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T2 DIVISION ARTILLERY MOUNT GUN AT FULL RECOIL, 80° ELEVATION

THE FIELD ARTILLERY JOURNAL

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MODERN DIVISION ARTILLERY

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(The author here describes the new T2 mount for 75 mm. gun, in the design and construction of which he took a leading part. The T2 mount and the T3 mount, described in the May-June number of the FIELD ARTILLERY JOURNAL by its designer Major G. M. Barnes, Ordnance Department, both contain so many new features and possibilities that they may be said to be epoch-making developments in the history of Field Artillery. Their ability to fire accurately on fast moving air or land targets, to utilize electrical fire control systems, and to travel at a high speed on the road are believed to denote progress in the development of artillery comparable to such important landmarks of the days gone by as the introduction of breech loading, lands and grooves or indirect laying. EDITOR.)

AS nearly as can be determined the first mobile gun carriage was conceived in the latter part of the XIV Century. It consisted of a gun carried in a wooden cradle which was mounted on a wooden axle with two wheels and a trail extending to the rear. The recoil energy was dissipated by the entire rigid structure moving to the rear when the gun was fired. Step by-step development brought this crude wooden structure to an efficient machine of metal. Yet the fundamental characterictics remained, namely the axle, the two wheels and the trail, and the principle of firing from an axle supported above the ground on wheels or some other sort of footing and struted to the ground by the trail. Not until 1929 was a real attempt made to produce a divisional artillery carriage designed along principles distinctly different from the old conventions.

In years gone by the artillery mission of the divisional carriage demanded fire on fixed or slow moving ground targets and for such purposes the limits of traverse and elevation inherent in the conventional type gun carriage were acceptable. It was probably on account of this fact that no real effort was made to produce a carriage designed along new principles.

With the introduction of the airplane, dirigible and tanks during the World War, and with the post war development of efficient high speed armored cars, tractors and wheeled prime movers, the mission of the divisional gun has apparently changed.

Terrestrial problems are no longer confined to stationary or

FIG. 1. T2 MOUNT UNLIMBERED

slow moving targets which allow ample time to elevate and traverse the carriage deliberately, but they now include fast moving targets for which some of the more optimistic conceive a speed of fifty to sixty miles per hour. The effect of this added requirement is to increase the amount of necessary traverse so greatly that the old conventional principles of design are no longer applicable.

The effect of air targets upon the divisional gun carriage has, as is true in many new problems, resulted in two schools of thought. An attempt will be made to outline both views and at the same time to give the effect of each upon the designers' problem.

One school holds that in addition to the terrestrial problems it will be the mission of the divisional artillery to engage air targets in its sector for its own protection as well as for that of the troops which it is supporting, and therefore the divisional guns should, in addition to the characteristics needed for terrestrial work, include features necessary to make them formidable antiaircraft weapons.

A weapon to meet these demands embodies many complications. First of all it requires a high muzzle velocity gun to be effective with an angle of elevation of at least 80° and a full 360° traverse. The traverse is readily obtainable at the cost of added weight by using additional outriggers. To obtain such a great elevation, however, means that the gun must be trunnioned as far

to the rear as possible, and overhung in the trunnion arms far to the rear of the center of rotation of the top carriage. The result is a high force due to the high velocity gun, with the load applied in such a manner to demand massive construction in the top carriage which requires addition to the weight of the carriage. Again, variable recoil must be provided to maintain stability at low angles of elevation, which in turn means added complications in design.

The second school holds that a divisional artillery battery should not be required to protect itself or other elements of the combat troops in the event of air attack; that the protection of the troops should be left to highly trained and developed special anti-aircraft units, supplemented by each ground unit having for its own defense against low flying aircraft a number of machine guns of sufficient caliber to provide reasonable protection. These requirements as far as they effect the design of the divisional carriage can readily be met, and in fact are met in the 75 mm. Gun and Carriage M1.

Which of the two thoughts expressed above is correct? Time and study and perhaps experience only will tell.

That this problem was given consideration at the close of the World War is evidenced in the report of the Caliber Board (Westervelt Board) published May 5, 1919, from which, under the title "Types of Artillery Recommended" and caption "Light Field Artillery," the following is quoted:

"Gun, Ideal: A gun of about 3" caliber on a carriage permitting a vertical are of fire of from minus 5 degrees to plus 80 degrees and a horizontal arc of fire of 360 degrees, etc."

FIG. 2. REAR VIEW OF T2 MOUNT IN POSITION FOR ALL-AROUND FIRE

At the time this recommendation was made the problem was considered impossible of solution because it was believed the divisional carriage must be horse drawn. Also at that time carriages had to be constructed of castings, forgings and riveted structures, all of which made for excessive weights for horse drawn carriages with the characteristics specified.

With the development and refinement of such important elements as commercial six-wheel trucks, alloy steels and welding processes, came the possibility of a reasonable solution of the problem.

It has become evident that the horse can be replaced to a great extent by efficient motor vehicles, so that close limitation of weight no longer is a controlling factor, and the generous use of welded structures makes possible the construction of carriages of reasonable weights which will withstand the added structural loads.

The importance of having carriages which can withstand road speeds of 25 to 35 miles per hour has come to be recognized. The almost universal development of good roads all over these United States has made this a factor of great importance. Tests have been made which conclusively determined that the carriages

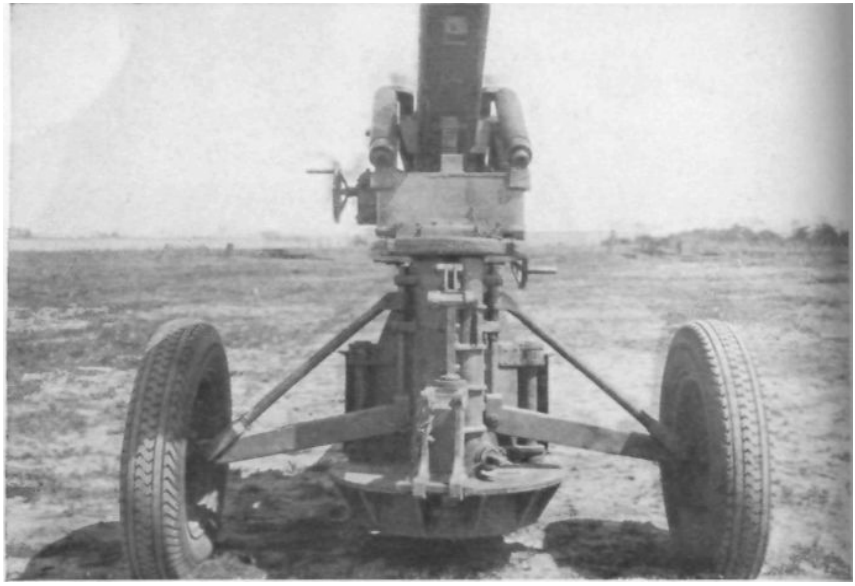


FIG. 3. SHOWING CYLINDRICAL PEDESTAL, OUTRIGGERS REMOVED

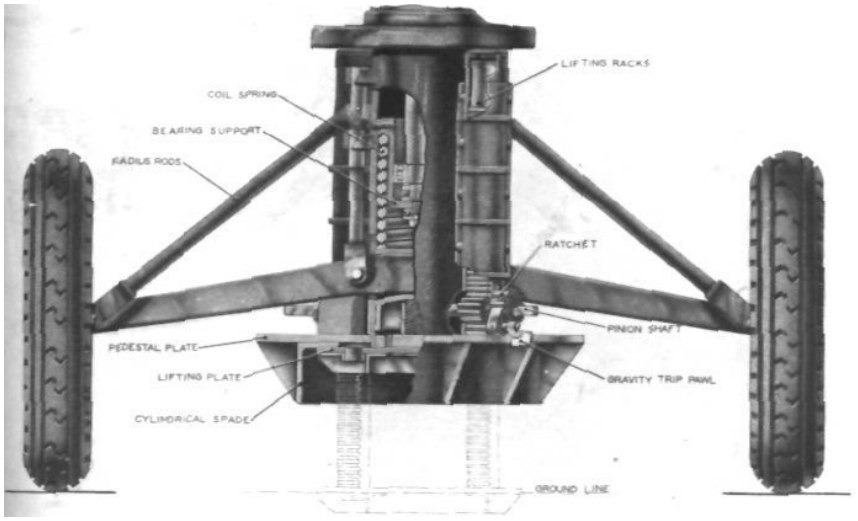


FIG. 4. DIAGRAM SHOWING AXLE PASSING THROUGH PEDESTAL

used in the past would not withstand the strain of fast travel over the road due to their more or less rigid construction.

In August of 1928, the first studies of a high speed divisional carriage were undertaken, and in November, 1928, studies of a four-wheel pneumatic tired trailer mount were completed. The carriage had an elevation of 45°, traverse of 180° and the estimated weight was 8000 pounds. The advantages of the design were not considered sufficient to warrant constructing a pilot mount.

In May of 1929 the study of an all-round fire 75-mm. high speed divisional carriage was undertaken in the Ordnance Office. Simultaneous with this, a study was directed to be made at the Watertown Arsenal.

The Watertown Arsenal design resulted in the construction of the 75 mm. Gun Mount T3 which has been described in the article "Division Artillery in the Next War" by Major G. M. Barnes. Ordnance Department, which appeared in the May-June, 1930, issue of the FIELD ARTILLERY JOURNAL.

In this article an attempt will be made to describe the 75-mm. Gun Mount T2 which resulted from the Ordnance Office study

of the problem and to point out the principle points wherein the two mounts differ.

Simplicity, low cost of production, and ease of operation were the watch-words of the T2 design. A study of Figures 1 and 2 will illustrate the simplicity of the carriage.

It consists of a cylindrical pedestal as illustrated in Figures 3 and 4. The axle passes through the center of this pedestal and is struted to it by two radius rods. A coil spring is interposed between the axle and top carriage bearing support. On the outside and paralleling the vertical axis of the pedestal cylinder are two lifting racks, the bottoms of which are attached to a circular lifting plate. The lifting plate is housed inside of the cylindrical spade under the pedestal plate. The racks are operated by a pinion shaft which passes through the pedestal cylinder under the axle. The ends of this shaft are squared to take two 36″ ratchet wrenches. On one end of the shaft proper is a ratchet equipped with a gravity trip pawl. The traversing worm wheel is attached to the top of the cylindrical pedestal. The three outrigger supports complete the pedestal construction.

The top carriage is of welded steel construction formed from three nickel steel plates with the pintle press fitted and welded into the structure. The traversing hand wheel and worm is attached to the top carriage as is the elevating hand wheel and gear mechanism.

The outriggers are of structural nickel steel and are approximately 15 feet long. Two of the outriggers are permanently hinged by pin joints to the cylindrical pedestal. The third outrigger is removable and in transportation is carried as shown in Figure 5.

The wheel equipment consists of two quick demountable wheels carrying single 34″ × 7″ heavy duty truck tires with puncture proof inner tubes.

The trunnions, top carriage pintle and axle bearings are equipped with high grade anti-friction roller bearings.

The problem of emplacing the carriage is extremely simple. It requires however that the gun position selected be fairly level, which may be said to apply to any type of carriage where the

bottom carriage is placed on the ground for support in the firing position.

The carriage is rolled into position on its wheels, the loose outrigger removed from its traveling position and the two hinged

FIG. 5. REAR VIEW SHOWING THIRD OUTRIGGER IN TRAVELLING POSITION

outriggers spread to approximately 120°. The lifting plate previously described is dropped to the ground by tripping the gravity pawl and the carriage then raised by the ratchet wrenches until the wheels are free from the ground. The ratchet

wrenches are then removed and the wheels taken off. The gravity pawl is then tripped which allows the entire carriage to drop. This drives the cylindrical spade into the ground.

If the firing is against ground targets with a field of traverse limited to the spread of the outriggers, the third or loose outrigger need not be attached, since in this position the carriage has been proof-fired at 0° and is stable. For 360° traverse, however, the third outrigger must be put in place.

Figure 6 shows the carriage emplaced for terrestrial targets with limited traverse while Figure 7 shows it emplaced for full 360° traverse and use against ground or air targets.

In going from firing to traveling position the third or removable outrigger is removed, the carriage raised, the wheels replaced, outriggers closed, lifting plate raised to traveling position and the third outrigger loaded when the unit is ready to limber to its prime mover.

It is believed that as designed the weapon can be readily handled with the normal gun crew of eight men.

The following statistical table should prove of interest as a

	T2	T3
Total Weight of Tipping Parts	1865	1865
Weight of Gun with Breech Mechanism	1475	1475
*Weight of Gun and Carriage in Traveling Position	5900	5813
†Total Weight of Outriggers	1250	1008
Traverse	360°	360°
Elevation Maximum	+80°	+80°
Traverse when emplaced for ground target only	120°	90°
‡Crossleveling	none	+6° to-6°
Lunette load	653	543
Weight of Bogie	none	1659
†Length of Outriggers	15′	14′-2″
†Total length overall	24′	23′-2″
Road clearance	9″	12″

*The pilot carriage T2 at the present time weighs 5900 pounds in traveling position and 5520 pounds in firing position. However, recent firing test have indicated that the total weight of this unit in traveling position can readily be reduced to 4900 pounds and its stability still maintained. This is made possible by the fact that all weight except that of the wheels remains with the carriage when it is in the firing position.

The weight of the T3 carriage cannot be materially reduced since 1659 pounds (the weight of the bogie) is removed from the carriage when it goes into firing position for 360° traverse. Thus the remaining 4154 pounds is the minimum which can be used and still have the carriage stable at low angles of fire.

†Firing tests recently conducted indicate that the outriggers on the T2 carriage can be reduced to a length of 12 feet which will reduce the weight of the outriggers and the overall length correspondingly.

‡The T2 carriage has not been provided with crossleveling since it is primarily a ground weapon with possibility of operation against aerial targets when necessity arises. The gun carriage must be provided with a dual purpose sighting system combining the operating requirements of terrestrial fire with those of anti-aircraft fire.

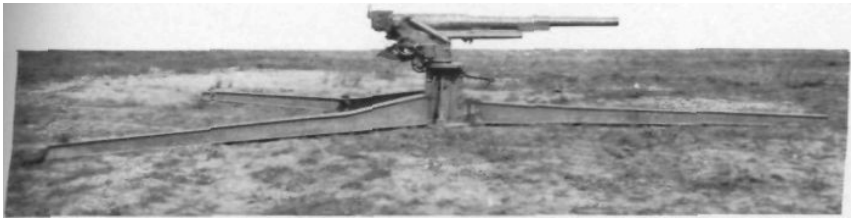


FIG. 6. GUN IN POSITION FOR ALL-AROUND FIRE

comparison between the T3 mount described in the May-June issue of this magazine and the T2 mount described above.

For use with the T2 mount a sighting system is now under development in which the combination of the two elements, namely terrestrial and anti-aircraft fire, has been accomplished without in any way compromising either the use of the weapon as a field piece or for anti-aircraft defense.

The entire burden of correcting the line of fire due to the out-of-level condition of the mount is placed upon the sighting system. From an engineering point of view this system is more desirable and sound than is the system of cross-leveling the top carriage, since in correcting the sight a smaller mass is moved than when the entire top carriage and the massive tipping parts are moved to establish them on a level plane. The crosslevel sight system has the further advantage that in operating the gun the gunner can control all laying without depending upon the other members of the gun crew to keep the mount level.

Description of the Sighting System: An azimuth unit is furnished on the left side of the carriage and an elevation unit on the right side. The azimuth unit is in essentials the Sight Mount,

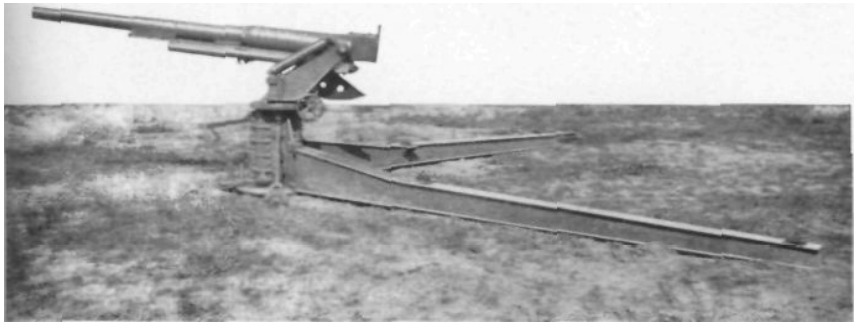


FIG. 6. IN POSITION FOR LIMITED TRAVERSE, USING ONLY TWO OUTRIGGERS

FIG. 7 LIMBERED

M1, for the standard 75 mm. field matériel. The elevation unit is a slight modification of the Range Drum, M1, for the same matériel.

For firing on ground targets, the usual means of setting are provided. The sight mount corrects for out-of-level in transverse direction, allows angle of site setting and setting for fore and aft out-of-level condition. The latest type of panoramic sight will be used. The range drum provides for the usual site settings, mils elevation setting and range elevation setting.

The above devices have been modified so as to adapt them to aerial fire. The sight mount corrects for out-of-level in the transverse direction, just as in ground fire, and indicates the amount of this correction. The correction is put into one side of a differential, the other side being actuated by the traversing mechanism of the carriage. The output of this differential is the present position of the gun in traverse, qualified by the correction for out-of-level. This output is visually indicated on one dial of a data receiver. The other dial, operated by the director, indicates the desired position in space. Matching these two pointers by traversing the gun, completes the setting.

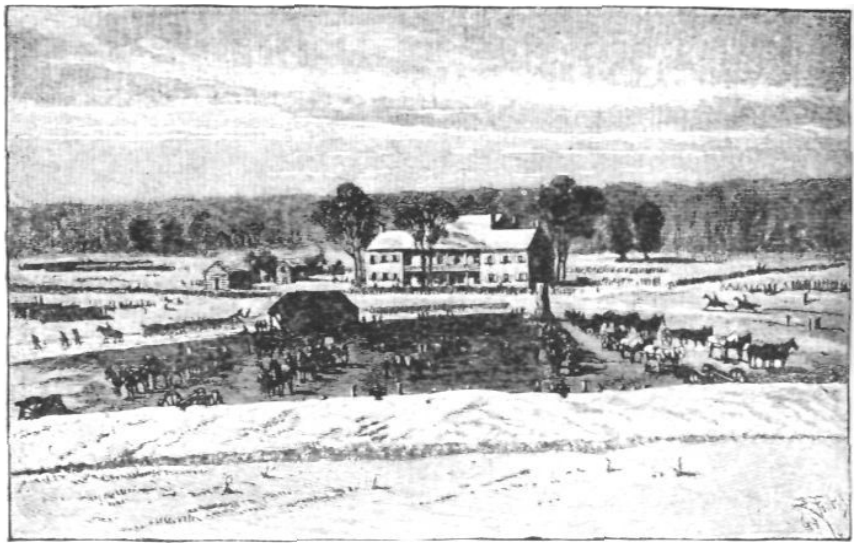
The range elevation drum corrects for the error in the elevation direction due to the mount being out of level. The immediate mechanism accomplishing this correction consists of a bubble with paired index, reading against a family of curves of angular elevation. Each of these curves has been rectified by the amount of the correction referred to the indicated cross-level angles.

FIG. 8. RIGHT SIDE VIEW OF GUN UNLIMBERED

It is intended that two of the approved type of anti-aircraft data receivers will be used with the system, thus tying it in electrically with the director and height finder. A third data receiver will be required if it is intended to use the continuous fuze setter developed for anti-aircraft work.

In conclusion it may be stated that the T2 mount can be adapted with slight modifications to any use outlined for the T3 mount and it is believed that it is simplier in construction, with a resultant lower cost and ease of procurement in time of emergency. These considerations are of vital importance in the solution of the great problem of national defense.

The T2 mount has one feature, the self-contained lifting mechanism, which should make it superior to the T3 mount as regards getting the piece into firing position and in going from firing to traveling position. It is believed that with a trained gun crew it will require considerably less time for handling than is required for the T3 mount.



A FEDERAL BATTERY IN FRONT OF HOOKER'S HEADQUARTERS AT CHANCELLORSVILLE, 1863

THE PART PLAYED BY SOME FIELD ARTILLERYMEN IN THE OHIO PENITENTIARY FIRE

BY BRIG. GEN. H. M. BUSH, COMDG, 62D F.A. BRIGADE, OHIO NATIONAL GUARD

In considering the catastrophe which struck the Ohio Penitentiary at Columbus on the night of April 21, 1930, the following facts should be borne in mind:

The institution was badly overcrowded. The census report of the Warden showed 4363 inmates as of April first.

This prison, as well as those in which revolts of a serious nature have occurred in the past two years, was under the charge of, and was administered by an expert penologist who used the most approved methods of that so-called science. At all of them the guards were old men.

For months those in charge had known that they were sitting on a volcano liable to explode at any moment.

The fire was incendiary in its origin as were several other fires in the place at or about the same time. The conflagration came some twenty minutes too late to suit the plans of the conspirators, and found the inmates locked in their cells instead of in the mess hall or going to or from supper.

The area enclosed by the walls is ten acres. There are but three entrances: one, the main entrance in the middle of the south wall or building; one, the wagon gate, in the southwest corner; one, the railroad gate, in the northeast corner. The fire was in the two cell blocks on the west side along the wagon entrance. The "White City" is the eastern part of the old or south building. While the prison, as such, antedates the Civil War (Morgan was confined in it and escaped from it), the interior of the old cell blocks had been taken out and new steel construction set up inside the old stone walls. One of the burned cell blocks was in process of reconstruction at the time of the fire and the oil-soaked concrete forms helped very materially in the conflagration. The buildings are of brick or stone and had wooden roofs; there was no system of fire extinguishers, hand or fixed, in any of them.

The spread of the fire was extraordinarily rapid as will be

OHIO STATE PENITENTIARY

(Viewed from the air, after the fire)

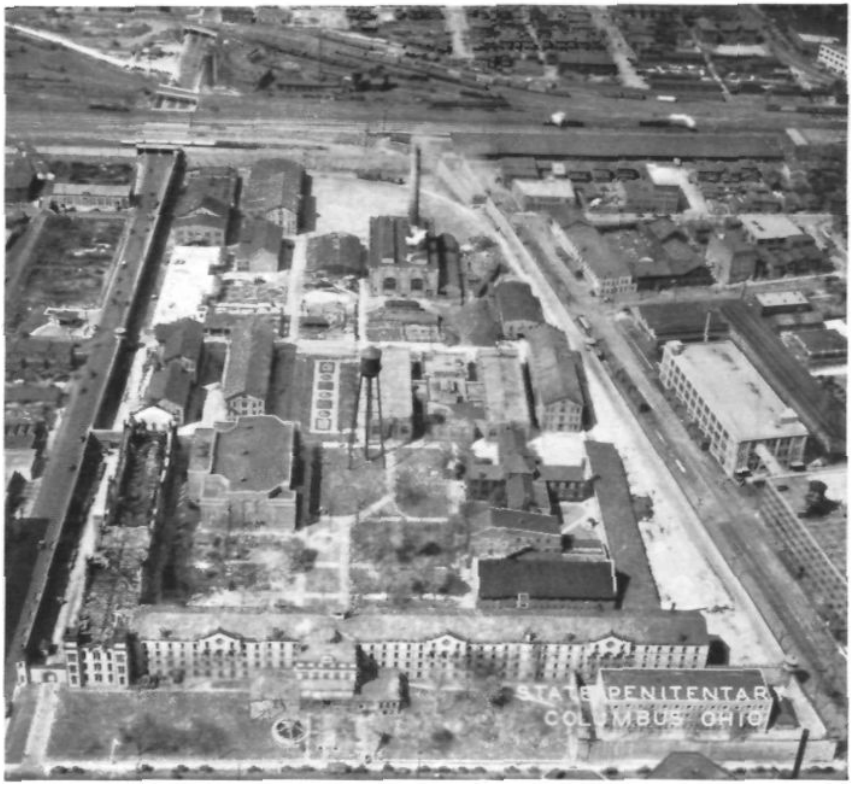


Photo by Photo Section, 37th Air Squadron

1. Note burnt cell building in lower left corner.
2. Only available entrance for fire trucks, etc., is gate in lower left corner.
3. Note crowd of convicts in open space just right of burnt cell blocks.
4. "White City" is the cell block just right of burnt cell blocks.
5. "Death House" is the small building in extreme lower right corner.

noted by reference to the accompanying photograph and the time table with it.

The fire promptly demonstrated that the system of discipline among the guards was not adequate to the emergency.

The first attitude of the great mass of the prisoners was not mutinous in the least, but helpful and even heroic in very many cases. The release of the "bad actors" from the so-called "White City" was not justified by any danger to them, and was a very serious error. To the presence of these men at large in the institution can be attributed practically all of the subsequent disorder and mutiny.

There was no dearth of material for weapons on every hand, yet the display of military force at the outset discouraged any attempt at a break.

The prisoners, through radios in their cells and a plentiful supply of daily papers, were in constant touch with the outside and knew all that was being done. In addition, one of their number was at the broadcaster sending out information and "sob stuff" over the state. The minute by minute story of the fire was allowed to be broadcast from the prison by a convict.

No organized body of troops entered the interior of the Penitentiary until April 29, and then only after the regular Penitentiary guards and later 150 city policemen had failed to restore any semblance of order, and matters were becoming more serious every minute.

The first organized body of troops on the ground were thirty-five Regulars from Fort Hayes who occupied the guard room. They exercised a very salutary influence on any plans or attempts at a break, but were not called upon for any particular duty, being relieved as soon as sufficient National Guard troops (166th Infantry) of the first echelon had reported.

To go back a little: After the riot at Auburn, N. Y., the Adjutant General (Brig. Gen. Arthur W. Reynolds) induced the Governor to call a conference between the Adjutant General, the Director of Public Welfare (Mr. Hal H. Griswold) and Warden Thomas of the Penitentiary. The outcome of this conference was the appointment of a military board to devise a comprehensive plan for the co-operation and co-ordination of the several

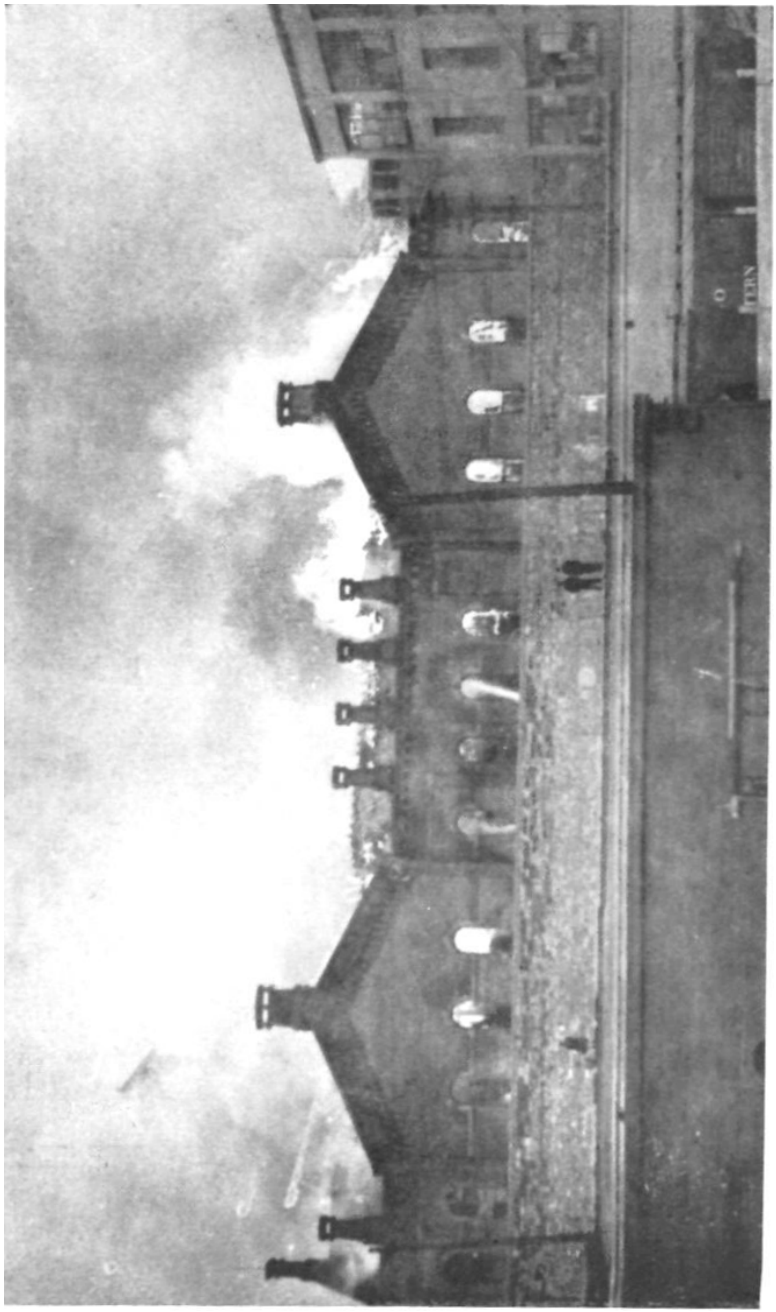


Photo by Ray W. Humphry, Columbus, Ohio. Courtesy CULUMBUS CITIZEN

OHIO STATE PENITENTIARY BURNING

Note: First alarm turned in at 5:39 P. M.; photo taken about 5:46, just when first stream of water was turned on. Most of the deaths occurred in the structure at right end of photo

police agencies in the city for the handling of any possible outbreak. The board drew up such a plan, the police made theirs and the sheriff made his. The three plans had not been fully coordinated at the time of the fire, but the work was speedily completed under the stress of action. The board studied the layout of the institution, visited the institution on several occasions and made some recommendations.

When the call for help came from the Warden and reached the Adjutant General, the President of the board (Col. Robert Haubrich, D.S.C., 166th Infantry) was placed in command of the troops and he ordered out the first echelon. Later on all troops in the city, including the Naval Reserves, were ordered out, giving a nucleus of about 800 men. Troops from nearby cities were sent for, and by early morning some 1200 men were on duty.

Transportation by bus, automobile, truck and traction lines was arranged so quickly and the transportation agencies acted so promptly that, in at least one case, the cars were waiting near the armory before the captain had received his mobilization orders. The radio, broadcasting from the Penitentiary itself, for the usual supper time entertainment, spread the news all over central Ohio and materially assisted in the speedy mobilization. It also augmented the crowds of sight-seers, whose presence, together with their innumerable automobiles, materially complicated the job of guarding the exterior walls and almost completely tied up traffic in the district. Both police and guardsmen did some very excellent work in handling this part of the situation.

As the troops were originally placed on duty to assist the Warden, all orders for their employment had to come from him. The Governor was out of the state, but on his way home. In the absence of the Governor, the Adjutant General could not assume control or direct the commander of the troops to do so. All that could be done in the first few hours was to guard against a break by the placing of machine guns in commanding positions (the walls, roofs of buildings accessible from the outside, and the roofs of the taller outside buildings) and by posting a ring

of sentries (mostly automatic rifle men) about the walls, and by controlling traffic.

The situation was complicated and rendered difficult by a small mob of Special Deputy Sheriffs, who individually sought to give orders and got themselves in the way pretty generally and by a flock of newspaper men, photographers, etc. Before midnight there was an irruption of certain of the county officials, who sought to establish their claim to jurisdiction and investigation across the shadowy line which divides State and County authority. The return of the Governor and his immediate grasp of the situation alone put a stop to a phase of the situation which was adding fuel to the fires of discontent and was encouraging the lawless. This activity might have had serious consequences if it had been allowed to continue; even so it had very embarassing results.

The recognized supreme police authority of the Governor of a State has nowhere been more strikingly shown and utilized for the safety and benefit of the whole people than here. Coolidge in the Boston police strike is another outstanding, though somewhat dissimilar, instance.

Aside from the exterior guard duty and watchful waiting, the major activity of the troops is described by Captain Taggart and Staff Sargeant Kish. Certainly here was strange duty for troops of the line, but organization and training proved their value in this phase of the emergency.

It was not until Monday the 28th, after shots had been fired by the Penitentiary guards and two convicts wounded, that the Adjutant General gave the word to carry out the written instructions of the Governor, issued several days previously and held up in order to permit the Warden to regain control with his own resources. The troops went inside and took over all but administrative control, imposing the military rule of FIRMNESS, KINDNESS AND JUSTICE, backed by trained and disciplined men ("Mere kids," the critics called them, forgetting who fights the Nation's wars), commanded by experienced officers, were substituted for modern "Penology."

Practically the first move was to institute a general police of the institution's living quarters. Sanitation and cleanliness,

according to the military understanding and practices, was substituted and enforced in lieu of "Welfare" and "Uplift." The co-operation of the prisoners was given willingly and without compulsion except in the case of a few.

There was nothing soft or "Please, Mister," about the matter. Prisoners were plainly told that resistance or violence would be met with bayonets and bullets. Refusal and "passive resistance" were met with bread and water diet in close confinement. A burly convict "sassed" a strapping young "red leg" and they carried the sasser to the hospital. Another balked at some order of a "dough boy" and the bayonet came in contact with the spanking place. There was no mincing of matters, it was grim hard work for the young soldiers.

Order among the prisoners could only be restored gradually. The refusal to work—"passive resistance"—had to be overcome. The cells were, for the most part, useless as the locks had been smashed or the doors torn off. The bullies and terrorists had to be ferreted out and isolated; little help was given the military by those who should have known their identity.

Almost equally hard was the maintenance of vigilance on the part of officers and men. The strictest of strict discipline had to be imposed and the troops were held inside the walls with only an occasional weekly pass and that not always obtainable. The docility of the bulk of the prisoners and their gratitude over the form and eveness of the discipline imposed on them under military rule tended to disarm vigilance and encourage sympathy. That ideal of the lazy soldier (a personal striker) was almost realized when the prisoners barbered them, washed their clothes, shined their shoes and served their meals.

The guiding spirit among them was the dicta of their commander: "These men were not sent here to die, but to live and learn—but they must behave."

The men with military training among the prisoners were a great factor in restraining the vicious, and an equally great factor in the restoration of order and discipline.

How long this state of affairs might have lasted it is hard to say. Order was restored and the shops started operating under the supervision of the troops. The higher officers were in a constant

state of anxiety lest some of the unruly and vicious would take advantage of a slackening of vigilance and change the whole picture (Spoil "Haubrich's Sunday School"). Not until thirty days after their first entry inside the walls did the troops march out and turn the discipline over to the Warden and his augmented force of guards, leaving a record of which they can well be proud. As the 37th and part of the 42nd Divisions, A.E.F., the Ohio National Guard and the Ohio Naval Reserves have given evidence of their ability as a fighting machine, before and since; in riot, conflagration, flood, tornado and near famine they have shown themselves safe and dependable, acting always without fear or favor as guardians of law and order in great emergencies, worthy of the support they receive from Nation and State. In these respects they have no advantage or superiority over either the Federal Army or Navy, nor the National Guard and Naval Reserve of other states.

Today order has been restored and some degree of organization arrived at among the doubled penitentiary guard. How long the lesson will last amid the theories and ideas of "Modern Prison Management" (Penology) remains to be seen.

Many civilians do not seem to be able to grasp the significance of the basic fact that Military Discipline combines and includes such vital things as CLEANLINESS, SANITATION, HEALTH, THE RIGHT TO FAIR, JUST TREATMENT as well as absolute and willing subordination to authority. They do not realize that military authority must work with care and efficiency along well thought-out plans committed to writing, and that it uses long and carefully tested methods in the control and direction of human beings. The "penologists," as well as many educators, would do well if they would put aside some of their fads and fancies and take the best of what we have learned through the ages on the field of battle. Our science of handling men is not shot through with fads and fancies. We rely upon a few sound facts garnered from isolated cases, based on the experience of commanders antedating history; Ghengis Kahn simply utilized and passed on the stored-up knowledge of his ancestors, and the commanders of today recognize and use the same successful methods. If these methods

are uniformily successful in campaign, in victory or in defeat, are they not well worth using and adopting in the place of dubious fads and theories?

To some behind the stone walls the rifles, bayonets and machine guns bore messages of life and hope and a surcease of misery, petty persecution, degradation and death. Let them speak:

"To Col. Robert Haubrich:—

* * * "Especially, at this time, do we wish to thank Major Eckstorm and his able assistant, Lieutenant Craven, for their ceaseless and untiring efforts in our behalf. To a man, we feel that they have understood us and our position. Instead of looking upon them as taskmasters, we look upon them as our deliverers.

"If permissible, please extend our sincere appreciation to General Reynolds for the many kindnesses shown us, and the gentlemanly conduct of his soldiers throughout this emergency.

"Be assured we intend to display our appreciation of your efforts by good conduct and the proper maintenance of the grounds."

(Signed) 200 Tubercular Prisoners.

These men were transferred from the poorest of the cells to tents in the stockade as one of the measures of prison control instituted by the military.

The following is a copy of the order under which the work was done:

STATE OF OHIO
ADJUTANT GENERAL'S DEPARTMENT
Office of the Adjutant General
COLUMBUS, April 28, 1930.

Special Orders No. 99.

Par. 8—Pursuant to an executive order from the Governor of Ohio to the Adjutant General of Ohio, dated 8:30 A. M., April 28, 1930, directing that the Ohio Penitentiary be placed under military control in the event of open hostilities, Col. Robert Haubrich, 166th Infantry, Commander of Troops, is hereby directed to assume command of the disciplinary functions of the Ohio Penitentiary and restore order, using such units of the Ohio

National Guard as are now or may later be placed under his command.

By Command of Governor Cooper:

A. W. REYNOLDS, Adjutant General.

There were no difficult legal questions entering into the affair. Everything done was done on state property and in connection with state employees and wards. The police power of the State Executive becomes and remains supreme when he chooses to assert it. In Ohio the principle is firmly established. No governor has the moral right to order out troops or state police to the scene of a disturbance unless he intends that the officers and men composing the force shall use ALL THE FORCE AT THEIR COMMAND in the discretion of the *Commanding Officer on the spot*.

The Governor had as his advisors Major General Hough (U. S. District Judge), Mr. Harry H. Silver, State Financial Director (an ex-Guardsman), and Adjutant General Reynolds. All of these advisors were at the scene of the trouble a great deal of the time. All relied on the calm, cool judgment of Colonel Haubrich for the actual handling of affairs. The officers of the Division Staff assisted in their several capacities. G4, Lieut.-Col. John Shetler, had charge of all matters connected with the disposal of the remains of the victims of the fire. The embalming of the bodies was very ably handled by Capt. Charles B. Wier, Q.M.C., O.R.C. Within ten to fifteen hours Captain Weir had assembled a corps of 100 professional embalmers and in forty-eight hours all of the three hundred and twenty-two bodies had been prepared for burial. The financial affairs were handled by the 37th Division Finance Officer, Lieut.-Col. Chester M. Goble, who disbursed the entire $250,000.00 pertaining to the Guard without having a single dollar passing out without a preliminary purchase order with all the required vouchers. Nobody had to wait for his money. The transportation was entirely handled by Lieut.-Col. Ports, Asst. Q. M. General.

The following accounts of the work of three of the units of the 62nd Field Artillery Brigade are submitted with a view of showing our fellows in the service that, even when without their horses and guns, the officers and men of the Field Artillery will

measure up to the crisis when it comes. As an older officer, whose rank and other duties kept him from an active part in the described incidents, it is a matter of pride, and a little more, to know that he not only commands such men, but that the gallant officer in command, Col. Robert Haubrich, D.S.C., entered the military service as an Artilleryman and was trained by him. As the old wheeler passes out, take off his harness, bring up the spare and keep 'em rolling.

AN ACCOUNT BY STAFF SERGEANT WM. E. KISH, HEADQUARTERS BATTERY 134TH F. A.;

The small though disastrous fire which swept the roofs of two cell blocks in the Ohio Penitentiary, at Columbus, Ohio, on the evening of April 21, 1930, was one of the greatest calamities ever visited upon an institution of its kind. The loss of lives, totaling to date 322, and the resulting break-down of discipline among 4363 prisoners made it necessary for approximately 1200 National Guardsmen to be called to the assistance of the authorities for the protection of the lives and property of the citizens. Conditions were such as to severely try the discipline, energy and real value of the troops involved.

It was not the troops' good fortune to assemble at their armories and, with the spell of discipline thrown over them by the commands of their officers and the shoulder to shoulder touch of their comrades, to march or be transported to the place of action. Some few parts of units, it is true, assembled at their armories and were transported to the scene of action. They were preceeded in some cases and followed in others by individuals, who, catching the call from the air, donned uniforms and rushed to help, or, reporting at their armories, were given arms and rushed off by ones and twos to report for duty.

Two members of Headquarters Battery, 134th F. A., Staff Sergeants Kish and Steelman, caught the call from the radio and having their uniforms at home, donned them and reported at the scene of the fire. As they arrived they heard the call for volunteer electricians to set up flood lights about the walls and grounds. Each grabbed a light and cord and, with these as their credentials and arms, entered the prison where horror, panic

and near mutiny reigned supreme. Assisted by others, within three hours twelve lamps were installed which flooded the walls and yard with light, materially preventing any organized attempt at escape. After the completion of the temporary lighting system they assisted the firemen and helped to guard the fire trucks from criminal attacks. About twelve o'clock they realized that they were alone in the place and among men who might not be trusted, so they passed through the gates and reported to their battery which had arrived on the outside.

The first call for troops was sent out over WAIU about 7.30 P. M. The local artillery was ordered out about 9.00 P. M. The battery armory is located at the extreme eastern edge of the city almost five miles from the Penitentiary. It was therefore not until 11.45 P. M. that partial assembly was completed and the two units, Headquarters Battery and Battery "A," left their armory for the fire.

The moral effect the presence of the troops had upon the prisoners (they knew over their own radios they were assembling) was as noticeable then as it has been remarkable during the succeeding twenty-five days that the Ohio National Guard has been on duty either inside the walls or in its immediate vicinity. It was due to the presence of these boys and the coolness and good judgment of the officers commanding them that but little trouble has been experienced in the handling of the prisoners since the night of the fire.

It was, of course, necessary that the dead should be removed from the prison area as soon as possible. The 37th Division truck companies having done their part in transporting troops and supplies were now pressed into service to transport the bodies to the temporary morgue at the State Fair grounds. The sights that met the eyes of the Guardsmen who entered the prison on this night will never be forgotten by them. Three hundred and ten bodies were laid out in rows in the yard and among them moved doctors seeking for signs of life, and those whose duty it was to make identification of the individuals.

The bodies were loaded into the trucks and removed as rapidly as possible to the Horticultural Building in the Fair Grounds where the men of the Headquarters Battery, 134th

F. A., and Battery "A," 134th F. A., and Battery "E," 135th F. A., had been stationed. Here the Artillerymen went at their work of unloading the bodies, arranging them on the tables and assisting in the work of final identification, taking finger prints, checking up articles found in the clothing as it was stripped from the bodies. Then came the volunteer embalmers from all over central Ohio and with them the red legs labored for a full forty hours, resting when and where they could.

Then they went on guard and faced the trying hours when the relatives of the victims were allowed to view the remains: mothers, fathers, wives, sisters and brothers, grim faced in their deep sorrow, some of whom were unable to recognize if the ones they loved were among the dead. What a painful duty it was to be forced to tell a grief stricken mother that it was known, beyond a reasonable doubt that the body before her was really that of her son! Again it was the duty of the Field Artilleryman to perform this task.

The strain, physical and mental, lasted for four days until the burials or the bodies shipped to distant points had been completed. The Artillerymen were then relieved until a rebellion of the prisoners against the Penitentiary guards resulted in two of the former being wounded.

The recalled Artillery units (Headquarters Battery and a part of Battery "A," 134th F. A.), together with Infantry and Naval Reserves, were ordered inside the walls and martial law was established. Special details were formed. Five Sergeants selected from Headquarters and "A" Batteries, 134th F. A., were placed in charge of the turnkeys in the troublesome cell block known as the "White City." With Sergeant Noble as jailor and Sergeants Stierhoff, Connors, Hale and Kish as assistants the unruly convicts confined in this block were removed to a war-time stockade which had been built for this purpose. While confined in the stockade the ring-leaders of the rebellion were removed to closer confinement and slimmer rations. At no time did the situation seem to us to be critical and the re-transfer of the prisoners from the stockade (they burned their tents) to the White City was accomplished with ease.

A special detail of men of all arms, qualified for duty in the

prison shops were picked to assist the superintendents and foremen with the reorganization of the personnel for the resumption of normal prison operations.

Four Artillerymen were placed on fire patrol to guard against incendiary fires. They also had to search the long service tunnels which radiated in every direction from the power-house for hide-outs and attempts at escape by tunneling to the outside.

Corporal VanMeter was selected by the commander of troops, Col. Robert Haubrich, D.S.C. for D.C.I. duty and much valuable information was obtained.

Some of us are still on duty (May 20th), but the number is lessened each day as the security and discipline of the prison is gradually being turned back to civilian control.

THE MOBILIZATION, TRANSPORTATION AND OPERATIONS OF BATTERY "E," 135th F. A. (Station Piqua, Ohio, 72 miles from Columbus)

By Capt. H. A. Taggart

Monday evening, April 21, word came in over the home radio that the Ohio Penitentiary was on fire and that help was being asked. At 9.00 P. M. it was decided that troops might be needed and as a precautionary measure orders were issued to assemble Battery "E," 135th F.A.

Within a short time a telegram was sent to the Adjutant General reporting fifty men and four officers ready for duty. Thirty minutes later a telephone call from the Assistant Adjutant General directed the battery to proceed to Columbus as quickly as possible by any transportation which might be available and report to Col. Haubrich at the Ohio Penitentiary.

Since it would be several hours before either electric or steam transportation could be furnished, it was decided to use buses. (Note: Buses were used very successfully in a number of other cases.)

Three eighteen-passenger buses were readily secured, gassed and oiled and spare tires gotten ready. Private cars took care of the extra officers and men. A total of fifty-eight men and six officers left Piqua at 11.30 P. M., arriving at the Penitentiary at 1.15 A. M.

We were immediately assigned to the improvised morgue at the Fair Grounds, whence we were taken in ambulances and trucks, arriving there at 2 A. M.

We had hardly arrived at the Fair Grounds when the Motor Transport trucks with their cargoes of six or eight bodies began to come in. Using four men to each body they were carried to the flower display tables and placed in rows with small boxes under the heads as pillows. Other details removed the clothes and searched for identification marks.

Embalmers and their assistants from all over the state commenced to arrive and their supplies were unloaded and placed on the tables ready for use.

Guards were placed at the doors to bar out the morbidly curious, the whole being under command of Major Caleb Orr, 2nd Bn., 135th F.A.

Blankets were thrown over the victims, some of whose bodies were charred beyond recognition. The coroner and his assistants made their examinations, while the finger printers and Bertillion experts moved from table to table making every effort to render identification sure.

You were proud that you were a Guardsman as you watched these young men working with all their might. The tasks that they helped to accomplish buried deep into your memory and ever deeper became your admiration for these citizen-soldiers. They were carrying on a job of unusual difficulty for which they had no training, beyond that of doing their duty as it came to them. Torn by nausea and sickened by horrible sights and smells, they kept at their task working swiftly and with ever increasing deftness and precision in their movements. But it seemed as though the lines of trucks would never end.

Despite the gruesomeness and horror of the spectacle, the men on guard had a most difficult task to keep the morbidly curious out of the building, only those having actual business therein were admitted until Wednesday.

The tables originally provided proving to be inadequate, it was necessary to crowd the bodies together until, in some cases, there were five and six side by side.

After the embalming was completed the soldiers clothed the

bodies with underwear and socks. Soon after daylight the caskets began to arrive and the undertakers placed shrouds on the bodies and put them in the caskets.

By noon flowers from every greenhouse in and near Columbus began to arrive and the soldiers placed them all, draped the interior with black and an occasional flag.

Men and women of the Red Cross served sandwiches, doughnuts and coffee at the Morgue, while the Salvation Army took care of the troops at the Prison.

By six Tuesday evening cots and blankets were beginning to find weary occupants, but caskets kept on coming and it was three o'clock Wednesday morning before the task of preparing for the relatives was completed.

Then came the rough boxes, and the shipping began of those corpses whose relatives had secured the necessary papers. At 3.00 P. M. we received word that we were to be relieved by the Columbus Battalion of Naval Reserves, and at 4.00 P. M. we boarded the buses for home, glad that we had been able through our training and discipline to render assistance in this emergency.

One lesson of value to all officers, especially staff, was learned and that was to start and keep a diary from the very first. The higher the rank or responsibility of the Commanding Officer the more detailed the diary. In other words keep all records as though in the field in time of war.

TACTICS OF A MECHANIZED FORCE: A PROPHECY

LIEUTENANT-COLONEL K. B. EDMUNDS, CAVALRY

(The following article, written by an instructor in the Department of Tactics at the Field Artillery School, Fort Sill, Oklahoma, is believed to contain much sound thought on a subject which has received considerable treatment of a fantastic or even fanatic nature.—EDITOR.)

The development of motor driven vehicles has progressed far enough to make it possible for us, without undue strain on the imagination, to visualize a machine capable of maneuver and attack across nearly all types of terrain at a speed of from ten to sixty miles per hour, armored to the extent of being invulnerable to anything but a direct hit by artillery, and having the radius of action and freedom from mechanical breakdowns of an automobile. A unit made up of such machines may have within itself the fire power of artillery, machine guns, and automatic rifles, and may possess a shock effect and rapidity and range of maneuver greater than those of Cavalry.

We are already in the habit of referring to such a unit as a "mechanized force." Discussions of it are appearing frequently, but it is doubtful if we have yet realized the profound effect this new arm will have on our tactics if the machine on which it is based is perfected to the extent indicated above. The tendency of the existing arms is to adapt the new arm to our present tactics. What we rather must do is to change our tactics to fit the characteristics of the mechanized force.

The Infantry, still worshipping at the shrine of the "Queen of Battles," whose creed is that the sole function of all arms is to assist the advance of the foot soldier and misled by the characteristics and functions of the World War tank, is inclined to see in this new engine only another auxiliary. But, as the speed of the tank increases from three to sixty miles an hour, as its radius of action rises from five to a hundred miles, and as its mechanical faults are eliminated, it becomes a weapon, not of the Infantry battalion, but of the field army or of General Headquarters. It becomes a separate arm characterized by mobility, fire power and shock, capable of self-sustained action, of rapid maneuver, and of dealing the decisive blow in battle; a mobile reserve in

the hands of the commander-in-chief, used at the decisive stage of the battle to overthrow the enemy by shock.

The Field Artillery, taking a defensive attitude, depends on being able to stop the assault of a mechanized force by gun fire, and is trying to adapt its comparatively clumsy and unwieldy tactics and system of fire control, developed to support the slow stages of an Infantry attack or defense, as well as the anti-tank gun of the World War, to this end. It does not give sufficient consideration to the difficulty of getting a direct hit on a rapidly moving target, or the great maneuvering range and surprise effect of a mechanized force. The function of the Artillery will be to support the attack or to support the counter-attack. It cannot stop either one.

Our Cavalry is instinctively hostile to any machine which may supplant the horse, and inclined to disparage its effect. We are retreating to mountain trails and thick woods, hoping that no fast tank can follow. Our policy, on the contrary, should be to encourage the new arm, experiment with it, and bring out its characteristics, both favorable and unfavorable, for the place of the new arm in the army team, its missions and tactics, are far closer to those of Cavalry than they are to any other arm. The cavalryman is best able to understand its potentialities. It is improbable that a machine will ever be invented that is more efficient for all military purposes than the horse. But, whether our Cavalry divisions are completely mechanized or not, Cavalry missions and Cavalry tactics will remain, and the mechanized force will act in conjunction with the Cavalry.

COMPOSITION OF THE MECHANIZED FORCE

Experiments and study, both in this country and in England, indicate that the composition of a mechanized force will be somewhat as follows:

a. A shock component (assault echelon) consisting of light tanks, armed with the one-pounder, or some other light cannon, and the machine gun.

b. A mopping-up and holding component, consisting of machine gunners and automatic riflemen, in carriers capable of rapid movement across country.

c. Fire support, consisting of motorized artillery capable of rapid movement across country.

d. Auxiliary troops (engineers, anti-aircraft, etc.) in motorized carriers.

e. Motorized trains, at least part of which will consist of carriers capable of rapid movement across country.

f. Present plans also call for a component of armored cars; but, as the speed and mechanical reliability of the tank, or combination wheel and track vehicle, increases the necessity for the armored car will disappear.

With the possible exception of part of the trains, all these components should have the common characteristics of speed, maneuvering ability, radius of action and protection against any fire but a direct hit by artillery. Homogeneity in these characteristics is essential, and probably the eventual development will be that all vehicles, to include the combat trains, will be mounted on the same chassis as the light tank. The Artillery will have either self-propelled mounts, or tank tractors with trailers of such a design that the speed of the tractor will not be impeded thereby on any terrain.

The size decided on for the force will depend on tactical considerations such as the desirable frontage to be covered in its attack and the dispositions in depth desired, as well as on the limitations imposed by logistics. Study and experiment must continue on these points, but as a basis for discussion the following arbitrary assumptions may be made:

Frontage for attack ..... 5000 yards
Number of waves in assault echelon 3
Additional reserve ..... Equivalent to one wave
Frontage for a single tank ..... 100 yards

Using these figures, we get fifty tanks in each of the three waves of the assault echelon which, with the allowance for the general reserve, gives a total of two hundred tanks.

For the holding component we may take as a basis the machine guns and automatic rifles of the number of front line battalions necessary to hold a front of 5000 yards, *i. e*. four battalions. These amount to 48 machine guns and 216 automatics. Allowing two machine guns or eight automatics, with their

crews, to each carrier, we arrive at a total of about fifty carriers for this component.

For the artillery component we may assume about the same number of batteries as are necessary to support the attack of an infantry force on a front of 5000 yards, viz. about 25 batteries, or 100 guns. Ammunition and service vehicles will raise the number of vehicles to about 200. The requirements of mobility will limit the calibres to the 75mm. gun with, possibly, the 105mm. Howitzer.

Granting the assumptions of characteristics and organization, it is now possible to come to certain conclusions:

a. The number of vehicles in the mechanized force, exclusive of trains, need not be over five hundred.

b. The road space of its combat units will be about 1500 yards, allowing 30 yards to each vehicle.

c. Assuming a marching rate of only ten miles an hour, the force can pass a given point in about one hour.

d. It can be disposed for attack from single column in about one-half hour.

e. It can move from a position in reserve to any point on the front or flank of a field army in three or four hours.

TACTICS OF THE MECHANIZED FORCE

Its tactics must be primarily offensive: a straight drive to its objective, either in attack or in counter-attack. The shock component will drive rapidly through the enemy's defense, breaking up his defensive organization of machine guns, infantry weapons, anti-tank guns and wire, continuing through his supporting artillery to the objective of the force, whatever it may be; then reforming behind its holding component, possibly to meet the enemy's counter-attack.

The artillery component, advancing by bounds from one firing position to another, will support the stages of the attack. Its principal targets will be those weapons of the enemy most dangerous to the shock component, viz. anti-tank guns and enemy tanks. In the last stage it will move to positions to support the holding component. Almost coincidently with the advance of the shock component from its assembly positions, the

artillery will advance rapidly to previously reconnoitered positions for direct fire. From these it will open on the enemy's anti-tank guns as the latter expose their locations by fire. To the objection that such tactics will expose the artillery to destruction by the enemy's supporting artillery, it may be answered that the time the attack lasts will be a matter of minutes, not of hours, and any counter-battery by the enemy will draw his fire away from the shock component.

The holding component, following the shock component closely, will complete the overthrow of the enemy on his organized position, and the capture of his supporting artillery within its zone. It will then move to the final objective which it will organize and hold, supported by the artillery component; provide a pivot behind which the shock component may rally; reorganize and prepare to meet the counter-attack of the enemy's mechanized force.

The defense against such an attack will be a counter-attack by a mechanized force.

PLACE OF MECHANIZED FORCE IN COMBINED ARMS

Such may be the tactics of the mechanized force within itself. Before considering the place and missions of the force with the combined arms it is necessary to say that, in the opinion of some students, there will be no combined arms; that future armies will be completely mechanized and will consist simply of a collection of mechanized units like that described above; or that other arms will be relegated to areas which, by fortification or by the nature of the terrain, are impassable to a mechanized force. Granting this, it might be said that the shock component of the force is the future Cavalry and the holding component the future Infantry, but this is going too far for intelligent discussion at this time. It will certainly take the lessons of the battlefield to effect such a revolution, and we can expect to enter the next war with Infantry and Cavalry *missions* and *tactics* essenitally as they are at present, the mechanized force being an arm added as aviation has been added. The theories of the extremists in mechanization are not likely to have more effect on our doctrine than those of certain enthusiasts in Aviation. Our units

may be largely motorized and mechanized within themselves; organization and equipment may change; but the conception of Infantry as a comparatively slow-moving arm intended to gain ground, to seize and to hold; and of Cavalry as an arm of mobility, to cover, to reconnoiter, to maneuver, to exploit, will not change. Twenty years ago it could be said truthfully that the Infantryman was a foot soldier, armed with the rifle and bayonet. Infantry now has machine guns, automatics, mortars, one-pounders, grenades and tanks; it is often transported in trucks; but its missions have remained.

Fast tanks may, of course, be attached to Infantry or Cavalry divisions, just as Cavalry squadrons may be attached now. However, this paper is concerned with the mechanized force as a separate arm, having the same relation to the field army as that of our Cavalry divisions.

It seems evident that an army commander will hold his mechanized force in reserve until the other arms have developed the situation. It can then be determined at what part of the front its blow will be most effective, and where the character of the terrain will permit its use. If the maneuver decided on be an envelopment, the Infantry divisions will make a holding and enveloping attack on the enemy's front line units. The Cavalry, operating on the flank selected for envelopment, will form a screen behind which the mechanized force will reconnoiter for its assembly positions, select the ground over which its attack will pass, and when its reconnaissance is completed, move to its assembly positions. Since this movement will utilize the roads it is important that it be made behind a screen which will insure physical possession of the routes of advance. The movement will be made under cover of darkness in ample time to refuel at the assembly positions and start the attack at daybreak. The attack will probably be directed at objectives in rear of the Infantry envelopment. The Cavalry will follow, either in exploitation or to connect with the Infantry flank. (See Figure 1.)

From this it can be seen that, in an envelopment, the missions of the Infantry and Cavalry will not be essentially different from what they are now. The maneuver of the mechanized force is simply added. The penetration, however, will differ

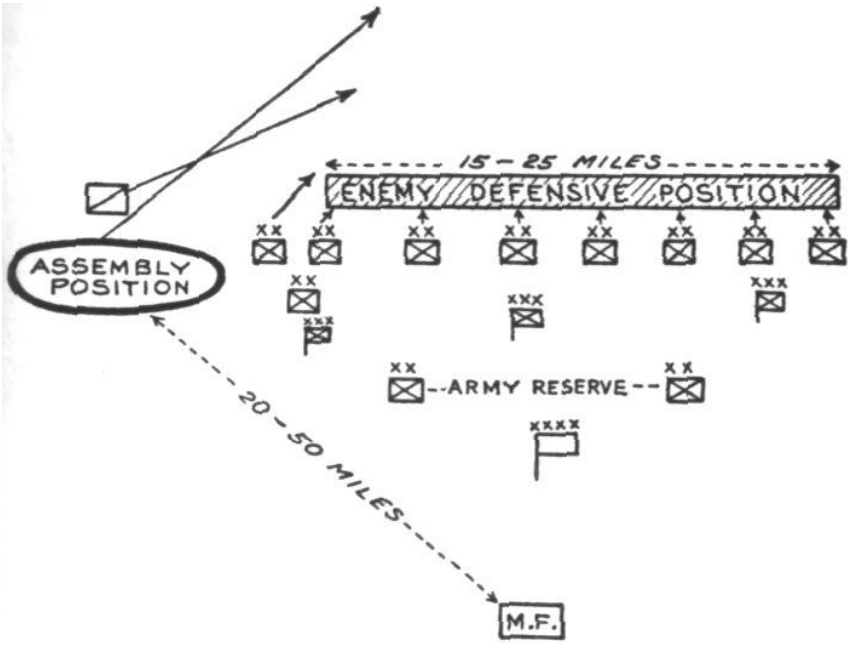


FIGURE 1

from our present tactics in that the actual break in the enemy's defensive organization will be made by the mechanized force rather than by the Infantry divisions. Having made the break, the force will continue through the supporting Artillery to objectives in rear. The Infantry, following, will exploit against front line units and supporting Artillery, widening the gap. The Cavalry will pass through the gap, either in exploitation or as a connecting link between the mechanized force and the Infantry. (See Figure 2.)

Against a zone defense it will probably be necessary to assign limited objectives, the mechanized force first preceding the Infantry through the outpost and delaying areas, then reorganizing, during the period of Infantry advances, for the assault on the battle position.

As has already been stated, the objectives of the mechanized force in attack will be well in rear of the enemy's front lines. Such objectives may be: enemy reserve divisions, army artillery, command posts and lines of communication, areas of tactical importance

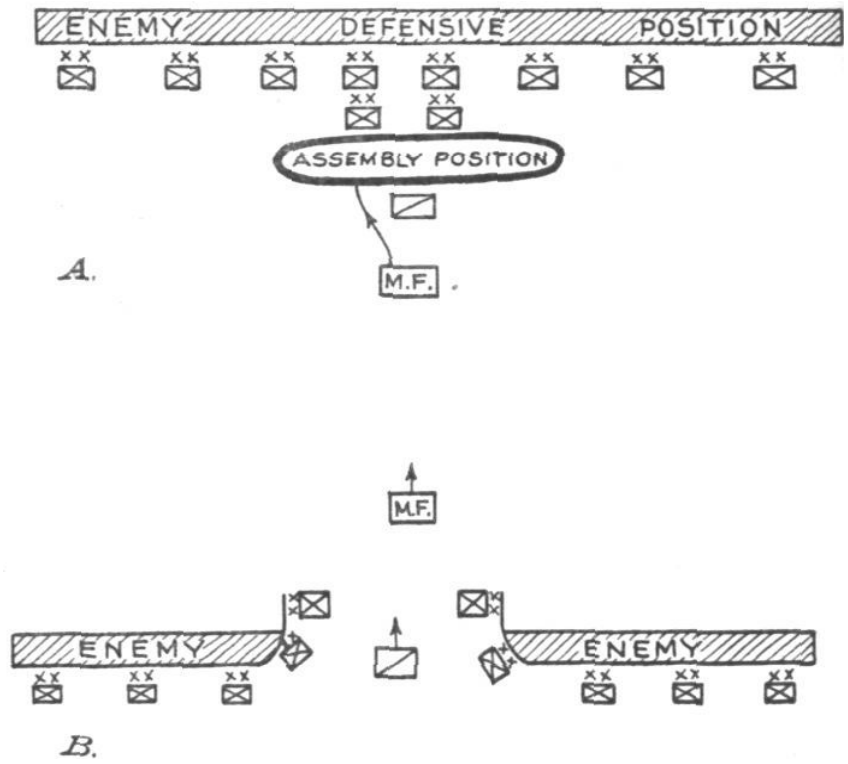


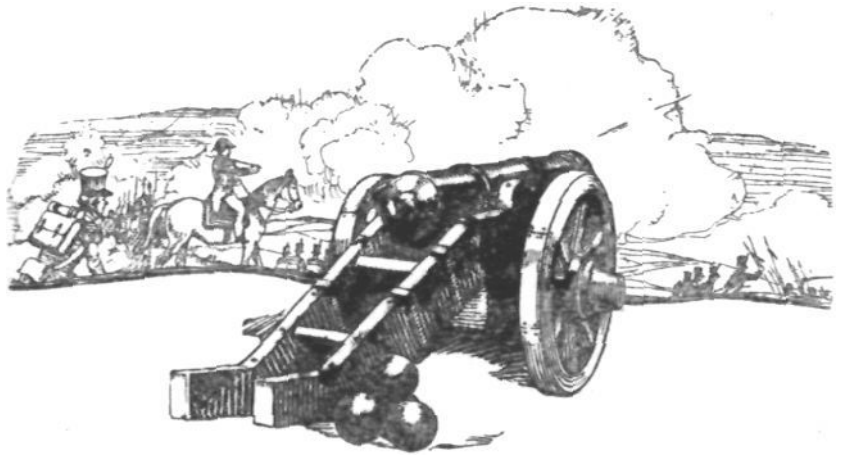
FIGURE 2

to its own army, critical areas essential to the enemy in his withdrawal; or may be the *opposing mechanized force*. The last named may well be the first objective for, like Cavalry and Aviation, a mechanized force cannot take full advantage of its characteristics until it obtains mastery over the corresponding arm in the ranks of the enemy.

On the defensive, the mechanized force must also be held in general reserve. Having determined the direction of attack of the enemy's force by reconnaissance, it will counter-attack, endeavoring to strike its opponent while the latter is still in motion, or before he can reorganize on his objective.

The potentialities of the mechanized force for maneuver and surprise are obvious. From a position many miles in rear of its army it can, within a single night, move to its attack position and can then start its attack at daybreak. It cannot be stopped by

machine guns and wired trenches. Its fire power approximates that of a division and its shock effect is greater than any arm which we now have. In effect the mechanized force will restore, to the main battle, tactics which the limitations of the horse and the development of the machine gun, the automatic and wired defenses have caused to disappear: the tactics of heavy cavalry. It is important that we do not allow its wings to be clipped by too great conservatism, by the assignment of limited objectives, by associating it with assault battalions, or with corps and division Artillery.



WITH THE TWELFTH IN THE WAR IN SOUTH TEXAS

BY COLONEL CHARLES M. BUNDEL, 12TH F.A.

Out of a clear sky came the news that our old enemies the Whites were making trouble again. Matters had reached a point where a declaration of war might be expected at any time.

The White forces that would oppose us consisted of about one brigade of Cavalry with a small Artillery force (one battalion), a few armored cars and Air Corps attached. This force probably would have the mission of harassing and delaying a Blue advance through this area.

The Blue force constituted a left flank guard for a large hypothetical force and consisted of the remnants of the Second Division that are stationed at Fort Sam Houston, reinforced by Air Corps and a few armored cars. The combat troops consisted of a small Infantry brigade, a tank company, the Air Corps, four armored cars and a regiment of Field Artillery, the Twelfth.

This force had the mission of preventing the Whites from impeding the advance of the Blue main body by raiding and harassing its left flank.

The Blues were to try to meet the superior mobility of the Whites by making full use of motor transportation for moving troops.

A survey of the situation disclosed the following features that are of special interest to the Field Artillery:

The Artillery would be called upon to follow and support a small Infantry brigade which consisted of five small battalions, one of which (for the maneuvers) was to be permanently transported in trucks. The ability of this small force to protect a long column on the march or in bivouac, of course, would be quite limited as so few men were available. For example, the Infantry commander figured that he could only cover a front of about 1200 yards by outposts.

As the White force consisted almost entirely of Cavalry and armored cars, attacks and raids against the flanks and rear of the column while on the march and the flanks and rear of the Artillery

while in position or bivouac behind the Infantry, were to be expected as a normal action by the enemy. No Blue Cavalry was available though a few armored cars were at hand.

It was plain the Twelfth would have to depend largely upon itself for its flank protection while on the march and the security of its flanks and rear while in bivouac or position.

An examination of the excellent map that was made by the Corps of Engineers for the maneuvers showed that the country in general is exceedingly flat. Near the center of the area involved, differences in elevation do not exceed 100 feet for eight or nine miles.

Preliminary reconnaissances developed the facts that there were almost no buildings in the area and that the vegetation consisted of cactus and low mesquite bushes. The largest of the mesquite trees were too slender to support an observer even if he could see after he had climbed one of them. A report on the fauna of the country stated that rattlesnakes *might* be encountered, but that the area was not infested with them. A reconnaissance party reported that they killed twelve rattlesnakes in one day, so opinion seems to differ as to what constitutes an infestation.

It was patent that the observation of fire would be exceedingly difficult and that special measures for securing it would be necessary.

Water for the animals would constitute a serious problem, as the supply was very limited and the quality very poor. There would be in the neighborhood of 750 animals with the Twelfth.

In case hot dry weather was experienced, water for the men also would demand special attention.

During daylight marches the regiment would be constantly exposed to attack by low-flying aircraft. When in position or in bivouac it would be exposed to harassing fire by the same means. Special measures were necessary in order to meet this situation.

As a result of studies of the situation made by the officers of the Twelfth the following measures were inaugurated to meet the difficulties:

Regimental, battalion and battery details were brought to full

strength. Each detail was divided so that four men always were available for patrolling and outpost duty. The men were given special training in these duties. They were impressed with the fact that their most important duty was to give prompt warning of the presence of the enemy. They could not hope to compete with Cavalrymen who are armed with rifles.

Machine guns crews were trained to open prompt fire on low-flying aircraft and to select and occupy flank and rear positions for protecting the regiment against Cavalry actions. The occupation of these positions became a normal procedure whenever the regiment halted.

A method of minimizing the effects of airplane fire by quick dispersion of the marching column was evolved and practiced. In general it was as follows: a special "air attack" signal (three sharp bugle blasts, repeated) was adopted. At the sounding of this signal the guns wheeled to the left, the caissons to the right and both galloped well off the road. Caissons carrying machine guns remained on the road and opened fire at once. Drivers remained mounted and cannoneers assisted in controlling draft animals. A similar procedure was prescribed for other organizations, the vehicles being designated to wheel to the right or the left.

Battery commanders were directed to provide themselves with portable extension poles for use as observation posts. Much interest and ingenuity was displayed in this matter and the pole that was adopted consisted of a ten-foot section of three-inch pipe into which a two-and-half-inch pipe, seven feet long, was inserted for a distance of one foot.

The question of providing water gave considerable concern. Two tank wagons of 450 gallons capacity each were attached to the Service Battery and were considered as an emergency reserve. The tanks on the converted ration and water carts furnishd the drinking water when the local supply failed or was too bad to drink.

Battery commanders were encouraged to purchase a liberal supply of "desert" water bags to supplement the supply of drinking water. Many of these bags were purchased and were hung on guns, carriages and wagons.

Portable watering troughs were carried, of course, and were used repeatedly. Usually the water for the animals came from tanks or irrigation ditches that soon became exceedingly muddy from the trampling of the animals.

Officers and men were encouraged to provide themselves with inexpensive dust-proof goggles, and a great many of them did so. The weather during the war was generally favorable, but the one dust storm that was encountered while on the march amply repaid the small expenditure for goggles.

In order to meet the superior mobility of the Whites, a great many war-time Liberty trucks were provided for transporting all of the Infantry and the firing batteries of one battalion of the Twelfth. The batteries were to load only guns, ammunition in boxes, fire control and communication instruments, rations and gun crews. A request was made for light passenger cars for reconnaissance but none were obtained.

The initial phase of the Blue plan of operations contemplated a quick dash of entrucked Infantry and the improvised "portée" Artillery to seize and hold a bridgehead at an important river crossing until the rest of the force could be brought up. For such an action as this, the entrucked battalion probably would prove of some value, but its value in other types of operations is very problematical.

In compliance with orders from GHQ the Blue force was concentrated in an area about 55 miles south of Fort Sam Houston. The Twelfth made the distance in three uneventful marches as war had not yet been declared.

The camp site allotted to the Twelfth in the concentration area was unique in that it was the worst that any of us had ever seen. It was a perfect maze of cactus and mesquite. A single horseman could weave his way through it, but a team could not be driven in it without seriously lacerating the animals. A few men armed with axes and stable forks were sent ahead in a motor car and cleared narrow lanes for the batteries.

War was declared the next day and the Blues started south at dark—7:30 P. M. The Infantry and tanks in trucks with the "portée" battalion attached, led the way. In rear came all of the

animal-drawn elements of the division with the Twelfth in the lead.

Shortly after midnight word was received that the long truck column was blocked in the narrow country road by a broken bridge. Advantage was taken of the delay to water the animals at a convenient irrigation plant. About an hour and a half later word came that the Infantry had detrucked and was marching forward and that the Twelfth was to push on. For miles the regiment wended its way in the darkness over rough, narrow roads, around stalled trucks, through cattle guards and over high, narrow bridges. As one officer put it later, if we had tried to make that march in the daytime we probably would never have finished it. The "portée" battalion (in the stalled truck column) failed to greet us as we passed. Afterwards they claimed that they were all asleep, but the regiment has a different answer.

Information finally reached us on the road that the Whites had secured the important crossing of the river and that our Infantry had encountered them four or five miles from the crossing.

The Twelfth was finally ordered forward to positions from which to support a projected attack that was to drive the enemy back across the river. Only a very hurried reconnaissance was possible as the hour for the attack was close at hand. As the action was to be a quick, hard drive against a relatively weak force the batteries were pushed very close to the Infantry line. It was essential that they reach as far as the river line with their fire without forward displacement during the action. In rear of the positions that were selected there was a bare, open plain that could not be used.

As the Twelfth moved up to position it had to cross this open space. It was then broad daylight and the hostile aviation took this psychological moment to attack. The "air attack" alarm was sounded, guns dashed to the left, caissons to the right and the machine guns promptly opened fire. The Umpire was very liberal and assessed a penalty of 10 minutes' delay. Later this was cut to 5 minutes.

Shortly after the regiment got into position and opened fire, the "portee" battalion came up and took its place with us. The

observation in this engagement was fair as there were several buildings nearby from which the river line and the intervening ground could be seen.

The attack went through as planned and the White force was driven back to the river followed by our Infantry. It was then tentatively decided to force a crossing at this place as soon as an attack could be organized. The Twelfth displaced forward to position about 4000 yards to the front from which an effective fire could be placed on and well beyond the river line. The terrain in which these new positions were located was perfectly flat and sparcely covered with mesquite bushes, the highest of which reached up about 12 or 15 feet. Observation from the ground was out of the question, the mesquite bushes could not be climbed, forward observation posts with the Infantry would be of little value for the same reasons, no airplane observation was available, and the only available O.P.'s were entirely too far to the rear.

The portable observation posts saved the day. It is not seen how the batteries could have functioned in this situation without them. However, they are not an unmixed blessing for a hostile battery was located by picking up a "flag pole sitter" who was very conspicuous against the light green background. He had neglected to screen himself and could be seen for miles.

Between the hours of 7:30 P. M. one day and 8:00 A.M. the next day, the Twelfth covered 27.4 miles and went into position twice.

An example of what aviation can do if unmolested occurred during this part of the operations. It is of great concern to all Field Artillerymen and is therefore given in some detail.

A battery moved into a position not far from the junction of two country roads in a region where roads are very scarce. Some cover was available and the guns were promptly camouflaged and concealed. The B.C. had no other officer with him and everybody was very tired after marching all night and fighting for several hours. When the trails were dropped the limbers under a N.C.O. moved *straight to the rear* from the gun positions. Just at this critical moment a hostile observation plane flew over the position. An Umpire was present and penalized

the battery for the movement. The Battalion Commander, who was also present, immediately ordered the battery into another position several hundred yards away. Less than an hour later the hostile attack aviation appeared in force and straffed the first position of the battery back and forth with remarkable accuracy.

The aerial observer evidently had picked up the exact locations of the guns from the drill ground movements of the limbers and had then spotted the battery position very accurately with reference to the nearby road junction. With this definite information in his possession it was a simple matter to radio the coordinates of the battery position back to the airdrome. This was all the attack planes needed and they proceeded to act upon it without delay. The change of position saved the battery.

The expected attack on the river crossing did not materialize although the batteries of the Twelfth were all prepared for it. The afternoon was devoted to the reconnaissance of positions that might be occupied in supporting operations against another crossing about seven miles directly to the right of the Blue force.

Additional information of the enemy led the Blue commander to change his plan of operations and he decided to hold the enemy in the immediate front at the main river crossing, move the bulk of his force to the right and attack the Whites at the other crossing. This was to be a daylight movement screened by increased activity of the Blue airplanes. The hour scheduled for the movement was 11:30 A. M. Shortly before this hour, our air force bombed the hostile airdrome in order to keep the enemy's planes out of the air and also paid particular attention to the Whites at the main crossing. This later activity combined with increased activities of the small Blue force that was in front of the main crossing, seemed to have deceived the Whites as to our real movements.

The movement of the Blue force to the right began as scheduled. The Infantry was transported in trucks and the Twelfth marched by concealed routes that had been carefully reconnoitered on the preceeding afternoon. This is an excellent illustration

of the advantage of active and anticipatory reconnaissance whenever it can be conducted.

The Whites put up a stiff resistance at this crossing and considerable fighting ensued before it was taken by the Blues. The leading battalion of the Twelfth was attached to one of the Infantry regiments and during the afternoon and evening it selected and occupied four different positions in the vicinity of and beyond the crossing. The rear battalion was brought into action upon several occasions. All in all it was a very active occasion and battery commanders were kept on the jump. Actual smoke and tear gas were used at times. Artillery and airplane smoke and gas concentrations were simulated by sending men (with distinguishing marks on them) to set off smoke and gas candles in the areas in which the concentrations were to be placed. The candles were lighted at the exact moment the concentrations were to be laid down. The dense clouds of white smoke added a touch of realism to the scene. The tear gas assisted the enemy in deciding to retire to another position.

The Whites were forced back and the march of the reinforced brigade was resumed. Its objective was then a small town about seven miles away that lay on the enemy's line of communications which ran directly from his left flank. With this town in our possession or under effective Artillery fire the Whites would be forced to evacuate the whole area and establish new communications farther south.

It was now late at night as considerable delay had been encountered in getting the supply column (wagons and trucks) across a very difficult ford. The Twelfth went into bivouac just beyond the ford, but had scarcely established themselves when an order was received that the march would again be taken up. The Infantry was sent on in trucks over a good road and the Twelfth followed at the head of the animal-drawn column. An interesting, though not unexpected situation, developed at this time. The enemy conducted a delaying action which meant that he would make some resistance at favorable positions along the route and then retire after he had forced our Infantry to deploy. The Blue Infantry moved in trucks and although they were delayed and forced to deploy on several occasions they soon got

far ahead of their Artillery. This presented a very favorable situation for Cavalry action against the animal-drawn column and the Whites did not overlook it. A small Infantry force in trucks followed behind the animal-drawn vehicles but, of course, could furnish no protection for the head and flanks of the long column. The protective measures that had been developed in the Twelfth again stood us in good stead. Mounted patrols were sent ahead and on the flanks. An attack by about one troop of Cavalry against the center of the column (tail of the Twelfth) created a bit of excitement and a great deal of firing of blank ammunition. Machine guns rattled away in the darkness, smoke and tear gas candles lit up the surrounding terrain and finally the 75's went into action from the road using shrapnel cut to muzzle bursts.

The march continued through the night and about an hour before daylight the Twelfth came up with its Infantry which had encountered the enemy in position just in front of the small town.

A deliberate attack was planned to take place at daybreak and fairly accurate information was given to the Twelfth as to the plan of the attack and the position occupied by the Whites. Positions for the batteries were selected in a perfectly flat and open plain (no others were available), map firing data computed and the batteries of the Twelfth opened fire according to schedule. A check of the firing data and the targets was made by the Umpire (a Field Artilleryman) and he pronounced the fire as effective in spite of the fact that all of the preliminary work had been done in the dark and in an absolutely strange country.

It is interesting to examine the position that the regiment occupied in this action. The whole regiment was placed in an absolutely flat plain where no cover was available for objects larger than a man on foot. In order to meet this emergency, guns, carriages, men, animals, etc., were dispersed in very small units over an area that was at least one mile wide and one-half mile deep. These small groups were, in general, quite visible from the air, but they were so widely scattered that an attack by aircraft would not have been worth the ammunition that it

would have cost. We might almost say, "In dispersion there is strength" in such a situation as this!

Between 11:30 A. M. one day and 7:00 A. M. the next day the regiment covered about fourteen miles and supported almost continuous Infantry action during the march. Needless to say, everyone, officers, men and animals welcomed a rest and some food.

This action ended the war as the line of communications of the enemy was in our possession and he would have been forced to make great readjustments in order to continue the combat. The Twelfth was just about 100 miles from home. The march back was made in five days, four of which were over improved roads. The event of chief interest in the return march was a Texas tornado that hit camp one night at about 1:30 o'clock, blew down all of the tents and thoroughly soaked everything we possessed.

The War in South Texas was a very short one, but it was exceedingly strenuous while it lasted. Concensus of opinion among the officers is that it was one of the best maneuvers that we have ever had. The opposing sides were given definite missions and were practically turned loose in a country that presented many unusual features and not a few serious difficulties.

Keeping in mind the conditions that are peculiar to this theater of operations, it can be stated that the officers of the Twelfth learned the following lessons, or had the following facts more deeply impressed upon their minds:

It is absolutely essential that Field Artillery be given careful and extended training in a method of quickly dispersing from a march column in order to minimize the effects of fire from low-flying aircraft. Anti-aircraft fire from machine guns probably is of some value and doubtless will be more valuable when guns and mounts are perfected, but the main reliance for security must be placed on rapid dispersion. A long, solid column of artillery on a road is a target that is eagerly sought by every hostile aviator. A regiment or smaller unit that is caught in this formation and can not quickly break up the tremendous target it presents is surely out of luck.

It is absolutely essential that the Field Artillery receive

careful and extended training in concealing itself when in position or bivouac. This concealment must be positive and complete and should include the movements of the elements of organizations. If the latter can not be concealed, as is usually the case, then effort must be made to introduce irregularity into them so they will not expose the positions of the guns.

In case adequate cover is not available then security must be obtained by great dispersion of the elements of batteries. The aim must be to present a target to aircraft that is so dispersed that the enemy will not waste ammunition upon it.

It is extremely important that a suitable mount for machine guns be developed and adopted. The mount used by the Twelfth was an improvised one (designed at Fort Sam Houston) and was not satisfactory. It is unstable, does not permit of all-around aerial fire and can not readily be dismounted from the carriage and set up on the ground. When the machine guns were taken off the caissons and set up for defense against Cavalry the Infantry tripod mount had to be used.

A satisfactory machine gun mount must provide for the following:

(a) Instantaneous and all-around aerial fire when the guns are carried on caissons.

(b) Stability when fire is being delivered.

(c) A single mount that can be used effectively on caissons, escort wagons and the ground.

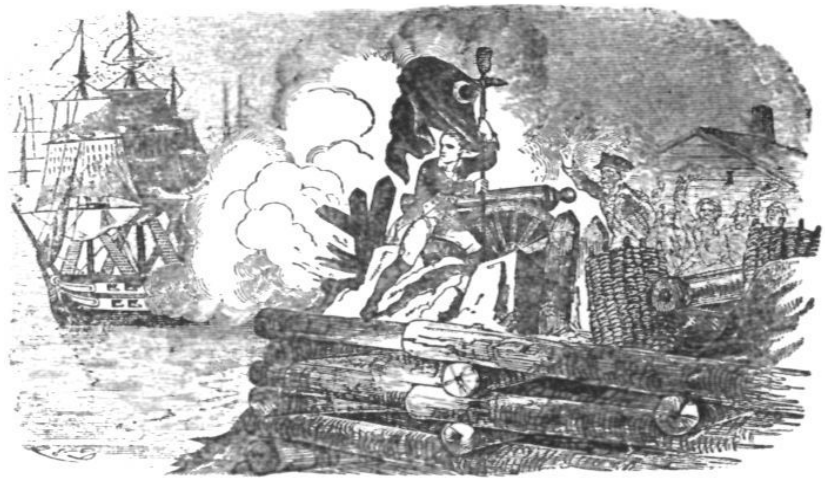
Horse-drawn Artillery operating with Infantry that may be moved in trucks must be prepared to protect itself while on the march because the truck movement, even though it is made in short bounds, almost always causes the Artillery to fall far behind the Infantry. This is especially important when the hostile force is very mobile for in such situations the enemy will make determined efforts to cripple and delay the Artillery.

When Field Artillery is operating with a relatively small Infantry force and against a very mobile enemy, it must be prepared and trained automatically to protect its flanks and rear whenever it goes into position or bivouac. This protection is afforded mainly by machine guns properly located, supplemented by warning patrols.

In operations in a flat and almost treeless plain, such as is found along so much of our southern border, portable extension poles are indispensable for use as observation posts. Without them battery commanders are often unable to deliver any effective fire.

Improvised portée artillery, *i. e.,* guns, ammunition and personnel loaded into cargo trucks, must be provided with some means of conducting their reconnaissances. It may prove of value in supporting Infantry that is engaged in a temporary defensive action, such as holding a bridge-head, but its value in other types of operations is very doubtful.

In operations in a dry and semi-desert country a liberal supply of "desert" water bags should be taken to carry extra drinking water. Also, officers and men should supply themselves with dust-proof goggles. Tank wagons should be taken to carry an emergency reserve of water for both men and animals.



DEFENSE OF CHARLESTOWN—JUNE 28, 1776

"Out from an embrasure leaps Sergeant Jasper—out where the cannon balls are flying. He picks up the flag, ties it to the rammer of a cannon, mounts the parapet, and plants it on the bastion. . . . Terrible the scene on the Bristol. The decks are slippery with blood, mangled corpses amidst the dismantled cannon. The captain has lost his left arm; a cannon ball has carried away the seat of Sir Peter Parker's breeches, forty of the crew killed and seventy-one wounded"—from THE BOYS OF '76, *by C. C. Coffin.*

THE HOOVER WAR LIBRARY

At Stanford University

THE following is a digest of an article by Ralph H. Lutz, Chairman of Directors, Hoover War Library, and Professor of History, Stanford University, with foreword by Colonel C. S. Vestal, U. S. A., Chief of the Historical Section, Army War College, published in *Army Ordnance*.

In this foreword, it is stated that, "Recognizing the value of this remarkable collection of material for the work of the Historical Section of The Army War College, arrangements have been completed with Dr. Lutz to survey and catalogue the documents from the viewpoint of military history and the participation of the United States in the war and in the activities of the post-war period."

Dr. Lutz's brief survey of this wonderful and unusual library is most entertaining and edifying, and without a doubt this library is destined to become the chief point of historical research on the World War. To give a faint idea of its immensity, its importance and its distinctiveness, it is stated that the manuscripts, in addition to the archive collections, number 21,050. There are 42,000 books; 135,500 pamphlets and 375 important newspaper files for the period 1914 to date, while the titles of war periodicals and trench papers number 7,775. In the group of rare collections of war materials there are over 20,350 posters, proclamations and water colors, and a collection of 3,030 military and naval maps.

The library was started in 1914 when Mr. Hoover, Chairman of the Commission for Relief in Belgium, recognized the importance of preserving the important records of that great philanthropic organization and gathering about them a great library on the World War. The private and confidential letters in regard to this work were sealed and kept at Stanford University, to which were added a vast amount of original papers from belligerent and neutral nations which came into the possession of Mr. Hoover when he was American Food Administrator.

In five years, with the financial and material aid of Mr. Hoover, the library grew to first rank in historical equipment.

Mr. Hoover gave the library a permanent endowment in 1924, which is now administered by a Board of Directors. Of especial interest are the excellent collections of delegation propaganda as well as government documents for the period 1914-1919 from 47 European, American and Asiatic governments assembled at the Paris Peace Conference. In 1922 over a ton of documents were shipped from Rome to Stanford University. These were destroyed by fire at sea and were generously duplicated by Italy.

The nucleus of the manuscript division of this library was a number of confidential reports secured in 1919, bearing on conditions in Europe during the war. To it have been added copies of private papers of men who have been in a position to feel the pulse of things. "Many of these personal *memorabilia* cannot now be described since they have been locked away for a term of years in compliance with the donor's restriction." "The number of Russian manuscripts in the library indicates the richness of this almost unexploited field." Pamphlets, posters, records of Soviet meetings and decisions, and copies of lectures delivered at the "Communist School for Agitators" were the result of Professor Golder's collecting work in Hungary immediately after the fall of the Hungarian Soviet government. Later, these documents were only saved by the intervention of the American officers in Budapest and the protection of an armed guard, when the White police in their eagerness to destroy all traces of the Red regime, demanded that the documents be burned. As a consequence, the Hungarian National Archives lack certain records which can only be found at Stanford University.

This wonderful library has, in addition to the War propaganda, a collection of over 2000 pieces of propaganda presented to the Peace Conference by the delegations at Paris.

One of the most important sections of the library is the archive section which contains the records of the international conferences and congresses dealing with the economic, social and political aspects of the war and postwar periods, such as The Institute of Pacific Relations, 1925-27. The publications of other miscellaneous organizations and societies include the principal

publications for the war period of over six hundred societies in the belligerent and neutral states.

In this library there is a selected collection of books and pamphlets of all countries and in all languages, dealing with the social, economic and political aspects of the war and reconstruction. Newspapers are represented in the library by complete files for the war period of all important newspapers of the leading countries of the world.

Some of the interesting and important personal memorabilia and diaries have such restrictions put upon their use that in many instances the library is not permitted to announce that the materials are in its possession. These will not be available for public perusal for many years.

The library is constantly adding to its archives through the generosity and interest of governments and through exchanges. In the field of international research, the Hoover War Library stands as one of the greatest contributions to research workers in social sciences. Its value for historians of the World War is incalculable since it contains information that can nowhere else be found. The archives in this library containing World War records no doubt will be of special interest and help to those who are designed to compile for publication the official records and maps relating to the proceedings of the military and Naval Forces of the United States in the World War, which was authorized by Joint Resolution No. 34 of the 71st Congress, introduced by Hon. A. Piat Andrew, Representative from the State of Massachusetts.

REGIMENTAL NOTES

Second Field Artillery (Pack, 75 mm. Howitzer, Model M-1)

ROSTER OF OFFICERS

Lt. Col. Ned B. Rehkopf
Major Gordon H. McCoy
Capt. John Van D. Hume
Capt. Schaumburg McGehee
Capt. John C. Johnston
Capt. Ross B. Warren
Capt. Henry E. Tisdale
Capt. Armand S. Miller
1st Lieut. John L. Shea
1st Lieut. Robert O. Montgomery
1st Lieut. William C. Huggins
1st Lieut. Raymond G. Miller
1st Lieut. Louis B. Ely
1st Lieut. Robert S. McClenaghan
1st Lieut. Donald Q. Harris
1st Lieut. John M. Whistler
1st Lieut. James H. Leusley
1st Lieut. Harold D. Kehm
1st Lieut. Harry M. Roper
1st Lieut. Harvey K. Palmer, Jr.
1st Lieut. Robert C. Lawes
2nd Lieut. Richard W. Mayo
2nd Lieut. Richard K. McMaster
2nd Lieut. Samuel P. Collins

En Route to Join

Major John B. Wogan
Captain Earl A. Hyde
1st Lieut. Charles H. Day
1st Lieut. Roswell B. Hart
1st Lieut. Conrad G. Follansbee

RUMORS that are always more or less prevalent in the Army occasionally prove true; and so it was with the rumor current for the last two years that the Second Field Artillery Battalion was to be reconverted to Pack from Portée after a three-year try out of the motor equipment in Panama.

In the middle of February, 1930, while the battalion was in camp at Corozal, orders were received for the immediate conversion. The new Model M-1 Pack Howitzer was designated as our armament, with Phillips pack saddles to be supplied at a later date and the immediate issue of the old aparejos.

A schedule for the shipment of remounts was worked out and the Remount Service issued orders for the purchase and assembling of the animals at the ports of embarkation to fulfill this schedule.

This meant, of course, that we were making our final appearance in the role of Portée Artillery and therefore great efforts were made to show our worth in the Department Transportation Show. In this we had great success taking the following prizes:

HEADQUARTERS BATTERY:

1st—GMC Light Truck
1st—Standard B Cargo Truck
1st—5 and 10 Ton Tractor

BATTERY "A"

1st—Artillery Section

BATTERY "B"

2nd—5 and 10 Ton Tractor
2nd—Artillery Section
4th—Push Cart

BATTERY "C"

4th—Standard B Cargo Truck

The maneuvers planned by the Department and Division Staffs had to be seriously curtailed for two reasons. First there was a serious outbreak of a communicable disease among the native horses in the interior which spread up to the Panama Canal farm at Miraflores West. This made it impossible to take any animals across the Canal or into the interior. In the second place the authorities felt that the heavy equipment of the Field Artillery would damage the improved roads to too great an extent. Thus the two principal arms to be represented on the maneuvers were greatly curtailed in their mobility and all plans had to be changed.

The one hundred mile marches prescribed by War Department orders were held. The dismounted units of the Infantry crossed the Canal and their equipment was sent by a truck train from the Artillery. The mounted units of the Infantry made a shuttle march from Paraiso to Panama City, retracing their route until they had covered a hundred miles. Department Headquarters shortened the march to be taken by the Artillery to fit the available unimproved roads.

Division and Department maneuvers were held on the Corundu Military Reservation and here again the battalion acquitted itself with credit.

On March the first the battalion entrained and returned to permanent quarters at Gatun and immediately thereafter entered upon a period of intensive labor in preparation for the coming change. Motor equipment had to be checked and prepared for turn-in and motor sheds had to be converted to stables in time to receive the first shipment of animals due from San Francisco on April twentieth. The Fourteenth Infantry

and the Fifteenth Pack Train, who had been occupying stables in the Artillery Area were to build new stables in the Infantry area and we were to repair their old ones for our own use in addition to converting our gun sheds. Little time and few men were available for drill. All that could be done was to prepare for and to hold the annual examination for gunners and to start the annual pistol practice.

On April the twelfth the first shipment of motor equipment left by barge through the Canal for storage on the Pacific side and further shipments followed rapidly so that soon only enough trucks and tractors remained as were necessary for use in the construction work. Guns were retained to carry on the gunners' examination as fast as possible.

Company "A" of the Eleventh Engineers came over from Corozal in the middle of March to lend a hand in the construction and many of our men were soon on duty with this unit actively engaged with pick, shovel, hammer and saw.

Such was the spirit displayed on the part of all that by April the twelfth when the Transport Kenowis arrived in Cristobal with the first shipment of animals, space was available to care for all of them.

This shipment, consisting of four bell horses, forty riding horses and thirty-six pack mules, was unloaded at the docks in Cristobal and the animals led out to the stables.

All the animals were in excellent shape after their sea voyage. The horses, all of the Philippine type, were first class and have responded well to their training. The pack mules are excellent specimens and the battalion is looking forward to the next Department Show with the feeling that many a ribbon is to be won by our prize mules.

We are now face to face with our biggest problem. For three years the battalion had been motorized, most of the old pack men have departed for other organizations, and the whole battalion, including some of the officers, were thoroughly impregnated with grease and gasoline. This meant we were in the position of the man who went to the riding academy and asked to be taught to ride, stating that he had never ridden. The instructor said that was fine as the horse had never been ridden and therefore the two of them were starting off even. So it was

with us, our horses were all remounts and our soldiers carburetor experts so that the men had to learn to ride while they were teaching their horses to be ridden. Fortunately there was a small nucleus of men with mounted experience and not a few transfers from other mounted units in the Departments, so by concentrating these men at the key points the instruction was soon going along nicely.

The Battalion Commander prepared a schedule to be followed by all units with the view of training the animals to be quiet from the first. No animal was allowed to be taken beyond a certain point by a certain date, with provision being made for an awkward squad for any animal not keeping up with the group. Great stress was put upon individual work so as to accustom the animals to work alone and to cure any tendency toward being herd-bound.

At the present writing this schedule has been in effect about one month and results have clearly shown the wisdom of making haste slowly, for every animal has responded to the treatment and all animals are used in their proper capacity daily. No animals have shown any tendency toward viciousness.

Recently the Kenowis made another trip and left behind another shipment of animals, thirty-six draft mules for the Service Station and fifty-four pack mules. The older animals will continue with their training and the new animals started along the same schedule and it is believed that the results with this shipment will be gratifying.

On May the first this battalion was redesignated the First Battalion, Second Field Artillery instead of the Second Field Artillery Battalion, and all personnel transferred in rank and grade. Along with this came new Tables of Organization increasing the enlisted strength from four hundred and forty-five to five hundred and fifteen.

Of the six hundred animals to be assigned to the battalion three hundred are to go to Headquarters, Headquarters Battery and Combat Train which has an enlisted strength of one hundred and twelve, from which must be deducted the necessary headquarters personnel so that the prospects for lots of grooming in that organization are excellent and all artists with the curry comb and brush are welcomed by the Battery Commander.

IMPERIAL PRECEPT GIVEN TO THE JAPANESE TROOPS

TRANSLATED BY 1ST LIEUT. MILLARD PIERSON. F.A., D.O.L.

(This precept was given by His Majesty the Emperor on January 4th, the 15th year of Meijii (1882 A.D.), when the new Japanese Army and Navy were in the process of construction. It was published five years after the civil war, known as the Satsuma Rebellion, and twelve years after the China-Japan war. Ever since, Japanese officers and men have kept the precept and proved themselves observers of it in peace as well as in war. This precept has become to their soldiers what the Scriptures are to religious believers.

As far as the translator knows, there has been no proper English translation of this precept,—the one that appeared in the Journal of the Royal United Service Institution (London, Nov. 1905) being a very free translation much condensed. In the present translation we have tried to be more true to the original, but we greatly fear that we fall short in bringing the profound sense of the original; we offer it with the hope that it may serve to illustrate some features of the fundamental doctrine held among the troops.—TRANSLATOR).

THE troops of Our Empire are to be under the command of the Emperor for all ages. Since the days when the Emperor Jimmu, taking personal command of the Otomo and Mononobe families, subjugated the unruly tribes of the Middle-Country, and ascended the High Imperial Throne to reign over all Under-the-Heaven, more than two thousand and five hundred years have passed. During these years, changes in the military organization have often taken place, in accordance with changes in the state of society.

In ancient time, the Emperors commanded the troops in person. This authority was at other times delegated to the Empresses or Crown Princes, but not as a rule to any of the Emperor's subjects. In the Middle Ages, the civil and military institutions were all reformed in imitation of the Chinese ways; Six Guards were created, the Right and Left Horse-Departments were established, and the system of the Frontier-Defenders was founded. Though the military organization was thus better regulated, the prolonged state of peace weakened the power of Imperial Government and gradually the soldiers became distinct from the farmers and the conscription system of old gave way to the system of the fighting class, resulting at last in producing Bushi or the Military-Caste. Then the command of the men-and-horses became centered in the hands of the chiefs of these Bushi, and after the disturbances prevailing in the Empire, the political power was also seized by these chiefs, and for nearly

seven hundred years a government of militarism continued. Though these were the unavoidable tendencies of that time, it was a condition deeply lamentable, for it was antagonistic to Our national-principle and was in conflict with the institutions founded by Our Ancestors.

As time went on, and it became the period of Koka* and Kayei†, the Tokugawa Shogunate lost its authority and moreover the pressure of the foreign powers became threatening, to the no common anxiety of Our Grandfather the Emperor Ninko‡ and Our Father the Emperor Komei§, which fact We recall with grateful but sorrowful recollection.

When We, being still young, ascended the Imperial Throne, the Shogun restored to Us the political power and all the Daimyos and Shomyos returned Us their clans, so that in a few years, all Our domain within-the-seas has been unified and the old institutions have been reestablished. No doubt, We owe this restoration to the service and help of Our loyal and able officials, civil and military. We owe it likewise to the abiding influence of Our Ancestors' benevolence toward the people in past times. But it would have been impossible had not all of Our subjects been imbued with the principle of right and wrong and felt the weight of the grand national doctrine.

Under these circumstances, being desirous to renew Our military organization and enlighten the glory of Our Empire, We have established in these fifteen years the present system of Our Army and Navy.

We declare hereby that the military authority is in Our Hand and, though various commands are entrusted to Our subjects, the great center of authority shall remain in Our hands and shall never be left with any of Our subjects. This principle shall be adhered to by Our sons and grandsons, and Let Us hope that the Emperors will hold the grand authority both civil and military, so that the lamentable state of affairs of the Middle-Ages and after shall never recur.

We are the Grand-Marshal of you, Our Soldiers. We,

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* (1844-1847 A.D.)

† (1843-1853 A.D.)

‡ (Reigned 1817-1846 A.D.)

§ (Reigned 1847-1867 A.D.)

trusting you as Our limbs, and you, regarding Us as your head, shall be very closely united. Shall We be able to protect Our Empire and prove Ourselves worthy of the blessing of Heaven or not? It entirely depends on whether you soldiers will do your duty or not. If the glory of Our Empire be dim, you soldiers must share in Our sorrow. If Our Military glory becomes resplendent, you soldiers will share in Our honor. If you remain always dutiful and, in accordance with Us, do your best for the protection of Our Empire, all of the people of the Empire will long enjoy the blessing of peace, and the dignity of Our Empire will be regarded as a glorious light in the world. As We expect so much of you, We charge you to keep in mind the following articles of this precept of Ours:—

1. To be loyal shall be the first duty of a soldier. No doubt every inhabitant of Our Empire is imbued with the spirit of serving the country. But a soldier especially, if not strong in this spirit, will be of no value. Be he an expert in arts and sciences, if weak in his willing service to his country, he will be no more than a doll. A troop may keep good order and discipline in its rank and file, but if not wholly loyal, in case of need it will be no better than a mob. As the protection of the Empire and the maintenance of Our national authority depend on the military force, you must realize how the welfare of the Empire is closely related to this force. You must not be misled by the various opinions of the age, neither must you meddle with politics, but be loyal before all else and know that right is weightier than mountains and death is lighter than a feather. Violate not fidelity, fall not into faults, but preserve your names from dishonor.

2. A soldier shall be polite and respectful. From a marshal down to a private, there exists various ranks among the soldiers. Even among those of the same rank, there are differences in length of service, and the juniors must be obedient to the seniors. The order of one above you must be regarded as Our own direct command. To all who are higher in rank and to your seniors, whether you serve under them or not, you must be respectful in every way. The higher likewise must never treat the lower with despite and pride. There may be public occasions when you must maintain your dignity, but on all other occasions treat your

juniors with kindness and love. Let all officers and men be of one accord in serving the cause of the Empire. If soldiers violate decorum and lose unity and harmony among them either by disregarding those who are above them or by ill treating those who are below them, such must be regarded not only as the enemies of the troops, but also as unpardonable sinners against the Empire.

3. A soldier must strive to be brave. As, from the early days, bravery has been highly respected in our country, every subject of the Empire must be a brave one. Especially a soldier, whose duty is to meet the enemy in war, must not depart from bravery even for a moment. However there are two kinds of bravery:—Great-bravery and Small-bravery. To be driven by rashness and to behave in an unruly manner cannot be considered as brave. A soldier shall cultivate the habit of thinking clearly, keeping presence of mind and planning for all details carefully. Despise not an inferior enemy, fear not a superior force, but under any circumstance perform your military duty,—this is the true Great-bravery. Those who respect bravery, then, shall in their daily intercourse with others try to be mild and peaceable and gain the love and respect of all. On the contrary, if you display useless temerity and act ferociously, you will be feared and hated by the people as brute beasts.

4. A soldier shall observe truthfulness (Shin-gi). It is but the ordinary duty of all men to be truthful; and a soldier, if not truthful, cannot remain in the ranks even for a day. The word "Shin" means the harmony of word and action, and "gi" the doing of your own duty. If you care to perform "Shin-gi," you must first think carefully as to whether the matter is practicable or not. If disregarding this, you make promise rashly to do something indefinite and vague and put yourself under some useless obligation and try to remain true to such promise afterwards, you may find yourself in a strait and regret it in vain. Therefore think first clearly of the reasonableness or unreasonableness of the matter, and if you arrive at the conclusion that it is impracticable you must stop it at once. Unfortunately there have been many examples in history of heroes or men of ability who, in trying to keep fidelity to the letter, lost sight of the greater

principle, or, being confounded by private friendship, failed in the performance of public duties thus falling into misery or destruction, bringing dishonor even to their posterity. You must guard yourself most carefully in this respect.

5. A soldier shall follow a simple life. If you live contrary to this rule, you will soon become weak in spirit, trifling in manner, luxurious and extravagant in living, and finally selfish and stained and so low-minded that even loyalty and bravery will be of no use. If so, you will be held utterly contemptible in the eyes of the people and incur more than lifelong misfortune. If luxury once takes root among soldiers, it will spread like an epidemic and morale and war-spirit will decidedly and instantly fall. We greatly dread this and lately have issued a Regulation for Punishment and Dismissal, in order to guard against this vice. Still We feel no small anxiety for the spread of this bad habit and hereby caution you again on this very subject. You soldiers must pay careful attention to this instruction.

The above five articles must always be kept in mind by all soldiers. In practising them, however, what is most important to you is a faithful spirit. These five articles are the spirit of all soldiers and faithfulness is the spirit of the five articles. Unless you are faithful in spirit, all good words or good conduct will be nothing but vain outward show. Being faithful in spirit, you can perform everything. Moreover, these five articles are the public ways of Heaven and Earth and the common rules of human life. It is easy to keep them and carry them out. If you soldiers will obey Our precept, keep these rules and carry them out and do your duty of service to the Empire, you will give Us pleasure and gain the gratitude of the nation.

POLO

EIGHTY-THIRD FIELD ARTILLERY POLO TEAMS

DURING the past intra-mural Polo season at Fort Benning the 1st Battalion, 83rd Field Artillery, by hard work, efficient cooperation and exceptional team play established on the polo field, a record that may well be the ambition of any separate battalion.

At the beginning of the season, August, 1929, this battalion faced the following obstacles:—

First: The Artillery had never won a Senior Tournament at Fort Benning.

Second: The Battalion could boast of but one Government pony good enough to substitute on the Post team last summer. A total of eight Government ponies plus some private mounts formed the nucleus around which to build. The organization was unable to requisition remounts.

Third: No Artillery players were chosen for the Post team last summer and the Post team members were to play on the opposing teams, two of them with the last year's champions, the Freebooters. The Post team won the Southern Circuit and competed in Chicago last summer in inter-circuit and twelve goal championships.

Fourth: Every other team could count on a nucleus of really top ponies.

To offset the above disadvantages the Battalion had gained two players of experience and six private mounts; however during the season they lost four private ponies and two players were unable to participate in the tournament, which partially neutralized the advantages gained.

Realizing at once the advantages of our opponents and knowing the keen competition that could be expected, The Artillerymen decided to start early and work hard.

Accordingly in August a new polo Constitution was drawn up to govern polo within the organization. Major F. K. Ross, the Battalion Commander, was made polo representative with power to appoint a polo manager, the polo representative and

polo manager to be the polo committee with power to act on all matters pertaining to play and selection of players for teams and assignment of ponies. Lt. H. D. Baker was appointed manager, his main duties being coaching of players and advising them on development of ponies.

The entirely successful season was due to the leadership, loyalty and zeal of this committee.

Work was immediately started on every horse in the battalion that even slightly resembled a polo pony. August being an extremely hot month at Fort Benning, the training period was set at 5:00 A. M. to 6:45 A. M. Twelve officers out of our total personnel of seventeen turned out regularly for the training and schooling of these ponies. Including private mounts this original string consisted of fifty-five horses. A practice field was built using the log slabbing from the saw mill for side boards. This schooling lasted until about September 15th, at which time the string was cut to thirty-eight ponies and the training period changed to 3:30 P. M. This reduction left each player with three ponies.

From September until January polo meetings were held each Thursday evening by the polo manager. During these meetings team and position play were discussed from all angles and concrete examples used to make the points clear. These meetings constituted a real factor in cooperation and soon all officers of the battalion attended regularly.

The intra-mural season started early in October. By this time the Eighty-Third had two equal teams fairly well mounted (but most ponies were still green) consisting of eight players, all of whom had previous polo experience and a third team composed of new players, who were doing their part. The Artillerymen had at this stage of the game a jump on all opponents who had started their practice late in September. During October, November, December and January all players were tried out at different positions on the team. Even through this interchange of players, positions and teams the Artillerymen succeeded in winning all games played throughout the season at this station by from one to twenty goals.

The battalion's first team was selected about February first.

From then until the last Senior Tournament game, all ponies were turned over to the first team. All private ponies in the battalion were turned over to the first team, a condition that shows clearly the spirit of cooperation existing within the battalion. For the Junior Tournament, which occurred just after the Senior Tournament, the same ponies were available for the second team.

The green ponies that came through the long season were by this time in fine condition and played the game with the experience and handiness of our old ponies. The battalion only used three ponies of the original nucleus, not counting private mounts, in the final game.

The Junior team which the battalion had counted all year on being composed of four experienced players received several severe shakeups. At the approach of the tournament Lt. Shirley Hurt was ordered to V. M. I. and the next most experienced player Lt. Foster received a severe injury during a practice game. These unforeseen events placed Lt. Dawson, a player developed this year, on the Junior team; how well he did his part can be seen from the results of the games.

The tournaments games lineup and scores were as follows:—

SENIOR TOURNAMENT

(1) 29th Infantry	HCP		Students	HCP
Capt. Halloran	0		Lt. Hill	0
Lt. Skelton	0		Lt. Caranouche	0
Lt. Jacobs	3		Capt. Tuttle	0
Lt. Strickler	0		Lt. Van Houten	1
Final Score	7	to		2 (1 by Hcp)

(2) 83rd F. A.	HCP		Freebooters	HCP
Lt. Baker	0		Lt. McFayden	0
Lt. Murphy	2		Capt. Toole	0
Lt. Baker	3		Maj. Thompson	2
Lt. Bartlett	2		Capt. McClure	2
Final Score	17	to		2 (by Hep)

(3) 83rd F. A.	HCP		29th Infantry	HCP
Lt. Baker	0		Capt. Halloran	0
Lt. Murphy	2		Lt. Skelton	0
Lt. Baker	3		Lt. Jacobs	3
Lt. Bartlett	2		Lt. Strickler	0
Final Score	10	to		6 (3 by Hep)

SENIOR TEAM, 1ST BN., 83D F.A.
LEFT TO RIGHT: 1ST, LT. H. E. BAKER; 1ST LT. J. B. MURPHY; 1ST LT. H. D. BAKER; CAPT. H. J. GUERNSEY

JUNIOR TEAM, 1st BN., 83d F. A.
LEFT TO RIGHT: 2D LT. J. T. DAWSON; CAPT. H. J. GUERNSEY; 2D LT. H. Y. GRUBBS; 1ST LT. M. BUCKLEY

JUNIOR TOURNAMENT

(1) 29th Infantry vs. Freebooters

	HCP		HCP
Maj. Taylor	1	Lt. Royce	0
Lt. Trent	0	Capt. Mallan	0
Lt. Hedekin	0	Maj. Lyman	2
Lt. Wharton	0	Capt. Sweet	0
Final Score	6 (1 by Hep)	to	5

(2) 83rd F. A. vs. 24th Infantry

	HCP		HCP
Lt. Dawson	0	Lt. Mood	0
Capt. Guernsey	2	Lt. McKnight	0
Lt. Grubbs	1	Capt. Brian	0
Lt. Buckley	1	Capt. Curtis	0
Final Score	15	to	5 (3 by Hep)

(3) 83rd F. A. vs. 29th Infantry

	HCP		HCP
Lt. Dawson	0	Maj. Taylor	1
Capt. Guernsey	2	Lt. Trent	0
Lt. Grubbs	1	Lt. Hedekin	0
Lt. Buckley	1	Lt. Wharton	0
Final Score	11	to	6 (2 by Hep)

The Freebooter team was unfortunate in having two players, Major Lyman and Captain Gee, injured just prior to the tournament which kept them out of the play and greatly reduced the strength of their team.

It is obvious from the above scores that both Red Leg teams were outstanding in their respective tournaments. The Artillery Battalion scored from scrimmage in these two tournaments fifty-three goals to their opponents nine. These decisive victories far exceeded the happiest dreams of the Artillerymen at the start of the season and are a just reward for the hours spent in making it possible.

The results of this successful Post polo season, so far as the Artillery is concerned, is due to two main factors, both of which are necessary in any line of endeavor, namely: hard work and intelligent cooperation.

Although the intra-mural polo season is the main topic of this article it may be of interest to the reader to know that Fort Benning, the home of the Infantry School near Columbus, Georgia, is famous, and justly so, for all forms of athletics and outdoor sports such as hunting (both with gun and pack), fishing, riding, horseshows, etc.

General Campbell King, the Commandant of the Infantry School, is an enthusiastic supporter and spectator of the sports which help to make service at this station pleasant for the officers and enlisted men and their families.

U. S. FIELD ARTILLERY ASSOCIATION TROPHY AND REPLICA

On May 13, 1930, the Executive Council of the U. S. Field Artillery Association authorized the purchase of the cups shown above "to be competed for annually in a military riding or jumping event, open to cadets only, at the West Point Horse Show."

WAR BUGS

BEING A WORM'S-EYE VIEW OF THE WAR TO END WAR

BY CHARLES MacARTHUR

Formerly Private Second Class Battery F, 149th F.A., 42d (Rainbow) Division, A.E.F.
Pictures by RAYMOND SISLEY, Formerly of Battery C, 149th F. A.

By courtesy of Liberty Magazine

IT WAS getting late in October. Meanwhile new divisions crept in under cover of night, big naval guns were hauled up, and soldiers were packed in every shell hole and valley like sardines. The last great battle of the war was impending.

Here it was October, a good month for oysters, football, forest fires, and everything but war. General Summerall (from whom all blessing flew) had shoved us up again, right into the gold teeth of the German army.

Just for fun, we were parked on the back of a greasy little hill in front of Sommerance, difficult enough for little feet, let alone guns. In time they were placed and pointed at the foe, just as the foe started some roughhouse stuff that nearly sent us to the cleaner's. Shells skimmed over the crest fifty at a time, followed by

gas, shrapnel, and stray machine gun bullets. The Heinies threw everything but their shoes. For a while nobody was safe.

A break, however. The ground was soft as Camembert. In ten shining minutes we were four feet under, guns and all. Thereafter we sat in the gluey mud and silently explored our bosoms for agile gray pests. Conversation had about died as a form of entertainment, especially as any repartee involved poking one's head out of the flop into a whining cyclone of steel splinters. We were too close for effective fire (there was some talk of throwing our shells by hand) and it was raining. And it was cold. And there had been no rations for five days.

Behind us were the reserve machine guns, adding to that unpleasant first line trench feeling—particularly when some snake-brained Yank accidentally leaned on his weapon and threw a bucket of bullets past our ears. Over the hill—if the lump of lard on which we were perched could have been called a hill—lay the doughboys and Germans; quite visible, if one cared to look. By that time, however, Germans were no treat.

The front was lousy with men. Every wood and templed hill bulged with U. S. citizens, itching to bust loose. Our old pals the marines came up and had a chair. They were assigned to relieve our badly battered infantry, which nearly precipitated mutiny.

We had been hacking away at this particular front for quite a while. Now, with all the artillery in the world massing—enough to blow a beautiful boulevard clean to Berlin—our boy friends were being yanked out and the marines were about to cash in on their chips. We memtioned this to various groups of Devil Dogs, with the usual results. Several of us got a brisk little workout before the actual battle started.

It was slow coming, that battle. Evidently G. H. Q. was taking no chances. The veined roads, empty by day, teemed at night as more and more and still more Americans boiled up to the front lines and hung up their hats. Whatever happened, it was sure to be the biggest gate in history.

For three days we held fire while the Germans pegged away at everything they saw: Americans, trees, *Chocolat Ménier* signs, and barn doors. They were war crazy, those boys. Shells for breakfast, lunch, and dinner; and all night long the strange

I wish that General Pershing had this pair of pliers on his nose

slither and slap of poison gas. The green wisps inched along the ground in the milky moonlight, fingering the sleeping caballeros, bringing us to our knees in the mud as we clawed at our masks. Sometimes we wore them for eight hours at a stretch, staring at each other through dirty bits of glass, chewing on stale rubber hose, and thinking long, long thoughts.

Sample:

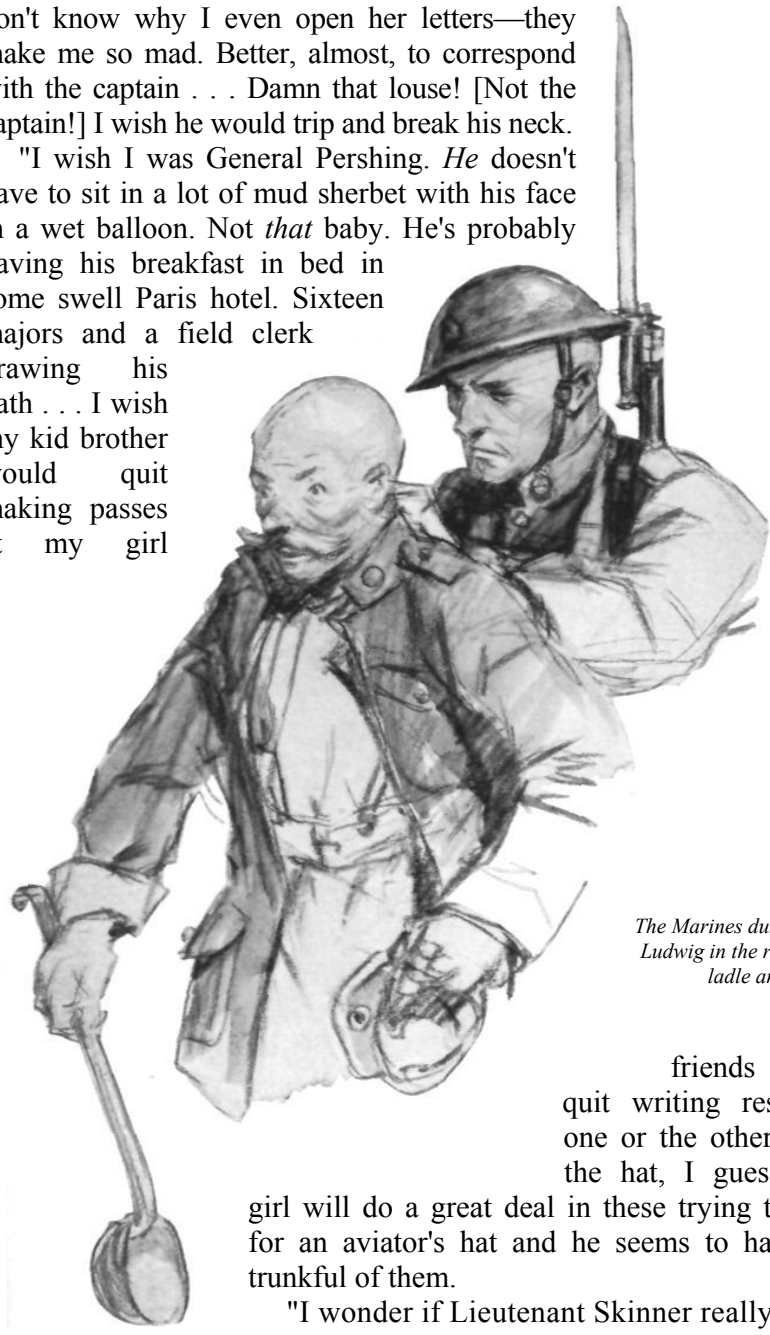
"Four hours of this is entirely too much. I wish I'd joined the navy. Those boys got it soft, all right. Nice soft hammocks. Hot baths. Elegant food. It's a wonder more of them aren't sissies. A lot of them are, or maybe it's just the hats that make them look that way.

"I would rather be shot than wear a gob's hat, with all those ribbons on it. They probably wear elastic under their chins when soldiers aren't around. . . . I wonder if I got any letters on me? Oh, for the love of God—there's that ten page la-de-da from Ruth. All sunshine, she is. I wonder why she doesn't go to night school and learn longhand, or buy a typewriter, or break her arm. Blah, blah, blah, blah, and 'we had such a *wonderful* dance on board Lionel's boat. It's a subchaser.'

"I would hate to tell what I think anybody named Lionel is. I

don't know why I even open her letters—they make me so mad. Better, almost, to correspond with the captain . . . Damn that louse! [Not the captain!] I wish he would trip and break his neck.

"I wish I was General Pershing. *He* doesn't have to sit in a lot of mud sherbet with his face in a wet balloon. Not *that* baby. He's probably having his breakfast in bed in some swell Paris hotel. Sixteen majors and a field clerk drawing his bath . . . I wish my kid brother would quit making passes at my girl friends or quit writing results, one or the other. It's the hat, I guess. A girl will do a great deal in these trying times for an aviator's hat and he seems to have a trunkful of them.



The Marines dumped Ludwig in the ranks, ladle and all

"I wonder if Lieutenant Skinner really

said he wouldn't speak to his brother if his brother was a private? You can never believe Quisno.

"I wish I would get a letter from Alice. I'd write her if I knew how to spell her last name. It's my fault, only you can't ask a girl you've known for two years how to spell her last name. It could be Walz or Walls or Wauls or Wallace—I wouldn't know. She certainly was an elegant dish of beans. . . . .

Most of the mail revealed that our girls were getting married to naval ensigns in droves, or were giving lawn parties for second lieutenants

"Five hours. This is a lot of hooey. I wish that General Pershing had this pair of pliers on his nose. Maybe we'd get somewhere. . ."

And so on. Besides the monotony of gas, there was more or less starvation. All the boys we could spare prowled the neighboring ration dumps, but with little or no luck. Even the amateurs had learned to watch their chow, although Porch Climber was successful in pinching a sack of bread from a marine detachment. Another raid yielded a pail of bacon grease, and for three days we lived by painting the bread with grease and frying it on a rusty field stove. The result was entitled French toast.

In the middle of a long gas attack Jack Bayless, Johnny Foster, and Roy Gullickson thought up some witticisms to yell at each other and momentarily removed their masks. Hospital. Clean sheets. Pretty nurses. Sam Katz smuggled us some Swiss chocolate and God rewarded him. He had scarcely left his billet in Sommerance on his errand of mercy when his town house was knocked cockeyed.

Everybody longed for the battle to begin, feeling that it would mean food, anyhow. German prisoners invariably were well heeled with such items as salmon and hardtack, not to mention a coffee substitute that tasted like Bull Durham. It was part of their efficient training never to nibble at reserve rations—a rule that frequently saved Americans from starvation.

Two more days passed—dull days, during which we lay low in the mud and spoke bitterly of the war. No war is fun when you get a cold mud pack with every exploding shell and skies are dripping ice water. Water was a foot deep in some of the flops, and the boys were beginning to cough.

Meanwhile the mysterious tension of impending battle began to mount. The Germans felt it and sent over a tornado of shell that about used up the entire Krupp output for 1916, '17, and '18. It got on our nerves, especially as we had to desert our flops twice a night and dive like seals into the deeper, colder, and damper trenches besides the guns. So it was a great relief when Captain Stone announced, on midnight of the 31st, that the attack would commence at dawn.

In the last patriotic outburst of the war, the cannoneers banded

together and agreed to stick to the guns through pneumonia, gas and mortal injury. We were so short-handed that every man was indispensable. Following this Episcopalian double ring ceremony, a courier galloped up with mail and thirty-six bars of chocolate—a neat touch of drama.

Letters were distributed by candlelight, shielded by the top's helmet; and the gloom of the gentlemen who had been overlooked would have made a general weep. We held matches for each other until all the mail was read. Most of it revealed that our girls were getting married to naval ensigns in droves, or were giving lawn parties for second lieutenants. Several correspondents cracked jokes about cooties—and what a word that is! All in all, it was the most discouraging mess of sweetness and light ever dished out.

Toward morning we split up the chocolate, sadly ate it up, and posted ourselves at the guns. Again we swore that we would stick in real Zouave fashion. The captain squeezed our hands with real affection, implying long good-bys. There was an excess of sentiment all around. If the attack had been postponed another day we would have been playing post office and kiss the pillow.

The shadowy tanks dipped along in the misty moonlight. (So many had never reached first base at St. Mihiel.) Behind them the doughboys, a slow, murmuring river. The night became grayer and grayer, and at last was ripped open by 10,000 cannon.

The old and pretty picture followed. Fountains of red, white and blue spray as more and more rockets rushed upward from the German lines. White hot shells splashed like comets across the sky, while the sheet lightning of thousands of cannon made the surrounding hills and woods look like something in a flickering 1905 movie.

Almost at once the Germans found us with a couple of batteries, and a dozen hissing white bursts plopped in and about the gun pits every minute—on the minute. We were still holding fire until such time as the doughboys ran the Germans into effective range. So we ducked and dug, and wondered how in

hell we were going to fire with a million chunks of steel fluttering around like lame pigeons.

Our own heavies opened up. The incoming shells began to skip a beat, then another, until they dwindled to three or four a minute. As well as if we had been there, we knew that three miles away several German gunners had gone to heaven. Also that we would not be likely to join them for quite a while. It is usually the first ten minutes of battle that inclose the sad fate of an artillery outfit.

Dawn limped over the horizon. We stood by as Captain Stone fingered his wrist watch and cursed his current dog robber for stealing his secret supply of coffee.

Directly in back of us the reserve machine guns broke out with unexpected clatter. They were less than a hundred yards away, and the bullets clipped close, hissing like steam. A good high jumper would have come down in six pieces. So close and unseemly was the barrage—intended to precede the doughboys—that a lieutenant mistook it for enemy fire and slid into the second flop faster than an African puma, calling on one and all to take shelter and sell their lives as dearly as possible.

We had been swapping eating tobacco with the machine gunners all afternoon and knew what was going on; but there was so little fun those days that we had to make the most of everything. So Buck Somers and Jack Walsh increased the lieutenant's distress by firing their forty-fives over his little cave and yelling loudly in bum German. The captain put a stop to the fun by ordering us to load. In three seconds we were slinging the wickedest barrage of the war.

It lasted eleven hours. Load and fire, load and fire—fire, fire, fire! Tons of German shells smashed against our sandbags unnoticed as the monotonous rhythmic, slambang cadence kept up and up, a foot at a time. Judging from our ranges, we must have been on top of the *Landwehr*—so close, in fact, that our own shells occasionally cracked the top of the crest, 200 feet ahead, obliging us to duck our own damage.

The Heinies talked back a little. Incoming gifts blinked in the night and burst in the dawn, and Charlie Schell got a machine gun bullet in his shoulder. Faithful to our death pact, he stuck

the whole route, screwing fuses with his good arm until cease fire came down.

It was a slick barrage, much too good for the marines. Two guns fired high explosive, one shrapnel and one smoke; and up and down the entire front every battery was repeating the order with an extra cup of coffee. The murdering fire rolled forward like lava, stamping out everything in its path. Pieces of Germans hung from every standing tree, and the ground was plowed up real pretty. Even birds were killed.

Behind the rolling curtain of smoke and steel straggled the weary doughboys and marines, not so cocky as they had been earlier in the war, but still worth twice their weight in Germans. Or French. Or English. The Katzies were fighting hard and shooting everything they had—shells, rockets, buffalo nickels—but principally their lunch. A few slipped through the iron brooms and made a bee line for American hospitality and food. As usual, we frisked them for *Schnapps* and rations as they passed the guns.

One kiddie named Ludwig, a hungry looking Bavarian with a handlebar mustache, paused in his rush to the rear in the ridiculous hope of mooching a handout. Rations had miraculously arrived during the morning, and, by pointing at a side beef and rubbing his belly vigorously, Ludwig indicated that he was in a fair way of being hungry. It made no impression on us. We'd been starving for a week and were getting hard hearted.

But when Ludwig, in the course of watching us shoot up his countrymen, let on that he was a cook, it was a different matter. The little Greek had remained at the horse lines to catch up on his gambling, leaving the raw beef and sundries to cook themselves.

It was voted that Ludwig dish up lunch while we dealt out destruction. He got on the job with apple cheeked alacrity, and in half an hour produced a bean soup equaled by nothing in all the world. It was an exquisite soup, a pearl among soups, and confirmed our long standing hunch that our Mr. Papolis was a Greek chippy chaser who had obtained his cook's job under the falsest of pretensions. We guzzled a washtubful while waiting for the roast. And what a roast!

Accustomed as we were to fried boots and saddles anointed with Greek perspiration, this beef, delicately pink and tender, was as unexpected as squab. We embraced Ludwig and asked him if he would consider joining the American army at $100 a month, the same to be chipped in by members of the battery. Ludwig was intoxicated with joy, and generously offered to join up for nothing. As he made his *beau geste,* he ate a sparerib, bones and all.

A few marines passed by, shepherding 200 prisoners. They gave Ludwig a bad eye. Instantly alarmed, we shed our khaki blouses until we found one of Ludwig's approximate size, and crowded him into it. There was no use taking chances with a good cook.

Ludwig was delighted with the change and asked for a monkey hat. By 4 in the afternoon he was as upstanding an American as you would want to see anywhere. By 5 o'clock he was beefing about General Pershing and demanding (in German) why we didn't get real rations, like the regular army. With the exception of field gray pants and black knee boots—for which we had no substitutes—Ludwig was as American as a stack of wheat cakes.

We complimented him on his citizenship and hoped that he would do something extraordinary in the way of dinner. Ludwig stated that we could cut off his ears if he didn't produce the most elegant repast we had ever punished, hinting darkly at *Apfelkuchen, Kartoffel,* and *Schweinfleisch,* all to be real home cooking.

As he drew plans for the meal, the Greek appeared, bulging with francs. He was imediately put on kitchen police amid terrible yowls. We had a maestro on the job and intended to keep him there.

But man proposes and God disposes. We were still firing, late in the afternoon, still running the Heinies bowlegged, when another batch of prisoners came by, escorted by a still surlier mess of marines. In the midst of his housework, Ludwig spotted a Bavarian boy friend named Willie, and couldn't resist rushing out to the road and waving a greasy ladle. He had gained nearly twenty-five pounds since morning.

He called Willie's attention to this, and urged him to join the U. S. army, where the war was something like it. The astounded and angry marines pounced like panthers, and dumped Ludwig in the ranks, ladle and all. As many of us as could leave the guns rushed to the rescue, but we were heavily outnumbered. The chances are that Ludwig was shot. We went back to our leather diet.

Cease fire came down shortly before sunset. Since early morning we had blown the Germans out of house and home. Our own casualties had been light, considering all the iron that had been skimmering around. Addie Moore had been gassed silly, but was able to serve the guns until the end. A shell had nearly torn Buck Somer's leg off. He did the heroic thing of asking for a cigarette, and then borrowed all the money in the battery for circulation in the hospital areas.

Our last range was the extreme limit of fire. It looked as if the Germans had swiped our slogan of "Berlin or Bust." We certainly were running them out of gas. It was grand to shed iron hats and gas masks and twirl a dream, as the handmade construction of cigarettes was called.

While Number One men doused the white hot guns, the rest of us slept or halted the long lines of German prisoners and prowled them for *Schnapps*. We felt so sure and safe and swell that we squatted by the muddy road and sang the prisoners a little song about the *Eisenbahn*, with many rude variations of our own. And suddenly above the sunshine and laughter came a disturbing, familiar sound. To be explicit, a forty-two centimeter shell seemed to be coming our way, when it had no business to be anywhere around.

At the first dull boom every Heinie and Yank in the road congealed into a handsome waxwork effect. The iron monster drew nearer at the rate of 165 miles a minute. The roaring became louder, more intimate and personal. A thousand human beings miraculously disappeared in ditches, shell holes, and latrines, as a large barrel of dynamite descended into an abandoned farm house and threw it up for grabs.

When we recovered from our start, we discussed the glowing future. Now we *would* get a rest, and probably one of those fourteen

day leaves they were always giving out—in the *Stars and Stripes*. We had been shooting people for nearly nine solid months, and looked like it. This time, we agreed, General Pershing would *have* to unbelt with a pass to Paris. So, as always, we were ordered to shut up, pack up, and keep going. And *like* it.

We moved out and ahead. It was raining again—in sheets. It came down with the force of Niagara, pounding on our tin hats, soaking into our marrow, blinding the horses so that they fell into every shell hole on the road. The carriage were swept off the road time and again.

The officers sloshed up and down dripping ranks, threatening smokers with death in many extraordinary forms. (The officers were getting silly by that time.) Those of use who waded after the column had fun during the halts wading up to the forward sections and calling out of the darkness that hated and universal query of the A. E. F.:

"What outfit, buddy?"

Wearily our poor soaked comrades would answer; whereupon the jokers in the shadows would play they were marines and twit the battery on its accomplishments in the war, adding many disparaging remarks concerning the regiment, the Forty-second Division, and the National Guard.

For a time the forward sections advised the supposed marines to button their noses, until the remarks got too personal, when they swore dejectedly, tied reins to their saddles, and dismounted sadly and with intent to kill. On discovering who their tormentors really were, they were so sore that they fought it out anyhow.

What a night, and *what* a night! Endless columns of German prisoners going slop-slop along the other side of the road, talking like tonsils, on their way to warm American beds, dry American clothes, and hot American food. We felt like kicking them in the pants.

Beside one German officer limped a beautiful police dog. Harley Tucker grabbed it. The German consigned his little pal to us with many tears. He said the mutt's name was Max, and that we should be very careful when we took the machine gun bullet out of his foot on account of Max being the greatest human being

in the world. We promised, and gave his owner a can of corn willie and fifty francs. The operation was performed on the spot. Max howled forward toward Germany.

Past Sommerance the moon went out entirely and the officers lost their way. The cannoneers took advantage of the wait to duck into a shack at the side of the road, safe from the roaring rain. Between cigarettes, talk turned to food, and everybody took a crack at inventing a suitable menu for our first dinner on American soil. It included sixteen kinds of soup, steak six inches thick (buttered), potatoes in every known style, beets, cauliflower, asparagus, squash, wheat cakes, several turkeys, chickens, cows, reindeer, and such edible animals as came to mind. The meeting broke up in disorder when Art Donnals discovered a crate of condemned beans. We were pretty damn hungry.

On Dead Man's Hill, near St. Juvin, a bread truck lay stalled on the road. The driver defended his load to the last, and then said he guessed it was all right anyhow, as the war was over. Three German envoys, he said, had come over the lines blindfolded to kiss and make up with Foch, Pershing, and Haig. We laughed heartily, and he got sore.

We were still laughing as we pressed on, our blouses stuffed with bread, and singing The Raggedy What Do You Call It Cadets—although the bread proprietor was more than half right, as it turned out.

At Thénorgues we flopped in a field and snored like generals, although our clothes froze to the ground. One hour's sleep and it was giddy-ap again. Some Y. M. C. A. secretaries overtook us at Buzancy in a swell automobile. One of them had the misfortune to laugh, politely—doubtless with good reason. Even Y. M. C. A. men have to laugh. Brick Bristol and Doc Evans interpreted the snicker as detrimental to our good name, and forthwith stopped the car. In gifted and bitter terms they told the boys off unmercifully.

Through Bar to Harricourt, where there were barracks—very lousy barracks, but barracks. The last ten miles had been a feat of somnambulism. We threw ourselves on the crawling wet straw, packs and all. The sandman came like a shot. So did a squadron of German bombing planes, and hammered and hammered

and hammered with wash boiler bombs. The barracks rocked like a rowboat in mid-Atlantic.

We rose on our elbows and waited for the aviators to let up, but they had no notion of letting up. Obviously, they were the same humans in fiend form who had incensed the A. E. F. by blowing up the co-educational center at Bar-le-Duc, killing three of the bonniest lassies who ever mistook a cigar coupon for a five dollar bill.

"My God!" groaned Harry Cureton, as one explosion blew in the doors. "I'll never feel safe till we're back in the front lines!"

By that time the Germans were taking the front lines back to Berlin at the rate of forty kilometers a day, and in our famished, exhausted state it was almost impossible to keep up. The horses were dying like flies, and men *would* have died had they had enough nerve.

Some of the drivers had been in the saddle so long that their legs, from crotch to instep, were caked with blood and cemented to their dirty pants. The cannoneers were worse off, if possible. (The condition of the horses forbade riding on the carriages.) The boys had scuffed through their shoes long ago, and the toes of several flopped out like frankfurters.

Everybody was sick, everybody was filthy, everybody was hungry and underweight.

It was impossible to leave Harricourt on our own steam, so the dying horses were cut out of the traces by nearly dying men, and the strongest of E and F batteries combined for a final dash. Everybody who could walk was in the parade.

Through Authe to Brieulles, where we caught up with the first wave of doughboys—now our own doughboys, under command of our own colonel, Hank Reilly. We were happy to learn that the doughboys liked him as well as we did. New York unbelted with food and coffee, and we swapped opinions of the war, as always. Our opinions always proved that (*a*) New York was the best regiment of infantry in the world, and (*b*) Illinois was the best artillery. Throughout the war it was New York and Illinois against the world.

At Les Petites Armoises we took position for the night on a soggy yellow mound. The horses were all in from painful detours

over dynamited roads. They couldn't make the grade up the hill.

Pappy Le Prohon appeared. He had been returned to us before the battle, and a happy homecoming it was, too. But now, at the defection of the horses, Pappy felt inclined to blame the drivers, and gratuitously announced that when he was a lead driver in the Philippines he could make horses climb palm trees.

The men were in a tough mood and withheld the usual applause at this old gag; whereupon Pappy pulled a driver from his saddle and undertook to eat his words. He socked the horse in the ribs, and emitted a geyser of loud Canadian French words sounding like cognac labels. The horse gently folded his legs and died.

It was a gesture so simple, so charming, so like what every one of us wished he could do, that we set up a loud cheering; which caused Pappy to burst important blood vessels, chiefly the ones in his neck.

Standing in the wet field, with shells bursting in air, he bawled at the top of his forty-two centimeter voice that:

1. He had been twenty-six years in the So-an-So regular army.
2. He was the best So-and-So horseman in the same So-and-So army.
3. He was now a First So-and-So Lieutenant, by Gar.
4. As such, he was entitled to shoot any So-and-So-and-So who laughed at him.
5. However, he was able and willing to kill everybody present with his bare fists, instead.
6. He was liable to lose his temper if we didn't watch out.

All of these statements were received with loud and enthusiastic cheers. Pappy blew up completely and screamed swear words that were nothing short of genius. The war stopped cold while we egged him on. Unquestionably he would have gone screaming, tittering nuts if Captain Stone hadn't intervened. And yet we loved Pappy. That's why we razzed him.

Eventually we scrambled into position and passed the night carrying ammunition from the horse lines to the guns and back again. For no reason. Nobody got a minute's sleep. And why

should they? The officers caught their usual eight hours. And why shouldn't they?

Before starting forward, the officers gave us a little talk. The command was forward, and to get anywhere we would have to strip down to the minimum of equipment, it seemed. Hereafter every item of equipment, short of harness and shell, would be carried on our bony backs. Orders.

The men yelled their hearts out, openly, loudly. Captain Stone was firm. In the end we said all the known words and threw out our trophies, our blankets, shelter halves, tent pins, mess kits, and underwear into the adjacent trees, reserving one wet blanket apiece.

The lieutenants tried to kiss in with the captain by quelling this perfectly natural demonstration, and heard plenty. Their shushing was a bit inappropriate, especially as we knew that *their* bedding—pneumatic and a foot thick—was in the supply wagon.

It remained there until the first halt, when we tied ropes from each blanket roll to the trees along the road. Again "Forward" came down. The sagging mules gave a tug. The fat rolls flopped out out the wagon, and with them all the German binoculars, French cognac, deviled ham, hair tonic, silk underwear, and other such curiosities peculiar to officers. What was sauce for the goose was tabasco for the gander.

When the rape of the blanket rolls was discovered, they set up a yodeling that beat ours by eights octaves and sixteen miles. It appeared that all their food had been stowed in the missing rolls, and they were hungry. We paid no attention, slugging away at the bed rock.

The more we laughed, the louder they yelled. Officers have no particular sense of humor. Their conduct at the loss of their bedding was only an indicator. The jokes they told and laughed at over their mess when the war was over established this lack beyond cavil or doubt.

Toward midnight Nick Richmond discovered four cans of salmon in a clump of German dead. Lieutenant Skinner smelled it a kilometer away, and drifted over with many soft words. They were as softly returned, but there was no handout.

THE CONDUCT OF WAR

BY MARSHAL FERDINAND FOCH, AUTHOR OF "THE PRINCIPLES OF WAR"
TRANSLATED BY CAPTAIN W. P. KERNAN, F. A., U. S. ARMY

PART II

EXECUTION OF THE PLAN OF WAR MANEUVRE

CHAPTER VIII—THE MARCH TO THE SAAR—FIRST ARMY

STEINMETZ, the Commander of the First Army, firmly believed, in accordance with information received, that the French were advancing against the German Second Army, which was in a dangerous situation, so he hastened his advance. He hoped by a flank attack to draw upon himself the thrust of the French main body which he supposed would cross the Saar.

He was just about to send out these orders when towards noon he received the following communication from Moltke, which acted as a damper to his enthusiasm:

"The postponement of the French invasion permits us to hope that on the 6th of this month the Second Army will be able to concentrate beyond the wooded region of Kaiserslautern.

If it is not possible to prevent a swift invasion of our territory the eventual concentration of the Second Army will be effected from behind the Lauter. The two armies will unite on the field of battle, the First Army operating through Saint Wendel or Baumholder.

His Majesty directs that the First Army concentrate on the 4th around Tholey.

The Third Army will cross the frontier at Wissemburg tomorrow, August 4th, with the idea of commencing a general offensive."

In this telegram two hypotheses were considered:

First, if the French definitely abandoned the invasion and the Second Army would be able to debouch without any trouble from the wooded region;

Second, if the French undertook a rapid offensive, the Germans would meet this offensive by a battle fought on the Lauter with two armies—the First and Second.

In either case the First Army was to concentrate at Tholey.

Let us discuss this arrangement. If the first hypothesis proved to be true, the decision taken involved no immediate difficulty.

It is the second hypothesis however which was feared.

"The enemy had been maneuvering for two days, and covered by the detachments stationed at Forbach and in front of Saarbrucken he had moved eastward in the direction of Saarguemines. This gave rise to the supposition that he was going to commence an offensive and advance on Kaiserslautern; thus it could be regarded as probable that he would meet the two armies around that place."*

The engagement at Saarbrucken seemed to change this possibility into a certainty. To meet this offensive two different ideas and two different methods of operating were conceived: that of Moltke and that of Steinmetz. From that moment there was a wide difference of opinion among the members of the German High Command, which even the most definite orders were unable to eradicate. First of all Moltke, on August 3rd at noon, when he sent the telegram mentioned above, had only the vaguest information regarding the engagement at Saarbrucken. It was only at 5:15 P. M. on the 3rd that he learned what had actually happened from a dispatch sent by Goeben which he answered immediately as follows:

"The occupation of Saarbrucken is of no importance to us. The First Army has been ordered to assemble at Tholey."

It is apparent that for the moment Moltke's interest ceased to center around the Saar. He ceased to desire to maintain *contact* with the enemy or to *observe* his movements. He ceased also to be interested in *retarding* him. He pursued solely the idea of a battle to be fought on the Lauter with the two armies operating together. However, this plan was worthless; it could not be realized nor could his two armies be united before the battle. Moltke sought through *space* alone—through preserving the distance between himself and the enemy—to attain the opportunity of uniting his forces before the battle. He had no detachment to cover the projected operations. Under these conditions the arrival of the First Army at the desired point by a retreat from the position which it occupied presented no difficulties.

*Von Schell "Operations of the First Army."

We can assume that this army would have had no trouble in reaching Tholey. However, it was highly problematical that the Second Army could reach its assigned objective. It had to form in two long columns, without lateral communications in order to reach the Lauter, which is only 60 kilometers from the Saar. The distance here would not protect it from the enemy before it finished its concentration. In front of it were only the 5th and 6th Cavalry Divisions dispersed over the wide front Volklingen-Neunkirchen-Pirmasens. Here Moltke abandoned completely all idea of security which, however, was the prime condition to the success of this operation. For if the French took the offensive on the 2nd or 3rd they could have reached by the 5th or 6th—

The German IV Corps debouching from Kaiserslautern;

The German III Corps debouching from Lauterecken, 30 kilometers away from the IV Corps. Both corps would have been separated from each other by one day's march and followed at a considerable distance by the corps of the second line which would have been unable to arrive in time.

In this case the reunion of the various elements of the Second Army was as impossible as the concentration of the two armies. This impossibility of uniting would have been certain if the French took the offensive. That the projected concentration did actually take place was due to the fact that the French failed to attack.

It appears that Moltke saw *a posteriori* the dangers of the projected operation. There seems to have been an attenpt on his part to counteract them by his selection of Tholey as a concentration point, which otherwise would have had no justification.

The effect of Moltke's selection of Tholey was to place the First Army in front of the zone of action of the Second Army. However, had the battle which he was preparing actually taken place a part of the Second Army would have been unable to engage the enemy due to lack of space.

But the crisis passed without the battle being fought, and when the march to the Saar was resumed the First Army was ordered to move because otherwise it would have encumbered the roads

which Moltke desired to leave free for the march of the Second Army.

We have another proof of the difficulty which Moltke would have found in debouching the Second Army in the face of a possible attack. This proof is furnished by the fact that the Second Army did not commence its march either on the 3rd or the 4th, which delay effectually prevented its concentration on the Lauter on August 6th. As a matter of fact the Second Army did not commence its movement until the 5th in accordance with an order dispatched on the 4th, due to the complete immobility of the French on the Saar since the 2nd. Probably the order was also influenced by the victory of Wissembourg which was supposed to have caused the enemy to transform his immobility into a retreat. Nevertheless Steinmetz was but little influenced by the receipt of this order. (It is difficult for one man's will to dominate another completely). He only changed his plans very slightly after the receipt of Moltke's telegram.

Following these divergences of opinion conflicts between these two wills constantly arose. The Commander-in-Chief of the First Army, who had a fairly accurate appreciation of the actual situation, had to give in. However, a part at least of the difficulties which arose between these two men can be attributed to Moltke's method of exercising command. Certainly Moltke often failed to give Steinmetz sufficient information regarding his plans.

August 4th and 5th

On August 4th after Steinmetz directed, in accordance with Moltke's telegram, that the First Army remain in the position it had reached, he wrote as follows "To ask for an explanation of the reasons for the orders he had received from His Majesty."

Headquarters, Saint Wendel
August 4, 1870, 3:26 P. M.

"Acting under orders of the King, I advanced today and took up a position with the First Army in the vicinity of Tholey, but I would much rather have remained on the Saar where my army was operating to form an *offensive flank in support of the Second Army*. The First Army had a more advantageous field of action in this position than in its position at Saint Wendel or

even at Baumholder where it could only *prolong the front of the Second Army*. Accordingly, I am unable to understand the strategic conception upon which the abandonment of the Saar was based. It seems to me that the situation in nowise required this movement. I particularly desire further information in order to continue operations. If the Prince Royal will be at Wissembourg on August 6th his movement and that of the Second and Third Armies on Nancy and Luneville would undoubtedly cause the enemy to disperse over a vast front and to abandon the Saar; this would be an excellent opportunity for the First Army to commence a victorious offensive. Moreover, I am afraid lest our change of position be regarded by the French as an advantage which they have been able to gain over us."

That the divergence of views between Moltke and Steinmetz continued is shown by the following:

Moltke was first of all a Chief of Staff, a student and theorist. Besides, from his Headquarters at Mainz, 120 kilometers from the enemy, he saw only his projected battle on the Lauter which he planned to fight with two armies. To bring about the reunion of his two armies he depended on space and the preconceived and hypothecal immobility of the enemy—which solution is very questionable as we have seen above.

Steinmetz, on the other hand, was first of all a soldier. He had been in contact with the enemy since August 2nd and he knew by experience that it was necessary to take account of that enemy's movements in order to guard against them. He was well aware of the difficulties which would attend the reunion of the Second Army before the battle of the Lauter took place. His idea was to protect the operation by forming an offensive flank, thus giving *"indirect cover"* to the movements of the Second Army. Besides this he felt that a useless retreat could not fail to have a bad influence upon the morale of green troops and would also have had an appreciable influence upon the attitude of the enemy.

To understand the attitude of Steinmetz we must take into account his character and the situation in which he found himself. He was seventy-four years old in 1870, an old soldier of the war of "Independence," active and vigorous in spite of his great age.

He had come into prominence in 1866, in the difficult circumstances of that war, through his indomitable energy and spirit of enterprise. Ever since that day he had borne the nickname in the Army of the *Lion of Nachod*.

Indefatigable, as severe on himself as he was on others, gloomy and defiant, his method of command was harsh; he was of an extreme susceptibility which had its origin in a colossal pride, rendering his relations as difficult with his superiors as with his inferiors.

Moltke was informed on the morning of the 5th of the telegram received by the King; moreover on the evening of the 4th he had learned through a telegram from Frederick Charles of the difficulties experienced by the Second Army in utilizing the Saint Wendel-Neunkirchen road which the First Army was holding in the vicinity of Saint Wendel and Ottweiler; Steinmetz refused to give it up since he had to continue in his present position on August 5th. Moltke thought he could resolve all difficulties and effectively resume command, which seemed to be slipping from his hands, by sending the following telegram to Steinmetz:

"The Road Saint Wendel Ottweiler-Neunkirchen will be evacuated tomorrow by the First Army.

The I Corps will be re-attached definitely to the First Army."

This was all. He did not furnish any additional explanation.

It is clear that the views of General Headquarters and those of the Commander of the First Army continued to diverge due to Moltke's failure to furnish sufficient explanations and also because of the brevity of his telegrams. The consequences were soon to be apparent. The Commander-in-Chief failed to be obeyed because he was not understood. His entire operation—the maneuver to meet the enemy and fight a decisive battle—was about to be frustrated before he began it, by lack of control over his subordinates. To formulate fine plans is not sufficient. Efficient command must be maintained over all operations throughout their execution and command is only in the fullest sense of the word effective when the will of the commander is both *comprehended* and *obeyed* by his subordinates. Moltke as a chief of Staff never wholly achieved either.

Let us contrast this method of command with the way in which Napoleon acted amidst the fog of uncertainty that always obscures the commencement of a campaign. In spite of his unquestioned authority, the Emperor did not hesitate to write letters several pages long to his Marshals in order that his ideas would be understood. Napoleon, military autocrat that he was, and always chary of superfluous explanations, knew that although a formal order, by its imperative brevity, could suppress all argument and rule out all discussion, yet it does not always contain sufficient information for the guidance of the highest ranks of his military hierarchy. He knew that mere blind obedience would not bring about the rational execution of the plans of a Commander-in-Chief. In order to be understood it is necessary to explain, to speak or to write at length. We too can learn from this. Besides orders, there are directives, and besides directives there are letters. In military as in civil life, if we wish to be completely understood we must speak or write. Silence, brevity, will only serve where the Commander-in-Chief makes no demand on the reasoning powers of his subordinates. Von der Goltz established this point very clearly in the following reference to the lack of the effective command exercised by the Germans during the advance to the Saar in 1870:

"The plan of the Commander-in-Chief should, in its main outlines, be clearly understood by every general of whom independent action may be expected. In 1870 we saw brigade and division commanders, by their personal initiative, bringing about battles which were not anticipated by the Army Commander and which precipitated the entry into action of the entire Army. Troops and their leaders will always be imbued with the desire to fight. The spirit of independent action is indispensable wherever large masses are operating in unison if the opportunities of the moment are to be seized and exploited in full. But it is all the more necessary that the subordinate commanders be informed of the central idea which the Commander-in-Chief is endeavoring to carry out. Secrecy will only in rare cases be compromised. In the first place if a plan is divulged, it will never get beyond a very small circle of the highest officers. In the second place, when the orders of execution are given, the execution

of the plan is so close at hand that any information gained by the enemy would reach him too late for him to take advantage of it."

If we examine the situation of the 6th of August brought about by Steinmezt' orders, we observe: the VIII Corps in *attack formation* with two advance guards: towards Volklingen and Saarbrucken.

The VIII Corps in the second line in reserve massed over a distance of 7 kilometers.

After the events of the Saar and the situation resulting from them, the attempt was made to tone down the intentions of Steinmetz and to minimize the effects of the decision which he took on the evening of August 5.

Since the troops of the First Army and those of the Second Army were side by side, General Steinmetz feared that confusion might result if the Second Army continued its march without a change in direction. He also felt that the First Army ran the risk of being deprived of freedom of movement. Moreover, since it was necessary to make dispositions for the deployment of the VIII Corps, he believed himself obliged to extend the camp not only toward the west, but also toward the south in order to make room in the direction of Tholey for the I Corps and the Cavalry Division.

General Steinmetz had no intention of launching an attack against the strong positions which the enemy had occupied at Saarbrucken since August 2nd. The disposition of troops ordered for August 6th was only made with a view to preparing for the occupation of the position selected between Saarbrucken and Volklingen. He intended to occupy this position later on and the fact that he sent an Advance Guard to Saarbrucken demonstrated his intention of covering himself against the enemy. The movement of the First Army was ordered to enable it to reach a position whence it could advance to the Saar in one day's march and also to assure to the troops the freedom of movement and the space which would be indispensable for their deployment if the First and Second Armies made a joint attack on the enemy behind the Saar.

Nevertheless it is clear from the position Steinmetz directed

the First Army to take with relation to the Second Army that he was again acting as the Advance Guard of the Second Army. It is also certain that one very important thing was wanting before he could completely fill the role he had assumed: *knowledge of the plans of the Commander-in-Chief*.

"When General Steinmetz undertook to direct the movement of the First Army toward the Saar on the evening of the 5th the final plans of the Commander-in-Chief were unknown to him."*

He had indeed requested explanations. He had not received them. Therefore he could only poorly fill, in his ignorance of these plans, the role he assumed as Commander of the Advance Guard.

General Moltke, in order to justify the brevity of his telegrams, his failure to issue directives, his day-to-day method of exercising command, gives us the following explanation in the History of the German General Staff:

"Faced by circumstances which each day could lead to the formation of an important decision (he might have added as a result of an important or unexpected crisis), General Headquarters did not consider itself able to issue instructions except for the immediate present. On the contrary it was regarded as necessary to direct the movements of the large tactical units by precise orders, in order that the individual action of the Army Commanders might be strictly limited.

From this quotation we gain the idea that from the beginning of the campaigns, the Commander-in-Chief, who was directing the movements of three armies, may have found himself obliged to become an Army Commander. We must add moreover that this is a necessary consequence of his conception of the strategic maneuver and of his method of employing the forces at his disposal. Lacking strategic security—a covering force or general advance guard—he found himself powerless to direct efficiently the group of armies under his command. He was thus unable to execute any strategic maneuver of several days' duration. Having only tactical security (information and resistance which was

*History of the Franco-Prussian War by the German General Staff.

obtained by the cavalry and advance guards of the Army Corps themselves) he could only control the corps, assign them tactical missions and direct their movements from day to day. The maneuver which he framed could not succeed except, as we have already seen, against an immobile enemy. Would it succeed even if this condition were granted? The result will show.

THE SIEGE BATTERY AT SHILOH LANDING

PACK ARTILLERY

BY WHITE MULE

RECENTLY in answer to a personal letter written to a friend of mine in one of the supply services about pushing the development of some pack equipment, I received the startling information that I was hopelessly behind the times; that people who still believed in horses and mules should be led to the dump and be painlessly eliminated.

The fallacy of this opinion is apparent if a small amount of skull gymnastics is indulged in. Recent tests of the new pack howitzer show that up to 7000 yards it leaves nothing to be desired. The officers testing the gun were of the opinion that, had range conditions permitted, they could have continued increasing the range until the gun was pointed skyward. So much for the gun itself.

Now for the uses to which this gun can be put. Those officers who have been with horse-drawn outfits which have been portéed on short notice doubtlessly remember trying to locate loading ramps, blocks and tackle, etc., in order to load. Frequently this loading could be done with post installations. In the field this becomes a real job. Your new pack howitzer presents no such problem, simply knock it down and heave the loads into the truck. The ammunition, coming in two round sacks, is equally simple to handle. Two Class "B" Liberty trucks will take care of the gun, ammunition, pioneer and anti-aircraft equipment, chief of section, gunner, cannoneers. And they can be on the road in five minutes using nothing but their issue equipment.

Considering anti-tank defense, this gun fires the same shell as the field gun. It can be run into position at night by man power, has a low profile so it can be readily concealed and has the punch and flexibility of a field gun against armored tanks.

When it comes to accompanying artillery we again have the advantage. The objection to the field gun has been vulnerability of the animals. The 75 mm. Pack Howitzer is arranged for tandem draft by two mules, hence can follow narrow trails and keep under cover. When the pulling becomes too hard a few

cannoneers can furnish the extra MV 2 for a short distance. Or, the gun can be packed and the hardtails moved individually with considerable distance between. The self-propelled mount has less vulnerability, but the construction of this equipment is a fine example of putting all the eggs in one basket. A temperamental carburetor will put one gun out of action and a hippopotamus dead for a week during hot weather is just as easy to move out of the road as a dead self-propelled mount. Of course in a good outfit they never go dead.

Last reports in this stable indicate that the so-called Infantry cannon is still being used by General "A" at the Service Schools only. Why not tell our friends the Doughs that we have a real one and for them to lay off being half-baked Artillery and having to handle half a dozen different weapons with a dozen different kinds of ammunition.

With the development of heavy tanks mounting 75 mm. guns, the need for accompanying guns may not be so necessary but the need for a real anti-tank gun becomes greater.

For the protection of important beaches inaccessible by road or which can be more readily reached by water, the 75 mm. Pack Howitzer is ideal. It can readily be knocked down and loaded into a motor sailor or pontoon boat with its gun crew and ammunition. I remember several years ago watching a section knocking down an American split trail 75 for just such a job. It was a real job and a long one.

With the abolition of the aparejo with all its fancied mysteries and the introduction of the Phillips pack saddle the matter of transportation has been greatly improved. While packing still continues to be an art (not a fine art) a reasonable amount of mule knowledge and common sense is all that is required to keep the battery on the road. However, officers trained in motorized units must remember that animals must be fed, watered, shod, doctored, etc., and that Pack Artillery officers are on duty 24 hours a day the same as any other mounted officer.

What we still lack to make us the equal of any other artillery is something better in the way of a reel pack for laying wire and a pack radio. Then watch us go.

For all of the above blessings we are thankful to our companions

in the Ordnance, Quartermaster Corps, Engineers and other supply services who have put up with our many idiosyncracies most patiently.

As to organization and tactical use there seems to be a wide difference of opinion. At present we are working on a regimental basis. The normal proportion of Field Artillery to Infantry is one regiment to a brigade respectively. It conditions of terrain are such that pack transportation is necessary, then all the mules in Missouri will not be sufficient to pack the supplies for a brigade of Infantry. Why not a battalion organization or a pack battalion in each light horse-drawn outfit? If 24 guns are needed for a particular mission use two battalions.

At various times the assignment of Pack Artillery to Cavalry Divisions comes up. This is believed to be radically wrong. The Cavalry training doctrine preaches "Speed, Mobility and more Speed and Mobility." Pack Artillery is mobile so far as getting over bad terrain goes, but it gains that mobility at the expense of speed. The old gun mule is geared just so high and he is good for so many miles per day. Until a super-mule is bred along speed lines let us leave the Artillery component of the Cavalry Divisions to the Horse Artillery where it belongs.

The use of Pack Artillery alongside of Light Artillery except in special missions as above, is believed to be unsound. Unless the number of animals for packing communication equipment is increased considerably, Pack Artillery cannot install the nets now called for. Its proper functions, and some of those will exist in all situations, are the special missions discussed above.

NATIONAL GUARD NOTES

Service Practice, National Guard Field Artillery

A REVIEW of the firing reports of National Guard Field Artillery organizations for the calendar year 1929 has recently been completed by the Militia Bureau. The delay in completion of this work has been due to the fact that several organizations failed to submit their reports as prescribed. These delayed reports were received at a very late date and only after considerable correspondence in regard to this matter.

Field Artillery firing reports, Forms 820 and 820-A, are required to be submitted in order that it may be determined whether the ammunition allowance was profitably expended and to give a record of how ammunition and matériel functioned during service practice. These reports also give a record of the number of rounds fired from each piece; this information is required by the Ordnance Department.

The reports received for 1929 show that continual progress is being made in the conduct of service practice by the majority of organizations, especially in regard to the profitable expenditure of ammunition and also as to variety in types of problems fired. The 75-mm. gun organizations expended 63,232 rounds of shell and shrapnel in firing 2,961 problems or an average of 19 rounds per problem. In 1928 the average for these organizations was 22 rounds per problem. The 155-mm. howitzer and gun regiments expended 7,930 rounds in firing 499 problems, giving an average of 16 rounds per problem, whereas in 1928 they expended an average of 19 rounds per problem. Both types of organization show an expenditure of ammunition slightly in excess of allowances which is due to the fact that in many instances reserve officers were attached for training and fired their allowance of ammunition with National Guard batteries.

As a result of the reduced number of rounds per problem in 1929 compared with 1928, more problems were fired and consequently more instruction was given on a smaller allowance of ammunition.

Comment of officers and instructors supervising firing indicates a general improvement in the instruction of personnel in

the conduct of fire. However, there still remains much room for improvement in this important subject and continual effort should be made during the armory training period to increase the proficiency of officers in the preparation and conduct of fire.

It is realized that some Field Artillery regiments are handicapped in conducting varied training during service practice by small and inadequate ranges. However, it is believed that in the majority of cases even if ranges are restricted varied training can be accomplished. As an example of what can be done by an organization on a rather restricted range, it is believed the following extracts from the comments of an instructor on duty with a Field Artillery organization using a restricted range will be of interest to all concerned, as it gives a clear outline of the varied training that may be accomplished during service practice:

"The prescribed reports of service practice for the current year are forwarded herewith but the manner in which this practice was conducted was so excellent throughout, that I believe it demands additional comment.

"The conduct of fire, by National Guard officers, was surprisingly good throughout, but the primary purpose of this letter is to invite attention to the wide variety of instruction given.

"Although only 250 rounds were available, the Commanding Officer so planned the firing that:

"Each battery fired from five different positions, and no battery more than once from a position which it had occupied in previous years.

"Each occupation of position for firing was a tactical occupation, and was done tactically, by battalion, with a complete battalion net established.

"Every problem fired was as a result of a call for fire by the Liaison Officer, and was assigned to a battery by the Plans and Training Officer, following the usual artillery staff practice, by reference to the map, or to a sketch or firing chart, or by means of an overlay.

"Ranges at which fire was conducted varied from 2,000 to 5,000 yards.

"Distances of O. P. from guns varied from 200 to 2,000 yards, and included both axial and lateral observation.

"Methods of laying batteries included:

Distant aiming point.
B.C. telescope as aiming point.
Compass laying.
Shift from last deflection.
Shift from basic deflection.
Topographic.
Base angle deflection.

"Briefly expressed, the Commanding Officer managed to include in his service practice, instruction in almost every ordinary means of laying that I can imagine, and to combine with his service practice a vast amount of instruction in artillery staff procedure, and in operation of the battalion net. This was done without the slightest loss to the instruction value of the service practice in a purely gunnery sense."

UP HILL WORK—THE WILDERNESS (MAY, 1864)

TYPE PROBLEMS

The following type problems fired at Fort Sill with ground observation axial, are based on the procedure approved for the new T.R 430-85, Field Artillery Firing.

The procedure outlined in the Field Artillery School Notes, Book II, Chapters IV. and V., has been slightly changed.

The following changes will be noted in the type problems in bracket adjustment:

(a) Starting fire for adjustment with one gun, to conserve ammunition, when the range is estimated.

(b) Width of sheaf for effect for light guns, changed from (80) eighty yards to (100) one hundred yards.

Date: Nov. 13th, 1929. Area: Apache Gate. Battery position: ID. Observation post: 250 yards to left rear of battery. Type: Time bracket axial. Organization and materiel: Battery "B," 18th F.A., 75 mm. guns. Visibility: Excellent. Wind: Velocity, 10 m.p.h.; direction, L. to R. Target description: Machine guns firing from the vicinity of a tree. Mission: Neutralization. Initial data obtained: deflection: Prismatic compass: range: estimated.

Commands	Range or Elev.	Rd. No.	Observations B.C.	Sheaf (from B.C. Station)	Remarks
Compass 5050 on No. 3 close 5, Site 0, Corrector 35, No. 3.				—12M—	Battery Commander knew corrector of the day, did not change corrector on one observation.
1 round	2800	1	G ?		
Right 10	2800	2	G–		
Up 5	3200	3	A+		
Down 3 Battery Right	3000	4	G+		
		5	G+		Proper deflection difference to give 100 - yard sheaf. 2800 would be the better range to start the fire for effect as there is only one sensing at the short limit.
		6	A+		
		7	A ?		
On No. 3 Open 10 Up 2, Battery. 1 round.					
Zone	3000 2800			Cease Firing	

SUMMARY

Errors in original data: Deflection 12; first shift in deflection 10 mils; range, 100 yards, or 3% of gun range. Time: From identification of target to announcement of first range 1 minute and 50 seconds; average sensings and commands, 11.2 seconds; total for problem, 4 minutes. Ammunition expended, 7 rounds. Classification: Satisfactory. General comments: A very good problem.

TYPE PROBLEMS

Date: Dec. 7th, 1929. Area: Signal Mountain. Battery Position: 400 yards to left rear. Observation post: Artillery Ridge. Type: Precision axial. Organization and material: French 75 mm. guns, Battery "B," 18th F. A. Visibility: Excellent, Wind: Velocity, 20 m.p.h.; direction, L. to R. Target description: Check point (old caisson) for transfer of fire. Mission: To obtain an adjusted elevation and a "K." Initial data obtained: Deflection: Map data uncorrected; range: same.

Commands	Range or Elev.	Rd. No.	Sensing (B.C.)	Sheaf (from B.C. Station)	Remarks
Base Deflection, Right 285, Shell MK.I. Fuze Long. No. 1				——23M——	B.C. failed to correct for drift and affect of cross winds. Fork = 10 mils (See Col. II, Table A, Range Tables). 2 Fork range change.
1 round, Quadrant	180	1	?		
Left 25	180	2	+		
	160	3	–		Rounds are falling 2 mils left of check point. Excellent for observation on account of direction of wind.
	170	4	–		
3 rounds	175	5	–		
		6	–		Second round gave an "over" at 180, hence only two more required.
		7	–		
2 rounds	180	8	+		
		9	–		The group of 6 rds. is assumed to have been fired at the mean elevation of 177.5. Fork at 177.5=10 mils 2 overs, 4 shorts. 177.5+2/12 (10) =179.2 (next elevation)
6 rounds	179.2	10	+		
		11	+		
		12	–		
		13	+		Fork at 179.2=10 mils 5 overs, 1 short. 179.2–½ (4/12×10)=177.5 adjusted elevation. The direction is adjusted 2 mils left of Check point.
		14	+		
		15	?		
1 round	179.2	16	+		

SUMMARY

Errors in original data: Deflection 23 mils Right; first shift in deflection left 25; range 40 yards, or 1% of gun range. Time: from identification of target to announcement of first range, 3 minutes and 20 seconds; average sensings and commands, 9 seconds; total for problem, 6 minutes and 25 seconds. Ammunition expended, 16 rounds. Classification: Satisfactory. General comments: Excellent problem.

Date Nov. 5th, 1929. Area: Apache. Battery Position: ID. Observation post: 300 yards to right rear of battery. Type: Percussion Bracket Axial. Organization and materiel: Battery "A," 1st F.A. (3-inch materiel). Visibility: Excellent. Wind: Velocity, 3 m.p.h.; direction, L. to R. Target description: Machine gun in the vicinity of pile of rocks. Mission: Neutralize. Initial data obtained: deflection compass; range estimated.

Commands	Range or Elev.	Rd. No.	Observations B.C.	Sheaf (from B.C. Station)	Remarks
Compass 5240 on No. 2 close 5 site 300, Shell MK.I. F.L. No. 2					Sensed on terrain
1 round	4000	1	+		
Right 15	3600	2	–		
Battery Right	3800	3	?		
		4	+		
		5	–		
		6	?		On No. 2 open 7 will give proper distribution to fire for effect. An open sheaf, 100 yards between flank bursts.
On No. 2 Open 7 Battery 1 rd.					
Zone	3700 3900			Cease Firing	

SUMMARY

Errors in original data: Deflection 14; first shirt in deflection, 15 mils; range, 200 yards, or 5% of gun range. Time: From identification of target to announcement of first range, 43; average sensings and commands, 7 seconds; total for problem, 2 minutes and 59 seconds. Ammunition expended, 6 rounds. Classification: Satisfactory. General comments: Excellent problem.

FOREIGN MILITARY JOURNALS: A CURRENT RESUME

FRANCE

Revue Militaire Francaise March and April, 1930

In the article, **"A Maneuver During Retreat,"** Lieutenant-Colonel De Charry describes the operations of the 43rd French Division in the Aisne campaign during May and June, 1918. After a detailed description of the campaign, he discusses the methods of employment of the Infantry and Artillery of the division.

In preparation for the Aisne offensive and the expected rupture of the line, the Germans had trained their Infantry in open warfare tactics. Their Infantry patrols were vigorously led and well equipped with automatic rifles. A patrol which encountered stubborn resistance halted and occupied the terrain; a patrol which found a hole in the French line, pushed forward boldly. This infiltration occurred frequently in ravines and heavily wooded areas which the French Infantry usually neglected, preferring to occupy high points which gave good fields of fire.

When the German patrols penetrated the line they called for reenforcements. The machine guns then entered the action with the evident intention of causing not only damage but noise as well. The German Infantry progressively gained ground on the flanks and even in rear of the French points of resistance, thus menacing their retreat.

At the same time the small amount of German Artillery, which accompanied the attack, opened a fire of intimidation on the villages and roads in rear of the French line to increase the impression of an encircling movement. These tactics worried the French Infantry which had during the four years of war, been assured of protected flanks and rear.

Colonel De Charry remarks at this point, that good Infantry should look upon an infiltration as a mere incident that can be parried by a local counter-attack. However, at this time, the

line was so lightly held that the commanders of small units did not have sufficient reserves to counter-attack.

There were three types of Artillery with the 43rd Division: the division's own regiment of 75s (the 12th), a regiment of Portée Artillery from the general reserve, and two groups of 155-mm. howitzers.

The French Artillery benefited by the comparative absence of German Artillery which permitted the greatest freedom of action. The 12th regiment, accustomed to working with the Infantry of the division, was particularly effective. The liaison was perfect. The same cannot be said of the Portée Artillery attached temporarily. Tied to the roads by the nature of its matériel, subject to motor trouble, and worried about its own security, this regiment frequently established itself at too great a distance from the battle line, to the detriment of communication, observation, and general effectiveness.

As a result of this study, Colonel De Charry suggests a scheme of artillery employment during retreat:

"Place the batteries as close as possible to the O.P's. The conditions of observation were excellent on the great plateaus of Soissons and Tardenois. A few meters of elevation were sufficient to give extended fields of observation. There was neither time nor necessary means to lay long telephone lines; it was, therefore, necessary to sacrifice defilade for rapidity in opening fire.

"Maneuver in retreat necessitated echelonment in depth to assure continuity of action of Artillery. Such echelonment should be obtained in the battalion, not in the regiment. The battalion commander in direct contact with the Infantry commander, whom he is supporting, is alone able to appreciate exactly the local situation and to regulate the displacement of his batteries. He should be allowed complete initiative and he can risk much. In open warfare it is relatively easy for a battery to change position, even at the last moment, under the protection of the batteries established in rear of it; for an entire battalion, the same operation would be very delicate.

"It is necessary also to note that Artillery must organize its

own means of defense because of the instability of the Infantry lines."

Revue d'Artillerie, February, 1930

Among the articles appearing in this issue are **"Study of a Concrete Case of Employment of Artillery in an Attack,"** in the form of an illustrative problem, with accompanying maps, charts and tables; **"Artillery in the Offensive in Position Warfare"** the second installment of a complete translation from the German of Colonel Bruchmuller's work, by Captain N. Aizier; **"A Mechanical Firing Table in the Form of a Slide Rule"** by Lieutenant G. Baraton; **"Endurance Tests of Trucks with Gas Generators and Farm Tractors,"** with a list of models declared suitable for possible adoption; **"The General Problem of Topographical Preparation,"** by Lieutenant L. Levrat, a study of the operations executed on the ground by a high burst ranging section, Model of 1924, when a minimum of known points are available. **"The Dutch Anti-tank 2 cm Haiha gun. The Anti-aircraft 75-mm. L/45 and 80-mm. L/50 Guns of the Same Firm,"** with descriptions and illustrations.

Revue d'Artillerie, March, 1930

Among the articles appearing in this issue are **"Study of a Concrete Case of Employment of Artillery in an Attack,"** continued from the February number **"Artillery in the Offense in Position Warfare"** continued from the February number; **"The Development of Armored Combat Vehicles and Mechanical Military Vehicles,"** a translation of a lecture by Major General Peck of the British Army, published in the *Royal Artillery Journal;* **"David Rivault de Flaurance, Balistician,"** by Captain A Basset, a biography and a review of Rivault's **"Elements of Artillery,"** published in 1605; **"A Rapid Method of Calculating a Point by Bearings"** by Captain A. Duvignac.

BRITISH EMPIRE

The Journal of the Royal Artillery, April, 1930

Moving Warfare—The Artillery at Rossignol, 22 August, 1914, by Colonel A. Grasset, D.S.O., and translated by Brig.-Gen. W. Evans, C.M.G., D.S.O., is of such lively interest that a few quotations are mentioned.

"This story of the war is intended for gunners, but as artillery is never alone in the field, to make the narrative clear it is necessary to place the artillery in its usual cadre: *i. e.*, divisional and corps artillery.

"Let us forget for the moment the gun epaulments, platforms, concrete dug-outs and ammunition dumps that we so conscientiously prepared for the next four years, and carry our thoughts back to moving warfare—'the fresh and joyous war' as we fought it in 1914, and as we may be called on to fight some day in the future.

Our ideas about moving warfare at that time were to prove entirely wrong, though we French just as the British thought we knew all about it. Let us accept that fact without argument, and the more readily when we see that the Germans were just as ignorant as ourselves. Also let us try to learn some lessons from the mistakes made, to help us in the future, when in addition we may have to compete with conditions we cannot even imagine today."

"What is brought out most clearly from this is that when the enemy is expected to be met with, artillery must march by big bounds from position to position, their observing parties going on ahead in each case. The observers should study the lie of the ground in front of them for a depth of four to five kms., and make up their minds as to a suitable battle ground. If this is done surprise becomes impossible."

"In conclusion is it necessary to point out the magnificence of the sacrifice made by the gunners of the 3rd Colonial Division? These men hung on under a hail of bullets and shell without ammunition, in the midst of their damaged guns and dead horses, putting up a fight until they had expended their last cartridge and were bayonetted at their guns by the German Infantry. By so doing they enable the Infantry to carry on the fight until the evening and to inflict terrible losses on the enemy. A fine example of brotherhood in arms for all Artillerymen to remember and be ready to repeat, should the occasion arise."

A Subaltern of Artillery in the Eighties, by Lieut.-General Sir George MacMunn, K.C.B., K.S.C.I., D.S.O., Col. Comdt. R. A, is a lively picture of the life of a young officer in the British

Artillery not so very long ago. It naturally concerns itself principally with the activities which appeal to energetic youngsters during peace times, and in addition to some discussion of artillery contains a great deal about personalities and the sports of the day. The descriptions of conditions and uniforms are rather vivid, as the following quotation shows:—

"That joining at Woolwich was a time of great glamour, when one did all one's drill and even took out the exercise in one's stable jacket, the smartest dress ever worn in any army, with one's white pouch belt and slings and undress sabretasche. Its variation was the frogged patrol with false jacket below the patrol, worn open. The false jacket was made with thin silk sleeves and no shoulder cords and on duty the pouch belt was worn underneath with looped ends and no pouch, a very picturesque kit for winter. Those were the happy days when a second lieutenant's pay might be calculated, as the good Mr. Cox was polite enough to inform you, at eight golden sovereigns a month.

'Oh five bob and seven a day, what a lot for subaltern's pay,
Yet happy is he in the Artilleree, on his five bob and seven a day.'

It was threepence more than the Infantry, and duly recorded in song 'five bob and four with a threepenny more.'

"When I see the messes of today with their all-in-three-course breakfast, I wonder, for in those days young officers on small allowances breakfasted in their rooms on an egg or herring cooked by their servants, which cost them perhaps fourpence. Then one reserved oneself for Mess dinner as the principal feature. It was worth while to deny oneself for the privilege of wearing Her Majesty's sword, and saving your money to hunt or shoot."

This issue also contains the following:—

"The New Artillery." By Brigadier R. G. Finlayson, C.M.G., D.S.O., A.D.C.

"Means of Promoting Closer Relations between Regular Army and Territorial Army Units of the Royal Artillery." By Martin Gale.

"Mutt and Jeff at War." By Major A. H. Burne, D.S.O., R.A.

"The 'Honour' Titles of Batteries in the Royal Regiment of Artillery."

ITALY

Rivista d'Artiglieria e Genio, April, 1930

"The Mechanization of the Armies of the Principal States," an article based principally upon recent American and English publications, deals with the present status of mechanization in the armies of Russia, Germany, France, England and the United States and the progress of studies and practical experiments in that line in the countries mentioned.

"A Study on the Employment of a Battalion of Motorized 75/27 Antiaircraft Artillery in Defense of a Division in Position and on the March," in the form of an illustrative tactical problem covers in considerable detail the antiaircraft defense of a division.

Other articles in the April issue, both detailed technical studies, are **"Minimum Velocities"** by Lieutenant General Ettore Cavalli, and **"Binaural Audition,"** by Professor Arciero Bernini, a study of the principal theories relating to binaural detection of sounds in air and under water.

Rivista d'Artiglieria e Genio, May, 1930

In **"The Employment of Divisional and Corps Artillery in the Offensive in Warfare of Movement"** by Brigadier General Spartaco Targa, the first installment of which appears in the May issue, the author reviews the factors which in recent years have influenced the methods of employment of field artillery. He discusses the employment of divisional and corps artillery in the offensive over open terrain, examining primarily the phases of the approach march and the artillery preparation for the attack. For each of these phases, the author considers the main questions relating to artillery employment which may have to be solved by the commanders of first line corps and divisional artillery.

"The Mechanization of the Armies of the Principal States," concludes an article begun in the April issue with a resumé of the trend of development of mechanization in modern armies.

FIELD ARTILLERY TRAINING CAMPS
SUMMER 1930

1ST CORPS AREA

TRAINING AT FORT ETHAN ALLEN, VT.

Trainees	June	July	August	R.A. Troops Participating
RES. OFFICERS—				
Field Artillery 81	24———	————	———4	R.A. Personnel
C. M. T. C.—				
Basic F.A., Inf. and Cav. (Incl. 100 fr. 2d C.A.) 775		5————	————3	7th F.A. (less 2d Bn.). 1st Sq. 3d Cav. 3d Bn. 13th Inf.
ORG. RESERVES—				
365th F. A. (97th Div.) 18	15-28			3d Bn, 13th Inf. 1st. Sq. 3d. Cav. 7th F.A. (less 2d Bn.)
355th F. A. (76th Div.) 50			3-16	3d Bn. 13th Inf. 1st Sq. 3d Cav. 7th F.A. (less 2d Bn.).
301st F.A. 45				
388th F.A. 45				Dets. Fin. Ord. Med. QMC.
389th F.A. 45				

TRAINING AT CAMP DEVENS, MASS.

NATIONAL GUARD—				
103d F.A. 20-198*	14-28			
26th Div. (less Hq. & Hd. Bty. 51st F.A. Bg. 101st F.A. & 101st Amm. Tr.) 457-5797		5-19		2d Bn., 5th Inf. Co. C, 1st Engrs. & Dets. Sch. for B.&C. QMC. Fin. Med. Ord., etc.
Hq. & Hq. Bty. 51st F.A. Bg. 10-41		12-26		"
101st Amm. TR. (26th Div.) 3-60				
101st F.A. (26th Div.) 57-697		19————	————2	"
152d F.A. 48-434			2-16	"

TRAINING AT NIANTIC, CONN.

NATIONAL GUARD—				
192d F.A. 48-582		5-19		R.A. Instructors

*When two numbers, separated by a dash are used in column "trainees" the first number refers to officers and the second number to enlisted men.

2D CORPS AREA

TRAINING AT MADISON BARRACKS, N. Y.

Trainees		June	July	August	R.A. Troops Participating
R.O.T.C.— F.A.	148	13-24			Btry. E. & F. 7th F.A.
C.M.T.C.— F.A.	200			1-30	Btry. E. & F. 7th F.A.

TRAINING AT PINE CAMP, N. Y.

ORG. RESERVES—					
308th F.A.	50		6-19		Hq. Btry. & CT. 2d Bn. 7th F.A.
367th F.A.	50		20———	———2	Btry. D 7th F.A.
391st F.A.	62			3-16	

UNITS TO BE TRAINED OUTSIDE THE CORPS AREA

TRAINING AT FORT BRAGG, N. C.

ORG. RESERVES—				
432nd F.A. (155 G.P.F.) 30		13-26		
477th F.A. (240 How.) 30		27———	———9	

TRAINING AT FORT HOYLE, MD.

ORG. RESERVES—					
305th F.A.	30			17-30	
306th F.A.	30				

FIELD ARTILLERY TRAINING CAMPS

3D CORPS
AREA TRAINING AT FORT HOYLE, MD.

Trainees		June	July	August	R.A. Troops Participating
C.M.T.C.—					
F.A.	300		2-31		R.A. Instructors, 6th F.A.
ORG. RESERVES—					
310th F.A.	26		5-18		R.A. Instructors, 6th F.A.
311th F.A.	26		19————1		R.A. Instructors, 6th F.A.
314th F.A.	25			3-16	R.A. Instructors, 6th F.A.
304th Am. Tn.	5			17-30	R.A. Instructors, 6th F.A.
305th Am. Tn.	5				
324th Am. Tn.	5				
305th F.A. (2d C.A.)	30				
306th F.A. (2d C.A.)	30				

TRAINING AT FORT GEORGE G. MEADE, MD. COMMAND POST EXERCISE

ORG. RESERVES—					Details of various Reg. Army officers and enl. men of all arms drawn from all posts and stations in the Corps Area. Serv. Co. 34th Inf. Det. of Mess Overhead from all units in 3d C.A.
145th Bg. Hq. & Hq. Btry.	6		6-19		
310th F.A. Hq.	6				
311th F.A. Hq.	6				
312th F.A. Hq.	6				
155th F.A. Bg. Hq. & Hq. Btry	6				
313th F.A. Hq.	6				
314th F.A. Hq.	6				
315th F.A. Hq.	6				
174th F.A. Bg. Hq. & Hq. Btry.	6				
370th F.A. Hq.	6				
371st F.A. Hq.	6				
372d F.A. Hq.	6				
862d F.A. Hq. & Hq. Btry.	6				
Inf., Cav., F.A. Communications Off. Indv.	20		1-14		Camp Staff & Supply
Inf., Cav., F.A. Communications Off. Indv.	20		13-26		
NATIONAL GUARD— Comand & Post Exercise			6-19		1st F.A. Brg. Hq. & Hq. Btry.

TRAINING AT CAMP TOBYHANNA, PA.

ORG. RESERVES—					
370th F.A.	25		6-19		1st Bn., 16th F.A.
371st F.A.	25				
580th F.A.	25		20————2		
313th F.A.	30			11-24	

UNITS TO BE TRAINED OUTSIDE THE CORPS AREA
TRAINING AT FORT BRAGG, N. C.

RES. OFFICERS—					
F.A.	49	13————24			R.A. Instructors

4TH CORPS AREA

TRAINING AT FORT BENNING, GA.

Trainees		June	July	August	R.A. Troops Participating
R.O.T.C.—					
F.A.	76	9————	————20		R.A. Instructors
TRAINING AT FORT BRAGG, N. C.					
R.O.T.C.—					
F.A. (Fr. 3d C.A.)	49	13————	————24		Hq. Btry. 2d Bn. 16th. F.A. R.A. Instrs. (Fr. 3d C.A.)
C.M.T.C.—					
F.A. & Basic	800	13————	————12		2d Bn. 16th F.A. (less Hq. Btry.) Post Dets. R.A. Instrs.
ORG. RESERVES—					
432d F.A. (155 G.P.F.) (Fr. 2d C.A.)	30		13-26		2d Bn. 5th F.A. R.A. Instrs.
316th F.A. (75HD)	16				2d Bn. 16th F.A. (less Hq. Btry.)
317th F.A. (75HD)	16				2d Bn. 16th F.A. (less Hq. Btry.) R.A. Instrs.
Indiv. F.A. Off. (C.A. S.C. Ft. Bragg)	16				17th F.A. (less 3d Bn.) R.A. Instrs.
F.A. Group Units	33				R.A. Instrs.
319th F.A. (75 mm.)	16		27————	————9	2d Bn. 16th F.A. and R.A. Instrs.
320th F.A. (75 mm.)	16				2d Bn. 16th F.A. and R.A. Instrs.
Indiv. F.A. Off. (C.A. S.C. Ft. Bragg)	16				17th F.A. (less 3d Bn.) R.A. Instrs.
F.A. Group Units	32				R.A. Instrs.
577th F.A. (240-How.)	30				2d Bn. 5th F.A. and R.A. Instrs.

UNITS TO BE TRAINED OUTSIDE THE CORPS AREA

TRAINING AT FORT SAM HOUSTON, TEX.

ORG. RESERVES—					
334th F.A.	25		20—————	————2	
336th F.A.	25				

FIELD ARTILLERY TRAINING CAMPS

5TH CORPS AREA
TRAINING AT CAMP KNOX, KY.

Trainees	June	July	August	R.A. Troops Participating
R.O.T.C.—				
F.A. (Incl. 85 fr. 7th C.A.)207	15————	————26		
C.M.T.C.—				
Basic, Inf. F.A. and Cav.1500		2-31		1st Bn. 3d F.A.
ORG. RESERVES—				
With C.M.T.C. F.A.	24————	————31		
Res. Lts. 3				
F.A. Camp				
158th F.A. Bg. 83d Div. 40		27————	————9	1st Bn. 3d F.A. Instructors
309th Am. Tr. 84th Div. 325th F.A. 84th Div. } 20				
175th F.A. Bg. 100th Div. 15				
R.A. Inactive Units 35				
Artillery Group 119			10-23	1st Bn. 3d F.A. Instructors
R.A. Inactive Units 50				
C. Area Serv. Command 2				
864th F.A. (84th Cav. Div.) 10				
F.A. (*Associated with 62d F.A. Bg., Ohio N.G.):*				
Hq. Hq. Btry. 159th F.A. 84th Div. 326th F.A. 84th Div. } 20			17-30	Instructors
Arty. Grp. & Div. Lts. 25				

6TH CORPS AREA
TRAINING AT CAMP McCOY, WIS.

Trainees		June	July	August	R.A. Troops Participating
R.O.T.C.	90	14———	———25		2d Bn. and Band, 3rd F.A., 2d Bn., 18th F.A. (less 2 Btries.) from 7th C.A.
C.M.T.C.	250		31———	———29	2d Bn. and Band 3d F.A.
ORG. RESERVES—					
78 F.A.	18		6-19		2d Bn. and Band, 3d F.A. 2d Bn. 18th F.A. (less 2 Btries.) from 7th C.A. (will leave Cp. Abt. July 19)
567 F.A.				13-26	
160 Brig. Hq. & Hq. Btry.	3				
310 Am. Tn.	1				
497 F.A.	29				
161 F.A. Brig.	30				
6 Brig. Hq. & Hq. Btry. (R.A.I.)	1				
6 Am. Tn. (R.A.I)	2				
14 FA. (R.A.I.)	18				
22 F.A.	0				
3 F.A. (Res.) less 1st Bn.	1				
326 F.A.	13		27———	———9	
329 F.A.	6				
403 F.A.	17				
311 Am. Tn.	1				
581 F.A.	25				
Hq. 101 Div. (F.A. Sec.)	1				
326 Am. Tn.	3				
377 F.A.	12				
572 F.A.	8				
F.A. Org. Res. (7th C.A.)	63		6-19		
NATIONAL GUARD—					
57th F.A. Brig. Wis. Off. 111, W.O. 2, Enl. 941			5-19		2d Bn. & Band 3d F.A.
59th F.A. Brig.		14-28			
Off. 101, W.O. 2	975				2d Bn. 18th F.A. (less 2 Btries.) from 7th C.A.

FIELD ARTILLERY TRAINING CAMPS

7TH CORPS AREA
TRAINING AT FORT RILEY, KAN.

Trainees		June	July	August	R.A. Troops Participating
ORG. RESERVES—					
340th F.A.	25		6-19		Det. from Post Personnel
79th F.A.	20				R.A. Instructors
7th Am. Trn.					
866th F.A. (horse)	9				
177th F.A. Bg.	1		20———	———2	
327 Amn. Trn.	1				
381st F.A.	18				Bty. D, 18th F.A. (with 60th
379th F.A.	19				F.A. Bg. Kan. N.G.)
380th F.A.	22		28———	———10	

TRAINING AT FORT ROBINSON, NEB.

ORG. RESERVES—					
341st F.A.	30		6-19		4th F.A. Bn. (Entire command utilized w. Res. Off. att. to organization)
164th F.A. Bg.	1				

UNITS TO BE TRAINED OUTSIDE THE CORPS AREA

TRAINING AT CAMP McCOY, WIS.

ORG. RESERVES—					
337th F.A.	18		6-19		2d Bn. 18th F.A. (less Btys. D. & F.)
338th F.A.	20				R.A. Instrs.
339th F.A.	2				
25th F.A.	23				
80th F.A.					
960th F.A. (AA.)	28		13-26		R.A. Instrs.

TRAINING AT CAMP KNOX, KY.

R.O.T.C.—					
F.A.	85	15———	———26		R.A. Instrs.

8TH CORPS AREA
TRAINING AT CAMP STANLEY, TEX.

Trainees		June	July	August	R.A. Troops Participating
R.O.T.C. F.A.	50	1———12			Btry. F, 12th F.A.
TRAINING AT FORT SILL, OKLA.					
R.O.T.C. F.A.	117	5———16			1st F.A.
C.M.T.C. Basic Inf. & F.A.	1000		7———5		Dets. F.A.
ORG. RESERVES—					
170th F.A. Brig.		8-21			1st F.A. or 18th F.A.
Hq. & Hq. Btry.	3				
359th F.A.	20				
320th Am. Tn.	2				
358th F.A.	25			31——	Sept. 13
409th F.A.	25				Sept. 14-27
TRAINING AT FORT FRANCIS E. WARREN, WYO.					
R.O.T.C. F.A. (Includes 45 from 9th C.A.)	125	7———18			76th F.A.
C.M.T.C. (Includes 60 from 9th C.A.)	100	23———22			76th F.A., less 2d Bn.
ORG. RESERVES—					
178th F.A. Brig. Hq.	4		6-19		76th F.A.
383 F.A.	25		6-19		
326th Am. Tn.	6		6-19		
179th F.A. Brig. Hq. (from 9th C.A.)	4		6-19		
385th F.A. (from 9th C.A.)	25		6-19		
386th F.A. (from 9th C.A.)			6-19		
329th Am. Tn. (from 9th C.A.)	6		6-19		
TRAINING AT FORT BLISS, TEX.					
C.M.T.C. Basic Cav. & F.A.	100	10———9			8th Cav. Det. 82d F.A. Bn.
ORG. RESERVES—					
382d F.A. (103d Div.)	25		13-26		82d F.A. Bn.
TRAINING AT CAMP BULLIS, TEX.					
C.M.T.C. Basic, Inf. F.A. & Sig.	1200	12———11			Garrison of Ft. Sam Houston.

FIELD ARTILLERY TRAINING CAMPS

9TH CORPS AREA

TRAINING AT THE PRESIDIO OF MONTEREY, CAL.

Trainees		June	July	August	R.A. Troops Participating
R.O.T.C.—					
F.A.	46	17————	————28		Instrs. Camp Staff & Supply
C.M.T.C.—					
F.A.	350		5————	————3	Dets. 76th F.A.
ORG. RESERVES—					
414th F.A.	20	1-14			2d Bn. 76th F.A.
439th F.A.	20				
349th Am. Tn.	2				
309th Obs. Bn. (Flash)	1				
346th F.A.	30				
347th F.A.	30				
348th F.A.	30				
316th Am. Tn.	2				

TRAINING AT DEL MONTE, CAL.

C.M.T.C.—					
Basic & Inf.	900		5————	————3	76th F.A.
ORG. RESERVES—					
Hq. & Hq. Btry. 166th F.A. Bg.	2			10-23	

TRAINING AT FORT LEWIS, WASH.

R.O.T.C.—					
F.A.	46	17————	————28		
C.M.T.C.—					
Basic, Inf. & F.A.	355	14————	————13		10th F.A.
ORG. RESERVES—					
363d F.A.	25		13-26		10th F.A.
413th F.A.	15				
500th F.A.	5				
361st F.A.	25		27————	————9	
362d F.A.	20				
32d F.A. (R.A.I.)	6				
Hq. & Hq. Btry. 171st F.A. Bg.	2				

UNITS TO BE TRAINED OUTSIDE THE CORPS AREA

TRAINING AT FORT FRANCIS E. WARREN, WYO.

R.O.T.C.—					
F.A.	45	7————	————18		Instrs.
C.M.T.C.—					
Basic, F.A.	60	23————	————22		
ORG. RESERVES—					
179th F.A. Bg.	60		6-19		

9TH CORPS AREA

(Continued) TRAINING AT FORT DOUGLAS, UTAH

Trainees		June	July	August	R.A. Troops Participating
ORG. RESERVES—					
104th Div. Tn. Staffs:			6-19		
179th F.A. Bg. 104th Div. 207th Bg. 208th Bg.	20				
	20				
363d F.A.	25				
413th F.A.	15				
500th F.A.	5				
361st F.A.	25		27———	——9	
362d F.A.	20				
32d F.A. (R.A.I.)	6				
Hq. & Hq. Btry 171st F.A. Bg.	2				

FIELD ARTILLERY NOTES

Progress With T3 Mount

The all purpose 75 mm. gun on T3 mount, designed by Major G. M. Barnes, Ordnance Department, and described at length in the May-June issue of the FIELD ARTILLERY JOURNAL, has to date fired about 160 rounds at all angles of elevation and traverse. The mount has functioned entirely satisfactorily and no changes except a few minor ones will be made in the carriage prior to shipment to Aberdeen Proving Ground for further test.

The T3 mount has been carried one step beyond that described in the last issue of the FIELD ARTILLERY JOURNAL in that the prime mover is being so arranged that the gun can be fired directly from the truck without any modification. Thus the universal gun carriage can either be trailed behind the prime mover or can be lifted off the ground and carried on the prime mover, and can either be taken off the prime mover and fired on the ground or can be fired directly from the prime mover, converting it into a sort of self-propelled mount. The new prime mover has already arrived at Watertown Arsenal and the parts to permit the mounting of the T3 gun upon it are now being made. The unit should be ready to leave Watertown Arsenal the first of July, and it is planned to send it to The Field Artillery Board for such tests as they desire to make after the unit has already undergone brief tests at Aberdeen.

Siamese Officers to be Attached to F. A. Unit

The Secretary of War has authorized the attachment of Lieutenant Cameron Sudasna, Siamese Army, to the 12th Field Artillery, at Fort Sam Houston, Texas, and of Lieutenant Svasti Pradisdh, Siamese Army, to the 2d Engineers, Fort Logan, Colorado, for a period of one year, beginning September 1, 1930. Both of these officers are graduates of this year's class at the United States Military Academy, West Point.

Field Artillery Extension Courses in 5th Corps Area

The report of the Extension School, Fifth Corps Area, for the month of May, recently arrived from Columbus, shows that the Artillery Group, of which Lieut. Colonel Lewis S. Ryan, F. A., U. S. A., is Chief of Staff, with headquarters in Cincinnati, again leads the Reserve divisions of that Corps Area with an average of five hours and twenty-seven minutes of instruction completed per member of unit. The 84th Division with headquarters in Indianapolis is second with an average of four hours and Thirty-five minutes. The 445th Field Artillery leads the fifteen regiments of that arm with an average of seven hours and nineteen minutes. This regiment is commanded by Lieut. Colonel Montie V. Loewenstine, FA,-Res., and Lieut. Colonel G. A. Taylor, F. A., U. S. A., is the unit instructor.

225,923 Trainees for Summer Camps

Figures compiled by the War Department indicate that a total of 225,923 trainees of the civilian components of the Army will be trained in the nine Corps Areas and the Hawaiian Department during the summer of 1930. To accomplish this training will require the services of 3,909 officers, 12 warrant officers and 43,871 enlisted men of the Regular Army.

The number of trainees by Corps Areas and Departments is as follows:

Corps Areas	ROTC	CMTC	Officers' Reserve	National Guard	Total Trainees
First	288	3,400	1,195	19,051	23,934
Second	543	5,150	1,435	24,758	31,886
Third	1,605	4,650	3,199	18,116	27,570
Fourth	1,322	4,400	2,217	18,767	26,706
Fifth	623	4,000	1,791	15,178	21,592
Sixth	605	4,700	1,757	17,330	24,392
Seventh	1,028	5,300	1,524	17,558	25,410
Eighth	790	2,960	2,102	17,563	23,415
Ninth	621	2,940	1,970	13,865	19,396
Hawaiian Dept.	38	....	....	1,594	1,632
Total	7,463	37,500	17,190	163,780	225,933

Graduation Exercises at the Field Artillery School

Major General Harry G. Bishop, Chief of Field Artillery presented 101 diplomas to officers from the grade of Major to Second Lieutenant who graduated on June 11, 1930, from the Field Artillery School at Fort Sill, Oklahoma. The graduates comprised the officers who completed successfully the Advanced Course, Battery Officers' Course, Advanced Course in Motors and Advanced Course in Horsemanship. These courses are a most important part of the military and technical training of Field Artillery officers.

The following is a list of graduates with their assignments:

Alexander, William	Instr. N. G., Seattle, Wash.
Bacon, Stanley	Instr. F. A. S. Ft. Sill, Okla.
Craig, David W.	Instr. N. G., Lakeland, Florida
Harrington, Arthur S.	Student A. C. Tactical School, Langley Field, Va.
Moore, Orville M.	4th F. A., Ft. Robinson, Nebr.

CAPTAINS

Adams, John C.	Instr. F. A. S., Ft. Sill, Okla.
Bevan, Wendell L.	Student, Inf. School, Ft. Benning, Ga.
Boone, Hugh	17th F. A., Ft. Bragg, N. C.
Cook, George E.	O. R. duty 319th F. A., Augusta, Ga.
Danforth, George L.	1st F. A., Ft. Sill, Okla.
Dockum, Wilbur G.	O. R. duty 385th F. A., Ogden, Utah
Doty, Mark H.	1st F. A., Ft. Sill, Okla.
Goessling, Ward C.	1st F. A., Ft. Sill, Okla.
Hunter, Richard G.	Instr. N. G., Chicago, Ill.
Kinnard, Harry W. O.	O. R. duty 337th F. A., St. Paul, Minn.
Lucas, Clinton M.	1st F. A., Ft. Sill, Okla.
McHale, Larry	2nd F. A., Panama
Marshall, Samuel	18th F. A., Fort Sill, Okla.
Metts, Walter A., Jr.	R. O. T. C. Alabama Poly. Tech., Auburn, Ala.
Milam, John H.	Instr. N. G., La Crosse, Wisc.
Murphey, William W.	24th F. A., Philippines
Rede, George R.	O. R. duty 367th F. A., Albany, N. Y.
Sabini, Dominic J.	7th F. A., Ft. Ethan, Allen, Vt.
Tenney, Walter M.	1st. F. A., Ft. Sill, Okla.
Wightman, Richard M.	R. O. T. C., Iowa A & M, Ames, Iowa
Williams, John R.	9th F. A., Ft. Lewis, Wash.
Woodruff, Victor R.	6th F. A., Ft. Hoyle, Md.

FIRST LIEUTENANTS

Anding, James G.	9th F. A., Ft. Lewis, Wash.
Andrews, Edward L.	Adv. Equitation Course, 1930-31 Field Artillery School, Ft. Sill, Okla.
Babcock, David S.	1st F. A., Ft. Sill, Okla.
Barragan, Milo B.	Student, Sig. Corps Sch., 1930-31
Barton, Oliver M.	1st F. A., Ft. Sill, Okla.
Bertsch, William H., Jr.	9th F. A., Ft. Lewis, Wash.
Beurket, Raymond T.	17th F. A., Ft. Leavenworth, Kans.
Booth, Charles L.	17th F. A., Ft. Leavenworth, Kans.
Boyle, Conrad L.	F. A. in Hawaii
Bratton, Andral	17th F. A., Ft. Leavenworth, Kans.
Brown, Perry W.	U. S. M. A.
Burger, Vonna F.	18th F. A., Ft. Sill, Okla.

Burrill, Joseph R.	17th F. A., Ft. Bragg, N. C.
Carpenter, Frank F., Jr.	F. A. in Hawaii
Collier, James V.	R. O. T. C., U. of Okla., Norman, Okla.
Coombs, Raymond H.	76th F. A., Monterey, Cal.
Craig, Malin, Jr.	16th F. A., Ft. Myer, Va.
Crigger, Herman J.	17th F. A., Ft. Leavenworth, Kans.
Crosby, George D.	16th F. A., Ft. Myer, Va.
Daniel, Charles D.	6th F. A., Ft. Hoyle, Md.
Dasher, Charles L., Jr.	6th F. A., Ft. Hoyle, Md.
Day, Francis M.	R. O. T. C., Iowa A&M. Ames, Iowa
Decker, Kenneth N.	17th F. A., Ft. Bragg, N. C.
Dorn, Frank	1st F. A., Ft. Sill, Okla.
Doxey, Thomas A., Jr.	F. A. in the Philippines
Erskine, David G.	F. A. in the Philippines
Evans, Bryan	18th F. A., Ft. Riley, Kans.
Eyerly, William J.	F. A. in the Philippine
Follansbee, Conrad G.	F. A. in Panama
Friedersdorff, Louis C.	16th F. A., Ft. Bragg, N. C.
Greely, Leonard J.	1st F. A., Ft. Sill, Okla.
Hart, Roswell B.	F. A. in Panama
Healy, Daniel F., Jr.	F. A. in Hawaii
Hendley, Robert C.	10th F. A., Ft. Lewis, Wash.
Hittle, Leslie L.	Student Sig. Corps Sch., 1930-31
Holsinger, George L.	1st F. A., Ft. Sill, Okla.
Jennings, Thomas A.	F. A. in Hawaii
John, Howard J.	18th F. A., Ft. Riley, Kansas
Johnson, Leonard M.	Student Adv. Motors, Field Artillery School, 1930-31
Kastner, Alfred E.	R. O. T. C., Princeton University
Kessinger, Howard E.	1st F A., Ft. Sill, Okla.
Kirkpatrick, Frank S.	F. A. in the Philippines
Kraft, James B.	17th F. A., Ft. Leavenworth, Kans.
Krauthoff, Samuel V.	F. A. in Hawaii
Kurtz, Maurice K.	Student Purdue Univ., 1930-31
Lee, Ernest O.	9th F. A., Ft. Lewis, Wash.
Leonard, Amel T.	16th F. A., Ft. Bragg, N. C.
Lewis, Thomas E.	Student, Adv. Equitation, Field Artillery School, 1930-31
Luebbermann, Bernard F.	1st F. A., Ft. Sill, Okla.
McCone, Alexander T.	F. A. in Panama
McKinnon, James L.	1st F. A., Ft. Sill, Okla.
Manderbach, Harold M.	17th F. A., Ft. Bragg. N. C.
Martin, Paul L.	1st F. A., Ft. Sill, Okla.
Mitchell, George E., Jr.	Student, Cav. School, 1930-31
Oliver, Robert C.	Detailed to A. C., Brooks Fld., Tex.
Owen, Ernest T.	Student, U. of Pa., 1930-31
Reed, Gerald J.	F. A. in Hawaii
Sampson, John H., Jr.	F. A. in Hawaii
Sather, Peter	F. A. in the Philippines
Scott, Winfield W.	1st F. A., Ft. Sill, Okla.
Sexton, William T.	F. A. in the Philippines
Stokes, Marcus B., Jr.	17th F. A., Ft. Bragg, N. C.
Stubblebine, Albert N., Jr.	F. A. in the Philippines
Studebaker, Clayton H.	Student, Inf. School, 1930-31
Tacy, Lester J.	1st F. A., Ft. Sill, Okla.
Vaughn, George W.	1st F. A., Ft. Sill, Okla.
Webster, William W.	7th F. A., Madison Barracks, N. Y.
Wicks, Roger M.	Instr. Field Artillery School.

SECOND LIEUTENANTS

Chamberlain, John L., Jr.	16th F. A., Ft. Myer, Va.
Cole, Hubert M.	7th F. A., Ft. Ethan Allen, Vt.
Conder, Raymond C.	17th F. A., Ft. Leavenworth, Kans.
Rasbach, Joris B.	F. A. in Hawaii
Smith, Norman H.	6th F. A., Ft. Hoyle, Md.
Willems, John M.	7th F. A., Madison Barracks, N. Y.