supply proved a saving foresight. The train commander kept a dentist at one end and his supply officer at the other to keep all other traffic off.

Observation and Fires

Two occasions only have been noted in which there was observed directed fire. Practically all fires were by map, except for some observed registration after the initial jump-off. The futility of shrapnel in such a situation is inescapable. However, a comparison should be made of fires conducted by the same brigade in a later offensive. The conclusions with reference to shrapnel may then be somewhat different. Aside from other difficulties due to past training and lack of wire and other communication equipment, the ground over which the attack progressed was generally unsuited to observed fire. The terrain was undulating and each crest position provided a limited observation to another crest a short distance in front. The command of the ground was generally insufficient to provide any depth for terrestrial observation. Balloon observation was kept down by enemy air service.

The following extracts of statements by the three regimental commanders are of great interest:

5th Field Artillery

"Practically all our fire was unobserved. The rolling country with no special elevation at any point made it impossible to observe fire of the targets we were called to fire on. Many of these were on points well behind the hostile front lines and naturally enough the Germans kept concealed as much as possible."

6th Field Artillery

"The Germans kept out of sight, and information of where good targets were, consisted of circumstantial evidence, rather than the actual appearance of the target. This condition, the emptiness of the battlefield noticed in the Russo-Japanese War, and probably much more pronounced in the last war, is naturally the normal condition which presents few exceptions. In other words, the enemy does not line up and present a target such as is fired at in our practice field firing. He is not seen. He is frequently dug in and almost invariably

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concealed. But he makes his presence known to the infantry assault battalions. These battalions know when they are being fired into. They do not, except rarely, see the enemy who is firing. But they know approximately the direction or directions of the fire and can locate a rough area where the enemy is, or perhaps furnish a little bit more exact information, but not much better. This is the sort of information that the artilleryman can get, and frequently he does not get even this."

7th Field Artillery

"Sometime before noon on the 19th, the Commanding Officer, 1st Battalion, put down a defensive barrage 200 metres beyond the Paris–Soissons Road. He requested and received assistance from the 2nd Battalion. The necessity for this fire was seen by the 1st Battalion Commander from his observation post. It was necessary in order to break up a local enemy counter-attack and was effective. Later a message by runner was received from the front line asking for this fire. During the remainder of the battle the regiment supported the infantry mainly by rolling barrages. It fired upon occasional demands upon specified terrain features and upon suspected machine-gun nests, notably the Château of Buzancy. Because of the spreading out of the front, the barrage became very thin. Defensive barrages were prepared nightly to cover the front line. After the morning of the 18th batteries habitually adjusted on a datum point. There was practically no firing on fleeting targets as the enemy appeared little in the open, the only occasion I remember being when the defensive barrage was laid down beyond the Paris–Soissons Road."

The following is also quoted from a statement made by one of the regimental commanders:

"The employment of a rolling barrage at this time was most fortunate. Progressive concentrations would not have been as effective. These concentrations are placed upon points where enemy resistance is expected, but since this was not encountered where anticipated, the barrage covered the area to much better advantage."

The Infantry-Artillery Liaison

There was a tendency in this battle for field artillery commanders to be physically with infantry commanders. This resulted, in certain cases, in battalion commanders being entirely out of communication with their batteries for protracted periods. As map barrages were being fired, no harm resulted. This condition was the natural result of the past experience of the division in sectors of more or less stabilization of front. Immediate communication with the assaulting battalions was practically non-existent. This fault lay

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rather in the lack of wire and training of details in movement, rather than in the lack of recognition of the fact by the artillery commanders, for every effort was made to remedy the situation. It had been planned to remedy this defect in training by intensive instruction during the rest period after the relief from Cantigny, but there had been no opportunity for it. Improvement in this regard will be noted in the later operations of the brigade.

The following conclusions of one of the regimental commanders are presented as of real value for consideration by all of us looking to the future:

"After this operation, I considered that to improve the character of the support given to the infantry, we had to maintain close contact with the forward elements and know the situation out there better. This conviction remains. I believe, at the same time, that in this operation, we had on liaison with the infantry considerably larger details than the present tables prescribe. I do not think that the duties of the liaison officers can be overestimated in importance. Instructions to them should be most complete and they should be required to report to the artillery frequently, if only to say there is nothing new. But there should be another agency besides liaison details to furnish this information and keep in touch with the situation forward and apply there the fire power of the artillery. There should be a regularly organized service for the observation of advanced areas and for the conduct of fire there. I have already described the information that should be got there. The artillery should get this information as much as possible from its own agencies, and the fire should be either observed or conducted, as far as may be, by these agencies. This observation of fire is a far different thing from that accomplished from the time-honored observation post near the battery, and supplements it. The battery commander cannot command his batteries from these advance positions. He has to be near his men, in practice, for all the needs of the battery. These targets must be sought out and attacked by a regularly organized service of the artillery, which goes well forward, locates the targets as well as it can, acts always in coöperation with the infantry, and then attacks the targets or observes the fire directed on them.

"It may be argued that the liaison officer with the infantry can do this. The answer is that he has other engrossing duties, is moreover almost always in a command post and not an observation post, and in practice was never able to assist materially in this duty, and cannot be expected to do so in the future. I would have this service organized as an agency in the battalion of artillery, distinct from the liaison service. It should consist of a captain and lieutenant assistant per battalion of artillery, with enough men to handle the wireless communications, a few maps, field glasses, etc. This

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unit in the attack should observe from within say 400 to 600 yards of the front line, or whence the forward observation is effective, and whence it can get the same idea of what is in the front of the assault battalion of infantry as the commander thereof can get, possibly more, for being fairly near him, it may profit by his knowledge and supplement that knowledge. This unit should be in wireless communication with the supporting battalion of artillery and observe or conduct the fire of one or more batteries thereof as the battalion commander may direct.

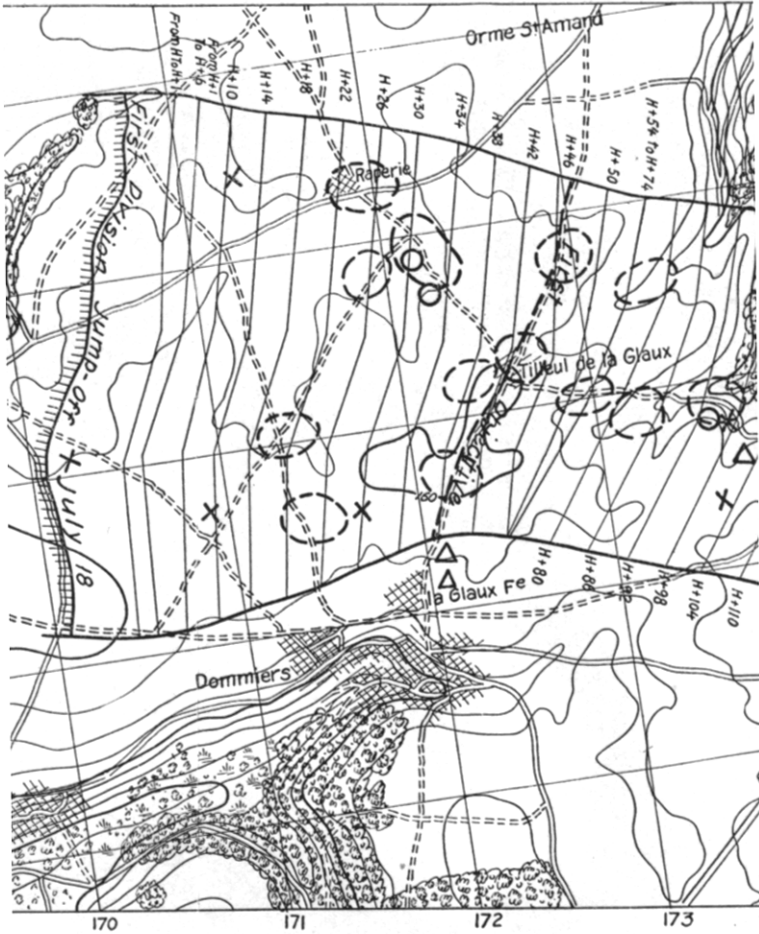
"This is my solution for the supporting of the infantry by the support battalion—intensive liaison and intensive forward observation, both organized and both independent, but both cooperating. It will find its principal application after the barrage or other prearranged fire has ceased or has run away from the infantry, or after the advance is over, or in cases where, due to the conditions such as exploitation conditions or light enemy resistance, prearranged time schedules are not used. The solution is an answer to the usual conditions of the modern battlefield, which to be appreciated must be seen—its apparent emptiness of humans and the consequent extreme difficulty of locating targets from any observation posts, especially those near the guns.

"This solution is based upon limited personal observation near and on the front line during this operation and at other times, and less limited observation near the battery positions. But it is substantiated by many conversations with infantry officers who have commanded in this and in other operations. These officers will tell you that the location of targets is extremely difficult. If it is difficult for them, how much more difficult it is from the observation post near the guns. While the observation from the observation posts is still useful, it must be supplemented by regularly organized observation and liaison. The principle of echelonment of guns in depth is a well-known one. There is a corresponding principle of the necessity of echelonment of the agency to observe and conduct fire, but the echelonment must be comparatively further forward. The more the range of the artillery is increased and the more the means for communication are improved and the accuracy of preparing fire by maps, etc., is enhanced, the greater becomes the necessity of accomplishing the forward observation and conduct of fire by a regularly organized agency of the artillery."

MISCELLANEOUS

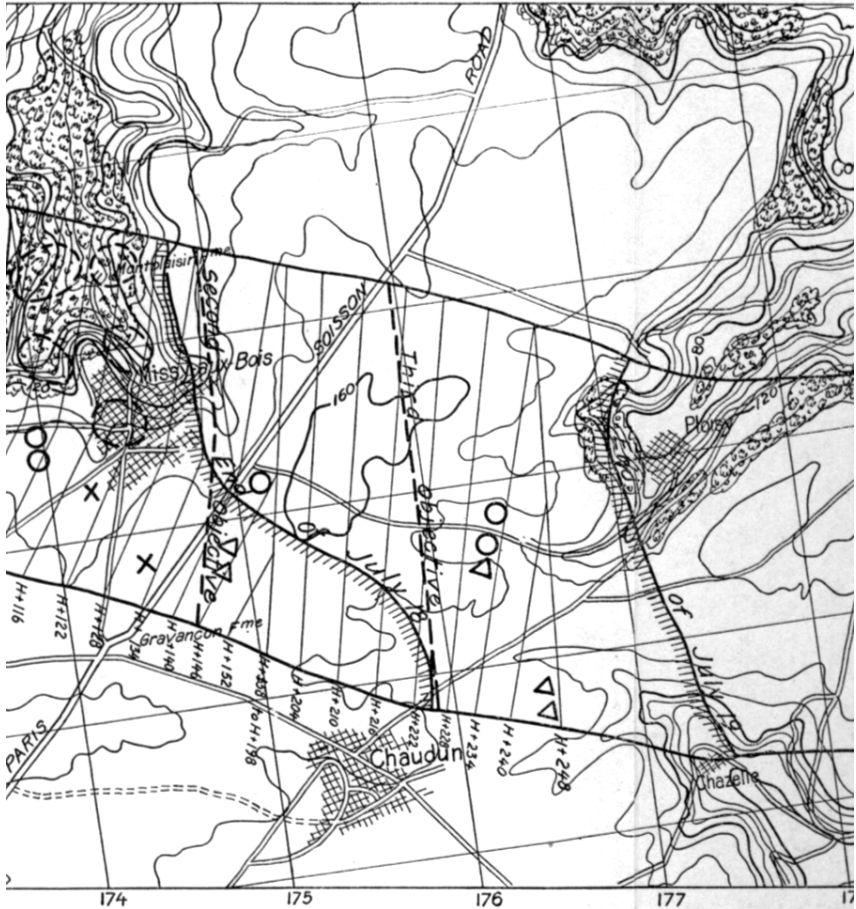
All attacks were ordered by the divisions. The artillery support in each case was prescribed by the field artillery brigade. There is no record of off-hand support of attacks between subordinate commanders.



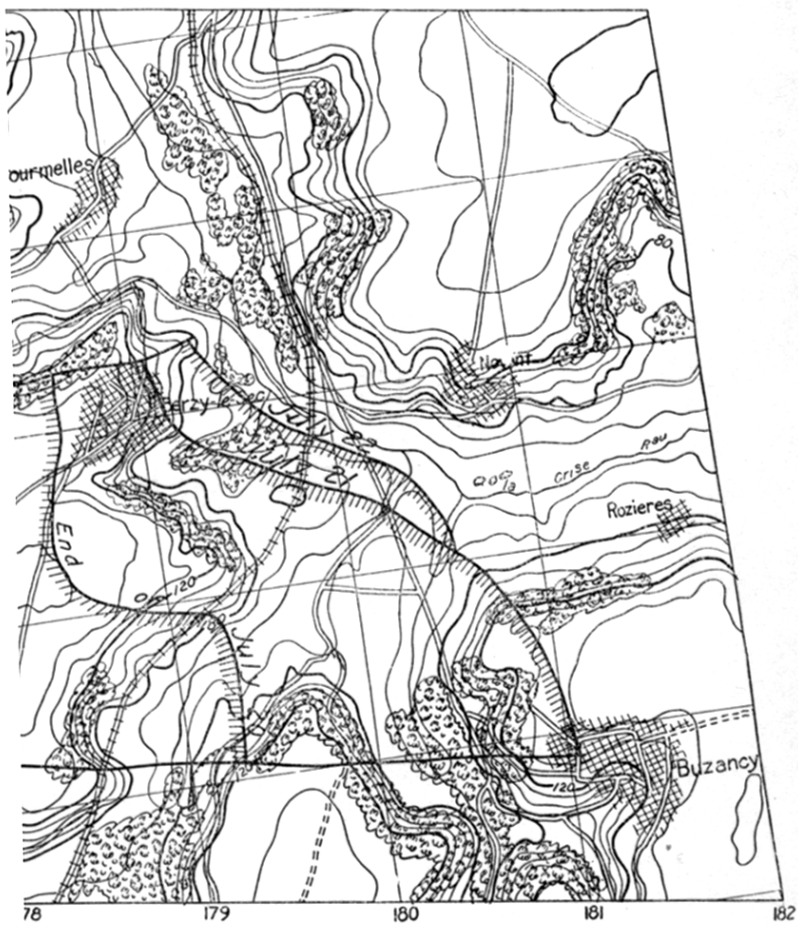


○ Concentration to be Fired By 5th. F.A.
 X Battalion Fifth F.A.





- △ Battalion Sixth F.A.
- Battalion Seventh F.A.



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The battalions of one regiment carried rocket boards and kept them manned throughout the attack. Apparently no defensive barrage was called for at any time in the right brigade zone of advance.

An infantry commander states that several hours were required to obtain artillery fire on machine guns in the vicinity of the Paris–Soissons Road on the morning of the 19th.

On this same date, one of the regiments of the left brigade received the attack orders fifty-five minutes before the jump-off. Its only communication with the front line was by runner. It is likely that this regiment never connected up with its barrage.

There was little interdiction by the Germans during the forenoon and early afternoon of the 18th, as most of its divisional artillery had been captured. Generally, throughout the attacks, the artillery casualties were not heavy during the infantry attacks, but increased considerably during the lulls of the attack. Some batteries lost more personnel from enemy airplane machine-gunning than from artillery.

During the attack, a battery was ordered to move to an advanced position over a route considerably exposed to enemy observation. It seemed suicide and the order was protested. However, it got there without drawing fire. This is interesting to note, for it is axiomatic that a battery must not move over ground theoretically exposed to observation. However, it has been necessary in the past and will be in the future. It must be remembered here that potential observation does not mean that the enemy can continuously see everything. If support is needed the chance will have to be taken.

It was reported that the barrage was not effective in the valley of the Crise because of the soft and marshy character of the ground. In this connection, attention should be re-directed to the statement that has been made before that "the employment of the rolling barrage at this time was most fortunate. Progressive concentrations would not have been as effective." Referring to the attack of the 18th, the rolling barrage has its proper place in artillery employment and will have in the future. There is a certain present tendency to consider the barrage form of support a thing of the past.

CONCLUSION

In conclusion I want to point out the real lesson that I see in this engagement. I do not know who won the war. And I do not want to reopen this old controversy here and now. But we do recognize *what* won the war and we must admit that this great division had it to a superlative degree.

This division was organized, and received its first training under the old Regular Army, a group that we tend to discredit in these modern times. Its officer force was largely composed of regular

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officers and of temporary officers appointed from the ranks. A large percentage of the non-coms were old-timers. By the time the division reached Soissons the old-timers represented a very small percentage of the commissioned strength of the division. But they had given it its life and its soul, that intangible quality of the spirit that binds men together in mutual confidence, and implants within their breasts the will to meet the demands of duty far more than half way, that made them stand against hell itself, and then to lift their weary bodies from fox holes and advance against it.

Remember that this division, with more than half of its rifle strength gone, exhausted in mind and body, was still able, with its shattered battalions to go forward and take the Berzy-Buzancy line. Every man must have been a leader, for the division was accounted for at the end in the men in the fox holes, the dead, the wounded—and one hundred and thirty missing or taken prisoner. The lesson is clear. Each man wanted to stay, to go forward, and to see it through with his division. There was no dissipation of force into the rear areas. What had been spared by the enemy's fire was in its place to *go*.

Past history will show many instances of small groups of professional soldiers forming the rallying point for the manhood of the country. And from these small groups have come the conception of the military ideals of duty and service that are so essential in first-class fighting troops. This conception is our heritage from the past. And only as we define it, understand it, and pass it on—so, and only so, will our military efforts meet success in the initial engagements of future war.



"The Old Army Game"

Army Horses and Mules May Be Groomed by Vacuum Cleaners.—*News Item.*

SAID the Stable Sarge to the Raw Recruit, "Put down that brush and that currycomb. That very old-fashioned way may suit The critturs down on the farm back home, But the hide of modern army plugs We very carefully vacuum clean. And for the coats of those hard-heeled jugs, We use the extension of that machine."	Said the Raw Recruit to the Stable Sarge, "I'm glad I enlisted in this here army. This grooming, taking it by and large, Seems like a cinch. It can never harm me." Said the Stable Sarge to the Rookie Raw, "Congratulations you'd best be saving. In army snaps there's some catch or flaw, And manes we soon may be permanent waving!"
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FAIRFAX DOWNEY.

THE PRESTON SYSTEM OF IDENTIFYING HORSES AND MULES

BY MAJOR C. L. SCOTT. Q. M. C.

DOES anyone know why the army persists in referring to horses and mules as "animals"? There are almost countless numbers of animals such as the cat, the dog, the cow, etc. Even in the army we have as public animals the horse, the mule, the dog (in Alaska), the cow (in the Medical Department), the ox and the cārābāo (in the Quartermaster Corps). When we mean a horse or a mule we should call it properly by its class name. In discussing the old descriptive card and hoof brands I will refer only to the horse, whereas the general defects in the old system will apply equally to the mule.

PRINCIPLE OF PRESTON SYSTEM

A board of officers appointed by the War Department has made over a year of thorough study and many experiments of the Preston System of identifying horses and mules, and has recommended its adoption. As a detailed description of the system will be published if it is adopted by the War Department, it will not be necessary to explain the system in detail herein. Only a general description of it is given.

Under the Preston System each horse (and mule) is given a serial number or symbol, consisting of a letter and three figures. The serial number is branded on the left side of the neck in two-inch letters close up to the mane. No other horse in the army has this same brand, and the brand for this particular horse remains permanent, and is positive identification throughout its military service. Example of brands—A012, 0A12, 01A2, 012A.

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This brand is further supplemented by a horse (and mule) register, which is established by filing the record card of each horse and mule in a property record book. The record card and method of handling is illustrated below.

HORSE (MULE) RECORD

Symbol A000
Class—Riding

Section 1—General Description and Purchase Record

Col.	Sex	Ht.	Wt.	Yr. Foaled	Breed	Sire	Dam	Purchased at	Date	By	Price
Bay	Geld	15	1000	1909	½ Bred	Ashton	Unknown	Kan. Cty.	2-3-16	C.E.R.	\$175
Remarks			Shipped to Fort Reno 6-4-16								

Section 2—Issue Record

Issued to	At	Date	Remarks
8th Cav.	Ft. Bliss	5-6-16	Good Polo Prospect

Section 3—Service Record

Rec'd Date	From	Assigned to	Named	Transfer	Transfer
5-10-16	Reno	Troop F	Frank	Trp. E. 8th Cav.	
Remarks		Good Polo Pony			
FINAL Separation from Service and reason therefor			6-10-25—Condemned and destroyed— ring bone left fore		

Section one of this record card is made out in triplicate at time of purchase. The original accompanies the horse wherever he goes. The duplicate is filed at the purchase point on the local register. The triplicate is sent for file to the office of the Quartermaster General, Remount Service, for the Army Horse Register. Section two is filled out at the time the horse is issued to service. Section three is completed in the organization and is put on the organization horse register.

When an animal dies or is separated from the service, final disposition is noted on the record card and the same is withdrawn from file and mailed to the Remount Service, Washington, D. C. (This requirement or report must be made before another horse will be issued to the organization concerned.)

Upon receipt of the original record card of the horse on final disposition the Remount Service notes it on the triplicate copy,

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removes this record from the live to the dead file of the Quartermaster General's office, and takes up the symbol for reassignment. The original record of the horse is then forwarded to the Veterinary Corps for use in obtaining data, keeping records, making studies, etc.

Note that the record card is concise on one small sheet, and much simpler than the present descriptive card. It reduces the paper work of organizations because it is practically complete upon receipt in an organization. Section three only has to be filled out in organizations and the record card is then filed in a property record book like other quartermaster property. The horse (or the mule) is then identified positively and permanently, the same as the pistol and the rifle now are, even though they are not as valuable as a horse.

The brand and the above record will do away with descriptive cards and hoof brands, thus saving both money and time in keeping both of these methods up, as is now done in each organization.

OPERATION OF HOOF BRANDING AND DESCRIPTIVE CARDS IN TIME OF PEACE

That the old system of hoof branding and descriptive cards did not serve as a method of identification, I think I can illustrate by my own experience in handling horses and mules in the army.

Upon first being commissioned I joined a troop of cavalry and went to the stables to get acquainted with the horses of the troop. A large amount of information about the troop horses was obtained from the first sergeant and stable sergeant. There were some questions that they could not answer and we sent for the descriptive cards of the troop. To my amazement they gave us no information of any value. The bay horse with black points and a star, on the descriptive card that we were examining, could have been any one of a dozen horses. A horse whose hoof number was twelve and which was a *bay gelding, age six*, was shown on the descriptive card as a *black gelding, age ten*. The stable sergeant then happened to remember that some six months previously the black horse had been traded to the band for the bay horse. The descriptive card had not been traded nor corrected and the horse had only been given the number of the traded horse. A horse in the corral whose hoof number was twenty-eight had no descriptive card in the troop. Investigation disclosed that the blacksmith in renewing the number upon shoeing thought that twenty-three was a twenty-eight and had so branded the horse.

Later, I went with my regiment to foreign service in the Philippine Islands. The horses which I received from the troop which I relieved were duly transferred and the number receipted for was correct. Some days later, upon checking the horses with the descriptive cards, we could not plainly distinguish the hoof brands and could make nothing out of the descriptive cards. The personnel

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of the old troop was not there to tell us. The result was that we discarded all the old descriptive cards and made new ones for all horses in the troop. Upon returning to the United States two years later, in taking over another troop, the same thing happened.

At times I have put what was known as a useless horse before an inspector. His sick record in the troop would be examined and would show only a few days of sickness. The inspector would order him retained in the service. Investigation later would disclose that the horse in question had been in "E" Troop, had a long sick record, and was useless. He was then palmed off to "G" Troop and was still useless. In turn, he had found his way to my troop, as useless as ever. Each time he had been transferred he lost his identity and started a new record in the troop which he joined. In the veterinary hospital he had been recorded as number 9E, and then as 50G, and then later as number 20F. That he was the same horse there was no means of determining, unless the veterinarian should happen to recognize him, and in the service the veterinarian changed as often as the horse.

On many occasions I have gone to the stable and admired, we will say, a fine-looking old bay horse, twenty years of age, who was gray and grizzled around the muzzle and eyes and was still the best horse for field service in the troop. I have wished that he could talk and tell me where he was raised, how he was bred, and the service that he had seen. His descriptive card would show him a bay horse, seven years old! The date of purchase would be unknown, his breeding would be unknown, everything would be unknown except his age, which would be known incorrectly! This brings me to a point brought out among civilians. You ask them how old a horse is. They will say: "He was foaled in such and such a year." In the army a horse's age is recorded, say as seven, on the descriptive card, under the heading "Age," and it stays that way if he lives twenty years. He starts seven and winds up at seven.

In substance, if we will frankly admit it, all of us who have been interested in our horses know that the descriptive card is valueless and a tiresome lot of paper work; that the hoof brand requires much time and labor; that the branding iron is expensive; and that the conditions I note above were and are general throughout the service. The only real records of our horses that we have are carried in the heads of the persons who know them!

DESCRIPTIVE CARDS AND HOOF BRANDS A FAILURE IN WAR

The World War came upon us in 1917. Practically all regular army officers who were on duty with divisions had to devote their time and attention to thousands of details; the training, instruction, feeding, clothing and handling of men, etc. No wonder they lost

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track of and could not keep up the horse and mule records. Few of those whom I saw thought of or had time to properly supervise the animals let alone the records. Being in the Remount Service, my job was to study and furnish horses and mules and nothing else. From March, 1918, to June, 1920. I had opportunity to see our thirty camps and thirty remount depots connected therewith and some 250,000 horses and mules. The following are some facts that I noted and recorded:

At one camp, where I commanded a remount depot, the following is a typical illustration of hoof brands. A company would draw out a horse and brand him 28 on the left forefoot and I-D-62 on the right forefoot. This horse would get injured and have to be turned in to the remount depot for replacement. He would shortly recover and then be issued again and get the brand 60 left fore, I.H.W.H., right fore. This organization would then leave camp and the animal would go to another organization and would be branded 80, left fore, and A-B-17 right fore. After the second branding you could not identify him with the jumbled figures on his feet, and about the third branding the horse would need a year to grow new hoofs in front.

As to identification in a depot which I commanded a check of the horses and mules in the depot showed one hundred and two *ahead*. A check in the division showed some organizations twenty horses and mules *ahead*. A check in the remainder of the organizations showed some one hundred and twenty horses and mules *behind*. Surveys had cleared some officers and others who were behind were waiting for a stray horse or mule to wander into their camp and thus make up their shortage. Some organizations one day would go ahead and the next day behind. Hoof numbers were generally illegible or so confused as to be of no value. Many of the horses' feet looked like Chinese puzzles. The whole horse and mule question was jumbled up and organization commanders had neither the time nor the proper system to keep it straight.

Later I checked, or had check made, in twenty-nine other camps and found the same condition existing to a greater or less degree. I finally formed the conclusion that the descriptive cards and hoof brands were worse than useless. An organization could by hook or crook come into possession of a horse or mule, make out a descriptive card for him, hoof-brand him, and then have, what was considered a positive proof of lawful possession. No positive record of issue was on file elsewhere as could be done by number (A012) under the Preston System.

BRANDING ANIMAL THE ONLY SOLUTION

Many will at once say that the work on the descriptive cards and with the hoof brands was not properly done. I admit this, yet

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I still claim that even when more than average attention was devoted to both the descriptive cards and the hoof brands they were not satisfactory. This was discovered at the Cavalry School, where we unquestionably have officers interested in horses and above the average in horse intelligence. Even at this school, with only 500 or 600 horses, it was not possible to keep them straightened out without the brand. Again, if you look into the question of handling horses and mules in large lots you will find that the civilian who has devoted his life to the study of them, and whose personnel rarely shifts, has had to resort to one method of identification, and that is the *brand*. Branding is recognized as efficient, and as identification on the ranch as well as in the high-class breeding establishments. The brand can be applied neatly and plainly without disfiguring the horse, as is demonstrated by civilian breeders of Percheron and thoroughbred horses, and as has also been demonstrated at the Cavalry School and by the Board in its experiments.

CONCLUSIONS

I submit herewith the conclusions arrived at by the Branding Board after over a year of study and experimentation and upon which the recommendation of adopting the Preston Branding System was made. I voice the desires of the Board when I ask the service in general to give this new system of identification of horses and mules a reasonable amount of study and a fair trial. Do not condemn it offhand as a crazy innovation.

1. The Board, after thorough study of the present system of identification of public animals, has reached the following conclusions:

- (A) That the present system of identification is not efficient, either in time of peace or in time of war.
- (B) That the branding of animals on the hoof is undesirable and injurious, particularly in time of war when numerous shifts of animals between organizations must be made.
- (C) That the present descriptive cards of animals give little aid in identification, and are not accurate and reliable data, and entail an extensive amount of paper work.
- (D) That a great saving can eventually be made to the Government by eliminating all hoof-branding irons and descriptive cards, that are now furnished to all organizations handling animals. If the Preston Brand is carefully and properly applied at the time of purchase, it will need only occasional freshening up or renewal.

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- (E) That the present system of identification of animals is so unreliable as to afford little or no assistance to the Remount Service or the Veterinary Corps in the collection of valuable data in regard to animals of all classes.

2. The Board, based upon the study of branding in all its phases, and upon the different experiments conducted by the Board for over a year, believes that the Preston System of branding, with the brand properly and carefully applied, will accomplish the following purposes:

- (A) Serve as a positive identification of an animal throughout its entire military service.
- (B) Give far more satisfaction to the service after being put into operation than the present system of hoof brands and descriptive cards.
- (C) Will allow the Remount Service to do away with the present purchasing officer's number, which is now placed on the croup, and the classification number and in reality only add one more small brand which is applied to the animal.
- (D) Reduce the expense to the Government of furnishing branding irons and descriptive cards to all organizations which are not assigned animals, and save much time in the application of hoof brands and in the preparation of descriptive cards.
- (E) Enable the Remount Service, Quartermaster Corps, to collect data of inestimable value on its breeding work, various breeds of animals, or hardiness and stamina of animals obtained in different parts of the United States, etc.; enable the Veterinary Corps to keep up its statistical data to following an animal through its entire service, and to obtain more accurate and complete data as to the effect of various diseases, injuries, etc.

TRACTIVE PULL OF ARTILLERY AND ESCORT WAGON TEAMS

BY WILLIAM H. SHEPHERD, 9TH, F.A.

SCIENTIFIC tests to determine the maximum pulling power of artillery horses and escort wagon mules were held at Fort Des Moines, Iowa, April 18th and 19th. The tests were official, conducted by the Horse Association of America and the Iowa Experiment Station, and were made at the request of Major General Wm. J. Snow, Chief of Field Artillery, United States Army, through the courtesy of Mr. Wayne Dinsmore, Secretary of the Horse Association of America, and Professors Caine and Collins of the Iowa Experiment Station.

The apparatus used was the tractive dynamometer invented by Professor E. V. Collins, of the Agricultural Engineering Section, Iowa Experiment Station, the same as was used in last year's test at the Iowa State Fair and at the National Horse Show in New York City.

A word might be said here in explanation of the dynamometer used in these tests. Briefly it consists of an old Nash chassis to which has been added oil-controlled brakes, a checking valve, and a series of reinforced-concrete weights. The latter are to some limits changeable, thus varying the pull required to lift them.

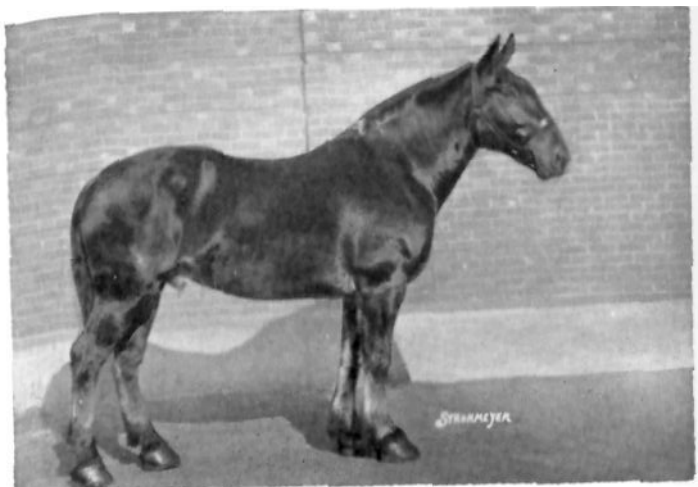
Raising the weights by means of the pull on the double-tree opens the oil valve and releases the brakes on the wheels. As soon as the pull exerted falls below that required to keep the weights suspended, the latter fall back to their normal position, thus closing the valve and setting the wheel brakes.

It will thus be seen that the dynamometer does not automatically register the pull exerted, but must be set for a test of a certain pull each time. This fact is regrettable in that it requires several pulls to register the maximum efficiency of the team under test.

A six-horse team from Battery B, 9th Field Artillery Battalion, developed a 4100-pound tractive pull which is equivalent to starting 26.5 tons (53,000 pounds) on granite block pavement, but with this important difference; in starting such a load on wagons on granite blocks the full expenditure of energy is required for less than a second, for as soon as the load starts the pull required drops to about one-sixth of that required to start the load, whereas, in the dynamometer tests the pull continues constant throughout the entire period, which may be for five seconds or which may continue up to 69 seconds as in some of the tests made.

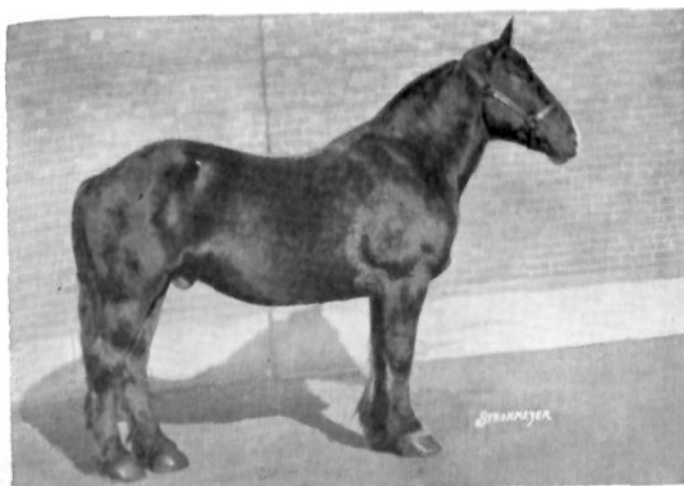


THE SIX-HORSE ARTILLERY TEAM



BUDDY

Height, 16¼ hands; weight, 1465 pounds. He has a strong back and loin and deep chest, also a fairly roomy middle.



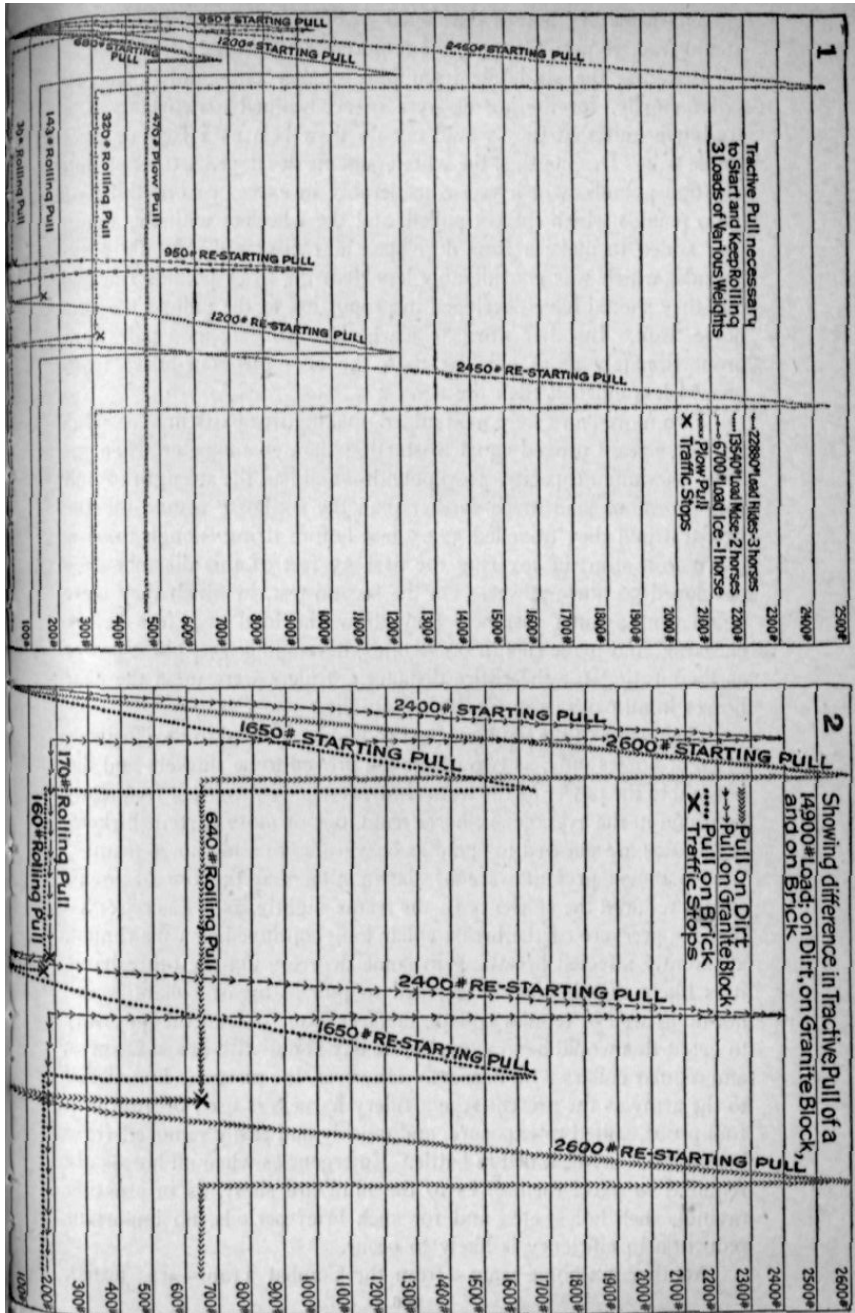
Courtesy of the Horse Association of America.

BARRY

Height, 16¼ hands; weight, 1445 pounds. Note his strong back and loin, deep chest and capacious middle.

FIRST PRIZE LIGHT WEIGHT PAIR (UNDER 3000 POUNDS). NATIONAL HORSE SHOW PULLING CONTEST, 1923

TRACTIVE PULL OF ARTILLERY AND ESCORT WAGON TEAMS



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The same six horses developed 41.86 horse power in a 3600-pound tractive pull, covering the required test distance of 55 feet.

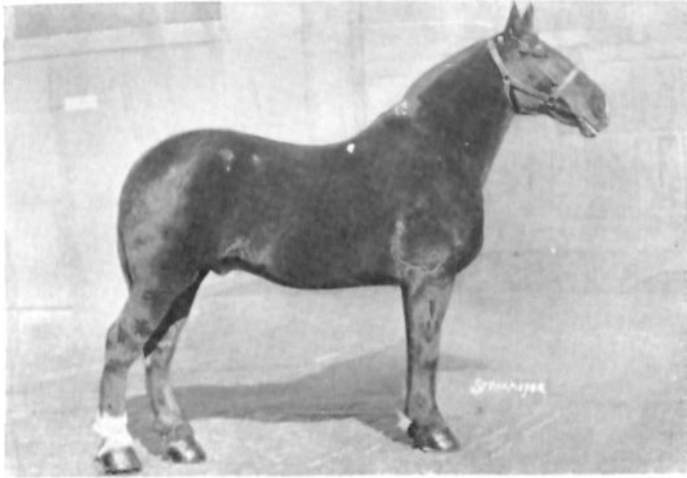
Breaking the six-horse team into smaller units did not work satisfactorily, for the horses were so accustomed to working as a six-horse unit that they would not do their best as a four or as a single pair. Despite this, the wheelers alone developed a tractive pull of 1600 pounds, which was considerably in excess of one-third of 4100 pounds which the six pulled, and the wheelers with the swing pair added to make a four developed a tractive pull of only 2100 pounds, which was considerably less than the 2733 pounds tractive pull they should have developed in proportion to the pull of the six-horse team. In other words, the wheelers working as a pair were proportionately more efficient than the six; the four-horse team proved less efficient than the six.

Two more pairs were next added, making five pairs in all. This ten-horse team proved equal to starting the dynamometer when set at its maximum capacity, 4100 pounds—and had the strength to pull this enormous load much farther than the six-horse team. On the first test pull they travelled 522.5 feet before tiring enough to slow down to a stop; in covering the first 55 feet of this distance they developed 50 horse-power. On the second test, in which they were again sent against distance, they drew the load 402 feet before checking, and made this in 69 seconds, developing 43.4 horse-power as their rating for the entire distance. Riders were upon the near horses in all pairs as in service conditions.

The results of the ten-horse test should be credited to the efficiency of eight horses only, as two of the ten proved to be shirkers and did not add to the power of the team; however, since there will frequently be found in the average six-horse team, one or more partial shirkers, the figures are allowed to stand as chargeable to a ten-horse team.

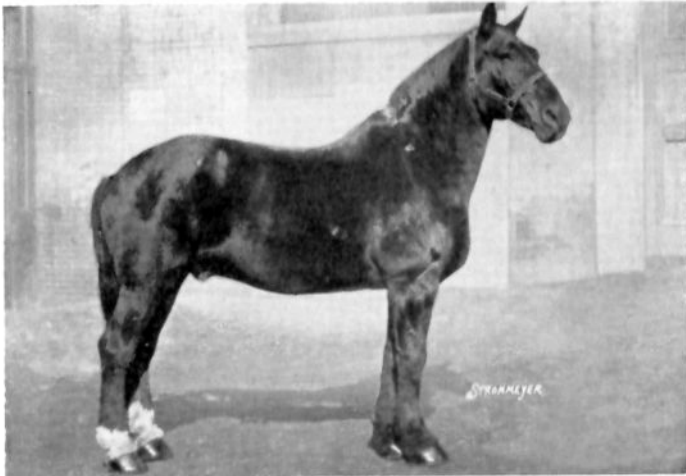
Horsemen present were of the opinion that the use of breast collars reduced the efficiency of the teams slightly, as it was observed that the pressure of the breast collar long continued at a maximum, apparently affected breathing in some degree. On the other hand, it is likely that horses accustomed to pull in breast collars would not do as well in regular collars, or *vice versa*. About the only way to get at this would be to work horses day about with breast harness, and regular collars with harness. However, the matter is immaterial to the army as the present type artillery harness is used because it is fool-proof, suited to exposure, and quickly and easily removed from horses that may be killed in battle. Emergencies when all horses are required to exert themselves to the limit are short, as in crossing ravines, shell holes, etc., and for such brief periods, no important reduction in efficiency is likely to occur.

Another six-horse team—from the Combat Train—was tested,



MONKEY

Height, 17 $\frac{1}{4}$ hands; weight, 1625 pounds. Deep chested, roomy middle, but not so strong in the back as his mate; heavily muscled, but a trifle sickle hocked.



Courtesy of the Horse Association of America.

TOM

Height, 17 $\frac{1}{4}$ hands; weight, 1635 pounds. He is very strong in the back; heavily muscled over the loins and hind quarters; deep chested; capacious middle; good underpinning.

FIRST PRIZE MIDDLE WEIGHT PAIR (3000 TO 3500 POUNDS) AT THE NATIONAL HORSE SHOW PULLING CONTEST, 1923. MAXIMUM PULL 2200 POUNDS



THE ESCORT WAGON TEAM

TRACTIVE PULL OF ARTILLERY AND ESCORT WAGON TEAMS

but without results of any consequence, as the horses became nervous due to an accident to the apparatus and could not be settled down in the time available.

Mule teams from the escort wagons, Service Battery, were also tested. The first four tested made an excellent performance as they developed 2600 pounds' tractive pull over a distance of 27.5 feet, equivalent to starting a load of 33,600 pounds on granite block pavement, but moved so slow while pulling that they developed only 10.95 horse-power for the entire four animals or 2.74 horse-power per mule; whereas, the six horses in the Battery B team developed a maximum of 41.86 horse-power or 6.97 horse-power per animal. Horse-power rating, however, is not of chief importance as it depends upon speed as well as load. The factor of primary consequence is the total load a team can pull in an emergency, regardless of whether they pull slowly or not; and measured by this standard the mules made an excellent record.

Another four-mule team tested did not do so well, but their defection may have been due in part to an accident which made it necessary for the driver to walk beside them.

The old idea that mules are stronger for their size than horses is still unsettled, so far as these tests are concerned. These four mules pulled more for their weight than the six army horses, but less proportionately, than the pair of horses owned by Lew Cole, of Ames, Iowa, which hold the world's record for pull exerted by a single pair. (Their well-established record is 2500 pounds over 27.5 feet.) The wheel mules alone, weighing 2180 pounds for the pair, pulled much less, in proportion to weight, than the pair of broncos weighing 2305 pounds, tested at the last Iowa State Fair, and many more tests will have to be made before the horse *versus* mule strength question can be settled.

Army officials have been interested particularly in possible reduction in efficiency resulting from stringing horses out in pairs. No final conclusion can be drawn on this. It is of course more difficult to start six or ten horses together than to start two together; on the other hand, temporary shirking or slow starting by one or two animals affects large units less, as the shirking of one horse means less when divided among nine others in five pairs than it does if it must be taken up by only three others, as in two pairs.

The outstanding feature developed by these pulling tests is that horses and mules possess tremendous reserve power which is available when needed, and the loss of even two horses out of a six-horse battery team can be made good temporarily by increased exertion on the part of those remaining. This reserve power is twice as great as engineers had deemed existed, and accounts for the reliance experienced soldiers put in animal transport for active army service.

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Battery "B" Team—Six Horses Hitched in Three Pairs

Name	Sex	Age	Weight	Heart girth	Loin girth	Front cannon	Hind cannon	Maximum pull exerted	Length of pull	Maximum horse-power developed
No. 83	Gelding	Aged	1400 pounds	78.0 inches	81.0 inches	9.0 inches	10 ³ / ₈ inches	} 4000 pounds 4100 pounds	} 55 feet 29 feet	} 41.86
No. 29	Gelding	Aged	1440 pounds	76 ¹ / ₂ inches	82.0 inches	9 ¹ / ₂ inches	11.0 inches			
No. 69	Gelding	Aged	1360 pounds	76.0 inches	82.0 inches	9 ¹ / ₂ inches	11.0 inches			
No. 70	Gelding	Aged	1340 pounds	74.0 inches	81.0 inches	9.0 inches	10 ¹ / ₂ inches			
No. 85	Gelding	Aged	1180 pounds	75.0 inches	75.0 inches	8 ⁵ / ₈ inches	10 ¹ / ₄ inches			
No. 31	Gelding	Aged	1320 pounds	75.0 inches	82.0 inches	8 ¹ / ₂ inches	10 ¹ / ₄ inches			

Special Battery "B" Team—Ten Horses Hitched in Five Pairs

No. 83	Gelding	Aged	1400 pounds	78.0 inches	81.0 inches	9.0 inches	10 ³ / ₈ inches	} 4000 pounds 4100 pounds	} 522.5 feet 402.0 feet	} 50,
No. 29	Gelding	Aged	1440 pounds	76 ¹ / ₂ inches	82.0 inches	9 ¹ / ₂ inches	11.0 inches			
No. 69	Gelding	Aged	1360 pounds	76.0 inches	82.0 inches	9 ¹ / ₂ inches	11.0 inches			
No. 70	Gelding	Aged	1340 pounds	74.0 inches	81.0 inches	9.0 inches	10 ¹ / ₂ inches			
No. 45	Gelding	Aged	1175 pounds	72 ¹ / ₂ inches	78.0 inches	8 ¹ / ₂ inches	9 ¹ / ₂ inches			
No. 50	Gelding	Aged	1225 pounds	75.0 inches	78.0 inches	8 ¹ / ₂ inches	10 ¹ / ₄ inches			
No. 39	Gelding	Aged	1250 pounds	74.0 inches	79.0 inches	8 ¹ / ₂ inches	9 ¹ / ₂ inches			
No. 40	Gelding	Aged	1275 pounds	78 ¹ / ₂ inches	84.0 inches	8 ¹ / ₂ inches	9 ⁵ / ₈ inches			
No. 85	Gelding	Aged	1180 pounds	75.0 inches	75.0 inches	8 ⁵ / ₈ inches	10 ¹ / ₄ inches			
No. 31	Gelding	Aged	1320 pounds	75.0 inches	82.0 inches	8 ¹ / ₂ inches	10 ¹ / ₄ inches			

Service Section Team—Four Mules Hitched in Two Pairs

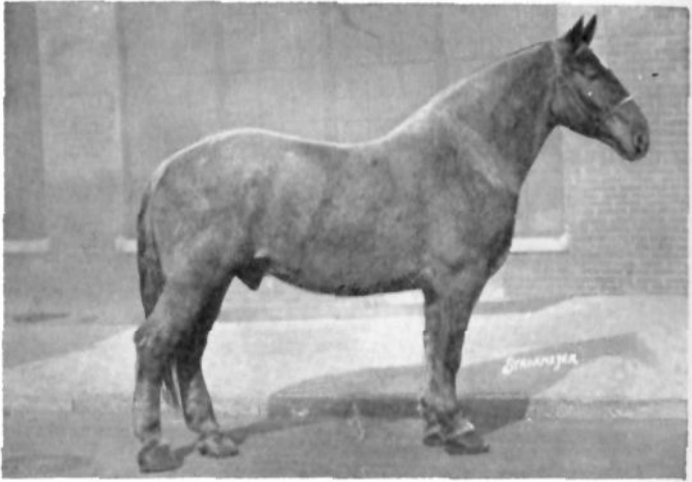
No. 28	Mare	Aged	1080 pounds	72.0 inches	79 ¹ / ₂ inches	8.0 inches	9 ¹ / ₂ inches	} 2600 pounds	} 27.5 feet	} 10.95
No. 27	Mare	Aged	1100 pounds	72.0 inches	78.0 inches	8.0 inches	9 ¹ / ₂ inches			
No. 30	Mare	Aged	1040 pounds	71.0 inches	74.0 inches	8.0 inches	9 ¹ / ₄ inches			
No. 24	Gelding	Aged	1120 pounds	74.0 inches	78 ¹ / ₂ inches	8 ¹ / ₂ inches	9.0 inches			



Courtesy of the Horse Associations of America.

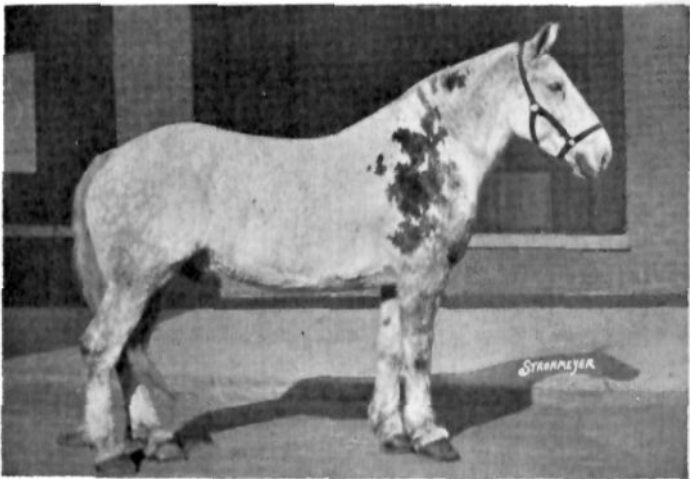
**THE BRONCHO TEAM—DAN AND JIM—TRYING A 2100 POUND TRACTIVE PULL WHICH
THEY COULD NOT MOVE**

The close-up view shows not only the terrific strain which comes on hocks, but also the excellent training and sporty gameness of this pair.



PETE

Height, 17¼ hands; weight, 1775 pounds. He is strong over back and loin; very deep chested, with wide sprung ribs, capacious middle, admirable slope of shoulder, heavy muscling throughout, well set legs and good underpinning.



Courtesy of the Horse Association of America.

BOB

Height, 17 hands; weight, 1800 pounds. Note his very strong back and loin, long well muscled hind quarters; deep chest, wide sprung ribs, capacious middle and very good underpinning.

FIRST PRIZE HEAVY WEIGHT PAIR (OVER 3500 POUNDS), NATIONAL HORSE SHOW PULLING CONTEST, 1923, MAXIMUM PULL 2450 POUNDS

TRACTIVE PULL OF ARTILLERY AND ESCORT WAGON TEAMS

While these tests prove the enormous reserve of a six-horse or four-mule army team, it is believed that the principal lesson to be learned is the value in building up in each artillery team a six-horse unit capable of great pulling power. This may be done as part of the daily work by having brakes set on all carriages for short periods and training the animals to work under a strong pull for several moments at a time. Terrain which is free of heavy gravel or rock should be selected, so as not to cause unnecessary wear on the tires.

Too much credit can not be given Mr. Dinsmore and Professors Caine and Collins for their courtesy in allowing the army the opportunity of making these tests, and the 9th Field Artillery particularly desires to extend its grateful acknowledgment of the untiring interest of these gentlemen in making the experiments possible.

Officials of the tests were Wayne Dinsmore, Secretary of the Horse Association of America, Union Stock Yards, Chicago; Professor A. B. Caine, Animal Husbandry Department, Ames, Iowa; Professor E. V. Collins, Agricultural Engineering Section, Ames, Iowa; Major Wm. H. Shepherd, Commanding Officer, 9th Field Artillery Battalion, and Captain Zim E. Lawhon, 9th Field Artillery Battalion.



SPECIAL PROBLEMS OF NATIONAL GUARD FIELD ARTILLERY

BY MAJOR FRANK THORP, JR., F. A.

A CONFERENCE AT THE SCHOOL OF INSTRUCTION FOR STATE ADJUTANTS-GENERAL HELD IN THE
MILITIA BUREAU AT WASHINGTON, D.C., MAY 5TH-10TH

I FIRST wish to briefly state some of the reasons for the maintenance of field artillery organizations in the National Guard and then tell of the facilities that are necessary for its proper training and give some measures that can be used to keep down the cost of maintaining this branch of the service.

The National Guard, now considered as first-line troops, should be organized and trained to take the field in the least possible time when a national emergency develops. In modern warfare infantry without the assistance of well-trained field artillery cannot, without prohibitive losses, successfully attack an organized enemy. Trained field artillery cannot be made overnight by simply issuing an order converting troops of some other branch into field artillery. This was done during the last war but it took a year or more to train these converted organizations. Hence, from a national point of view, it is absolutely necessary to have the field artillery of the National Guard organized, trained and ready to take the field should the necessity arise. There has been allotted to the National Guard, to be raised in the first increment of two hundred and fifty thousand men, the divisional field artillery of the eighteen infantry and four cavalry divisions, and eighteen 155-mm. regiments. All of this artillery has not yet been raised, but it is hoped that this delay will not continue much longer because it takes time to properly train this arm.

I will divide the facilities required for the proper training of the national guard field artillery into two classes—armory facilities and field-training facilities—and take them up in that order.

ARMORY FACILITIES

The men in the lettered batteries of a field artillery regiment are divided into three groups: the cannoneers, the drivers and the special detail. These groups must be trained separately before they can be combined to function as a battery—therefore, facilities must be provided for the training of each group. A well-lighted room large enough to contain the guns is necessary for the training of the cannoneers. This room should be at least sixty feet long and thirty feet wide, although a larger room is preferable. There should be

SPECIAL PROBLEMS OF NATIONAL GUARD FIELD ARTILLERY

some method of heating, because drills are usually held at night, once a week throughout the year, and cannoneers cannot be successfully trained in a dark cold place where the graduations of the sights cannot be seen and fingers become cold and numb.

Depending upon whether the batteries are horsed or motorized, the following should be provided for training the drivers: Horsed batteries should have adequate stables and a place where the men can be trained in riding and driving. Either a well-lighted field or an indoor riding-hall is necessary. Motorized batteries should have a well-lighted garage where instruction in the care and maintenance of motor vehicles can be given. A place where the driving of the vehicles can be taught is not so essential, as a side street near the armory can often be used for this purpose.

The training of the special details involves instruction and practice with the fire control and communications equipment. No special armory facilities are required for this work.

Other types of field artillery units such as headquarters batteries and detachments, combat and ammunition trains and service batteries consist of certain combinations of drivers, special details and specialists. These units having no guns do not require as much in the way of armory facilities as the lettered batteries.

It is believed that the best way to keep down the cost of the necessary armory facilities for field artillery is to group several batteries at the same place. Thus, by drilling the batteries on different nights, one good plant can be used to train several units. For horsed batteries, this makes a large saving on animals and the cost of their forage and care. It is also better from a training point of view, for more horses can be allowed when several units are grouped. Where states have facilities to store the matériel of certain batteries in state arsenals, it saves on the size of the armory necessary to properly store the matériel of all the batteries. This method has, however, the disadvantage of divided responsibility for the use of the matériel that is kept at the armory and used by the different batteries in turn.

I might add at this point that the reason why four guns are issued to each national guard battery is that it is considered the chances of receiving guns in the initial stages of a national emergency are very slight, and even if they could be issued in time to be taken into action, they would not be available for the training of the personnel during the period of mobilization.

FIELD TRAINING

The following facilities should be available for the field training of field artillery: Suitable terrain for instruction in the reconnaissance and occupation of positions, the manœuvring of field artillery

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and the firing of service ammunition; sufficient matériel and equipment, including horses or tractors and motors for all organizations in camp.

Consideration of the following points when planning the dates and places for the summer camps of the different field artillery organizations should result generally in better and more economical training.

Location of the Camp—Suitability of the Terrain for Field Artillery Training, Facilities for Field Artillery Training, Distance from Home Station to Camp.—The fact that troops must be sent out of their home state or even into other corps areas should not interfere with their going to a place where the best training at the least expense can be secured. It is also believed that if a policy can be established of sending organizations to the same place each year, a large saving in the cost of the necessary facilities can be effected.

Matériel and Equipment.—Sufficient matériel and equipment should be available to give the maximum amount of training to all the organizations in camp. By using matériel that is kept in storage at the camp, matériel of regular army organizations at the camp, and by pooling national guard matériel for use by successive organizations, the cost of shipping the matériel of the units to and from the camps should be kept as low as possible. Many of the disadvantages of issuing matériel at camp can be overcome by having the organizations bring their own tools and accessories and by issuing to them the matériel stripped, except as to sights. This method has been successfully used at Tobyhanna, Pa., for two seasons. It saves the time and paper work required to receive and return a large number of tools and accessories. The stripped carriages can be issued and returned with little trouble. The tools and accessories can be taken in a box car with other organization property. Each organization should bring to camp its own communications and fire control equipment. Horsed organizations should bring sufficient harness and horse equipment for their own use. Harness can be brought in harness sacks and much time will be saved in issuing and returning same. Every effort should be made to avoid the cost of hiring animals for horsed organizations which, at best, are generally unsatisfactory for training purposes. In a measure, this can be accomplished by pooling the horses issued to the national guard of one or more states and having them used by the different organizations in turn. Animals of regular army organizations can, in some cases, be used to supplement the shortage. Horses issued to cavalry units can be used by field artillery units for individual mounts and a large number of national guard field artillery horses are suitable for cavalry use. Sufficient motor equipment for motorized field artillery organizations

SPECIAL PROBLEMS OF NATIONAL GUARD FIELD ARTILLERY

should be provided in a way that will reduce the expense as much as possible.

Dates of Camps.—It is believed that the main consideration pertains to matter concerning sufficient matériel, equipment and training facilities for the organizations. No greater number of organizations should be sent to camp at the same time than can be properly cared for and trained. While it is realized that the sending to camps of regiments and brigades of field artillery at the same time, gives valuable training for the higher commanders, this should not be done to the detriment of supplying sufficient animals and equipment for the organizations or at excessive expense to the Government.

The number of horses that should be furnished for the field training of a regiment depends upon the strength of the regiment at camp. Regular army peace strength for a 75-mm. regiment is 49 officers and 1055 enlisted men, without counting the attached medical department. For this number the tables call for 640 draft horses, 328 riding horses, 188 draft mules and 7 riding mules, or a total of 1163 animals. But national guard regiments, although they do very well with regard to officers, do not take this number of enlisted men to camp. Last year the regiments ran from 400 to 800 enlisted men. By eliminating the mules and using motor transportation for supply, supplemented by a few teams of draft horses, it can be roughly assumed that they should have as many horses as they have enlisted men. Hired horses, leaving out of consideration the great expense, are not trained for military use and there is not enough time to train them. Hence, the practice of pooling all the horses issued to one or more states should be encouraged. To do this successfully a number of regiments should go to the same camp and the dates of the different field training periods should be arranged so that they will follow each other successively. Organization commanders do not like to have their horses used by other organizations, but they should be made to realize that only in this way can enough horses be furnished for their own training without prohibitive cost.

Passing the Buck

THE General called the Colonel in,
And he was good and sore;
There was lightning in his glances,
There was thunder in his roar.
"This morning at inspection, Sir,
Your kitchens were not clean,
The barracks in disorder,
And likewise, the latrines."
* * *

The Colonel was quite ruffled,
There was nothing he could say,
He went back to his quarters,
And he sent for Major Gray.
The Major came in quietly
And stood before his chief,
And the way the Colonel trimmed him,
Is passing all belief.
* * *

The Major, he was furious,
Yea, he was mad clean through,
He hustled to his swivel chair
And sent for Captain Blue.
The Captain hurried over,
He made a record sprint,
And what the Major said to him,
Can not appear in print.
* * *

The Captain, he was withered
By this verbal gas attack,
He reared upon his hind legs,
And he sent for "Looie" Black.
The Lieutenant hurried over,
Each step he gathered speed,
And the way the Skipper read the Law
The stoniest heart would bleed.

The Lieutenant's pride was wounded,
He raved like one insane,
"What is that 'Top Kick' doing?
Send in First Sergeant Lane!"
The Sergeant came in meekly,
His soul was filled with fear,
And he got the greatest reprimand,
In all his twenty years.
* * *

Now Sergeant Lane was hard boiled,
He was seasoned, old and tough,
He sent his clerk out looking,
For Duty Sergeant Rough.
The Sergeant came in quickly,
No thought of words or strife,
And he got the hottest dressing down
In all his sweet young life.
* * *

When Sergeant Rough departed,
His face was red with rage,
He hastened to the quarters
And roared for Corporal Page.
The Corporal stood and shivered,
As the Sergeant cursed by note,
And he was almost tempted
Just to catch him by the throat.
* * *

The Corporal rounded up his squad,
He gave them brooms and mops,
He called them "Tea Hound Soldiers,"
"Buck Privates," "Poles and Wops."
The Doughboys then got busy,
And soon the place was clean,
The barracks and the kitchen,
And likewise, the latrine.

—JOHN S. MADDEN, Capt. Inf., O.R.C., in
The Infantry School News.

OUR FILIPINO REGIMENT—THE TWENTY-FOURTH FIELD ARTILLERY (PHILIPPINE SCOUTS)

BY RALPH HIRSCH, CAPT., 24TH F.A.(P.S.)

BROUGHT into existence during a time of great stress when all eyes were turned toward Europe, planted in tropical soil far from the parent plant, the Philippine Regiment of the Field Artillery has quietly flourished and has grown into a stalwart youngster. The period of reorganization after the World War which disrupted so



A SCOUT SOLDIER'S HOUSE AND FAMILY



STAFF AND FIRST SERGEANTS QUARTERS

These are built by the troops. The walls are sawali (woven bamboo) and the roof is nipa palm leaves.



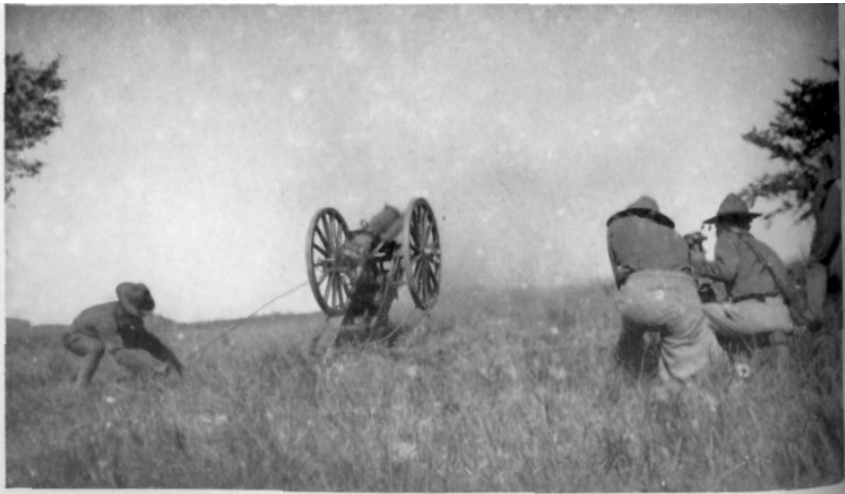
A WET PASSAGE

On the road to the town of Dinalupihan south of the post.



A FILIPINO AQUAMOBILE

The carabao is swimming with his nose out and the driver is standing on the shafts.



A MOUNTAIN GUN IN ACTION

OUR FILIPINO REGIMENT—24TH FIELD ARTILLERY

many regiments touched the Twenty-fourth Regiment of Field Artillery but lightly, bringing only a change of name. Now but five years old, it has passed satisfactorily the stages of experimentation and probation; as the only Filipino regiment of field artillery and as one of the two pack regiments it stands, today, one of the dependable factors of the Army.

The progress of this Scout regiment has been unnoted by the bulk of the field artillery officers and, in some instances, the first intimation of the existence of such a unit has been received with orders of assignment. Unless acquainted with officers who have served with the Islands' regiment within the past few years, one is apt to have a weird and altogether erroneous idea of this interesting regiment.

The regiment was organized in the early part of 1918 at Camp Stotsenburg, in Pampanga Province, P. I. The 11th and 12th Battalions of Philippine Scouts formed the new regiment which received the somewhat unwieldy designation of "The Provisional Regiment of Field Artillery (Mountain), Philippine Scouts." The animals and matériel of the Second Field Artillery were transferred to the new organization which began its training under the Scout officers who were without field artillery experience. Undismayed by the task confronting them, both officers and men threw themselves into the new work with a spirit that was in part expressed in the first general orders of the regiment—"The attention of all officers and men is invited to the necessity for extra effort. The opportunity to demonstrate our efficiency at new work is an exceptional one and the result of such demonstration will determine to a large extent our future." This extract very aptly describes a predominate characteristic which the regiment has retained.

It is doubtful if any other regiment of field artillery has started its career with as many veterans. With but few exceptions the Scouts of the 11th and 12th Battalions were veterans in the purest sense of the word. Privates of less than two enlistments were regarded as recruits by the noncommissioned officers, all of whom had seen fifteen or more years of service. Practically all had fought against the Moros and there were many whose original entry in the service of the United States was in the Native Scouts. There also were many who had fought against the United States as revolutionists and there were some who had been soldiers of Spain. Standing today without regimental traditions, the Twenty-fourth possesses an anecdotal background of gallant service.

The Filipino soldier who a few years ago was considered to be useful only as a light infantryman or scout has demonstrated his worth in other branches of the Service and today the filipinization of the garrisons of the Philippine Islands has been consummated. His handicaps of speech and small stature are overbalanced by his many admirable qualities. He is earnest and possesses a great

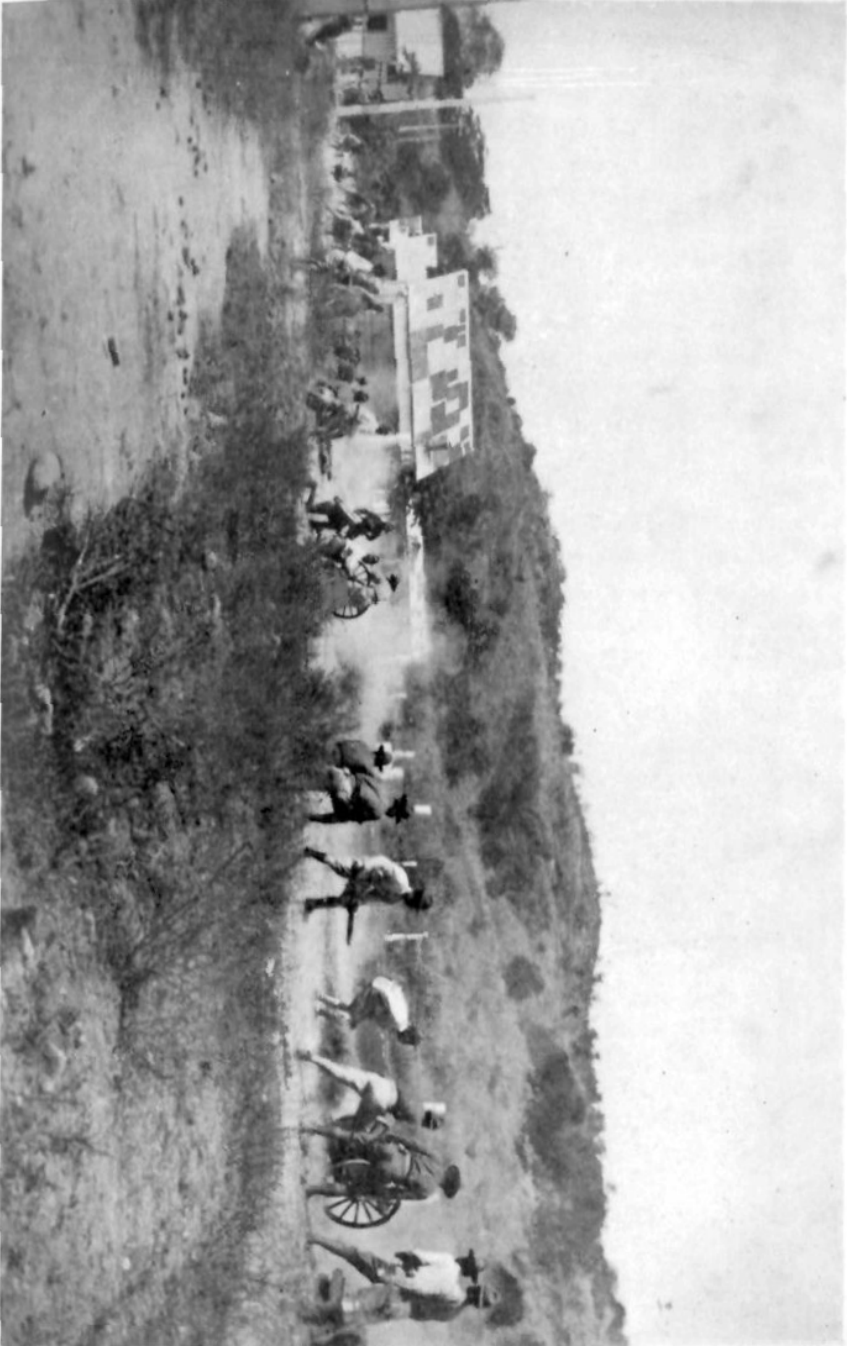
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eagerness to acquire knowledge. His application and ability to reproduce accurately that which he has learned are disconcerting to the careless instructor. An inborn courtesy and dignity are his, and although placed within easy reach of intoxicants, he is rarely drunk. Service with a Scout organization is remarkably free from the annoyances of court-martials and battery punishments. The Scout soldier has to a great degree the spirit of competition and love for the good name of his organization; very often the appeal of "beating the other batteries" will bring forth more effort than of personal gain. As a field artilleryman he has shown marked aptitude.

The Twenty-fourth has been one of the few regiments in which it has been possible to keep up the enlisted strength to the authorized number. The enlisted personnel changes but little from time to time because to the Filipino the Army offers much in training, education and position. This condition, together with the advantages of a mild climate throughout the entire year, has been a large factor in the continuous training of the regiment. Since 1921 it has been officered for the most part by officers of the field artillery detailed for two years in addition to a few Scout officers, who have received artillery training.

Thus favored by many things, the training of the regiment has progressed to an advanced stage. The batteries deliver fire quickly and accurately in a manner that would be exceedingly gratifying to organizations armed with more modern matériel. The results of the recent examination for gunners show the three highest places in qualifications are held by batteries with percentages of 97, 95, and 92. The percentage for the entire regiment is 60.3. The figures were based on the strength at the time of the examination and should be viewed with the understanding that many of the candidates can not read or write English at all, and speak it with difficulty.

The special details have become highly trained; the occupation of positions and the establishment of communications are accomplished with such neatness and dispatch as to call forth enthusiastic comment from field artillery officers of long experience, and commendation from the Division and Department Commanders. Pistol firing, so often a side issue in a field artillery regiment, is done with a keen interest as is evidenced by the records. The two highest places in the number of qualified pistol shots were held by batteries with percentages of 80 and 78.8. Horsemanship, for which the Scout soldier has no natural bent, is rapidly being developed. In short, to reduce the statement to a term so predominate in the affairs of the Army today, the Government is receiving a greater return from its money invested in the Twenty-fourth Field Artillery (Philippine Scouts) than from any other field artillery regiment.



A BATTERY IN ACTION NEAR THE STABLES
The country in the direction of fire is the artillery range which extends for many miles north and west.



A PACK TRAIN ON DEAD HORSE PASS ON THE RESERVATION



ANOTHER VIEW ON DEAD HORSE PASS



ON THE ARTILLERY RANGE

The river is the Bamban. The wooded ridge on the horizon is Storm King—a worn down volcano crater rim.



SECOND BATTALION STABLES AND BARRACKS

Mt. Arayat, in the distance, is 15 miles away. The Filipinos have a legend which seems to be a version of the deluge. A close inspection will show the depression left in the mountain peak by the Ark.

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No description, however short, of a Scout regiment is complete without at least a reference to its bamboo complement, the "Scout Barrio." This neat little village of nipa-covered bamboo houses is undoubtedly the greatest reason for the high state of morale prevalent in the Scout regiments. Built on the reservation and supervised by the military authorities, it affords an opportunity to the lowest paid private soldier to marry and raise that large family of brown babies so dear to the heart of every Filipino. Sufficient ground provides garden space for each little home. Here, a few steps from his battery parade, he has his wife and children, camotes and chickens. Thus, in the face of the increased cost of necessities and the reduction of an already pitifully small pay, has discontent been kept from entering the "Scouts."

THE BATTLE OF DETTINGEN

BEING A DESCRIPTION OF THE BATTLE IN A LETTER FROM SAM DAVIES, FOOTBOY TO MAJOR PHILIP HONEYWOOD, TO HIS FRIEND, ABRAHAM DEBART, DRAWER* AT THE WHITE HART INN, COLCHRSTER.

Hanau, 26 June 1743.

FRIEND ABRAHAM,

I hope these few lines will find you very well and Mrs. Ann and my old Mrs. and Mrs. Wallis my young mistress and my young Mr. Joseph and all my old fellow-servants, as I am and have been ever since I came into this country. This is a very pleasant country we are now in. We had a battel with French on Thursday June 16, 1743. One battel last 5 ours, the first they played upon our baggage for about 2 ours with there cannon, and then we play upon there army and they upon us. There balls was from 3 lbs. to 6 lbs. and 12 lbs. each; our rigement was upon the left wing next the river, and they playing upon us all the time. The sarvants of the rigement went into the rear of the rigement with their led horses, I had a led horse, so I was there. We stayed there till the balls came flying all round us. We see first a horse with baggage fall close to us. Then seven horses fall apace, then I began to stare about me, the balls came whistling about my ears. Then I saw the Oysterenns (Austrians) dip their heads and look about them for they doge the balls as a cock does a stick, they are so used to them. Then we sarvants began to get of into a wood for safete, which was about 400 yards from ware we stood. When we got into the wood we placed ourselves against the largest trees, gest as I had placed myself, a 12 pounder came, puts a large bow of the tree upon my head, the ball came within tew yards of me. Then I began to stare, indeed it was about the size of your light puddings, but a great deal hevyer. Then we took fresh quarters, to the baggage of the whole army.

* One who draws liquor for customers.

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We had not been there but a littel while, but the hussers were coming to take it, whilst the tow armies was swurd in hand, then the baggage made all the haste they could away. I having good luck had a horse that would not follow, so I let him goe. Jist as I had let him goe the word came to halt. Then I had my horse to kich again and when I had my horse Cornet Car came to me. Sam, says he, your master is dead, so of all my troubel that was the worst: I takes my horse that I led and tyes him to a cart, then I went to see for my master. So when I came a littel higher in the ffield I saw Laftanent Lee, he told me that my master was taken by the French, I liked that better than the other. When I came a littel higher I saw some of our men lay on the ground, some dead, some wounded some without arms, some without legs. I saw one Fryer of our Rigement that came from the oyspeatal but that morning, he was afoot, the other men asked him to fetch them some water from a well that was by them. He had been several times and as he was going agin a cannon ball came, and went into his back, takes his left breast away and his Hart gumpt on the ground. Then I rides further up and at last I saw Sam and he tells me that his tow Horses was shot at once with a cannon ball. He was upon the old gray horse. At last they finds my Master on the ground naked for tow French men had striped him of his cloes, Watch, and Money and left him for dead under a Tree. Sam was riding by him, as he had done before and did not know him. My master happened to open his eyes, saw Sam going close by him, calls him as well as he could considering he lay 4 ours naked upon the cold grund. Thay got him to a village ware the King was, got him into a Bed, and now he is bravely, thank God for it. He has 6 wounds, 2 cuts on the head, a stab under his right Arm with a bagnet. One Ball went in at his Body, out at his Back, another Ball in at his Back, the other is but a little Cut—our Rigment is above half killed and wounded, for never any Men in the Field behaved as well as they did, so carry all the Honour. The King is meghtely pleased with them. But our English Army drive the Freanch so that some could not get fast eenuf over the Bridge, but took to the Water so were drowned.

And all the newes now is that the Emperor is going to come into our Army, and it is talked for the Truth that the King has sent to the King of ffrance to desire Him to take the field farely, and not to do as he did afore. If that he dont his Majesty says he will goo through France home with his army, and the newes is hear that Prince Charles is coming with his army, and it is after a freanch Generil that as a small army coming to joyn the other. We have got 3000 of the Queen's Hussers a coming to help the Freanch Hussars from our baggage. Those fellows have nothing but what

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they ketch, they ride upon small light cattel that goos light, they plunder and take all they come upon, kill all they can of our Army. Ill tell you there Dres—First there Cap, which is made of hareskin, they ware no Cote but a Wescote, which is very tite upon them. There Briches and there Stockins are all of a peace, the Stockins lace down behind, the Boots are like your haf Boots. They have a skin which they hang on one side, which ever side the wether comes. They carry a small Carbine slung over the Shoulder, so when they fire they put it under there Arm, so look over there Shoulder. They have 2 pr of Pistolles and a Simmeter but when the Queen's hussers come, thay will soon put an End to thoase Gentlemen. The Queens are the finest in all the Wourld. But there is one thing I forgot that I lost all the Baggege and was out of Sight of any Body in the Wood. Up comes a man a horseback to me, he had no Saddell nor no Pistolls so I did not mind him. He asked me for to give him my led Horse in fraench, I told him no. At that he draws out a Sword and runs it at me. Oh, thinks I, what sort of usige is this, So I takes a Pistoll out and shot him through the Shoulder. At that he makes of and I makes to the baggage. Thank God he did not hurt me, it went through my Grete Cote soo no more at present.

Pray send me all the news you can out of the Town. . . . Your most sincere ffriend S Davies.

—From the *Journal of Army Historical Research*.



ATTENDANCE OF NATIONAL GUARD PERSONNEL AT SERVICE SCHOOLS

BY MAJOR FRANK THORP, JR., F. A.

A SUBJECT FOR CONFERENCE IN THE SCHOOL OF INSTRUCTION FOR STATE ADJUTANTS-GENERAL

The following table gives a list of the Service Schools to which national guard personnel were sent during the school year, 1923–1924. It also shows the number of officers and enlisted men sent to each and the length of the courses.

WAR COLLEGE.....	30 Officers (7 weeks course, G-1 Washington, D. C. and G-4) (8 weeks course, G-2)
COMMAND & GENERAL STAFF SCHOOL	18 Officers (3 months course) Fort Leavenworth, Kansas
INFANTRY SCHOOL	123 Officers (3 months course) Fort Benning, Ga.
FIELD ARTILLERY SCHOOL.....	62 Officers (3 months course) Fort Sill, Oklahoma. 19 Enlisted men (4 months course)
MEDICAL FIELD SERVICE SCHOOL.....	21 Officers (6 weeks course) Carlisle, Pa. 5 Enlisted men (6 weeks course)
CAVALRY SCHOOL.....	20 Officers (3 months course) Fort Riley, Kansas.
ENGINEERS SCHOOL	18 Officers (6 weeks course) Fort Humphreys, Va.
COAST ARTILLERY SCHOOL	12 Officers (3 months course) Fort Monroe, Va. 6 Enlisted men (14 weeks course)
AIR SERVICE SCHOOL.....	12 Officers (3 months course) Brooks Field, Texas.
AIR SERVICE SCHOOL.....	5 Enlisted men (4 weeks course) Chanute Field, Ill.
FLIGHT SURGEONS' SCHOOL	3 Officers (6 weeks course) Mitchel Field, N. Y.
SIGNAL SCHOOL	6 Officers (3 months course) Camp Vail, N. J. 10 Enlisted men (4½ months course)
BAKERS & COOKS SCHOOLS	31 Officers (4 months course)

The Tank School at Camp Meade, Maryland, to which two officers were sent, and the Aerial Photographic School at Chanute Field, Illinois, to which one officer was sent, do not appear on the chart because of the small attendance.

I will state briefly the general purpose of these schools.

The general purpose of the War College is to educate officers for duty on the War Department General Staff. Three courses were given: G-1, Personnel; G-2, Intelligence; G-4, Supply. The particular course pursued by an officer will undoubtedly give him information

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that he had not previously had; it will create new viewpoints and should enable him to form a conception of national preparedness in a new light. In addition, it will give him a certain preparation for the particular class of duty in the War Department General Staff for which he might be made available in time of emergency. But the best value to the nation that can result from this instruction is the opportunity, within the sphere of their influence, for those taking the courses to correctly inform the public about matters of fundamental import connected with G-1, G-2 and G-4 questions which must be handled in time of emergency.

It will be noted that the distribution of officers for these courses is widespread. The desire of the Militia Bureau is to have a uniform distribution so that representative individuals from each state will have knowledge about the big questions that are necessary to be solved in connection with preparation for, and prosecution of, war. It is felt that no better means of public education on military matter can be developed than by having representative officers of each state know the military developments from the point of view of personnel, supply and the general requirements to be met by this country, in connection with potential enemies whom the country may sometime be called upon to face in war.

The general purpose of the course given to national guard officers at the Command and General Staff School is to train officers to act as commanders and tactical staff officers of brigades and divisions. Officers selected to take this course should be limited to those whose previous service and military experience is such as to insure that they will be able to complete successfully the course in question. They should be general officers, colonels and lieutenant-colonels of the line, or other field officers who are or may be potential tactical staff officers of organizations not lower than the brigade. Before taking this course, they should have successfully completed Course "D" of the Army Correspondence Course.

The general purpose of the national guard courses at the Service Schools of the different branches, such as Infantry, Field Artillery, Cavalry, Engineer and Coast Artillery, is to train officers to be proficient in all matters pertaining to the duties of company officers of these different branches.

The general purpose of the course at the Medical Field Service School is to train medical officers in their military as distinguished from their professional duties.

The Air Service School at Brooks Field gives a course in primary flying for national guard officers. Officers who successfully complete this course are given the rating of junior airplane pilot. The four weeks' course at Chanute for enlisted men was a course in care and folding of parachutes.

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The Signal School gave a general course in communications including radio, telephone and other means of military communications for both officers and enlisted men.

At the Field Artillery School two courses for enlisted men were given: horseshoers and field artillery communications. Both cavalry and field artillery enlisted men were sent to the horseshoers' course at this school.

There are six different bakers and cooks' schools to which enlisted men are sent. These schools are located in different parts of the country and men are sent to the one nearest to their home. The table shows these six schools grouped as one.

The following table shows how the funds appropriated for attendance of national guard personnel at service schools for the fiscal year, 1924, which coincides with the school year, 1923–1924, were apportioned among the different branches of the service:

WAR COLLEGE	\$30,000
COMMANDANT GENERAL STAFF SCHOOL.....	20,000
INFANTRY	145,000
FIELD ARTILLERY	56,000
CAVALRY	21,500
MEDICAL DEPARTMENT.....	12,500
AIR SERVICE.....	11,500
COAST ARTILLERY.....	11,000
ENGINEER CORPS.....	10,000
QUARTERMASTER CORPS	3,500
SIGNAL CORPS	4,000
	\$325,000

These figures were arrived at in the following manner: A lump sum was set aside for the War College and another for the Command and General Staff School, these sums being based upon the estimated cost of the number of officers that could be sent to these schools; the remainder was then divided among the branches in approximate proportion by their strength. An estimate was then made of the number of officers and enlisted men that each branch could send and this number was divided among the states depending upon the strength of the particular branch and the number previously sent from each state. For the Command and General Staff School two officers were allotted to each corps area. For the War College, an endeavor was made to send officers from as many different states as possible. The money was actually expended in very nearly the amounts apportioned. It might be interesting to note that the cost of an average company officer, including mileage at a three months' course, is just about one thousand dollars.

There have been cases where officers were sent to service schools who were in no way qualified to pursue the course. This usually

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deprives some qualified officers of the opportunity of taking the course and in addition is a waste of federal funds. These cases often arise through national guard authorities approving applications of officers without knowing exactly what qualifications are necessary. In order to keep these cases down to a minimum and thereby prevent inefficient expenditure of federal funds a report is required from the instructor upon each officer who applies to take a course at a service school. A report from an instructor is not required in the case of enlisted men, but it would seem that it should be, because there were several cases this year where enlisted men, who never should have been recommended by company officers, had to be relieved from the school before the completion of the course.

It is hoped that next year each special service school will be able to give a short course for field officers and this proposition is now being considered by the different chiefs of branches and their service schools. The idea at present is to give a field officers' course of approximately six weeks and that one field officer would be sent to this course for every four or five company officers sent to the company officers' course.

It is realized that when a junior lieutenant is a graduate of one of these courses and the other officers in the company, including a captain, are not, the prestige of these latter officers is liable to suffer to some extent. It is therefore hoped that as many captains as possible will try to arrange their business affairs so that they can avail themselves of these courses. The same thing to a certain extent applies to field officers.

The following list shows the number of national guard officers, by states, who have attended service schools from 1920 to date.

Alabama	14	Arizona	5	Arkansas	15
California	13	Colorado	15	Connecticut	17
Delaware	4	Dist. of Col.	4	Florida	9
Georgia	14	Hawaii	2	Idaho	5
Illinois	25	Indiana	21	Iowa	15
Kansas	20	Kentucky	1	Louisiana	4
Maine	18	Maryland	18	Massachusetts	37
Michigan	19	Minnesota	27	Mississippi	5
Missouri	14	Montana	2	Nebraska	7
Nevada	0	New Hampshire	2	New Jersey	19
New Mexico	1	New York	54	North Carolina	19
North Dakota	5	Ohio	36	Oklahoma	22
Oregon	15	Pennsylvania	44	Porto Rico	4
Rhode Island	8	South Carolina	8	South Dakota	6
Tennessee	15	Texas	44	Utah	11
Vermont	10	Virginia	22	Washington	20
West Virginia	7	Wisconsin	37	Wyoming	5
				TOTAL	764

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The amount carried in the appropriation bill for schools for next year is the same as was received this year. This year 325 officers attended courses out of a total of 10,255 in the National Guard. It can easily be seen that unless the appropriations are increased, and even without considering the large turnover among officers, which occurs annually, it would take many years before each officer would have taken a course of some kind.

It is intended to apportion the money for next year's schools in the same manner as was done this year. However, to avoid as much as possible the uncertainty as to whether an officer will be authorized to attend school after he has submitted his application, it is planned to have each state submit the names of a certain number of principals and an equal number of alternates if available. Only the number of principals will be authorized for which it is definitely known funds will be available. Applicants who have been recommended by the instructor and picked as principals by the state adjutant-general can then be notified that they will be authorized to attend and can arrange their business affairs accordingly. In order to assure the filling of the full quota to each school, it is planned to make this allotment of principals good only until one month before the beginning of the course. If a state has not filled its allotment by that time it will be filled by the Militia Bureau from alternates from other states. This will also prevent the situation which occurred in previous years where applications have to be held in the Militia Bureau until a few days before the course starts, because some state may fill its allotment at the last minute. It is then often impossible for officers who are given such short notice to arrange their affairs so that they can attend the course.



AIRPLANE SHOOTS BY MEANS OF VISUAL SIGNALS

BY MAJOR CARLOS BREWER, 8TH F. A.

SINCE observation of artillery fire from airplanes will probably be one of the principal methods of conducting fire in future wars, it is important that every means of communication between plane and battery be developed. Visual communication is certainly the simplest and surest means and it is believed that some standard set of signals should be adopted by the field artillery. Below is a set of wing signals that has been worked out and used very successfully by the field artillery in Hawaii.

By use of these signals it was possible to locate a target and adjust fire on it very promptly without the use of any other means of communication. It was possible to fire considerably faster by using these signals than by using radio. This was due to the fact that the plane worked directly with the battery and could be sure that the signal was received instantly at the battery. This fact made it unnecessary for the plane to fly back to a point where it could see the panel because the battery was sure to be ready to fire twenty seconds after the signal. Thus the plane remained over the target and gave the signal to fire the next salvo about thirty seconds after reporting on the preceding salvo. If for any reason the battery did not fire when the plane gave the command, the plane would repeat the command once, and then if the battery did not fire the observer would fly back and take a look at the panel. This, however, was seldom necessary. Messages from the plane to the battery other than those for which signals are prescribed were sent by means of dropped messages.

The method of locating the target is as follows: The airplane flies over the battery and straight towards the target. The battery commander follows the plane with his battery commander's telescope, keeping the cross-hairs on it. When the plane arrives directly over the target it zooms (ascends sharply) and turns. At this instant the battery commander ceases tracking the plane and notes the angle in mils subtended by the wings of the plane. The telescope is now laid in the direction of the target and the deflection to the aiming point can be measured. The plane indicates the target a second time to make sure the battery commander gets it and to give him the mean of two observations if possible. The range is now computed by dividing the wing span of the airplane (approximately 15 yards in case of DH-4) by the angle in mils as read at the time the plane

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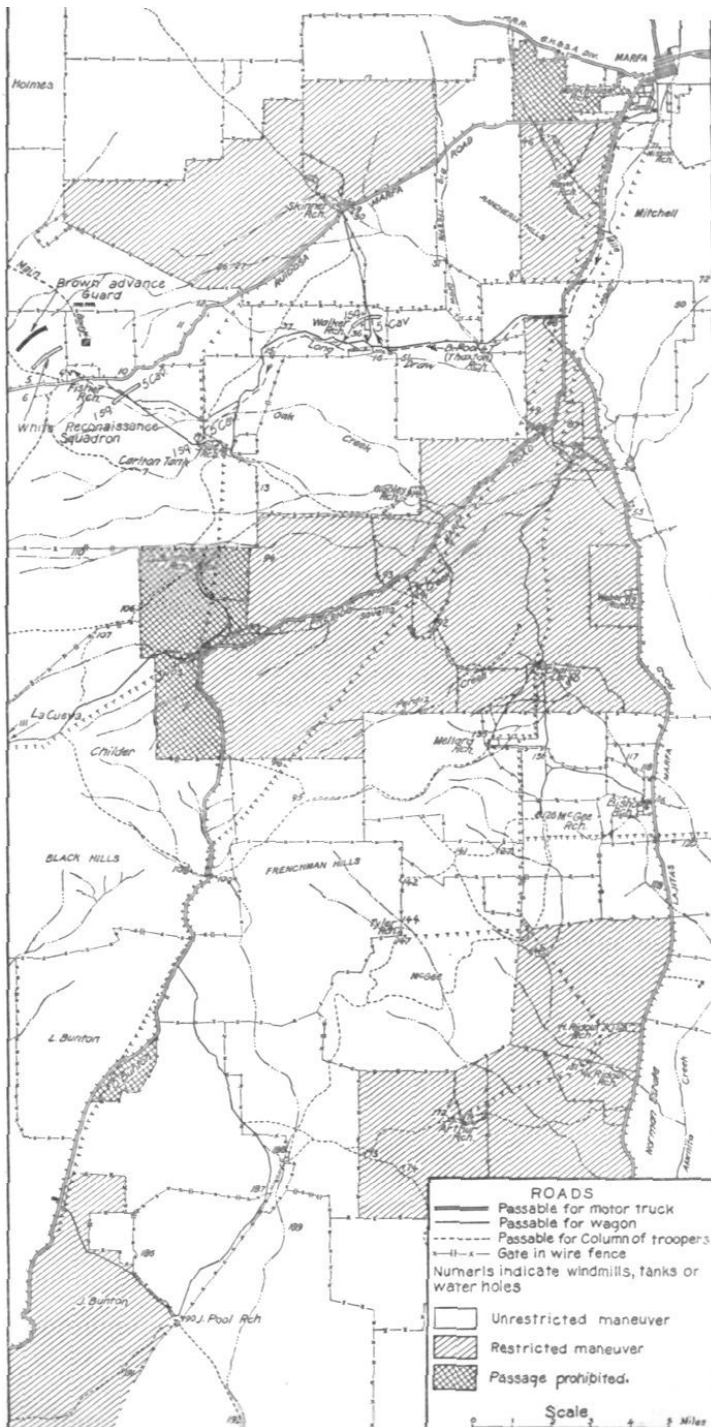
was directly over the target. If a map is available the target is now located on the map by means of the deflection and range and firing data is computed in the usual way. Otherwise the site of the target must be estimated and data prepared without the map. The probable error in this method of locating the target when the map was used was found to be approximately ten mils in deflection and two forks in elevation. Where no map is available the error in elevation will of course be somewhat greater, due to the site being estimated.

Adjustment is obtained by means of the bracket method in both range and deflection, using a four-fork range bracket and a 20-mil deflection bracket. The plane reports the centre of impact of each salvo with reference to the gun-target line by means of the following visual signals:

- Centre of impact: Signal.
- Over, deflection correct: Zoom.
- Over and right: Turn to right and zoom.
- Over and left: Turn to left and zoom.
- Short, deflection correct: Dive.
- Short and right: Turn to right and dive.
- Short and left: Turn to left and dive.
- Right (left), range correct: Turn to right (left).
- Target: One turn in spiral over target.
- Lost: One turn in spiral over panel.
- Not understood or repeat: Flip rudder.
- Understood: Flip elevators.
- Sheaf too wide: Figure-of-eight across line of fire.
- Sheaf too narrow: Figure-of-eight along line of fire.

It is better to have the plane fly straight towards the battery before starting its signal. This in itself is a signal to the battery commander to be on the lookout for the report and also makes it easier to see and understand it. The battery corrections for the next salvo are simple and can be made and the battery ready to fire by the time the plane turns again towards the target.

The desired bracket having been obtained, the battery fires for effect without waiting for further reports from the plane. Volley fire is the signal to the plane that the battery has started fire for effect and further reports are not made unless the fire is ineffective.



THE MARCH TO CONCENTRATION AND TWO-SIDED MANOEUVRES OF THE FIRST CAVALRY DIVISION SEPTEMBER- OCTOBER, 1923

(Continued from Last Issue)

THIRD DAY MANOEUVRES, SEPTEMBER 26TH

Brown—An advance.

White—Delaying action and withdrawal.

MISSIONS

(See Map of the Marfa Manoeuvre Area)

Brown to advance at 8:00 A.M., September 26th, in direction of La Cueva (111) to drive the hostile cavalry in its front to the east of the Presidio road, at the same time sending a strong reconnaissance detachment (one troop) *via* Sauz (8)—Cooley (14)—93—102 to determine if Red transport is moving *via* the 109—95—Mellard Ranch (135) road.

White to hold the line Sauz (8)—Carlton Tank (7) until 9:30 A.M., September 26th, when it will withdraw in the direction of La Cueva (111), taking up defensive positions north of the La Cueva (111)—Childer's Tank (108)—road to stop any advance of hostile cavalry in that direction and to keep open the road junction 109 for the rest of the day.

It should be noted that the O. Bunton property was considered impassable ground, the owner having withheld permission to trespass.

EXECUTION

(See Map of the Delaying Action Which Follows)

Brown moved out at 8:00 A.M. The reconnoitring troop in proceeding on its mission passed to the north of Sauz and did not encounter the White force at this point. The Brown troop as left flank guard of the main column marched about one-half mile from the column. It was often in low ground from which it could see little of the enemy on its east flank.

White.—The Red reënforcing column (imaginary) was assumed to clear 93 at 9:00 A.M. enroute to Marfa. Leaving the 1st Cavalry, reënforced by a battery and a machine-gun troop to hold the line Sauz-Carlton Tank, White moved out at 8:00 A.M. with the rest of the brigade to secure the gates near 110. The 1st Cavalry quickly occupied the Sauz-Carlton Tank line with the battery in position

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near Carlton Tank. Patrols were sent to the front and north flank as security. The battery was in a well-defiladed position with an observation post about 800 yards to the northeast. Since the battery also had a line to the 1st Cavalry command post, its wire from battery to observation post failed to connect by about 300 yards. Shortly after 9:00 A.M., the Brown column was observed marching south along the ridge about three and one-half miles to the west. At 9:10 A.M. the White battery opened fire at 5500 yards, but Brown continued its march without change of formation.

At 9:30 A.M. the line Sauz-Carlton Tank was vacated by White. The White battery moved out first, followed by a company of engineers as escort. The 1st Cavalry (less 1st squadron) followed a mile in rear. The column moved at a walk and trot to clear the first gate east of 110 and was hastily put in position on the ridge south of 110 to cover the withdrawal of the 5th Cavalry, which had its two squadrons on the ridge just north of the two gates near 110. The 5th Cavalry had secured these gates at 8:30 A.M., prepared to delay the enemy advancing from Fisher's Ranch. The 1st Squadron, 1st Cavalry, did not receive orders in time to withdraw from the Sauz-Carlton line. It later withdrew of its own accord toward gate 110, attacking a part of the Brown force. Brown counter-attacked and succeeded in cutting off this White squadron, which was practically out of the fight for the rest of the day.

Just before the White battery reached the eastern gate, the Brown advance guard encountered the White squadron north of gate at 110. Since the 1st Cavalry had not yet cleared the eastern gate, the White squadron at 110 was ordered to hold off the enemy. This permitted Brown to deploy almost the entire brigade against this one squadron. After Brown had completed his dispositions, the umpire ruled that Brown take possession of the gates and that White withdraw at least 2000 yards. In the meantime, the 1st Cavalry (less 1st squadron) and attached battery and machine-gun troop had taken position on the ridge about one mile south of 110 and covered the withdrawal of the two White squadrons (5th Cavalry) at the gates. These squadrons withdrew to a position on the left of the rest of the White brigade.

The Brown brigade now passed through the gates and made its plan of attack to envelop the White left flank. White in the meantime withdrew its battery to a well-defiladed position about one and one-half miles west of 107, the battery observation post being on a prominent hill about 800 yards west of the battery. The two White regiments were ordered to delay the enemy's advance and to withdraw slowly in the direction of 107 and La Cueva (111) respectively.

Brown launched its enveloping attack shortly after noon. In order to meet this envelopment, White moved its left regiment farther to the west, but in doing so came under Brown artillery fire.

THE MARCH TO CONCENTRATION AND TWO-SIDED MANŒUVRES

The two White regiments now became pretty well separated. Had Brown pushed its attack through the centre the White right regiment would have been driven back again against the impassable O. Bunton property. The White commander seeing the situation and considering the delay offered sufficient, now ordered his brigade to occupy a position on high ground south and southwest of 107, on both sides of the 107-111 trail.

During this withdrawal, the White battery while changing position was stopped and ordered to go into a direct fire position against hostile artillery and cavalry. After firing a few shots it drew hostile artillery fire and was under this fire when limbering up. About 2:30 P.M., after White had passed through the gates in the vicinity of 107 and taken a position south thereof, recall was sounded.

COMMENTS

Both commanders were unable to get the desired information from their reconnaissance detachments. In some cases this was due to lack of, or faulty, communications, in others to poorly directed or delayed reconnaissance. To get the desired information, reconnaissance must be planned in advance and have a purpose; also intelligence officers must be on the job all the time to gather the information, make intelligent deductions and give their commanders the necessary reports.

One commander was practically his own reconnaissance and intelligence officer. A vigorous and splendid horseman, an inspiration to his men, he rode the legs off four horses on this day. He was everywhere, led a squadron, directed the fire of a battery, gathered up patrols, etc. In the meantime his staff back at the command post was sometimes without definite information of his whereabouts.

The other commander was also a hardy and rugged soldier but somewhat of a different temperament. He was always inclined to make full use of his staff, but at times found himself taxed with unnecessary details and worries. Though a little slower in making his decisions, he more than made up for this by his calmness and energy.

In both the field officers' and troop (battery) officers' classes of the Cavalry (Field Artillery) School, more time should be devoted to staff duties of brigade, regimental and squadron (battalion) headquarters. The duties of such staff officers and their relations to their commander, should be brought out by suitable exercises and problems. This is important not only for staff officers, but also for commanders. The former must know how to serve their commanders, and the latter how to use their staffs.

When Brown started its march south from Fisher's Ranch, the presence of a strong White force on its left (east) flank, was apparently not discovered. When the Brown column came under fire of

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the White battery near Carlton Tank, no steps were taken to change the formation or to meet the threat on this flank. Probably the long range at which the White battery was firing made this unnecessary. This enabled Brown to reach 110 much earlier than expected, but left it with a strong enemy force on its flank and rear. Had the White force holding the Sauz-Carlton Tank line moved to the southwest and attacked Brown in flank and rear while it was engaged with the White squadrons at 110, Brown would have been in a very dangerous situation. The 1st Squadron, 1st Cavalry, actually did make this effort, but being alone, was cut off.

The original White dispositions and plan of withdrawal from the Sauz-Carlton line were well made. This line was, however, held longer than necessary. The fact that no Brown troops were advancing in force against this line should have been known to the commanding officer, 1st Cavalry, at Carlton Tank, by 9:00 A.M., if patrols had been pushed out sufficiently far. Furthermore, about 9:00 A.M., the whole Brown brigade was observed in column, marching south on a ridge three and one-half miles to the west. To hold the Sauz-Carlton line any longer was therefore unnecessary. It was then evident that the White squadrons at 110 would soon be engaged with the Brown brigade. Two lines of action were therefore open to the regimental commander at Carlton Tank: (*a*) To vacate the Sauz-Carlton line at once and rejoin the rest of the brigade as ordered; (*b*) to attack the Brown force in flank and rear while it was engaged with the two squadrons of the 5th Cavalry in front. By remaining on the Sauz-Carlton Tank line until nearly 9:30 A.M., the 1st Cavalry permitted the Brown brigade to attack the two squadrons of the 5th Cavalry at 110 with superior numbers, and it was not in position to cover their withdrawal.

The mission of the White brigade was to withdraw in the direction of La Cueva (111)—Childer's Tank (108), taking up positions north of this line, delaying the advance of the Brown brigade and keeping open road junction 109, for the rest of the day. The White plan of action therefore was to fight a series of delaying actions, withdrawing to successive positions in rear before it became too seriously engaged with Brown. These successive positions should have been previously reconnoitred and selected by a staff officer, and routes thereto reconnoitred and marked, and the positions outlined by the engineer company attached to the brigade. The positions should have been so selected that the two White regiments withdrawing in their zones of action could mutually support each other, care being taken that the right flank of the right regiment did not rest too closely to the impassable O. Bunton property.



THOSE CAISSONS GO ROLLING ALONG

Note the cannoneer with a canvas bucket of water procured at a wayside water hole to sponge out the horses' nostrils at the next halt.



ONE OF THE WATER HOLES FOR WHICH THEY FOUGHT



AN AIRPLANE REPORT

THE MARCH TO CONCENTRATION AND TWO-SIDED MANŒUVRES

A preliminary study of the map would have shown the following successive positions for the White regiments, at which the enemy could be delayed if necessary:

- (a) 1st Cavalry: (1) Sauz (8)—Carlton Tank (7).
 - (2) Ridge 1½ miles southwest of 110.
 - (3) Ridge south of trail, two miles west of 107.
 - (4) Ridge along telephone line in vicinity of La Cueva.
- (b) 5th Cavalry: (1) Ridge north of the gates in vicinity of 110.
 - (2) Ridge south of 107, astride trail leading south from this point.
 - (3) Ridge south of Childer.

A final defensive position could then have been taken by both regiments about half-way between 108 and 111, the occupation of this position being covered by a squadron of the 5th Cavalry in the position (b) (3) above.

In each of these positions, the regiments would have mutually covered each other's withdrawal to the next position in rear, the time of withdrawal being controlled by the brigade commander depending upon the amount of delay desired in each position. Between positions each regiment would have delayed the enemy by small covering detachments, while the rest of the regiment made its withdrawal, too, and occupied the next position in rear under the protection of the regiment in the adjacent zone and the fire of the artillery.

The terrain and the successive positions were such that the White battery could support both regiments from successive central positions near the boundary between the two regiments, and preferably in the zone of action of the left regiment, since this afforded better observation. The action of the White commander in keeping the White battery under his command after its withdrawal from the Sauz-Carlton Tank line was therefore correct, provided it was given the mission of supporting both regiments.

Had the two White regiments become so widely separated that the battery could not support both, then a subdivision of the battery, attaching one platoon to each regiment would have been justified. Under certain circumstances, the battery would not change position as a whole but would do this by echelon, one platoon remaining in action at the old position until the other platoon had occupied the next battery position in rear. In this way a continuous fire support could be given to both regiments.

The important principles which this delaying action emphasized were:

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(1) In a delaying action, the defense cannot afford to become too closely involved before breaking off the action.

(2) The commander should assign zones of action in which the subordinate units will withdraw toward the objective to be secured or covered.

(3) Successive delaying positions in rear should be previously reconnoitred and selected, and these should be designated as early as the tactical situation will permit.

(4) This reconnaissance of positions should be made by staff officers, and the engineers attached to the command should be employed in reconnoitring routes thereto and outlining the positions.

(5) The commander should not lead the combat of his subordinate units; this is the duty of the subordinate commanders.

(6) The commander should keep in close touch with the progress of combat and control the withdrawal of subordinate units to their successive positions in rear.

(7) He should make sure that these successive withdrawals are mutually supported and that they are covered by the fire of the artillery.

(8) The commander should be at his command post or at an observation post nearby, or if required elsewhere, leave word where he can be found.

(9) Every commander must make full use of his staff, and through his staff see that his orders are being carried out.

(10) There must always be prepared or in mind a coördinated plan of action to meet the probable action of the enemy.

(11) Machine guns should be attached to subordinate units.

(12) The artillery should support the delaying action of the command as a whole from a central position if possible.

(13) If it cannot give proper support from such a central position, appropriate subdivisions should be made and attached to subordinate units.

(14) The artillery should habitually take well-defiladed positions, not too far from a good observation post. If this is not done, artillery will soon be without any wire.

(15) The subordinate commanders must be informed when adjacent units will withdraw, and mutually support each other's withdrawal.

(16) They should deploy their units in each position to insure the maximum fire power from the beginning.

(17) Between successive positions the enemy must be delayed by small covering detachments with machine guns.

(18) The mobility of the horse should be used to quickly transport fire power to a critical point or locality.

(19) An artillery escort must take a suitable formation to

THE MARCH TO CONCENTRATION AND TWO-SIDED MANŒUVRES

protect the artillery in march. Its dispositions should be such that it will provide security against small arms fire at effective ranges (600–1000 yards). It will be remembered that the White engineer company trailed behind the White battery when it moved from Sauz to 110.

(20) The artillery commander must be informed of the situation from time to time and given a clear idea of the plan of action and scheme of manœuvre.

(21) Successive positions should be from two to three miles apart. To order the artillery to make a change of position of 500–1000 yards, is a waste of valuable fire power, time and effort.

(22) Artillery should not be too eager to open fire on targets that are not worth while but save its fire for the hostile main body or columns.

Considering now the Brown plan of attack after the withdrawal of the White squadrons from 110. The envelopment of the White left flank necessitated a wide turning movement and consequent loss of time. Brown knew that White was fighting a delaying action. It should therefore have taken advantage of the faulty dispositions of White, to defeat part of the White force before the other could come to its support. Such an opportunity presented itself when Brown attacked White south of 110.

The right White regiment was then in position with its right close to the impassable O. Bunton property. Instead of Brown making the main blow with a large manœuvring force against the White left flank, it should have threatened this flank with a very small force and made its main effort by a vigorous attack in the gap between the two regiments, against the White right regiment. The two White regiments were then so widely separated that this attack would have succeeded and the White right regiment would have been pinched out. Before making an attack, all available information of the enemy must be considered in the plan of action. Battle reconnaissance must be continuous.

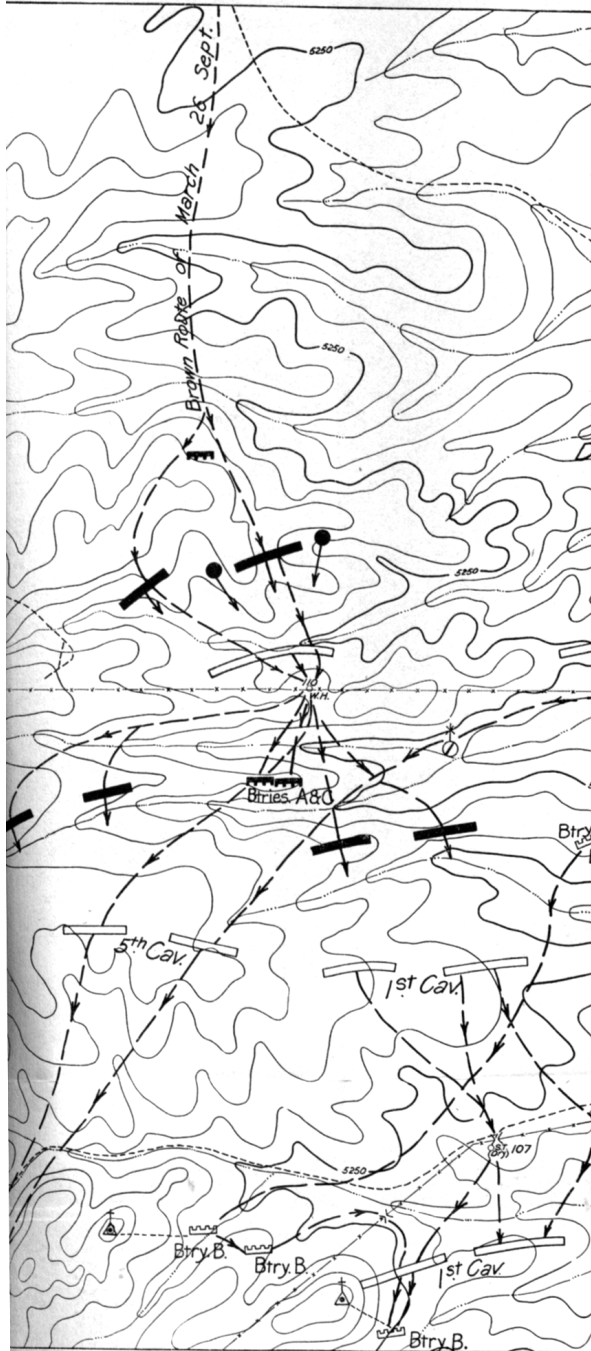
This action illustrated a very good example as to the form of attack to be used by cavalry against cavalry whose intentions of fighting a delaying action are known or apparent. In such situations, when the attacker attempts an envelopment, he is playing into the defender's hand whose whole purpose is to gain time. As soon as the defender discovers the envelopment, he simply withdraws or meets it. As a rule, the defender will be deployed on a wide front. His plan of withdrawal will usually be by echelon, one part covering the withdrawal of the other. The attacker's plan of action should therefore be directed against the nearest and most vulnerable part of the enemy. The attack should be made without delay and in the

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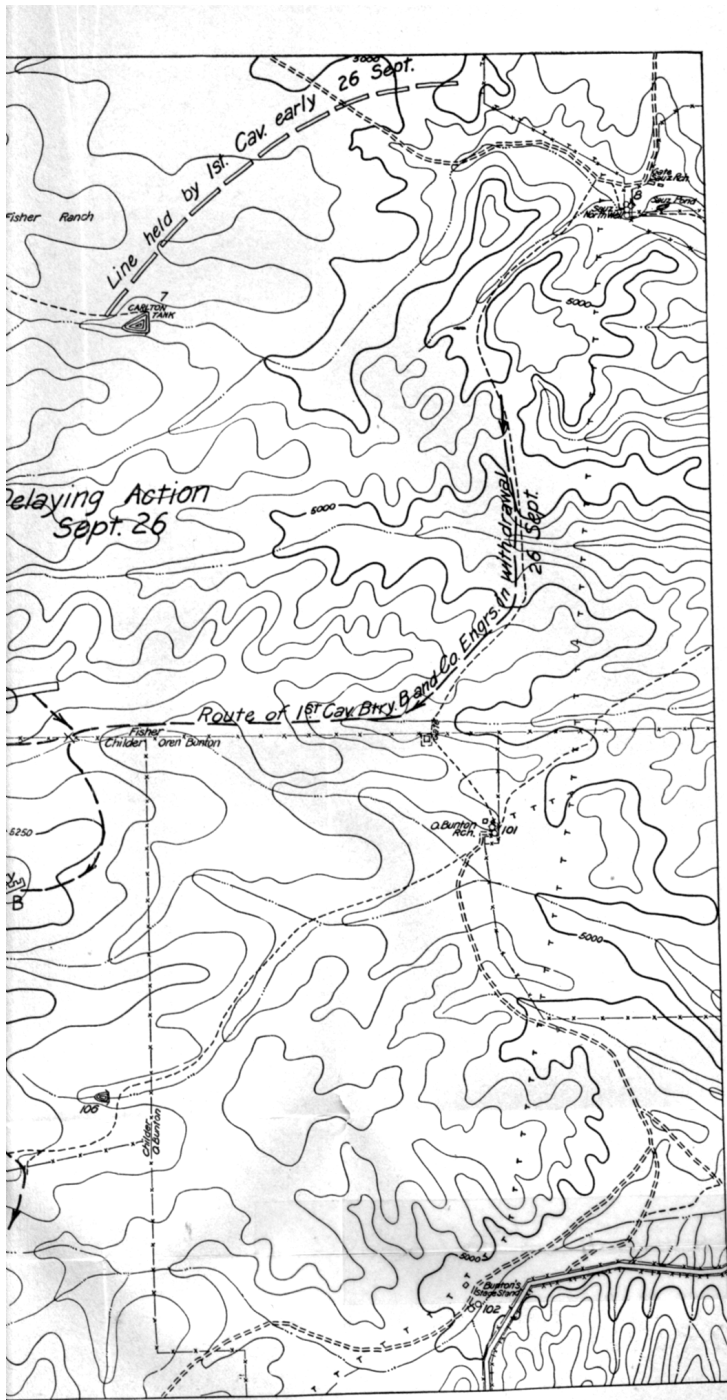
most direct manner. This does not necessarily imply a frontal attack, but rather a penetrating attack with the main blow so directed that it will drive between the two hostile groups and reach the rear of the more advanced enemy group. In support of this attack, the artillery should therefore place most of its fire on the decisive point near the centre of the enemy line, and at the proper time switch part of its fire on the withdrawing hostile echelon to prevent it from taking the penetrating attack in flank. Only a small force should be sent to threaten the outer flank of the withdrawing enemy echelon. While this small manœuvring force should be given an attack mission, its principal mission is to contain the withdrawing enemy echelon, to divert its attention from the main blow, and to prevent it from coming to the support of the enemy group against which the attack is primarily directed.

The Brown artillery did not have sufficient information on this day nor was it given a definite support mission. Consequently, the battalion commander employed his batteries according to his own judgment. The fire of artillery should be used against a decisive point and not scattered all over the battlefield. This decisive point must be designated by the commander of troops; it can not be selected by the artillery battalion commander.

The Brown batteries remained in exposed positions too long. When coöperating with cavalry, artillery will frequently be required to take a position in the open or one with little defilade. But as soon as the emergency which required such a position to be taken is past, the guns should be withdrawn behind the crest. This can be done very easily without stopping fire, by withdrawing one gun at a time. The executive chooses a suitable aiming point; directs each gunner in turn to measure the deflection to this aiming point and then orders the guns in turn to be withdrawn straight to the rear to the selected emplacement. Knowing the distance the gun has been withdrawn, the executive determines the deflection correction and announces it to each gunner who lays his gun which will then be directed at the previous target or base point. If the aiming point is to the right, the deflection correction will be subtractive; if to the left, additive; if in rear or front, it will be zero. This practice of withdrawing guns under cover as soon as the emergency is past, should be habitual with a battery which has been required to take a direct fire position. It can be done in a few minutes, and when operating with cavalry, can usually be completed before the hostile artillery can complete its adjustment and neutralize the battery. The method is simple, direct and requires no time consuming calculations or use of fire control instruments.



The troop locations above are only approxims



imate and are intended to aid the reader in following the text.

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The White battery commander fought his battery well, but was also somewhat handicapped by lack of knowledge of the situation and absence of a definite mission. His battery was usually a little too far from his observation post, sometimes as much as 900 yards. This required a long telephone line which in actual combat would have been difficult to maintain. The action was progressing so rapidly that he would have been compelled to abandon telephone lines in each position, and after several changes of position he would have had no wire left.

A battery commander must keep this problem of communications always in mind, particularly when operating with cavalry. It has a great influence on the selection of position for the battery. He will find that in the majority of cases the selection of a good observation post is the first consideration. After this he selects a position, of which there are always a number, that will offer easy communications. While there should always be alternate means of communication, frequent use can and should be made of semaphore.

It was noted on this and other days, that batteries habitually put their caissons alongside the pieces in a direct fire position, with sections at regular and frequently less than normal interval. As a result, batteries were always very conspicuous to an artillery observer. When a battery is in a direct fire position, every measure should be taken to screen and conceal the guns and to make the target as inconspicuous and dispersed as possible. Guns should be irregularly spaced and at more than normal interval. Advantage should be taken of every terrain feature which will screen the guns. It is very doubtful whether any battery commander or executive, after his first battle experience in a direct fire position, will again put his caissons in position alongside the pieces. He will probably thereafter unload the ammunition as near the guns as safety and cover permitted, and have it carried to the guns by hand.

It probably would have been better not to have attached the White battery to the force holding the Sauz-Carlton line. The most critical points for White were the two gates near 110. Had the White battery been in position in the vicinity of 110 with an observation post just north thereof, it could have supported both parts of the White brigade. This would have eliminated one change of position and would have placed the battery very early in an advantageous position to delay the advance of the Brown column marching on 110, and at the same time cover the withdrawal of the 1st Cavalry through the gate just east of 110. As it was, the battery was out of action for about fifty minutes while changing from the Sauz-Carlton line to a position south of 110, during which movement the White force at 110 was engaged with a superior Brown force and needed artillery support.

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FOURTH DAY MANŒUVRE, SEPTEMBER 27TH

White—Defensive position and withdrawal from action.

Brown—An attack.

MISSIONS

(See Map of the Marfa Manœuvre Area)

White to take up a position on September 27th west of the Marfa-Presidio road, covering the defile between the Black Hills and that road, and hold this position until 12:00 noon, after which it will withdraw to J. Pool Dam (188), continuing its observation towards the Marfa-Presidio road.

Brown to advance from present position at 8:00 A.M., September 27th, moving west of the Marfa-Presidio road (inclusive) and attack the enemy cavalry wherever found, driving him to the south and opening the road to Shafter (on the Presidio road to the southwest).

EXECUTION

(See the Attack-Defense Map Following)

The White brigade occupied a position along the ridge leading from 108 near the Presidio road on the right, in a northwest direction, for a front of about 6000 yards. The regiments were abreast with the Fifth Cavalry on the right and the First Cavalry on the left. The boundary between regiments divided the position into two sectors of about equal width. Each regiment organized two centres of resistance. The machine-gun troops were not attached to the regiments for the organization of the position, but were ordered to take position with one troop and a platoon in the centre of the position, one troop on the left flank and one platoon between two centres of resistance on the right flank. In case of withdrawal, one machine-gun troop was to come under orders of the commander of the right regimental sector and the rest of the machine-gun squadron under the commander of the left regimental sector. The White battery supported the entire brigade from a defiladed position about one and one-half miles in rear of the centre of the position. Its observation post was forward, just in rear of the centre of the main line of resistance.

No troops were specifically designated as brigade reserve, but the commander of the right regiment was ordered to hold one troop at the disposal of the brigade commander. In the brigade order the engineer company was ordered held mobile at a point about one-half mile in rear of the centre of the main line of resistance. This mission was changed before the position was occupied and the company was ordered to 109 to cover the right of the position and observe the Presidio road. No covering detachment was pushed

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forward to cover the organization of the position and delay the enemy. Troops were ordered to construct such hasty entrenchment as tools available would permit. It was impossible to do so on account of ground rules. Each regiment was held responsible for its local security and was ordered to hold the position at all costs. Led horses of troops occupying sectors were held immobile in the nearest available cover.

The collecting station was on the 108–109 trail in the right regimental sector. The consolidated field and combat trains under B₄, after refilling at Tyler gate on the Presidio road, were ordered to proceed to J. Pool Dam (188). Telephone communications were established from the brigade command post to regimental command posts, and each regiment was ordered to connect with adjacent and supporting units. The brigade had two observation posts, one on a prominent hill about 2500 yards in rear of the centre of the position, not far from the brigade command post, and the other in the front line near the position of the machine guns at the centre of the position. This forward observation post had an efficient mounted messenger service with the brigade command post and was occupied by a brigade staff officer.

The Brown brigade moved out at 8:00 A.M. in two columns. The right column had one squadron, one machine-gun troop and a platoon of 75's in the advance guard and marched *via* 110–107–junction telephone line with (108–109) road–109–Presidio road on Shafter. The artillery of the main body marched at the tail. The left column, composed of the 7th Cavalry and the Brigade field and combat trains, marched *via* Cooley–Presidio road on 109 where it was to join the right column.

About 10:00 A.M., when the Brown advance party reached the ridge about one-half mile southwest of Childer, it came under hostile machine-gun and rifle fire from a prominent butte about 1000 yards to the south. The enemy was well concealed and his strength and location could not be identified. The advance guard was delayed in its deployment. A troop was finally sent to the west to envelop the butte from this direction. In the meantime the main body continued its march and assembled in a draw about 300 yards to the left rear of the advance guard. The brigade commander joined the advance guard commander while the latter was making his dispositions and received from him the report that the enemy opposing was probably only a few machine guns and riflemen. While the brigade commander was discussing the situation with his regimental and artillery commanders, a report was received from the troop sent to the west that a small force of the enemy was behind the butte. The brigade commander evidently coming to the conclusion that the

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hostile force was only a covering detachment, ordered the advance guard to drive it away and continued the march with the main body down the draw leading southeast from Childer's. As the head of the column crossed the nose about one mile southwest of the southwest corner of the O. Bunton property, it came under heavy machine-gun and artillery fire from the southwest. The brigade commander decided that he had developed the hostile position and ordered the rest of the regiment to deploy dismounted to the right on the ridge, facing to the southwest. The artillery was ordered to go into position a few hundred yards in rear. A plan of action was now considered, but nothing could be done until the 7th Cavalry arrived. This regiment had been ordered to march on 109 and establish connection with the brigade as soon as the south fence of the impassable O. Bunton property was reached. It had also been ordered to set up its radio each hour to maintain communication, but up to this time nothing was known of its location. It was estimated, however, that the 7th Cavalry should be near the south fence. Had an observer been sent to the ridge about 300 yards to the east, this regiment could have been seen marching south on the Presidio road and about one mile from the gate at this time.

The brigade commander had in the meantime decided on his plan of action to envelop the hostile right flank with the 7th Cavalry. The 8th Cavalry, supported by the artillery and machine guns, was to form the pivot of manœuvre while the 7th Cavalry, moving down the draw just west of the Presidio road, was to attack the enemy flank and rear. The right of the enemy position had not been definitely located, but was believed to be about opposite the left of the 8th Cavalry. The signal for the coördinated attack was to be a rocket fired at the brigade command post as soon as the 7th Cavalry was in position and ready to make its mounted attack.

In the meantime, no messenger or staff officer was sent to head off the 7th Cavalry to direct it to its position. This regiment, having heard the firing, had passed through the gate just south of the O. Bunton property and was on its way to join the main body. As it crossed the ridge one mile south of the O. Bunton south fence, it came under hostile artillery fire. A staff officer was now sent to have it counter-march and to give it the orders for the attack.

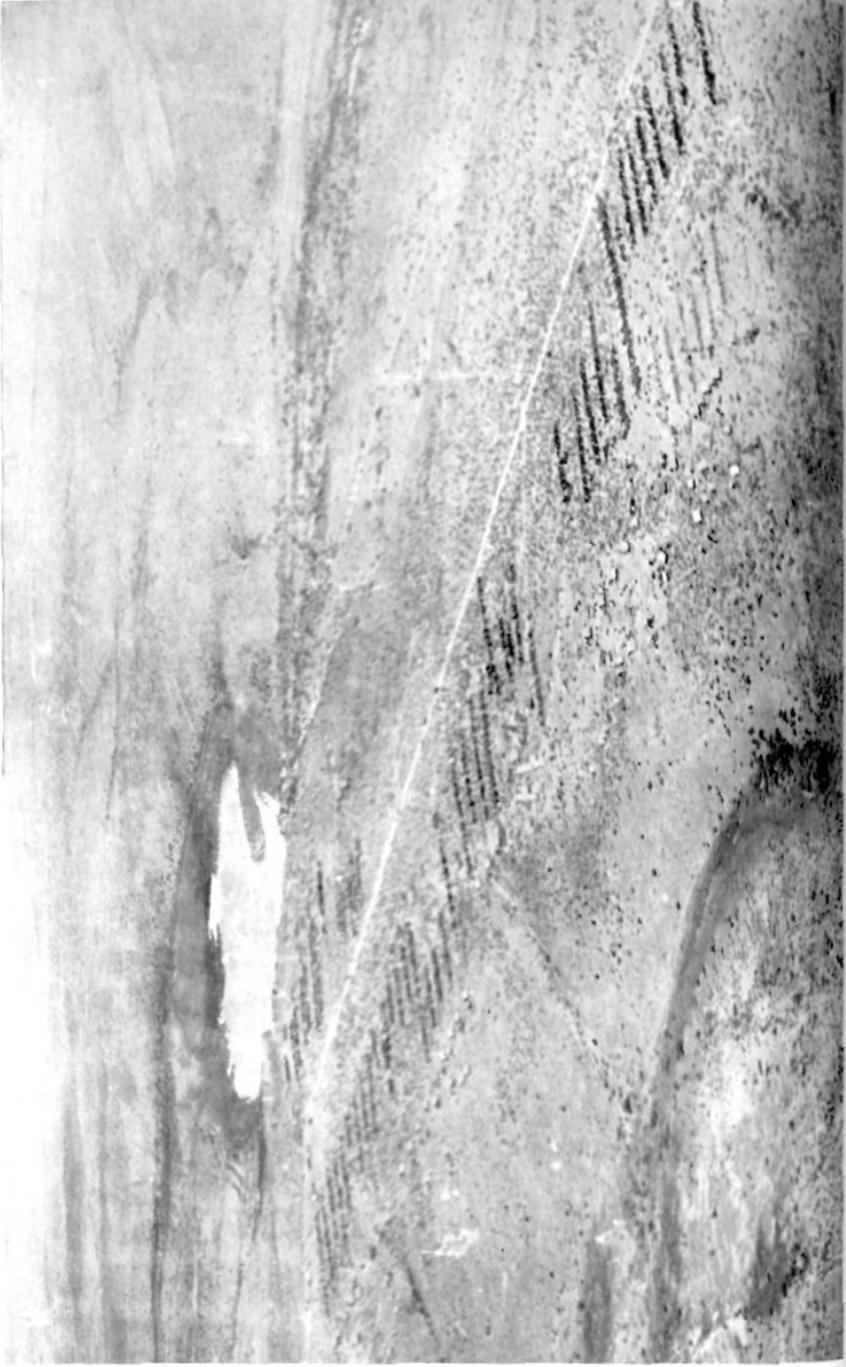
From the time the Brown commander had made his decision until the 7th Cavalry was ready to attack about one hour had passed. A White staff officer from his forward observation post had observed these movements and kept his brigade commander informed of the situation by a relay of mounted messengers. The White commander seeing that Brown was making no effort to advance on the centre and left of the White position, and realizing the danger to his right flank, had a reconnaissance made to determine whether a machine-gun



A TYPICAL CAVALRY TARGET



BATTERY "B" IN ACTION



DIVISION CAMP AT J. POOL DAM

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troop could be placed in position there to cover this flank. Receiving a favorable report, he withdrew the centre machine-gun troop, and sent it to the rear of the White right flank, where the troop arrived before Brown launched its attack. The movement of enemy cavalry toward the right of the White position was also reported to the White brigade command post by airplane.

Shortly after 11:30 A.M., the Brown brigade command post sent up a rocket, whereupon the 8th Cavalry and artillery opened up a heavy fire on the White position, but did not advance to the attack. A few minutes later the 7th Cavalry came around the nose about one mile north of 108 and launched its mounted attack with squadrons abreast, direction of attack due west against the right of the White position. The flank of the White position had not been definitely located so that in coming over three successive small ridges in front of the right of the White position, the charging squadrons came under hostile machine-gun and rifle fire. The squadrons changed direction to the southwest, the left squadron swerving sufficiently to reach the flank and rear of the White position. One or two of its troops in passing around the flank came under fire of the machine guns in second line. Later they were counter-attacked by a White troop. The Brown mounted attack did not have adequate fire support. The umpire therefore ruled that the charge had failed and ordered the 7th Cavalry back to its jump-off line.

The White commander not being correctly informed of the outcome of the Brown enveloping attack on his right flank and fearing that it had been turned, now directed the brigade executive to have the 1st Cavalry withdraw on the left and take position on the ridge just north of Black Hill and face south to meet the Brown envelopment which he believed had succeeded. A brigade staff officer joined the commanding officer, 1st Cavalry, and delivered this order. This regimental commander was, however, confronted with a difficult situation himself. The Brown pivot in his front was just preparing to make a mounted attack. To meet this impending attack, the commanding officer, 1st Cavalry, had withdrawn his squadrons from position, had mounted them and was preparing to counter-attack. He therefore informed the staff officer that he could not carry out the mission ordered by the White commander until he had settled with the coming Brown mounted attack.

The resulting action on this part of the front was a stand-off. In the meantime the umpire had at 12:30 P.M. directed the White commander to withdraw. The 1st Cavalry, with the battery and one machine-gun troop, were ordered to withdraw to the high hill about two miles southwest of 108. In making its withdrawal, this force passed over a ridge in rear of the 5th Cavalry. The movement

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was in plain view of the Brown artillery and drew heavy fire. The 5th Cavalry on the right covered the withdrawal of the 1st Cavalry, which was followed up very slowly by the 8th Cavalry. The 7th Cavalry was in the meantime moving back to its jump-off line to renew the attack dismounted.

About 1:00 P.M. Brown renewed the attack, the 8th Cavalry moved south against the 5th Cavalry, while the 7th Cavalry attacked dismounted southwest against the 1st Cavalry in position on the high hill two miles southwest of 108. The 1st and 5th Cavalry withdrew slowly. About 1:30 P.M. recall was sounded. The White withdrawal was then well under way and its columns were marching on J. Pool Dam (188). Brown did not pursue vigorously.

COMMENTS

The manœuvre on this day brought out many interesting principles in the employment of cavalry in attack and defense.

Considering first the defense, we find again the initial dispositions made by White to be those for a passive defense. There was practically no reserve.

As long as the flanks of a position are exposed, and the location and direction of the enemy's main blow are still undetermined, cavalry should make its initial dispositions as for an active defense. A good-sized reserve should be held out to protect the flanks and to meet envelopments. As soon as the enemy's main blow has been discovered, some of these reserves should be used to extend or to reënforce the main line of resistance, and to protect the flanks by counter-attack. Since the action of the attacking cavalry will usually be some form of envelopment, the defending cavalry should never adopt a passive defense unless its flanks are secure.

No reserve was specifically designated by White on this day, although one troop was evidently intended to be used for this purpose. The main line of resistance (called battle position in the order) was between 5000 and 6000 yards long, organized into four centres of resistance, each held by a squadron. The disadvantages of the present regimental organization were again shown. With a two-squadron regiment, if a squadron is put in brigade or division reserve, the regimental commander is practically without a command, and the services of an experienced officer and his staff are lost. Had there been three squadrons to the regiment, each regimental commander could have organized his sector with the assurance that his dispositions would not be upset by having a higher commander come along and take away a part of his command when a critical situation arose. In this situation, the brigade commander would have had two squadrons in reserve with which to meet the enemy's envelopment.

THE MARCH TO CONCENTRATION AND TWO-SIDED MANŒUVRES

In almost every defensive situation during the manœuvres, the brigade commanders were compelled to adopt a passive defense due to faulty organization of the regiments. All regimental commanders were unfavorable to the two-squadron regiment.

Machine guns were not attached to regiments and therefore their employment was not coördinated by sector commanders. They were handled as separate tactical units. Instead of having a plan of machine-gun defense covering strong points and the intervals between the centres of resistance, the machine guns were grouped in three localities on the front line. This disposition and location of the machine guns made them particularly vulnerable to artillery fire. This was partly corrected during the engagement, when the machine-gun troop in the centre was sent to a position in rear of the right flank of the White position.

White had no covering force in front of the position to cover its organization and delay the approaching Brown force. Brown therefore met no opposition until it ran into the White defensive position; White had insufficient time in which to complete its preparations for defense.

The White battery was well located and defiladed. Its observation post was too far from the battery, and being in the front line had a more or less restricted view. Had the observation post been on the high hill near the battery, the battery commander would have had a wider field of view to the front and flanks; his telephone line to the battery would also have been shorter and visual signals could have been used as an alternate means of communication.

In one paragraph of the White brigade order, it is intimated that a withdrawal may be made; in another, it is stated that the position will be held at all costs. Such expressions should not appear in an order. To intimate a withdrawal, takes all the snap out of an order to hold the position at all costs. On the other hand, the well-understood purpose of any position defense is to hold the main line of resistance. Troops must hold what they have by a determined defense until ordered to withdraw. In a position defense, there is no active or passive defense, as far as subordinate commanders and their troops are concerned. Such an idea exists only in the mind and plan of the higher commander.

It is only in the zone defense that the higher commander will indicate what line will be held at all costs, and prescribe under what circumstances and by whose authority counter-attacks will be launched. In a position defense there is only one position and one

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main line of resistance; therefore any instructions as to what is to be held are unnecessary. In the zone defense there are several positions, and reserves are held much farther to the rear. The line or position to be held until reserves can be brought up, must therefore be designated.

In a position defense, the commander may direct that subordinate commanders take certain measures to maintain the main line of resistance. He may order that reserves be held mobile for use in counter-attack to maintain this line; or he may order that in case of attack the outposts will be withdrawn to the front-line strong points; or withdrawn only on orders of regimental commanders. He may go even further and state that these strong points will be vacated only on orders from brigade or division headquarters.

The division order to the White brigade directed that the position be held only until 12:00 noon, after which it was to withdraw to J. Pool Dam (188). This was later amended, White being ordered to hold "until forced out or ordered to withdraw." A position should therefore have been reconnoitred in rear and a plan of withdrawal prepared prior to 12:00 noon. The order for the withdrawal of the White brigade was given at 12:45 P.M. when directed by the umpire. Had it been made at 12:00 noon, the whole White brigade would have made a clean break-away without Brown interference. At 12:00 noon the mounted attack of the 7th Cavalry had been definitely repulsed; the 8th Cavalry was still dismounted and had not advanced. By holding on until 1:00 P.M., White had to receive the mounted attack of the 8th Cavalry and the dismounted attack of the 7th Cavalry. The withdrawal was therefore made under hostile fire, but this could not be avoided since White was ordered to hold until ordered to withdraw.

The withdrawal of the White brigade offered a fine opportunity for good staff work. Prior to 11:00 A.M., some brigade staff officer should have reconnoitred the next position in rear and the routes thereto. The order and all the arrangements for the withdrawal should have been prepared by 11:30 A.M. The commander and certain members of his staff should then have joined the two regimental commanders and the battery commander at 11:45 A.M., to inform them of the contemplated withdrawal at 12:00 noon or when ordered, and the arrangements to be made. At the proper time, the orders for withdrawal could have been handed to the regimental commanders personally, whereupon the withdrawal could begin unobserved by the enemy.

The tendency to use mounted engineers as a mobile reserve and diverting them from their normal duties was noted throughout the manœuvres. The reason for this will again be found in the faulty

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organization of the cavalry regiment. In order to get a reserve, brigade and division commanders are compelled to use their engineer units as cavalry, for which duty they are not specially trained. The White engineer company had a very important normal duty to perform on this day. The original order should have attached half of the company to each regiment to assist in the organization of the regimental sector, and should have prescribed that the company would be relieved either at a designated time or when the White covering force gained contact with the enemy. The company should then have assembled at a rendezvous and made ready for further assignment. Its next mission should have been ordered about 10:00 A.M. when the staff officer proceeded on reconnaissance of the rear position. The engineer company should have reconnoitred, repaired and marked the routes leading to this position, and outlined the position for occupation by the brigade. Had this been done, the withdrawal would have been made without confusion.

The following incident was observed in rear of the right of the White line. The led horses of a White troop were located in a fold in the ground, under command of a noncommissioned officer. The horses were covered by a few dismounted men about 150–200 yards to the flank. Suddenly a Brown troop came charging over a small ridge about 400 yards distant. The dismounted men at once ran toward the led horses, evidently with the intention of mounting and getting away. Before they reached the horses, the Brown troop was upon them in a pistol attack. The noncommissioned officers tried to get away with the led horses, but could not make it.

Such incidents may be expected in battle. Noncommissioned officers will have to make quick decisions to meet them. In this situation any attempt to get away was futile. When a man is dismounted with a rifle in his hand, his best bet is to stand fast, continue firing and try to empty as many hostile saddles as possible. For horse-holders to try to hold on to led horses under such circumstances is almost hopeless. The first pistol volley will probably stampede the whole bunch. The best thing to do is to turn the led horses loose and have every horse-holder get on his feet to meet the hostile charge with rifle fire.

Considering now the attack. The Brown brigade marched in two columns separated by four or five miles. Some alternate means of communication besides radio should have been used between the two columns. When the right Brown column west of the O. Bunton property encountered the enemy, nothing was known of the exact location of the left Brown column. A staff officer should have been sent to the gate just south of the O. Bunton fence to meet and direct

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the left column (7th Cavalry) when it arrived at this point. Had this been done, the 7th Cavalry would never have come under hostile observation and its approach to the White right flank would have been concealed. The subsequent attack would have been a complete surprise and delivered three-quarters of an hour before it was. A brigade staff must foresee such situations and relieve the commander of all worry concerning them. The incident also showed how unreliable radio communication may be, and that cavalry must always make use of alternate or duplicate means of communication. The mounted trooper is still as reliable as ever.

The White position was not fully reconnoitred by Brown, the right of the White position not being definitely located. When the Brown advance guard encountered the enemy, the rest of the right column continued its march and crowded too closely on the advance guard. Before the advance guard could clear up the situation, the column continued its march to the southeast without sufficient security and within effective small arms, machine-gun and artillery fire of the hostile position. Had White launched an attack at this time the right column would have been in a dangerous situation before the 7th Cavalry could come to its assistance.

While the 7th Cavalry was making its enveloping movement, the Brown pivot did not sufficiently engage the enemy in its front. As a result, White was able to pull out a machine-gun troop from in front of the Brown pivot and send it around to the right flank to meet the Brown enveloping attack. The rocket for the coördinated attack should have been fired by the manœuvring force and not by the pivot. It took about fifteen minutes to get back a report that the 7th Cavalry was in position ready to attack, and the attack was delayed by that amount.

The mounted attack of the 7th Cavalry was technically well led and conducted, but it lacked fire support and definite objective. At least one machine-gun troop should have been attached to it. The point at which the 7th Cavalry came into view north of 108 was about 1200–1400 yards from the hostile position. From the time the regiment came into view until the charge reached the position took about five minutes. The actual charge began about 1000 yards from the hostile position and took three minutes to reach its objective. The charging troops had to cross three small ridges, and in passing over each, were met by hostile fire. Only one or two troops reached the flank and rear of the White position and were met by machine-gun fire from machine guns in rear of this flank.

The location of the hostile right flank not being definitely known, the mounted attack was not directed against the hostile flank and rear, but practically frontally against the right of the enemy position. Had the mounted attack been launched from a point near 108 against

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the White flank and rear, it would have had fewer obstacles to cross and been subjected to less hostile fire.

This mounted attack brought out the importance of reconnaissance of the objective. It also emphasized the fact that such an attack to have promise of success must have surprise, have a favorable direction and be supported by fire.

On the Brown side, it was shown that a fire fight without advancing against the enemy position is not sufficient to prevent the enemy from making a redistribution of his troops. This would not have been possible had the Brown pivot advanced to the attack. It would then have become the secondary attack and probably would have broken through the left of the White position.

The Brown commander had no reserve to throw into the action at this decisive moment. With a three-squadron regiment such a reserve would have been available. The three-squadron regiment is therefore also the best organization for the attack. With a two-squadron regiment, it is the general practice to use the mounted engineers as a reserve. In actual campaign they would rarely be available for such use. To make a general practice in manœuvres of using engineers as cavalry is therefore incorrect. Whenever they are so used, it must be justified by unusual conditions.

The formation of the 7th Cavalry in its dismounted attack was too dense and compact. It advanced in line of squad columns with not more than ten yards intervals. This formation made it very vulnerable to artillery fire, since one shell or shrapnel could have inflicted losses on two or three of these squad columns. The interval should have been from 30 to 40 yards.

When these squad columns deployed, the interval between skirmishers was one or two yards, whereas it should have been five yards. The regiment was led practically as in a mounted attack. The whole regiment numbering about 200 men dismounted, covered an area of 200 yards front by 50 yards deep. The led horses followed about 150 yards in rear. This made the regiment a vulnerable target for hostile machine-gun and artillery fire.

Each troop numbered from 25 to 30 men dismounted to fight on foot. Each squadron could therefore have formed with two troops in front line and one troop following as reserve in squad column at a distance of 200–400 yards. This would have given each squadron a formation covering an area 300–400 yards front by about 300 yards deep. To give the squadrons sufficient manœuvring space, an interval of not less than 100 yards should have been taken between squadrons. The whole regiment would then have covered a front of at least 700 yards. Led horses should have followed beyond effective small arms fire and therefore not closer than 600–1000 yards of the front-line troops.

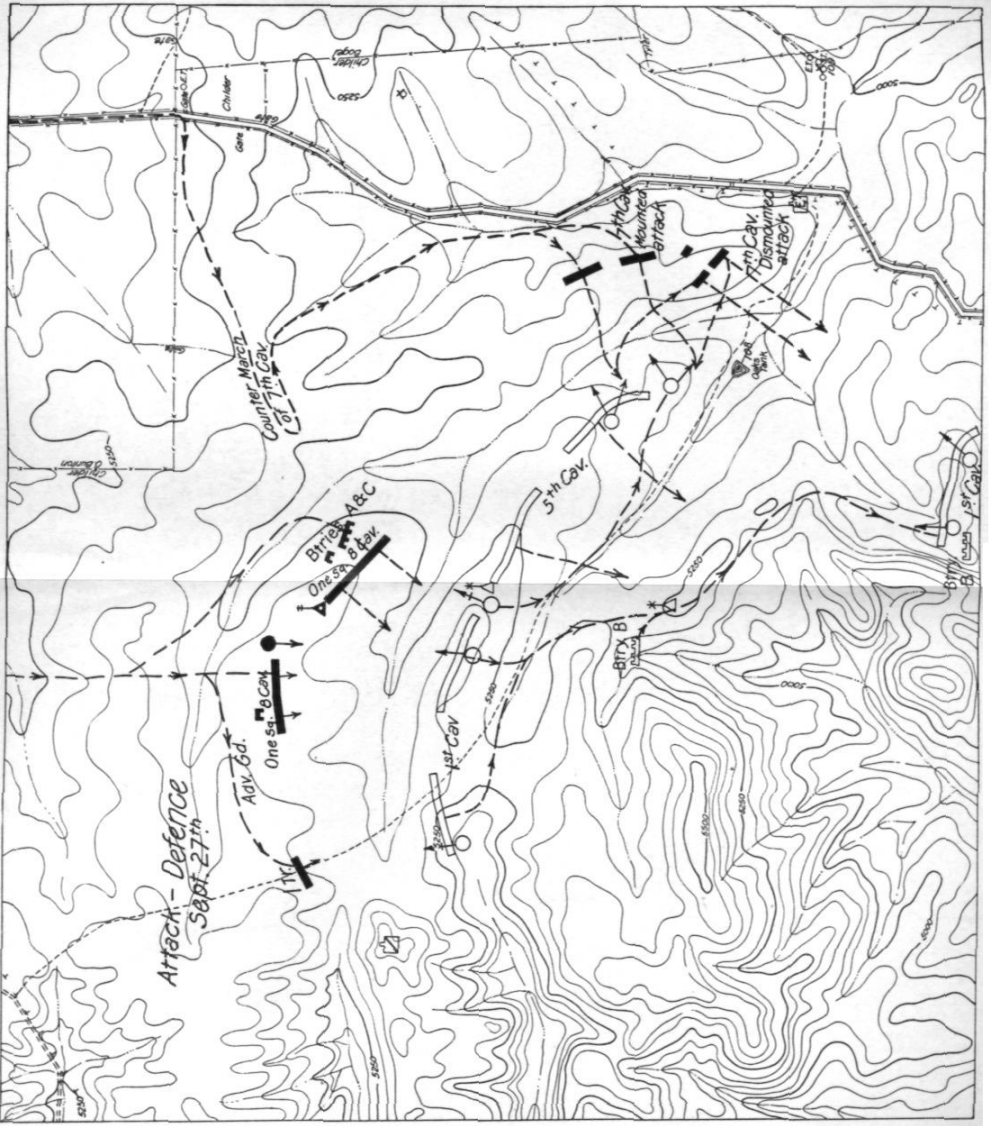
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In order to control the manœuvres and to coördinate the action of the attacking squadrons, the regimental command post should be well behind the squadrons. The battle position of the squadron commanders is between the assault echelon and the squadron reserve troop. Communication between regimental, squadron and troop commanders is by runner. The actual leading of the fire fight is the job of the platoon and troop commanders. The principal duty of the squadron commander is to see that his troops are being led properly, to direct how the attached machine guns shall be employed, and to decide when the reserve troop shall be thrown in. The regimental commander coördinates the action of the two squadrons. He should also control the movement of the led horses and assist the squadron commanders in ammunition supply. If we had a three-squadron regiment, the regimental commander would control the employment of the reserve squadron which would follow at from 500–800 yards behind the assault squadrons.

When cavalry dismounts to fight on foot, it should follow as closely as possible the combat methods of the infantry, adapting its formations as far as the reduced strength of its troops will permit, to those of the infantry. Cavalry dismounted formations should never be more compact than those of the infantry; if anything, they should be more dispersed.

The Brown artillery remained exposed too long in a position of little defilade. For the amount of security it had in the beginning, it was also too near the enemy front line. Had White taken any offensive action against Brown before the 7th Cavalry arrived, the Brown artillery would have been in danger of capture. Until Brown was certain that it could concentrate its two regiments on the field of battle, it should have taken a temporary defensive attitude, feeling out the hostile position and completing all preparations for the attack as soon as the 7th Cavalry arrived. The artillery should therefore have taken its initial position farther back covering the advance guard. In the first position, the two batteries should have been echeloned in depth, say about 500 yards. Then as soon as the 7th Cavalry was within supporting distance and the plan of attack had been decided upon, the rear battery should have been moved forward to a position from which it could support the enveloping attack of the manœuvring force. Since there was no emergency which required a direct fire position, both batteries should have been more defiladed. There was sufficient time available to make all these preparations.

The faulty disposition of the Brown artillery was due principally to failure to give timely information of the situation and a proper tactical mission to the Brown artillery commander. The artillery



The troop locations above are only approximate and are intended to aid the reader in following the text.

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of the main body should not be committed to action until there is a job to be accomplished, *i.e.*, until the enemy situation has been cleared up more or less, and the commander has arrived at a definite decision of his plan of action.

FIFTH DAY MANŒUVRE, SEPTEMBER 28TH

Brown—Flank guard action.

White—A flank attack on a column and convoy.

MISSIONS

(See Map of the Marfa Manœuvre Area)

Brown to advance at 7:45 A.M., September 28th, to seize the road fork four miles northwest of J. Pool Ranch (190) (Tinaja China Ranch), and prevent communication between Shafter and Alamito.

White to prevent the enemy reported at Childer's from moving further south; to advance at 7:45 A.M., September 28th, to strike the hostile column at the earliest possible moment and destroy it.

EXECUTION

(See the Attack Map Following)

White pushed forward patrols toward 109 very early in the morning of September 28th. These patrols were well handled and discovered the Brown troops in camp and later the Brown direction of march. The White advance guard pushed forward rapidly from (188) northwest to the Presidio road. By 8:15 A.M. the White advance guard was in possession of the Tyler gate (six miles from 188) and the high ground near the junction of the Presidio and 188–187 roads. Due to its rapid advance, the White advance guard was about one and one-half miles ahead of the main body.

The Brown brigade was somewhat delayed in getting started. Instead of marching south on the Presidio road with a flank guard east of this road, the whole column except one troop marched east of this road, leaving the grouped field and combat trains parked in a defensive formation in the vicinity of Well 109. Passing through the gate at 109, the column moved *via* Tyler gate. At 8:20 A.M., as the advance guard approached Tyler gate one and one-half miles from its camp, it came under hostile machine-gun and rifle fire from the high ground just south of the gate. The Brown advance guard deployed against the enemy at the gate, sending one troop to the Presidio road to attack the enemy in left flank. The Brown artillery battalion without further orders went into action immediately on a ridge in rear of the advance guard while the rest of the main body assembled in approach formation on both sides of the batteries and awaited further orders.

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About 8:30 A.M., the whole White main body was observed on the ridge about two miles south of Tyler gate, advancing northwest in approach formation. This force was in plain view for fully 15 minutes. The Brown commander immediately ordered his artillery to take these columns under fire. Firing at its maximum rate, the Brown artillery in the next 15 minutes expended practically all its ammunition (blank) in direct fire at the hostile cavalry columns. Although the batteries and the smoke of firing must have been plainly visible to the White columns, they took no steps to seek cover or to change to a more deployed formation.

In the meantime the White advance guard was ordered to withdraw in order to permit the Brown advance guard to pass through Tyler gate. By constantly manœuvring toward the Presidio road against the White left flank, the Brown advance guard gained possession of the junction of the Presidio and 188-187 roads. The White advance guard met this attempt to envelop its left flank by gradually withdrawing to a position astride the 188-187 road facing to the northwest.

The Brown plan of action was now to get astride the 188-187 road with the 8th Cavalry and to attack southeast, while the 7th Cavalry moving down the draw leading south from 109 was to attack the enemy in right flank. The artillery was to support both attacks from a central position in the vicinity of Tyler gate.

Having been ordered to withdraw by the umpire, the White advance guard commander was compelled to fight a delaying action. In order to prevent Brown from enveloping his left flank, the White advance guard commander withdrew slowly to a position astride the 188-187 road about one-half mile from its junction with the Presidio road. In this way the White advance guard covered the axis of advance of the main body and gained time for its deployment for attack. The deployment of the White main body was, however, delayed, and in coming under heavy artillery fire when it passed over the ridge, lost the advantage which its advance guard had gained.

The White commander now decided to play a waiting game and disposed his force in such a manner that he could attack the Brown force at a favorable opportunity. Leaving the White advance guard facing northwest to cover the 188-187 road, he moved one squadron, 5th Cavalry, to a prominent knob on the right of the line, facing north. The other two squadrons were held in rear of the L-shaped ridge under cover, behind the gap between the two front line squadrons which were about one and a half miles apart. The interval between the two White squadrons was covered by two machine-gun troops, one located on the inner flank of each squadron. The left reserve squadron was in rear of the White advance guard squadron, prepared to attack toward the Presidio road in case of an envelopment

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of the White left flank, or northeast in case Brown attacked through the gap. The right reserve squadron was held in a wide draw approximately in rear of the centre of the gap from which position it was prepared to attack either north or northeast through the gap or due east in case Brown attempted to envelop the White right flank.

At 10:00 A.M. Brown launched its attack. The 8th Cavalry on the right, attacked south and southeast against the 1st Cavalry and secured the gate at the junction of the Presidio and 188–187 roads. It made favorable progress until stopped by the counter-attack of the rear squadron of the 1st Cavalry which advanced through the gap against the left of the 8th Cavalry. The 7th Cavalry after passing through the Tyler gate moved southeast and launched its mounted attack against the White squadron on the right of the White line. As the 7th Cavalry came over the ridge in front of the White right flank, it was met by both squadrons of the 5th Cavalry in a mounted counter-attack. These mounted attacks were all well conducted and timed. In the final mêlée, it seemed as if every trooper of both sides was attacking mounted.

The Brown advance guard artillery platoon moved forward with the advance guard and did good work from a position near the gate on the Presidio road. Here it was attacked by White cavalry which failed, however, to reach the guns. The Brown artillery with the main body, from direct fire positions near Tyler gate, got in some timely off-hand support. The White battery got into action early from a position northwest of the south Tyler gate. Its position was defiladed and well selected to cover not only the flanks of the White squadrons, but also the gap between them. About 11:15 A.M. during the mêlée, recall was sounded.

COMMENTS

The march of the Brown main body east of the Presidio road was hardly justified by the situation as it appeared at 1:00 A.M., when the march order was issued, nor even at 7:30 A.M., when the march was begun. Division orders required Brown to seize the road fork on the Presidio road four miles northwest of the J. Pool Ranch (190). Brown should therefore have marched without delay with the whole command south on the Presidio road, covering its exposed left flank with a flank guard. This flank guard should have marched from one to two miles east of the Presidio road. The field and combat trains should have marched with the column following the main body without distance and themselves followed by the rear guard. They should not have been left back at Well 109 without escort and liable to capture or destruction by a White force. The distance from Well 109 to the road junction on the Presidio road which Brown

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was to seize was ten miles. No force expecting combat with an enemy can afford to be separated from its combat train and ammunition by such a distance.

Although Brown camped two miles from Tyler gate, it permitted White, which was six to seven miles distant from this point, to get there first and seize it. White was able to do this because it acted aggressively, and because Brown failed to send out distant patrols to locate the enemy and delayed in getting started. The Brown march order prescribed no reconnaissance or flank security.

Par. 3 (x) of the Brown march order prescribed an approach formation which might or might not have been suitable when the enemy was met. Such instructions should not be included in a march order. No commander can foresee so far in advance what tactical formation his command will take when the enemy is met. It can easily happen that the formation prescribed will be the one least adapted to the tactical situation which confronts the command. The development and deployment of a command is governed by the plan of action when the enemy is met, and in this situation should have been part of the commander's plan of attack.

The White patrols and advance guard were well handled and secured a decided advantage for White. This advantage was, however, lost when the White main body came under hostile artillery fire in a very vulnerable formation. The White deployment was thereby delayed. White's subsequent action of assuming a waiting attitude until Brown had disclosed its plan of attack was well considered, and the dispositions made to meet the Brown attack were well planned and the counter-attack well executed.

On both sides the cavalry often neglected to take advantage of available cover and in crossing open ground failed to move at rapid gaits and in proper formation. In crossing open ground, cavalry must adopt a dispersed formation and move at rapid gaits in order not to offer too vulnerable a target to machine guns and artillery. Cavalry should also avoid predicted routes, that is, after disappearing in a hollow it should not reappear on the next ridge in front at a point where artillery and machine guns can predict its reappearance and meet it with a burst of well-aimed fire.

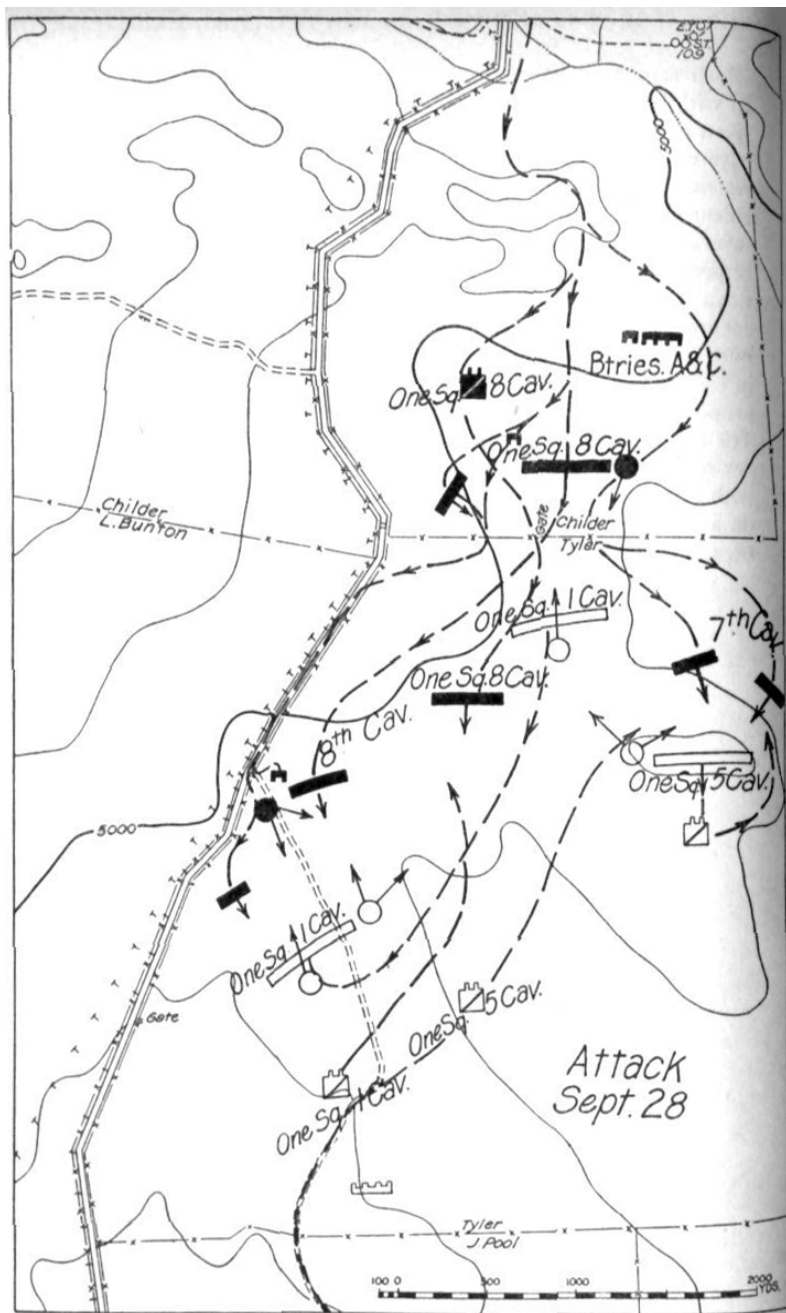
Led horses were often too close to artillery and machine-gun positions. A battery position is always an unpleasant location for horses. The artillery usually posts its limbers under cover from 200 to 500 yards to the flank and rear of the battery. Led horses of cavalry should therefore not get any closer to a battery in action than the limbers of the artillery. If this precaution is not taken, led horses will not only suffer casualties from fire directed at the battery, but will themselves draw fire on the battery.

Artillery in action will always make a good strong point around

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which retreating troops can group themselves when hard pressed. In withdrawing, troops should, however, be careful not to cross the front of the battery and thereby mask its fire. Artillery in action, covered by machine guns and riflemen on the flank and rear, is reasonably safe against mounted attack. Such machine guns and riflemen should not take position too close to the battery but be several hundred yards away. The flank guns of the artillery must be prepared to shift their fire to the flanks and obliquely to the front. Cavalry, as artillery escort, should be so disposed that it can keep the enemy beyond effective range of small arms fire. The commander must be in constant communication with the battery commander, and in case of withdrawal of the battery must be prepared to make the proper disposition of his escort to cover the withdrawal of the guns. The time of withdrawal must be determined by the battery commander and not by the commander of the escort. Artillery operating with cavalry will frequently be compelled to take an exposed position on a flank. Troop commanders should therefore know what measures to take to give adequate protection to a battery.





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FOREIGN MILITARY JOURNALS A CURRENT RÉSUMÉ

ITALY

"Revista di Artiglieria e Genio," January – March, 1924

IN THIS number Colonel Arcoli finishes his study of the developments of counter-battery in the Italian Army. He shows how the Italians, through careful study and organization, finally acquired a technical and tactical skill in counter-battery which gave them artillery supremacy over the Austrians in the decisive battles of 1918. Colonel Arcoli throughout backs up his arguments and doctrines with extracts and illustrations from orders and war records. He shows that the greatest difficulty in the way of the infantryman was Austrian artillery fire. As soon as the Italian artillery could neutralize this the way to war of movement and victory lay open.

Although primarily of interest to the Engineers, the article of Lieutenant-Colonel Mario Papone on German pontoon equipment is very instructive to officers of other arms on account of the ingenious uses of pontoons described as well as on account of the illustrations.

Major Paolo Bernardi's article on "The Training of Officers" lays great stress on the fact that training should be arranged so as to give officers more familiarity with arms of the service other than their own, especially in the higher grades.

"Artillery Reorganization and Equipment Along New Lines" is discussed by Colonel Laviano, who concludes his article which was begun in the previous number. He states that development and experimentation in France and in the United States appears to be chiefly in self-propelled gun carriages. Italy, on the contrary, favors motor-drawn artillery for the larger calibres. The reasons for this are:

Weight and clumsiness of self-propelled guns which prevent the pieces from being hauled to difficult positions in the mountains and over weak bridges. In this connection, however, Colonel Laviano states that the French have manœuvred with great success over the Alps of Savoy with 155-mm. guns on self-propelled mounts, crossing glaciers and climbing slopes as great as 1 on 1.

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Inability to leave only the guns at the battery positions, thus reducing to the minimum the size of target.

Inability to use the motor transportation for hauling ammunition and other purposes while the guns are in position.

Necessity of constructing great war reserves of costly motors and carriages for self-propelled artillery. Motor-drawn artillery, on the other hand, presents the great advantage of enabling the military authorities to requisition tractors and trucks with the same ease with which horses are requisitioned.

Standard types of motor vehicles are constantly being purchased, repaired and improved by the civilian population without expense to the army.

The substitution of bombing airplanes for the larger calibres of artillery is advocated by Colonel Laviano on the grounds that, in order to be really effective, long-range artillery must have aerial observation, therefore adverse weather conditions or hostile supremacy in the air are as detrimental to accurate long-range artillery shooting as they are to bombing. It is also claimed that while little more can be done to improve the accuracy of long-range artillery shooting, much progress is to be expected along the lines of aerial navigation and bomb dropping. Furthermore, it should be remembered that during the war many great offenses slowed down and were stopped because of the impossibility of bringing up the huge masses of heavy artillery necessary to keep them going. Colonel Laviano claims that in the near future, bombers will prove themselves more efficient than artillery at ranges over 15 kilometres.

"Revista di Artiglieria e Genio," April, 1924

The leading place in this number is given to an article by Carlo Geloso, Lieutenant-Colonel of Artillery, on "The Hegershoff Method of Map-making by Use of Aerial Photography." The article is a brief technical description of the process and instruments and is illustrated with excellent plates. The instruments were made by G. Hede and Company of Dresden. Errors have been reduced from 0.63 to 0.38 metres in 100 horizontal metres and from 1.22 to 0.37 for 100 metres of vertical distance during the experiments which took place from 1921 to 1923. Seventeen men in a month can make a 1:25,000 map covering 2400 square kilometres which is 75 per cent. more than the same number of men could do in the same time by the terrestrial mapping. By this process a 1:5000 map covering 120 square kilometres can be made in a month. A note to Colonel Geloso's article states that the *Revista* will soon

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publish a description of another method of aerial map-making which has been invented and applied in Italy.

The article entitled "Practical Sound Ranging," by Captain Gustavo Secco, covers the subject briefly from many angles. He states that although Major Pillion in the *Revue d'Artillerie* claims that he can instal a sound-ranging system in six hours, it would really take more nearly 24 hours before it would function if the time for proper reconnaissance were included. Captain Secco claims that the method of trying to avoid being located by the hostile sound-ranging service by firing several batteries simultaneously, as was done by the Germans, is apt to do more harm than good. Better ways to avoid detection are, when possible, to utilize the warm hours of the day when there is frequently an acoustic mirage, or to fire when the wind is blowing from the hostile lines.

A discussion of various methods of anti-aircraft defense is presented by Colonel Spartaco Targa. He shows how he believes the large centres of industry, supplies and communications, which are near the frontiers, can best be defended by a rational organization of the various means of defense at hand, in order to reduce devastation and confusion to the minimum if an aerial invasion immediately followed a declaration of war.

Mountain warfare is the subject of Major General Carlo Ferrario's article, in which he tells of the operations in the high Pasubio region. The front here consisted largely of isolated outposts in crags or on peaks, some of which were provided with ten days' supplies in case they were cut off by snow drifts or surrounded by the enemy. The artillery played an extremely important part in this warfare; large calibres as well as mountain guns were used to a great extent. Enfilade and extreme cross-fire was used almost everywhere, as it was usually impossible to shoot straight to the front. At a position called Eagle's Nest Spur the artillery held the front positions unsupported by infantry, because access was so difficult that a few cannoners could prevent the enemy climbing to the guns.

ENGLAND

"The Journal of the Royal Artillery," April, 1924

THE MECHANICALIZATION OF FIELD ARTILLERY (LIEUTENANT-COLONEL
C. C. ARMITAGE)

The writer starts out by giving the four main systems of mechanicalization. The first of these is to have the gun hauled on its own wheels by the tractor. Next, the gun may be carried on a

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machine from which it cannot fire. Third, the gun may be carried on a machine from which it can fire if required. Finally, the gun may be mounted permanently on the machine on a central pivot mounting.

With reference to the first system, the gun hauled on its own wheels by a tractor, the advantages are that a light and narrow tractor will do the work. The gun and carriage need no modification except in minor details. The tractor can carry without difficulty the personnel and an ample supply of ammunition. The gun can be brought into action very rapidly. The gun is independent of the tractor and therefore there is a great flexibility. In the case of a direct hit, both gun and tractor are not likely to be put out of action.

However, these are the disadvantages of this system. The speed must be limited to what the gun and carriage will stand. This is not a serious drawback, for speeds of 10 to 11 miles have been used without damage to the equipment. The obstacle crossing power is somewhat limited by the gun wheels. It is difficult to push the gun backwards.

As to the second system, the gun carried on a machine from which it cannot fire, the first advantage is that there is no wear on the gun due to vibration while travelling. The machine is handy, reversing is simple. The speed and obstacle crossing power are greater than in the first system.

But the disadvantages to this second method are these: Additional width and weight are required for the machine. Both these disadvantages are serious, especially the latter. The space for the personnel and ammunition is limited, necessitating a larger number of machines or else less ammunition. There is delay in loading and unloading the gun and ammunition from the machine and consequent slowness in getting the gun into action. This can be obviated by towing the gun into and out of action. Special arrangements must be made for cover for the personnel during action.

As for the third system, the gun carried on a machine from which it can fire, the *pros* and *cons* are the same as for the last system with the additional advantage, however, that a surprise attack may be dealt with more easily.

Finally in the last system where the gun is mounted permanently on the machine on a central pivot mounting, there are these advantages: The gun is always ready for action and on a good platform. This system provides a very mobile form of artillery and particularly suitable for close support and anti-tank work. As just stated, the mobility is great and protection is sought rather by movement than by concealment or by armor. It has all the carrying power required.

But there are disadvantages. There is increased vulnerability due to the increased size, the machine and the gun being one. The

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machine and the gun combined are conspicuous in action. There is lack of flexibility in the event of casualties or mechanical breakdown and the gun and the tractor can not be separated. The system involves considerable weight and width for the machine and there is limited space for the detachment and ammunition. This system is not suitable for divisional field artillery, but finds a place in special cases of close support and anti-tank work.

Considering all of these advantages and disadvantages the ideal solution seems to be that of the third system where the gun is capable of firing from the machine in emergencies but is used normally on the ground. The difficulties in design are very great, however. Until we get another type of field gun, it is better to confine ourselves to the first system of drawing the gun *behind* the tractor.

Then the writer takes up the characteristics of mechanical field artillery. He shows, from the experience that the British batteries have had, that a field artillery outfit can travel at the rate of over six miles per hour and cover in a day about sixty miles.

Mechanical field artillery is considerably less vulnerable than horse artillery. During a ground attack practically all of the personnel are free to use rifles for defensive purposes. There are no horses open to attack. An attack by machine gun fire from the air will do little damage. Bombs will have practically no effect—unless direct hits are registered. The element of surprise is not so disconcerting to a mechanical as to a horsed battery.

The visibility of a motorized battery is the same as that of any other battery. But once in action it is easy to hide the machines, at least much easier than to hide horsed limbers. There is no movement as in the line of limbers and there is no watering of horses. As regards the visibility from the air of the tracks of vehicles, it is probable that the tracks of motor vehicles are more visible than those of horsed vehicles. On the other hand, in the vicinity of the position the reverse will be the case. Taking all things into consideration, it is thought that the spotting of a position of motorized artillery will not be easier than that of spotting a battery of horsed artillery.

As to such things as gas, disease and exhaustion, a motorized outfit will not be so subject to these as will a horsed battery.

If the total number of men needed for a battery be added up, it will be found that approximately the same number of men are needed for both kinds of artillery. But, the advantage of the motorized battery lies in the fact that not so many men will be exposed in the motorized battery to the dangers of combat.

Motorized artillery is conducive to better training, morale and general efficiency. There is more variety in the work, more time for drill, and the men will be learning something that will be of value

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to them in civil life. Battery training will be simplified, for it will be possible to concentrate on one thing at a time. In time of war the maintenance of the standard of mechanical knowledge should not be difficult, for it will be possible to obtain recruits with this knowledge.

Generally speaking, it would appear that the motorized artillery is tactically superior to the horse-drawn artillery. The advantages of mobility and invulnerability enable artillery to be handled more boldly than before. An increased supply of ammunition will be available and replenishments from the rear will be easier. The road space problem is a difficult one and will not be solved until we have had more experience. The chief defects of mechanized artillery are the noise of the machines and the lack of flexibility in the battery staffs. The former will be lessened as design improves and the latter can be overcome by the use of small machines and lots of them.

The rôle of the artillery has not changed. By making artillery motorized, however, it will be able to carry out its rôle more efficiently. The introduction of mechanical artillery favors surprise, mobility, and the concentration of superior force at the decisive time and place.

THE SLIDE RULE IN THE FIELD (LIEUTENANT-COLONEL E. C. ANSTEY)

The writer says that the slide rule has an undeserved reputation for difficulty. Its appreciation is not widespread and this is due to the fact that not enough people have tried to use it in the field. It is easy to demonstrate the superiority of the slide rule over rules of thumb and mental or paper calculations.

The slide rule proves of value in the solution of the following calculations:

(a) The distance from observer to battery by use of sub-base at the battery.

(b) Conversion of metres to yards.

(c) Angle of site when difference in height is known.

(d) The range to a target indicated by an aeroplane by the Very pistol method.

(e) The range and the bearing of a target when the coördinates of the battery and the target are given.

When the range to the battery and the range to the target are both known from the observer and when the angle between is known, the problem of determining the range from gun to target is as simple with the slide rule as by any other means.

The slide rule can be carried without inconvenience.

To determine the distance from observer to battery using the sub-base method, let one man stand at the directing gun and another

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take a twenty-yard distance normal to the line of sight. If these men will signal their positions by semaphore flags or by holding up one arm, the subtended angle can be read. Dividing twenty by this angle in mils gives the thousands of yards of range. Simply put 2 over the mil reading and read the distance on the right. If it is necessary for the base to be more or less, the battery will signal the length of it and the computation is similar.

Since 8000 metres are equivalent to 8749 yards, therefore, if 8750 on the lower scale of the slide is set over 8000 on the lower scale of the rule, the lower scale of the slide will read yards while the lower scale of the rule will read metres. Eight thousand seven hundred and fifty and 8000 on their respective scales should be marked in red so that there will be no danger of forgetting the setting.

To find the angle of site, find the difference in height between the guns and the target and set this (in yards) over the thousands of yards in range. Read the angle of site on the left.

In finding the range to the target by the Very pistol method, the plane flies at a known height over the target and fires the pistol. The angle of site is read. Put the known altitude over the subtended angle in mils and read the range in thousands of yards on the right. This is exactly the same as the measurement of the distance to the battery except that the sub-base is vertical instead of horizontal.

Finally comes the problem of determining the range of a target when the coördinates are given.

To find the range between two points, first find the difference between the north and south coördinates and then the difference between the east and west coördinates. Take the ratio of the *smaller* difference, whichever it may be, to the greater difference. Perform this indicated division on the slide rule. Then turn over the slide and find the angle of which the ratio is the *tangent*. Now, knowing this angle, divide the *smaller* difference by the *sine* of the angle, and the result is the range; three operations on the slide rule.

This sounds hard until one tries it.

FRANCE

"Revue Militaire Généralé," March, 1924

The first instalment of Lieutenant-Colonel Clement-Grandcourt's "Our North African Natives in the New Army," is the leading article in this issue. The author considers the effect of the conscription of the natives, particularly in Algeria, and inclines to the belief that voluntary enlistment would be less expensive in every way in the long run. Obligatory service presents many social, economic, political and military disadvantages.

While the native troops took an important part in the war, the

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present rôles of France as the policeman of the Entente and the principal guardian of the Rhine, the bulwark of the West, have not lessened their importance. More than one-fourth of the peace-time French Army is composed of natives of her Colonies and almost half of this quota is supplied by North Africa. While the British have only employed Indians in the Infantry and Cavalry since the Sepoy Mutiny, the French have gone so far as to train them as artillery drivers as well as in the use of all the new infantry auxiliary weapons.

The author believes that the native quotas could be maintained—perhaps, even increased—without conscription with all its attendant dangers.

Commandant Janet selects one of the most interesting operations which took place between the period of stabilization and the battle of Verdun as his subject in an article entitled "Attack of the 10th Colonial Division" (September 25, 1915). A detailed account of the action of this unit, which took part in an operation almost leading to the complete rupture of the German Champagne Front, is given, based on documents in the archives of the Historical Section of the Ministry of War and the statements of participants.

The last instalment of the "Russo-Roumanian Campaign of 1917" is found in this issue of the *Revue*. Colonel Bujac recounts the events of the battle of Maresesti which he considers Roumania's most brilliant and glorious operation since that country's participations in the war. He gives the new ally—and particularly the First Army—credit for the victory.

Captain H. Welschinger contributes an article under the caption "Campaign of 1679" and with the sub-title "How Louis XIV in 1679 Forced the Great Elector to Accept the Treaty of Saint-Germain." A quotation from Louis' envoy extraordinary in northern Germany opens the article: "The Germans, when one treats them fairly, believe that they are feared and there is no way to bring them around except to not spare them at all." The author describes the successful campaign of Marshal de Créquy against the Great Elector of Brandenburg's Lieutenant Spaën, beyond the Rhine. Louis XIV had declared war because the Elector had refused to return western Pomerania taken from his ally, Sweden, when the French King was otherwise occupied. The author draws the conclusion that, in order to deal successfully with the dangerous, perfidious nation to the east, the Rhine is the key to the situation.

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"Revue d'Artillerie," March, 1924

"The Trend of Foreign Artillery Thought," by Major Laurent, is a résumé of post-war policies and development of most of the great powers. Principal attention is given to the United States and Germany.

The Westervelt Board Report, and the matériel developed in compliance with its recommendations, is discussed in detail. Great interest is displayed in the only complete post-war system of matériel which has been carried beyond the drafting board stage.

While Germany is forbidden artillery development, a great deal of thought has been devoted to the lessons of the war, and a complete set of regulations for the use of the artillery has been issued. The division has a large proportion of artillery; an artillery commander and staff (corresponding to artillery brigade headquarters), two regiments of field artillery, a battalion of anti-aircraft artillery, an observation squadron, in addition to three infantry batteries. One light regiment is horse-drawn, and consists of three battalions of two 77 batteries and one 105 howitzer battery each. The other regiment consists of three batteries of 15-cm. howitzers, horse-drawn; three batteries of 105 howitzers, motorized; two batteries of 10-cm. guns and one battery 21-cm. mortars, motorized. The German division takes care of many missions which with us are assigned to the corps artillery.

The general tendencies in all countries are toward an increase in range in existing matériel by an improvement in the form of projectile and in addition, in new matériel, an increase in the length of tube and in powder pressure. Retubing or relining is relied on to furnish the solution to the greater wear of the tube caused by high velocities. Hydro-pneumatic recuperators are almost universally adopted. The horizontal and vertical fields of fire are being increased, the split-trail carriage being the solution for the former. At least 45° elevation is considered necessary for all calibres, gun or howitzer. Ease of manufacture, quantity production, and standardization of parts are qualities which are being stressed.

In "Combat Liaison between the Infantry and the Artillery," Colonel Jeze discusses the various means of communications between the infantry and artillery, and shows that all are unreliable in action. He proposes, as a remedy, a system of panel communication between the infantry and airplanes, and radio between planes and artillery. The infantry displays a signal indicating their line when held up by enemy resistance. The airplane sends the coördinates of this line to the artillery, which opens fire at a prearranged distance in front of this line. In the same manner the infantry adjust the fire

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roughly (short, over, right, left, correct) and when they consider the target neutralized, signal "cease firing," and advance.

"The 155-mm. Gun, Model 1917, Schneider," is a description by Captain Layral of this type of matériel, which was put into service in the French Army during the last year of the war, and notes on its use based on his experience with it.

"Disturbing Factors in Artillery Fire," by Colonel Mercier, is a collection of notes on several ballistic subjects. Under the heading "Coppering" he describes the events which during the war established the fact that coppering, and not wear, was causing erratic firing in many cases; the search for a remedy, and the final solution found in the lead-tin alloy. In another note he showed that erratic effects were obtained with some matériels due to too high a rate of rotation of projectile, the projectile striking on its side. He explains the loss of fuzes in some calibres, notably the 155, as taking place during ricochet. If the ground is firm, the projectile has its spin greatly reduced, and the inertia of the fuze causes it to continue rotation, unscrewing it from the shell.

"Revue d'Artillerie," April, 1924

"Entrance Requirements for Military Schools" is a reply, by General Tanant, Commandant of Saint Cyr, to an article, bearing the same title, appearing in the February issue. General Tanant disagrees with the statement that a more scientific education is necessary in all military schools, as he believes the tactical use of the scientific weapons does not require any specialized scientific training. He contends that a literary education—history, geography, literature—produces a keen, active mind, as against the more precise, but less flexible mind which is the result of an intensive scientific education.

"In Concentrations of Fire," the author, who is anonymous, discusses very ably this important phase of artillery fire. He traces the development of artillery fire from the pre-war doctrine of "so many batteries assigned to a target of so many miles front" to the practice at the end of the war of attacking targets in succession, with powerful concentrations of fire. He sets forth the present thought—the targets assigned to be attacked successively with such heavy concentrations that they will be destroyed, or at least neutralized for a sufficient length of time. He attacks the practice, showing that in many cases extremely heavy concentrations, due to errors in computing data, may not silence the target for more than a

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few minutes. He advocates, therefore, the attack of objectives by lighter concentrations, and also the assignment of units to fire on them continuously, in order to keep them neutralized.

"The National Motor Fuel Problem and Producer Gas," by Major Sainctavit, voices the desire, which is common to all nations, for the development of a motor fuel which can be produced in quantities in time of war, without recourse to foreign countries. After discussing the more ordinary fuels and showing the inadequate supply in France of each, he proposes the use of producer gas made from wood charcoal. He describes a number of simple and compact gas producers one of which was applied experimentally to a commercial automobile, with fairly satisfactory results. He estimates that the forests of France can supply sufficient charcoal to fill all automotive needs.

"The German 77-mm. Anti-aircraft Gun, Model 1916, Krupp," by Major Vauthier, describes an interesting type of mount. The lower part of the carriage is a conventional single trail type. A pedestal mount is placed on the trail, some distance in rear of the axle. There is a horizontal pivot at the front and bottom of the pedestal, around which the pedestal can be rotated forward into almost a horizontal position, where it is locked for travelling. The trail is secured to a limber by means of a lunette.

"Theoretical Studies on the Life of Gun Tubes," translated from the German of Captain Justrow by Lieutenant-Colonel Gavard, is the first instalment of a comprehensive study on a subject which is of deep interest to the artillery. The author considers the forces tending to produce wear in the tube under the following headings: Pressure on lands due to the acceleration of rotation of the projectile; friction between tube and projectile; force necessary to engrave the rotating band; the pressure, temperature, and duration of action of the powder gases, and the rate of fire; composition of the metal of the tube and the rotating band; wear caused by cleaning. In this instalment principal consideration is given to wear due to reaction between the lands and the rotating band. Different types of twist and profiles of grooves are considered, formulæ being derived to show the forces acting in each case.

"The Artillery of Louis XIV," continues Major Pichat's study of the development of French ordnance toward the end of the 17th century. He describes the gradual displacement of the pike by fire arms and the bayonet, and the controversies of the period as to the type of fire arms to be used by the different branches.

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Summer Training for Reserve Officers of the Branch Assignment Group

THE first separate training for our branch assignment reserve officers will be at Fort Myer, Virginia, and Camp Meade, Maryland, probably the first two weeks in September. The date is not definitely announced as it is planned to set the time most conveniently for the greatest number, and replies from individual officers are not all in yet.

The officers will report for duty at Fort Myer, where a week will be spent on technical instruction. At the end of the first week the group will move to Camp Meade for a week of service firing and field work. The battalion of the 16th Field Artillery will conduct the instruction.

The Field Artillery has at present 540 reserve officers commissioned in the branch assignment group. These officers come directly under the Chief of Field Artillery and in case of war they are assigned to the Chief's office, or to our field artillery schools, replacement centres and brigade firing centres—some as administrative officers but mostly as instructors.

The funds in previous years has not permitted separate training for these officers. The allotments are small this year, and in an effort to economize on mileage Fort Myer was selected and only officers east of the Mississippi have been asked to attend. Next year a camp will probably be selected in the central west and the following year on the Pacific coast.

Results of the R. O. T. C. Pistol Competition for 1924

Alabama Polytechnic Institute has again won in the R. O. T. C. Pistol Competition and retains possession of the Challenge Cup. Twelve of the twenty field artillery R. O. T. C. units entered the competition this year. The team standings follow:

Alabama Polytechnic Institute	2096	Iowa State A. & M.....	1974
Purdue University	2087	University of Oklahoma	1935
Princeton University	2070	University of Wisconsin	1914
University of Missouri.....	2044	Harvard University	1781
University of Utah.....	1989	Colorado Agricultural College	1732
Oregon Agricultural College	1975	Yale University	1619

The highest individual score was made by G. E. Boefer, University of Missouri. The individual scores of the three leading teams are shown below.

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<i>Alabama Polytechnic Institute Challenge Cup- Bronze Medals</i>	<i>Purdue University Bronze Medals</i>	<i>Princeton University Bronze Medals</i>
J. H. Reeves..... 429	J. F. Armstrong..... 419	John Meade 419
T. B. Wilder..... 418	R. Van Meter..... 423	A. W. Meston..... 419
W. B. Wood..... 422	R. E. Day..... 418	E. A. Baldwin..... 416
A. R. Swanson..... 411	C. E. Lennox 415	H. G. Hemingway 409
M. B. Smith..... 416	D. A. Barker..... 412	H. Schlosberg..... 407

Change in Terms of Competition for the Knox Trophy

The terms of competition for the Knox Trophy are changed this year. This handsome trophy, at present held by Battery "A" of the First Field Artillery at Fort Sill, was donated by the Society of the Sons of the Revolution of the Commonwealth of Massachusetts. For a number of years it has been given to that battery of regular army field artillery displaying the greatest firing efficiency during the year. This condition has resulted in recent years in such an advantage to the batteries at the Field Artillery School, which fire an enormous amount during student officer instruction, that other batteries could hardly hope to compete on equal terms.

This year the selection of the winner will be made on a composite standard of excellence. The batteries will be judged on firing efficiency, mobility, communications and interior economy, giving equal weight to each. Judging units from this point of view each battalion commander selects the competing battery from his battalion, each regimental commander selects the best offered by his battalion commanders, and, if a brigade is present, the brigade commander selects the best offered by his regimental commanders. When the best battery at any station is thus selected, the senior field artillery officer present will convene a board which will give this battery a test, already prepared by the Chief of Field Artillery. There will be about twenty batteries at as many different stations taking this test.

The final test consists briefly of three service firing problems to test the firing efficiency; a road march to test mobility; a demonstration of the customary duties of the battery detail, including laying of a telephone net, use of signal lamp, range finder and other battery instruments to test communications efficiency; and an examination of the battery records as to desertions, trials and reenlistments to test interior economy. The whole test will take about two days to perform.

This final test has already been prepared by the Chief of Field Artillery. Specific tasks are prescribed and specific credits or deductions are assigned each task for time, mistakes, etc., etc., with the idea of eliminating, so far as possible, the personal element in judging.

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These tasks are varied for different types of matériel and are held confidential until given the battery commander two hours before the test by the board. The total mark for the competing battery will be forwarded to the Chief of Field Artillery by November 20th. It is believed the resultant comparison of marks will enable a fair award of the Trophy. It is expected to vary the nature of the tasks to some extent from year to year.

The Army Olympic Riding Team

The Army Olympic Riding Team sailed from New York, Saturday, March 31st. This team has been training at Fort Myer, Virginia, since last fall. Before this JOURNAL is in the mail, they will have taken part in the Olympia, the international horse show held in London, June 20th–28th. In July they will meet the best teams the countries of the world can produce at the VIII Olympiade in Paris—representatives of the United States of America.

The army may take pride in furnishing these riders. On the team are Major J. A. Barry (team captain); Major Sloan Doak; Major C. P. George; Major E. W. Taulbee; Captain V. L. Padgett; Captain W. T. Bauskett; Lieutenant F. H. Bontecou; Lieutenant P. M. Robinett and Lieutenant F. L. Carr.

The expenses of the team have been borne to some extent by admission to shows given by the team itself; the greater part has been met, however, by public spirited horsemen of the country whose liberal contributions have made this effort possible. Not only have these men given of money but they have given horses, from among which some have stood the training trials at Fort Myer and will now appear with the army mounts in France.

There can be no question of the sort of opponents this team will meet. One might mention the great team from Italy, from France, England, etc.; the simple fact remains, their opponents will be the greatest the world can produce. The inspiring thing is to know that we have a team that we well may trust to do honor to our colors. America is behind them.

Road Test of T-35 Tractors

Between July 1st and September 1st, Battery A, 83rd Field Artillery, is to march from their home station, Fort Benning, Georgia, to Fort Bragg, North Carolina and return. This will be a total distance of over eleven hundred miles.

The purpose of this march is to test the performance of the Holt T-35 tractor. In local tests at Fort Benning, this tractor has demonstrated apparently satisfactory ability to handle any one-axle load,

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i.e., a single gun or a caisson body. The officers observing the local tests further believe it can handle a two-axle load such as a gun and caisson. If this is so, it will facilitate the solution of many problems, notably those concerning road space. The battery is to be comprised of tractors pulling one-axle loads and two-axle loads. This will not only demonstrate any lack of necessary reserve power needed for heavy, two-axle loads in emergencies, but it will also enable observers to account for any possible racking to pieces of the light tractor under a heavy load.

Statistics on the National Guard for 1923

From the 1923 Armory Inspection Reports

Percentage of organizations where recruiting is not aided by the attitude of the community in which stationed	26 per cent.
Percentage of armories owned by private parties	52 per cent.
Percentage of armories not properly adequate for purpose ..	23 per cent.
Percentage of armories not having adequate gallery facilities	34 per cent.
Percentage of organizations not having ranges accessible ...	60 per cent.
Percentage of organizations not having satisfactory schools for officers	32 per cent.
Percentage of organizations not having satisfactory schools for noncommissioned officers	34 per cent.

From the 1923 Field Inspection Reports

Unsatisfactory conditions:

Discipline in 35 organizations out of 427.

Arms, uniforms, equipment and matériel in 128 organizations out of 427.

Camp administrations in 13 organizations out of 427.

Hours of instruction—general average 7.8 hours.

Purely military	6.3
Other	1.5

Exercises and manœuvres among 427 organizations:

Participating in company or detachment exercises or manœuvres	253
Participating in battalion exercises or manœuvres	139
Participating in regimental exercises or manœuvres	94
Participating in exercises or manœuvres above regimental	52

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Status of readiness for field service among 427 organizations:

As to organization	304.....	70 per cent.
As to training	110.....	26 per cent.
As to equipment and matériel	170.....	40 per cent.

Inspections for the Office of the Chief of Field Artillery

Major-General W. J. Snow, Chief of Field Artillery, is on an extended inspection trip to Hawaii and various stations in the United States. Leaving New York on April 16th, by transport through the Panama Canal, he arrived in Honolulu May 12th. One month was spent in Hawaii. Since arrival in San Francisco, June 19th, his inspections include the field artillery activities at Monterey, California; Camp Lewis, Washington; Fort Douglas, Utah; Fort D. A. Russell, Wyoming; Camp Custer, Michigan; and Camp Knox, Kentucky.

Lieutenant-Colonel Augustine McIntyre from the Office of the Chief of Field Artillery has completed an inspection of national guard, reserve and R. O. T. C. field artillery units, extending from the middle of April to the middle of June. His visit included the various units at Louisville, Kentucky; Indianapolis and Kokomo, Indiana; Columbus and Canton, Ohio; Detroit and Lansing, Michigan; Chicago, Illinois; Madison and Lacrosse, Wisconsin; Minneapolis, Minnesota; Pierre and Aberdeen, South Dakota; Omaha, Nebraska; Fort D. A. Russell, Wyoming; Denver and Pueblo, Colorado; Hutchinson and Topeka, Kansas; Tulsa, Chickasha, Anadarko and Fort Sill, Oklahoma; Dallas and San Antonio, Texas.

Polo

The Camp Lewis Team

The Camp Lewis Polo Team consisting of the following named officers: No. 1, Major F. W. Honeycutt, F.A.; No. 2, Lieutenant H. J. Guernsey, F.A.; No. 3, Captain W. C. Green, F.A.; No. 4, Major J. W. Downer, F.A. (Team Captain); substitutes, Captain H. R. Hanson, F.A., and Lieutenant S. T. Williams, Inf., playing in the Pacific Northwest Polo tournament (Washington and Oregon) at Vancouver Barracks, Washington, May 8th to 18th defeated Vancouver Barracks 8 to 7; Oregon Agricultural College 17 to 4; and Seattle 21 to 1, thereby winning the Pacific Northwest Polo Championship and the championship of the state of Washington. They also won the runner up cup for the Grand Championship, having been defeated by the Boise, Idaho team 13 to 6. The Boise team is considered to be the best mounted team on the West Coast. The game was played without handicap. A later report will

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cover the play of the Camp Lewis team in the Ninth Corps championship played at Boise, Idaho, May 30th to June 10th.

Polo at Fort Bragg

The following is an account of polo activities at Fort Bragg by Major R. C. Batson who has captained the team the past year.

Since July 1, 1923, the Fort Bragg 1st Polo Team has engaged in 22 tournament games, and has won 18 of these. The scores of games lost were 22-23, 7-8, 5-6, 10-13 and 10-13. These scores include handicaps. Although this is a most creditable showing, the circumstances accompanying them are perhaps more important than the scores.

The great majority of officers who have been practicing are assigned to motorized organizations. Not less than twenty officers have been turning out regularly for practice throughout the year and have benefitted greatly by engaging in this excellent athletic exercise, gaining marked improvement in horsemanship, and by being brought in contact with the highest type of civilians. A large number of these officers have been transferred to other posts, and many of them are making good in Polo at their new stations.

Very few of those turning out had any appreciable amount of polo practice prior to reporting at this station. A goodly proportion of them had previously received very little instruction in equitation. Only one member of the first team had ever really played polo before arriving here, this is a lieutenant who was on the second cadet team at West Point. The only man on the second team who had played any appreciable amount of polo before was on the first cadet team at West Point.

The second team has, in addition to regular practice, participated in two tournaments—winning the championship in one and second place in the other. Local games have been played throughout the year. All those considered qualified to play in matches have been given opportunities to participate. All officers turning out have received valuable instruction in equitation. None of this practice or playing has interfered with military training or duties.

Great benefit for the Post and for the Army has been obtained through outside and local tournaments. Much has been done to inspire interest in polo among the national guard and civilians in this Corps Area. During the summer training in 1923, 60 officers and 15 enlisted men of the field artillery national guard units from the following states were given instruction in polo: Georgia, North Carolina, Alabama, Florida, Louisiana and Virginia. Equipment and horses were furnished from the polo stables. Only one of these officers had ever practiced polo, and very few had previously received any instruction in equitation. Some had never been on a horse. The

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instruction given was, of course, very limited. In spite of this, they were given enough to cause them to become extremely interested and all the organizations went away stating that they were determined to organize polo clubs at their homes. This did a great deal towards increasing interest in horses, which is a vital need among mounted national guard organizations.

Fort Bragg has been instrumental in creating interest in polo in this state. Encouragement from Fort Bragg has been largely responsible for the organization of active clubs at Charlotte, N. C., and Winston-Salem, N.C. At Pinehurst, a popular winter resort near the Fort Bragg Reservation, extremely cordial relations exist between the post and the civilians. Players from Fort Bragg go there at various times throughout the winter to fill in on teams for games, and players from their club often come to Fort Bragg. Polo at Pinehurst, where a large number of highly representative people go during the winter, has risen from a minor sport to one of the most important activities. Fort Bragg is to be greatly credited with this.

The number of enlisted men used in connection with polo has been kept at a minimum. Officers turning out for polo have done all training of ponies and a great part of their exercising. On trips to outside tournaments only 4 or 5 grooms were taken along and members of the team have exercised the horses.

Only 32 government horses and 2 private horses have been used. The condition and training of the few horses available for polo has been the subject of numerous complimentary remarks in newspapers and correspondence with individuals. These are government mounts and are not markedly above the average of government horses. Their condition is due entirely to careful and good handling. Their average age is about 11½ years. Great stress has been placed on care of limbs, feet and mouths. Much has been gained by studying the methods used by civilians.

All the government horses used are assigned to motorized regiments, none being available in the 1st Battalion, 2nd Field Artillery, the only horse-drawn unit at Fort Bragg.

The polo teams have assisted materially in recruiting. Many applicants have been received from places where polo has been played.

Players have unusual opportunities for mixing with civilian players. Officers frequently go to Charlotte, Winston-Salem, and Pinehurst, N.C., and Camden, S.C., at which places they are most welcome. At these places they have met some of the country's best players, and often have a chance to ride fine horses.

Captain Miller, a guest of Mr. A. W. Harriman at Overhills Club, N.C. (adjoining the Fort Bragg Reservation), has kept 12 of

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Mr. Harriman's polo ponies there during the winter for training. He has joined in practice with these ponies at local games, and has most obligingly given some very valuable coaching to the Fort Bragg officers. Captain Miller is a retired officer from the English Cavalry, and is a man of exceptional ability with horses and at polo. It is understood that he is to be used for refereeing international polo games next fall.

The excellent sportsmanship displayed by players on trips has been very gratifying. Many complimentary letters and newspaper articles have been written on this subject.

Assessments for funds from members of the Post Polo Club have been comparatively low. In most tournaments the expenses of the team have been paid by the clubs from proceeds from gate receipts.

The tournaments in which the Fort Bragg Team has participated are as follows:

Post Polo Tournament, July, 1923. Three local teams were entered. Appropriate handicaps were agreed upon by the team captains, taking into consideration the ability of the players and the difference in the training of the ponies. Trophies were presented to the winners (tin cups were presented to the team winning third place).

War Department Fall Tournament, October 13th-23rd, 1923. The expenses of this tournament were paid partly by the local polo fund and partly by individual members of the team. There were six teams entered in this tournament, *viz.*: Fort Myer, War Department, Fort Humphreys, Second Corps Area, Third Corps Area, Fort Bragg. This was an elimination contest. The Fort Bragg Team won their first game from Fort Humphreys. In their second game they lost by a close score to the War Department Team. The War Department made the tying goal in the last twenty seconds of the eighth period and won in an extra minute of play. This game was on an excellent field. Fort Myer eliminated the War Department. This latter game was played on a soggy field, and no doubt the condition of the field was responsible for the inability of the War Department to offset their high handicap. Comparison with Fort Humphrey's play indicated that the Fort Bragg Team was as good, if not better, than the Fort Myer Team.

Fall Tournament at Pinehurst, November 23rd to December 2nd, 1923. The expenses of this tournament were paid by the Sand Hill Polo Club at Pinehurst from gate receipts. Two Fort Bragg Teams were entered in this tournament. There were five teams participating. The First Fort Bragg Team won first place and the Second Team won fourth place. The scores of the first Team were as follows: Fort Bragg 10, Winston-Salem 9; Fort Bragg 31, All

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Carolinas 4; Fort Bragg 17, Fort Bragg Second Team 8; Fort Bragg 10, Sand Hill 4.

First Pinehurst Spring Tournament at Pinehurst, February 10th to 12th, 1924. Expenses for this tournament were paid by the Sand Hill Polo Club from gate receipts. The officers playing were able to carry on most of their duties at Fort Bragg between games. there were four teams entered in this tournament. Fort Bragg won this event. Scores: Fort Bragg 10, Winston-Salem 4; Fort Bragg 6, Sand Hill 4; Fort Bragg 13, Charlotte 1.

Camden, S. C., March 12th–19th, 1924. The expenses of this tournament were paid by the Camden Polo Club from gate receipts. In this tournament one of the first string players was injured in the first game, and the team lost 2 out of 5 games played. No doubt all games and the Southern Circuit Championship would have been won but for this accident. The scores were as follows: Camden 6, Fort Bragg 5; Fort Bragg 6, Fort Benning 5; Fort Bragg 13, Cincinnati 4; Fort Bragg 13, Fort Benning 9; Camden All-Professional Team 13, Fort Bragg 10. Fort Bragg won the Hobkirk Trophy, but lost in two other events.

Pinehurst Spring Tournament, April 5th to 14th, 1924. Expenses for this tournament were paid by the Sand Hill Polo Club from gate receipts. The officers playing were able to carry on most of their duties at Fort Bragg between games. This tournament was composed of two events—one for zero goal teams and one for handicapped teams. There was one Fort Bragg Team entered in each event. Both of these teams won the championship in their respective events. In the handicap event the Winston-Salem Team was made up of a very strong combination, and the Fort Bragg Team deserves much credit for beating this team by a score of 9 to 5. This team consisted of Captain Egan, formerly Captain of the English International Indoor Polo Team; two strong players from the Dedham County Club at Boston; and the best local player from Winston-Salem. This was an elimination contest. In the handicap event the scores were: Fort Bragg 9, Winston-Salem 5; Fort Bragg 8, Sand Hill 6. In the zero goal event the Fort Bragg Second Team won easily from Charlotte and the Pinehurst Second Team.

Corps Area Tournament at Fort Oglethorpe, Ga., April 30th to May 11th, 1924. The expenses of this tournament were paid by the Sixth Cavalry Polo Club from gate receipts. This tournament was played in two events, the first, a handicap event, was won by Fort Bragg, the scores being: Fort Bragg 11, Chattanooga 4; Fort Bragg 8, Oglethorpe Purples 7; Fort Bragg 14, Fort McPherson 6. The fine spirit of sportsmanship and cordiality shown by officers and enlisted men of the Sixth Cavalry was most gratifying. There is

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a most pleasant feeling between field artillery men at Fort Bragg and the Sixth Cavalry, as a result of their meetings at polo. Colonel Robert J. Fleming, Major Charles W. Foster, and all the other members of the Sixth Cavalry Polo Club deserve high praise for the manner in which their polo tournament was conducted.

In the second event only two teams competed for the Corps Area Championship, the Fort Bragg Team losing to Fort Oglethorpe in a most exciting game by the score of 13 to 10. This latter was anybody's game until the last two minutes of play.

If more horses were available a great many more players would be turning out for practice at this station. The horses available are limited to those assigned to the 13th Field Artillery Brigade, which number only thirty serviceable. The 2nd Field Artillery (horse-drawn) will probably be able in the near future to turn out three or four horses suitable for polo practice, but the general shortage of horses in this battalion prohibits further calls for polo ponies from them.

The decided success of polo at Fort Bragg has been made possible by the personal supervision, encouragement, and assistance rendered by the commanding general.

The Junior Championship Team

The players and ponies for this army team have been assembled at Mitchel Field, Long Island, and their preliminary work is under way. During the last half of June they have been occupied at Meadowbrook in the high and low goal events. During July, special match games will be played to select the team to defend the Junior Championship Cup at Rumson. The match games will be held three times a week and will afford the squad an opportunity to meet all the teams on Long Island. This play, together with the opportunity to observe the trial matches for the International team, which is also being selected, should afford excellent means for development. The ponies on hand are a better lot than the army teams have had before.

As reported in our last JOURNAL, Major Beard, the team captain, completed an extended inspection trip this spring. The following comments found in his report of the results of his inspection are of interest. "The guiding principle in this inspection was to select personnel in ponies and players to broaden the field of selection for the Army Polo Team of 1925, which will defend the Military Polo Championship against Great Britain in that year. With this idea in view, the commanding officers at the various centres of army polo were told that the Central Committee was endeavoring to develop new material for polo teams so that the service as a whole could look upon the Army Team as a real representative of the best in ponies and players that exists in the Army. It was impressed upon them

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that every effort was being made to give everyone a chance, and that the team that was selected for the play of 1924 would be with a view to development rather than with a view to selecting a team for some particular tournament. In other words, this year's polo team is not selected to win any particular match, but with the hope that both players and ponies will be developed to a higher point for the benefit of army polo in general.

"At the outset it cannot be too emphatically stated that the spirit of coöperation at every point left nothing to be desired. From the commanding officer himself down to the rank and file of each organization a manifestation of this spirit of coöperation was apparent. As an example, various officers around the polo centres have offered to lend their private ponies to the team for these games, and the commanding officers themselves allowed a selection of as many ponies as were needed from the very best they had in their organizations. The officers at Kelly Field, Texas, admitting their inability to help in players or ponies, offered financial assistance when needed. In no instance was there ever a protest or an objection registered from anyone.

"The polo games seen at the various posts such as Fort Sam Houston, Fort Bliss, Fort Riley, and Fort Leavenworth, evidenced play of much improved class. The youngest tyro at the game seemed to understand the principles of play, and although handicapped in regard to ponies and proper playing fields, the games themselves were surprisingly good. It can be safely stated that polo in general is very much on an upward trend, and the only thing necessary is proper encouragement and opportunity in every line.

"In the selection of ponies an effort was made to take only a small percentage of first-class ponies from each place so that the high grade of post polo would not be interfered with by the Army Team; and also with the hope that a pony from any organization on the army string would give that organization a closer personal interest in the team. As stated before, each organization offered its best as a whole, and as a result three ponies were taken from Fort Sam Houston, one from El Paso, five from Fort Riley, and one from Fort Leavenworth. This does not include two private ponies from El Paso and two private ponies from Fort Leavenworth. In addition to this, ten ponies were gotten at the Fort Reno Remount Depot, five of which will be ready for first-class polo immediately and the other five should be developed by the end of the season. Two of these ponies were donated by the commanding officer himself. To recapitulate, there should be fifteen good ponies and four undeveloped ponies as a result of the inspection. All of these ponies are fresh and sound, and the list does not include any ponies which have been played by the Army Team during the past three years. It may

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be necessary for the list selected to be changed slightly, due to accidents, illness, etc.

"The following points were observed with reference to the polo in the Army in general and applies particularly to polo played at the various army posts:

"Referees.—Not enough attention is paid to the selection of referees who will enforce the rules and who will call fouls properly. This condition allows certain young officers beginning their polo career to have a wrong conception of the game. They do not properly understand the play and therefore cannot coöperate with their teammates. Too much stress cannot be laid on this point as it is one which requires immediate attention.

"Fields.—With the exception of Fort Riley, Kansas, proper playing fields do not exist at any of the posts where polo is played to a great extent. Just how to remedy this is a question, but it is believed that the Central Polo Committee could persuade some expert in the care and upkeep of polo fields, to write an article which can be distributed to the service at large and which will in a large measure overcome this defect.

"Regimental Polo.—At most army posts regimental polo is being sacrificed for the post team itself, to the detriment of developing beginners. This condition of affairs is due to the fact that the various posts are anxious to win the civilian and circuit cups in their district. It is believed that polo at the various army posts should start with the lowest organization at the post; hold tournaments for these organizations and their ponies; that no ponies of one organization be loaned to another organization until after the completion of these tournaments. From the regimental tournaments could be selected teams for higher units, both in ponies and men, and from it all a regular series of tournaments should be held with the ultimate idea of selecting the best available team for civilian and circuit play. In this manner the younger players will not be discouraged through lack of opportunity or through the fact that their ponies are taken away from them at the beginning of the season."

The following officers were finally selected for the squad and are now at Mitchel Field: Lieutenant John A. Smith, F. A., Camp Travis; Captain C. A. Wilkinson, Cav., Fort Leavenworth; Captain C. H. Gerhardt, Cav., Fort Riley; Major J. L. Devers, F. A., West Point; Major A. H. Wilson, Cav., West Point, and Major L. A. Beard, Q.M.C., Mitchel Field, Long Island.

There are thirty-six ponies obtained from various posts: 8 from West Point, 2 from Army War College, 2 from Fort Myer, 4 from Fort Riley, 1 from Fort Leavenworth, 3 from Fort Sam Houston, 1 from Fort Bliss, 7 from Fort Reno, 1 loaned by Major S. W. Winfrey, 3 private mounts of Captain Wilkinson's and 4 private mounts belonging to Major Beard.

INTERCOLLEGIATE POLO CHAMPIONSHIP

BY CAPTAIN ARTHUR L. WARREN, F.A., A.D.C., POLO
REPRESENTATIVE, SECOND CORPS AREA

INTERCOLLEGIATE polo for the year 1924 may be said to have been centred about the field at Fort Hamilton, Brooklyn, New York. The contests held there consisted of first, an Eastern Intercollegiate Championship, in which the eight most important college polo teams of the East were entered, and second, a National Intercollegiate Championship between the winner of the Eastern championship, Princeton, and the Western challengers, the University of Arizona.

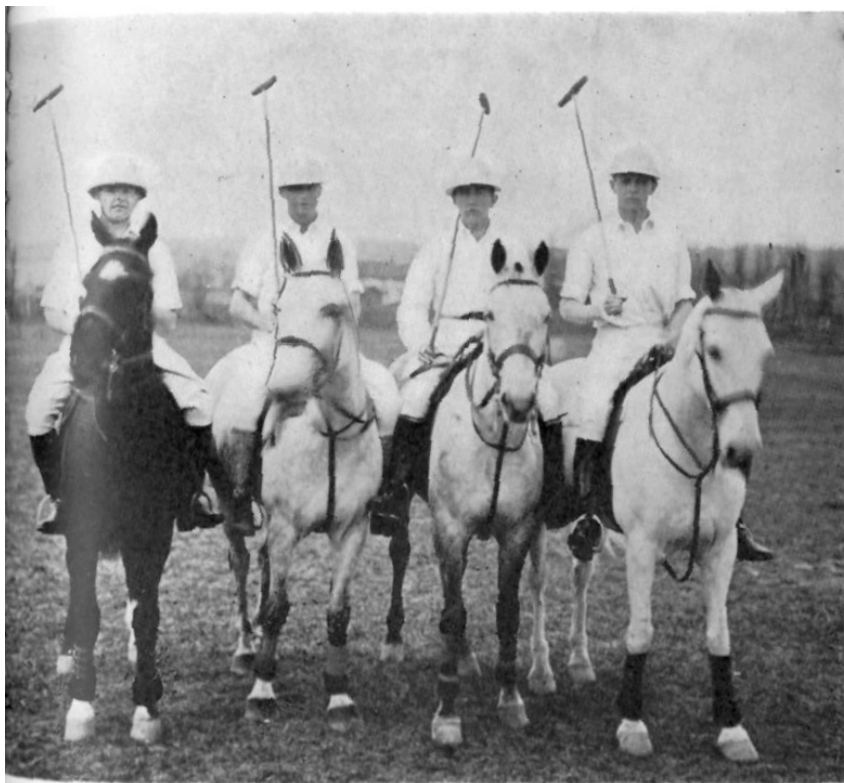
Intercollegiate polo in the East had its real start in 1923 when the first tournament was held at Fort Hamilton. This tournament was made possible through the active interest and personal efforts of Major General Robert L. Bullard, the Corps Area Commander and donor of the Robert Lee Bullard Perpetual Challenge Trophy, and his polo representative, then Captain C. W. Yuill, Inf., A.D.C. In the 1923 tournament the trophy was won by Yale.

In introducing the tournament for 1924 General Bullard, in his foreword for the program, makes a few very pertinent remarks relative to intercollegiate polo. He says:

"For the second successive year, polo teams from some of our most famous institutions of learning are gathered here to battle for supremacy. Although polo is an ancient game, it is only beginning to be known by many Americans. As a college sport it is still more of a new-comer. In fact, the tourney held on the Fort Hamilton field in 1923 was the first intercollegiate polo tournament ever held in the United States.

"Last year's success in every respect proved conclusively that this fascinating sport most properly belongs in the forefront of athletics in our leading colleges. Its advantages in training our young men are too numerous to longer go without the recognition which the Army and many leading clubs have long since accorded it. For these young college men of today will be our country's leaders of tomorrow, and to guide the destinies of nation and industry in the channels of success they will need certain vital human qualities the seedling of which is often planted in youth in the realm of sports. And among these sports none offers quite so bounteously as polo.

"Polo combines as does no other game the unity of action between two living things—a horse and man. It requires not only the skill of the player and the training of his horse, but that close coördination between the two which makes them act as one, recalling



PRINCETON

INTERCOLLEGIATE CHAMPIONS

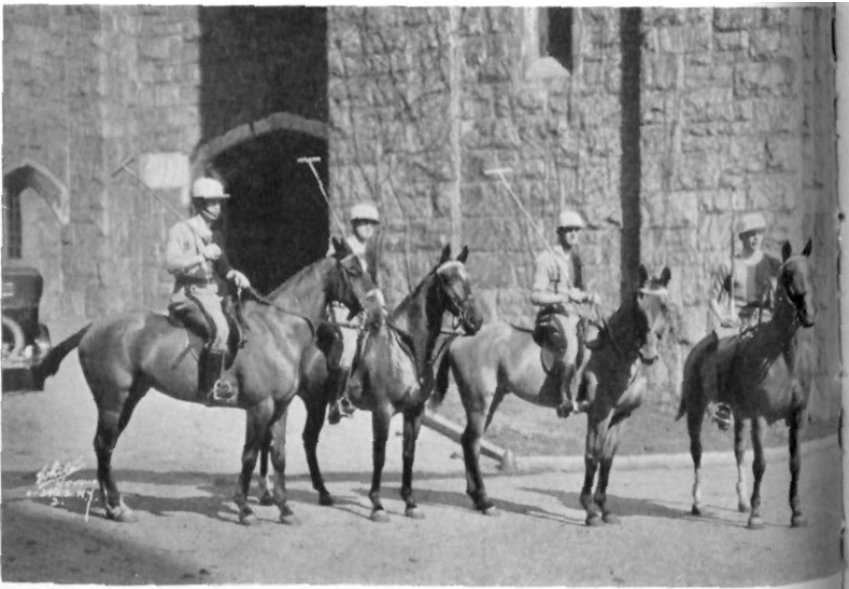
D. S. Holbrook, No. 2—C. Newbold, No. 1—W. H. Jackson (Captain), No. 3—T. M. Bancroft, No. 4.



YALE

INTERCOLLEGIATE CHAMPIONS 1923

Left to Right:—A. H. Hunt, No. 1—S. Hewitt, No. 4—H. P. Baldwin (Captain), No. 2—W. K. Muir, No. 3 A. H. Herold, No. 5—Major A. V. Arnold, F. A. (Coach).



WEST POINT

J. D. Scott (Captain), No. 1—D. T. Crow, No. 2—J. R. Moon, No. 3—J. O. Murtaugh, No. 4.

INTERCOLLEGIATE POLO CHAMPIONSHIP

the centaurs of Greek mythology which galloped the mountains of Thessaly. It develops team-work and self-restraint, strength, endurance, dash, quickness of decision, and courage. It brings into play all of these qualities and more; in fact, almost every requisite for a successful leader of men.

"In the Army we have long recognized this and have fostered polo both as a sport and a training. If the soldier were never again to mount a horse in war—and we know he will—polo will still be for him the most valuable instruction any game offers. But the attributes of a good soldier are no different from those that spell success in civil life, the realization of which may account for the gratifying start the galloping game recently has made in the universities. Its future progress will undoubtedly be still more rapid, for, of all games, it combines the greatest number of fascinating and valuable characteristics, which indeed makes it worthy to be crowned the 'King of Sports'."

The tournament for 1924 was again held at Fort Hamilton. The preliminaries opened on May 3rd with a substantial victory, by West Point over Cornell. In the following game Yale proved a winner over the Pennsylvania Military College, which had in a previous series at Chester, Pennsylvania, eliminated the University of Pennsylvania. Harvard in turn proved a victor over the Virginia Military Institute and Princeton completed the preliminary games by eliminating Norwich University.

In the semi-finals, which started on May 10th, Yale, in a game in which there was intense public interest, and on a wet field, proved their playing ability over West Point. Princeton in turn won from Harvard.

In the finals, with excellent weather and before a crowd estimated by some as high as nine thousand persons, and with General Pershing present, Yale and Princeton met to decide the intercollegiate championship of the East. Princeton displayed a brand of polo thought by many to be practically beyond the ability of a college team and closed the game with a victory over Yale by a score of 6 to 4, thus avenging their loss of last year, and winning for Princeton possession of the Robert Lee Bullard Trophy for the current year.

Prior to the Princeton-Yale game the final tryouts in the riding events for the American entries in the modern (Military) Pentathlon for the Olympic games at Paris 1924 were held on the field as an added attraction.

THE NATIONAL INTERCOLLEGIATE CHAMPIONSHIP

Early in 1924 the teams from both the University of Arizona and Stanford University in California expressed a desire to come east and challenge the winners of the eastern intercollegiate polo championship.

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Preliminaries

WEST POINT:

Scott 5; Craw 4; Moon 2; Murtaugh 1: Total 12.

CORNELL:

Bull 1; Graselli 1: Total 2.

YALE:

Hunt 3; Baldwin 3; Herold 1; Hewitt 1: Total 8.

PENNSYLVANIA MILITARY COLLEGE:

Wyman 2; Burt 1; Hafleigh 1: Total 4.

HARVARD:

Tufts 5; Stranahan 1; Pinkerton 3; Kent 2: Total 11.

VIRGINIA MILITARY INSTITUTE:

No scoring.

PRINCETON:

Newbold 5; Holbrook 4; Jackson 2; Bancroft 1: Total 12.

NORWICH:

Fisher 1; Seyler 1: Total 2.

Semi-finals

WEST POINT:

Craw 2; Moon 1; Murtaugh 1: Total 4.

YALE:

Hunt 5; Baldwin 1; Herold 1: Total 7.

HARVARD:

Pinkerton 2; Kent 2: Total 4.

PRINCETON:

Newbold 2; Holbrook 2; Jackson 2; Bancroft 1: Total 7.

Finals

YALE:

Baldwin 2; Herold 2: Total 4.

PRINCETON:

Holbrook 4; Jackson 2: Total 6.

Because of the expense it was not possible to bring both teams into the east, and because of scholastic schedules and expense it was impossible for both teams to meet and to decide the western winner for this year. Upon the basis of the showing made by the University of Arizona in winning the intercollegiate championship of the south-west and the fact of their claim to the western championship for 1923, they were chosen as the team to come east, their trip being made possible through a guarantee from the Polo Representative, Second Corps Area, and funds raised by Arizona backers in the south-west.

Seventeen ponies for the Arizona team, in charge of one of its members and a cowman from the south-west, arrived at New York, as early as May 3rd for the purpose of accustoming the ponies to



THE UNIVERSITY OF ARIZONA

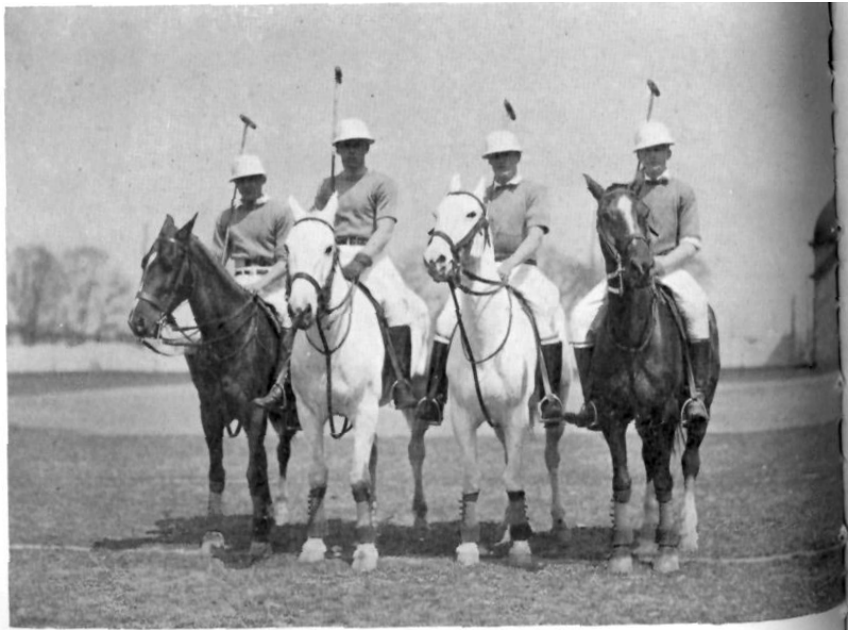
WESTERN CHAMPIONS, 1923 AND CHAMPIONS OF THE SOUTH-WEST, 1923-1924

J. S. Fuller—H. Saunders, No. 1—P. Sawyer, No. 2—Lt. Col. R. M. Parker (Coach)—M. H. Woody, No. 4 J. H. Hearon (Captain), No. 3—J. Magee, No. 2.



HARVARD

G. Fannelly, No. 3—G. E. Kent, No. 4—F. D. Stranahan, No. 2—J. G. Pell, No. 1.



PENNSYLVANIA MILITARY COLLEGE

INTERCOLLEGIATE POLO CHAMPIONSHIP

the climate and the low altitude of the east. The ponies were followed on May 19th by the arrival of Colonel Parker and his team, who, during their stay, were the guests of Mr. Walter Douglas, of New York, The Meadow Brook Club, and Fort Hamilton.

Though the original plan called for a schedule of three games during the week of May 26th to 31st, it was impossible to play before Decoration Day, May 30th, because of final examinations at Princeton. The first game between Arizona and Princeton was played on May 30th before a crowd estimated by some as high as ten thousand spectators, in which Princeton was victorious. Princeton's No. 1, Newbold, and the faster Princeton ponies proved to be too much in spite of the hard fight of the Arizona players and their cow-ponies. In the second game of the series, Princeton again proved the victors by a more decisive score in which the smooth playing of the Princeton team and their ponies outmatched Arizona and retained for the east the claim upon the national intercollegiate polo championship.

Prior to the series with Princeton, the Arizona team had some very excellent practice games at Meadow Brook Club and at Herkscher Field on Long Island and it appeared until the first game of the series that Arizona would be a stronger contender than she actually proved to be. Arizona was unfortunate in that some of her best ponies were out of the play before the first game and others injured in that game were unable to play in the second. Colonel Parker, the coach, and his team state that in spite of the period of almost a month which their ponies spent in this lower altitude there was a noticeable shortness of breath and excess perspiration due to the change in altitude.

The Arizona team have scheduled a series of games with the Pennsylvania Military College at Chester, Pennsylvania, and other stops on their return trip home.

The Field at Fort Hamilton, which is located in Brooklyn, New York, about three-quarters of an hour by subway from Times Square, is most centrally located for army polo. Its accessibility to the public makes it most desirable. It is a turf field and with time can be developed into an excellent field, although for the 1924 tournament it was quite rough and tufted.

The weather throughout the tournament was most discouraging and as a result of the late spring many of the games were played in a light drizzle or a series of cold showers and frequently the field was wet almost to the point of danger to the players and mounts.

The games played by the college teams were of six periods of seven and one-half minutes each with three-minute intervals between periods and ten-minute intervals between the third and fourth

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periods, which seemed to work out very well for these tournaments and this class of polo.

Aside from the personal interest of General Bullard and his polo representative in the game of polo itself, the Headquarters Second Corps Area has fostered the intercollegiate polo tournament and made it possible because of the interest which the game can bring to the R. O. T. C. units in the various universities. The establishment of mounted units in the different universities alone has made the playing of polo possible through the availability of mounts and riding equipment, the cost of which would otherwise be prohibitive to the students. It is believed polo serves as an incentive to the R. O. T. C. students and further advertises and popularizes the unit itself among the student body.

The tournament as conducted at Fort Hamilton was self-supporting and competing teams had all expenses of every nature paid for without cost to themselves. In 1923 the players alone, without their ponies, were brought to Fort Hamilton and were mounted upon government ponies furnished locally. This year, however, each team has brought its own string of ponies which has aided materially in the type of polo played. Because of the lack of accommodations at the post, teams had to be quartered at hotels in New York City. As a result the expenses of the tournament itself have been exceedingly heavy and have been met by the polo representative of the corps area by sales of boxes to prominent persons in and about New York City, through general gate sales of stand seats and general admission, and through the sale of programs.

Some of the universities are fortunate enough to have student players who own excellent ponies of their own. Other schools, such as Princeton, have a polo association, to which wealthy alumni have donated very excellent mounts. These teams have a great advantage over those dependent solely upon mounts furnished to the R. O. T. C. unit by the Army.

Altogether polo in the various universities and R. O. T. C. units is still in a formative stage and it will take some years to decide fully its status. The tournaments of 1923 and 1924 have served to demonstrate that there is a popular public interest in polo among the various universities and that gradually interest and the development of players in the universities is also on the increase. There is little doubt but that some of our players of this past tournament will, within the course of a few years, be seen competing for the international teams to represent the United States in the matches with England, and the older generation in civilian polo look with much interest upon this new developer and feeder of polo material into their already thinning ranks.



CORNELL

From Left to Right: D. Morse (Sub.)—R. H. White, Jr., No. 2—C. A. Grasselli, 2nd No. 3—H. Headden, No. 4
A. S. Jarecki, No. 1—R. Turner (Sub.)—R. D. Warren (Manager).



VIRGINIA MILITARY INSTITUTE

From Left to Right: H. Wilson, No. 1—M. K. Kellogg, No. 2—J. Yates (Sub.)—E. Ferguson, No. 4 R. Stokes
(Captain), No. 3—C. Carstens (Sub.).



NORWICH

E. H. Richard—C. C. Peterson—N. D. Nichols—J. H. Monahan—H. A. Ambrose (Manager) N. A. Butler
(Captain).