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Notes on the First Division in the Battle of Soissons

WITH SPECIAL REFERENCE TO THE EMPLOYMENT OF THE FIELD ARTILLERY

LECTURE DELIVERED BY MAJOR-GENERAL C. P. SUMMERALL, U. S. ARMY, TO THE OFFICERS OF THE FIELD ARTILLERY OFFICERS' RESERVE SECTION IN NEW YORK CITY

WHILE the assault at Soissons was only a part of a general offensive, it was vital that a deep wedge should be driven into the enemy's line at this point. As a result of the June and July gains of the enemy, he had occupied a great salient in the Allied line, and thus exposed the flanks of his positions to a counter-attack. The enemy was well aware of the weakness in his position, and he had secured the critical point of the flank southwest of Soissons by holding it with some of his best troops. The 20th French Corps occupied this sector. The plan was to capture the high ground southwest of Soissons and, pivoting on this position, make a general advance from the southwest towards the north and later towards the northeast. The attack was not only to be in force, but it was to be a surprise. This required a rapid concentration by night marches of large numbers with vast quantities of artillery, munitions and supplies.

The 1st Division had been relieved from the Cantigny Sector July 9th and had been concentrated near Beauvais for training in open warfare. The 2nd Brigade and the 7th Field Artillery were held near the front as reserve of the 10th French Corps. On July 11th orders were received directing the movement of the division to the area of Dammartin-en-Goel, north of Paris, and placing it at the disposal of the 10th French Army. The movement began July 12th. The 1st Field Artillery Brigade and all of the mounted elements proceeded by marching, while all dismounted elements were moved in trucks furnished by the French authorities and from the Divisional Trains.

The movement was completed on July 14th for all elements except the Field Artillery Brigade.

On July 15th, the day of the German offensive, orders were received from the 10th Army placing the division under the 20th Corps and directing movement in the direction of the sector held by the 20th Corps southwest of Soissons. Corps orders the same day directed the advance to begin on the night of July 15th–16th. The two infantry brigades, the 1st Regiment of Engineers and all other dismounted elements were transported by French trucks to the vicinity of Palesne. The urgency now became so great that the guns and gun crews of the 75-millimetre regiment were transported by camions. The 155-millimetre regiment continued by marching. On July 16th the Headquarters of the division and of the 1st Field Artillery Brigade were advanced to Mortefontaine. During the night of July 16th–17th all elements of the division, except the howitzer regiment, reached the rear area of the 20th Corps. The battalions which were to be in the front line of the infantry regiments were advanced to the vicinity of Mortefontaine. The infantry officers proceeded to make reconnaissances. On account of the exhausted condition of the horses, it now became necessary to draw the howitzers by trucks of the 1st Ammunition Train. Even with this assistance, 3:30 P.M. of the 17th found them approximately twenty-five kilometres from their positions. At 7:30 P.M. they reached Mortefontaine. On the afternoon of July 16th the brigade and regimental commanders and staff officers of the 1st Field Artillery Brigade visited the chiefs of artillery of the 20th Corps and the 1st Moroccan Division, where they obtained information relative to the employment of the artillery. On the 17th positions were selected and firing data prepared. Some work was done in constructing the gun emplacements, but on account of exposure the most of them could not be made ready until the night of the 17th–18th. One French regiment of 75's and one subgroupment of 105's were placed at the disposal of the 1st Division. A subgroupment of 155's was at its disposal at times.

On July 17th orders from the 20th Corps stated that the 10th Army would make an offensive to break the enemy's front between the Aisne and the Oureq and to push in the direction of Fere-en-Tardenois; that the 20th Corps would participate with three divisions in the front line and two in the second. The 1st American Division was designated as the left front-line division of the corps.

The attack was ordered for 4:30 A.M., July 18th. It was not to be preceded by any artillery firing, and, in order to insure surprise, not even adjustment shots were permitted. The advance of the infantry was to be covered by a rolling barrage. Three objectives were assigned to the division. The front of the division was about 2½ kilometres. The division had issued Field Orders No. 27 from advance information:

"G-3* Headquarters First Division,
"694 American Expeditionary Forces,
France, July 16, 1918.

"Field Orders
"No. 27

"Map references:
"1/20,000 (furnished by G-2† to combatant units).
"1/20,000 with zones (furnished by G-2 to most interested units).
"1/80,000—SOISSONS.

"1. The 10th Army attacks in direction FERE-en-TARDENOIS.

"2. The 20th Corps participates in this attack.

"3. The 1st Division participates in this attack under orders of 20th Corps. It has on its right the 1st Moroccan Division, on its left another French Division of the 1st Corps.

"4. The zone of action of the Division is limited as follows:

"Southern limits—Reservoir 1500 metres southeast of MORTEFONTAINE—north edge of BOIX VAUBERON—Ru de ST. AIGNAN de RETZ—(stream bed to road crossing south of COEUVRES)—elevation point 162—old trenches and wire running west-east to crossing of road 400 metres north of la GLAUX Fe‡ (trench included)—along same trench system to crossing of road 300 metres north of CRAVANCON Fme (trench included)—road crossing 500 metres northeast of CHADUN (trench system excluded).

Northern limits—Fe de POUY (included)—along trench to LAVERSINE (included)—wood at head of ravine 1200 metres northeast of CUTRY (included)—RAPERIE (included)—MONT PLAISIR Fe (included)—PARIS to SOISSONS road 2000 metres northeast of CRAVANCON Fe.

"*Objectives:*

"1st: road running east of north through la GLAUX Fe—TILLEUL de la GLAUX.

"2nd: eastern side of ravine east of MONTPLAISIR Fe—eastern edge of MISSY aux BOIS—eastern edge of CRAVANCON Fe.

"3rd: PARIS to SOISSONS road at northern sector limits—eastern edge of CHAUDUN.

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

"6. The 1st objective will be organized as soon as taken, and held by units of 1st line battalions with machine guns to further the advance.

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* Operation Section of the Division Staff.

† Intelligence Section of the Division Staff.

‡ Fe. or Fme. abbreviation for Farm.

"The 2nd objective will be organized and held in like manner by remainder of 1st line battalions.

"Second line battalions will pass through 1st line battalions at 2nd objective and will take and hold 3rd objective, pushing out reconnoitring parties to feel the enemy and if possible continuing the advance.

"7. Interior limits between Brigades—north edge of VAUBERON Fe—North edge of Le MURGER Fe—North edge of MIX SAULOX—South edge of CUTRY—TILLEUL de la GLAUX—North edge of MISSY Aux BOIS—head of ravine southwest of PLOISSY,

"Interior limits between regiments in brigades indicated on map furnished by G-2 to most interested units, approximately middle of brigade zones.

"8. *Infantry*.

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

"Original emplacement of battalions—1st and 2nd line battalions on east side of Ru Du RETZ. The wooded ravine north of CUTRY will not be used for emplacement of troops as it is full of Yperite and badly shelled.

"3rd line battalions on west side of ravine east of RIVERSEAU Fe and ravine of Ru du RETZ. Both ravines are badly shelled. At H hour reserves will move forward, picking unshelled passages across ravines and take station east of jumping-off line. After departure of 2nd line battalions from 2nd objective, 3rd line battalions will move forward and take station just east of road la GLAUX Fe to TILLEUL de la GLAUX.

"Combat groups will maintain liaison to the flank.

"9. *Artillery*.

"The Divisional Artillery, as reinforced, will protect the movement.

"Reinforcement:

"253rd R.A.C.P.

"1 sub-groupment (105's) or (155's) to be furnished later by General Commanding 20th Corps Artillery.

"The 75 mm. batteries will furnish a rolling barrage to cover advance to 1st objective and consolidation. The cadence of the barrage will be 100 metres in 3 minutes. It will halt for 15 minutes beyond 1st objective.

"After 15 minutes all available artillery will cover the advance of the infantry to the 2nd objective at the initial cadence. It will rest in front of the 2nd objective for 45 minutes, and then cover advance at initial cadence to 3rd objective and cease.

"The 75 mm. batteries, being unable to cover the movement to the 2nd objective, will move forward to positions where they will be able to protect further advance of their infantry. One battalion of Divisional 75 mm's. will be assigned to act with the infantry in each regimental zone.

"The 155's 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 position.

"10. *Tanks.*

"1 Groupment (4 groups of 3 batteries of 4 tanks) will be used with the infantry. Further orders will issue.

"11. *Engineers*.

"1 company will be put at disposition of each Commanding General, Infantry Brigades and reported to him.

"4 companies under command of Commanding Officer, 1st Engineers, will be division reserve in valley west of MORTEFONTAINE. Liaison officer at Division P.C.

"12. *Machine Guns*.

"1st Machine Gun Battalion in division reserve on roads in ravine north and east of MORTEFONTAINE, liason officer at Division P.C.

"All other machine guns attached to battalions.

"13. *Special Orders for Infantry Battalion Commanders in Division Reserve*, will conform to normal attack formation and follow in regimental zones, liaison officers at Division P.C.

"14. *Posts of Command*.

Unit.	*Final.*	*Initial.*
20th C.A. & Arty. of C.A.	RETHEUIL	MONTGOBERT
3rd Corps, A.E.F.	TAILLEFONTAINE	Advance representative at MONTGOBERT
1st Div., & F.A. Brig.	MORTEFONTAINE	COEVRES
1st Div. Moroccan	VIVIERES	ST. PIERRE AIGLE
1st Inf. Brig.	Dugout on trail 400 metres southeast of Le MURGER Fe.	To be determined and reported later along Trench de la GLAUX
2nd Inf. Brig.	Dugout on trail 600 metres east of RIVERSEAU Fe.	To be determined and reported later along line CUTRY-RAPERIE

"15. *Liaison.*

"Axis of liaison MORTEFONTAINE-COEVRES road, thence Trench de la GLAUX.

"Orders will issue later.

"16. *Supply and Evacuation.*

"Orders will issue from G-1.

"17. *General Instructions.*

"Our front line runs from Fe de la GLAUX at coord. 0115 to TRANCHEE l'ARENE at coord. 0840.

"Troops will be so placed that the first wave will cross the front line at H hour.

"Surprise is the essential factor in this operation. There must be no preliminary reglage from new positions. There must be no indiscreet exposure of personnel or indiscreet telephone conversations.

"Shell holes west of jumping off trenches have been Yperited and must be avoided. Ru du RETZ has been Ypreited and must not be forded. Troops forming up east of Ru du RETZ must be in position by 1:30 A.M., if possible as the ravines are shelled nightly at that hour. There is good water, spring, south of Church in CUTRY.

"Distribution 'B.'"

The following administrative orders were issued:

"G-1 Headquarters, 1st Division,
American Expeditionary Forces,
July 16, 1918.

"*SECRET.*
"ORDERS
No. 22
"Map: SOISSONS Sheet 1:80,000.

"1. Railhead, July 17th, CREPY.

"2. Distributing points and hours of issue July 17th as follows:

"1st Brigade: HAUTE FONTAINE, 12:00 Noon.

"2nd Brigade: HAUTE FONTAINE 1:00 P.M.

"1st Engineers: HAUTE FONTAINE, 2:00 P.M.

"2nd Fld. Sig. Bn.

"Hq. Troop (1st Echelon).

"Mil. Police Cos.: HAUTE FONTAINE, 2:30 P.M.

"1st F.A. Brigade: RAILHEAD, 10:00 A.M.

"Ammunition Train: RAILHEAD, 11:30 A.M.

"Sanitary Train: RAILHEAD, 12:00 Noon.

"All other organizations: RAILHEAD, 12:30 P.M.

"Ration Section, Field Trains will report at distributing points promptly at the time indicated above.

"3. EVACUATION: Men and animals unchanged.

"4. C.O. Military Police companies will ensure proper circulation by establishing such police posts as he deems necessary.

"5. Mail service at distributing points. A.P.O. 729 at Railhead.

"Distribution 'B.'"

"G-1 Headquarters, 1st Division,
American Expeditionary Forces,
July 17, 1918.

"*SECRET*.

"ORDERS

No. 23

"1. This Division attacks in compliance with F.O. 27.

"2. Supply:

"(a) Rations.

"Railhead, distributing points and issues as directed in Order No. 22, these headquarters. Division Dump at HAUTE FONTAINE.

"(b) Ammunition.

"Artillery ammunition at Corps Dump A 5, 2000 metres South of TAILLE-FONTAINE. Distributing point for Division after H hour J day, road junction Southern exit of ROY ST. NICHOLAS.

"Infantry Ammunition and Pyrotechnics.

"Dumps.

"Southern Brigade at Quarry near P.C., 300 metres West of COEUVRES.

"Northern Brigade at Les Longues Rayes.

"Division: Woods 500 metres North of MORTEFONTAINE on MORTEFONTAINE-HAUTE FONTAINE road. Combat trains will distribute to troops, who will carry the combat allowance in the attack. Combat trains will refill at echelon of Horsed Battalion, Ammunition Train South of Roy St. Nicholas.

"(c) Anti-Gas Material.

"Dumps: Southern Brigade near Brigade Ammunition Dump. Northern Brigade near Brigade Ammunition Dump.

"3. Evacuation.

"Embarkation Posts, four Ford ambulances each, to be established at H plus 20, J day, as follows: Southern Brigade: At the Eastern exit COEUVRES. Routes: To selection post le MURGER Fme.—Fme. de POUY, then road to Northwest. From selection post directly South to cross-roads, then East to Fme. de POUY—le MURGER Fme.

"Northern Brigade: Les Longues Rayes. Routes: To selection Post road West and Southwest to point 154, then same route as above. Posts for walking eases; two trucks from Sanitary Train for each Post. Southern Brigade at Quarry 500 metres S. W. of le Murger Fme. Northern Brigade on road 100 metres S. W. of RIVERSEAU Fme. Routes same as for ambulances.

"From selection post same route as for Southern Brigade to point 154

then N. E. and East. Selection Post, Chauteau de Fme. at HAUTE FONTAINE. Twelve motor ambulances.

"Hospitals.

"For seriously wounded at PIERREFONDE; for slightly wounded at CLAIGNES

"Litter Bearers.

"Each Infantry Regiment litter bearers will be augmented by twelve litter bearers from Division Sanitary Train.

"(b) Animals.

"To Mobile Veterinarian Unit at CREPY.

"4. Battle Barrage.

"Battle barrage will be established by M.P. Co. No. 2 at H hour, J day, as follows: From Quarry at St. PIERRE AIGLE North along trench through CUTRY—point 128 to communicating trench at point 9944.

"Stragglers will be turned back. Wounded men directed to station for walking cases. Prisoners sent to nearest collection post.

"5. Prisoners.

"Collection Posts for prisoners will be established at H hour, J day, by M.P. Co. No. 1, as follows:

"Southern Brigade: Tr. Des COEUVRES at intersection with ST. PIERRE AIGLE Trench. When 1st objective has been taken this post will be advanced to RAPERIE. Prisoners will be quickly assembled after capture and turned over to the Military Police at the collection station. C. O. Military Police Co. No. 1 will evacuate prisoners direct to the Corps Cages 1500 metres west of VIVIERES.

"Distribution 'C.'"

"G-3 Headquarters First Division,
"697 American Expeditionary Forces,
France, July 16, 1918.

"Memorandum.

"Subject: Use of Telephone and Other Means of Communication.

"1. Pursuant to instructions from the 20th Army Corps, the telephone will not be used in advance of the Brigade P.C.'s until further orders.

"2. Under present conditions, it is particularly necessary that the use of all means of communication which are susceptible to being intercepted by the enemy be particularly guarded. It is further very important that the enemy should not learn of the entry of American troops into this sector. Whenever it is necessary to use the T.P.S., T.S.F. or Optical Communication, the message will be sent in French and the French liaison officers and interpreters will write the message, same to be transmitted in the proper code.

"Distribution."

A conference of the Brigade and Regimental Commanders of the 1st Division was called at Division Headquarters at 4:00 P.M. All were present punctually, except one Regimental Commander, who was still reconnoitring. The orders were read and every detail carefully explained. The following notes show some of the subjects covered:

The rolling 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 location of the line.

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

Artillery Battalion Commanders would be with Infantry Regimental Commanders.

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

The equipment to be carried was optional with Brigade Commanders.

Other subjects mentioned were:

The filling of canteens; bridges; combat liaison platoons; time to hold barrage in front of objectives; signals with aeroplanes; organization of captured positions; disabled and abandoned arms; police of battlefield; the military police barrage; three days' food on men and three days on wheels to follow; water carts ready to march; ammunition and engineer material on wheels; evacuation of wounded; observation posts.

The 1st Field Artillery Brigade issued orders as follows:

"The division artillery of the 1st Division reinforced by the 253rd R.C.A.P. (3 groups) will protect the infantry in the offensive operation described in F. O. No. 27.

"No adjustment will be made. No artillery preparation will be made.

"75's and 155's will fire rolling barrage and concentration fire according to the attached map. The 75's will cease firing at H plus 122. All guns will cease at H plus 248 and resume firing only at request of infantry.

"Moves of the artillery:

"75's:

"The limbers and caissons of the 6th F.A. and two batteries in each group of the 7th F.A. will leave their emplacements at H plus 60 and proceed to the batteries for the movement of the guns. The remaining batteries of the 7th F. A. and 253rd Regiment will move only on orders from these Hdqrs.

"The reconnaissances will leave the actual battery positions at H plus 120 and select positions between roads FERME LA GLAUX-ORME ST. ARMAND and the ravine of MISSY-aux-BOIS included. As much as possible each in its own zone.

"A liaison officer from each regiment will at this moment be sent to report to these Headquarters. Group Commanders will be in close liaison with the infantry for the opening of fire on first request, considering that all conditions become from this time on those of open warfare. As soon as they open fire Groups will report that fact to these headquarters.

"155's:

"Will move only on orders from these Hdqrs.

"Itineraries: In principle, the 6th F.A. will use bridges located near the TUILLERIE and COTE 60. The 7th F.A. will use bridges in COEVRES.

"Liaison: All means of liaison will be utilized. A liaison detail for each regiment will be at the disposal of the 1st Division. A liaison officer from the 5th F.A. will be furnished to the infantry supported."

The artillery was now working under conditions that were almost opposite to those which prevailed in the sectors of Lorraine and Picardy. Batteries had been taught to adjust their fire with the greatest accuracy, and the coördinates of battery positions, enemy batteries and sensitive points and of both friendly and hostile lines had been determined before any shots were fired. At Cantigny, for example, elaborate tables of fire had been prepared for the preliminary destruction, for concentrations upon all enemy organizations, for counter-battery for smoke screens, for gas neutralization and for trench mortars and machine guns. Nevertheless, the elements of command of all grades accepted their tasks with confidence and determination. At noon on the 17th, none of the batteries were in position and there was no ammunition at the emplacements. At H hour only 4 of the 155-millimetre howitzers of the 5th Field Artillery could fire. All came into action, however, within an hour thereafter. The guns of the 7th Field Artillery were moved into position by French trucks and all were placed by 1:00 A.M., July 18th. The guns, gun crews and limbers of the 6th Field Artillery arrived in French trucks at La Raperie, about 2 kilometres northeast of Mortefontaine, as day was breaking on the 17th. The first six limbers were used to take six guns to the battery positions, and these were placed as directing guns for the six batteries. The rest of the matériel remained hidden under sheds until night. After dark the guns were moved forward and the combat train started for ammunition. Two groups of French 75's were superimposed on the fire of the 6th Field Artillery, which supported the 1st Brigade, and one group was superimposed on the fire of the 7th Field Artillery. The initial ranges of the artillery were about 2500 metres.

The infantry marched in a heavy rainstorm during the night of the 17th–18th and reached their positions on time. The regiments were arranged from right to left as follows: the 18th Infantry, the 16th Infantry, the 26th Infantry, the 28th Infantry. A company of the 2nd Machine-Gun Battalion was attached to each battalion of the 1st Infantry Brigade and a

company of the 3rd Machine-Gun Battalion was attached to each battalion of the 2nd Infantry Brigade, except the battalions to which the regimental machine-gun companies were attached. As a result, the following assignment of machine-gun companies existed, and all operations of battalions include the operations of the machine-gun companies attached to them:

18th Infantry: Machine-Gun Company, 18th Infantry, to the 1st Battalion. Company "C," 2nd Machine-Gun Battalion, to the 2nd Battalion. Company "D," 2nd Machine-Gun Battalion, to the 3rd Battalion.

16th Infantry: Machine-Gun Company, 16th Infantry, to the 1st Battalion. Company "A," 2nd Machine-Gun Battalion, to the 2nd Battalion. Company "B," 2nd Machine-Gun Battalion, to the 3rd Battalion.

26th Infantry: Machine-Gun Company, 26th Infantry, to 1st Battalion. Company "B," 3rd Machine-Gun Battalion, to 2nd Battalion. Company "A" 3rd Machine-Gun Battalion, to 3rd Battalion.

28th Infantry: Machine-Gun Company, 28th Infantry, to 1st Battalion. Company "C," 3rd Machine-Gun Battalion, to 2nd Battalion. Company "D," 3rd Machine-Gun Battalion, to 3rd Battalion.

The initial order of the battalions in each regiment from front to rear was as follows:

18th Infantry: 3rd, 1st, 2nd.

16th Infantry: 1st, 2nd, 3rd.

26th Infantry: 2nd, 3rd, 1st.

28th Infantry: 2nd, 3rd, 1st.

The 37-mm. guns and the Stokes mortars of each regiment assisted the assault battalions. The battalion of French tanks attached to the division was accompanied by a company of the 1st Engineers. In addition to the two companies of Engineers attached to the infantry brigades, two companies of Engineers were assigned to the artillery for the purpose of repairing roads and bridges and assisting in the forward movement of the guns. The remaining company was engaged in road repairing at the front.

Field Hospitals Nos. 2, 3, 12 and 13 were established as prescribed and Ambulance Companies Nos. 2, 3, 12 and 13 were in readiness to move forward. The 1st Ammunition Train was delivering ammunition to the batteries and the 1st Engineer Train and the 1st Supply Train were in position to serve the troops. Water carts were filled and kitchen carts were held ready to follow with food.

The 1st Machine-Gun Battalion was in its reserve position and the 2nd Field Signal Battalion was intensely occupied repairing the wires that had been broken by the tanks and shell fire and in connecting advance command posts. A battle barrage was established by Military Police Company No. 2, and the First Division Headquarters Troop was disposed on guard, courier

and dispatch duty. It was proposed to utilize the 1st Trench Mortar Battery to assist the artillery and to serve captured enemy guns.

While the planning of this first great assault involved the most elaborate and detailed preparations, the experience of the division had perfected the staff and all elements of command to such a degree that the coördination was complete. Nothing could have been finer than the spirit of the officers and soldiers as they plunged forward that stormy night, through darkness, rain and mud, thinking less of the danger that awaited than of the duty of meeting and overcoming it, whatever it might be. Then, as the weary infantry lay in the shallow holes along their jumping-off line during those tense moments that immediately preceded the fateful zero hour of assault, and while the gunners stood waiting for their well synchronized watches to tick the second when all should fire with one great crash, some alarm brought down a barrage of counter-preparation from the enemy's guns. This lasted for only a few minutes, but it took its toll of casualties from our superb infantry. So well controlled was our own artillery that not a shot was sent in reply and silence again fell over the entire field. Then, at 4:30 A.M., while it was yet dark, there came a great roar, the sky burst into flame and the artillery barrage dropped, as it was expected to do, in front of our lines. Our gallant infantry, who for so many weary months had borne gas and shell in the trenches of Lorraine and Picardy, rose like a great irresistible wave and advanced, per schedule.

Reports soon began to arrive that the different units had jumped off on time. At 6:30 a message stated that the first objective had been taken at 5:30. As usual, the artillery reports were very complete and they supplemented and checked the reports to the division. At 7:45 a report stated that a German battery of 77's was captured and turned on the enemy and that 200 prisoners were coming in. Other reports told of the forward movement of our artillery reconnaissance officers and of batteries and of the repair of roads by the Engineers across the obliterated No Man's Land. Everything indicated that the course of the battle was normal. With the assurance of success, the Division Headquarters and Headquarters of the Artillery Brigade moved forward to the advance Command Post already prepared with communications. The reports became more favorable, indicating that our losses were small and large numbers of prisoners began to arrive. Many slightly-wounded men gave the most favorable account of our progress. As the day wore on, however, we began to learn of increased losses, and then the disquieting news came that the 2nd Brigade was unable to advance beyond the second objective. As had been anticipated, the enemy offered strong resistance in the Missy ravine, and the brigade fought desperately to cross it. Severe machine-gun fire from the front and left flank produced great losses in the left regiment and the advance was checked.

The leading battalions of the 2nd Brigade organized a position in advance of the second objective. The 1st Brigade advanced, overcoming all resistance by hard fighting, and occupied its objective for the day. There was thus left in the division front a space of over a kilometre between the line of the 1st Brigade and the line of the 2nd Brigade. This was filled by the 1st Brigade, which refused its left flank and added the necessary strength from the brigade reserve. For the time being, there was no anxiety, as the formation of the division in depth gave ample protection against counterattack. The division felt much encouraged by the capture of 2000 prisoners, including 75 officers, 30 guns and howitzers, a large number of machine guns and quantities of ammunition and stores.

The story of the fight can best be told by extracts from the regimental histories and they will be taken in the order from right to left.

THE 18TH INFANTRY

"This was the situation July 15th when the Eighteenth Infantry departed from Juilly in camions with the balance of the division and proceeded to the Compiegne Forest. This was in the neighborhood of the town of Palesne, around which was assembled the entire division. The following day division headquarters was established at Mortefontaine. To this vicinity two battalions marched the night of July 16th–17th, and from there the night of July 17th–18th, marched to the position in the line from which the attack was to be launched. The remaining battalion marched from Palesne to the line the night of July 17th–18th.

"This long march from the forest to the vicinity of division headquarters, and from there to the position in the line is one that will always stand out in the minds of the men who made it. Like that first long march from the Gondrecourt area to the Seicheprey sector, rain was an important factor. Starting from the woods at dusk, the first columns of troops were met with the heavy downpour before they had been under way more than a few minutes. Blinding flashes of lightning illuminated the countryside momentarily and gave the moving columns of men glimpses of a scene such as they would witness only once in a lifetime. Every road, every track and every field was filled either with trucks, wagons, artillery of moving columns of men. Here and there the French cavalry could be seen threading their way through the maze of tangled men, trucks and animals. Now and then the moving columns of Americans in olive drab would be halted because of congestion ahead. At such times it would be necessary to diminish the size of the column and send the troops through the small openings in single file, to be concentrated again as soon as the opportunity would permit. Clothing, packs and equipment of all kinds were soaked until they added many extra pounds for the men to carry. Strange oaths of the Orient mingled with those of

Europe and America, as now and then the native of this or that land relieved his feelings in the manner best known to troops in the field.

"But in all this tangle of moving humanity, animals and transportation, one thing always appeared uppermost: the determination of every man to get somehow and as soon as possible to his appointed place. Anxious unit commanders glanced at their watches repeatedly and prayed that they might be on time. They were just in time, no more.

* * * * * *

"It is doubtful if the Eighteenth was ever at a higher point of efficiency as a fighting unit than it was when it entered the battle of Soissons. The older officers and non-commissioned officers who had been in the army several years, and who had been with the regiment through all its work in France, were seasoned leaders who knew what to do at every turn in the situation. There were enough of these to control every element. The replacements received in the Seicheprey sector had been trained into splendid soldiers in the actual conditions of battle. The additional troops, received while the regiment was in the line at Grivesnes, also had received similar training and many of the older soldiers who had been wounded at one time or another had been returned to their companies. The regiment was at its best.

"Boundaries of the sector placed the regiment in the line directly in front of the village of Coeuvers and about two kilometres to the east of the ravine in which the town was located. The Third Battalion was given the mission of inaugurating the assault, with Companies L and M in the assaulting waves, and with I and K Companies supporting them. The First Battalion was in the supporting line, while the Second Battalion was held as a reserve for the division. At the opening of the engagement the Machine-Gun Company of the regiment became identified for battle purposes with the First Battalion and thereafter in the engagement of the war continued to act with it.

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"The first advance of the Third Battalion carried it forward to the enemy first line before the alarm was generally spread that an attack was on. Signal rockets of all kinds were sent up from the enemy trench system far to the right and left, and in a remarkably short space of time the enemy batteries began to put down fire in the path of the advance that brought a few casualties.

"On the plateau over which the troops were moving forward steadily the terrain lent itself admirably to the operation of machine guns, and this was the chief obstacle to be overcome. The German trenches fairly bristled with Maxims, but before the withering fire of the Allied artillery

these had little chance for action before the infantrymen were upon them, and there was no halt in the advance. One by one the enemy's field pieces either were put out of action, deserted or captured. As they overcame a machine-gun position at one point and then pressed on to attack another, the advancing infantrymen could see the enemy retiring as rapidly as possible, first toward the Paris-Soissons highway, then over it and through the wheat fields to the vicinity of the ravine leading down to Chazelle Farm. But before these objectives could be gained the Eighteenth was compelled to overcome position after position strongly defended by machine guns. The casualties were necessarily heavy.

"Just before the Paris-Soissons road was reached the First Battalion had passed through the depleted ranks of the Third Battalion and continued on until the village of Chaudun was in its hands. The rapidity with which the Eighteenth had been able to advance was due to the closeness with which the assault waves had followed the barrage and pressed the enemy wherever an opportunity offered.

"At the end of the first day the Eighteenth Infantry occupied the most advanced position in the division sector, the line extending northwest from the village of Chaudun, which was captured by the regiment. * * *

"During the first day tanks had been sent forward with the attack on the plateau across which the Eighteenth advanced, and these had been able to render valuable assistance until they reached the vicinity of the Soissons-Paris Highway, when direct hits from the enemy artillery resulted in most of these being put out of action. One of these took its last toll of the enemy just as it floundered in a final move after being hit. It came down with a crash on a group of Germans in position by the side of the road and crushed them into a mass of mangled bone and flesh.

"Alarmed at the rapid advance of the attack, the enemy during the evening placed his Eleventh, Forty-second and Thirty-eighth Divisions in the line, the last named directly in the path of the Eighteenth Infantry at the head of Chazelle ravine.

"After the line had been established northwest from Chaudun strong patrols had been pushed to the front to assure the holding of the ground against any surprise counter-attack that the enemy might make."

THE 16TH INFANTRY

"On the night of July 17th the American Forces sallied forth to strike a blow that was to roll the Kaiser's hordes back across the devastation of France and crumple the mighty military machine of Germany in final defeat. As those long columns of determined warriors issued from the dark confines of the Compiegne Forest, the intermittent hum of the German avions

could be heard high overhead. Neither spark nor light marked the path of America's fighting men as they silently passed through the night. Of all the nights of the war, the one that stands out most vividly in the memory of the 16th Infantry is that black night of storm and tumult which resembled Dante's Inferno. Rain fell in torrent after torrent, vivid lightning flashes zig-zagged across the sky. Thunder rolled through the hills. The powers of heaven were shaken. It was a night of horror, yet one of glory. All nature was travailing in pain, as though it were the birth of a new day for humanity.

"In the momentary brilliancy of a blinding lightning flash, the whole countryside seemed one live thing, moving irresistibly toward the German lines. Every road, highway and byway leading to the front was choked with soldiers and their weapons. Huge tanks, like monsters of old, dragged their ponderous forms toward the front. Clumsy tractors labored along with their mighty cannon. Battery after, battery, regiment after regiment of artillery crept forward in that mad tangle of humanity. Drivers tugged and strained at the bits of their horses to get a little more power, a little more speed, through some river of mud or some gigantic shell hole. There were five distinct lines, each in single file, moving simultaneously along a narrow road. The congestion and confusion was beyond all description. Blockades would make it necessary for now one unit, now another, to halt and wait its turn to sift through and push toward the front.

"And in this flood of vengeance, this slow-moving avalanche of righteous wrath, there crept one little brown vein—it was the 16th Infantry. Soaked to the skin by the drenching downpour, bruised and sometimes bleeding from a tumble in a shell hole, the men of the 16th moved forward as an integral part of that irresistible tide. Dazed with weariness from their long hike, they pushed their way over barbed-wire entanglements, past plunging artillery horses and rumbling tanks which blocked their passage, through veritable seas of mud, on and ever on through the night. As the line would slow up a little an officer would cry out: 'My God, men, we'll be late if we don't hurry.' And those weary bodies would straighten, the men would hitch their packs a little higher, grab their rifles a little tighter and plunge ahead. Nothing but death would or could stop them from going over in the morning. On they surged, through the ruins of Couevres, in through windows, and out through doors, thousands of them stumbling through the débris. Down the hill they went and over the creeks, whose gassed waters ran liquid poison. At last the French guides led them up the slope to the jumping-off place. Breathless and tired, after the exertion and confusion of the long night's march, they dropped into the shallow trenches. They were glad to be there on time. It was only a narrow margin, with scarcely time to roll and smoke a cigarette before the zero hour.

"SOISSONS:

"The dawn was serene and clear. The Germans, ever so alert, little suspected what was being prepared for them on that fateful 18th of July. Elated by the tidings of victory brought from their fellow invaders farther south, they were happy in the thought of their security. Never could an enemy, so battered as they supposed the Allies to be, turn and fight back. While these arteries of men and guns were pushing forward in the storm, the Germans were resting in their shelters. Never during the night was the scream of a shell heard by the marching thousands.

"It was to be a surprise attack. There was no warning bombardment. Instead, there was an ominous silence. Suddenly a red rocket shot into the air from the wheat field very near the trenches. Then a Boche sentinel leaped from his listening post and ran. A burst of rifle fire laid him low, but he had done his work. The battle was on. Red and green rockets went up all along the enemy's lines. The German heavy guns began to roar, and the Americans began to fall. It was yet four minutes to the appointed time. As the hands of the clock, like the hands of fate, crept closer to zero hour, the doughboys hunched closer to the floors of their trenches. Artillerymen stood tense at their guns, while the tank men, behind the shelter of some friendly bush or thicket, made a final inspection of their steel monsters, and farther back in the rear the aviators listened with critical ear to the hum of their motors. Along the front, officers and men were peering intently at the hands of wrist watches.

"It was a relief when the mighty guns flashed from behind, filling all space with their thunder. Immediately, every fear vanished. Fatigue was forgotten, and with one irresistible impulse the doughboys leaped forward. From those apparently deserted trenches, bayonets without number appeared and were followed by the olive drab bodies of American soldiers.

"Every rock and bush and tree bristled with life, as thousands of guns roared in unison, and the avions from the fields in the rear winged their way to the scene of battle. At the batteries, the black muzzles of the guns were elevated skyward in unison with the progress of those little wrist watches. It was an advance by schedule. The artillery knew nothing could stop the doughboys, and the infantrymen knew that at the right moment the gunners would move the barrage. So far as the eye could see, to the right and to the left, the battle-line moved steadily forward. Gradually the sound of the enemy's guns diminished, and in the distance Boche infantrymen could be seen retreating in colunms.

"From that section of the front near the war-wrecked villages of Cutry and Coeuvres, the Sixteenth, echeloned in depth, arose as though from the earth itself and started on its victorious fight. The First Battalion was

in the lead, supported by the Second. For the first few kilometres, there were not many casualties. The doughboys were in high spirits. As they were following the rolling barrage, immediately in their advance a rabbit scampered across the field. The men whooped and yelled, and for a hundred yards they took pops at him. But they were out for bigger game. The wheat field through which they were passing was soon found to be infested with machine gun nests. The doughboys passed these with a single order of 'Surrender or death.' The Colonel had forbidden the sending in of the report: 'Held up by machine guns,' and the Sixteenth had no intentions of being 'held up' by anything.

"The machine gunners would fire until the infantrymen were upon them and then cry 'Kamerad.' One Boche had his foot on a lever, and continued to fire even while he was holding up his hands in surrender. Another shot and killed Captain Lewis with a tiny pistol while doing the Kamerad act.

"The fight grew momentarily more deadly. * * * On the immediate right was the Eighteenth Infantry advancing magnificently. But on the left it was a different story. The Twenty-sixth and Twenty-eighth had encountered hard fighting in the Missy ravine.

"Unable to continue their advance, they left that flank of the Sixteenth exposed to a flank attack. This forced part of the front line to swing around and face northward.

"THE PARIS ROAD:

"It was with great difficulty and heavy losses that the First Battalion finally made its objective, the Paris-Soissons road. That road lined with tall trees was a veritable dead line. Every tree sheltered a machine gun and from nearby knolls the road was literally swept clean by light maxims. The enemy artillery from two directions was focussed upon that region, and the avions were circling overhead. It was here that the Second Battalion leap-frogged the First, and on the afternoon of the first day advanced to the attack. Never up to that moment had the Sixteenth encountered such desperate resistance. Two companies were almost wiped out in a short time. Soon all the officers were gone and a sergeant took command of the surviving elements of the Battalion."

THE 26TH INFANTRY

"On the night of July 16th the 2nd Battalion relieved troops of the Moroccan Division, while the 3rd Battalion billeted in ROY ST. NICHOLAS, moving into the line the following night as the 1st Battalion moved up into Brigade Reserve. All the movements had, of course, been made under cover of darkness. Marshal Foch had perfected his plans for a great counter-offensive. The movement into position had to be secretly made, over unknown

roads, through fields and forest without a gleam of light, lest the enemy note the movement. To add to our troubles a thunder storm had soaked our clothing and made the shell-torn roads veritable quagmires. The night of July 17th was inky dark, a godsend, in so far as it relieved us from all worry from the avions, but the roads, with hundreds of horses, cannon, motor trucks and tanks made the progress very slow. The attack was to begin at 4:35 A.M. and not many units arrived in position much before that hour, but none were late. Through the shell-torn village of Coeuvres the men wound their way into the valley and up the slopes, sometimes tangled in the wire and again pitching headlong into a shell hole. The French guides led the boys to their places.

"It was known that the fighting would be desperate, as it involved an attack over rolling country which concealed hundreds of machine gun nests and fortified heights which the enemy had elected to hold when his advance had been checked just a short time previous. He was flushed with victory and confident of continued success, and from the natural strength of his terrain he believed his position impregnable. It rested on the courage and indomitable spirit of the American soldier to prove this a fallacy.

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"Each battalion of the regiment was supported by a machine gun company; the regimental company with the 1st Battalion, Compaies 'B' and 'A' of the 3rd M. G. Battalion with the 2nd and 3rd Battalions, respectively. This arrangement was continued throughout the succeeding operations of the regiment, the companies of the 3rd M. G. Battalion being virtually a part of the regiment, and contributing measurably to its successes. Wherever mention is made of battalions of the regiment it includes the attached machine gun companies.

"THE ATTACK

"Day broke clear and serene. There had been no warning note sounded by the artillery. If Fritz had heard the rumble of the heavy French tanks as they moved into position he showed no sign. This was to be a surprise attack, the master stroke of the Allied Commander-in-Chief. It was to mark the turning point in the great war.

"All troops were in position in time to begin the attack at the scheduled hour. The advance was to be covered by a rolling barrage. When the first gun boomed the doughboys were up and over ere the shell had burst. The 2nd Battalion was the first wave and had been ordered to take the first and second objectives. It was followed by the 3rd Battalion which was to leapfrog the 2nd Battalion on the second objective and take the third objective. The 1st Battalion was in Brigade Reserve.

"At 5:30 A.M. the first objective, two kilometres from the jumping-off line and midway to Missy-aux-Bois, had been gained with comparatively few losses, and only slight resistance, mostly on the right. At 7:15 A.M. the 2nd Battalion was preparing to descend into the Missy ravine, and here we encountered the first stubborn resistance. Before 9 A.M. Missy had been taken, and with it a large number of prisoners, machine guns and 77's.

"The 1st Brigade had in the meantime gained its third objective. * * * At 4:00 P.M. we were making but slight advances. We suffered heavily from machine gun fire from wheat fields beyond the Paris-Soissons road and dug in for the night just beyond Missy-aux-Bois. The supporting tanks had overrun the infantry and several had crossed the road. They suffered heavily from direct artillery hits and were all abandoned."

THE 28TH INFANTRY

"With the coming of dusk on the evening of July 17th, the men of the 28th Infantry with battle equipment formed in column near Mortefontaine ready to start forward. The roads were congested with the traffic of tanks, ammunition trucks and artillery, and the hike to the battle position had to be made by a circuitous route through fields pitted with shell holes. The Moroccan guides arrived and the column began to wind its sinuous way toward the Front. The night soon grew pitch dark, with flashes of lightning now and again only serving to intensify the impenetrable darkness, and a deluge of rain began to pour down from above. Before long, it was impossible to go through the sticky mud except in single file, and as nothing could be seen at a distance of three feet, it was necessary for each to take hold of some part of the equipment of the man ahead of him, in order that the column might not be broken. The guides had difficulty in finding the way on such a night, and it was growing light on the morning of July 18th when the head of the column drew near the trenches. The 2nd Battalion was placed in the front line with the 3rd Battalion in support and the 1st Battalion as Divisional Reserve. On the right, the lines connected with those of the 26th Infantry.

"The men of the assault wave hurriedly took their positions in the 'jumping off' trench and the second wave was formed along the edge of a ravine about fifty yards behind them. The clouds were now breaking up and scurrying away and the downpour of rain had ceased. As the last of the men were getting into their places, the German artillery laid down a terrific barrage on the front line trench and the ravine where the men of the 28th were crouching in readiness. The hardest part of an attack is the last few minutes of waiting before the 'zero hour' and waiting there with shells falling in quick succession on every side was nearly intolerable. For five minutes this continued, and then at 4:35 A.M. from behind came the thunder of the Allied artillery and the men rose coolly in the midst of the

German barrage and started forward. The first line of enemy trenches was passed without much resistance being encountered, but the second line was better organized and was protected by machine gun nests concealed in the wheat fields and snipers in straw stacks. However, the men kept swinging on with nonchalant stride close behind the rolling barrage and overcame those strong points by boldly advancing upon them. There was no time wasted in flanking these obstacles; the men of the 28th, unflinchingly, and with no sign of fear, took them all by frontal attack and at the point of the bayonet. After passing this line of resistance, the Infantry was aided by the French tanks which had just caught up with the front wave and nothing was met to check the advance until the line neared the St. Amand Farm. Here was a position well organized for defense with machine guns, trench mortars and 77 mm. guns. The garrison of this strong point chose to fight to the bitter end. Machine guns opened full blast; mortar bombs rained down and the 77's, with leveled barrels, fired point blank into the advancing lines of Americans. There was no stopping, no suggestion of a halt among the khaki-clad warriors. As the onrush of a flood carries all before it, leaving death and desolation in its wake, so did the charge of the 28th sweep on, leaving only dead and wounded Huns to mark that stronghold.

"THE MISSY RAVINE

"Just beyond this farm, and directly in the line of advance, lay a deep ravine overgrown with trees and underbrush. The tanks were unable to give any assistance here as the sides of the ravine were too steep for them, and it was necessary that they should go around the head of the depression at Missy-aux-Bois. Brush hid many pieces of artillery and afforded excellent places of concealment for machine guns. In the bottom of the hollow was a swamp, crossed by foot bridges, but all such places of crossing were useless, as they were swept by a steady stream of bullets. There was but one way to pass and that was to wade the swamp. This the doughboys did, sometimes sinking to their waists in mud and water. On one occasion a high German officer buried himself in the mud and water until his head and arms were exposed and continued firing upon the slowly advancing men until he was killed and trampled into the mud by the infuriated soldiers. In the face of German machine gun fire, they climbed the opposite bank and proceeded up the side of the valley to a point about 300 yards east of Breuil. This position was reached about 9:30 A.M., and the task of consolidation was immediately begun in the face of murderous fire from enemy machine guns. Owing to heavy losses, the 2nd and 3rd Battalions had merged and were now together in the front line.

"Meanwhile, the troops detailed to do the 'mopping up' were having some very thrilling experiences. The country around Soissons abounds with

large underground quarries capable of sheltering thousands of men. These places of refuge held many hundreds of Germans who had sought safety from the American shell fire. In this they were successful, but their havens were quickly transformed into traps by the men of the 28th Infantry, who followed so closely after the barrage as to give the Huns no time to get out. A few men were stationed at the mouth of each cavern to prevent their escape and the main assault body kept on going. A few hand grenades tossed into the entrance produced results of a very surprising nature. Emerging from the quarry came a column of Huns with their hands over their heads and at the rear of the column was a German Colonel, walking with a military step and bearing, common to Prussian officers. When counted, there on the road above Missy-aux-Bois, it was found that 24 officers and about 580 men had been taken. A very similar scene had been enacted a short time before at a large quarry near le-Mont-d'Arly, where about 500 prisoners were captured. When the caverns were searched, many machine guns and trench mortars and large stores of ammunition were found. Furniture taken from French houses adorned the officers' quarters.

"Order for an advance at 5:30 P.M., July 18, 1918, had been given, but these orders were countermanded before that time arrived. During that day and the following night the men in the front line lay under direct fire from enemy machine guns where the slightest move called for a volley of shots. Many of the rolling kitchens, which had been ordered up, lost the road or were destroyed by shell fire so that very little food was received. Hunger, though, did not cause as much distress as the burning thirst which could only be slaked at great risk of life. In spite of the great danger involved, some of the men would crawl out of their 'funk holes' and, taking canteens, go down to the spring in the valley below to secure a priceless store of water."

During the action, the 5th Field Artillery had employed its howitzers against sensitive points in the German line. It had given special support to the 1st Brigade and had fired concentrations into the Missy ravine. All the guns were grouped in the first position. Ammunition was brought by caissons and trucks. At 5:30 P.M. the 2nd and 3rd Battalions moved forward about 2 kilometres directly in front of the first position. All artillery preserved the formation in depth so as to cover the flanks and front by guns not too much exposed to counter-attack. After the line had halted for the day, special missions were given the batteries as targets were discovered. Enemy troops, machine guns, strong points, trenches and villages were taken under fire. Counter-preparation was delivered from time to time. The enemy batteries discovered our guns in the open and replied vigorously.

After the rolling barrage ceased in front of the final objective the batteries of the 6th Field Artillery advanced one-half at a time to a position

near Tilleul-de-la-Glaux, where they were in position before noon. Here harassing fire was opened, and the enemy's batteries returned the fire, inflicting casualties during the afternoon. The 7th Field Artillery moved to the same line, both regiments being near the first objective. Battery "C," 7th Field Artillery, moved to the west of Missy. The French tanks had rendered the greatest resistance and their crews had aroused the admiration of our troops, but they had lost heavily. The 1st Ammunition Train delivered during the day 657 rounds of 155-millimetre ammunition and 13,587 rounds of 75-millimetre ammunition, in addition to ammunition and pyrotechnics for the infantry. The trucks brought back wounded on the return trips. The Division Reserve Battalion of the 18th Infantry was ordered to Dommiers with a view to entrucking for rapid movement to the front with the French cavalry in case we effected a break-through. At the close of the day it was evident that no such movement would be possible, and the battalion passed back to the control of the Division. In spite of incomplete success, the situation was not bad. Our losses had not been too severe, the morale was high and the services of the Division were functioning in a most gratifying manner. All assault battalions were re-formed in depth, and the ground was organized for defense. As soon as the infantry front lines were reported, the barrage line was given to the artillery and the batteries prepared to protect the units that they supported. The dislocation and capture of the enemy's guns and the movements and resupply of our own greatly reduced the artillery action. As we learned later, the enemy busied himself by bringing two fresh divisions to our front and strengthening his artillery and machine-gun resistance. The ground in our front was more favorable to him than on the first day. The Missy and Chazelle ravines, the heights of Buzancy and the great ravine in the valley of the Crise afforded him abundant cover and observation. The broken nature of the ground, generally, and the fields of tall wheat gave every opportunity for machine-gun organizations.

As was expected, on the night of July 18th-19th orders came from the 20th Corps stating that the 10th Army would attack at 4:00 A.M., July 19th. The objective of the Division was the line, Berzy-le-Sec (exclusive)—Buzancy (exclusive). The Division was to wheel slightly while advancing and face northeast. It was then to establish itself to cover the left flank of the Corps. The Corps order directed the Division to push out offensive reconnaissance patrols as soon as the objective was reached until contact with the enemy was gained.

The Division attacked as ordered. A rolling barrage covered the advance, with the howitzers firing concentrations. The 1st Brigade was able to advance its right to the Chazelle ravine. The 2nd Brigade advanced till its centre crossed the Paris-Soissons road. Both brigades fought desperately. The left of the 2nd Brigade suffered from the enemy in front and on its left.

In the same manner the left of the 1st Brigade suffered from the enemy in front of the 2nd Brigade. There was a gap of more than 2 kilometres between the line of the 1st Brigade and the line of the 2nd Brigade. This was filled by the 1st Brigade Commander, who placed his Brigade Reserve Battalion and the company of Engineers at his disposal in a line facing almost north and at right angles to the direction of our advance. Some of the tanks that advanced reached the Ploisy ravine without infantry support and were captured. The tank commander reported that every tank in his command had been captured or destroyed. The wounded were now arriving in large numbers and calls were being received for more ambulances.

As soon as the rolling barrage ceased on the day's objective, one battery of the 6th Field Artillery was moved forward to the west of Hill 166 to suppress the fire from the east of this hill. An officer climbed a tree to observe and saw Germans not far off in the dead angle of the hill. An infantry officer requested that the battery be moved back, as he wished to occupy the position with his line. The battery retired to where it could fire effectively over the hill. Five batteries of the 7th Field Artillery advanced to the southeast of Missy. At 9:00 A.M. the 3rd Battalion of the 5th Field Artillery moved to a point south of Cutry, and in the afternoon the 2nd Battalion moved to a position north of the 3rd. The 1st Battalion then advanced to the position vacated by the 2nd and 3rd Battalions.

It was not desirable that the line should remain in this position during the night. Accordingly, another assault was ordered to take place at 5:30 P.M. The hour was fixed with a view to allowing time for preparation and to enable the troops to reach their objectives at dark, so that they might dig in before the enemy could discover the line for his artillery. The object of the advance was to bring the line abreast of the right of the 1st Brigade. It would become necessary for the troops to advance by echelon from the left and as the new line would be far shorter than the one occupied, a portion of the troops would be pinched out in order to avoid density and confusion. The entire artillery was used to cover the advancing echelons and a part of the heavy howitzers were assigned to the enemy organizations on the left. At the appointed time the line advanced, with great dash and gallantry and every detail was successful. The new line occupied extended from the Fermede-Mt.-de-Courmelle across the Ploissy ravine to the Chazelle ravine. In parts of our line, due to losses, this was a fight of soldiers and commanders of smaller units, and it demonstrated again the wonderful courage and determination of our men. Again the infantry regimental commanders were compelled to manipulate their battalions to maintain the strength of the assault. The 18th Infantry, which had at its disposal only two battalions, retained them in the order 1st, 3rd, 2nd. The 16th Infantry jumped off in the order 1st, 2nd, 3rd, with Company "B." 1st Engineers, in the support line. Soon

it was found necessary to call for the Brigade Reserve Battalion and the 3rd Battalion was passed through the 2nd and 1st. At the Soissons-Château-Thierry railroad it added the 1st battalion to the front line and ended the day with the 3rd battalion in line, with the 2nd in support. The 26th Infantry placed the 3rd Battalion in line with the 2nd. For the assault at 5:30 P.M. it relieved the 3rd by the 1st which had been in Brigade reserve. The 28th Infantry advanced with the 2nd and 3rd in line, but for the assault at 5:30 P.M. it was necessary to use the 1st Battalion which had been in Division reserve. The day ended with the 1st Battalion in line and the 2nd and 3rd in support. Thus, during the second day of battle, all reserve battalions had been used, except the Division reserve battalion of the 18th Infantry. The day's casualties were heavy. The captures included 1000 prisoners, 35 officers and 20 field guns. In spite of the losses, there was throughout the Division that night a feeling of great confidence and relief.

The stories of the fighting can best be told by extracts from the regimental histories:

THE 18TH INFANTRY

"The following day the 1st Battalion continued the advance slightly in the direction of the high ground between Chazelle Farm and Ploissy. Here the most stubborn resistance was met in the nature of machine-gun fire, and the casualties were numerous. An advance of little more than 500 metres had been made.

"With the Soissons-Paris railroad as an objective, the following day the Eighteenth again pressed forward to the attack. By this time the First and Third Battalions had been so depleted in strength that combined they hardly represented half of a battalion. Again suffering heavily from the machinegun fire which the Germans had been able to plan during the two nights previous, they skirted the edge of the Chazelle ravine and dislodging the enemy from his positions among the trees to the right and the wheat fields to the left, they reached the railroad and dug in behind its banks at the close of the day.

"By this time the regiment's lines had been pushed so far to the front that the flank fire from the left had become almost unendurable. Men who had dug in around the railroad cut to the east of Chazelle Farm suffered numerous casualties from shell fire. This position was enfiladed from the north by the enemy and this, coupled with the frontal fire rendered the task of finding positions of shelter most difficult. Enemy observers in trees to the right flank and from the shoulder of the hill directly toward Buzancy directed the machine-gun fire from across the ravine beyond the railroad with such accuracy that scarcely a hand could be shown with any degree of safety.

"Few officers remained to command the companies, and some of those who had been wounded refused to go to the rear until they were assured that their organizations were in an organized position to hold the ground that had been taken."

THE 16TH INFANTRY

"The First Battalion came to the rescue, and at 4:45 the next morning took the lead. But they, in turn, were disorganized by the severe attacks. Meanwhile, the Third Battalion, which was acting as Brigade Reserve, had moved up beyond the Paris-Soissons road and was in support of the advance line.

"In this crisis, the Third held the front, stopped the counter-attacks, and reorganized the line while the First was reforming in the rear. Soon the First moved forward again. For two or three hours they fought abreast with the Third, and then advanced toward their next objective, beyond the railroad over which the Germans had brought up their artillery during the previous two days.

"Tanks came forward and did effective work for awhile against the machine-gun centres, but the anti-tank guns checked them, and the direct fire of the artillery shattered them. Oftentimes, when a tank would be disabled, the men would jump out, seize rifles and run forward to the attack. The German planes, flying very low, were dropping bombs from a height of three or four hundred feet. One of them mortally wounded Major Wells, the able and courageous Commander of the Second Battalion. The men avenged themselves by bringing down one of the attacking planes by rifle fire. Many were the losses of the Sixteenth that day. Captain Wheeler, M.C., one of the most fearless of men, was killed. Lieut. Andes, as he entered a dugout, was confronted by a German officer. Two pistols cracked and two valiant men fell dead. As one looked back across the Paris road, the field seemed suddenly alive with horsemen. A Brigade of French Cavalry was champing to break through for a dash to Château-Thierry. It was a most spectacular battle to watch, but terrible beyond description to experience."

THE 26TH INFANTRY

"On the night of July 18th-19th orders were received to continue the attack. The morning of the 19th found our 2nd and 3rd Battalions side by side and both jumped off at 4:30 A.M. behind a rolling barrage. The 2nd Battalion was on the left, the 3rd on the right. Heavy machine-gun fire was again encountered and there were many casualties. The troops advanced to a position along and slightly in advance of the Paris-Soissons road, which was constantly being swept by machine-gun fire. Regimental P.C. moved to Paris-Soissons road 200 metres east of Missy.

"With the First Battalion on the right, 2nd Battalion on the left, and the 3rd in Brigade Reserve, we jumped off again at 5:30 P.M. The terrain was rolling, covered principally with growing wheat, and traversed at frequent intervals with sunken roads. The place seemed to be fairly alive with machine guns, cleverly screened and commanding all approaches. But nothing could stop those doughboys this time. They fought as they had never fought before. This advance on the afternoon of the 19th carried us forward three kilometres. When the boys finally pulled up for a breathing spell we had taken Ploissy and were digging in on the slope opposite.

"Of the five days the regiment fought during this counter-offensive, that late afternoon of July 19th stands out as the day of days, never to be forgotten. Our casualties in the whole regiment were almost 800, the 1st and 2nd Battalions suffering the most. Scarcely but a platoon of each company remained to meet the Hun counter-attacks. In the 2nd Battalion but six officers remained. Major M. McCloud fell in the wheat fields a kilometre beyond the Paris road, with the first wave of his Battalion and with his right arm in sling. He had been wounded by machine-gun fire just as the attack began, but refused to leave his command. With him in those same wheat fields were Captain James H. Holmes, Jr., and Captain James N. C. Richards, each at the head of his company, to consecrate the field of honor.

"Although we had paid dearly, the cost was not disproportionate to the loss inflicted upon the enemy. The regiment took several hundred prisoners, including a number of officers. In the Ploissy ravine a whole battery of 77's was taken. No one stopped to count the enemy dead, but they seemed to be everywhere. Many hand-to-hand conflicts took place with the bayonet and the pistol.

"When night came on the boys settled down to await the chow carts. Two days had now elapsed since they had last seen them and reserve rations were low. But they waited in vain. It was not until the evening of the third day that their craving for warm food was to be satisfied, and even then only partially. Artillery fire was intermittent during the night, but Fritz did not seem to know just where we were. A general reorganization was effected and regimental headquarters moved to the sunken road at the head of the Ploissy ravine."

THE 28TH INFANTRY

"At 3:55 A.M., July 19th, orders came to Regimental Headquarters directing an advance at 4:00 A.M. The time required to transmit this order to the front line troops caused the start to be a little late but, by moving rapidly, the men were soon abreast of the advancing line. During the night the Germans had been busy placing machine guns on either side of the Soissons-Paris road. These were placed in such a manner as to secure enfilade fire

and * * * the 28th was forced to stop at the highway. * * * Snipers and machine gunners in the trees that lined the road made it almost impossible to move without being hit. There was no way to get water, and many had not eaten for two days. As if to add the final touch to that place of torment, a hot July sun shone pitilessly down, torturing the wounded and parching the lips and throats of all. The losses had now been so extremely heavy that Company 'C' of the First Battalion, then in Regimental Reserve, was sent to reinforce the lines.

"PLOISSY

"At 5:30 P.M., on the same day, the advance was renewed, the First Battalion passing through the rest of the Regiment and taking the lead. Stubborn resistance had to be overcome for every inch of ground gained, but at 8:30 P.M. the town of Ploissy had been taken and the lines had been consolidated on the ridge east of that village. Casualties had again been extremely heavy and the men who were left were now very weary and worn with the hard fighting. There were but eight officers now remaining to command the troops of the front line."

* * * * * *

On the morning of the 20th orders from the Army extended the zone of action of the First Division to include Berzy-le-Sec. The hour for the assault that day was fixed for 2:00 P.M. This was to allow time to have orders reach our units and to complete artillery preparation. The 1st Battalion of the 5th Field Artillery moved forward to a position in front of the 3rd Battalion, west of Missy. Four batteries of the 6th Field Artillery advanced to near the Chazelle ravine and two remained near Hill 166, where the entire regiment had gone after the advance on the 19th. Six thousand rounds of ammunition were supplied to the four batteries in advance. Four batteries of the 7th Field Artillery moved during the night of the 19th to the east of the Paris-Soissons road, one battery to the southwest of Ploissy and one battery remained southwest of Missy. During the morning of the 20th one more battery moved to the southwest of Ploissy leaving three on the Paris-Soissons road and one southwest of Missy. The divisional reserve battalion of the 18th Infantry was placed at the disposal of the Commanding General of the 2nd Brigade and was moved to the east of the Missy ravine. In order to form a new division reserve, three companies of engineers, about 500 men from the trains and recently arrived replacements and the 1st Machine Gun Battalion were formed near the position of the second objective. At 12:00 noon, all the heavy artillery of the Division began a fire for destruction on Berzy-le-Sec, which continued until H hour. At 2:00 o'clock the entire line advanced covered by a rolling barrage and by concentrations. The

BATIERY C, SIXTH FIELD ARTILLERY, FIRST DIVISION, A.E.F., IN POSITION NEAR MONT SEC, FRANCE. THIS BATTERY FIRED THE FIRST SHOT FOR THE AMERICAN TROOPS IN THE WORLD-WAR.

155 MM G.P.F. ON CHRISTIE SELF-PROPELLED MOUNT. "OVER THE JUMPS."

objective was the line of the heights north of Buzancy to Berzy-le-Sec, inclusive. The 1st Brigade crossed the Soissons-Château-Thierry railroad and advanced to the line Visigneaux-Aconin Ferme. The 2nd Brigade reached the top of the knoll, about 300 metres west of Berzy-le-Sec, where it was checked by a withering machine gun and artillery fire from the left flank and from the west of the town. The 1st Brigade refused its left flank and connected with the 2nd Brigade. Identifications showed fresh enemy divisions, and a machine-gun unit of the Guards was in Berzy-le-Sec. Buzancy and Berzy-le-Sec and the strong positions between them, as well as the high ground in the vicinity of Roziers and Noveant were held by the enemy. The enemy's line was growing stronger as we grew weaker. The 18th Infantry, which had only the 1st and 2nd Battalions at its disposal had attacked with the remnants of both in line. The 16th Infantry attacked with its battalions in the order 1st and Company "B," 1st Engineers, 3rd, 2nd, but ended the day with them in the order 3rd, 1st, 2nd. The 26th Infantry fought as on the 19th with the 1st and 2nd Battalions in line and the 3rd in support. The 28th Infantry had practically all that remained of its three battalions in line. Notwithstanding the ordeal of the previous days, the men throughout the Division were cheerful, and the only difficulty found was that some elements had received no food or water. The lines were generally fairly well supplied with ammunition. Some detachments had no officers and groups were being directed by non-commissioned officers and privates. Food and water arrived during the night. In one case, motorcycles were used for supplies.

During the night orders were received from the 20th Corps that the attack would be resumed at 4:00 A.M., July 21st. In order to conform to neighboring units, the 1st Brigade was ordered to attack at 4:00 A.M. and the 2nd Brigade at 8:00 A.M. All the artillery was ordered to cover the advance of each brigade in turn by a rolling barrage and by concentrations on the exposed left flank. Fire for destruction by all the heavy artillery was ordered on Berzy-le-Sec for three hours preceding the advance of the 2nd Brigade. In the meantime, the 1st Battalion of the 5th Field Artillery moved to a position in front of the 3rd Battalion and the 3rd Battalion moved to the southeast of Missy. The 2nd Battalion moved to the north of Dommiers. The French 75's continued to operate in the axis of the Division zone. Our own 75's were disposed in depth with the most advanced elements near the mouth of Ploissy ravine. The 2nd Brigade had not used the 2nd Battalion of the 18th Infantry on the 20th. Although this battalion had undergone the fatigue, marching and losses incident to its mission, it was the only unused element in the Division. Accordingly, one company of the 2nd Battalion and one-half of the 3rd Battalion of the 18th Infantry were assigned to the 2nd Brigade and three companies were assigned to the 1st Brigade for the

assault of July 21st. Thus the last original reserves were thrown in line. At 4:00 o'clock on the morning of July 20th, without artillery preparation and accompanied by a dense rolling barrage, which dropped accurately in front of our line, the 1st Brigade advanced with a dash that was out of all proportion to its feeble numbers. It crossed the Crise ravine and the Soissons-Château-Thierry high road and planted itself on the heights of Buzancy and on its objective to the north. The 2nd Brigade advanced at 8:00 A.M. with the Brigade Commander and his staff in the first wave and the Regimental Commanders with their troops. The line swept through Berzy-le-Sec, capturing a battery of 77-millimetre guns at the edge of the town and the remnants of a battalion of machine gunners and infantry in the town. At 9:15 the Brigade was on its objective, which was the crest of the slope east of the town. The Division line then ran north of Berzy-le-Sec across the Soissons-Château-Thierry road to and including the heights north of Buzancy. The Division was facing the northeast on the objective originally assigned, and protected the left flank of the Corps. Its mission was fulfilled to the letter. Patrols reached Roziers and pushed out in the direction of Noveant. Our casualties were heavy and throughout the day our lines were subjected to a constant bombardment by the enemy's artillery. He could use direct observation, and he had excellent cover for his guns in the ravines to the east. His machine guns covered the slopes in the vicinity of Noveant. Our artillery was very active and gave especial attention to his machine guns. Our thin line was dug in on a front of 3¼ kilometres. Barrage lines were established and the captured ground was organized for defense. The 18th Infantry had advanced with two companies of the 2nd Battalion in line and one-half of the depleted 3rd Battalion in support. The 16th Infantry retained the order of the previous day with its small battalions in the order 3rd, 1st, 2nd. Company "B," 1st Engineers, was placed in support of the left flank company. The 26th Infantry began with the 2nd and 3rd in line, but ended with all three battalions in line. The 28th Infantry advanced with the 1st, 2nd and the elements from the 18th Infantry in line and the 3rd in support.

The account of the fighting on the 20th and 21st is quoted from the regimental histories.

THE 18TH INFANTRY

"During the third day, or July 20th, the regiment lost another of its most valuable officers in the fatal wounding of Lieutenant-Colonel R. C. Hand. At the most advanced position of the regiment he was looking over the ground in the vicinity of the railroad cut to the east of Chazelle Farm when struck by a fragment of a shell. He was carried to the rear and died a short time later. By this time all companies of the First and Third Battalions had

become so intermingled that it was impossible to do other than form them into small groups under non-commissioned officers and hold the ground that had been taken.

"Up to this time the Second Battalion of the regiment had been held in reserve, part of the time as division and the balance of the time as brigade reserve. The morning of July 21st the ranks of the other two battalions had become too depleted to continue the assault. Companies 'G' and 'H' were then sent forward to be placed in the assault line, while the Third Battalion, numbering about seventy-nine men was brought back and placed in reserve.

"The heights of Buzancy were the final objective assigned to the regiment, and the front line newly reinforced by these two fresh companies forged ahead and fighting its way through the wooded slopes of the ravine through which runs the Soissons-Château-Thierry highway, reached Buzancy Château, where about 200 German prisoners were captured.

"In the meantime, orders had been received that the Second Battalion would support, with two companies, the attack of the Second Infantry Brigade on Berzy-le-Sec. Company 'F,' with half of what remained of the Third Battalion, supported this assault, Company 'E' remaining with the First Brigade as part of its reserve.

"In this final assault on Berzy-le-Sec the town was captured and all of the objectives assigned to the First Division were secured. In this attack heavy machine-gun fire again was encountered, additional casualties among the officers and men sustained and the Third Battalion still further depleted in numbers.

"By this advance the communications of the Germans from Soissons into the salient by means of the railways and the Soissons-Château-Thierry highway had been cut. The Eighteenth Infantry actually occupied the highway and the ground beyond, the most advanced positions reached by the division, and the artillery was able to reach a position which would enable it to bear directly upon the German communications to the south. The withdrawal of the German forces in the lower part of the salient had become a necessity to save them from capture. The entire salient, which had cost so dearly in lives during the spring, would have to be abandoned."

THE 16TH INFANTRY

"On the morning of the third day, the advance elements of the regiment that had moved up to the railroad the evening before found themselves exposed to fire from both flanks.

"Aviators peeping at them from the clouds gave the signal to the big guns and down came a barrage. Had it not been for the protection of the railroad embankment, the First Battalion might have been annihilated.

"They were about a hundred strong when they pushed forward next morning. They took the last objective, a little hill beyond the road near Ouchy le Château. Here the Third Battalion that had been in support and had caught the enemy fire all the way, moved up to the front, extended the line and held firm.

"Never before nor since has the Sixteenth suffered such heavy losses in the same length of time. They had their objectives to gain, and they did not count the cost. It was something to cover seven or eight miles of the sacred soil of France, but that was incidental. They were helping to win the crucial battle which was destined to turn the whole tide of the war."

THE 26TH INFANTRY

"Berzy-le-Sec was placed in our sector, and the 1st was ordered to take it. The order directed the advance at 2:30 P.M. * * * By this time the Divisional Artillery was in position on the Paris-Soissons Road and delivered a terrific fire into the town and along the railroad. The capture of Berzyle-Sec, which dominated the railroad from Soissons toward the south, meant the loss to the Germans of the entire salient. * * * The fighting was intense, often at close quarters, when the bayonet was used with telling effect. We swayed to and fro with the balance slightly in our favor. But with nightfall Berzy was still uncaptured. * * *

"The next morning, July 21st, at 4:30, behind a partial barrage the Brigade advanced. The 1st Battalion leap-frogged the 3rd and established itself beyond the railroad. The 28th Infantry swept into Berzy. All day long the battle raged, but the Hun had lost. All that now remained of the regiment was hurried forward to resist the counter-attacks. Companies and Battalions were so intermixed that their identity was practically lost, but all realized the necessity of holding that which had been so dearly earned."

THE 28TH INFANTRY

"Reconnoitring parties were sent out to investigate the ground around Berzy-le-Sec, with a view to attacking that town. It was planned to have small parties filter into the village, capturing it by this method, but this plan was abandoned on receipt of orders for a general advance to be made on July 21st. During the night of July 20th carrying parties succeeded in getting food and water to the front line. This gave the troops new vigor with which to continue the fight.

"BERZY-LE-SEC

"At 8:30 A.M., on July 21st, the troops formed under direct observation of the enemy and attacked Berzy-le-Sec. At 10:15 A.M. the 28th had passed through Berzy-le-Sec and had advanced beyond it to the railroad. Although

there were only 280 men left, the 28th had taken its final objective. In the front line were 190 men of the First Battalion, with 90 men of the Second and Third Battalions in support near Ploissy. This handful of men lay in their positions holding on like grim death, while the German artillery kept up an almost continuous bombardment."

On July 22nd the left of the 1st Brigade advanced its line slightly and occupied the Sucerie, which placed the entire Division more firmly on its objective. Orders were received for the relief that night by the 15th Scottish Division and advanced detachments arrived to make preliminary reconnaissance. The 1st Field Artillery Brigade, the 1st Ammunition Train and the Sanitary units of the 1st Division were left with the Scottish Division. With these exceptions, the relief was effected during the nights of July 22nd-23rd. The 1st Field Artillery Brigade supported an attack by the 15th Scottish Division at dawn on the 23rd. The casualties in this Division were cared for by the 1st Division Sanitary Service and the Sanitary Service of the Scottish Division. During the 22nd the enemy's air service was very active and many planes, flying low, used their machine guns on our lines and upon any persons seen moving in the rear. His artillery was also very effective and in a fire for destruction two howitzers of the 5th Field Artillery were disabled in one battery. During the night of the 22nd there was a great deal of enemy bombing, especially upon the marching columns of the Scottish Division.

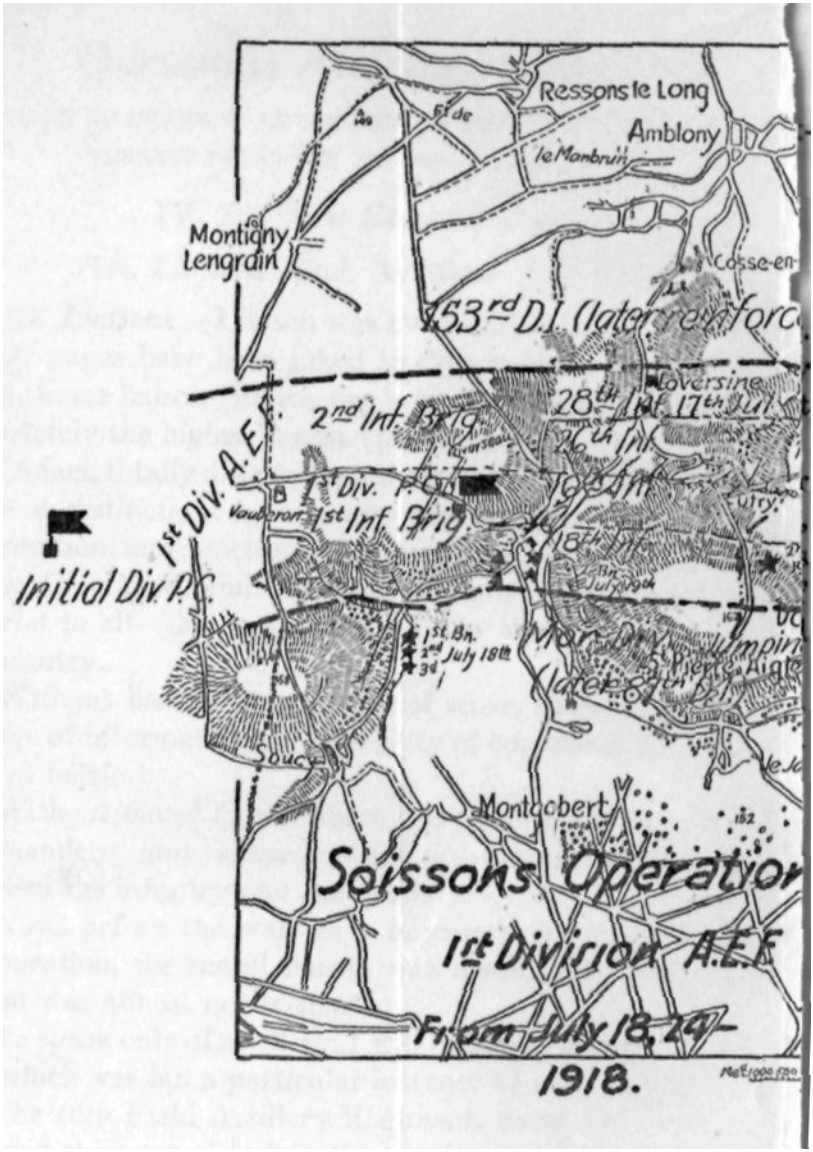
It was a memorable sight that appeared in the woods behind the lines early on the morning of July 23rd. Our great battalions were reduced to skeletons and regiments looked like companies. Many of the familiar officers and men were gone. The troops formed in the woods along the national road where the company kitchens marked the places of assembly for the men. Hot food was ready, and after eating all slept from exhaustion. Later the bands of the Division began playing. The troops were silent but cheerful, and they showed the pride they felt in the knowledge of their wonderful achievement. All of the dismounted elements were taken in trucks to the Dammartin area. The units left with the Scottish Division were relieved on the nights of July 23rd-24th and 24th-25th.

For us the Battle of Soissons was ended. The casualties amounted to 285 officers and 7655 men. In this battle the Division gained 11 kilometres against desperate resistance. It cut the railroad and the highway leading to the point of the Marne Salient, upon which the enemy mainly depended for his supply. It met and overcame elements of eleven hostile divisions. It captured 125 officers and 3375 men, 75 field guns and howitzers, 50 trench mortars, 300 machine guns and quantities of ammunition and stores. On the second day the enemy recrossed the Marne and began the retreat that ended only with the Armistice. On the night of July 19th the fires in every direction

in our front told of the enemy's efforts to destroy the stores that he could not move. The Division came out depleted beyond any former standards, but it was still a fighting unit and was destined to come back stronger than ever.

Among the lessons emphasized in this battle was the great advantage of employing all of the machine guns in the most powerful manner to support the infantry. The artillery was handled with great boldness, but it observed the sound principle of maintaining depth for protection in case of a counterattack. There was insufficient wire to maintain telephone communication as the lines advanced. This emphasized the necessity of keeping some batteries well to the front where they could be controlled by the battalion commanders or battery commanders with the corresponding unit commanders of the infantry. Regimental commanders of light field artillery maintained their post of command with infantry brigade commanders. Artillery officers recommended that certain batteries be superimposed in order that their fire might be taken at any time to suppress the enemy's machine guns without causing a gap in the barrage. The principal difficulty experienced was in locating the infantry front line for either the protective or the rolling barrage. In order to compensate for lack of information as to the exact position of the infantry line, the rule was adopted of having the rolling barrage stand for a few minutes on the initial position to allow the infantry to close on it before advancing. While our air service acted with the greatest aggressiveness and efficiency, it was found that the infantry line could not be located unless many distinguishing marks were displayed. On account of the usual congestion and bad condition of the roads, rendered worse by heavy rains during the operation, the ammunition supply was very difficult, as was also the evacuation of the large number of wounded. On the night of July 18th it became necessary to utilize Pack Train No. 10 to send ammunition to the advance infantry dumps.

The battle showed that the Division was not only a powerful fighting unit, but that the staffs and services were equal to the great demands that were made upon them.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Soissons Operation
1st Division A.E.F.
From July 18, 24-
1918.

Questions Affecting Artillery*

LECTURE BY GENERAL LE GALLAIS TO THE OFFICERS OF THE SIXTEENTH INFANTRY DIVISION, FRENCH ARMY

IV. *The New Essential Factors*.

(1st, Liaisons—2nd, Aviation—3rd, Tanks)

1st. *Liaisons*.—Liaison was much talked of before the war. Many pages have been inked to demonstrate the infallibility of the lower liaison (liaison par le bas), while forgetting almost completely the higher liaison (par le haut).

In fact, totally different questions were confounded together without distinction; both those concerning especially the use, distribution, and functions of the artillery, which are the affairs of the Command, and those that pertain to liaison and are of interest to all—the great as well as the small, artillery as well as infantry.

Without liaison in the material sense, there can be no exchange of information, no possibility of command, no coördination in battle.

Without *moral* liaison, there can be no confidence between commanders and subordinates, no mutual understanding between the infantry and the artillery.

Now, before the war, as a necessary consequence of our organization, the moral liaison was insufficient, and material liaison was almost nonexistent.

To speak only of artillery, I will illustrate by a simple example, which was but a particular instance of a general condition.

The 40th Field Artillery Regiment, Saint Mihiel garrison, received at eleven o'clock in the evening (night of the 30-31st, August, 1914) the order to leave "en converture"† with its division.

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* Translated from *The Revue Militaire Générale*, October, 1919.

† As a part of a covering force.

At three o'clock on the morning of the 31st everybody was on horseback, ready to depart, and at that hour they marched. Their means of liaison were: Battery and group agents, according to the then existing regulations, scarcely sufficient to insure liaison by mounted courier between the different units of the regiment.

We had barely one kilometre of telephone wire for each battery and group, the regiment carrying along with it the "instruction apparatus," in default of any others; and Heaven knows what impossible incoherent apparatus they were.

Let us not speak too ill of them; they were the result of the labors of a brave comrade in the artillery. In civil life, in the governmental offices, good telephones were not wanting, but these were civilian instruments; I say no more.

Do you think that if a covering regiment, ready to depart in three or four hours, possessed no other means of liaison than those I have just indicated, the other regiments were better equipped? I do not know, I hope so, without being very deeply convinced of it. The war has intervened to bring matters to a focus and to demonstrate the absolute, imperious necessity of utilizing all possible means to insure, perfect, and maintain the liaisons, to convey information, and to coördinate effort.

We are acquainted with these means of liaison—we have utilized them all, together or successively; some of them fail, others succeed, liaison is maintained in general, and thus great progress has been made in methods of warfare.

I am not going to give a course in liaison tactics; I shall merely mention the different methods that have been originated or perfected. They are: The telephone, visual signaling, ground telegraphy, wireless, sound ranging apparatus, pigeons, dogs, couriers, and, finally, aviation, which merits special mention.

Let us simply say here that many improvements still remain to be made in the existing methods. In particular, with respect to ground telegraphy, the battalion commander ought to be provided with a simple apparatus of small volume, capable not

only of sending, but of receiving; with respect to the wireless, all corps commanders and group commanders ought to be able to receive and transmit in a simple manner; and, as to the telephone, when the wireless telephone shall have become capable of rapid, sure, practical use, the question of liaison within the infantry and artillery, and, still more, between artillery and infantry, will have made a great step forward.

2nd. *Aviation*.—Among the means of liaison we have mentioned aviation. I do not intend to consider here the various and important functions which make of this fifth arm an instrument of the greatest value in the hands of the commander. I shall pass over its functions of exploration for the benefit of the high command; combat—pursuit plane, bombing plane, protection plane; and reconnaissance at short range.

I wish to speak only of aviation in its intimate relationship to artillery, that is to say, of its rôle in ranging.

The war has demonstrated the great importance of this new element, an importance that is increasing every day.

From the beginning of the war, in August, and September, the German aviators flew over our batteries and indicated by a rocket the firing direction; the map did the rest, and after twenty-five or thirty minutes of respite, the bombardment began—a bombardment fortunately inaccurate, almost always too short or too long, since there was no observation, no ranging, and therefore no efficacy.

On our side, nothing; the few military aeroplanes that we possessed were reserved for functions of greater importance—for exploration or the protection of a few great centres. Little by little the plane was perfected; it was equipped with wireless, and liaison was established between the plane and the battery; ranging being made possible, its success was demonstrated.

We struggled forward against all difficulties, and soon realizing the importance of this new engine of warfare, we constructed planes in numbers, we and the British. We gained the mastery of the air in the battle of the Somme by a powerful concentration of force.

The aeroplane for artillery ranging became an instrument of daily use. Its necessity was recognized; here we have another of the conclusions drawn from the lessons of the war.

We have reason to ask ourselves whether, in the restricted organization of the division and divisional artillery, there is not something still lacking.

I answer without hesitation: Yes.

The divisions have no flight squadron.

This is a mistake, or rather it is a deficiency, which without doubt could not be supplied during the war on account of the enormous needs that had to be met on every hand.

This deficiency must be supplied in time of peace.

It is necessary that the division have at its disposal and within its organization a flight squadron, the double function of which will be to supply information to the division commander by means of short-range reconnaissance, and to locate vulnerable objectives and immediately regulate the fire of the artillery, especially the short, heavy divisional artillery in open warfare.

This is an absolute necessity; the 75 can do without it in open warfare, the 155 (short) cannot.

In position warfare, the divisional flight squadron is no less necessary in the daily life of the sector, for the purpose of bringing in information, observing, and getting the range.

And, gentlemen, we must not make any mistake—we are touching upon most annoying specialties.

What state of affairs have we seen, I may say almost daily, since the army corps have been provided with flight squadrons?

In principle, such and such a flight squadron works for such and such a division; in practice, if the division departs, the flight squadron remains, and a new unknown squadron institutes a vague contact with the division. There is not time to establish any intimate liaison between the aviation officers, on the one hand, and the officers of artillery or infantry, on the other. Many officers full of spirit and courage, but very inexperienced in artillery matters, attempt to take a hand in range

adjustments that they know nothing about, forgetting that they are, above all, observers.

There are flight squadron commanders, calling themselves divisional—and I have seen some of them—who, while charged with operating for the artillery, are näively ignorant of the elementary principles of ranging, unable to distinguish bursts of the 155 from those of the 75, and incapable of observing, at the same time, the fire of two batteries of very different calibres.

The results are magnificent or nil, according as the flight squadron works in thorough accord with the divisional commander, follows his directions, and knows and coöperates with the artillery officers, or according as these conditions are unfulfilled.

We have learned this by experience, and none of those who have had experience will contradict me.

It is necessary that the commander of a division have a divisional flight squadron at his command, and the aviators should be artillerymen or should have had considerable experience with the artillery, as observers and in coöperation with battery commanders.

The annual period of target practice should be, for them as for the artillery, a period of practical instruction supplementing the theoretical instruction.

These observations are not new, and even before the war I had exchanged ideas along similar lines with General Z.—, who had already proposed light artillery flying squadrons, living and maneuvring with the artillery regiment in the field. The experience of the war demonstrates that this idea is good and that upon its adoption depends, in great part, the successful coöperation of artillery and aviation in time of war.

3rd. *Tanks*.—I regret, gentlemen, that the chances of battle have never given me an opportunity to use these new engines. I can not speak with any confidence regarding them, not having been able to see them at work, and being limited to the study of some notes which have appeared on the subject, and to the

still somewhat indefinite opinions of those who have had experience in their use.

The tank was invented to meet the needs of position warfare, with the view of facilitating the infantry offensive by the destruction of material obstacles, such as barbed-wire entanglements, and by reducing centres of resistance—machine gun, etc.—not wiped out by artillery fire.

In certain attacks on a grand scale, especially with the British, the artillery preparation has sometimes been replaced by the sudden, unheralded attack of a mass of tanks—a mode of attack that takes the enemy by surprise, and has been attended with great success.

That has not been the general method; the tanks were most frequently employed in groups of batteries brought up into position with great secrecy, and, after the usual artillery preparation, accompanying the attacking waves and reducing, by the fire of their guns and machine guns, as well as by their overpowering mass, the obstacles capable of holding up or blocking the infantry advance.

Tanks of very different models have been constructed; some very powerful, heavy, and strongly armed, able to pass broad trenches, but of a considerable vulnerability on account of their mass; others lighter, easier to handle, and less strongly armed.

It does not appear that any attempt has been made, so far, to construct field tanks, able to follow troops easily in open warfare. If we ever succeed in giving them sufficient mobility and speed, in combination with great strength, I clearly foresee the future employment of these latter-day monsters, in the following manner:

There will be two distinct modes of action, and, therefore, two distinct types of tank, so far as armament is concerned. One type, armed with machine guns, will be designed to flank attacking troops immediately, either during their successive rushes or when they halt and grip the terrain for the purpose of taking breath and re-forming.

The other, armed with rapid-fire guns, will support the

infantry at short range, and give it the immediate assistance of powerful artillery fire.

In brief, they will be auto-machine-guns and auto-cannon, which instead of being forced to follow the roads will travel and fight across country, taking advantage of the defilades of the ground.

These tanks would, of course, be grouped in batteries, the machine-gun-tank batteries being assigned organically to the brigades or regiments of infantry, and the cannon-tank batteries, to the divisional artillery.

PART II

USE OF THE ARTILLERY

I. *Generalities*

Here I approach one of the essential points of what I have called the conclusions from war experience. This part of our subject is of such importance and presents so many different sides that it will not be too much to dedicate to it one of our discussions.

I will say at once that I see nothing in these conclusions regarding the manner of using artillery that is in opposition to the principles set forth in our last regulations—of 1910 or 1911, if I am not mistaken.

Doubtless, there are differences in method, questions of application and detail, or of adaptation to new and improved material, but, in fine, an authoritative confirmation has been given of the true doctrine of pre-war days, which may be briefly stated in a few words: No breaking up into small parcels; artillery action in mass. The mass of the artillery under the direct orders of the commander of the large combat unit—the division. Detachments reduced to the minimum in special cases and for definite purposes.

Masked fire is the rule, and the fire should be violent, rapid, by surprise or in concentration—no firing of shots one by one. Spend liberally for ammunition, or leave the matter alone

altogether. Close liaison is necessary within the artillery, between the command and the artillery, and between the infantry and artillery. Terrestrial observation remains the essential and principal means of observing.

When that fails, a new organ, aviation, gives a new power to the artillery, by enabling it to act when it would otherwise be forced to remain inert.

Echeloning in depth remains the usual formation for maneuvring artillery.

In open warfare, this formation becomes an advance by echelon of group and battery.

In position warfare, it is occupation in depth.

Mobility remains an essential condition for field artillery, both in open warfare and in position warfare, in order to avoid losses, deceive the adversary, and prepare fire.

The chief point to be noted is the way in which these superficial pre-war theories, of which I have spoken, melted away before the lessons of experience, and the recognition by infantry officers of the power of artillery, which they had not suspected before the war.

So great is this power that, while the infantry has seen confirmed, during this war, its title of queen of battles—a title merited by its immense sacrifices, its devotion, its daily energy, its long painful life in the mud and shell-holes—yet the artillery may and must be recognized as its rival in glory. Artillery also has earned a title—the title of king of modern warfare; earned it by its losses, by its abnegation, the devotion of its personnel, the high courage of its officers and by its material participation in the final victory.

We shall now proceed to give a general outline of the two great forms of battle—open warfare and position warfare—and of the striking features of offensive action in each.

II. *Open Warfare*.

The war began with a period of fierce battles on open ground—a period of veritable open warfare; it ended with a second

period of activity, but one in which the will for offensive that animated all, officers and men alike, was opposed, to such an extent, by systematic destructions, defensive organizations still in existence, and difficulties of every kind in obtaining supplies, that, up to the time of the armistice, it had not yet assumed that decisive character which the German armies would not have been able to prevent, had they not, perceiving the coming disaster, hastily forestalled it by accepting the hard and just conditions which gave us back our ancient provinces and carried our flags to the Rhine.

In the first period, the thing most clearly demonstrated was the effectiveness of the field artillery; the 75's against infantry in close formation and unmasked artillery. This was a confirmation of the following double principle of pre-war days:

It is necessary for the infantry, from the moment that it is exposed to artillery fire, to utilize the conformation of the ground for its advances, to spread out in thin formation, to dig in as soon as it is halted, and to cover itself with trenches. The artillery must enter into action only for masked positions, utilize as completely as possible the defiles and the cover of the terrain for its changes of position, and prepare its fire quickly, but carefully.

The Germans suffered heavy losses at first, both infantry and artillery, through having neglected these principles of prudence.

Our infantry also, unhappily, was often exhausted by attacks delivered with imprudent valor before the artillery had had the necessary time to prepare the way for them, and even before it was known whether the artillery was in a position to support them effectively. These things were brought about by mistakes of the high command, mistakes of commanders of different ranks, insufficient liaisons—all known causes—all errors that we should never repeat.

The more or less fortuitous battles of the early days of the war gave place, after our first reverses, to retreats systematically arranged and ordered up to the day fixed upon for the reëstablishment of the positions.

This period, especially hard both on physique and morale, was for the artillery, reduced to the 75 alone, an often very critical period.

To cover the infantry retreat, it was necessary to remain upon the field of battle as long as the most extreme limit of prudence would permit; then retreat by échlons of groups or batteries; that sort of work was the regular order of the day.

Grave errors committed by the enemy artillery, or perhaps by the commanders responsible for its use, were dearly paid for.

Entire batteries were destroyed by fire, because unmasked; they were nailed to the ground, shut off from the possibility of moving, and were finally taken or destroyed. I will mention as examples the German batteries destroyed and captured in the second French offensive in Alsace, and the French batteries at the battle of Le Vaux-Marie.

The battle of the Marne, in which French artillery did a fine piece of work, showed what great losses could be inflicted on an enemy retiring in disorder by skillful and well-commanded artillery.

Then came the battle of the Yser and the period of position warfare, the study of which we will take up later.

During the final period of the war, July to November, 1918, open warfare was resumed, but, as we have seen, it was open warfare modified by various restricting conditions.

I believe that great difficulties had to be overcome at this time, both by the infantry and the artillery. And there is one thing certain—men do not fight stabilized warfare for more than three years and a half, in holes, without leaving in them some of their impetuosity in attack, some of their dash, a little of that spirit of decisiveness in the commander which will take risks in order to profit by the occasion. From this arises a tendency for the infantry commanders to remain far in the rear of their troops because the posts of command are well organized, with good liaisons, and for the artillery commanders to make their reconnaissances from the rear or in automobiles.

A few days was needed, without doubt, for us to get back

into the right road again, for the infantry commanders to comprehend that their place was with their troops, with their reserve battalions; for the artillery commanders to see that the place for group commanders and commanders of regiments is as far to the front as possible, in order to make their reconnaissances and to prepare the attack in advance of their batteries. All that was done, thanks to the will of some and the good will of all.

The use of the artillery—at least on our side—I cannot speak generally—was, during a long and ardent pursuit, in accordance with the instructions set forth in our regulations and with orders given afterwards. (Note of October 25, 1918, by note of G.H.Q.)

Very light artillery detachments, consisting of little batteries of two pieces, followed as closely as possible behind the advance guard battalions, in close liaison with these battalions, acting for them and taking as their objectives the centres of resistance that stopped or interfered with the advance of the infantry.

The main body of the artillery remained under the immediate orders of the divisional commander, with definite functions and zones of action and with reserve units for concentration action in case of need; the heavy artillery had special objectives assigned to it (failing divisional aviation), and stood ready, also to effect concentration fire.

This method, based upon the rational use of artillery and confirmed by experience, gave the successful results that were expected from it.

There is no need to seek for any new method.

To conclude, I may state that, although open warfare endured but a short time, and though the circumstances were abnormal, yet the use of artillery was such as had been foreseen and such as was outlined in the regulations of time of peace, of which I gave a summary at the beginning of our discussion.

[TO BE CONTINUED]

Maps and Map Firing

BY BRIGADIER GENERAL DWIGHT E. AULTMAN, U.S.A.

WITH a view to dispelling any misconceptions as to the relative merits of map firing in comparison with the methods of adjustment that reached such high development before the war, and of presenting to the Field Artillery the broad application of a well-developed system of map firing, this article is submitted for what it is worth. The statements and conclusions therein are based more on practice and the experience of the World War than upon theory, and the broad conception of the general applicability of map firing had its foundation in the quick transition from trench to mobile warfare that took place, first in the Second Battle of the Marne and again in the later phases of the Meuse-Argonne.

It goes without saying that good maps are a *sine qua non* of highly-developed military operations. The better the maps the more clearly defined can be the plans based upon them. Yet we shall never, especially in the beginning of a war, have such maps as the meticulously accurate "Plans Directeurs" of the French, until similar conditions of stabilized warfare are reached. Yet it is undesirable that the Field Artillery should hypnotize itself into a belief that without such maps we must resort to inferior methods of employment of artillery fire. In the most crucial moments of the war, when the Germans had broken through the line and possible defeat stared the Allied Armies in the face, the shifting of the battle line carried it to new terrain, for which there were no "Plans Directeurs." Yet the problem was solved by enlarging the 1:80000 map of France to a scale of 1:20000, with all its inaccuracies magnified, and placing upon it the Lambert squares. The firing was still by the map and was still accurate and effective.

This brings us to the question of the essentials of a firing map.

The elaborate "Plan Directeur," while desirable in every

respect, is not essential. As a matter of fact, beyond furnishing within a reasonable degree of accuracy the difference of level between gun and targets, it is not necessary at all. Some of the best firing done in France was conducted by the use of the simple planchette, or plane table, with the Lambert squares ruled on the blank paper, the map being used solely to furnish the information for the computation of the angle of site.

The basic essentials of the firing map were, in reality, the *coördinates of geodetic points*, and these were not on the map itself, but were furnished by the "Canevas de Tir." All prominent landmarks were carefully and accurately located by triangulation, their positions on the Lambert projection determined with a minimum of error, and the coördinates tabulated for use.

Upon these coördinates, thus accurately determined, depended the orientation of batteries and observing stations, the installation of flash and sound-ranging systems, and indirectly the careful observation and location of enemy batteries and other targets. In fact, they determined the horizontal elements of the firing data, *range* and *direction*. Without them the best maps were useless, as the unequal stretching of paper and its expansion, contraction and warping, under even slight atmospheric changes, introduced inaccuracies that rendered them undependable for the preparation of firing data.

With the development of a simple and reasonably accurate method for determining the angles of site, which can be made as easy as the preparation of the horizontal data, by merely determining the heights above sea level of the principal geodetic points, and tabulating them, whence by simple computation the angle of site can be found, all the elements of the firing data can be obtained without resort to the topographic map.

It is therefore evident that if we are provided with these geodetic coördinates, which correspond very well with the secondary triangulation of the Geological Survey, placed accurately upon the Lambert squares, and especially if we know the heights above sea level, we can fire accurately by map in any portion of our country that has been thus triangulated.

Once in position and properly oriented, a battery thus located by the map with its observing station likewise determined is prepared to fire upon any target in its sector or within range of its guns. The position of the observing station is independent of that of the battery. The fire of any battery can be observed and adjusted from any observing station, within the limitations imposed by the system of communications. The fire of all batteries can be quickly concentrated upon any specified target or area.

In other words, artillery located by the map is susceptible of the widest possible range of employment, from extreme dispersion to the closest concentration of its fire. The entire mass of artillery of an army corps or of an army can be directed by the will of one man, and, artillery being an arm that depends upon fire power alone, the advantages of this possibility of central control are obvious.

The next element that enters is that of time. It takes time to orient positions, time to move the guns thereto, time to prepare the fire. Yet the time factor is comparatively simple, even in the attack. Battles are not questions of minutes, nor always of hours; frequently of days. An advance is foreseen. An artillery commander looks forward to his next move. Forward positions for the batteries and observation stations are tentatively selected from the map. The orienting officers are pushed forward, accompanying the infantry. The selection of actual positions is simple and the orientation is accomplished so that the batteries may commence firing on arrival. A reconnaissance officer can precede his battery by two hours and have all data prepared before the guns come up.

One of the objections that have been raised to map firing is that much of the firing is unobserved. This is true, but the reasons therefor must be considered.

On the modern battlefield, whether it be in trench or open warfare, concealment is the price of safety. Every possibility of the terrain, aided by the skilful use of camouflage, is utilized to conceal batteries, dumps, strong points, all manner of targets against which artillery is employed. The effort to conceal is

not merely from ground observation alone, but from the view of the aviator and from detection in air photographs.

As a consequence, the large majority of artillery targets, probably 90 per cent. of them, will be invisible from any ground observing station; in fact, from anything but an airplane, and airplanes will never be so numerous that all fire can be directed from them.

Hostile batteries will be revealed only by their flashes, or through sound ranging or photography, and must be fired at from the map. Direct observation will be impossible, and the only method that can effectively be employed will be an adjustment upon a nearby auxiliary target, with observation, and the transport of fire to the real target, without observation. Night firing must always be unobserved.

One of the criticisms made in France was that "barrages were too often fired from the map." The writer knows of no barrage that was not fired from the map. The location of the point of impact of each gun in a barrage could be determined only from the map. Consequently, the only method through which a barrage could be established was the orientation of the guns by the map, the adjustment on a visible auxiliary target duly located on the map, and the transport of fire from that target to the point or points assigned in the barrage. It was only through map firing that a barrage could be established at all. It is quite true that in many cases there was a failure to employ observed fire to the limit of its possibilities, and in consequence thereof there seems to be a conception that map firing is a substitute for observed fire. This conception is entirely erroneous, for nothing can replace observation of fire, whether upon the actual or an auxiliary target.

For effective fire, the guns must invariably be adjusted, and map firing thereafter merely permits the application of this adjustment to concealed targets in the vicinity of the visible auxiliary, with reasonable certainty of effect. The system must not be condemned merely because of the failure in some cases to understand and apply it. At the same time we must not

neglect the rapid pre-war methods. In unknown terrain and in emergency they may be the only means that can be employed. They are essentially training in the observation of fire, and such training cannot but increase the efficiency of the Field Artillery officer, whatever the methods employed.

Furthermore, in the case of the pursuit of a routed enemy, or in a rapid rear-guard action, time may be lacking for the establishment of communications, and units down to the battery may have to operate by themselves. The simplest and most direct methods may be essential, and such methods must always be a part of our artillery system.

In conclusion, the advantages and disadvantages of the two systems may be summarized as follows:

MAP FIRING

Advantages:

(*a*) Ability to fire on any target in the sector with probability of effect, after first orientation.

(*b*) Independence of relative position of battery and observing station, and ability to observe the fire of a battery from any observing station.

(*c*) Ability to fire with reasonable probability of effect upon concealed targets by transporting the fire from a visible auxiliary; upon targets beyond the range of ground observation; at night and in fog or rain.

(*d*) Possibilities of distribution and concentration of fire in the hands of higher commanders and consequent ability to employ the maximum power of artillery fire.

(*e*) The rapid establishment of protective and rolling barrages.

Disadvantages:

(*a*) Dependence upon communications.

(*b*) Inapplicability where the phases of battle are rapidly changing, especially in cavalry operations.

(*c*) Tendency to neglect observation of fire, and to rely too much on mathematical and mechanical accuracy.

PRE-WAR METHODS

Advantages:

(*a*) Applicability to any terrain, known or unknown.
(*b*) Applicability to rapidly-changing phases of combat and to cavalry operations.
(*c*) Independence of communications.
(*d*) Direct conduct of fire by battery commander.

Disadvantages:

(*a*) Difficulty of bringing an effective fire upon concealed targets.
(*b*) Inability to attack a second target by a simple transport of fire, or to use a distant and unrelated observing station.
(*c*) Impossibility of quick concentration or distribution of fire of a group of batteries by the central commander, *e.g.*, a divisional artillery commander.
(*d*) Difficulty of establishing any kind of a barrage.

An analysis of the above brings one inevitably to the conclusion that a system of map firing is absolutely essential if we are to obtain the best results in the employment of large masses of artillery; that map firing should be the normal method in major operations. It also leads to the conclusion that occasions will arise when battery commanders must act independently and must, therefore, be prepared to use the old methods.

Both methods should be taught, observation of fire should be stressed, and all artillery officers should be so trained that, when the emergency is upon them, they may be prepared to meet it in the most effective manner.

Their proper instruction should be such that they will clearly understand the potentialities and application of all methods that will enable them to discharge their primary mission of rendering effective and timely support to the infantry.

Being a Tactical Study of the Field Artillery Group in Retreat.*

BY LT.-COL. W. H. F. WEBER, C.M.G., D.S.O., *PSC.*, R.F.A.

(In three parts; Part I, March, 1918; Part II, April, 1918; Part III, Conclusion and some Platitudes.)

[EDITOR'S NOTE.—*This study of Field Artillery in retreat contains much of interest to our Field Artillerymen, as it will call to mind some of their own difficulties in transportation and with communications, though fortunately we were never in a retreat.*

A few notes on the latest British Field Artillery organization are given as an aid to the reader, as their organization differs materially from ours.

Batteries are commanded by majors, each with a captain, second in command, and have six guns, except heavy field batteries, which have only four.

Brigades, commanded by lieutenant-colonels, usually have three batteries, though horse artillery and howitzer brigades have only two batteries. Heavy gun batteries are not brigaded.

The Divisional Artillery (D.A.), commanded by a general officer, contains four brigades (one equipped with howitzers) and one heavy gun battery. Howitzer brigades are now being increased to three batteries, which will give seventy-six guns and howitzers to a division.

A cavalry division has two brigades, with a total of twenty-four guns.

In this article, the writer's Second Brigade, R.F.A., had four batteries (three guns and one howitzer).

The term "group" refers to a convenient grouping of batteries, varying in number, to cover an area. At first the writer had three batteries in his right group, while later he had seven.

The "bury" so frequently mentioned is a buried telephone cable.

As this study will appear in serial form, it is suggested that numbers of the JOURNAL *containing the different installments of the "Study" be preserved in order that the whole may be read when leisure permits. Back numbers of the* JOURNAL are not always on hand.]

* Reprint from *The Journal of the Royal Artillery*, December, 1919.

TACTICAL STUDY OF F. A. GROUP

PART I (Continued)

CHAPTER IV

MARCH 21ST UP TO 10.00—THE PREPARATION

ON the afternoon of March 20th the relief of the 6th Division was postponed for the *nth* time in view of expected attack. A considerable amount of work attendant on this decision kept everyone at 18th Infantry Brigade and Right Group Headquarters up till midnight.

Shortly after lying down, the Group Commander was awakened by the Acting-Adjutant[1] with news that an aeroplane had reported some thousands of German infantry marching into Pronville or Queant. In the light of after-events, it seems surprising that more detailed steps were not taken; he was however, sleepy, and what influenced him was that counter-preparation was *not* ordered. Now this was the fifth day since March 10th, selected by our Higher Command for the German attack, and on all previous occasions "CPN" had been ordered—it will be remembered that "CPN" was not to be put into force even by Infantry Brigadiers, unless out of communication with Divisional Headquarters. The fact remains that the impression of immediate attack did not convey itself to the Group Commander's mind; however, "Battle Stations" was ordered—the extra liaison officer ordered up—all O.P.'s to be manned by 04.00—wagon-lines to "stand to" at 05.00—mounted orderlies to be sent to Group and Battery Headquarters—and harassing fire was increased.[2]

At approximately 04.50 the enemy opened a violent bombardment on 18 I.B. and Right Group Headquarters with gas, which left no doubt in our minds that "Der Tag" had arrived; there was also some low-flying enemy aircraft. Within a few minutes the combined headquarters office was established in the unfinished tunnel; followed the complete destruction of the Group Commander's above-ground residence by a shell or a bomb with nearly all defence schemes, etc.

It now came to light that the new "bury," though laid last night (and trench filled in), was not connected with the office in the tunnel; 18 I.B. signals achieved the connection in spite of the bombardment—a fine performance. The sergeant in charge of the 2nd Brigade Signal Subsection was wounded almost immediately afterwards.

The Group Commander had a few minutes' conversation with O.C. 42nd Battery and a word or two with an officer of 53rd Battery before the cables gave. To attempt to repair them and keep them going was out of the question and attention centred on visual, but there was a very thick mist, mixed with

[1] The adjutant had just gone to D.A. as "Learner" for Staff-Captain.

[2] The battalions of the 6th Division which were not actually in the line were out digging in the early part of the night 20/21.

the smoke of bursting shells. It was some time before visual was started with 42nd Battery, and considerably longer as regards 53rd Battery. There was never any connection with 87th Battery, except by "runner."[3]

Under instructions from the Brigadier, 18 I.B., counter-preparation was ordered at 05.30.

At 07.05 Group Commander informed 6th D.A. that our front line was intact but that it looked like trouble on either flank; that the enemy bombardment was rather less in rearward areas but increasing in front.

By 07.45 written acknowledgments of the CPN order had been received from all three batteries.

At the same time news was received from 53rd Battery that the body of Major Charles Stuart Lyon, M.C. (Comdg. 43rd Battery) had been found. The death of this most able and gallant officer was a great blow. The Captain of the 42nd Battery was sent for to take command of the 53rd Battery (he arrived there about 10.30).

At 08.40 Group Commander spoke (down the infantry line) to one liaison officer, the burden of the information given being that both liaison officers were "in position" and that there was no news from the front.

At 09.35 he spoke to the Left Group Commander, who said that the Germans had made an attack on his front but had been repulsed, and also announced that the O.C. 21st Battery had been wounded.[4]

At 09.40 a conversation with the Group Commander next on our right who had little news, but said that so far as he knew nothing was amiss.

At 09.00 42nd Battery had heard from its forward section, where a few casualties had occurred. The main position had been and was still being heavily bombarded and a subaltern (who had but made his bow last night) had been killed.

At 09.15 87th Battery had reported "O.K.," but did not know for certain about their forward section.

At 09.20 it was reported from several sources that the enemy were using gas projectors from the Birdeage (D 14).

At 09.40 the battalions reported that the enemy barrage seemed to be creeping towards them, but that no attack had taken place on our front.

The situation at 10.00 might therefore be described as "awaiting developments." It might have been advisable to visit 53rd Battery on the news of the B.C. being killed; it was much quieter after 08.00; on the other hand, it seemed better to remain at headquarters for the present in view of what might occur—and it must be remembered that the Acting-Adjutant had but just taken up duty and was still then inexperienced. Had the Group Commander

[3] 87th visual apparatus had been destroyed.

[4] Battery Headquarters completely wrecked, including a valuable Battery Diary kept since August, 1914.

been able to visit the 53rd and 87th Batteries, and to discuss the question with B.C.'s personally, satisfactory action might have been taken with regard to their forward sections.

In real fact, much was happening. The O.P. parties at "Linnet" I and II were captured complete; with one officer the writer has never been able to gain touch. The other one appears to have given S.O.S.* to 87th at 05.00, which was answered; questioned as to why he did not return to the head of the "bury" (Battalion Headquarters) when communications "went," he denied acquaintance with the order to that effect and further says that he kept up communication with 87th for a considerable time.

He says the bombardment lasted with great severity for about 2 hours, gas being sent over for 1½ hours. After that he was constantly in and out of the dugout, peering through the mist, but could not see much more than 20 yards. Once he heard machine guns close behind him, and when going to see what was afoot was immediately captured by German infantry coming from the flank along the trench; the machine guns were German. He does not remember the time, but it "may have been 09.00 or soon after." The signallers were used to carry wounded, he and his brother F.O.O. being taken to Pronville or Queant, where he saw large concentration of German field guns firing about a round a minute; our guns were not then doing much, but did damage later. From Queant he saw much enemy infantry with trench mortars on both flanks. The officers appear to have been fairly well treated—at first they were not even searched.[5]

The German bombardment is worth notice. It was at its height for only about 2 hours on the morning of the 21st, but its distribution was most remarkable; it opened simultaneously on every battery position on I.B. and Group Headquarters, on the wagon-lines, on Bapaume and St. Pol, to the writer's knowledge—aiming at our communications as its principal objective. The gas part of it appears to have created moral effect in the trench system, but there may have been more H.E. in the rearward area than on the trenches until the enemy infantry advanced; it is hard to say. There was a very heavy fire along the track from Mariecourt Wood to the X tracks in C.29.a., which made the passage of our runners to the 87th perilous.[6] They must have had an immense number of guns[7] firing. Previously, in the various counter-preparation, etc., we had exploded a great number of ammunition dumps and our planes were always notifying new enemy gun-positions.

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* Code signal for a protective barrage.

[5] He managed to get rid of his maps without his captor's knowledge.

[6] As a matter of fact, not a single Group orderly was hit on 21st March, and not a single message failed to arrive.

[7] See Colonel Bethell's article in July, 1918, number of *The Journal of the Royal Artillery*.—Not more than 18 yards to a field artillery weapon at a moderate estimate. Since then Ludendorff's book has been published, and he says the attack was to be prepared by artillery on a basis of 100 guns to 1000 yards!

CHAPTER V

A—THE DAY AT GROUP HEADQUARTERS[1]

MARCH 21ST, FROM 10.00 UNTIL 22.00—THE FIRST ASSAULT

10.05. Right Battalion telephoned S.O.S. to 18 I.B. Passed on 10.07 by visual and orderlies to batteries.

10.15. Infantry report enemy reached our support line (Front or Blue system) on right, and request that barrage be brought back. (i.)

10.20. Infantry report enemy lying outside our wire in front of our Reserve Line (Red System).

Gave 42nd and 53rd Batteries targets accordingly (by orderly), and asked 299th Siege Battery to engage Area D.26.b.

10.55. 42nd Battery report two guns (main position) received direct hits. (ii.) Shortly afterwards told 42nd Battery to get their forward section (three guns) back in order to strengthen their barrage and facilitate control. (iii.)

10.57. Reported situation by mounted orderly to 6th D.A.; also that we had lost but regained Skipton Reserve Trench (71st I.B. on our left); also that Germans had a gun at the end of Central Avenue, which may have been an anti-tank gun belonging to neighboring troops.

Wagon-lines told to send up more mounted orderlies.

11.07. Received a message from 87th, timed 10.30 A.M., announcing the unloading of 12 wagon-loads of ammunition at the main position, and enclosing an untimed message from their forward section, saying, "short of ammunition, because ammunition train[2] cleared off directly enemy barrage started before it could be unloaded. Otherwise O. K. Infantry say enemy concentrating Cornhill Valley." (iv.)

11.20. 299th Siege Battery say they are firing on Lynx (D.26.b.).

11.25. Infantry report Posts 27 and 28 on right of our Reserve (Red) Line lost.

11.35. Left Group report enemy advancing in fours over the ridge in D.20.

11.45 Enemy said to be in J.2.b. Officers of 95th Siege Battery and 299th Siege Battery came in for information and were given situation as we knew it.

11.55. 42nd report (time unknown) forward section has only one gun capable of firing and several casualties.

11.59. Infantry say enemy advancing in masses through Louverval.

12.35. News from 6th D.A. of two batteries 110th Bde., R.F.A., coming in to reinforce Right Group.

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[1] Numerals (i), (ii), etc., refer to paragraphs in comments.

[2] The forward section got its ammunition always by light railway.

12.45. Believe all batteries now engaging enemy in front of the wire of the Reserve Line. A message from 90th Bde., R.G.A., says enemy through our Reserve (Red) Line on right, and a German battery in action at D.13.d.9.0. (v.)

About 13.15. Received a message from 87th Battery (timed 12.45) "with main position am covering our Reserve Line in D.25.b., and am laying forward guns on Leopard Support (D.20.c.). Have ordered up six loads to section, but doubt if they will arrive for some time. Forward Section O.K., and no casualties; 5 casualties at main position." This was an important message, in that it presented no hint of trouble on our left. (vi.)

13.45. 42nd Battery report (1.40) "Still firing from D.26.c. that teams not yet back with guns from forward position; that sergeant in charge of No. 2 anti-tank gun (Leech) had returned."

13.47. S.O.S., Barrage Line to Batteries; D.27.c.9/0—D.26.d.7/5 thence along wire of Reserve Line. 87th various trenches behind Barrage Line.

14.00. 87th report (12.10 P.M. vii)[3] "so far as can be seen, enemy through Lagnicourt and advancing under fire from 18-pounders."

14.05. Orderly officer went to 299th Siege Battery with situation.

14.25. 53rd report (time not given) "Enemy in Lagnicourt, we are engaging them. Ten casualties, of which two at forward section—one gun of forward section out of action."

14.45. 42nd report (2.40 P.M.) "guns not back yet, but forward section was still firing at 1.30 P.M."

15.20. Officers Commanding A/110 and C/110 reported in person. Situation explained, and they were given orders as follows:

"A/110. W 334. 21. Take your battery to 127. My O.O. will guide. Our line runs approx. J 22 b 8/8—D 26 c 5/2—D 25 b 7/0—D/25 central—C 29 central—and probably C 29 a 0/8. Intention is to occupy Brown Line to-night withdrawing troops now in Red Line. Your S.O.S. 150. in front of Brown Line in squares C 29 d, I 5 b, and I 6 a. O.P.'s I 11 a and I 5 c. Position No. 127 coördinates I 8 d 0/8."

A similar message to C/110, which was to go to position 125. State of affairs as regards ammunition stored there was explained, and warning given to be prepared to use open sights.

15.25. Orders for employment of "A" and "C"/110 received from 6th D.A. These orders did not agree with those just given to Battery Commanders who had already left. D.A. Orderly took back at about 16.00 a note giving reason for non-compliance, which was that positions 109 and 121 (ordered by D.A.) would be rather close for supporting Brown Line. The latest news from 87th was also given.

15.38. 87th report (untimed) "guns at main position withdrawn to Position

[3] Compare time with last message.

118 in order to facilitate ammunition supply. No sign of forward section, and enemy have reached sunken road.[4] Captain killed, self hit." The report was initialed by the B.C. in a very shaky hand.

On receipt of this, orders were issued for the captain of the 42nd, now commanding 53rd, to go and command 87th, who could have few officers left.[5]

15.42. 42nd report (3.40 P.M.) "Forward guns back at main position. One gun knocked to pieces left at forward position."

16.05. Gave situation in J.2.b. valley to 299th Siege Battery.

16.15. 18 I.B. situation report: "71st I.B. holding (left) flank from D.25. central (in Red system) to C.29.c. of 7 (Brown system); Battalions 18 I.B. from D. 25. central to D.26.c.8.2 (Red system) to J.1.b.7.5. (flank refused to meet 51st Division). If no counter-attack being launched, 18 I.B. will withdraw at dusk . . . to Morchies Line (Brown system) . . ." Batteries were ordered to prepare to withdraw at dusk. The following guns now in action: 42nd, 2; 53rd, 4 (1 forward); 87th, 3.

16.35. 53rd report, "Infantry say Germans already in Brown Line, C.27 and 28."

Whether some Germans did or did not get into this portion of the Brown Line has not, to the writer's knowledge, been decided; something uncertain occurred here, for a battery commander of the Left Group went into this trench line to see for himself, and was shot at close quarters. A D.A. message timed 7.10 P.M., speaks of enemy holding a small loop in the Brown Line at C.29.c. 53rd was told to verify this information. If correct 53rd and 87th were to withdraw at once. The situation as thus reported could not be verified.

17.00. O.C. 87th Battery arrived and was "dressed" at Group Headquarters. From him it was learned that his forward section must have been captured, and that the main portion of the battery (3 guns) was in position 118 (on Morchies—Vaulx road) under Corporal Martin. See Section D of this chapter.

Orderly Officer returned from guiding A and C/110 into position and reports C/110 actually in position at 125.

17.15. Situation, intentions and useful targets sent to 299th Siege Battery.

17.50. On report of congested enemy transport J.2.b. valley, gave orders to 42nd and 299th Siege Battery (viii.) to concentrate on the tracks in this area.

18.20. Sent Orderly to 6th D.A., giving whole situation as conjectured. In this message the number of guns still in action was slightly over-estimated.

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[4] In a part of which the guns were emplaced.

[5] In real fact, all 9 officers were now casualties and the battery was under command of a wounded corporal.

19.25. An officer from 53rd arrived, by whom orders were sent to 53rd and 87th to withdraw to position 110 and 112 (I.15.c.).

The state of affairs in the Brown Line C.27, 28, and 29.c. was still uncertain. South of that it was known we held the whole line.[6] An order was therefore sent to all batteries detailing a S.O.S. Barrage Line to cover the Brown Line, giving each battery (42nd, 53rd, A and C/110, 87th) its task.

Two guns of 42nd were to go to position 111 (I.15.c.) forthwith. Later the remainder of the battery was ordered back.

19.45. Saw O.C. Y/6 T.M.B., who brought what personnel he could collect and asked for orders. He was able to give some rough information as to what had happened to the T.M.'s (see Section F. of this chapter).

21.00. B.S.M. 21st Battery reported, and about this time a message arrived from 6th D.A. saying 21st Battery would join the Right Group at Position 128.

Pending decision as to what troops were to be responsible for defence, and who would command, and where he would have his headquarters, it was not possible to leave Group Headquarters. The last battery to withdraw was 87th, which left position 118 at 21.20.

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The war of movement had begun.

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COMMENTS

(i) *Infantry Demands*. It seems that the infantry had expected our fire to fall concentrated on the particular spot on the extreme right, where the danger lay, when S.O.S. was sent; the bringing back of the barrage, at all times difficult, *especially on the defensive*, is almost impossible to achieve when no artillery communications exist. It is for us to get as near as possible to meeting whatever demands the infantry make, but we must realize that these demands are sometimes high, and in the mean (peace) time the more we can tell them what we can, and what we cannot, easily do, the better. It might have been better to have a prearranged Brown Line Barrage with a code call; such a barrage had been arranged elsewhere.

(ii.) *Fitters' duties in action*. The 42nd Battery fitter did good work on damaged guns during the day, and the battery armament (less broken gun left at the forward position) was nearly complete by 22nd.

(iii.) *Reason for withdrawal*. The situation of the 42nd Battery was unsatisfactory with one gun in action at the main position, and three (by now) dangerously far forward and out of communication. The 53rd, with only two forward and with flanks protected, was not so badly placed.

[6] A few Germans got into this part of the Brown Line during the night 21/22/., about J.7., but were ejected.

(iv.) *Writing of Messages*. The meaning of the last sentence of this message is obscure, "Enemy *concentrating* Cornhill Valley"; it might mean "massing," or it might mean, in the language of the day, "concentrating fire." The use of the expression "concentrate," meaning "concentrate fire," is loose and has, in the writer's experience led to considerable misunderstanding. The drill of writing messages must be persistently inculcated; during the operations under discussion at least three important messages were received whose usefulness was discounted by the neglect to time them. Another source of error has been the expression "heavy artillery bombardment"—did "heavy" refer to "artillery" or to "bombardment?"

(v.) *Flank Communication.* News from our right-hand neighbors was much needed all through this and subsequent days.

(vi.) *Flank Patrols.* The two 87th Battery positions lay on the southern slope of a ridge running N.E. and S.W. A flank patrol a couple of hundred yards to left would have kept the battery commander aware of events on his left; this is a singular instance of the illusive security resulting from trench warfare and the continual offensive; the exposed right flank could be better watched from the 42nd position on 25th (Chapter VIII); after our experiences in March we used flank patrols frequently, standing patrols, or officers or N.C.O.'s mounted on horses or bicycles; and most valuable was the information they brought in, both on the defensive in April and later in the "100 Days' Battle."

(vii.) *Error of Timing Messages*. This was the first hint of trouble on our left flank, hitherto thought safe. A message timed 12.45 P.M. reached Group Headquarters about 1.15 P.M.—about the time it would take a runner. The message to which this note refers was timed 12.10, and got to Group Headquarters at 2.00 P.M.; either the 12.10 or the 12.45 message must have been wrongly timed—it looks as if the 12.10 message should have been timed 1.10 P.M.

(viii.) *Liaison with Heavy Artillery*. It will be noticed that there was effective liaison all day with 299th Siege Battery, and the Group Commander ventured to give *an order* to the latter at 5.50 P.M. There had been liaison once during the day with 90th Brigade, R.G.A., and with 95th Siege Battery by an officer coming from that unit. It is contended that if heavy artillery units defending the line were more closely connected with the F.A. Group, whose commanders are, quite simply, representatives of the G.O.C., R.A. Corps, the defence would be more efficient.

(ix.) *Fire Records.* It is a pity that batteries did not keep better records of targets engaged. Military history is the basis of training, but it is absolutely dependent on the accuracy of records. At 1 P.M. there was some shooting on the Red Line,[7] and one cannot tell at all whence it came.

[7] The perpetrators of this outrage were never actually located, owing to breakage of communications, but batteries were warned.

(x.) *Wagon-lines*. The wagon-lines had to shift about a great deal during the day owing to shell fire, as they did to even a greater extent during the April operations about Kemmel (see Part II). The insistence on proper liaison came from our experiences during some parlous days opposite Cambrai at the end of November, 1917—a most valuable lesson; unfortunately Group Headquarters (with R.S.M. on leave) had not learned it so thoroughly.

(xi.) *Visiting*. It may be taken as an axiom that, no matter how much it adds to work and physical fatigue, it is absolutely essential for a commander to obtain touch with events in battle by personal visits. Every soldier knows it. It is no case of "small profits and quick returns"—sometimes the time so spent seems wasted; it is rather a case of increase of capital at (a high rate of) compound interest, for not only will the knowledge thus gained be of inestimable value to the wanderer when studying the map at his headquarters for a later situation, but also the presence of seniors on the field is a thing highly valued by the troops, of which in public little, but *in private a great deal is said*. Position warfare creates the illusion that one can do one's work at home, but the surprises which greet one when on the tramp tear away even quite comfortable veils; *Malheureuse est l'ignorance et plus malheureux le Savoir*. The writer has never ceased to regret not visiting his batteries during this day; even now it is hard to select the time when such a visit might have been made. Had he gone between 08.00 and 10.00 and discussed the situation personally, it seems to him not unlikely that the forward sections of the 53rd and 87th Batteries would have been withdrawn during the morning; but at that time it seemed possible that no attack on our front was impending. Later, there seemed to be always a time just ahead when it would be not only advisable but necessary to go to the batteries.

The conclusion appears to be that, so long as communications hold, and a commander can speak to subordinates, he is well placed at headquarters[8]—even one may say best-placed; we all met the gentlemen who could never be found at home to do business. When communications are gone, his principal task (that of command) has become most difficult, and he is well advised to beg leave to go visiting, so be he is not too long absent at one time.

(xii.) *Business at Headquarters*. The summary of events given in this chapter gives no idea of the "business" which went on at Group Headquarters during the 12 hours—the rumors, the conflicting reports, the uncertainty. One felt it was all only the beginning, and a small part, of a much bigger series of events; if blame be given for not ordering this movement or that, it must be remembered that in trench warfare battles move very slowly; and that, over and over again, a few remnants of units hanging on where they were had held up large bodies of troops and brought to nought

[8] Unless, of course, there is some particular thing he considers it his duty personally to see.

all sorts of ambitious schemes concocted in the quiet of a distant office. Again, the mental attitude of a man accustomed to a rifle, when suddenly handed a gun and shown driven grouse, gives an idea of the impression created by the first day's moving battle after years of position warfare—that is to say when it is at the enemy's will that it moves. It was a most anxious and tiring day, but "Be the day short or be the day long, at last it reacheth to evensong."

B.—THE DAY WITH 42ND BATTERY

The day was an exciting one. Both positions were under heavy fire from the very start. The main portion of the battery had only just settled in its new position, which was still incomplete; it was strong enough, but the advantage of its strength was discounted by the impossibility of concealing (in such surroundings) the work done. Two guns at the main position and one of the three at the forward position received direct hits early in the day. One of those at the main position was mended by the fitter under fire; the other had to go to the I.O.M. The one at the forward position was destroyed in its pit. The battery had thus four guns in action that night.

The captain of the battery was taken away early to command the 53rd Battery; one subaltern (just joined) was killed at the main position; one subaltern (borrowed from 87th) was captured with the O.P. party at "Linnet," and one subaltern was on leave. Four subalterns remained, one at the forward position, one at the main position and two at the wagon-lines.

When the order came to withdraw the forward section, 2nd Lieut. D. reconnoitred the task. The enemy were already on the heights W. of Louverval, and quite close to the forward section in its immediate front. The officer thought the task could not be achieved, but asked to be allowed to try; volunteers to drive were at once forthcoming; the officer personally led the limbers forward through the wire of the Brown Line one by one; and one by one the two guns returned; a wheel horse of the last team got his foot entangled in the wire, and the team had to stop while the wheel-driver dismounted and disentangled his horse's foot. In the meantime, the officer at the forward position was organizing fire with small arms, after having prepared the guns for withdrawal. It was a most gallant performance, and all concerned were deservedly decorated; it just shows what can be done.

A fine instance of infantry coöperation occurred here (i.); the 51st Divisional Infantry in the Brown Line[9] noticed the attempt, and at each critical moment developed a heavy rifle and machine-gun fire on the Louverval heights, without which the task could never have been accomplished.

On arrival at the main position the two guns were sent back (by order from Group Headquarters) to the Brown position allotted to 42nd Battery—No. 111 (ii.).

[9] The 42nd forward position was in the 51st Divisional area.

The battery wagon-lines suffered considerable casualties in horses during the day, and like all others had to shift.

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(i.) *Infantry Coöperation*. In another part of the battlefield some limbers coming up to withdraw guns had a very different experience at the hands of the neighboring infantry. Intent on a stout defence, the infantry had blocked up a certain gap in the wire; the team drivers had to unwire the gap, but, to their disgust, on returning with the gun they found their gap re-wired!

(ii.) *Method of Withdrawal*. It is a moot point whether a withdrawal is best conducted by sending a whole battery back at a time to cover other batteries' retirement, or by each battery sending one section to cover its own. This last method divides every battery into two portions, making control difficult for the B.C.; and the section sent back first is very short of orders and information until the main battery arrives. On the other hand, the battery is the fire unit; the more preparations made at the new position the earlier will efficiency be reached; observation and communication have to be arranged there; angles must be calculated for the new S.O.S. line. Still further, each battery has a certain task as a fire unit—maybe a zone to cover; if a whole battery is taken away, it means constant alteration of tasks, at an already difficult time. Throughout the March and April withdrawals the writer adopted the section method—with success.

In the advance it is quite another matter. A section sent forward for close support of the infantry has so much to do with observation, liaison, flank reconnaissance and fire-command that it has to borrow officers from the main battery in order to carry out its task. Instead of sending a section forward, it was our custom to send forward a complete 4-gun battery under its own commander with his full staff, and to treat the remaining two guns as a reserve of personnel and equipment.

The question is rather a controversial one.

C.—THE DAY WITH THE 53RD BATTERY

It is no reflection on the 53rd Battery to say that the death of its commander during the first moments of the battle had a serious effect on its efficiency. The B.C. in question was a born leader of men, and the very life and soul of the whole unit.

On news of his death, the captain of the 42nd was placed in command and arrived at 10.30 A.M., but in the afternoon, the 87th being left without a single officer, the captain of the 42nd went on to the 87th (his old battery). The captain of 53rd was on leave; there were five subalterns, one at the forward position, one at "Sparrow" O.P., three at the main position, of whom but one had experience. Except during the short time mentioned, the battery was commanded throughout the March operations by its senior subaltern; it had an excellent B.S.M.

The forward section could have been withdrawn without undue trouble up to the sudden and unexpected capture of Lagnicourt by the enemy; after that the machine-gun fire from the Lagnicourt and Louverval heights rendered withdrawal practically out of the question, for the ground behind was on a forward slope and devoid of cover; the Group Commander gave no order for such withdrawal.

The forward section was bombarded like all others, and one gun destroyed by enemy fire at an early hour. The remaining gun was most gallantly fought by the officer in command; when the enemy appeared at Lagnicourt, it was brought into the open against them with success. Between dark on the 20th and the late afternoon of the 21st it fired over 1700 rounds; in fact, every round within reach of the position. The section commander having fired his last round, destroyed the gun and withdrew what remained of his detachments.

The O.P. party being out of communication, and therefore of no use, the F.O.O. rightly rejoined the main portion of the battery.

At the main position also, guns were taken out of their pits, and the enemy at Lagnicourt effectively engaged.

The battery withdrew at dusk to its Brown Position (110); it had lost its two forward guns and the anti-tank gun; one of the remaining guns was temporarily out of action.

There seem to be no special comments; one can say that the battery put up an effective defence under difficult circumstances.

D.—THE DAY WITH THE 87TH BATTERY

If it was exciting with 42nd, it was perhaps more so with 87th. The visual station was hit in the first few minutes. Previously-noted messages show that early in the day the forward section was in trouble as regards ammunition, owing to the sudden departure of the light railway truck which was bringing up the daily supply. Unfortunately 12 wagon-loads[10] had just been dumped at the main position, and by the time more could arrive the forward section no longer needed supply. It is possible that the Battery Commander was too occupied with fighting the main portion of the battery to give all the attention due to the other half of his command; he was singularly badly placed as regards communication with Group Headquarters, and it can justly be said that he did not get all the help and advice which might normally be expected. It must also be remembered that chance rendered him very short of officers; he had his captain with him until the latter was killed; pure chance dictated the fact that the 87th were finding *both* liaison officers that morning; being so rich in subalterns, the battery had lent one to 42nd, and that lent subaltern was doing a tour of O.P. duty for 42nd at

[10] Ordered early in the morning by Group Headquarters.

Linnet I. on his way back to his own battery, so that *both* the captured Linnet F.O.O.'s were 87th officers; two subalterns were with the forward section (one for instruction), a seventh subaltern was on leave, an eighth had been just seconded for services with the T.M.'s (where he was wounded early in the day). When the Battery Commander was wounded there was, therefore, not one officer left out of the *ten*, for both liaison officers had been wounded by the early afternoon.

No order was given to withdraw the forward section by the Group Commander; it has already been suggested that the defence scheme should have been clearer on this point. The section was badly placed for such a battle, more particularly as steps were not taken to keep the northern side of the ridge under observation.

It has never been decided at what time the forward section was captured, for the last message from them was untimed. Reference has already been made to the difficulty of determining whether a mistake was not made in the timing of the 12.10 or 12.45 messages to Group. By 14.30, in any case, our fire from the forward position had stopped, and a German machine gun opened from farther south (to the right) along the same roadway in which lay the forward section—in fact, from what had on 16th March been I.B. Headquarters and still was a dressing-station (C.29.a.6/0). That the Germans came along the sunken road from the left (north) over the crest of the ridge is obvious; this movement probably took place *after* they occupied Lagnicourt (a useful pivot).

An untimed message from the wounded B.C. arrived at Group Headquarters at 15.38. The battery was getting short of ammunition; there was plenty stored at Position 118 (the position allotted to the forward section for the defence of the Red or Second Line); further, ammunition had by now arrived at 118, intended to refill the forward section, but unable to get there because the ground east of 118 had become completely swept by German machine guns from the above-mentioned dressing-station. The B.C. had, therefore, determined to move his guns back to 118 instead of bringing the ammunition up to the main position—an important decision, which brought about one of the most stirring episodes of the day. The wagon-limbers unhitched the wagon-bodies and drove forward over the open to withdraw the three howitzers from the main position. They got there all right, but the withdrawal took place under heavy machine-gun fire at about 1000 ⩴ —1400 ⩴. Scarcely a single horse escaped being wounded, and in two of the three teams there was an empty saddle. The whole incident was exciting and most creditable to the battery, but the captain was killed and the major wounded in the process.

Up to the withdrawal the B.C. had gallantly fought the battery by voice from an exposed position on the hill behind; he described his method of getting his "line" as unorthodox, but the fire was considered effective by

those at hand. The wireless mast had long been hit, but the operator succeeded in saving all the instruments.

On arrival at 118, the battery was fought for some hours by a corporal, himself wounded. At night it withdrew without great difficulty to its Brown position (112), where it found itself with one (borrowed) officer and three howitzers, of which one was temporarily out of action.

The wagon-lines had had a bad time, but this battery also possessed a first-class B.S.M.

E.—THE ANTI-TANK GUNS

No. 1 Gun (15-pdr.—42nd Battery) "Nickel" was hit almost at once. The sergeant in charge got back with two men in the evening after fighting all day with their rifles.

No. 2 Gun (18-pdr.—42nd Battery) "Leech" caught the very centre of the barrage. A gallant effort was made by a liaison officer to get it into the open, but its detachment was practically wiped out, and the Germans were in possession of that area about 10.00. (i.)

No. 3 Gun (18-pdr.—53rd Battery) "Tiger" fired two successful bursts early in the day when good targets presented themselves. While sitting on the layer's seat, trying to open fire later in the day, one of the liaison officers was hit[11] by a splinter in the eye from a rifle bullet which struck the rocking bar sight; the enemy was quite close, and it proved impossible to go on manning the gun. The detachment retired with the infantry at dusk, but only the N.C.O. (wounded) and one man got back.

No. 4 Gun (18-pdr.—21st Battery) "Sparrow" appears to have done good work; it was run out of its hiding place soon after 08.30, and was firing at 500 $\underline{\times}$ when the infantry officer on the spot told the detachment to give it up and rejoin their battery. The N.C.O. and one man got back.

No. 5 Gun (18-pdr.—87th Battery) "Shaws" was in the centre of one of the main depressions. It had fired 25 rounds when the infantry officer told the N.C.O. to stop firing as the gun was drawing the fire of the enemy on to his men (ii.). The N.C.O. and two men rejoined their battery forthwith.

It is believed that every gun, if not already destroyed by enemy fire, was rendered useless by the detachment before withdrawal, except (possibly) No. 2 Gun, "Leech."

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COMMENTS.

(i.) *Siting*. Siting of the anti-tank guns in the trenches was not a success, but too much stress was perhaps laid on their being able to cover ground *at short range*, and there was nowhere else but trenches to hide them.

[11] He remained at duty, however, with the infantry and rejoined 87th later, at night.

One frequently comes across good sites in a forward area for an anti-tank gun, with a covered approach for its detachment, good camouflage and well away from trenches; nothing like such a site existed on this front.

(ii.) *Artillery in the Infantry Zone*. One of the great objections to placing artillery weapons in the infantry zone is that pressure is exerted to keep quiet, so as to avoid retaliation. An officer can withstand such pressure; a N.C.O. scarcely has the position. Had the medium T.M.'s remained entirely under infantry control, it is not unlikely that the fear of retaliation would have made them too inoffensive; it was this that weighed so heavily towards the decision to make them part and parcel of the F.A. Group.

(iii.) *Loss of Power—Anti-Tank Guns*. It has proved almost impossible to get accurate information as to what happened in each of the five anti-tank gun cases; the infantry were too busy to notice, and returning members of the detachment naturally made out the best possible accounts for themselves. The anti-tank guns cannot be said to have done much for the defence; but then no enemy tanks appeared on the scene. Had the tanks come there would have been less enemy barrage (after the preliminary bombardment was over) and doubtless the carefully selected detachments would have rendered good account of themselves; they could ill be spared by their batteries, and their absence was felt on the 21st.

F.—THE TRENCH MORTARS ON 21ST[12]

As regards the Heavy T.M. nothing is known except that it fired from 05.30 until captured. By the middle of the day the dugout was holding a large collection of German infantry.

As regards Nos. 9, 10 and 11, it is believed that Nos. 9 and 10 fired; the officer in charge was captured, it is understood, between Infantry Company Headquarters (D.21.c.0/0) and his guns. An officer in charge of No. 11 was killed—if rumor is to be believed—while most gallantly directing an infantry fight on the top of the parapet after his gun was captured.

Nos. 7 and 8 were fired at the request of the Left Battalion Commander. One received a direct hit. The officer in charge was wounded early in the day.

The history as regards Nos. 16, 17 and 18 is better known. Lieut. C. was acting T.M. Control Officer (see Appendix IV to Defence Scheme) on the evening of the 20th. At 05.15 it was only just possible to see the wire in front of each trench, and such telephone wire as it had been possible to steal (in order to allow of control) was already cut so that three of the T.M. Groups had to act on their own responsibility. The Right Battalion Commander very naturally refused to allow Lieut. C. to go forward himself, as his

[12] The writer is indebted to several people for information given after repatriation. It is most unfortunate that no opportunity occurred for getting Lieut. C. and some of the 25th Divl. T.M. Personnel the recognition which they, according to *all* accounts, merited.

group of T.M.'s might be wanted at any moment. Every fifteen minutes reports were coming in the front line, but only bombardment was taking place.

At 09.25[13] a company runner reported the enemy in possession of our support line (front system)—the first intimation of actual attack. About this time the F.O.O.'s at "Linnet" must have been captured, as well as the group of Nos. 9, 10 and 11 T.M.'s. About 09.40 enemy infantry were observed outside the wire of the Reserve (Red) Line, in which Battalion Headquarters were situated.[14]

It was now that the Right Battalion Commander gave permission to put Nos. 16, 17 and 18 into action. Lieut. C. reached his guns (not without difficulty) and fired them on their registrations.

Going up to the Red (or Reserve) Line (close in front) he obtained touch with a post of the Division on our right and, seeing a party of 75 Germans cutting our wire by hand, he changed his target on to the enemy party at the shortest possible range. The fire was successful, and that party "evaporated." Going back after this episode to his guns, he found three of his men dead or wounded; Lieut. C., the N.C.O., and the remaining man each took one gun.

At 11.00 rifle and machine-gun fire was received from the right (southern) flank, and the N.C.O. was hit; the party was, however, reinforced by a man who had escaped from the Heavy T.M. detachment. About 11.30, while working his gun, Lieut. C. received a blow on his head; when he came to a German was standing over him calling him "Good English comrade." He and the two men were sent towards Queant, but crossing our support line (front system) they found a British post under a sergeant-major still holding out; they escaped and joined the garrison; the sergeant-major was expecting a British counter-attack and refused to surrender; ammunition gave out later, and after an unsuccessful attempt to get away, the party had to surrender. They had a bad time, and indeed Lieut. C. tasted nothing between dinner on the 20th and the end of a 70-kilo. march! It was apparently not salubrious to "fall out" during this march.

Lieut. C.'s impression of the German method of attack was that it was not made in line, but in very deep columns at intervals along the front—this is an interesting point and accounts for many things. The carnage inflicted on the enemy between our support line (Front or Blue System) and the Reserve (Red) Line was a credit to the close defence—it is to be feared that the field artillery did not pull its full weight as regards infliction of casualties on this occasion.

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[13] This fixes the hour.

[14] Group Headquarters knew this at 10.05.

COMMENTS

(i.) It is claimed that the Heavy and Medium Trench Mortars put up a fine defence.

(ii.) *T.M.'s in the Defence*. The employment of T.M.'s in the defence is difficult; T.M.'s are primarily a material-destroying, not a man-killing, class of weapon, and best suited to preliminary bombardment before an offensive. For purely trench warfare they are well enough sited in the front-system; but they are not good for S.O.S. against an assault, and are better placed on the defensive in some reserve trench ready to assist a counterattack. Nos. 16, 17 and 18 (and perhaps 7 and 8) did better work than No. 9, 10 and 11.

(iii.) *Control of T.M.'s*. Trench mortars cannot be treated like another battery in the Group, but rather a sub-group, for they form another echelon of the artillery defence; they need as careful arrangements for control as the brigade of brigades, R.F.A., which form the second echelon of the group. For actual gunnery they need telephone equipment, and much more of the same for tactical control; the reluctance of the authorities to provide this telephone equipment was never understood unless it was that the equipment did not exist to be issued.

G.—THE 18TH I.B. FIGHT ON 21ST

The 18th I.B. had the 1/West Yorkshire Regiment on the right and 2nd D.L.I. on the left; 11th Essex Regiment in Reserve.

The Left Battalion Liaison Officer was the one ordered up during the night (see Defence Scheme); the German bombardment had begun before he had reached his post. The Left Battalion was not on the "bury"; the only communication was, therefore, from Right Battalion Headquarters; both battalion headquarters were in the Reserve (Red) Line. At 10.00[15] the sentries reported German infantry advancing; they captured our Front Line (Blue) system, but were held up by the wire of the Reserve (Red) Line; however, they managed to get up Leech Avenue (the main C.T. which left the Reserve Line near where the two battalions joined hands), and the Left Battalion was obliged to vacate the Reserve Line and occupy the "Travel Trench" in rear; however, a counter-attack was made, and the Reserve Line reoccupied, and two German machine-guns captured.

Up to now this Liaison Officer had been fighting with rifle and bayonet, bomb and revolver. He now tried to reach No. 2 Anti-Tank Gun, but found it already in enemy hands; he also tried to work No. 3 Anti-Tank Gun, but was wounded in the attempt without, however, leaving the fight, for he again took a rifle. An attempt to effect *liaison* was now made, for he sent an orderly from No. 7 T.M. to tell his *battery* commander the situation. Many S.O.S.

[15] T.M. account (written from the right) gives capture of front system at 09.25.

signals were put up, he says, by the infantry after 11.30, but "no answer came."[16] Some 20 enemy aeroplanes were circling overhead. A detachment of 11th Essex Regiment arrived at 14.00. The enemy had now captured Lagnicourt, and were obviously getting round the right also; the two battalion commanders decided to fight on where they were; Leech avenue was blocked, and all papers were destroyed. At 18.45 the Germans, by bombing up Leech Avenue, had again reached the Reserve Line, while practically all our ammunition was expended. The withdrawal took place under heavy rifle and machine-gun fire from both flanks. Both the battalion commander and the liaison officer got back; the latter rejoined his battery at once, was sent to be "dressed," and was shipped by the doctors, under protest, to England.

The Right Battalion Liaison Officer[17] remembers speaking on the 'phone to the Group Commanders about 09.00—an effort to *liaise* liaison. At 12.00 danger became imminent from the right flank. At 12.15 he manned a rifle and a trench. At 13.00, just after three companies of 11th Essex had arrived, he went to help form a defensive flank on the right, at right angles to our line and in rear of battalion headquarters. At 13.30 the infantry officer was hit and our *liaison* officer found himself in command of the defensive flank; the troops to our right had withdrawn, and the Germans were trying to bomb up the Reserve Line from the south; they were stopped about 60 yards from battalion headquarters. At 14.00 he was hit, and sent back with an orderly; he only succeeded in reaching the dressing station at Beugny after a perilous journey.

From the accounts of the T.M. Controlling Officer and these two liaison officers, the story of our own front becomes fairly clear. What had happened on the right is borne out by the 42nd Battery account (Section B). We know that on the left the Germans suddenly appeared at Lagnicourt, and that the 71st I.B. were forming a defensive flank south of Lagnicourt, running from the Reserve (Red) to the Brown Line. One can only wonder that anyone got back alive to the Brown Line from the 18th I.B. front, of which the O.C. 1/West Yorkshire had been deputed to take command.[18] Returning artillery personnel speak with great enthusiasm of the fight put up by these two grand old battalions.

* * * * * *

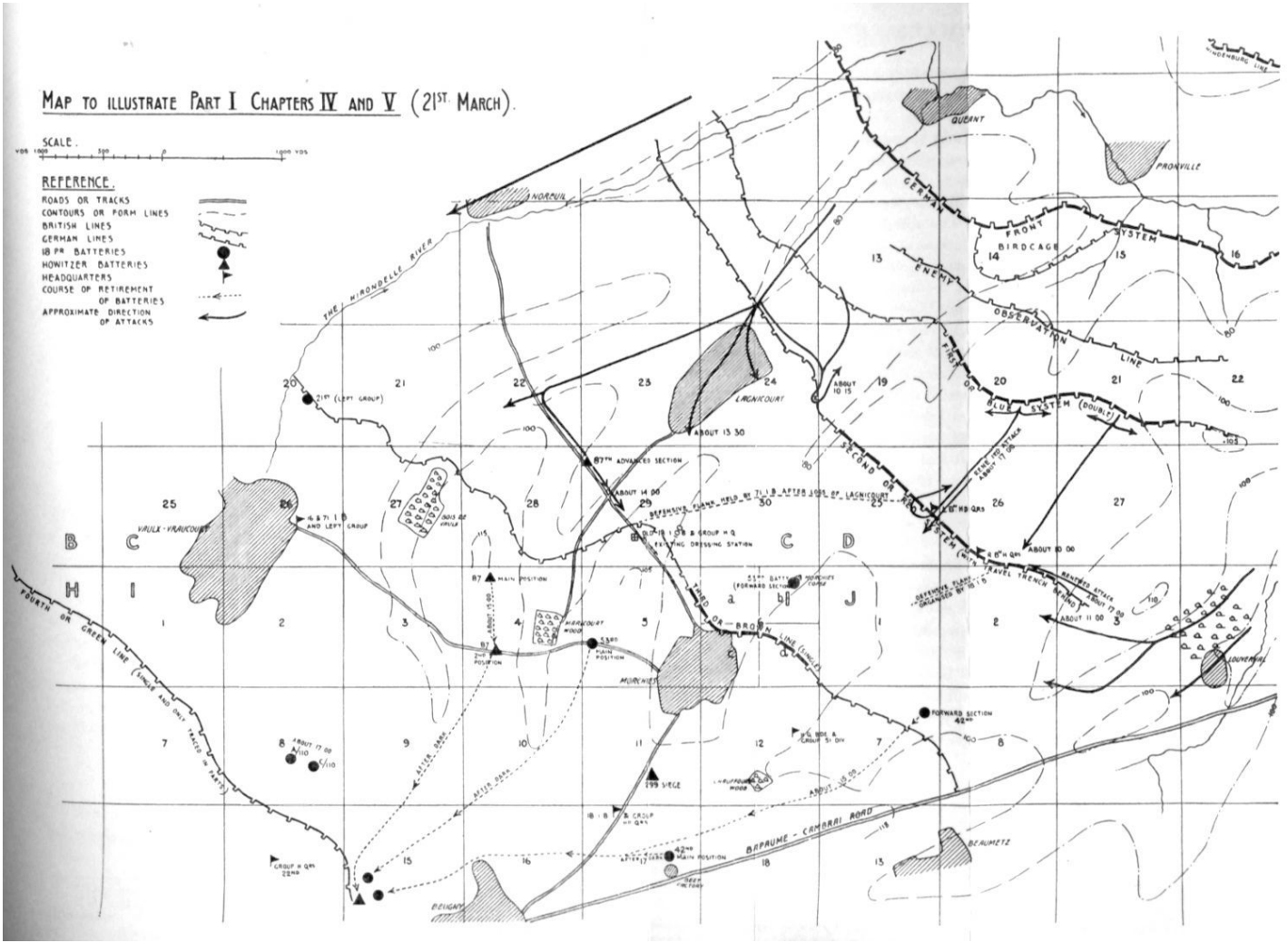
COMMENTS

Liaison Duties. It is obvious that the two liaison officers, finding communication difficult, abrogated their liaison duties and fought as infantry so long as it was possible. One admires their spirit, but what they did was *not*

[16] The gunners had their own troubles by now.

[17] Of modest character and rather short memory.

[18] He was hit on the way back, and after exciting episodes became a prisoner of war, where he enjoyed further excitement in the form of a German doctor's efforts to keep his wounded leg straight.


MAP TO ILLUSTRATE PART I CHAPTERS IV AND V (21ST MARCH).
SCALE.
REFERENCE.
ROADS OR TRACKS
CONTOURS OR FORM LINES
BRITISH LINES
GERMAN LINES
18 PR BATTERIES
HOWITZER BATTERIES
HEADQUARTERS
COURSE OF RETIREMENT OF BATTERIES
APPROXIMATE DIRECTION OF ATTACKS
HINDENBURG LINE
QUENT
PRONVILLE
NORVAL
THE HIRONDELLE RIVER
GERMAN FRONT SYSTEM
BIRDCAGE
ENEMY OBSERVATION LINE
FIRST OR BLUE SYSTEM (DOUBLE)
SECOND OR RED SYSTEM (DOUBLE)
21ST (LEFT GROUP)
LAGNICOURT
ABOUT 13 30
87TH ADVANCED SECTION
ABOUT 14 00
ABOUT 10 15
ABOUT 10 00
ABOUT 11 00
VAULX-VRAUCOURT
BOIS DE VAULX
15 & 71 I.B. AND LEFT GROUP
87 MAIN POSITION
87 2ND POSITION
HERMIES
HERMIES WOOD
FOURTH OR GREEN LINE (SINGLE AND ONLY TRACED IN PARTS)
THIRD OR BROWN LINE (SINGLE)
MORCHIES
FORWARD SECTION 42ND
42ND MAIN POSITION
LOUVERVAL
BEAUMETZ
BAPAUME - CAMBRAI ROAD
BEUGNY
199 SPOT
CROUP H QR'S DEAD
18 - 8 GROUP H QR'S
B GROUP H QR'S
A & B BDES & GROUP 51 DIV
BEAUCOURT

liaison between the infantry and artillery. Whether had they reported personally to Group Headquarters, the artillery could have done anything, is nothing to do with the case. On the 23rd, and again on the 24th, the Group lost valuable officers in the same way.

H.—THE DAY WITH THE 21ST BATTERY (ATTACHED TO LEFT GROUP)

On the morning of 21st March, the 21st Battery had one gun attached to Right Group as an anti-tank gun (see Section E); it had one gun in a forward or "active" position, of which little is known; it had an O.P. party which was captured, including the F.O.O.; it had three guns[19] in a "silent" position sited *in* the Brown Line for the specific purpose of covering the Hirondelle Valley. Several officers were on leave or courses; one was at liaison and returned safely; the captain was at the wagon-line; at the main position were the B.C. and one subaltern. Two of the guns at the main position were completely knocked out with their detachments early in the day and the subaltern wounded. Battery Headquarters was destroyed within the first minute or two, and the B.C. seriously wounded. The captain came forward, and with two sergeants and a few men with rifles, one 18-pdr. and a Lewis gun, put up a first-class resistance[20] for the rest of the day. The one remaining 18-pdr. was brought out into the open and escaped damage for several hours, during which time it did sterling service, until eventually it also got hit. The Lewis gun, however, remained in action to do effective damage to the Germans about Lagnicourt, and, with two undamaged rifles, was carried out in triumph at dusk.

The 21st Battery rejoined the Right Group (in accordance with orders) for the defence of the Brown Line at position 128; it consisted (at midnight) for that purpose of a captain and perhaps a dozen men.

It was withdrawn on the 22nd, re-armed and attached to the Left Group, when the latter was reconstituted from 25th Divisional Artillery. It did not rejoin 2nd Brigade until March 27, so appears no more in Part I, but we shall hear of it again in Part II.

* * * * * *

COMMENT.

Rifle and Revolver. Every officer in the Artillery should be efficient with his revolver and every gunner with his rifle.

(To be continued.)

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[19] One gun at I.O.M.

[20] Probably the only defenders of this part of the Brown Line until late in the afternoon.

Possibilities in the Act of June 4, 1920*

BY MAJOR WILLIAM BRYDEN GENERAL STAFF

ALMOST everybody in the Army has by this time become more or less familiar with certain provisions of the recently enacted amendments to the National Defense Act which are contained in the Act approved June 4, 1920. For example, those who have recently been promoted, as well as those who have not, realize that the single list has at last gone into effect; emergency officers desirous of commissions in the Regular Army are aware of the fact that the critical period has arrived; while those of us who have to struggle with morning reports have learned that the grades and ratings of enlisted men have undergone a change. But there are certain broader features of the new law which are possibly not yet fully appreciated by the service at large, and it is with such points that this paper is concerned.

A comparison of the Act of June 4, 1920, with the Act of June 3, 1916, which it amends, shows that the old act has in fact been rewritten rather than merely amended, and a careful study of the new law discloses a military policy far more definite than has ever been found in any previous reorganization bill. The following notes on some of the provisions of the new law may serve to call attention to what appear to be the salient points of this policy.

The old National Defense Act started off with the statement that "the Army of the United States shall consist of the Regular Army, the Volunteer Army, the Officers' Reserve Corps, the Enlisted Reserve Corps, the National Guard while in the service of the United States, and such other land forces as are now or may hereafter be authorized by law," but in spite of this assertion, how many of us ever thought of the many

* Reprint from the Infantry Journal, September, 1920.

elements named as making up a single Army of the United States?

It took a big war and a short, decisive order issued while that war was in progress to make us realize that Regulars, National Guardsmen, Reservists and others in the service must be but parts of one united army, both in spirit as well as in name.

The new law begins similarly with the statement that "the Army of the United States shall consist of the Regular Army, the National Guard while in the service of the United States, and the Organized Reserves, including the Officers' Reserve Corps and the Enlisted Reserve Corps." In this case, however, the components of the Army of the United States are few in number and clearly defined, and if in time of peace there should be any danger of our ever forgetting the war-taught lesson of the necessity for a united army, the organization prescribed further on in the new law is such that there will be kept constantly before us the all-important fact that the Army of the United States does, in truth, consist of three parts; the Regular Army, the National Guard, and the Organized Reserves. For example, instead of all policies and regulations affecting the National Guard being prepared hereafter in the Militia Bureau, as they were before the war, the law now prescribes that "all policies and regulations affecting the organization, distribution and training of the National Guard and the Organized Reserves, and all policies and regulations affecting the appointment, assignment, promotion and discharge of reserve officers, shall be prepared by committees of appropriate branches or divisions of the War Department General Staff, to which shall be added an equal number of reserve officers, including reserve officers who hold or have held commissions in the National Guard, and whose names are borne on lists of officers suitable for such duty, submitted by the governors of the several States and Territories," and as a consequence of this provision there will necessarily be hereafter a number of reserve officers on duty in Washington as additional members of the General Staff.

ORGANIZATION

In section 3 of the new law we find that "the organized peace establishment, including the Regular Army, the National Guard and the Organized Reserves, shall include all of those divisions and other military organizations necessary to form the basis for a complete and immediate mobilization for the national defense in the event of a national emergency declared by Congress." At last our military establishment is to be planned on a war basis—on a big war basis—on the necessities of "a national emergency declared by Congress," and the peace establishment must therefore be adapted to the needs of war.

The peace establishment, furthermore, must include "all of those divisions and other military organizations" such as corps, army and special troops, "necessary to form the basis for a complete and immediate mobilization," and "the Army shall at all times be organized so far as practicable into brigades, divisions and army corps, and, whenever the President may deem it expedient, into armies."

In that section of the law lies the foundation of our present military policy which Congress has seen fit to state merely in general terms such as these. To the War Department, under the President, will fall the task of putting this policy into effect. The confidence which Congress has displayed by not imposing restrictions in this work cannot fail to put the War Department on its mettle, and, needless to say, the work will undoubtedly be done with the utmost care.

The task is by no means a small one. First there must be determined the number of men that would be needed in a "complete and immediate mobilization" for the purpose stated. This involves a consideration of the forces which might possibly, and not improbably, confront ours in a national emergency, and of the amount of time subsequent to a declaration of war which would be available for completing the mobilization.

The number of men having been determined, there immediately arises the question of the strength and composition of

the units in which the men will be organized. Shall we continue without question the organizations used in the World War, or shall we study the lessons of that war and possibly modify the present authorized strength and composition of our division, army corps and field army?

With this second big question settled, it will be possible to transform the number of *men* needed into the number of *field armies* needed, and the next step will then be to allot all subordinate units of these field armies to the Regular Army, the National Guard and the Organized Reserves for maintenance in time of peace, and for mobilization at the declaration of war. Of the three components of the Army the only one for which the law prescribes a maximum limit is the Regular Army. While the law does not prescribe for the National Guard a strength which is not to be exceeded, still the states will do so indirectly by not accepting allotments for more National Guard units than they will care to maintain. The strength permissible for the Organized Reserves will be limited only by the War Department's decision as to the number of men needed in the "complete and immediate mobilization," or by such regulations as may be laid down by the Secretary of War.

Many points must be considered in the allotment of the subordinate units of the field armies to the three components of the Army, such as:

In the case of the Regular Army.—(*a*) The character of units which should be maintained in the Regular Army in order that its duties in time of peace and in minor emergencies may be performed effectively.

(*b*) The legal peace-time limits placed on the strengths of the several arms of the service.

(*c*) The numbers available after having deducted the overseas garrisons, the coast artillery troops required within the continental limits of the United States, the personnel needed in the training of the National Guard, the Organized Reserves and the Reserve Officers' Training Corps, and to provide the necessary overhead, etc.

In the case of the National Guard.—(*a*) The character of units which should be maintained in the National Guard in order that its duties in time of peace and in minor emergencies may be performed effectively.

(*b*) The units which have been already recognized, and those which have been allotted to the States but have not yet been recognized.

(*c*) The desires of the States with respect to further allotments.

In the case of the Organized Reserves.—The subordinate units of the field armies not provided for in the Regular Army and the National Guard.

In the case of both the National Guard and the Organized Reserves.—(*a*) The preservation as such, as far as practicable, of "the names, numbers, and other designations, flags and records of the divisions and subordinate units thereof that served in the World War between April 6, 1917, and November 11, 1918," as required by law.

(*b*) The suitability of particular districts for the location of units of particular troops.

It is thus seen that the allotment of units will be a complicated problem which will call for a knowledge of local conditions in the several States which officers of the Regular Army could not be expected to possess, and consequently they will welcome the assistance which will be forthcoming from the National Guard and Reserve Officers who are being selected in accordance with the law to assist the proper committees of the War Department General Staff in the preparation of "the plans and regulations under which the initial organization and territorial distribution of the National Guard and the Organized Reserves shall be made."

As an index of the desires of Congress in this matter the law provides that "at least one division of the National Guard or Organized Reserves" shall be contained in each corps area.

This reference brings up another important provision of the law, namely, that "for purposes of administration, training and

tactical control the continental area of the United States shall be divided on a basis of military population into corps areas," and that "the President is authorized to group any or all corps areas into army areas or departments." It is evident that Congress intended the corps area to be the principal territorial military unit since the division into corps areas is mandatory, whereas the division into army areas or departments is merely authorized.

The delimitation of the new corps areas will call for another careful study in which once again many points will have to be considered. For example:

(*a*) The division into corps areas must be made on a basis of military population, yet it would be inadvisable to decide upon boundaries which would in any case split a State.

(*b*) The corps areas must not be so few, and consequently so large, as to make them unwieldy commands, nor can they be so small, and consequently so numerous as to run up an exorbitant overhead in headquarters and staff.

(*c*) The number and size of the corps areas should fit in with the mobilization plan.

(*d*) As an essential step towards the preservation as such of "the names, numbers and other designations" of the National Guard and National Army "divisions and subordinate units thereof that served in the World War" every effort must be made to retain intact as far as practicable the *areas* which supplied the men for these units.

Upon the establishment of the corps areas which must necessarily function during peace and war, there would seem to be no further reason for the existence of the six territorial departments now comprised within the continental limits of the United States, and in that case the corps area would become all that the territorial department is now and something more, since it must contain a considerable number of military units, together with the necessary machinery for performing its part in the "complete and immediate mobilization," to say nothing of the mobilizations which would undoubtedly follow the first, and

of the big problem of supplying replacements which is not mentioned in the law but which, nevertheless, must not be forgotten in our plans.

The corps areas having been established and the allotment of troops to corps areas having been determined by the War Department, the corps area commanders doubtless will, under "general regulations approved by the Secretary of War," be required to determine the location and designation of the several units allotted to their corps areas.

A thorough knowledge, on the part of the officers concerned, of conditions within the States and smaller localities will be essential in this work, and the law recognizes that fact by requiring that the "location and designation of units of the National Guard and of the Organized Reserves entirely comprised within the limits of any State or Territory shall be determined by a board, a majority of whom shall be reserve officers, including reserve officers who hold or have held commissions in the National Guard and recommended for this duty by the governor of the State or Territory concerned."

The work of these boards will be complicated and important, and will call for the exercise of a vast amount of tact, patience and common sense on the part of the members thereof, for every subordinate unit of the field armies and every unit of special troops not provided for in the Regular Army should be provided for in the National Guard or in the Organized Reserves and should be located in a neighborhood favorable to its growth and development.

PERSONNEL

Under the new Act officers and enlisted men for the Regular Army will be obtained practically as heretofore, but the Regular Army Reserve has been abolished. However, enlistments in force at the outbreak of the war, or entered into during its continuation, will continue in force until six months after its termination unless sooner terminated by the President. In time of emergency the Regular Army, therefore, will have to

be filled to war strength by reserve officers and by voluntary enlistments, by reservists or by the draft. The draft is not mentioned in the law, but in view of its fairness, effectiveness and efficiency as demonstrated during the World War, it is safe to assume that in another national emergency it will be speedily put into operation.

The National Guard will also obtain its officers and men practically as heretofore, except that now "any reserve officer may hold a commission in the National Guard without thereby vacating his reserve commission." The National Guard Reserve is, however, retained and will furnish a means of filling up organizations to war strength, while behind the reserve we may again assume the draft. Members of the National Guard, when drafted into the service of the United States in an emergency, will serve for the period of the war or emergency unless sooner discharged.

A novel and interesting feature of the new army is the creation of the Organized Reserves, and many of us are wondering how and with what success the units thereof will operate. In this matter a great deal will depend on the attitude of the commanding officers of all grades, on the way in which the proposition is put up to the public, and on the degree of coöperation shown by the personnel of the Regular Army and the National Guard and by the reserve officers, the reservists and the people at large.

In time of peace reserve officers of the line will in general be procured from among former officers of the Army, graduates of the Reserve Officers' Training Corps, warrant officers and enlisted men of the Regular Army, the National Guard and the Enlisted Reserve Corps, and persons who served in the Army at some time during the World War. Appointments will be "for a period of five years, but an appointment in force at the outbreak of war, or made in time of war, shall continue in force until six months after its termination."

A most important provision and one which should do a great deal towards building up reserve organizations is that "so far

as practicable, reserve officers shall be assigned to units in the locality of their places of residence."

With respect to the Enlisted Reserve Corps, the law states that it "shall consist of persons voluntarily enlisted therein. The period of enlistment shall be three years, except in the case of persons who served in the Army, Navy or Marine Corps at some time between April 6, 1917, and November 11, 1918, who may be enlisted for one-year periods and who, in time of peace, shall be entitled to discharge within ninety days if they make application therefor." Enlistments, as in the case of the Regular Army, will continue in force until six months after the termination of war unless sooner terminated by the President.

Enlistments are to be limited to persons who have had such military or technical training as may be prescribed by regulations of the Secretary of War. Members of the Enlisted Reserve Corps will therefore in general come from among persons discharged from the Regular Army, the Navy, the Marine Corps, the National Guard, and persons who have received suitable training in the Reserve Officers' Training Corps at technical schools or colleges and at civilian camps.

In the organization of the Enlisted Reserve Corps the idea of localization is again in evidence, for it is provided that members of the Enlisted Reserve Corps may be formed "into tactical organizations similar to those of the Regular Army, similarly armed, uniformed, and equipped, and composed so far as practicable of men residing in the same locality." These organizations may be officered by the assignments of reserve officers or officers of the Regular Army, active or retired, and such personnel of the Army may be detailed as may be necessary for the administration of such organizations and the care of government property issued to them. Reserve officers and reservists may be placed on active duty at any time by the President, provided funds specifically appropriated for such purposes are available, but except in time of a national emergency expressly declared by Congress they cannot be held on active duty for

more than fifteen days in any one calendar year without their own consent.

There is, therefore, sufficient authority for units of the Enlisted Reserve Corps to be made into organizations of real military value. Persons entering them will have had some training, both men and officers will live in the same locality and should be able to work up considerable organization spirit, while arms, uniforms and equipment will be at hand under the care of small permanent cadres from the Regular Army for use during the annual training periods, in such voluntary instruction as may be possible at other times, and in mobilization for war. Even if the enrolled strength of these units should not exceed the number necessary to fill the commissioned and non-commissioned grades, think how much better off we would be in an emergency than we were at the beginning of our participation in the World War.

CONCLUSION

Above are the essential points to be considered in the reorganization of the Army. And it is now for the War Department to get out of the new law all that Congress intended in the way of national defense and possibly a little bit more.

The law is not perfect, but its imperfections are negative rather than positive. For example, under the law no means are available whereby the Army may be assured of sufficient personnel for training and for service, and there is no authority for classifying the military population in advance of hostilities, a step which would permit mobilization with a minimum disturbance to essential industries, and would result in shortening greatly the mobilization period. But these are omissions which may possibly be corrected in the future.

For the present there is plenty to do. All that is now needed is a sound basic plan to build to, a realization by the three components of the Army that their missions are quite different and that there is work enough for all, and a spirit of true coöperation running through all our activities.

The German Field Artillery in the War*

ANONYMOUS

IF I return again to-day to the subject discussed in the September number, I do this first of all on account of editorial comments, then also on account of the Seeger treatise, which was unknown to me when I wrote my answer, but, above all, on account of an article published in the Schweizer Zeitschrift für Artillerie und Genie, Swiss Journal of Artillery and Engineering, under the title of the "Die Deutsche Artillerie im Weltkrieg nach eigener Beurteilung" (The German Artillery in the World War According to its own Judgment) which clearly shows how the notion of the inferiority of the German artillery is already beginning to pass into an historic conception and how necessary it is to defend ourselves against it in the interest of this arm of the service.

I shall not now deny—this must be said by way of premise—and have never denied that the German Field Artillery was not so far superior to the French Field Artillery as possibly the German Infantry or the German Cavalry and Foot Artillery were superior to the corresponding French arms. I only protest against the assertion of a decided inferiority, an assertion which is often uttered with an undertone of strong reproach (see, for example, the Seeger treatise). The reasons for the difficulties which have been standing in the way of the further development of the German Field Artillery since 1877 are not to be sought in a "fault" of this arm of the service, which, in the long run, is composed of the same kind of personnel as the other arms. These reasons may be found in the path mapped out for the development of this arm, in the sharp division made between it and the Foot Artillery in the introduction of regulations with a cavalry tinge, but, above all, in the suppression of the higher artillery positions (Inspectors and Inspectors-General)

* Translation from the Artilleristiche Monatshefte, January, 1920.

and the subordination under the Corps and Division Commands.

Yet it is curious that all the reproaches concerning insufficient training in shooting, concerning lack of coöperation with the infantry, etc., are always addressed only to the Field Artillery and that since the first battles the Foot Artillery has frequently been held up to us by the Infantry as a model. Since, however, the Foot Artillery is composed of the same sort of personnel as the Field Artillery and, in particular, draws its officers from the same source, the reason for this difference can only be in the organization and in the training resulting from this organization. I believe that this is an indisputable fact which every one must admit. It is only necessary to raise the questions: Has a judgment ever been given against any Battalion Commander of the Foot Artillery by a Division Commander or a Commander of an Army Corps? Has the Foot Artillery executed even a hundredth part of the practice manœuvres with the Infantry that we have executed? Have their lieutenants led companies and platoons of the Infantry in garrison practice and manœuvres as ours have done? Did they have the same endless joint lectures and war games that we had in the years before the war? Nothing of all this took place, but the Foot Artillery learned to shoot and again to shoot; they were protected from any frittering away of their strength. That was the decisive point. Whoever is able to shoot can do everything. Coöperation with the Infantry is no mysterious black art, concerning which thick books have to be written; it follows, as a matter of course, for any one who knows how to shoot.

The difference between Field and Foot Artillery, however, lies further in the facts that the Brigade Commander was the highest artillery officer we had (the Inspector came only twice a year as a spectator at target practice directed by the Division Commander or the Commander of the Army Corps) and that the surest way to promotion led through tactical work and tactical training; while in the Foot Artillery an Artillery Inspector

took the place of a Division Commander, drawn from another arm of the service, and an Inspector-General with full powers (particularly in regard to the decisions) took the place of the General in command of the army corps.

Thus one may well say, according to the old words, "By their fruits, etc," that the changes in the Field Artillery of 1877, 1890, 1899 have certainly been made good use of in regard to tactics, horsemanship and soldierly training, but that they have not been effective as regards the technic of shooting, and this is the kernel of the whole question. If the Inspectors and the Inspector-General had been taken away from the Pioneers and they had been subordinated as strictly as the Field Artillery to the Army Corps and Division Commands, the Pioneer battalions of 1914 would probably have been Infantry battalions, marching and fighting excellently, but they would not have been such masters of technic as they actually were.

The result of these circumstances was that the German Field Artillery, as must be openly admitted, was not so far superior to the enemy's Field Artillery as it might have been; it did not have the superiority shown by the other arms of the service over the corresponding arms of the enemy. The fact, however, that criticism, especially that made by the Infantry, so greatly exaggerated and exaggerates this difference is due to purely psychological reasons. Two such reasons are to be distinguished. One of these is common to all human nature and works in all armies in the same way, while the second rests upon a special German characteristic. The first cause lies in the manifestation, entirely natural and easy to understand among men, of a certain slight jealousy against any one who is "better off" who remains farther in the rear, does not endure such severe losses and can live more comfortably. This "jealousy of position" has been shown in equal measure in all armies. The same note is sounded in countless statements of prisoners and in captured letters. With our opponents of the summer of 1916 this feeling once even led to very wild outbreaks when the Infantry, returning from the muddy trenches, met a cavalry regiment well

equipped, wearing beautiful uniforms and riding along comfortably. At least such a scene was described in letters captured by us. This has always been so and always will be so. For the same psychological reason we artillerymen have also taken pleasure in sharply criticizing the Aviation, the Survey Section and the higher staffs.

The second reason, however, is, as has been said, a peculiarly German one. It is the old phenomenon that, with a German, nervousness and anger are always directed against a fellow-countryman and preferably against his nearest neighbor. This is also the case in connection with the provision question, as is well known. Here again this German psychological characteristic played a rôle in the world's history. "In regard to the cruelest war measure in history, the hunger blockade, which alone struck us down (the military crisis occurred in the winter of 1916-17 and purely from the point of view of numbers, we were never so well off in regard to divisions, guns, ammunition, etc., as in the summer of 1918), this blockade aroused anger not against our cruel enemy, but only against our fellow-countryman. The townsman abused the peasant, the peasant the townsman, and both united only in denouncing the authorities. Unfortunately, the same thing took place in the army as the overstrain gradually became too great. We suffered about ten times as much as our enemy, as may be easily calculated from the use of ammunition and the possibility of relief. In the hard autumn of 1916, when all the available Reserves and supplies of ammunition were being sent in ever-increasing measure to the Eastern Front on account of the defeat of the Austrians, when affairs before Verdun and on the Somme were becoming more and more unendurable, the same picture was always seen. We did not rail against the enemy, who, from envy of our economic development, had dragged half the world into battle against us, or even against our forsworn ally, who sucked the marrow from our bones. No, the Infantry reviled the Artillery, because they were not wide awake; the Artillery reviled the Infantry because they constantly demanded foolish barrages, and both united in

reviling the Aviation, while all of them inveighed against the service which had charge of manufacturing ammunition. This is peculiarly German; or, at least, the fact that such conduct is possible even in war is due to this special trait of our national character."

So much for exaggerated statements. If, however, our own Infantry, even at the beginning of the war, had a so much higher opinion of the enemy's Artillery than of the German Artillery, this was not due to the psychological reasons described above, but only to the fact that the Infantry felt the effect of the enemy's artillery on their own bodies, while they seldom saw the effects of their own artillery fire, except, principally, in the cold, naked mass of ammunition figures. The simple fact that the enemy shot, on the average, five times as much artillery ammunition at us as we shot at them (for half a year I calculated this daily in my work), played a very important part in the judgment of the Artillery, since it made it possible for our enemy, from the very beginning of the war, to open searching and sweeping fire to a far greater extent than we could do, and it was just this sweeping fire which produced a material and, above all, a moral effect.

The case is simply the following: If I want to hit the objective often and to hit really worth-while objectives, I must, above all, shoot where I cannot see. For the celebrated "emptiness of the battle-field" is naturally only a delusion. The powerful masses of the battling armies must be somewhere, and they are just where they cannot be seen; that is, behind hills and in hollows, villages, etc. If I shoot there, I must always hit worth-while targets, provided only that I have sufficient ammunition at my disposal to shoot into all the places into which I cannot see. In doing this, I naturally take the risk of having a few hundred or even thousand rounds explode on unoccupied terrain. In the open warfare of 1914 I often saw the French Artillery shooting for hours at a time at slopes behind which there was nothing. But when there was something there, when a battalion was passing, when a carefully-covered ammunition

train or a group of gun carriages (limbers) were standing there, then a burst of fire was inevitably received at once. Since it is a well-known psychological fact that we regard as meant for ourselves any shot hitting in dangerous proximity to us, naturally reports of the wonderful achievements of the French Artillery were spread broadcast. Thus the well-known rumors of a concealed telephone, of mysterious signals from a church tower, of people who unfortunately came by chance into the range of the artillery, broke out everywhere. I think there was no division in which such rumors were not circulated. They even found their way into official reports. I experienced an instructive example of this on September 6, 1914. My gun carriages, carefully standing under cover, were hit directly by a lot of shells. With the calmness and coolness which characterized the "old army and its errors," the Sergeant-Major and the brave drivers put things in order again and went on to another better-covered place. Hardly had they reached this spot when the same thing happened again, and it was only due to the ineffectiveness of the French shells, with their small splinters of that period and their fuses which were not sensitive, that, while, to be sure, we lost 12 horses, only a few of the drivers standing between the horses were slightly wounded. That evening the Sergeant-Major reported to me: "Since there was no airplane there, the fire must have been directed by a concealed telephone, which, unfortunately, has not been found." I myself, however, had clearly seen from the battery position that the enemy were spreading their fire over all the slopes behind us and that they shot many dozens rounds at places where there was nothing.

Soon afterwards I had a similar experience at the beginning of the trench warfare. Behind our position there lay a village which certainly was not visible from the enemy's position, but yet was large enough to be hit by the inaccurate map firing of that period, and, therefore, it received bursts of fire from the French Artillery from time to time throughout the entire day. Many of these rounds fell in the empty village, countless teams

passed through the village without being fired upon, but when a couple of field kitchens happened to be hit by such a burst of fire, the drivers immediately told all through their companies that the French Artillery was keeping a devilishly close watch and had at its disposal some secret means of observation, of which even its own people had no suspicion.

But, joking aside, this question is serious enough: Why did we not have ammunition enough to win the same cheap reputation as great prodigies among the enemy's Infantry? Now it is perfectly clear why we were so inferior in regard to ammunition during the campaign. Every one knows what an influence was exerted in this respect by the lack of raw materials due to the blockade. But the answer to the question why we were so short of ammunition even at the very beginning of the war is not so simple. It is closely connected with the question: Why did we not accept the batteries of four guns? and with other similar questions. The answer to these questions, however, must be this: Between 1871 and 1914 the German Army had a tenacious, strong, watchful, tireless, inexorable and powerful enemy who always subjected it to a frightful barrage when it wished to extend or improve its position in any way, and this enemy was the German Reichstag. I say "to extend" or "to improve," for whenever we wanted an increase or an improvement of any kind, the same picture was always presented. The matter was not approved or was only approved on such a scanty basis and with such reductions that the result was neither half nor whole, and the troops continued to suffer from excessive economy under the celebrated "poor man's system." Whenever there was a question of more guns, more ammunition, more oats, hay or straw, of helmets, cloaks or boots, of coal for the soldiers' quarters, of pay for the non-commissioned officers, of marches for target practice or of field exercises, of supplies or rope or pole bands—whenever we wanted anything new, panoramic sights, army saddles, sets of harness, universal shells, electric light for the barracks, etc., etc., there was always the same picture, always the same procedure. The requests were either not

even passed on to the Reichstag on the pretense that they had no chance at all of being approved, or they were so cut down that only a weak torso remained. This was the case also with the ammunition question. The disadvantages of the small supply of ammunition were well known everywhere. Redress was asked for often enough, but it never came. I remember, indeed, that in the summer of 1913 our Regimental Commander gave a long and interesting lecture on this subject, during which he placed on the board large tables and columns of figures, and also read aloud some confidential papers in which high officials explained that an increase in our supply of ammunition was urgently needed. He told us in addition the reasons that had caused the shipwreck of all these wishes. If the supply of ammunition were increased for the war, then, on account of this replenishment, each year more ammunition would be used up in target practice. As a result of this the target practice would last longer and the guns would also be worn out quicker. All this would cost money and then again more money, and there were naturally no prospects that these large sums would ever be granted. We must be happy if we could at least put into practice again to some extent the idea of universal military service. Thus nothing was left for us but the greatest care in the use of ammunition and therefore we should only shoot at worth-while objectives, etc.

Artillery officers everywhere were instructed along these lines in the years before the war. No target practice was executed without there following, in the criticism of the practice, an exhaustive discussion as to whether after all the task might not have been accomplished with somewhat less ammunition. The instructions were correct under those conditions. If we had not been trained to economy in this way, if we had even used about as much ammunition as our enemy, we should probably have come to the end of our resources in the middle of the open warfare of 1914.

Very similar is the case in regard to the question of batteries with four guns. As I said in my previous article, if I were

granted the means of having nine batteries, I should take nine batteries of six guns and not nine of four guns (after what I have learned from my experience in the war). If I were granted the means, that is the kernel of the whole question! It would not make much difference in the expense whether I made use of two or more gun carriages or wagon bodies. The expense is caused by the battery as such, with its officers and non-commissioned officers, its barracks, stables, etc. An officer, who from his official position had a clear insight into all questions of organization and the budget, once explained to me definitely during the last years before the war that the authorities had long been convinced of the advantages of the battery with four guns, but that they could not reduce the entire number of guns. The most exact calculations had been made as to the cost of reorganizing the Field Artillery regiments into three groups of three batteries, each battery having four guns. The amount required was so enormous that it was entirely out of the question for the measure to be passed. Therefore, it would be better, at least in the first place, to somewhat increase the extremely weak peace status of the batteries, whereby we could manage without building so many barracks, extending the stables so much, etc. On this rock the battery with four guns was one of the first things to be wrecked, but I personally cannot help being of the opinion that this was no great misfortune.

Now in regard to the question as to where the fault lies that the army suffered for decades from a system of economy and elimination, and that at the beginning of the war we not only did not have a sufficient supply of ammunition, but also lacked 15 Army Corps, while 500,000 to 600,000 men who were fit for active service were sitting untrained at home (15 army corps which later had to be created out of nothing and for which, consequently, there was an especially great lack of ammunition); concerning this question there was naturally much controversy even during the war. Many wished on principle to place the blame on the incumbents of the office of War Minister. This is a very naïve idea, which indeed assumes that in four long

decades not a single one of the War Ministers filled his post worthily, although these ministers were very carefully chosen; yet every War Minister since 1871 has suffered from this rage for cutting down the army. Personalities do not make history. Race psychology, in the last analysis, alone decides the fate of nations, and the roots of the incomprehensible behavior of the German Reichstag can only be found in it. It was really our old hereditary defect which here worked to our prejudice; it was the cosmopolitan delusion, seeing in war only a misfortune which in itself was to be avoided, but which yet broke out here and there occasionally through the mistakes of diplomats. The same cosmopolitan delusion that during the war kindled the senseless controversy concerning the acceptance or rejection of a peace by mutual agreement (a peace which was, however, utterly impossible); the same delusion that ate away the strength of the army, while the people finally really came to believe from the outcry in the German newspapers that we might have an acceptable peace any day; the same cosmopolitan delusion that made the retreating troops write on their wagons: "Hurrah for Wilson, the Savior of Germany!" this same delusion was really alone to blame for the fact that the Reichstag saw in every expenditure for the army of defense an unproductive waste of money, that it believed it was doing a good work in the service of international conciliation with every penny that it cut off from the demands of the army.

That and that alone was the reason why we suffered from a lack of ammunition at the beginning of the war. Why matters could not improve during the war is certainly quite well known. What we accomplished, however, during the four years when we were shut off by the blockade, is worthy of the greatest and most unbounded admiration. What we accomplished can only be entirely appreciated when we think not only of the scarcity of nitrogen, copper, workmen, etc., but also of the length of the front held by us and the supplies we sent to our allies.

All that could be done was actually done. The fact that,

in spite of this, we did not get away from the usual "poor man's system," was due to circumstances. With our enemy these difficulties ceased to exist. The statement so often repeated that the French Army also suffered from a lack of ammunition at the close of the open warfare seems incomprehensible to me. That the French should make such an assertion is clever and right, for the fact of a lack of ammunition would more easily explain the failure of the offensive undertaken after the so-called Battle of the Marne, but that this statement should be made by the Germans also is incomprehensible to me after what I saw myself during the months in question. Between October and December, 1914, I was fighting at four points, at two places on the Champagne front, in the Argonne and east of the Argonne. In all these places I saw that the French, on days without any special engagements, used about ten times as much ammunition as we did, while during their Christmas attack, beginning December 9th, their artillery kept up a heavy bombardment with a vengeance. Naturally during this time the enemy did not use nearly as much ammunition as was used during the open warfare and then again from the spring of 1915 on. Therefore, if we use the expression "lack of ammunition" only in a relative sense, if we think only of the comparison with the usual procedure at the beginning of the war, the expression may perhaps be justified. The decisive fact remains, however, that our Infantry even during this period, were subjected to artillery fire night and day, while they only heard their own artillery fire comparatively seldom.

When we take all these circumstances into consideration, we cannot really assert that the German artillery, or even the German Field Artillery alone, was inferior at that time to the French artillery. Up to the late autumn of 1916, when I came to the Eastern Front, I continually had the impression that we, with our infinitely smaller resources, accomplished more than the enemy's artillery, not only relatively (that is beyond question), but even absolutely. In justification of this statement I can only point to the many local attacks (Argonne!) made

by us on the Western Front between the late autumn of 1914 and the autumn of 1915, which all passed off entirely according to the plan and brought us thousands of prisoners, while the enemy's attacks or counter-attacks failed every time with the same certainty.

I then remained for more than a year on the Eastern Front, where I learned the great superiority of our artillery, working with the most limited resources, over the Russian artillery, and then I came back to the great offensives in the West. During these offensives, however, our artillery did work such as the enemy's artillery had not been able to show up to that time. It is not strictly true that "the old artillerymen resisted the introduction of tables of the errors of the day." Certainly every one acknowledged the value of this method and objection was only made to entirely giving up registration and observation in large attacks. This was such a weighty decision as has seldom been made. The whole fire, from the first fire for effect on the strong points and trench mortars to the last advances of the barrage, was to be executed entirely from maps, without observations; not one shot was to fall on the hundreds of entrenched positions before the beginning of the attack. We dared to make this decision, and the plan proved successful. It was inevitable and natural that this method should still show small childish ailments during the first attacks. In addition to this it happened that at St. Quentin and Armentières there was such a fog that the Infantry, with the best will in the world, could not remain close to the barrage. At the Chemin des Dames, however, the method had ripened and produced brilliant results never obtained before. The artillery engagement at the Chemin des Dames, including the approach march as well as the fire, certainly forms the greatest and most successful artillery achievement in the history of the world. Hundreds of guns, drawn under bushes or covered with branches, stood behind the thin veil of infantry all day long in entrenched positions which were entirely exposed on the forward slopes; hundreds of thousands of rounds were fired at these positions at night, in concentric

wheels of fire, but not a single round was fired in return. Then, at daybreak, the barrage ran with concentrated force, as straight as a string, from the Valley of the Ailette up the steep slopes, ran on over the mountain and valley to the farthest range, so concentrated and so straight that the Infantry could follow close behind it, and a front-line regiment had only three men wounded up to the Aisne. It was an unparalleled and brilliant performance which can only be fully appreciated by some one who has seen on the maps the twisted lines along which the barrage had to run on that terrain and knows the preliminary calculations which the battery commanders there had to make concerning dead spaces, angles of fall, the apparent and real length of the advances of the barrage on the slope, etc. An officer of high rank who had been taken prisoner made at that time the following statement: "The success on the front must be attributed to the German barrage. The French Artillery has, at present, nothing to oppose to such a system, carefully planned and worked out to the most minute details. The coöperation between the Infantry and Artillery is, for the moment, better on the German side than on ours." In regard to this whole matter, we must now take into consideration still another fact, that the mortars, those of 10 centimetres and those of heavy calibres, did not take part in the barrage, but went before it in systematic advances. Thus from the heavy Field Howitzer Batteries only the Field Batteries took part in the barrage and consequently three-fourths or four-fifths of the Battery Commanders, who executed this unique and unparalleled artillery performance, came from the ranks of that German Field Artillery which was alleged to be so behind the times and inferior.

The objection may now be made that while the work done by our artillery was, to be sure, very good, yet the enemy's artillery, after they adopted our method—giving up entirely registration and observation—from July 18th on did equally good work in their attacks. Even if the enemy's Infantry did not break so far through the opposing lines on the first day as was done at the Chemin des Dames, yet, it might be said, they

advanced to the farthest range of the barrage safe and sound under its protection. In connection with this statement there always occurs to me the objection made by an old friend when, on my return from the Eastern Front, I began to relate our experiences at Riga, on Osel, etc. "Keep quiet about your experiences on the Eastern Front," he interrupted me indignantly; "in the condition the Russian was in at the end, he would have run away even if you had shot at him with pickled cucumbers." In this utterance, together with much exaggeration, there was yet a kernel of truth. Artillery operations against an army which no longer wishes to hold out can hardly be used as a basis of comparison. As a matter of fact, with the Russians in July, 1917, conditions were shown very similar to those in our army in July, 1918. In both cases the singular result was that an army, decayed internally and shot through with polities, could still attack after good preparation, but could no longer defend itself. This fact must be taken into consideration if we wish to form a correct estimate of the operations of our western enemies since July, 1918. Their later successes, like the advance in Flanders, the success of the Americans at Thiaucourt and their advance over the Meuse, should, therefore, be no more highly prized than our "victorious advance" to Darpat and Kieff, than the victorious march of the Italians to Trieste and the march of the Roumanians to Budapest. It is thus difficult to judge whether the enemy's artillery accomplished the same results during these attacks as our artillery accomplished during our offensives of 1918. That it did not accomplish quite the same results, however, can be proved by the fact that attacks on the numerous positions where determined resistance was still offered, where the so-called "strike-breakers" (to repeat the celebrated nickname) were fighting, regularly failed. These "strike-breakers" were mostly well-known units, in whose ranks numerous officers, non-commissioned officers and men from the time of the "old army and its errors" were still fighting. There it was almost always possible to resort to defense with machine guns and rifles, which was, consequently,

a proof that the infantry did not follow the barrage closely enough, a fact that was also confirmed by numerous eye-witnesses. I have just recently spoken again to returning prisoners of war who fought in the front lines on August 8th and other days. They all confirm the fact that the barrage even there actually ran away from the enemy's infantry and that it was possible to work with the machine guns still longer, but that naturally this was of no avail in the long run, when some adjacent division or other was of the opinion that not only a half hour's conference with the leading English statesman, but also a half hour's retreat from the attacked position would be sufficient to bring about an acceptable peace by mutual understanding.

In spite of all this I do not wish to undervalue the achievements of the enemy's artillery, but only to object to the statement that the French Artillery was fundamentally superior to ours and that even in the war it "Ied" in all new ideas.

What great danger already exists, however, that such notions may pass into historic ideas is shown by the utterance from abroad, which was mentioned in the beginning of this article. The article in the Swiss periodical: "Die Deutsche Artillerie im Weltkriege nach eigener Beurteilung" (The German Artillery in the World War According to its own Judgment) is not based, as it happens, on the opinion of German artillerymen but on a pamphlet by Major-General von Gleich, "Die alte Armee und ihre Verirrungen" (The Old Army and its Errors). I haven't read this book and do not wish to read it. The title is quite enough for me, since it reminds me far too strongly of the "Endlich die Wahrheit über die Marneschlacht" (The Truth at Last Concerning the Battle of the Marne) and other similar titles, which we now read in the shop windows. Posterity, with calmer judgment, will some day turn away from books of that kind and will place them in museums of the history of "Kultur" beside the descriptions and plans which describe the great victories of this army, uninterrupted during a period of four years against a force ten times superior to it. According

to the quotations given in the Swiss Journal, this book also seeks to prove the inferiority of the German Field Artillery. As a proof of this it specified, among other things, the facts that we were frequently fired upon by French batteries which "could not be found at all," and that the enemy's batteries were often so far away that it was no longer possible to engage with them. In regard to the first statement, I seem to have a faint memory that German batteries also were often so located that they could not be found. Indeed, I even remember that my whole regiment was stationed for about a year in the same positions without being found. I also remember the arguments of the correspondent of a great French newspaper in the autumn of 1914, in which, as an explanation of the breakdown of the French in direct encounters, he pointed to the powerful German artillery and, in doing this, regretfully explained that it was, for the most part, impossible to find the German Field Artillery in its masked positions.

In regard to the second statement, however, the one concerning the longer range of the French Artillery, it is a question here of an incorrect statement, which does not become any the more correct because it is often repeated. Naturally it happened that French field batteries shot at our Infantry and that it was impossible to return the fire because they were too far away, but just the same thing happened also with German field batteries. That is to say, if I take up a position so far away that I can just hit the enemy's Infantry in their position at the farthest range, then I may always count on producing an effect, because a system of positions extends so far back that even with the greatest dispersion every shot must yet hit something, while naturally the enemy's artillery stationed 2 to 5 kilometres behind the positions cannot hit me, even if it has the same maximum range, because, furthermore, at such distances it can only be a question of a harassing or troublesome fire, not of an engagement of hostile batteries. The maximum ranges of the German and French Field Artilleries were, however, about the same up to the introduction of the 16-cm. field guns, since in practice it

was naturally only a question of the range of the shells. With percussion shrapnel the French Field Artillery, in my opinion, may have shot a couple of hundred metres farther than we did; only fire with this pattern of projectile can no longer be called exactly effective fire.

Now the pamphlet asserts furthermore (here also I follow the quotations made in the Swiss periodical), that the lack of cooperation between the Field Artillery and the Infantry may be attributed, above all, to the circumstance that we had practiced too much in large formations. I must say, I could not believe my eyes when I read this. For over two decades before the war I was in active service in the front of the Artillery and, as the editors of this periodical will bear witness, I was honestly interested in all questions of training, but whenever, during the war, I was asked for my opinion concerning the training in cooperation with other arms of the service, I could only repeatedly emphasize, as the most important experience, what I had already said so often before the war in the "Monatshefte": That we had had far too much practice in small formations and too little in large formations. The wild fights of the blue and red detachments, eternally whirling about each other, in which the Group (Abteilung) Commander stood upon the battlefield "like an artillery baron," as I once expressed myself here, and in which he no longer saw things through the stero-telescope, but only saw them continually according to the mass of messages arriving from all sides, were certainly most detrimental to fine training, even if they were very useful in another respect. We learned most in the imperial manoeuvres and, next to those, in the corps manoeuvres, where the slow progress of the fight gave time and leisure for finer artillery work, where the group commander was what he afterwards was also in the war, a little wheel in the great machine, a master of technic and not of tactics. But I might ask further: What practice, then, did the Foot Artillery have, since they, to be sure, were so far superior to the Field Artillery, according to the opinion of the book concerning our errors? The answer must be as follows: That they had

hardly any practice at all in small formations. At first they really only took part in the imperial manoeuvres, but later they took part in the corps manoeuvres as well as in the great sham battles; in short, they fought in division formation; that is, in the formation which alone played an important rôle in the war.

We see, therefore, that there may be at least as many different opinions concerning the question why we were so inferior to the French Artillery as concerning the question whether we really were so inferior. From the opinion of the Swiss periodical, however, it seems clear to me that this assertion of our inferiority is already regarded abroad as a fixed fact and to protest against this idea was the purpose of these lines.

LIEUT. GEN. ROHNE'S COMMENT

I gladly welcomed the above arguments of my highly-esteemed colleague, although, or rather, just because they were, in part, directed against the opinions that I have repeatedly expressed in this periodical, for I consider it expedient that different opinions should be freely expressed and thus cleared up. For this reason I, of course, feel obliged to answer these arguments once more, in order not to leave the impression that I agree with the opinions expressed here.

I cannot decide the question whether the German Field Artillery was superior to the French at the beginning of the war, since, for lack of personal experience, I can only rely on information from hearsay. That the experiences of the author should not be generalized and why this is so, I have already explained in September, 1919. Before the war I repeatedly expressed my opinions concerning the superiority of the French Field Artillery, especially in regard to the ballistic efficiency of the guns, the organization, the regulations for gunnery and the training of the officers so far as it was possible to learn about these from writings.

The separation of the Field Artillery and Foot Artillery is not the cause, at least not the main cause of the backwardness of the Field Artillery. This cause lies rather in the opinions

concerning the value of artillery training which have been developed in this arm of the service in the course of years. What one of the best judges of artillery, Lieutenant General von Müller, strikingly set forth in his "Entwickelung der Feld-artillerie" (Development of the Field Artillery) concerning the connection between effectiveness and mobility, may be literally applied to the value of the artillery and cavalry training (I purposely choose this word instead of tactical) of the Field Artillery. He says (Part I, p. 346): "While in peace times Field Artillery Services are always striving for greater mobility of the systems and are seeking to outdo each other in this respect, during wars and after them a very decided longing for greater effectiveness makes its appearance. Every artillery seeks in war to surpass the enemy in the calibre and weight of guns; in short, in effectiveness. In peace times, effectiveness, as the real end of the artillery, comes into the foreground during all the exercises much less than mobility, which is only a means to that end. We have no enemy on whom we can test our effectiveness, but we certainly have many judges who are fascinated by the ability of the artillery to maneuver and place a disproportionately high value upon this. The artilleryman, as such, also becomes accustomed in course of time, to regard mobility as the principal element. It is otherwise in war. As soon as the artillery is moved into a position, effectiveness makes its full value felt owing to the deadly seriousness of the situation; the means to the end, mobility is completely forgotten. The difficulties which, perhaps, lie in the way of moving the guns are also forgotten. The most effective gun is the most perfect. The thought of being opposed to superior guns produces a very disagreeable and depressing effect. The artillery force alone controls the situation."

On the separation of the two arms of the service, the higher officers who were more highly trained in artillery were preferably assigned to the Foot Artillery. This is very easy to understand, but then the Field Artillery was left without superior officers who had a special interest in and understanding of

artillery training. It lies in the nature of things that a young officer has a greater fondness for bodily exercise, especially for riding, than for ballistic studies for which he has never found any incentive. In the Field Artillery, therefore, the main stress was laid upon riding and exercises and the interest in purely artillery activities disappeared. Every older officer knows that the judgment of the inspector of that period was based far more upon the dashing way in which an officer led forward his troop in mounted exercises (I might say, the way in which he "showed off his troop"), than upon the fire control at target practice. This is easy to understand. The inspector was a master of the first art; about the second he often understood less than his subordinates. At that time there were certainly artillery officers, but no artillerymen. With them, on the contrary, according to the joke of the lieutenants, the interest in the gun stopped with the cruppers (?), that is, with the horses' tails. The "Podbielsky system" upon which the principal blame for the deterioration of the Field Artillery is often placed, was only able to gain such a penetrating influence, because it found the ground prepared for it, the artillery spirit was not alive in that arm of the service. Indeed, many officers, particularly those of the mounted artillery, which has been especially favored from time immemorial, thought "more along cavalry lines" than the General Inspector, who was drawn from the cavalry. I remember a review in which a Group Commander led an attack of the gun detachments, an attack established by a regulation which had been issued soon after the wars of liberation. General von Podbielsky insisted in his criticism that such a nuisance, no longer suitable to the times, should cease.

Another mistake made in the separation was that this was carried farther than necessary. It was a fundamentally false idea, to establish one division each for the Field and Foot Artillery in the Artillery Testing Commission. Powder, fuses, directing implements, as well as many other things are nevertheless common to both, and these certainly could not be properly managed by one division alone. It would have been better

to have divided the work according to the kind of matériel, since then technical knowledge would have received its just due. It would then have been impossible for fire-control instruments to be graduated in thousandths for the Field Artillery and in sixteenths for the Foot Artillery, for the height of bursts to be regulated in the former by changing the elevation, and in the latter by the time of the burning of the fuse, and for so many other things to happen.

The subordination of the Field Artillery to the Corps Commands (1889) and the Division Commands (1899) resulted from very weighty reasons. Unfortunately, these changes did not have the hoped-for effect because the generals of the other arms of the service understood too little, not to say nothing of the arm placed under their command, which they were to lead against the enemy. Too little, also, was done to further this understanding. According to the German army lists which appeared before the war, of the 50 positions on the Administrative Staff only four were held by artillerymen. On account of the importance of artillery in infantry battles we might certainly have expected that a just proportion would have been observed in filling these posts; in that case it would have been necessary to appoint at least twelve artillerymen to these positions. In France the Generals are not such strangers to the artillery; brigades are frequently commanded by officers from another arm. In recent years, indeed, generals of other arms have been ordered to be present at the target practice of the artillery schools, but simply to be present. By merely looking on, however, nothing is learned; we can only learn by active participation. This might easily have been arranged if these gentlemen had, in turn, taken command of hypothetical troops (perhaps even having their positions located), to which the artillery was attached, and had issued the necessary orders on the basis of the given situation of the battle. Thus valuable experience concerning the indispensable cooperation of the Infantry and Artillery might have been collected. This is certainly no mysterious black art; it is even fairly simple. But the

simple thing is difficult in war, and that is why it is so often left undone. In no case is it sufficient for the artillery merely to be able to shoot; that is, to hit the objective selected. It is fully as important that they should choose the right objective at the right time. General Perein very justly observes that many artillerymen are ready and glad to help the infantry, but they want to help it as they think best and are averse to taking directions about this from the Infantry. That such separatist tendencies prevailed in our Artillery also shortly before the war is shown in my essay, "Regiments—und Brigadeübungen der Feldartillerie" (Regimental and Brigade Exercises of the Field Artillery) published in No. 74, 1913. We cannot caution urgently enough against searching and sweeping fire behind hills, in hollows and villages, in the hope of finding there a worth-while target, with the danger of "exploding there a couple of hundred rounds on empty terrain," for this is the surest means of not supporting our own Infantry, since then a lack of ammunition must surely result. Even if the French Artillery did this, it remains a great mistake. The most plentiful supply of ammunition would not suffice for such a waste of ammunition. There can be no doubt concerning the fact that the German Artillery was too scantily supplied with ammunition. I can not acknowledge the truth of the statement that a larger supply of ammunition was forbidden through a consideration for the excessive replenishment of supplies required. It seems to me that it proves the incapacity of our administration to say that the ammunition cannot be kept any longer than that. In France the supply of ammunition for the Field Artillery was much greater, but, on the other hand, the use of it in exercises was considerably less than with us.

I have considered it necessary to define my position in regard to the arguments of the author, because, according to my opinion, which I expressed repeatedly before the war, the French Field Artillery was greatly underestimated by the German Field Artillery and therefore we did not consider it necessary to make a careful examination of its fire procedure and its

tactical principles. Even in the first essay, which gave rise to these arguments, I observed that it redounded to the honor of the German Field Artillery that it had learned so much in the war. But it would have been better if it had not had to pay so dearly for its experience.

I am prepared for the reproach, which was formerly made to me, that the reputation of this arm of the service must suffer from my arguments, but I can only answer to this that I place more value on excellent performances than on an excellent reputation, especially as reputation will surely follow performance. Whoever has the earnest purpose to improve something must have the courage to speak out what he believes to be true. I must explain, furthermore, that the Artilleristische Monat-shefte stands open at any time, even to contrary opinions.

The Trip of the American Forces in Germany Polo Team to England

REPORT OF COLONEL N. E. MARGETTS, 6TH FIELD ARTILLERY

[EDITOR'S NOTE.—*The following report of Colonel Margetts is published in the belief that it will be of interest to those of our readers who are polo players or lovers of the game.*]

1. In accordance with authority granted by the War Department to send a polo team to play in England during the month of June, the Commanding General, American Forces, Germany, after a series of test matches, designated the following officers to make up the team:

Colonel J. C. Montgomery, Cav.
Colonel N. E. Margetts, F.A. Captain Terry Allen, Cav.
Captain A. R. Harris, F.A. Captain David Rumbough, Inf.

On account of his duties as Chief of Staff, Colonel Montgomery was not able to go, and First Lieut. J. Tate, Cav., was designated in his stead.

Arrangements for the trip and for matches to be played in England were made through Colonel Melville, British Liaison Officer, on duty at these headquarters, and the American Military Attaché in London. The team, consisting of the above officers, fourteen enlisted men, twenty ponies, selected from the best in Coblenz, with an automobile, proceeded to England, via Coblenz, Brussel, Ostend, London to Aldershot, where the team, men and ponies were to be billeted with the 13th Hussars until the 5th of June, when they proceeded to London for the first match. I might state that the men, ponies and equipment left Coblenz on the 20th of May under charge of Captain Terry Allen, Cavalry, and arrived at Aldershot in good condition without accident or delay on May 22nd. The remainder of the team followed, leaving Coblenz on the 27th of May and arrived

at Aldershot on the 28th. The team was fortunate in being accompanied by Colonel Melville, who, through his wide acquaintance with the polo conditions in England, was able to arrange a suitable handicap and to fix matches with English teams in which the American team would have an equal chance in winning. The handicap of the team was based on that of Colonel Melville's, he being carried as a five-goal man in England. The members of the American team were handicapped as follows:

Colonel Margetts, five	Captain Harris, two
Captain Allen, four	Captain Rumbough, two
Lieutenant Tate, three	

or a total of fourteen goals for the team. The American team was entered in a tournament at Aldershot, and in the draw played the first match against the First Life Guards, the Life Guards starting with three goals as a handicap. The American team won this game, the score being 8 to 4, seven periods being played (English tournaments are always of seven 8-minute periods, and match games may be either six or seven 8-minute periods). This put the American team in the semi-finals, which was played two days later against the 13th Hussars. The handicap of these two teams was even, and the American team lost by a score of 6 to 4. The team remained at Aldershot until the 5th of June, working the ponies and attempting to perfect some teamwork. The next match scheduled was the Junior Championship, to be played at Roehampton, commencing June 7th. This is one of the important annual tournaments, the conditions of which are that no team with a total of more than twenty-five goals can enter. The American team drew Mortenhouse, a team carrying a total of twenty-two goals, and was eliminated by score of 8 to 4. The next match played was at Roehampton, against a team called the Wanderers, who carried a total of twenty-three goals. The Americans lost this match by the close score of 5 to 4. It might be stated that both the above matches were played

on flat without handicap. The next tournament in which the American team played was at Ranelagh, on June 11th, and was to be a one-day tournament, in which eight teams were entered. The first matches were to be decided by four periods of play, the winners to play two periods in the semi-finals, and the winners of the semi-finals to be in the final two periods. The American team won through this tournament to the final and won the finals and the cups. The teams played and the scores made during this tournament are given below:

TIE	**A.F.G.**	**"A"** Team	4 periods
	8	2	
SEMI-FINALS	**R.H.G.**	**"B"** Team	2 periods
	3	0	
FINALS	**A.F.G.**	**"C"** Team	2 periods
TOTAL:	17 goals to 2, in eight 8-minute periods.		

From this time on, until the end of the tour in England, the American team did not lose a single game, although matched against very strong teams, as indicated below. Following the one-day tournament, the American team played the Roehampton Club Team, June 14th, carrying a total of twenty goals, and won, score 7 to 3. Following this, a match was played on June 16th against the Hurlingham Club team, which carried a handicap of twenty-six goals, and won by 7 to 3 goals. The winning of these three games created a sort of flurry in the polo world at London, and we were next matched at Roehampton against the Swillington team, which is considered one of the strong English teams, and carries a handicap of twenty-four goals. This was a six 8-minute period game, and resulted in a tie score of 2 to 2. This was considered the finest performance the American team had made in London.

Before this match took place, we had been entered in the Novice Championship Tournament, but, after the three previous games, there was talk at the various clubs of not allowing the American team to play in the Novice Cup, because they felt our handicap should be higher than what we were playing

under; however, the team was not scratched from the Novice and in the draw for the first ties the American team was matched to play the 7th Hussars, but on the day on which the match was to have taken place the 7th Hussars were scratched and the American team passed to the semi-finals against Evardton Hall, who had won its tie against the Zebra team. The semifinals were played on June 26th in the presence of General March, Chief of Staff, U. S. Army, and won by a score of 12 to 2, thus reaching the finals to be played against the Fox Hunters, who had won in the semi-finals from Mortenhouse. There was great interest taken in the results of the finals, and every effort made to mount the Fox Hunters on the best ponies that could be found. The game was fast and hard fought, the score being 5 to 5 at the end of the sixth period. In the seventh the Americans put forth a great effort, scoring four goals, and won the match, the cups and the Novice Championship of England for 1920 by the score of 9 to 5. It did not appear to be an unpopular victory, because the team received great applause upon leaving the field, and remarks were heard on all sides that it was a well-earned victory. The team finished its play in England in a whirlwind fashion, and I believe left a good impression at all the clubs where matches were played. After the final of the Novice Cup, instructions were received to return to Coblenz, by way of Paris, and there to play several matches with the French team at Bagatelle. It was not believed the team would meet with much opposition in Paris, because the French have few good players, but it was believed that the American team stopping there would have a tendency to stimulate polo among the French and, especially, the Militaire. The ponies were shipped via Folkstone and Calais to Paris, where they arrived on the 20th of June, given one day's rest on the 1st, and played a practice game of six periods on the 2nd. The Bagatelle team won this match by a score of 5 to 2. During the last match played in England, three of the best ponies were injured and were not able to play in the matches in Paris; on the other hand, the French club felt that their regular members

would not give us much of a game and used three very good English players and one Frenchman. The next match was played on Sunday, July 4th, in the presence of General Allen, the American team losing this game, after a hard fight, by the score of 5 to 4. A one-day tournament was to have been played on July 6th, but, owing to rainy weather, was cancelled, and this ending the tour, the American Army Polo Team of the Rhine returned to Coblenz on July 8th.

COMMENT ON AND OBSERVATIONS DURING THE TOUR

1. The successes of the team were far beyond my expectations. The experience gained by the members of the first American Army team to play in England is invaluable, as the cordial relations formed while in England with the great polo players there have established a liaison and precedent which is believed should be and will be renewed each year.

2. The ease with which ponies, grooms and equipment can be transported and cared for was clearly demonstrated during this tour.

3. Where a trip of this duration is contemplated, it is believed that at least six ponies per player should be taken, the wear and tear during transportation, exercises and hard play, and often injuries obtained, or sickness speedily reduces the ponies to such a point that you must accommodate the number of periods to the ponies you have available for play,

4. It was demonstrated that a team without sufficient play as such in advance has not the teamwork necessary to win against good teams, no matter how brilliant individuals may be. It is suggested that the players be selected well in advance, the ponies selected and assigned in order that a smooth working machine may be developed. The advantages of this cannot be sufficiently dwelt upon; for example, some of the ponies taken to England had not been ridden enough by the officers to whom assigned for the latter to but partially understand them, and as a result two ponies did not play in England. Then again, where

a substitute player is to be used without ponies he is more or less familiar with, it is asking too much to expect him to do well. This was the case where Captain Rumbough was substituted for Lieutenant Tate at No. 4 and had to use the latter's ponies, which were too big and difficult for Captain Rumbough to handle.

5. Great care must be exercised in the selection of grooms to care for the ponies and equipment. One man for each two ponies is sufficient, and an efficient horseshoer is indispensable, who should carry a complete outfit with him.

6. Polo as played in England is the most strenuous I have ever seen, and is taken very seriously. The game is played usually seven 8-minute periods, no intermission during game; players must keep fit in order to finish strong and late hours and dissipation must be avoided.

7. Too much care and attention cannot be given the ponies. I am convinced that no small share in the success of the team was due to the enlisted men, who were always on the job; their great desire was to have their ponies and equipment looking as well, if not better, than the English. They were frequently complimented on the appearance of both ponies and equipment by old polo players.

8. There are many first-class polo players in England and great polo enthusiasm everywhere; the question of first-class ponies is worrying them as the pre-war ponies are all gone; new ponies are being made, and, although they have magnificent prospects, it is going to take time to make them ready for international play. After careful observation and investigation I determined that the average age of England's best polo players is forty or forty-one years. Polo is very expensive in England, and the government lends no assistance; average ponies sell easily for one thousand dollars. If the American team wins the cup next year it must be a powerful combination, hard and accurate hitters from both sides, and built around one player who stands out. England has designated Major V. Lockett to build their team around him; he is well known in American and considered

in England as their greatest player to-day. His position is 4, but plays 3.

9. The question of good fields should be taken up, now that polo has been given a place in the Army; a good player can be made an excellent player on a good field, and if we expect to develop international players, our officers must be given the opportunity to play on grounds equally as good as those used in England. Players acquire bad habits on poor fields, such as playing for a miss, which is fatal on a good field against good players.

10. In regard to the difference between English and American rules, I am very much in favor of the former. The English rules provide for free hit at goal in case of foul or safety, the position of the ball depending on the nature of foul or where the ball went over the back line in case of a safety. This means of penalizing is practical and increases the science of the game, while the American method merely changes the score; and I have seen some close matches decided by the deduction of one-half or one-fourth of a goal, and usually results in the referee becoming unpopular. I believe as all our games will be played in Europe, where English rules are adopted, we should use them.

I was very much impressed with the efficient manner in which the English referee performed his duty. In tournaments they use two referees, each taking half the field. Thus the referee need not be galloping with the players, saves his ponies, and it is rarely a foul escapes his observation.

I might add the American players were penalized oftener than their opponents, and not unjustly.

11. From my observations and play during five weeks in England, I believe a team selected from our best Army players and well mounted, after a few months of practice playing together, could hold their own against any English team carrying a total of twenty-five goals, this at the present time, and I further believe that in the course of a few years the American International Players will come from the Army. I can think

of no better opportunity to begin than here in the American Forces, Germany. There is championship material here, and with necessary assistance from the War Department there is every good reason why a team should be sent to England next year to work with the American team that will be sent over to play for the cup. It would give the Army an idea as to the standard of polo necessary to win and keep the cup in America.

12. In closing this report, too much credit cannot be given the enlisted men, who cared for the ponies and equipment. They made an excellent impression by their fine conduct and soldierly appearance; their interest and attention to the numerous duties imposed upon them was largely the cause of the team's success.

I also wish to state the officers, by their sportsmanlike conduct, made an impression that will be long remembered at the clubs where the team played; by taking good care of themselves they always finished strong in the matches, and by loyal and ready coöperation they were of valuable assistance in making the tour a success.

CURRENT FIELD ARTILLERY NOTES

The Accompaniment of Infantry in the Attack

GIROLAMO PALLOTTA, LIEUTENANT-COLONEL ARTILLERY. RIVISTA DI ARTIG. E GENIO, JANUARY 20TH. 4500 WORDS.*

SYNOPSIS

EVEN with the most careful preparation of the attack, small centres of activity generally remain, which break up an attack. In the later days of the war, more and more importance came to be attributed to surprise, so that artillery preparations were less complete, and this condition became accentuated. When, in addition to this, one has to deal with an alert enemy and a mobile defense, the importance of suitable infantry formations and fire accompaniment increases.

The accompanying fire should, on principle, conform absolutely to the movements of the infantry, which naturally would presuppose perfect communication and coöperation. In place of attempting a solution of this complex problem, the French idea has been to reverse the situation and make the infantry conform to a rolling barrage by the artillery. Since the guns cannot continue rapid fire indefinitely without stopping to cool them, and the infantry cannot conform for long periods to the fixed rate of advance of the barrage, it has been found necessary to divide a serious attack into phases, with halts of fixed duration at intermediate objectives some 600 or 800 metres apart. Since the predetermined duration of the halts may prove not to be suitable, means must be provided by which the infantry may call for a change.

This system, of course, restricts the liberty of movement of the infantry, and it is not always applicable, as for instance in mountainous country. Any unforeseen obstacle may destroy the synchronism, and to halt portions of the barrage at any

* Reprint from National Service—International Military Digest.

point, so that a part of the infantry halts between two objectives, will delay also the adjoining elements.

The French idea was at first imitated by the Germans, who applied it with even greater rigidity and minuteness of detail. Their barrage charts, however, generally provided for relatively few and large changes in elevation, so as to fire for a longer period on each successive line; and these successive lines did not always fall upon the important points of the ground, so that much of the effect was lost. The Austrians tried to follow the German example, and also laid great stress upon messages from the infantry, both by telephone and by visual signalling; but the signalling was badly managed, and the Austrians failed to realize that the assembly of a powerful mass of artillery and the expenditure of very large quantities of ammunition were indispensable conditions to success. Volume of fire compensates in part for the defects of the barrage plan.

All the great German offensives, after the summer of 1917, were characterized by the very violent action of large masses of artillery, which were brought into line secretly, and which did not reveal their presence by registration fire, although captured documents show that tasks were apportioned to the batteries with great minuteness. Thus full use was made of the advantages of surprise.

But in general the protection of an attack cannot be entirely regulated by a time table, unless it be for a short distance, over favorable ground, and against an inferior enemy. Nevertheless, it should be worked out to the utmost possible limit, taking into account every element that can be discovered or foreseen. The plan should include, among other things:

(*a*) The line of departure and the successive phase lines of the attack.

The attacking infantry must work up as close to the enemy as possible before the start, and then follow the barrage closely. The phase lines should follow characteristic accidents of the ground, which, at the same time, do not constitute strong positions for the enemy.

(*b*) The hours for opening the accompanying fire, the initial time of the advance, and the probable time of arrival at and departure from each phase line.

Premature opening of fire may draw the hostile barrage. No single rule can cover all cases. The plans should be varied; but, as a rule, the fire should have its maximum density at the moment that the attack strikes the hostile line. The rate of advance depends upon the difficulties to be encountered by the infantry and generally becomes slower as the advance continues.

(*c*) Variations in intensity of fire; use of machine guns, infantry howitzers and flame throwers.

A density of two shots per minute on each fifteen metres front is generally considered necessary. To secure this without overtaxing the guns, a battery should not be required to cover over 100 m. front, which will give an average rate of fire of three or four shots per gun per minute, increasing during the attack of important positions and falling off on ground not supposed to be held in strength. During halts, the accompanying fire becomes a standing barrage, which may be reduced to one shot per gun per minute, or even cease altogether when observation is good. Both in accompaniment and in standing barrage, machine guns, infantry howitzers and flame throwers should assist the artillery.

(*d*) Apportionment of duties to light, medium and heavy batteries.

The light guns are the direct support of the infantry. Heavier guns assist in the accompanying fire, their power permitting them to use longer range and flanking fire. Other heavy guns, especially howitzers, fire for destruction upon special targets, beyond the line of the moving barrage.

(*e*) Disposition for material accompaniment.

Guns are often sent forward to fire upon islands of resistance, while the infantry manœuvres against them. The commander of a battery assigned to this duty should deal direct with the local infantry commander, and should be well provided with patrols and with means for communication with the guns.

The battery habitually works by piece or by platoon; ammunition is limited, and must be used with good judgment. Pack artillery is the most suitable.

Handling of accompanying guns is extremely difficult. Experience on all fronts indicates that when the enemy is well organized and alert they generally fail to accomplish their purpose, although suffering very heavy losses.

(*f*) Connection between infantry and artillery.

This must be completely organized beforehand. Every possible method must be considered as fully as if it were the only one, and none neglected, for none is infallible.

The accompanying fire must be constantly observed, to insure that the needs of the infantry are promptly met. This is best done by officers' patrols reporting direct to the artillery commander, and provided with ample means of communication. It is one of the most delicate tasks of the artillery to maintain communication between the observer, who is usually the officer commanding the patrols, and the units in action; but the difficulties may be overcome if everyone concerned refuses to admit that it is impossible.

The United States Field Artillery Association

PROPOSED AMENDMENTS TO THE CONSTITUTION

WASHINGTON, D. C.,
December 31, 1919.

The Secretary, United States Field Artillery Association,
Washington, D. C.

SIR:

In conformity with Article IX of the Constitution of the United States Field Artillery Association, the undersigned, being active members of the Association, hereby propose certain changes in said Constitution for the following principal reasons:

(*a*) At the time of the adoption of the Constitution of the Association there were no officers of the Field Artillery Section of the Officers' Reserve Corps. There are now approximately eight thousand of these officers, all of whom were in the Field Artillery of the United States Army during the World War, and a considerable number of whom are subscribers to the FIELD ARTILLERY JOURNAL. It is believed that the service and interest of these officers merits the privilege of active membership in the United States Field Artillery Association, and representation upon the Executive Council of the Association.

(*b*) It is believed that the natural interest in Field Artillery matters of those persons who served in the Field Artillery of any of the United States forces during the World War should entitle them to the privilege of associate membership in the United States Field Artillery Association.

The proposed amendments to said Constitution are clearly set forth as follows:

1. It is proposed to amend Section 2, of Article III, by

inserting the words "and commissioned officers on the active list of the Field Artillery Section of the Officers' Reserve Corps" between the words "District of Columbia" and "provided" in line six of said Section, so that said Section shall read, when amended, as follows:

> Sec. 2.—The following shall be eligible to active membership:
>
> Commissioned officers on the active lists of the field artillery of the regular army and of the organized militia of the several states, territories and District of Columbia and commissioned officers on the active list of the Field Artillery Section of the Officers' Reserve Corps; provided, that officers of the regular army when separated from the field artillery, by promotion or detail in staff departments, shall not thereby lose their status as active members.

2. It is proposed to amend Section 3, Article III, by adding thereto the following sub-paragraph:

"(*g*) All persons who, in any war, served in any capacity in the Field Artillery of any of the forces of the United States Federal Government," so that said Section shall read, when amended, as follows:

> Sec. 3.—The following shall be eligible to associate membership:
>
> (*a*) Commissioned officers on the retired lists of the regular army and of the organized militia of the several states, territories and District of Columbia.
>
> (*b*) Those who, as commissioned officers, either regular, militia, or volunteer have served with batteries or larger units of field artillery in time of war.
>
> (*c*) Commissioned officers of the regular army and of the organized militia of the several states, territories and District of Columbia, not now belonging to the field artillery,

who have served at least one year as commissioned officers in field artillery.

(*d*) General officers of the regular army, except as provided in Section 2 of this Article, and of the organized militia of the several states, territories and District of Columbia.

(*e*) All commissioned officers and former officers of the United States Army, Navy and Marine Corps, and of the organized militia in good standing, not included in the classification hereinabove set forth.

(*f*) Those in civil life, whose applications are approved by the Executive Council hereinafter provided for.

(*g*) All persons who, in any war, served in any capacity in the Field Artillery of any of the forces of the United States Federal Government.

3. It is proposed to amend Section 1 of Article VI by striking out the word "five" in line two of said Section and substituting therefor the word "nine"; by striking out the word "three" in line two of said Section and substituting therefor the word "five"; by inserting a comma after the word "army" in line three of said Section; by striking out the word "and" in line four of said Section; and by inserting the words "and two officers of the Field Artillery Section of the Officers' Reserve Corps" between the words "militia' and "to" in line four of said Section, so that said Section shall read, when amended, as follows:

Sec. 1.—The Executive Council shall be composed of nine active members, five of whom shall be officers of the regular army, two officers of the organized militia, and two officers of the Field Artillery Section of the Officers' Reserve Corps, to be elected biennially for a term of two years by a majority vote, in person or by written proxy of the active members. The Council shall hold its meetings at the headquarters of the Association, which shall be in the city of Washington.

4. It is proposed to amend Section 3 of Article VI by striking out the word "Three" in line three of said section and substituting therefor the word "Five," so that said Section shall read, when amended, as follows:

> Sec. 3.—The Executive Council shall meet from time to time, at the call of its senior member present in Washington. Five members shall constitute a quorum for the transaction of business.

Respectfully submitted,

E. P. KING, JR., Col., F.A.
JOHN B. ANDERSON, Lt. Col., F.A.
W. C. POTTER, Col., F.A.
R. E. LEE, Col., F.A.
G. R. ALLIN, MAJOR, F.A.
T. W. WRENN, Major, F.A.
WILLIAM E. BURR, Lt. Col., F.A.
T.D. SLOAN, Col., F.A.
W.W. HESS, JR., Major, F.A.
C.S. BLAKELY, Major, F.A.
E. T. SMITH, Col., F.A.
F. W. HONEYCUTT, Col., F.A.
H. D. HIGLEY, Lt.-Col., F.A.
C. P. GEORGE, Col., General Staff.
J. F. BARNES, Major, G.S.
CLIFT ANDRUS, Lt.-Col., F.A.
M. CHURCHILL, Brig.-Gen., G.S.
D. F. CRAIG, Major, F.A.
MANUS MCCLOSKEY, Col., F.A.
WM. BRYDEN, Major, G.S.C.
MAXWELL MURRAY, Col., F.A.
WM. J. SNOW, Maj.-General.
OLIVER L. SPAULDING, JR., Lt.-Col., F.A.
J. N. GREELY, Col., F.A
H. W. BUTNER, Lt.-Col., F.A.

WASHINGTON, D. C.
December 31, 1919.

The Secretary, United States Field Artillery Association,
Washington, D. C.

SIR:

In conformity with Article IX of the Constitution of the United States Field Artillery Association, the undersigned, being active members of the Association, hereby propose certain

changes in said Constitution for the following principal reasons:

> It is believed that no good reason exists for the requirement of the Constitution that the Secretary-Editor and the Treasurer of the Association shall be active members of the Association. Since the policy and records of the Association and the editorial policy of the FIELD ARTILLERY JOURNAL are under the close supervision of the Executive Council, the members of which are required by the Constitution to be active members of the Association, and since the Executive Council selects the Secretary-Editor and the Treasurer, it is desirable that the Constitution be amended so as to permit those offices to be held by retired officers. It is necessary that the Secretary-Editor and the Treasurer should be stationed in or reside in Washington. As officers on the active list are constantly changing station, the number of troublesome changes in the officers of the Association will probably be diminished by making retired officers eligible to hold these offices.

The proposed amendments to said Constitution are clearly set forth as follows:

1. It is proposed to amend paragraph number three, of Section 2, of Article VI, by inserting the words "or associate" between the words "active" and "members" in line two of said paragraph, so that said paragraph, when amended, shall read as follows:

> 3. A Secretary-Editor, to be selected from its own members, or other active or associate members of the Association, and who shall be an officer of the Regular Army.

2. It is proposed to amend paragraph number four, of Section 2, of Article VI, by inserting the words "or associate" between the words "active" and "members" in line two of said paragraph, so that said paragraph, when amended, shall read as follows:

4. A Treasurer, to be selected from among the active or associate members, and who shall be an officer stationed or residing in Washington, D. C.

Respectfully submitted,

(Signed)

JOHN B. ANDERSON, Lt.-Col., F.A.
WILLIAM E. BURR, Lt.-Col.,
R. E. LEE, Col., F.A.
E. P. KING, JR., Col., F.A.
T. D. SLOAN, Col., F.A.
W. C. POTTER, Col., F.A.
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WM. BRYDEN, Major, G.S.C.
F. W. HONEYCUTT, Col., G.S.
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DWIGHT E. AULTMAN, Col., F.A.
M. E. LOCKE, Major, F.A.
C. D. HERRON, Lt.-Col., F.A.
A. S. FLEMING, Col., F.A.
A. J. BOWLEY, Col., F.A.

Index to Current Field Artillery Literature

Compiled from monthly list of military information carded from books, periodicals, and other sources furnished by the War College Division, General Staff.

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