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**MARCH-APRIL**

**THE  
FIELD ARTILLERY  
JOURNAL**

**EDITED BY**

**WILLIAM C. HOUGHTON**

**MAJOR, FIELD ARTILLERY, UNITED STATES ARMY**

**THE UNITED STATES FIELD ARTILLERY ASSOCIATION**

**1624 H STREET, N. W.**

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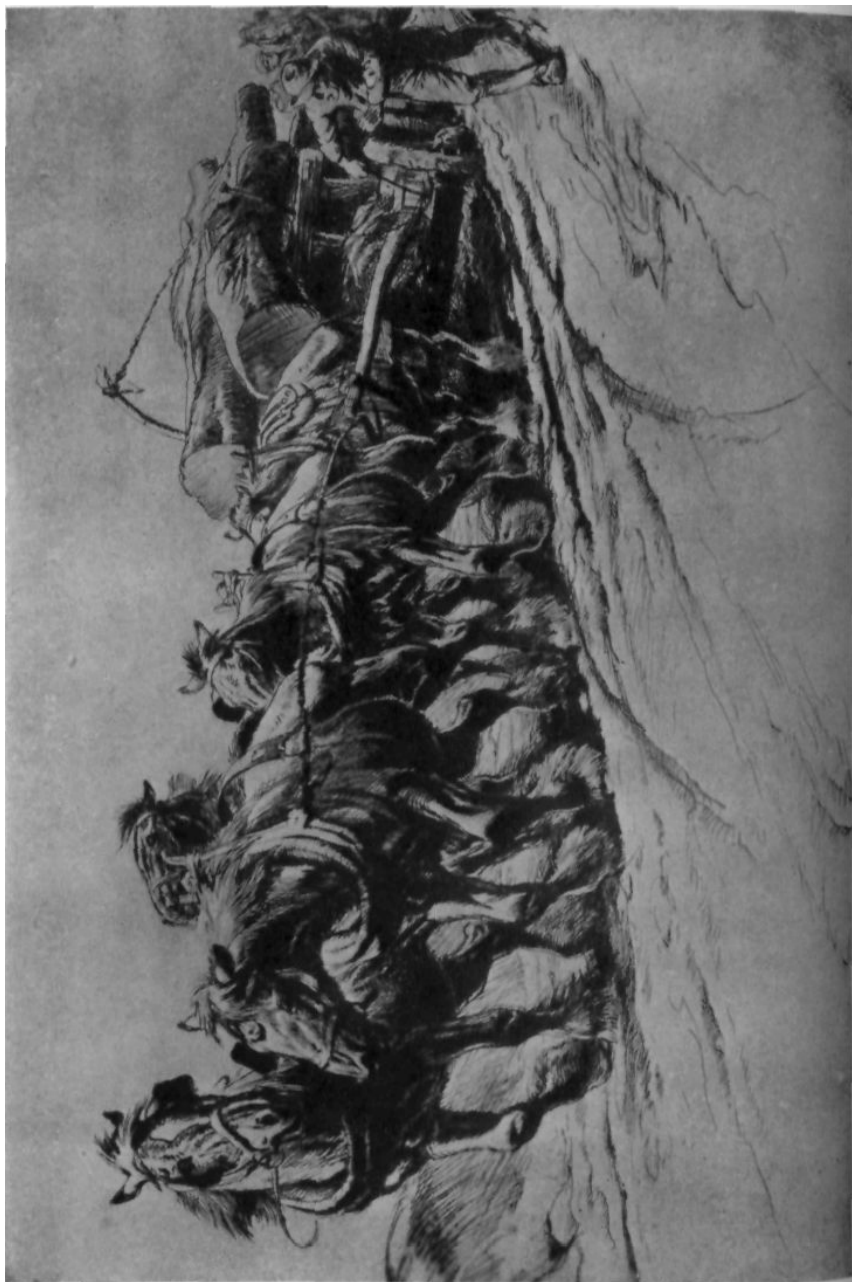
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**TIMBER HAULING**  
From a Drypoint Etching By George Soper.

# THE FIELD ARTILLERY JOURNAL

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VOL. XIV

MARCH-APRIL, 1924

NO. 2

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## ANNUAL REPORT OF THE CHIEF OF FIELD ARTILLERY

*(Continued from last issue)*

### War Plans and Operations

THE progress made during the year in the development of the field artillery annexes to accompany the various war department war plans has been most satisfactory. Modifications of approved plans to meet the varying changes in national policy, economics, organization and matériel have been made from time to time, with the result that the field artillery plans are at the present time up to date and could be put into operation without delay.

The basis of a war plan for an army is its organization. It is by the development and expansion of the peace organization that a war organization is built up. Therefore, it follows that an incomplete or imperfect peace organization must result, in an emergency, in an incomplete and imperfect war organization.

Congress, by the Act of June 4, 1920, prescribed that the Army of the United States should consist of three categories: the Regular Army, the National Guard and the Organized Reserve. Based on the organization of these three categories, at the strengths authorized, our present war plans were developed. To meet the requirements of this peace organization it was provided that the Regular Army should have a strength of 17,000 officers and 280,000 enlisted men. This regular force was considered the minimum necessary to train and develop the more recently organized components and at the same time carry on its own training.

Since the passage of the above-mentioned act, the strength of the Army has been reduced by Congress first to 175,000, then to 150,000, and finally to 135,000. At the present time, the Regular Army consists of 12,000 officers and 132,148 enlisted men, including 7148 Philippine Scouts. It is important to note that while the strength of the regular force has been reduced, its responsibilities as regards the development of the other components and its own training have in no way been lessened.

The result of this reduction of the Regular Army has been

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far-reaching, particularly as affecting the preparedness of the Field Artillery.

The Regular Field Artillery consists in part of twelve full regiments, two full regiments less a battalion each, and eight battalion organizations. These active units in addition to their own training are required to train cadres for their inactive associates consisting of eighteen full regiments, seven regimental headquarters, and nine battalions. This represents only a part of the necessary organization of the Field Artillery in an emergency, but this part is basically essential and is so considered in our war plans. Considering that the Regular Army is the first-line defense of the nation, and appreciating the value of time in an emergency, the test to which the Regular Field Artillery will be put to meet the demands of an emergency are at once apparent. The time which must necessarily be spent in expanding the few regular units of field artillery to meet the war demands is indeed a serious consideration, and one which points outstandingly to unpreparedness. However, the situation in reality is much more serious. In reducing the strength of the army, all active field artillery units have been seriously affected. They are regiments and battalions only in name. They are undermanned in officers and enlisted personnel to an extent that in an emergency they would encounter considerable trouble and delay in expanding and organizing themselves. This would result in seriously delaying the organization of the inactive associates.

In this connection, it is important to emphasize the necessity for keeping alive, among the active units of the Regular Army, a nucleus of the heavy calibres of artillery pertaining to the General Headquarters Reserve. Prior to the reduction of the Army, in June, 1922, only one mixed regiment of 240-mm. and 8-inch howitzers and one regiment of 155-mm. guns were maintained in the 13th Field Artillery Brigade at Fort Bragg, North Carolina. However, by reason of the reduction in June, 1922, it was found necessary to further reduce the amount of heavy artillery. Consequently, there is only one emasculated regiment consisting of *only four batteries* of heavy artillery on the active list at the present time. This regiment consists of *two batteries* of 240-mm. howitzers and *two batteries* of 155-mm. guns: a totally inadequate amount. Under the present mobilization plans of the War Department these four batteries are required to furnish instructor personnel for more than *thirty regiments* pertaining to the General Headquarters Reserve.

The present policy as regards the distribution of active and inactive associates demands the closest scrutiny as to possibilities of effective operation. Considering the present strength of the Field Artillery, as authorized by law and allotted by the War Department, and the shortage of enlisted personnel, it is at once apparent

## ANNUAL REPORT OF THE CHIEF OF FIELD ARTILLERY

that the designation and training of the cadres for inactive associates by their active associates can not be carried out effectively and efficiently. This condition should be recognized as an inherent weakness materially affecting the time necessary to complete an effective mobilization. Particularly is this true as regards the provisions made for the mobilization of corps and general headquarters artillery.

To sum up, it may be stated that Congress in the Act of June 4, 1920, prescribed the part to be played by the Regular Army in national defense, and authorized an adequate force to play this part: but in subsequent acts, Congress, while not changing this part to be played, has so reduced the strength of the Army, that it can now, at best, play this part only lamely and haltingly.

In the preparation of the branch annex of this office for the War Department's basic mobilization plans, the location of field artillery brigade firing centres, which is of vital importance to the efficient training of field artillery, was given careful and thorough study. The questions of climate, railroad facilities, extent of firing ranges and locations with respect to mobilization points of national guard and organized reserve units were given careful consideration and study. All reservations throughout the United States possessing any possibilities whatever, capable of being developed into suitable firing centres, were carefully analyzed with the ultimate idea in view to establish, if possible, in each corps area one brigade firing centre. This plan was found to be impracticable and too expensive in view of the fact that seventy-six per cent. of the Field Artillery under the mobilization plans of the War Department is located within a 1000-mile radius of Camp Knox and Fort Bragg.

During the year, this section has made a complete reclassification of all the Reserve officers now holding field artillery commissions (some 8700) according to the duties they performed during the World War, with the idea of assigning each officer during an emergency to duty to which his qualifications and war experience show him as best suited.

During the past year, a complete revision has been made of all field artillery war strength tables of organization. In this revision the recommendations of the Field Artillery Board and the service at large were given careful consideration with the end in view of furnishing to the National Guard and Organized Reserve a set of tables in which were included the latest development in organization, transportation and matériel and at the same time reduce the road space of field artillery units to the minimum.

The present scheme of organizing certain units, regular field artillery, into separate battalions and the location of the different

## THE FIELD ARTILLERY JOURNAL

field artillery units in general throughout the United States has been successfully tried out for a year, and it has proven eminently satisfactory. Not only is this true from a standpoint of training, but also from a standpoint of increased morale of the Field Artillery as a whole, due to better living conditions. Under the present scheme each corps area commander has at least a battalion of field artillery to assist in the instruction of the National Guard, Organized Reserves, and at R. O. T. C. and C. M. T. camps. Also, with the retention on the active list of a battalion of each of the field artillery regiments necessary for six divisions, in addition to the three active field artillery brigades, the organization and mobilization of the artillery of the nine divisions assigned to the Regular Army by the War Department under the basic mobilization plans has been greatly simplified.

### Matériel Section

The work of this section during the past year has included, in addition to the routine work of distribution and maintenance of matériel, the compilation of equipment and basic allowance tables for practically all types of field artillery organizations, and the maintenance of liaison with the Field Artillery Board, the technical committees of the supply branches and with the Supply Division of the General Staff.

It is felt that the most important work accomplished within the section has been the compilation and distribution, in mimeograph form, of the equipment tables of the most important field artillery organizations. The necessity for issue of such tables to facilitate standardization of equipment has been apparent for some time, but the delays incident to reorganization, with the publication of new tables of organization, prevented completion of these tables prior to this year.

The following tables of equipment have been compiled, mimeographed and distributed:

*a.* Tables 22-P, 24-P, 25-P and 30-P, covering the equipment, by battery organization, of the units of a brigade of light field artillery, horse-drawn (peace strength).

*b.* Tables 21-W, 23-W and 26-W, showing totals of equipment for a battalion, regiment and brigade, light field artillery, horse-drawn (war strength).

*c.* Tables 326-W, 327-W, 328-W and 329-W, covering the equipment, by battery organization, with totals for a separate battalion, light field artillery (horse), cavalry division.

*d.* Tables 122-W, 123-W, 124-W, 125-W, 126-W, 127-W, 128-W, 129-W, 133-W, 134-W, 135-W, 136-W, 137-W, 138-W, 139-W, 140-W, 141-W, 142-W and 143-W, covering

## ANNUAL REPORT OF THE CHIEF OF FIELD ARTILLERY

the equipment by battery organization, with totals for battalions, regiments and ammunition train, of a brigade, medium field artillery, war strength. (Tables for observation battalion not yet prepared.)

In addition to the above, Tables IV—Basic Allowances of Equipment, have been prepared and approved during the past fiscal year for a regiment, pack artillery; separate battalion, horse artillery; and regiments, 155-mm. gun, 8-inch howitzer and 240-mm. howitzer, heavy artillery.

The basic allowance tables are primarily staff tables intended to indicate the general basis of issue for all items of equipment, both organizational and individual, and are not dependent upon tables of organization. They are adapted for use of staff officers in determining procurement requirements or large issues in case of mobilization.

The tables of equipment, on the other hand, are the detailed tabular statement of equipment authorized for separate organizations, and are directly dependent upon tables of organization. They are in much greater detail than the basic allowance tables, and show the total amount of equipment prescribed for each organization, and the service responsible for storage and issue of the various items of equipment included in the table.

The basic allowance tables and tables of equipment, thus supplement each other, and together form a complete guide. The staff officer and supply departments are able to determine the requirements of any amount of field artillery in either peace or war. On the other hand, the field artillery commander of any size unit is able to determine his equipment for any organization, and which articles are furnished by each particular supply department.

The preparation of these tables with the thousands of articles involved, has been a detailed work of much magnitude.

The change of stations of the Field Artillery Board from Fort Sill, Oklahoma, to Fort Bragg, North Carolina, was made in the early part of the year, and work was begun at Fort Bragg in September, 1922. A year's work at this new station has proven the wisdom of this change. The organizations of field artillery stationed at Fort Bragg include all types of field artillery, except pack artillery, and the advantage of having active organizations available to assist in tests and to present comparisons of old and new matériel has been of great benefit to the work of the board. The coöperation of the Commanding Officers, 4th Corps Area and Fort Bragg, has been all that could be desired, and I feel that every effort has been made by the Corps Area and Fort Bragg personnel to assist the Field Artillery Board in its work.

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The movement of the Field Artillery Board from Fort Sill to Fort Bragg has also resulted in marked economies in transportation funds required to deliver experimental matériel and the ammunition required for test work to the Field Artillery Board, and has greatly facilitated the personal liaison of the Board with the Ordnance, Signal and Quartermaster Corps and with the Office of the Chief of Field Artillery. The proximity of Fort Bragg to Washington has proven of great advantage.

Much of the work of the Board during the year has been done in continuance of tests begun at Fort Sill, as well as several new projects undertaken on matériel presented by the supply branches for test.

Among the projects which have been before the board during the year, the following should be mentioned:

### Fire control and communication projects:

- High-burst ranging methods.

- Sound and flash ranging.

- Instruments for observation from balloon and airplanes.

- Modification of reel carts.

- Modification of reels to permit telephone communication while laying wire.

- Modification of aiming stakes.

- New field telephone, type EE-8.

- Telephone transmitter in gas mask.

- German observation periscope.

### Ammunition development projects:

- Flashless and non-hygroscopic powder.

- Aliquot part charges for howitzers.

- Experimental four-round boxes for divisional ammunition.

- Washers to prevent unscrewing of fuzes.

### Guns and carriages:

- Divisional guns—75 mm. on split and box-trail carriages.

- Divisional howitzers, 105 mm. on split and box-trail carriages.

- German howitzers, 105 mm. re-chambered to take American ammunition.

- Caterpillar adapters for 8-inch howitzers and G. P. F. guns.

- Standard handwheels for gun carriages.

- Experimental panoramic sight mountings for French 75's.

### Tractor and self-propelled mount projects:

- Model 1920 ordnance divisional tractors.

- Modified 2½-ton ordnance tractors with Cadillac and class "B" motors.

- Fordson tractors with caterpillar adapters.

- Holt T-35 (light tractor).

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"800-pound" reconnaissance tractor.  
"1600-pound" reconnaissance tractor.  
Christie type self-propelled mount.  
Ordnance Mark VII self-propelled mount.  
Holt (Ordnance Mark VI) self-propelled mount.

### Training regulations:

Service of the piece—6-inch howitzer.  
Service of the piece—240-mm. howitzer.  
Service of the piece—155-mm. gun.  
Field artillery instruction and training.  
The observation battalion.  
Camps, marches and field equipment.  
The tractor driver.  
Officers' handbook.  
Dismounted drill and ceremonies.

### General projects:

15-ton Barrett jacks for heavy artillery.  
Use of dismounted canteen by all field artillery personnel.  
Lace boots for enlisted men.  
Non-slip horse shoes.  
Waterproofed clothing and tentage.  
Commercial flashlights of battery and generator type.

## MOTORIZATION

As indicated in the report of the Chief of Field Artillery for the year 1922, considerable thought has been given to the use to be made of commercial tractors in the event of an emergency which might make it desirable to motorize a large number of field artillery units. The tests of commercial tractors by the Ordnance and the Field Artillery Board has given much interesting and valuable data on the efficiency of certain commercial tractors as motive power for artillery, and it is the opinion of the Chief of Field Artillery that such experimental work to keep in touch with the developments in the commercial field is of the utmost importance and should be continued indefinitely.

The general performance of the tractors indicate that they may be considered as a reasonably reliable means of transportation for artillery. Under certain circumstances they have advantages over horses, but the experience to date has justified the stand of this office that artillery in divisions should be horse-drawn, and not motorized. The motorized organizations now active should be retained, in order to permit continued experimental work and development of this form of motive power for field artillery of all calibres.

One of the greatest difficulties to be overcome with the motorized light artillery is that of providing mobile transportation for reconnaissance



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and communications personnel. The so-called "reconnaissance tractors" under test by the Field Artillery Board are special vehicles designed to meet the needs of the Field Artillery for reconnaissance work, but their performance to date has been most disappointing. Experiments are being made at the present time to determine the capabilities of a modified Ford chassis, in the attempt to utilize a commercial product, available in practically unlimited quantities for the transportation of reconnaissance personnel.

### HORSES

During the past year the numerous reductions in the animal strength of field artillery units has seriously affected the organization and efficient functioning of these units. Individual mounts have been reduced twenty per cent. and rolling equipment such as ration carts, rolling kitchens, caissons, etc., which would normally form a part of field artillery batteries at all times have been left at posts in storage due to the fact that necessary animals required for drawing this equipment were not available. At the present time caissons which normally require six horses are being drawn by four horses, and the animal strength of field artillery units at the present time is only approximately seventy-one per cent. of the minimum number required under peace strength tables of organization. Unless funds are obtained from Congress during the next session, for animal replacements, the Field Artillery will be forced, by reason of lack of animals due to normal casualties which are bound to occur, to further reduce the number of animals by an amount equivalent to the dismounting of two regiments of divisional artillery. While this reduction will not be concentrated, the entire horse-drawn field artillery will be almost immobilized. The question of animal replacement is of vital importance to the Field Artillery.

### **Ordnance Developments as Pertaining to the Field Artillery**

Many of the projects hereinafter referred to have been discussed at more or less length in previous reports. With regard to these particular projects, this report will be limited to a discussion of their present status and such developments or changes as may have occurred during the current year.

#### GUNS AND CARRIAGES

##### LIGHT (DIVISIONAL) FIELD ARTILLERY

*75-mm. Gun, Model 1920 (Split Trail)*

*75-mm. Gun, Model 1921 (Box Trail)*

This matériel is under test by the Field Artillery Board. No report has yet been rendered, due to the fact that priority has been given the test of the 105-mm. howitzer matériel.

## ANNUAL REPORT OF THE CHIEF OF FIELD ARTILLERY

### *75-mm. Gun, Model 1923 (Split Trail)*

In accordance with the recommendations of the Chief of Field Artillery, the Ordnance Department has designed and constructed a wooden model of a new split-trail carriage which is comparable in mobility and simplicity of construction with the box-trail carriage, Model 1921. In this carriage, the weight has been materially reduced over the weight of the Model 1920, and the design as a whole has been greatly simplified. No consideration has been given the desire for interchangeability between gun and howitzer, as indicated in the Calibre Board Report. The elevation on the carriage has been limited to that necessary to obtain the maximum range; a constant recoil system is used, and a small shield has been designed. The cannon itself has been reduced two calibres in length and somewhat lightened through the use of a drop block and a simple type of hammer-firing mechanism.

### *105-mm. Howitzer, Model 1920 (Split Trail)*

### *105-mm. Howitzer, Model 1921 (Box Trail)*

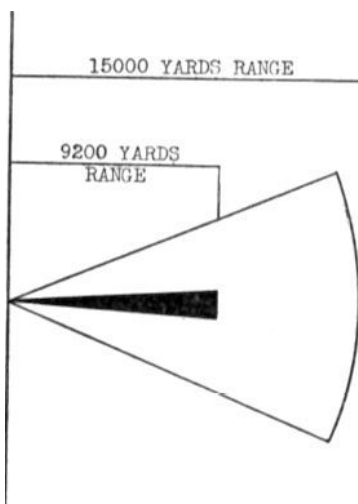
The test of this matériel by the Field Artillery Board has been concluded with a report which was submitted to the War Department for approval.

The box-trail carriage indicated satisfactory strength and ruggedness, both in road and firing tests.

A recommendation for the design and construction of a box-trail pilot was based primarily upon consideration of the fact that there is now under construction a carriage of split-trail design for the 75-mm. gun.

The recommendation of the Board for the design and construction of this new pilot matériel has been approved, and the general specifications laid down by them for guidance in its design have likewise been approved with certain modifications.

As approved, the new 105-mm. howitzer will be of box-trail construction, with a road clearance of about 20 inches and a maximum weight of 3000 pounds in firing position. Other characteristics are: wheels of 56-inch diameter, lateral stability of at least 40 degrees, dependent line of sight system, and a maximum elevation of 65



COMPARATIVE FIELDS OF FIRE

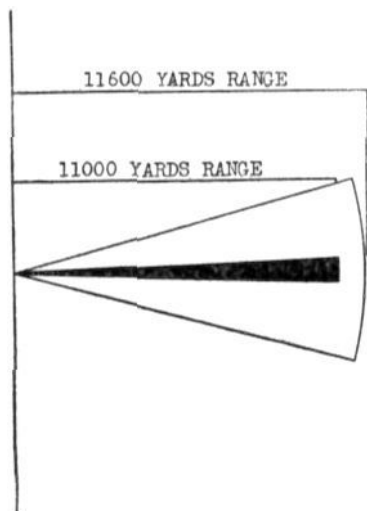
The Black is for the 75-mm. Gun, Model 1897 (French). The White is for the 75-mm. Gun, Model 1923.

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degrees, with a constant recoil mechanism so designed as to permit firing of the howitzer to an elevation of about 43 degrees before there is necessity for digging a pit. The sliding drop block will be used, and axle traverse on a straight axle.

### *105-mm. Howitzer (German)*

There are on hand approximately 130 cannon and 630 carriages of this type. After considerable study it was decided to rechamber these cannon to use our low 105-mm. experimental ammunition in place of manufacturing the German ammunition for which they were originally intended. This rechambering has been carried out on one cannon which was tested during March at Aberdeen Proving Ground. A muzzle velocity of 1460 f/s was obtained as against the standard muzzle velocity of 1500 f/s obtained with our experimental matériel. The carriage and cannon functioned in all ways in a satisfactory manner.



COMPARATIVE FIELDS OF FIRE  
The Black is for the 105-mm. Howitzer (German), Modified. The White is for the 105-mm. Howitzer, Model 1920.

It is clearly apparent that the split-trail carriage, on account of its wide field of traverse, is being seriously and extensively considered for both gun and howitzer.

### MEDIUM (CORPS) FIELD ARTILLERY

The Calibre Board, in its report, visualizes the ideal medium gun as of about 4.7 inches or 5 inches in calibre, mounted on a carriage permitting a traverse of 360 degrees and a vertical arc of fire from  $-5$  degrees to  $+80$  degrees, firing a projectile of approximately 50 pounds weight, to a maximum range of 18,000 yards, with a total weight of gun and carriage of approximately 12,000 pounds. As a companion piece to this gun, the medium howitzer recommended is of about 155 mm. in calibre, firing a projectile of approximately 100 pounds weight, to a maximum range of 16,000 yards. It was their desire that a carriage be developed on which could be mounted either the medium gun or medium howitzer.

The requirements for howitzers of the light and medium class contained in the Board's report are appreciably more difficult to meet than the companion guns. The requirements for the medium gun were quite out of proportion to those for the medium howitzer since it was desired to have about the same mobility in the two pieces.

## ANNUAL REPORT OF THE CHIEF OF FIELD ARTILLERY

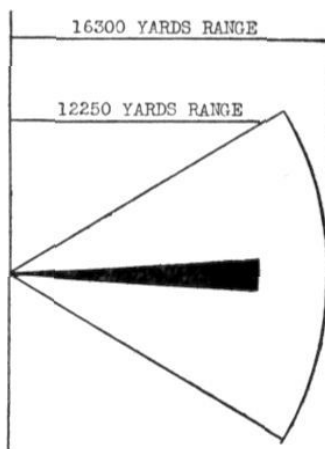
Two carriages of this type have been constructed. One is now under test at Aberdeen Proving Ground, alternately mounting either the 4.7-inch gun or the 155-mm. howitzer. In the early stages of the test of this matériel, weaknesses developed in the principal top carriage casting, which had to be redesigned.

### *155-mm. Howitzer, Model 1920*

This howitzer is mounted interchangeably with the 4.7-inch gun on the wheeled carriage above referred to. The 4.7-inch gun—155-mm. howitzer carriage, Model 1920, mounting the 155-mm. howitzer, will probably not be available for service test at Fort Bragg before well into the fiscal year 1924.

### *4.7-inch Gun, Model 1921*

This matériel has been under manufacture during the past year at Rock Island and Watervliet Arsenals. The estimated date of its delivery for test at

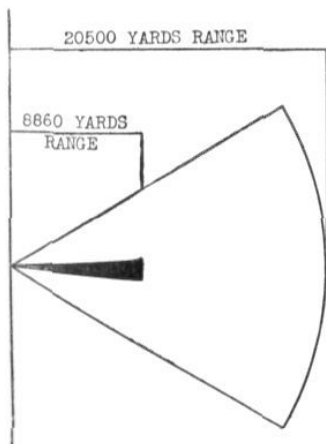


COMPARATIVE FIELDS OF FIRE

The Black is for the 155-mm. Howitzer, Model 1918. The White is for the 155-mm. Howitzer, Model 1920.

Aberdeen Proving Ground

was September, 1923.



COMPARATIVE FIELDS OF FIRE

The Black is for the 4.7-inch Gun, Model 1906. The White is for the 4.7-inch Gun, Model 1921.

### HEAVY (ARMY) FIELD ARTILLERY

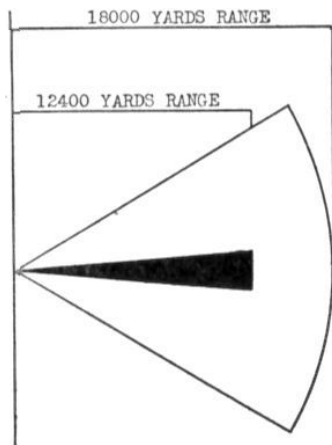
The Calibre Board, in stating our requirements for this class of artillery, ask a heavy field gun of approximately 155-mm. calibre, on a carriage permitting a vertical arc of fire from 0 degrees to +65 degrees, firing a projectile of 100 pounds in weight, to a range of 25,000 yards, the carriage on which it is mounted to be interchangeable with the carriage for the heavy field howitzer. This howitzer should be of about 8-inch calibre, firing a 240-pound projectile to a range of 18,000 yards.

### *155-mm. Gun—8-inch Howitzer Carriage, Model 1920*

This carriage, designed to meet the general specifications laid down above, and to fulfil the requirement that a single carriage

## THE FIELD ARTILLERY JOURNAL

mount, either the heavy field gun or the heavy field howitzer, has given sufficient promise to warrant its consideration in future study and design. One wheeled carriage of this type has been constructed, and is now under test at Aberdeen Proving Ground. The test thus far, though accompanied by



COMPARATIVE FIELDS OF FIRE

The Black is for the 8-inch Howitzer, Mark VIII. The White is for the 8-inch Howitzer, Model 1920 E.

of this calibre. However, the service has been furnished with eight cannon of this calibre, Model of 1918, which forms the armament of one battalion of the Fifth Field Artillery. These howitzers have shown reasonable road mobility, are comparatively easy to emplace, and their accuracy is far better than had been expected.

### *Pack Howitzer, Model 1920*

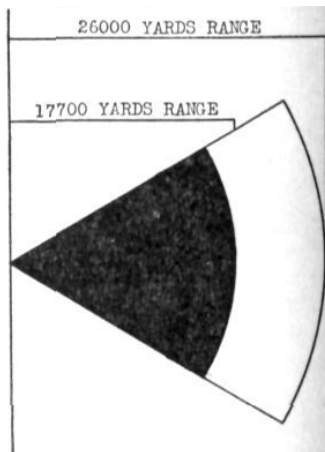
The pack howitzer, Model 1920, has been under service test since July, 1921, by two separate boards appointed for this purpose. The report of test from the first board was rather non-committal and incomplete, but recommended that further

study and additional test of the pilot be carried on. The report of the second board has been forwarded to the War Department for consideration. The howitzer has been withdrawn from test for the purpose of having

certain minor failures and difficulties, has been generally satisfactory, and it is thought that this matériel holds considerable promise as a suitable service weapon. Its test at Aberdeen Proving Ground should be completed by January, 1924, at which time it is contemplated sending it to Fort Bragg for service test. In addition to this wheeled mount, two similar top carriages have been constructed for mounting on the two Mark XX motor carriages.

### *240-mm. Howitzer*

No additional work has been done on the design study of an experimental howitzer of this



COMPARATIVE FIELDS OF FIRE

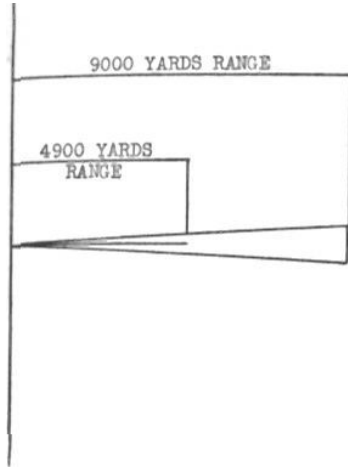
The Black is for the 155-mm. G. P. F. The White is for the 155-mm. Gun, Model 1920 E.

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it put in condition for use as a comparative weapon in the test of the pack howitzer, Model 1923-B.

### *75-mm. Pack Howitzer, Model 1923, Type B*

In accordance with the Chief of Field Artillery's recommendations of April 28, 1922, the Ordnance Department has completed the design and construction of a wooden model of the 75-mm. Pack Howitzer, Model 1923, Type B. Except for increased weight and power, and the resultant requirements as to division of loads to facilitate packing, the design is not unlike that referred to in my last report as the Model 1922. This latter design was a revision and improvement of the 75-mm. Pack Howitzer, Model 1920, but its completion was not carried beyond the construction of a wooden model.



COMPARATIVE FIELDS OF FIRE

The Black is for the 2.95 Mountain Gun, V.M. (This Gun Has no Traverse on the Carriage.) The White is for the 75-mm. Pack Howitzer, Model 1923, Type B.

Though this latest design has been considered primarily and essentially as pack matériel, there has been incorporated without any sacrifice in its pack qualities, means for its transport in draft.

## AMMUNITION

The improvement of ammunition, both as to weight and form of projectile and composition of bursting charge and propelling charge, is a continuing study. Experimental types have been produced for all of our experimental matériel and are being tested as that matériel becomes available for test itself. For the 75-mm. gun, the 15-pound projectile has been accepted as the best of the three experimental types under consideration, this primarily on account of the greater range and better accuracy obtained with this projectile over that with the 13½-pound projectiles. For the 105-mm. howitzer, a 33-pound shell fitted with three types of ogive has been considered. Firing so far has indicated greater range but less accuracy for the longest of the three.

### F. S. N. POWDER

Considerable progress has been made toward the development of a flashless, smokeless, non-hygroscopic powder for propelling charges. Both the DuPont Company and Picatinny Arsenal are at work on this problem, submitting samples for test at frequent intervals.

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### PERIODICAL SERVICE TEST

It is the policy of the Ordnance Department in their development and improvement of ammunition to periodically assemble a small lot of ammunition embodying the latest improvements, and send this to the service for its use in regular firing along with the use of the standard ammunition. The reports from these tests are forwarded as received, with recommendations by the Chief of Field Artillery.

There is now under manufacture ammunition for test in the 155-mm. howitzer.

### REDUCED CHARGE

It is well at all times to bear in mind the advantage of the reduced charge in the lengthening of the life of the guns, and the possibility of using the guns with this charge somewhat in the capacity of a howitzer. This consideration is of particular importance so long as there is not with our divisional artillery a light howitzer of approximately the same mobility as our divisional gun. The angles of departure and angles of fall for the reduced charge as now employed up to a range of 3000 yards, are practically double those for the normal charge. This permits the gun being used not only to search reverse slopes which cannot be reached with the flat trajectory of the normal charge, but of still greater advantage it permits the location of the gun frequently in positions much nearer the infantry line than would be feasible with a flatter trajectory. It permits the selection of advanced positions with better cover than is possible where the use of normal charges alone is contemplated.

### ALiquot PART CHARGE—155-MM. HOWITZER

Experimental powder charges of the aliquot part type for the 155-mm. howitzer are now under study and test by the Field Artillery Board.

### TIME FUZE

During the war and since, there has been a strong tendency to supplant the use of time fire with percussion fire, for reasons which in most cases are of a technical rather than tactical nature, and it is believed that efforts should be made to overcome these technical difficulties as far as possible. The time fuze—and on this account the shrapnel—is now practically barred from such uses as barrage, interdiction, harrassing and night fire (where it might often be employed with considerable tactical advantage) due to our being unable to efficiently employ fire of this kind without observation. It is believed that the feasibility of a transport of time fire similar to that now made with percussion fire should be carefully

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investigated, either through the design of a time fuze giving greater accuracy than our present fuze, or through increasing our knowledge of the variation in time of burning of the present fuze under varying conditions of fire.

Both lines of investigation are now being followed. The development of more accurate time fuzes has been given priority over other development of fuzes, and current firing with the 75-mm. shrapnel at Aberdeen Proving Ground is being carefully observed with a view to obtaining sufficient data to warrant applying corrections to the time of burning of our present fuze due to variation in barometer and temperature.

The emphasis placed on the importance of time fuze development is primarily on account of the necessity for such a fuze for anti-aircraft fire, though our interest in this fuze both for use in shrapnel and in high-burst ranging is material.

### IMPACT FUZES

*A-B 3.* This is a short fuze designed for super-quick functioning, and intended to supersede the Mark III (long) fuze. It has been tested both in the service and at Aberdeen Proving Ground.

*E-13.* A desire to simplify the fuze supply problem prompted the development of this combination super-quick and short-delay fuze. It is designed to replace both the Mark III and the Mark V fuzes, functioning as either one or the other, depending upon a setting made at the gun at the time of firing.

### FIRING TABLES

Firing tables in tentative form have been under study throughout the service in this office. As a result of this study, numerous modifications and changes have been made in those tentative tables, and a standard form has been adopted which is in general applicable to all mobile artillery. Firing tables for the 75-mm. gun, Model 1897, have been prepared in this form and are now in process of printing for general distribution.

This table will represent more than two years of study with a view to simplifying and improving the form which was taken from the French during the war. The principal changes in this form consist in a fuller explanation of the use of the tables, the elimination in so far as practicable of duplicated data, the simplification of the meteorological message, both in its preparation by the meteorological service and in its use by the battery commander, a slight rearrangement of the corrections and the inclusion of tables for correction,



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due to height of site and change in elasticity of the atmosphere due to change in temperature.

In addition to the 75-mm. firing tables above referred to, tables for the 155-mm. howitzer, the 155-mm. gun, the 8-inch howitzer and the 240-mm. howitzer, are in such form that they can be rearranged and printed with but short delay.

### TRACK MECHANISM

Until the present year, most of our development of motor equipment has contemplated the design and construction of complete units. This is primarily for the reason that as the commercial tractor is never the ideal for military use, so, too, are few parts of commercial production identical with those which would be designed for a military tractor. In addition, the assembly of parts which are not related in the original design breaks the continuity of the design, resulting in certain disadvantages.

However, it is believed that without undue sacrifice, practically all parts for the assembly of our tractors, if not, in fact, the tractors themselves, particularly of the light and medium types, can be found in a satisfactory form and in commercial production; this with the possible exception of the track and track mechanism.

A consideration of the above, in conjunction with our very limited funds, is forcing the centralization of effort on the study and test of commercial tractors and the design and test of track mechanisms,—the latter, both for adaptation to commercial vehicles and for assembly into complete units, if necessary, with parts and sub-assemblies of commercial production.

### TRACTORS

#### ORDNANCE TRACTOR, MODEL 1918

In an effort to utilize 117 tractors of this type which are available, two forms of modification have been made and are both now under test by the Field Artillery Board.

#### ORDNANCE TRACTOR, MODEL 1920

This tractor was designed as a 2½-ton tractor to meet the requirements of a tractor for the divisional artillery. In it an effort was made to incorporate changes and modifications found necessary and desirable as a result of test of the 2½-ton tractor, Model 1918. It is now undergoing service test at Fort Bragg. Report of this test has not yet been rendered. However, preliminary reports indicate a fairly satisfactory performance to date.

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### MEDIUM (CORPS) TRACTOR

This vehicle now under construction at Rock Island Arsenal and nearing completion, which is especially designed with a view to testing on it various types of track mechanism, is intended to meet our requirements for a tractor to handle corps matériel. A single vehicle is being constructed. No alternative designs of track mechanism for test with it have yet been approved. This vehicle will probably be available for Ordnance test at Aberdeen Proving Ground in the latter part of the present summer.

### HEAVY (ARMY) TRACTOR

Two tractors of this type designed to fulfil our requirements for a heavy tractor to handle the heavy field gun and howitzer, are now under construction at Rock Island Arsenal. One is practically completed.

### COMMERCIAL TRACTORS

In any consideration of the problem of artillery transport, there is great difficulty in separating the ideal from the practical. The artillery in its early attempts at its solution has sought, combined in a single vehicle, the mobility of the truck and the caterpillar in their respective fields, and the speed of the motor car. All of these features, we realize, are highly desirable, and it has been hard to eliminate any of them from our requirements. However, one by one they have been weighed against the numerous disadvantages met in study of the design, construction and procurement of such vehicles.

The commercial field has for its development work far greater resources than we can contemplate under the best of conditions. The development in this field is continuous and progressive, though at times it may be considered conservative and rather slow; for they can not afford, as ourselves on some occasions, to look beyond what is reasonably assumed as a practical success. Their general aims and desires are not radically different from our own. They are constantly seeking increase in mobility, in reliability, and in the efficiency of their vehicles for the transport of cargo. It is true, many of the requirements toward which they work are less rigid than those encountered in the military service, but the general trend of these requirements is toward a vehicle which, though not the ideal from our point of view, is entirely practicable and will at all times be available with the latest tried improvements embodied.

It is thought that we can, in time of peace, considerably influence construction in the commercial field to follow lines which are manifestly advantageous from a military point of view and do not adversely affect commercial use. This influence may, for instance, take the form of increased reliability and accessibility, increases in

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strength and quality, and design capable of slight alteration to produce the higher speeds desired in military use. Such consideration of our needs is now a factor in the study and design of commercial products by one of the largest producers of caterpillar tractors in the country; and through a display of sufficient interest in their vehicles and an assurance of their use in time of necessity, many other producers may be influenced in their design to our advantage.

### RECONNAISSANCE TRACTORS—800-POUND AND 1600-POUND

Both of these vehicles after a brief examination to insure their proper functioning, which was made at Aberdeen Proving Ground, have been delivered to the service and are now under test at Fort Bragg.

### MOTOR CARRIAGES

#### 75-MM. GUN—105-MM. HOWITZER MOTOR CARRIAGE

Both the Christie and the Mark VI (Holt) have been with the service for test during the past year. The test of this matériel by the Field Artillery Board has practically been completed.

#### 75-MM. GUN MOTOR CARRIAGE, MODEL 1924 E

A new carriage mounting the 75-mm. gun has been under study during most of the past year. Preliminary sketches of this design have been approved and the work of detailing begun. Every effort has been made to reduce weight without sacrificing the requisite strength and durability. The manufacture of a pilot from this design has not yet been approved.

#### 155-MM. GUN—8-INCH HOWITZER MOTOR CARRIAGE, MARK II

Two of these motor carriages, Nos. 1 and 2, have been at Aberdeen Proving Ground for more than a year. Test of No. 2 has been in progress since October, when the 155-mm. gun and mount were installed.

The 8-inch howitzer and mount for Motor Carriage No. 1 were shipped from Rock Island Arsenal April 23, 1923.

A complete report of this test has not yet been submitted.

### MISCELLANEOUS

#### CATERPILLAR ADAPTERS

The Field Artillery Board has conducted a test of caterpillar adapters as applied both to the 155-mm. gun, G. P. F., and the 8-inch Howitzer, Model 1918, in comparison with the same matériel on wheels. In this test, the 8-inch howitzer load was considered to include the firing platform and its transport only when used as a wheel carriage.

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### PANORAMIC SIGHT BRACKET

Considerable study has been given the problem of employing with the 75-mm. Gun, Model 1897, our standard panoramic sight. In its solution, brackets of two types have been designed and constructed, and tested by the Field Artillery Board at Fort Bragg.

### MACHINE GUN MOUNT—CAISSON

In order to obtain a convenient and readily accessible means of carrying the machine gun with artillery units, as well as a mobile firing mount, there has been designed a means of securing to the caisson the column and upper post of the pedestal mount for the Browning Machine Gun. One mount of this type is now under test at Aberdeen Proving Ground preparatory to sending it to Fort Bragg for service test.

### **Chemical Warfare Service Development**

During the past year, tests have been conducted with boosters of varying lengths, and with three or more smoke compositions with a view to improving the characteristics of our smoke shell. This improvement, it is thought, is vital, provided the use of smoke by artillery is to be in any way extensive.

Tests have been made with a tear-gas projectile intended for training purposes and a thermit hand grenade has been developed for the infantry for the purpose of disabling cannon.

An incendiary projectile for the Field Artillery has been developed and tested.

In any war in which gas is employed, it is thought that no other than the most efficient toxic gas that can be produced and used satisfactorily will be justified, except in so far as this gas becomes non-obtainable in desired quantities. This type of gas should be provided both in a persistent and non-persistent form.

### **General**

With our comparatively large stock of munitions on hand, and our shrinking appropriations for the manufacture of others, we can not think of building for today, tomorrow, nor yet for the first part of our next war. We must look still further ahead and without losing sight of the practical, design our matériel to fit into at least the second year of this prospective great war.

We can not take what is good enough now and has served well in the past, and set it up as ideal. We must recognize the rapid strides being made in the manufacture of metals and chemicals, the improvement in means of communication and transportation, means of mapping and observation—in short, all scientific development,

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and realize that this progress though made in the furtherance of peace-time pursuits, is available for military purposes and will be used for such to the fullest extent when the emergency arises.

However, its use can not be accomplished with reasonable efficiency and economy except through continuous study, careful preparation and planning, and constant revision to meet current changes in times of peace.

This, as I see it, is the function of our development and experimental work with matériel. Our progress at best will be slow, and extremely difficult, but progress we must make and this at least equal to that of any possible opponent.



# BATTERY "B" OF THE TWELFTH FIELD ARTILLERY DURING THE LATE WAR

BY CAPTAIN GEORGE D. WAHL, F.A.

*(Continued from last issue)*

SECTOR NORTHWEST OF CHÂTEAU THIERRY

AFTER an all-night trip our train came to its thousandth jerky stop at 6:30 A.M. on June 1st. Investigation disclosed the town of Dammartin in the immediate vicinity.

An orderly came down the tracks calling for the Train Commander. Colonel McCloskey, the Regimental Commander, who had made the trip on the battery's train, replied and received the orders for the battery to detain.

The orders were urgent. The French line had been literally shattered and the Second Division was to be used to block gaps in the line. Our first destination was to be Acy-en-Multein, in the vicinity of which the Second Division was said to be concentrating. The battery was quickly detrained and prepared for the road.

An amusing incident occurred while the battery was being unloaded. Private Valley was in charge of one of the anti-aircraft machine guns assigned to the battery. As we had been told to beware of low-flying hostile aircraft, his gun had been mounted on the broad top of the battery wagon ready for instant use at all times. The Regimental Commander wanted a picture of the gun on its unique emplacement, so Private Valley was directed to pose "as realistically as possible." He did! He fired ten shots into the fair town of Dammartin before he could get his finger off the trigger.

Colonel McCloskey left on reconnaissance as soon as his car was unloaded. He directed the Battery Commander to march the battery to Acy as quickly as was consistent with due conservation of horse flesh.

At 7:45 A.M., the battery having been fed, watered and packed we started. In order to facilitate the march the battery commander's detail was sent ahead to reconnoitre the route. During most of the march it kept about two or three miles ahead of the battery.

The route selected led through le Plessis-Belleville, Bouillency, Reez to Acy. The road was crowded with two lines of traffic. One line, headed northeast, was strictly military in character. The other line, going in the opposite direction, was composed entirely of fugitives from the area of the new enemy invasion.

A consideration of the plight of these miserable, innocent victims brought home to us the real meaning of war. They were almost all

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children, women or old men. Sherman undoubtedly had formed his opinion after due consideration of the subject. The sight of women and old men hitched to light carts, piled high with all that remained of their worldly belongings, the younger children perching precariously on top, was enough to make the most thoughtless of us stop to think.

We arrived in Acy-en-Multein about 1:30 P.M. Here we were met by Colonel McCloskey with orders to proceed on to Cocherel. As the change in orders meant an additional fifteen miles of marching, a two-hour halt was made to water and feed the animals and break the march for the men.

The exact situation was still obscure. The Colonel informed us that it had originally been planned to concentrate in the Acy-Mayen Multein area. To concentrate further to the front had been deemed impracticable at the time the original orders had been issued. Unexpected developments had changed this and new and more advanced positions had become available.

That day's march will long stay fresh in the memories of the personnel of the battery. Miles had never been so long before.

Our route lay through Lizy-sur-Ourcq. This town is at the intersection of several roads. On each of these roads troops of all kinds were streaming toward the new salient. After a remarkably short delay, considering the number of troops involved, we were able to move on again.

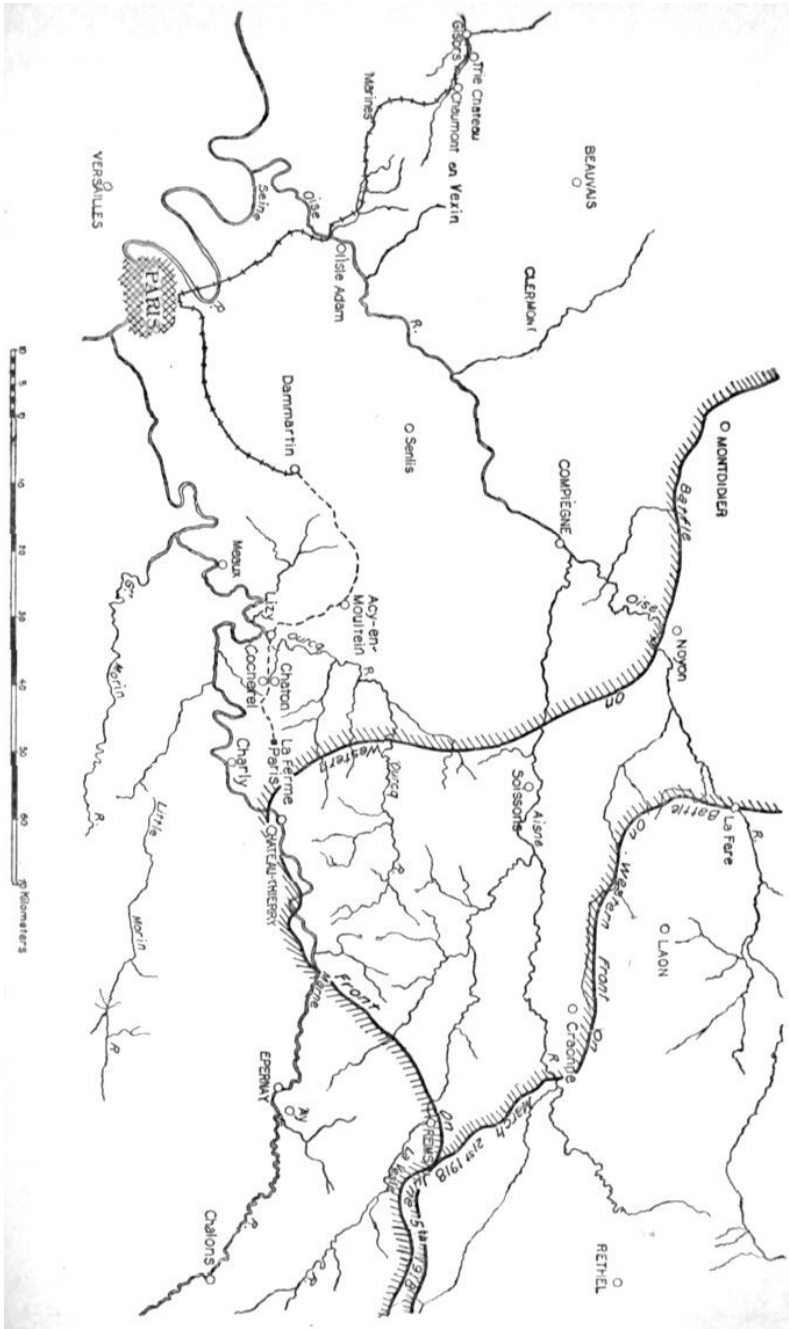
We came at last to Cocherel, only to find a route-marker there, who directed us on again. Finally, at 7:30 P.M., we arrived in the regimental bivouac at Chaton after nearly ten hours in the saddle. The march had been a trifle over thirty miles.

On arriving at Chaton, what was known of the general situation with regard to our troops at that time was told to us. The Third Brigade (9th and 23rd U. S. Infantry) was reported as holding the line Triangle Farm-Monneux. The Fourth (Marine) Brigade (5th and 6th Marines) were said to be on the line between Triangle Ferme and Bussiares.

A battery plays a very small part in a big war. Taken by itself, its wanderings and experiences appear a trifle aimless. If it takes a small part in the war, it sees even less. It is therefore appropriate to mention here some of the things which were happening to the Division as a whole. In doing this we can piece the small part we play into the jig-saw puzzle of the whole and get some idea of what was actually happening. The knowledge of these things, which appear aimless at the time, take on an added significance.

The best place to start this summary of the fortunes of the Division appears to be on May 30th. That date, as will be remembered,

BATTERY "B" OF THE TWELFTH FIELD ARTILLERY





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was celebrated by the Division with fitting exercises in its rest area near Chaumont-en-Vexin (12th Field Artillery near Trie Chateau).

About 8:00 A.M. on May 30th, Field Order Number 3, Second Division, was issued directing in detail the movement of the entire Division to the region of Beauvais by marching. These orders reached us just about the time that the memorial exercises were over. Our march was to start at 6:00 A.M. on May 31st.

About 5:00 P.M., May 30th, a French staff officer arrived at Division Headquarters with an order countermanding the march order for Beauvais and directing that the infantry of the Division be ready to be loaded into trucks at 5:00 A.M., May 31st, to be transported to the region of Meaux (thirty-five miles east of Paris). The artillery was to follow by rail.

Field Order Number 3 was immediately cancelled. A warning order was issued, followed at 9:30 P.M. by Field Order Number 4, Second Division, which directed the new move.

It was in compliance with Field Order Number 4 that the battery entrained at Gisors on the evening of May 31st and started its trip to Dammartin, where this chapter begins.

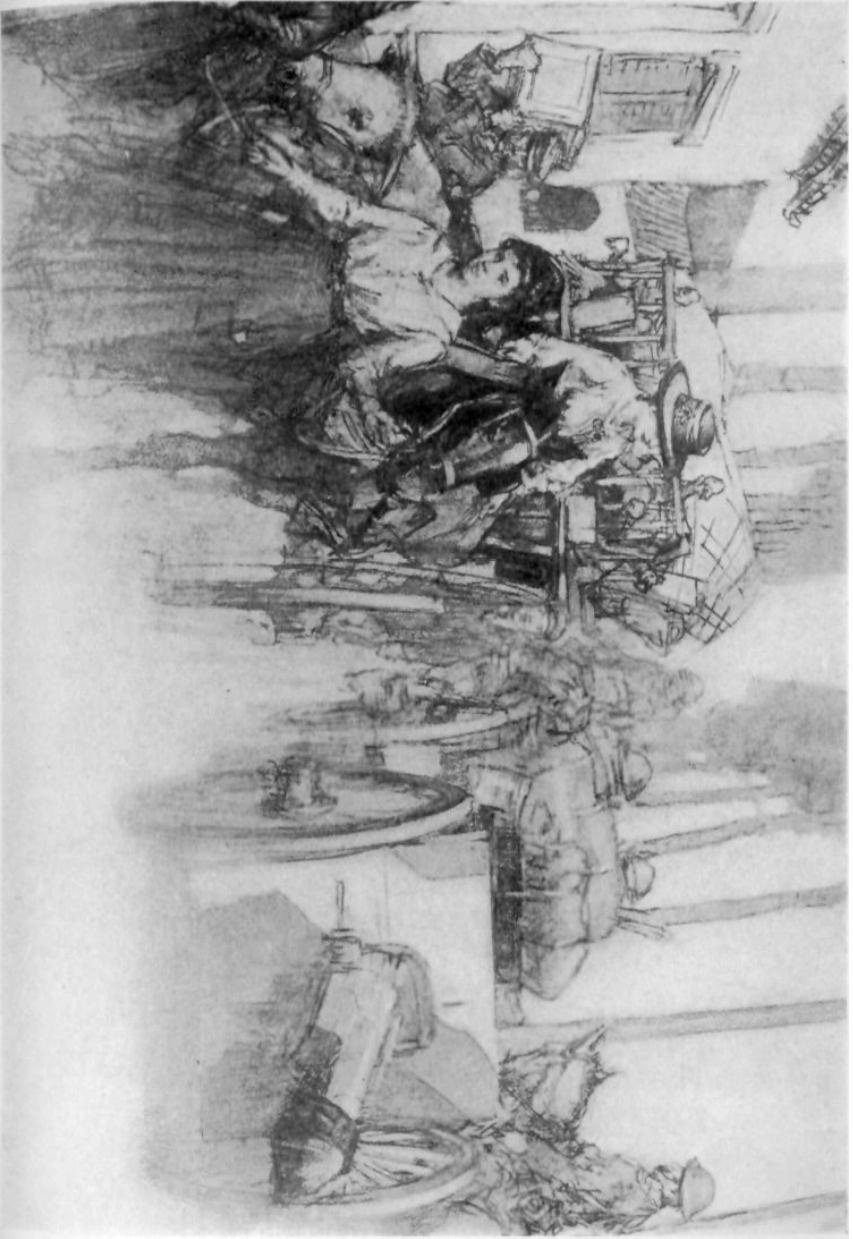
The hurried changes in our Division mission were due, of course, to the great German attack of May 27th along the Aisne and between Rheims and Soissons, which made the Château Thierry salient. On May 30th this salient was approaching Château Thierry and looked as if it might even reach Meaux.

At 7:40 P.M., May 31st, Field Order Number 5, Second Division, was issued. Among other things it states, "A strong enemy attack has developed on the line Epieds-Etrepilly-Bouresches. The Division passes from the Seventh Army Corps (French) to the Twenty-first Army Corps (French) as reserve \* \* \*. It will be concentrated at once in the area Montreuil-Dhuisy-Bezu-Coupru \* \* \*."

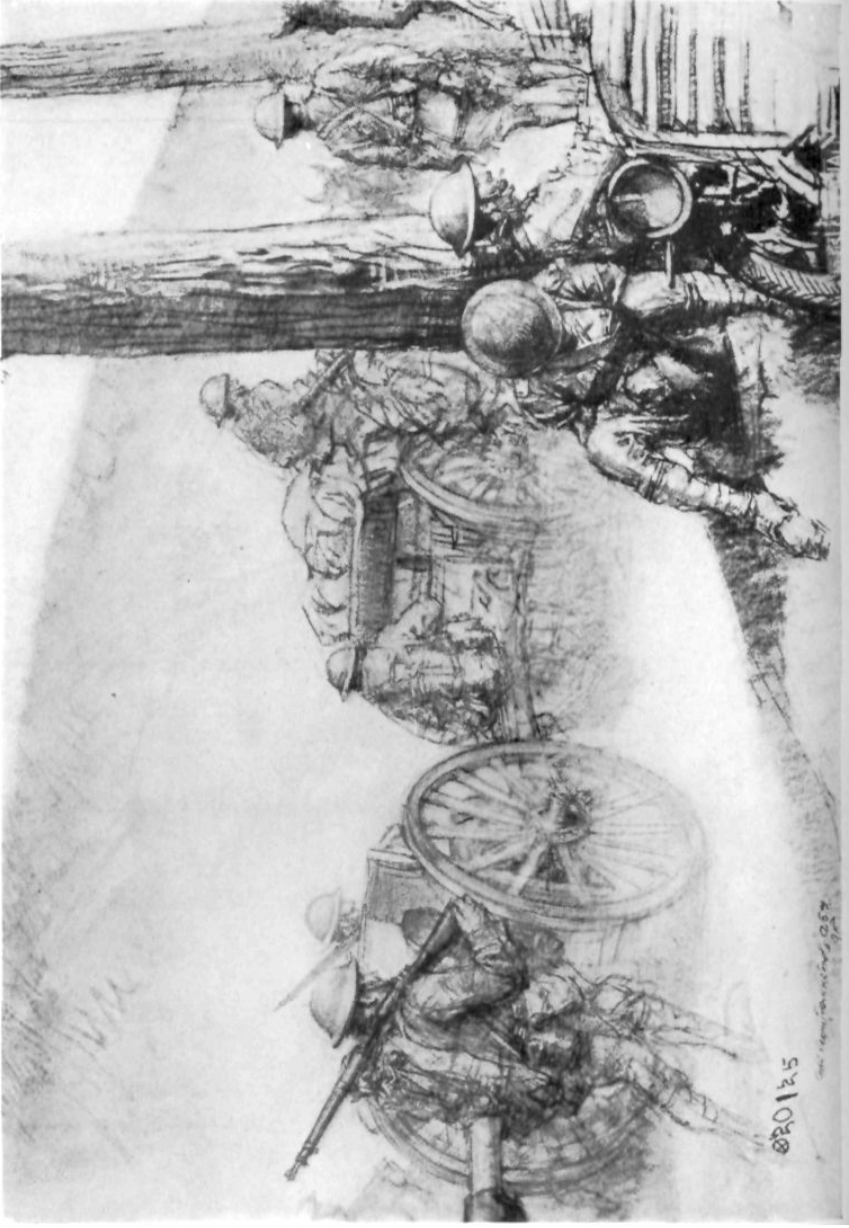
Our orders on detraining at Dammartin were in compliance with Field Order Number 4. The orders we received at Acy were to comply with Field Order Number 5. To an humble battery commander, the operations at the time closely resembled the Second Battle of Bull Run. We had all but made a true semi-circle.

The following extracts from the War Diary of the Fourth Brigade (Marines) for June 1st will give some idea of what was happening to the infantry of the Division while we were on our way to Chaton.

"Troops arrived at front during night and morning. Disembarked from *Camions* at different points and are marching toward the line. The rapid advance of the Germans within the past few



REFUGEES FROM THE CHÂTEAU THIERRY SECTOR  
Drawn by Captain H. E. Townsend.



NORTHWEST OF CHÂTEAU THIERRY: THE ROAD TO THE FRONT

Drawn by Captain H. E. Townsend.

## BATTERY "B" OF THE TWELFTH FIELD ARTILLERY

days and the tired condition of the French troops make it imperative that the Division go into line immediately. Men somewhat stiff and tired after a twenty-four hour *camion* trip \* \* \*. The first contingent of the Brigade reached the line during the afternoon. Brigade Headquarters established at Issonge Ferme house at about 4:45 P.M."

As the 12th F. A. later supported that part of the line held by the Fourth Brigade, the following message sent by that Brigade to Division Headquarters at 5:05 P.M., June 1st, is of interest as indicating the line we were to support later.

"Second Battalion, 6th Marines, in line from Le Thiolet through Clerembauts Wood to Triangle to Lucy. Instructed to hold the line. First Battalion, 6th Marines, going into line from Lucy through Hill 142. Third Battalion in support at la Voie du Chatel, which is also P. C. of the 6th Marines. Sixth Machine Gun Battalion distributed at line \* \* \*." HARBORD.

About the time then that we arrived at Chaton the infantry we were later to support were deploying for action behind the Bois de Belleau. We did not know this at the time, of course.

Having arrived in Chaton at 7:30 P.M., June 1st, the battery bivouacked for the night in an orchard just north of the town. The civil inhabitants had all left, so the place was quite deserted. The only disturbances during the night were due to the arrival of other batteries of the regiment which had detrained after we had and the display of pyrotechnics along the line. By dawn the 12th Field Artillery was concentrated in Chaton.

We harnessed in at 6:30 A.M., June 2nd, and took our place in the regimental column, which formed ready to resume the march to the East. However, we were not to march that day. The Brigade Adjutant, Major W. C. Potter, ordered the regiment back into bivouac, directing us to keep under cover. We were disgusted to say the least! We had hiked 30 miles to get there and we wanted to fight somebody for it!

We returned to Chaton and amused ourselves by making a collection of all the chickens, rabbits and other edible impedimenta left by the civil population in the hurried evacuation. A list was made of it and the stuff issued to supplement the day's rations, which were quite scanty. Fresh meat, also, was quite a novelty in this sector.

On June 3rd, the 12th Field Artillery went into action behind the Fourth Brigade. The officers preceded the regimental column to the vicinity of Paris Ferme (172.8-258.2), where they were met by the Regimental Commander. From that point the reconnaissance was conducted under the direction of the battalion commanders.

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Major E. M. Watson was the commander of the First Battalion of the 12th at this time and under his direction A and B Batteries selected positions in a patch of woods at (171.7–258.5), marked 1 on the map. C Battery went into some woods just north. The battalion command post was established in Issonge Ferme (171.0–259.0).

The battery's general field of fire was designated in the vicinity of Bouresches. Observation in this sector was difficult, in fact almost impossible. The only maps of the sector were 1/50,000 French hachure affairs which had been enlarged to 1/20,000 and supplied with a grid. The information as to the infantry situation was scanty. We knew little but what we had learned on the evening of June 1st, when we arrived at Chaton.

As a result of these things and aided largely by lack of foresight on the part of the battery commander, the battery was finally registered by moonlight. This registration consisted of lining up four very high shrapnel bursts fired at 5000 with the church steeple of Lucy-le-Bocage, which was in our lines. Our fire that night must have been quite effective!

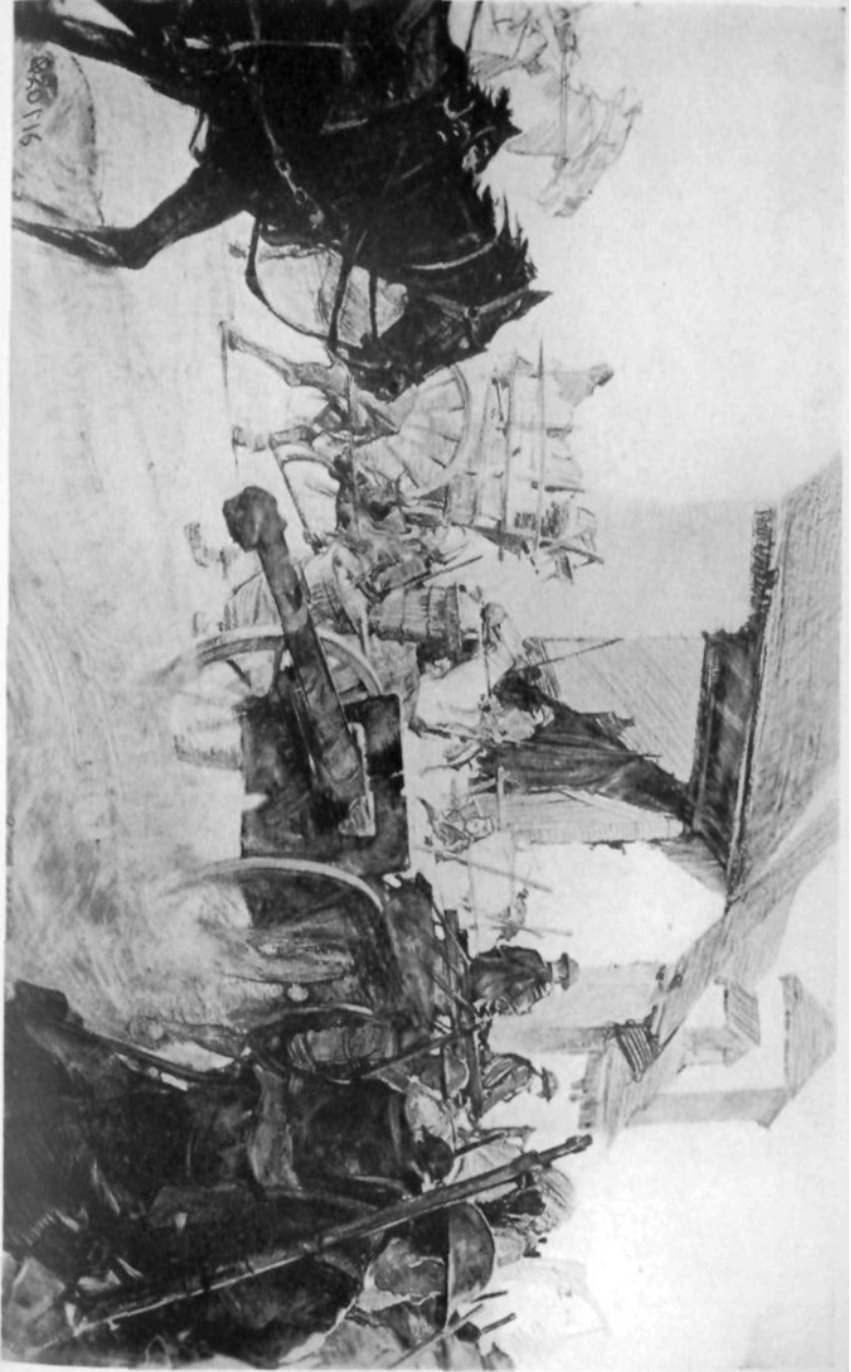
This was our first experience with open warfare. If we learn by our mistakes, we were learning bookfuls for a time during this period.

The first thing the next morning (June 4th) an observation post was selected in the top of a large tree at (173.9–260.3) and the battery was registered on different points between Bouresches and Belleau. The base point elected was a small house at (177.2–263.2). The map proved much more accurate for firing purposes than would be thought to look at it.

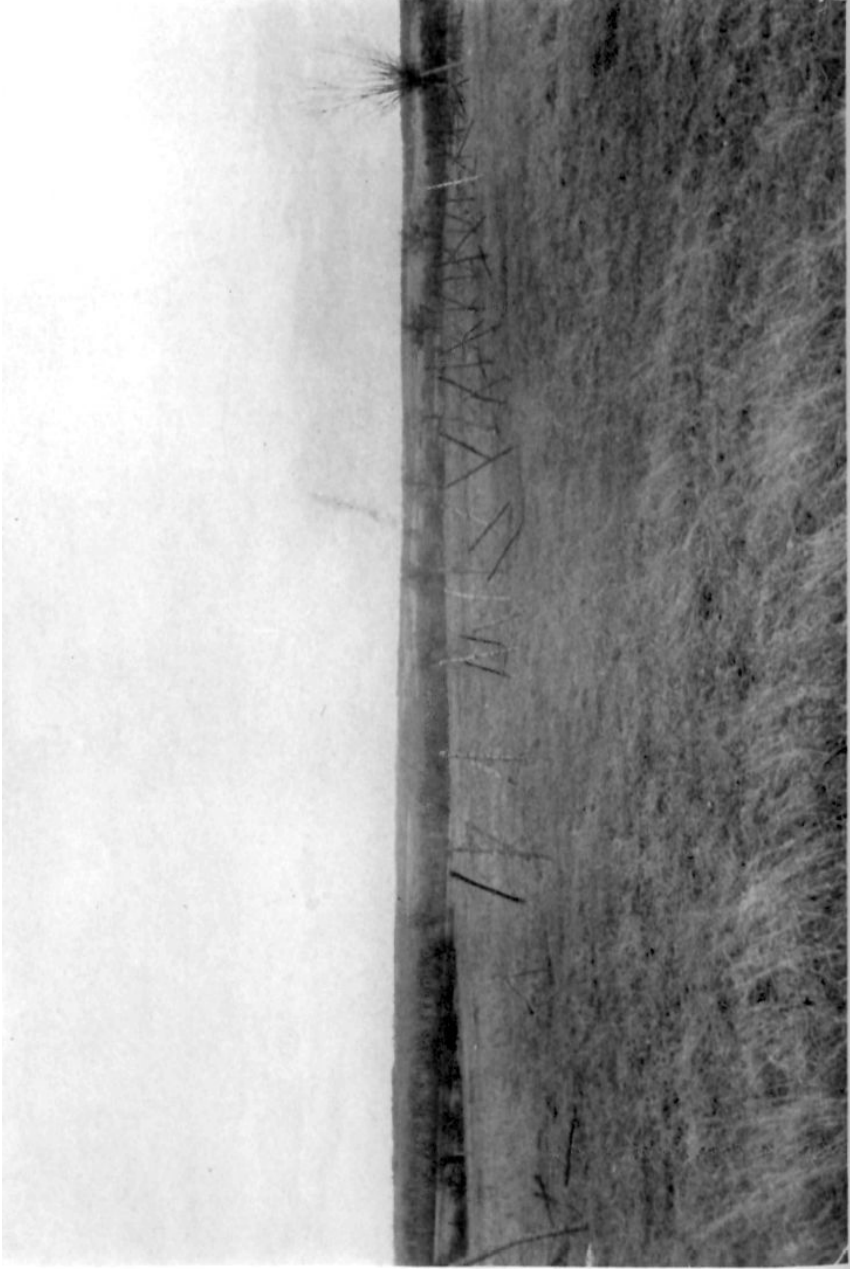
For the sake of coherence it will be to our advantage at this point to take up here the operations of the infantry of the Division from the time we last mentioned them as going into action behind the Bois de Belleau to the morning of June 4th up to which point we have brought the narrative of the battery.

During the night June 1st-2nd, the 23rd Infantry and the 1st Battalion, 5th Marines, which had come up, marched to plug a hole in the French lines from the Bois de Veully, Premont and towards Gandelu (about four kilometres northwest). The 2nd Battalion, 5th Marines, took position on the line, Hill 142 to the Bois de Veully, on the afternoon of June 2nd. This considerably extended the line to the left.

The real front line was supposed to be in front of that held by the Division, but if it was a line it was a very lightly dotted one. There were troops in front of ours, and we were supposed to be in support of them, but these troops were very few and were not



ON THE CHÂTEAU THIERRY ROAD  
Refugees Passing American Troops Going to the Front. Drawn by Captain George Harding.



NORTHEAST OF LUCY-LES-BOCAGE, LOOKING TOWARD BELLEAU WOODS  
Taken toward the Northeast from Point (174.8-260.9).

## BATTERY "B" OF THE TWELFTH FIELD ARTILLERY

capable of putting up much of a fight. There were several attacks in front of the Division during the day, but they broke down mainly under the fire of the American machine guns.

The afternoon of June 3rd is the date of an attack which has historical interest. We have mentioned that the 2nd Battalion, 5th Marines, took up a position near Hill 142 on the afternoon of June 2nd. Just as it took position the light forces in front gave way, and it had to prepare to receive an attack immediately. Nothing serious happened, however, until about 5:00 P.M., on June 3rd. At that time a fair German barrage started and an attack was made through the wheat fields of Hill 142 against the position of the 55th Company at Les Mares farm (171.9-262.3). The attack was met entirely by rifle fire and automatics as no machine guns were available at this point of the line. This attack marks the closest advance of the German Army to Paris in 1918.

June 4th, at 4:00 A.M., the French troops in the sector officially turned over the command to the Americans. The following is of interest in this connection:

"The relief of the French this morning at 4:00 A.M. passed off without event. Now that the French have moved from our front, I have instructed regimental commanders to have small patrols pushed to the front tonight in an endeavor to locate the enemy \* \* \*. The spirit of the men and officers is good. Reports just received that the battalion of the 23rd Infantry, next to our left, has withdrawn its liaison and is expected to be about to be relieved.

"HARBORD."

The Infantry activity mentioned so far has been mostly that of the Marine Brigade. It should be understood that there were other troops on the field from the Second Division. The activities of the Marines are mentioned particularly as they were the ones in which the battery was concerned. All troops of the Division took their share in the operations in this sector. As this is an account of a battery and not of the Division, naturally no mention is made of them.

We have now traced the events of both the infantry and the artillery up to the moment when the artillery is in position and the command has passed to American hands. From this time on only the operations in which the battery took part will be mentioned.

The firing done by the battery on June 4th was in the region of Bussiares. Fire was requested and delivered along the valley of the Clignon brook below Licy-Clignon. The Bois des Mares (172.8-263.2) and the Bois de Baron nearby also were fired upon.

June 5th was a comparatively quiet day. In the late afternoon, however, a single 150-mm. shell landed fairly on the horse lines of



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the combat train of the battery which was located about 300 metres from the battery position. The casualties were 18 horses killed and 5 wounded. No men were hurt, although several who were sleeping near the horses were badly shaken up.

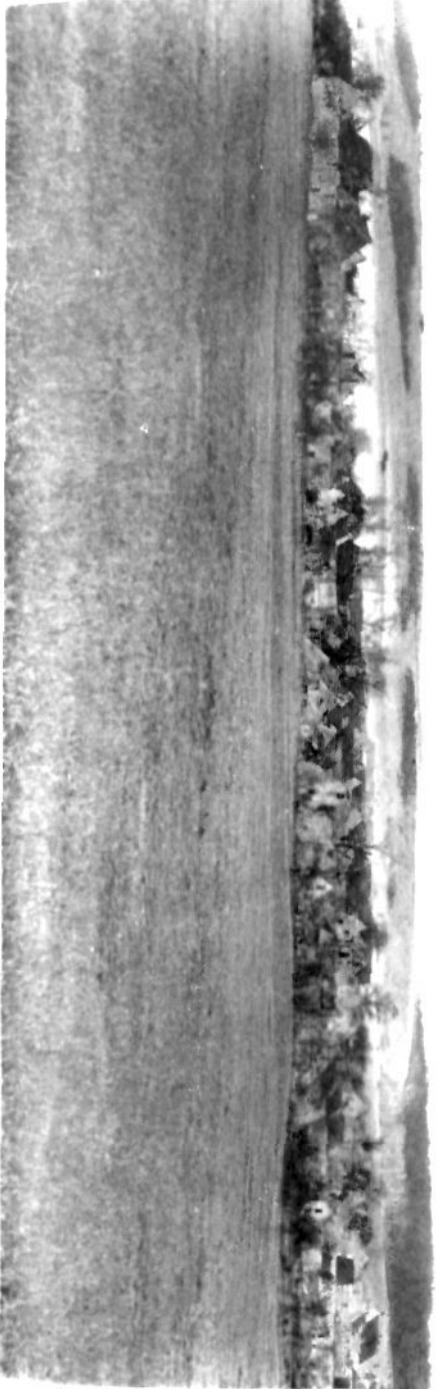
Most of the night of June 5th and 6th was taken up with harassing and interdiction fire in preparation for an attack to take place on the morning of June 6th. The attack was delivered at 3:45 A.M. and was against Hill 142 (173.5–262.5). The enemy retaliated later in the morning by harassing fire on the batteries and C Battery suffered the first casualties, losing five wounded by shrapnel fire.

The morning attack was successful and gave us the high ground overlooking Torcy and Bussiares. Another attack was decided upon for the afternoon of June 6th and was of a more pretentious nature. The objectives of this second attack were to be the Bois de Belleau (176.0–262.0), Bouresches (177.0–261.0), and the hills on either side of Torcy and Belleau. The attack was energetically pushed, but did not gain us much. Bouresches, with the exception of the railroad station, the Bois de Belleau up to an east and west line through Hill 181 (175.8–261.2) and the woods north of Lucy remained in our hands. Our casualties were heavy. The Bois had shown its teeth!

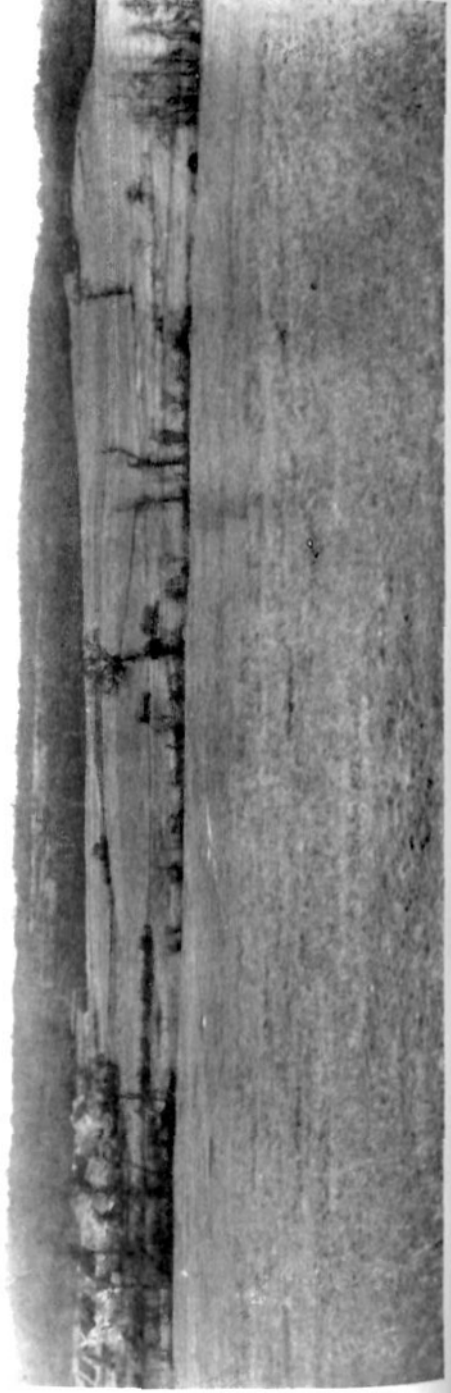
Belleau Wood was a very difficult piece of terrain indeed. It was covered with fair-sized trees and from an artillery observation post no particular point in it could be located on this account. All one saw was a fair-sized wood. It was also difficult to hit any one spot. With a flat trajectory weapon like the 75 one might get through to the ground and also one might burst short in the trees. The ground was covered with large boulders, making excellent machine-gun nests, which only a direct hit could knock out. It did not help matters much to go into the wood. One usually could not locate oneself accurately enough to be of much assistance.

About this time a change of position for the battery became very desirable. There were two batteries near us. B battery, 17th F. A. (155-mm howitzer), fired over our heads from a position only a short distance in rear. It used OO charge most of the time and annoyed us greatly. "A" Battery of the 12th was right alongside of us. It is never pleasant to be in a group of batteries. It invites attention at best. As we were all firing heavily, we felt conspicuous. The incident of June 5th, which cost us dearly, made us feel unlucky, so we asked for and received permission to move.

On the night of June 6th–7th we moved to a new position in a patch of woods at (172.5–259.5) which we occupied for only one night. At dawn the next day we discovered that the position could be seen from Hill 204 (181.0–258.5) on a clear day. The preceding



**BOURESCHES**  
Taken from A Point (1766—260.7) Southwest of the Village. Looking Northeast.



RAVINE LEADING INTO BOURESCHES  
Taken from A Point (176.6—260.7) Southwest of the Village. Looking East.

## BATTERY "B" OF THE TWELFTH FIELD ARTILLERY

day had been cloudy and Hill 204 had been hidden in mist during the reconnaissance.

A more suitable position was found and another change was made on the night of June 7th–8th. This position was an excellent one, having good entrances and exits which are very desirable when doing much firing and consequently hauling much ammunition. It was in a small square wood at (172.0–259.3).

Early on the morning of June 8th attacks were made against Bouresches, which we had captured on June 6th. The battery took part in repelling this attack. It broke down largely under artillery fire.

June 8th, 10th and 11th saw repeated attempts by our troops to take the Bois de Belleau. Each of these attacks was accompanied by artillery preparation. They gave us possession of all but the tip of the woods. In the tip was a strong point which still remained.

June 12th, another attack was launched against this remaining strong point. The preparation which was scheduled to last two hours was lengthened to three hours on account of the apparent lack of effect of our fire on the woods. The attack was successful, but a corner of the woods was missed when some unit lost its direction. During the night the Germans filtered back before the mistake was discovered and the next morning the strong point had been reestablished.

In the early morning of June 13th we started in on a preparation to receive a heavy hostile attack expected on account of statements by prisoners. Between 1:00 and 11:00 A.M. we fired 1600 rounds. The shelling was severe on both sides. Our infantry suffered more than we did. We fired at intervals all day. One woods was shelled five times on request. The attack was finally delivered by elements from a Prussian Guard Division but failed to gain.

During the entire period to date active reconnaissance had been maintained by battery personnel to find better observation. Hill 181 (175.8–261.2), the woods near point (174.6–262.3) Lucy le Bocage, the woods near Hill 178 (176.0–260.) and the woods near point (175.0–259.1) had all been visited. This reconnaissance was far from a pleasant task. The enemy did not seem to be adverse to sending a complete battery volley after one man. The best observation, coupled with reasonable security, was found to be the edge of the woods near Montgivrault le Petit (175.0–259.1). The coolness of Sergeant B. G. Patterson on the reconnaissance was a subject of constant remark.

In order to utilize the better observation we had found and also because the grass in front of our position was becoming marked

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by the excessive firing, we asked permission to move. This was granted and the battery was moved by échelon to a position in a small wood at point (174.2–258.8).

The first platoon occupied the position on the night of June 17th–18th and the second platoon followed the next evening. The first platoon was firing an emergency mission when the second platoon arrived to occupy its emplacements. The guns had to be laid with the aiming circle and the officer doing the job had far from a pleasant task. The guns had to be laid from the front because of the woods.

From June 15th to June 23rd the 7th Infantry relieved elements of the Second Division in our sector. The operations during this time were mainly defensive. One attempt was made against the strong point still remaining in the north end of the woods but without any success.

There was much harassing fire near our new position. The road just to the north was the Paris-Metz highway. Maison Blanche to the northwest in the woods was a Marine headquarters. Many infantry units were bivouacked in the woods in our vicinity. Coupru had been a Corps headquarters at one time. In consequence, we had to dig in pretty thoroughly.

Our change in position seemed to change the weather. It started to rain. The result of the rain and our digging gave us nice mud puddles to sleep in at night.

At night the Germans had been in the habit of harassing the woods near Maison Blanche and the large crossroads to the northeast of our position. At first they were quite accurate and did not bother us much. They evidently grew careless after a while because their sheaf, which at first had been regular, widened considerably and spread all over the vicinity. On the night of June 21st–22nd they wobbled more than usual. An unexpected burst of fire caught us unawares and Corporal Kirkpatrick and Private Cummings, the Gunner and Number 1 of the fourth piece, were wounded before they could take cover. Corporal Kirkpatrick was mortally injured and died on the way to the hospital. Cummings was severely but not dangerously hurt. Corporal Kirkpatrick was known as one of the steadiest and best of our younger noncommissioned officers and his loss was keenly felt.

By June 23rd all units of the 7th Infantry had been replaced again by units of the Second Division. Another attempt was made to squeeze out the strong point in the end of Belleau Wood, but again the results were negative.

During the night of June 23rd–24th the wandering, harassing fire wobbled our way again. This time a shell burst directly beneath



CAPTAIN WAHL, LIEUTENANTS CLARK AND EARLY AND SERGEANT PATTERSON ON JULY 16, 1918



THE TRAIL TO BELLEAU WOODS  
Drawn by Captain J. A. Smith.



#### FIELDS OF BELLEAU

The Drawing was made on the Edge of the Village of Belleau, and is Looking Across the Bouresches-Bussiares Road to the North End of Belleau Wood. Drawn by Captain J. A. Smith.



#### HILL 204, JULY 23, 1918

Drawn by Captain H. E. Townsend.

## BATTERY "B" OF THE TWELFTH FIELD ARTILLERY

number 4 gun. One wheel was blown off and holes were made in the trail, cylinder and shield.

"A" Battery of the 12th, which occupied a position about halfway between our emplacements and Maison Blanche, was fired upon from 9:30 to 12:30 on the morning of June 24th. The shells were 210 and 150 mostly. An average of two shells a minute were unloaded. Six men were wounded.

The last attack in the Bois de Belleau took place on the afternoon of June 25th. Exasperated with the place, the infantry evacuated the woods as far south as Y-line 262. The artillery was given full permission to play on the evacuated part of the woods to its heart's content. It did. During the early afternoon every gun that could shoot was turned on the place. By dusk it was practically kindling. The infantry then took up the job again and early the next morning, Major Shearer, commanding the assault troops, sent up word: "Woods now United States Marine Corps entirely!" The Battle of the Bois de Belleau was over.

The harassing fire we were receiving and the counter-battery against "A" Battery made our communications too difficult to maintain. The supply of the battery had become a nerve-racking affair. On the night of June 25th–26th we moved to a new position. The new position was on the edge of the woods 500 metres south of Ferme Paris (173.1–257.9). It was selected because of its quietness and cover. We were tired of being shot at!

Just as we moved into this position two lone 77-mm. shells arrived and burst in the midst of the signal detail. Luckily the *fourgon* wagon with the signal equipment took most of the fragments. Private Hendry and Private Rogers were slightly wounded.

As rumors of a large hostile attack were circulating, we occupied this position on a wide front. There were at least 150 metres between the two platoons. It was hoped that a hostile concentration intended for us would miss one of the positions.

Our casualty list at this time was the smallest of any of the combat units in the Division and we did not want to increase it. The acid test of a good organization is to perform its mission with the minimum loss of men, animals and matériel.

It would be very appropriate to say a word here about the supply end of the battery. Every round that was fired and every mouthful that was eaten had to be hauled by the échelon over the roads which we have said were being constantly harassed. There was fire on some part of the Paris-Metz highway all night long. The battery was firing heavily and used much ammunition. The men were exposed to the weather and were hard worked, which produced wonderful appetites. During this time the supply of the battery



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never failed. The credit is due to First Sergeant Nally and his assistants, Supply Sergeant Woodward and Stable Sergeant Ruddon, for the care and administration of the affairs of the échelon. As for food, the work of Cook Bodway in maintaining a kitchen for the firing battery in the shelled area and the trials of Private Gularck in bringing the food to the battery will not soon be forgotten. Who will ever forget the time when Gularck was leaving the position with his ration cart and a high burst of shrapnel spattered the road around him with the balls. Gularck promptly turned the cart around and came charging profanely back to the battery. Reporting to the Battery Commander, he expressed his complete willingness to punch any man's head who thought that he could get away with throwing stones at him when his back was turned! Verily, they also fight who only sit and drive supply wagons.

Only two events of interest occurred while we were in our last position. On July 1st our next-door neighbors, C Battery, were forced to vacate hurriedly when about 100 rounds of 210-mm. shells landed fairly on their position. They were only about 300 metres north of our position and pieces of the bursting shells landed around our guns. C Battery's guns were buried but no casualties occurred. Corporal Lancaster, of our battery, was hit by a fragment which cost him the sight of one eye.

It is interesting to note that C Battery fired a barrage from this position about two hours after the shelling. The guns were merely uncovered and righted.

The next and final event was the capture of Vaux by units of the 3rd Brigade. Five hundred prisoners, sixty machine guns and several trench mortars were taken. The operation was well planned and excellently executed. Although the battery was almost at the limit of its range, it participated in the operation with fire on parts of the Bois des Rochets.

On July 5th units of the 101st F. A. came to make our relief, but were ordered back to the rear. A general attack by the Germans was said to be imminent. Finally, on July 8th–9th, "B" Battery, 101st F. A., did relieve us and we withdrew into reserve positions near Les Ecoliers Ferme (six kilometres southeast of Issonge Ferme).

This position was one covering the main line of defense, called the Army Line in orders. Our infantry was bivouacked all around us and was to furnish the garrison for our part of the line in case of necessity. Our mission was to cover a stretch from Issonge Ferme, our old battalion command post, back to Les Ecoliers Ferme. The battery was so emplaced that it could cover this area with direct fire. We had an alternate position back a little

## BATTERY "B" OF THE TWELFTH FIELD ARTILLERY

ways to which we were to withdraw in case our forward one become untenable.

An epidemic of grippe hit the battery shortly after we went into reserve. For several days we had practically no men for duty. Our rear échelon which had better quarters was not so badly affected. The wet woods we had for our bivouac were supposed to have something to do with the epidemic, so on the night of July 14th we were moved to Les Ecoliers and given billets in the Ferme. A real rest was on hand at last!

That same night our échelon, which had been back on the Marne River for a week or more, was moved up to just in rear of Cocherel. By 10:00 P.M. on the night of the 14th, we were all settled and ready to enjoy a few days of absolute rest! The only "fly in the ointment" was that the next morning was July 15th! In certain high German circles they were even then drinking to "Der Tag!"

*(Continued in next issue)*

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### Over the Crest

Driving my car through the dusk of the night.	Then sudden the look of that crest took me back,—
Through the shade of a spring-scented wood, I felt the delight of the wind's cool caress,	Back to France with the battery gray, And the brake and the clutch had the feel of my stirrups,
And knew the tired feeling that's good.	And the seat took my saddle's mild sway.
The road stretched before me its misty white length.	My knees had a grip on my old sorrel's sides,
To home and to supper and rest.	And my cap like a steel helmet press'd.
My headlights like fingers were pointing the way.	My chest felt my gas mask as forward I rode,
Up over the sloping hill's crest.	Up over the sloping hill's crest.

The toggle chains rattled, the horses' hoofs  
clicked,

As they dragged on each smooth rolling gun  
And the caissons with shrapnel and shell loaded  
down—

Our hope that the battle be won.  
The rumble and ominous flashes ahead Nerved us  
to the morrow's great test;

To lay our barrage on the enemy's trench,  
Up over the sloping hill's crest.

\* \* \* \* \*

The welcoming, beckoning lights of a house,  
Mean home and a supper and rest.

My reveries vanished, as onward I drive,  
Up over the sloping hill's crest.

FAIRFAX DOWNEY.

—In the *Kansas City Star*.

## PROPERTY RESPONSIBILITY AND ACCOUNTABILITY

This is reprinted from *The Howitzer*, Official Publication of the 176th Field Artillery. The paper was originally read by Colonel Zierdt, the inspector of the 28th Division and Attached Troops.

A BUGABOO! When you hear it mentioned you shudder and you try to think of something else to do. You finally argue with yourself that the other thing is more important and you will tend to that bit of property accounting later. And that action constitutes procrastination which is the only thing that is really wrong with our property accounting. We are only two or three years behind.

The Adjutant General is alive to the situation. He has placed two officers on duty whose sole business is to audit property accounts. We are having less trouble than we had a year ago. The company commander who would not or could not account for property is eliminating himself, so though we are only two or three years behind, we are taking strides that will enable us to catch up.

The company property should be inventoried at least once a year. A few items should be selected and counted at one time. But the habit is to postpone the inventory because we know it is going to be disagreeable to explain why we do not have the shirt that John Jones lost in camp in 1921.

Inventories and "show-down" inspections are as necessary to good discipline as to good administration. If you let John Jones lose a shirt today and do not punish him for it, he will lose a pair of shoes next week. And then he will borrow a pistol to take with him on a "hunting-trip" and he will forget to return it. That is the way property losses accumulate.

There are two types of good supply sergeants. I knew one of the first type quite intimately. He moved to a house near the armory so he would not lose so much time in going back and forth. He worked six nights a week. When John Jones was discharged he went to John Jones' house and brought in the missing equipment. If a recruit lost some equipment this type of supply sergeant helped the recruit to find it.

Then we have the other kind of lazy supply sergeant who has a way with him too. He is a sharper disciplinarian. He is exact and punctilious about locking up his property and he obtains a receipt for everything that goes out of the supply room. When he finds property lying loose in mess tent or drill hall without an immediate owner in sight of it, he gathers it up and takes it to his supply room

## PROPERTY RESPONSIBILITY AND ACCOUNTABILITY

for re-issue. He teaches the recruit who loses property that the loser pays. It does not matter that the property got back into the company supply room; it had been issued; it could not be produced by the man to whom it had been issued, therefore that man paid. Now each of these sergeants teaches discipline and orderly methods in his own way.

The company commander should have a "show-down" inspection a month before the quarterly pay period ends. Then he should make a survey to determine who is responsible for all shortages discovered. Action on that survey can be had in time to deduct the losses from the next payroll. If you make a man pay for his small losses he will not have any big losses. You will have taught him discipline.

The story is told of a man in one of our companies, who, in April of 1919, bemoaned the fact that he had lost a tent peg, the first thing he had ever lost in all of his service overseas. His company commander had preserved property accountability throughout the entire war. That is a fine instance of good, well-disciplined military administration. That man had learned something of value from his service.

This paper is not to be technical. This is not the place to tell you where the shipping ticket comes from and where it goes. That is covered in regulations anywhere. I commanded a company for more than ten years, but since 1919, in my present job, I have seen more wrong ways to account for property than I ever knew existed.

After working for weeks on a battery of motorized artillery a shortage was found that amounted to more than \$2000. About \$500 of that was for personal uniforms and equipment. Every cent of it should have been charged on the payroll. The officer responsible only had \$100 due him, but we did take that. Today officers are under bond and the State will collect from the bonding company who in turn will collect from the responsible officer.

If the total shortages in this Pennsylvania National Guard could be added up here and now, the amount would be staggering. If all the losses in the United States were consolidated and made public, people would ask what is wrong with the National Guard.

Before the National Defense Act passed, the State of Pennsylvania purchased equipment and uniforms. Equipment was largely issued free, but uniforms were charged against annual allowance. When a captain requisitioned a uniform it was charged against his State annual allowance and he knew what it cost. After the National Defense Act was passed the amount of equipment for field service was increased, and supplied with uniforms from the federal government. This equipment has become greater and greater in

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quantity, but it is no longer charged up in cold cash. Perhaps this is one of the reasons why company commanders today fail to realize the importance of accounting for property. Perhaps it is because so many of our captains had service overseas where the property accountability was suspended so all ability could be concentrated on defeating the enemy.

*"Them Was the Happy Days."* If John Jones lost his shirt we got another one for him from the nearest supply dump. If his extra pair of shoes became too heavy, he threw them away and obtained a new pair later with no questions asked. Those days are gone, and until there is another war, you will account for every tent peg and shoe lace.

The sooner this is realized the better. This is as it should be. The National Guard should teach discipline and methodical habits. In the enlisted man as well as in the officer, his training as a military man should develop an instinct for economy, a natural orderliness of mind that will hate extravagance and waste.

There are company commanders who are accounting for property now. They have systems of their own. They check property when it is received. If it is short they notify the shipper at once. Perhaps they have a rule that the first lieutenant and supply sergeant shall do it. Perhaps the captain does it with the supply sergeant. The particular method is your business. Your way is the best way to handle it, if you only will handle it.

Do it at once. If you wait a month it is harder to do it. If you wait two months every headquarters between you and the Adjutant General's office knows of your delinquency, for they are all trying to get you to acknowledge that you have received that property. If it is that much trouble to get a company commander to acknowledge a receipt of property, how much more trouble will it be to make him account for it after he has distributed it to fifty or so enlisted men?

From my observation at division headquarters most correspondence on property accountability consists of trying to obtain an acknowledgment that certain property has been received by the company commander. This proves my contention that the fault with property accountability is with the company commander in most cases.

Another question comes up. What are the channels for correspondence on supplies? Make your requisition direct on the U. S. P. and D. O. (United States Property and Disbursing Officer). He ships direct to you and charges your account with it. That is the simple business way to do it. If you have any complaint about that requisition, send your complaint through channels. If there are any errors or omissions on the part of the office of the U. S. P. and D. O.,

## PROPERTY RESPONSIBILITY AND ACCOUNTABILITY

let your higher headquarters know about it. They will correct it. Colonel Turner's office is not infallible, nor does it claim to be. It is squarer and fairer for you to make your complaint officially to people who are not directly concerned.

We speak lightly of surveys. We say of certain property, "Oh, I'll put it on a survey and get rid of it." A survey is used to *fix responsibility* for the property that has been lost, damaged or destroyed. The government does not handle property promiscuously. Someone is required to account for property from the time it is purchased until it is sold for salvage. The government prescribes rules and regulations for the handling of property and the survey is a report of an investigating officer on whether those rules and regulations had been violated.

Of course we are all partners in this government of ours. The government belongs to us and, therefore, the property of the government is ours. "Of course, it is not stealing to take property from a concern in which you are a member," is the attitude of too many people towards government property.

We sometimes hear company commanders say, "I do not have the time nor the inclination for paper work. All I desire is a company which can march and shoot." It is my experience that there is nothing effeminate about a well-administered organization. The federal government allows pay at the rate of \$20 a month for this administrative work. It is not intended that the company commander shall check or issue property or that he shall post property records. It is intended that he shall supervise this work. He can not be excused from the responsibility of caring for his property.

### FINANCE

Before the federal government issued uniforms to the National Guard, each company commander received an allowance of \$500 per year with which to purchase uniforms and pay overhead expenses. Today we have no uniforms to buy and the allowance has been increased. The allowance is ample if correctly administered.

All moneys received or expended should be entered in the council book; disbursements should be made only with the consent of the company council which comprises all officers of the company. The accounts should be balanced monthly and audited by the council. They should be inspected at least every three months by the battalion commander.

"Budget" is a much overworked word in these days of government economy. There should be a plan of some sort—call it "budget," or what you will—or a "schedule for disbursing the company annual allowance." One hundred dollars per year is not too

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much for a good supply sergeant, and a company clerk who really works is worth a similar amount. If these men are encouraged and supervised by an active company commander intent on earning his \$20 per month administrative pay, they can keep company administration in an excellent condition. Civilians should not be used for this work. Bills should be settled monthly, which should include the payment to your clerk or supply sergeant. It is better to pay these men \$5 per month than to pay them \$60 per year.



# ASSIGNMENTS TO DUTY AND STATION

BY MAJOR J. A. CRANE, F.A.

PROBABLY sometime during every officer's service, he has wondered how he happened to receive a certain assignment or failed to get another one for which he has asked or wished. This article is intended to explain briefly how assignments are made by the Chief of Field Artillery.

## RESERVE CORPS

There are three groups of reserve corps officers in the Field Artillery—territorial assignment group, branch assignment group and general assignment group.

The great majority of officers are in the territorial assignment group; that is, they are assigned by the corps area commander of the corps area in which they reside to units in his territory. Over the assignment of these officers the Chief of Field Artillery has no control. It is entirely in the hands of the corps area commander.

A lesser number of officers are selected by the Chief of Field Artillery for the branch assignment group. These officers are selected for their fitness for duty as instructors at field artillery schools, for duty in the office of the Chief of Field Artillery, and for such other activities as are directly under the control of the Chief of Field Artillery. These officers are assigned by the Chief of Field Artillery.

The general assignment group consists of a few officers selected by the Adjutant General, from those commissioned in the Field Artillery, for duty outside of the Field Artillery: instructors at the War College, for example. This group is very small and their assignment is made by the Adjutant General.

As stated above, the great mass automatically go with the territorial assignment group, the Chief of Field Artillery and the Adjutant General only selecting those who by their records are considered especially desirable for the small number of assignments with which they are directly concerned.

## REGULAR OFFICERS

Before considering the assignment of regular officers it is necessary to speak of the efficiency reports and the classification of officers. Each efficiency report of a field artillery officer, as it is received in the Adjutant General's office, is sent to the office of the Chief of Field Artillery, where an extract is made and filed in the folder of the officer to whom it pertains. Immediately after July 1st, each year, all efficiency reports received on each officer during the



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preceding fiscal year are carefully considered by the Chief of Field Artillery in connection with the officer's previous record, and each officer is then given a rating for the year. These ratings are superior, above average, average, below average and inferior. Officers rated below average or inferior are notified by the Chief of Field Artillery of their unsatisfactory record, and from those so rated is made up the list that go before the Class B Board. All ratings made by the Chief of Field Artillery are transmitted to the Adjutant General, where they are entered on the officer's classification card and become a part of the permanent record of the officer. As will be seen later, the ratings enter into the question of assignments.

The General Staff each year allots to the Field Artillery the number of officers it is to have on various duties—so many on duty with troops, so many instructors at schools, so many students at service schools, so many at civil institutions, so many on duty with the Officers' Reserve Corps, with R. O. T. C. units, with National Guard, etc. These figures control the number of officers that the Chief of Field Artillery can assign to these duties.

For the fiscal year 1925, for instance, the Field Artillery is allotted seven students at the Army War College. These seven must be selected under the following provisions as laid down by the Secretary of War:

"(a) Graduated from the General Staff School in the class of 1922-1923, and, upon graduation, were recommended by the Commandant, Fort Leavenworth, Kansas, for detail as students at The Army War College; or

"(b) Graduated from the Command and General Staff School in the class of 1922-1923, and, upon graduation, were recommended by the Commandant, Fort Leavenworth, Kansas, for detail as students at The Army War College; or

"(c) Graduated from the General Staff School, and, upon graduation, were recommended by the Commandant, Fort Leavenworth, Kansas, for detail as students at The Army War College, including those officers who were so recommended but were retained on graduation as instructors at Fort Leavenworth; or

"(d) Are borne on the initial general staff eligible list; or

"(e) Have affirmatively demonstrated by their work in the army their suitability for higher training in command and general staff duty, and who have an efficiency rating of 'superior.'"

Notice the last class which requires a rating of superior. There are approximately forty officers who can be detailed under

## ASSIGNMENT TO DUTY AND STATION

the above provisions. The list is still further limited by the undesirability of relieving most of the officers from their present duties, and in this case it really becomes difficult to find the necessary seven officers.

Our allotment for 1925 to the General Service Schools is thirty-three, with the following requirement to be complied with:

"(1) Detail to attend the school shall be voluntary on the part of each candidate.

"(2) No officer shall be detailed who has completed the course at the General Staff School, the Army War College, the Staff College, the Command and General Staff School, or who, on graduation from the School of the Line, was not recommended to attend the next, or any subsequent course, at the General Staff School.

"(3) Candidates shall be of field grades, or captains who, under normal conditions, may be expected to attain the grade of major within three years from September 1, 1924. They shall be detailed as set forth in the letter of November 2, 1923 (selection of instructors and students, Command and General Staff School, upon the recommendation of their respective chiefs of branches, from officers who fulfil the qualifications prescribed by Section I, Circular 200, War Department, October 20, 1923, which provides:

"Officers detailed to take the course at The Command and General Staff School should be familiar with the organization of the division and included units, should have a knowledge of the methods of solving tactical problems and of the form and expression of field orders, and should have such grasp of the tactics and technic of the separate arms as will properly enable them, after a brief review of the reënforced brigade, to pass to the solution of problems involving a division.'

"(4) The class shall consist of:

"Not less than 50 per cent.—thirty-eight (inclusive) years of age and under.

"Not more than 50 per cent.—thirty-eight (exclusive) to forty-seven (inclusive) years of age—and such officers over forty-eight years of age as may be selected from the following:

"Any officer of a combatant branch over forty-eight years of age on September 1, 1924, whose name is not borne on the general staff eligible list, shall, if such officer so desires, be considered eligible for detail as student, 1924-1925, or subsequent courses,

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at The Command and General Staff School, provided, first, he is not a graduate of the General Staff School, The Army War College, The Staff College, or The Command and General Staff School, Fort Leavenworth, Kansas; second, he has a general efficiency rating of 'above average' or better.

"(5) All candidates under forty-seven (inclusive) years of age must have an efficiency rating of at least 'average.'"

The list of those to be detailed was made in the following manner; Beginning with the senior officer in the Field Artillery who, under the conditions above, was eligible and considering the practicability and desirability of relieving him from his present duty, a list of about seventy of those considered available was made and they were asked if they desired to attend. The list of thirty-three was then made from those who signified their desire to go, strictly according to seniority, with only two exceptions, where officers were moved up on account of their foreign service status.

The lists for Sill will be made in the same manner.

Details on R. O. T. C. duty are made from those officers who are available, consideration being given to the officer's school reports and his other qualifications as indicated by his efficiency reports, his preference when possible, and, finally, his acceptability to the institution to which it is desired to detail him.

Assignments to the National Guard are handled as those on R. O. T. C. duty. Both on R. O. T. C. duty and national guard duty, the officers are sometimes asked for by name by the institution or state to which they are to be detailed.

To sum up, details are made from those considered available, careful consideration being given in each case to the officer's record, and where possible, to the officer's preference. There are many restrictions on availability; for instance, an officer cannot be moved until he has been at his station two years, except to send him to or from school, nor if it can be foreseen that he will become due for foreign service within a year; length of time an officer is available for duty away from troops enters into all details, where the duty is not classed as duty with troops.

Many officers apply for duty as students at schools of other branches. The Field Artillery is allotted so many students. If a field artillery officer is sent to the Infantry School, it means one less field artillery officer is getting educated at the Field Artillery School. The value of an individual field artillery officer is, of course, increased by his attendance at the Infantry School, but what

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must be weighed by the Chief of Field Artillery is the question as to whether a field artillery officer with a year's schooling at the Infantry School or a field artillery officer with a year's schooling at the Field Artillery School is of more value to the service as a whole.

In the same way, many requests are made for detail as students to civil institutions. The allotment to the Field Artillery is small and is used to educate the men that are regarded as best qualified to take a course in subjects pertaining to the Field Artillery,—communications, engineering, ballistics, sound ranging, automotive engineering, etc. These men are sent with the intention of using them as specialists in their particular line at a later date for the benefit of the entire Field Artillery.

In detailing officers to foreign schools, the Chief of Field Artillery has to weigh the question as to which is of the greater value, another officer educated at Sill or one at Fontainebleau.

In conclusion, it should be stated that requests for details are given due consideration; that as far as possible an officer's preference is considered and that each officer's record is carefully scanned before details are made.



# FIELD HORSEMANSHIP

BY COLONEL GERALD E. GRIFFIN (VETERINARY CORPS, RETIRED)

GASOLINE and electrical motors are gradually but surely forcing the horse to the rear of the column of progress. As an adjunct to outdoor pleasure and general convenience he is becoming less desirable each year.

Those who were familiar with him and understand him are less numerous than they were ten years ago.

By the rising generation he is considered as slow, bothersome, unreliable and insanitary. The indications are that in twenty more years he will be a curiosity to thousands of those native to our largest cities.

The horse-shoeing, saddlery, and forage shops are few and far between. The garage is ubiquitous and the screw-driver and monkey wrench have taken the place of curry-comb and brush.

Thanks to the Cavalry School, and other army centres of equitation, horseback riding has become an art; an art that may be learned under competent instructors in one year, provided the pupil is of the proper age and possesses riding conformation, and an even disposition. It is probably safe to state that there are more embryonic mechanics, good riders, and fewer horsemen in the service today than at any time in its history in time of peace. Garrison horsemanship may be learned at the home station in a comparatively short time; it consists of watering, feeding, grooming, shoeing, harnessing, saddling, exercising, stabling, ventilation and sanitation. Field horsemanship is not so easily acquired. In addition to many of the things mentioned in connection with garrison horsemanship there are many other problems arising daily when in the field, that must be solved intelligently or the efficiency of the horsed command is soon bound to suffer. The solving of these problems is helped by expertness in garrison horsemanship, but is mainly dependent on field experience, "horse sense"—the understanding of horses—and an inherent love for these animals.

An expert horseman is not always a good rider. It is seldom that an expert rider is a good horseman. In garrison, horsemanship is more or less of a routine affair once a good system has been established. In the field, horsemanship is—to use the vernacular—"One darned thing after another," and each of these of a discouraging nature.

The word "field," when used in this article, does not apply to the well-supplied summer marches of from 200 to 400 miles taken

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annually by a large per cent. of mounted commands, but is intended to apply to gruelling expeditions under unfavorable conditions of climate, weather, terrain and supply. These are the conditions that try the soul of the horseman and show the stuff of which he is made. In this connection it may not be amiss to quote the remark of an old and tried cavalry officer: "Horsemen! By their led horses you shall know them."

The essentials of good mounted troops are fire-power and mobility. The mobility is dependent on the condition of the horse, his endurance, load, shoeing, time under load, length and duration of march, rate of march, forage and water supply, and the *horsemanship* of the *commanding officer* and his *subordinates*. Lacking efficient horsemanship and sufficient forage, and water, the instructions in gunnery, musketry and discipline may not bear fruit in the vicinity of an enemy.

In the field the horseman is the last into the blankets at night and the first out of them in the morning. He knows his horses intimately; their appearance and that of their surroundings will indicate that a vicarious eye has not replaced that of the master.

Man is a slave to the animals he has domesticated. When he resents this slavery they suffer, but should this slavery be honest and faithful the quality thereof manifests itself in the appearance and condition of the practically dumb creatures who have enslaved him.

## HORSES

We are today living in a draft-horse country, therefore there should be no cause for uneasiness on the part of light field artillery in connection with a generous supply of team horses in the near future. The time when a clumsy cavalry horse of poor riding conformation was considered good enough for field artillery has gone by. Today the Cavalry is pleased to have even clumsy horses on which to mount its troopers.

A few years ago the Remount Service saw, by the then dim handwriting on the wall, that the agricultural districts were neglecting the production of "general purpose" horses which were always dependable mounts. Something had to be done to save the situation before it became too late. The solving of this problem was undertaken against much opposition, but fortunately for the Cavalry the Remount Service has partially succeeded. At present it has over three hundred blooded stallions at stud in districts where horses are bred, and these are now serving accredited mares at a nominal fee with the prospect of purchasing the progeny, if of suitable conformation, for the cavalry service. Three hundred are not enough. At least one thousand are needed in order to produce a fair supply of decent riding horses for all arms.

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According to recent statistics there were 19,766,000 horses in the United States in 1920, compared to 18,858,000 in 1923. In this serious reduction in numbers it is safe to state that those of the draft type did not suffer heavily. In the Field Artillery there is a strong tendency at present to call for horses of, what appears to be, too heavy a type. As a rule the heavier the draft horse the less nimble he is and the more forage is needed to keep him in good condition; also the larger his hoofs the larger and heavier the shoes used.

It has been frequently demonstrated and as frequently ignored, by riders at any rate, that, other things being equal, the medium sized, compactly built riding horse is superior to his taller and heavier brother when in the field; that he is handier and smoother at the gaits; that he requires less forage for his upkeep; that he has better feet and legs and quicker "come back," and that he is easier to saddle and mount.

Horsemen know that when the height of a riding horse exceeds fifteen hands and one inch there is usually something amiss with his conformation, and that the higher he measures from this the more pronounced this something is likely to be.

In time of stress the service is forced to procure horses for mounted commands in a hurried manner; at such times the specifications cannot be lived up to, therefore, the quality and suitability of the animals purchased are not so satisfactory. Young, unseasoned animals, although they may be of fairly good quality, are unsuitable for urgent military purposes, as they are still subject to many of the general diseases of colthood. Other things being equal, old horses from eight to ten years of age are better adapted for campaign than those between five and seven. They are more rugged of health and have reached maturity.

### ON THE MARCH

From Xenophon to Pershing, horses in campaign have suffered exceedingly. From the day the horse leaves permanent camp or station until he returns thereto, is turned into a recuperation station or dies from exhaustion on the trail, the halcyon days for him have ceased to exist. On that day and on those which follow he marches many more miles under heavier loads and traction, and for more hours than may have fallen to his lot in the routine life of a well supplied garrison, or in summer manœuvres. He is suddenly deprived of a clean, abundant water supply for which is substituted the doubtful waters of streams and ponds that, of necessity, are usually churned into solutions of mud or sand which are unavoidably flavored by fresh dung before he has time to allay his thirst completely. A horse will not partake copiously of soiled water until

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forced to do so by extreme thirst. His oats are now offered in a nose-bag and much of it is wasted through the excitement on the lines. The horse dislikes wet hay but rain or shine it is, or rather was, customary to place all of it before him at a given time; should it be rained upon heavily he noses it over for dry wisps and tramples on that which he will not use. Should the weather be dry and windy, much of the best part of the hay allowance is usually blown away, while some of that which is left may be spoiled by the micturition of geldings, and by pawing. We have no good method for the conservation of hay on the picket lines.

The horse in the field is, of course, exposed to the vicissitudes of weather, and to the inevitable equine squabbles of the line which he, by virtue of being tied, is unable to dodge successfully. He is afraid of being trampled upon should he lie down; he will not lie down in the mud except when very much fatigued. He, therefore, persists in standing and eases each tired limb alternately; always on the *qui vive* for a bite or kick. Soon after midnight he may brace himself and throw his weight on his suspensories with the intention of taking a short nap from which he is too often aroused by a noise of the camp or a scuffle alongside. Some horses will not lie down to rest themselves even under the most favorable conditions. When such a one does voluntarily take the recumbent position he is either seriously sick or completely exhausted.

When a nose-bag containing grain is secured to a horse's head he invariably scatters some of that grain on the ground. He may swing the bag impatiently in an effort to quickly fill his mouth and in doing so lose a small amount; he may be a bully and spill some in his domineering rushes at his mates; he may be of a timid nature and may lose some in dodging or he may be a very slow eater and be deprived of that which remains in the bag when that bag is removed and shaken out on the line. In any event every ounce of grain lost in one way or another helps to pull him down later, which reminds one of the remark of a Hibernian gentleman who on meeting a friend riding a thin horse said—"The dearest oats that colt ever ate are the oats he never got." When nose-bags have been removed after feeding time, a trail of grain may be noticed extending from end to end of the line. All of this may not be a total loss, for each horse if the ground in his immediate front be not obscured by hay or mud, diligently applies himself to recovering it grain by grain and with it ingests a quantity of insoluble matter which interferes with digestion and may cause intestinal irritation, or obstruction later, if the performance is repeated—the so-called "sand colic."

To the horseman there is no more depressing sight in camp than that of the picket lines of a cold, wet morning. The horses stand



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humped and shivering on a footing of liquid mud and trampled litter with every defect of conformation accentuated. The tall, thin ones giving a camelistic, if the word may be excused, effect to the wretched scene. A little cheerfulness is imparted by the arrival of a care-free soldier with bulging nose-bags, some of them leaving little trickling streams of grain in their wake. They are welcomed by a subdued, six-syllabled neigh that is deficient in pitch—the neigh of equine misery. Hungry horses do not scatter much grain when feeling miserable.

Time is getting short. Boots and saddles may be sounded any moment, but still there are a few slow feeders who do not worry about such things as bugle calls. Look! See what is happening on the far end of the line. Four to eight nose-bags, still containing grain, are whisked from the heads of the slow feeders by thoughtless young soldiers, and their contents emptied on the ground. Yes, probably three pounds of oats in all. Of course this is a criminal procedure, but what else could one expect from thoughtless young soldiers who, in all probability, have been brought up on a "flivver." Soldiers of a certain type may be competent to discuss automobiles and their vagaries intelligently, still it may be found by inquiry that these men know practically nothing about forage allowances, values, and proper distribution.

For the first two days of marching the horse is usually in good fettle and condition. If well taken care of previously, he will have established a wonderful cushion of fat just beneath his hide. This cushion acts as a protective covering to the muscles of the saddle piece, breast, shoulders and other external regions and also protects the vessels connected with dermal circulation. Let us call this *current* fat. There is still another store of fat, and this surrounds the internal organs. Let us call this *reserve* fat. What becomes of them? During the first ten days on the road quite a number of changes, depending on the work done, take-place in the horse. About the fourth day out he begins to look less familiar; his eyes seem less bright; his droppings, due to ingestion of dirty water, mud and sand, are very much darker in color than formerly and their odor is now more noticeable; his urine is less abundant, due to increased sweating and lack of good water, it is of a higher color and smells strongly of ammonia; his coat has a harsher feel; his mouth is dryer; his ears do not stand as erect as hitherto; his tail when elevated by hand does not so energetically resist an upward pressure; his abdomen seems smaller, "tucked up," and a number of well-defined lines have begun to make their appearance where the muscles of locomotion overlap each other in the neighborhood of shoulders, croup and quarters.

He is tired, and the *current* fat is being drawn upon by the

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system and has been exuded to some extent in the sweat. The *current* fat absorption continues until about the twelfth day when, if the forage has not been curtailed, the horse is in good marching condition. He has "hardened" as we say.

The men are also in good, "hard" condition about the twelfth day. From about the twelfth day onward, if the forage and water are diminished and the work keeps up, there is a heavy draft on the *current* fat which is now rapidly withdrawn and expended. The saddle piece and the breast are deprived of their protective cushions, and sore backs as well as galled shoulders and necks begin to appear. During this time there has been an issue of small checks on the *reserve* fat which honors them with reluctance. Finally the *current* fat has been drawn upon to the last pound and now checks of large denomination are presented for payment by the *reserve*. The end is just around the corner. The only remedy is complete rest and a plentiful supply of forage and water.

Assuming that the molar teeth of the horses, of a battery, for instance, are in good masticating condition and that each horse is fed at the proper time, it may be observed occasionally that the slow feeders go to pieces more rapidly than their mates, even though the waste through premature emptying of nose-bags has been corrected. In such cases it may be found that the drivers or riders of these slow feeders, to gain time at the morning feed, take it upon themselves to reduce the grain allowance at the issuing point.

### SADDLES AND COLLARS

There is no better military saddle than the McClellan; its one fault—centre of gravity too high when stripped—may be corrected by the addition of flaps. It is not a comfortable saddle in which to ride unless the rider is blessed with a thirty-six or less waist line, small gluteals and flat thighs. The inventor of the McClellan saddle had the comfort of the horse's back in mind. It is to be regretted that he also had a heavy pack in mind. The McClellan is too good a pack saddle. It has been frequently condemned for being productive of sore backs when the blame should have been placed on the pack and the long hours the back is subject to the combined weights of both pack and rider.

In the field artillery teams, sore backs are rare until the *current* fat is well absorbed. Of course this is due to the transportation of much of the pack weight by the off horse.

In the Cavalry, sore backs may appear at any time due to the concentration of almost the entire weight on the saddle piece.

The discarded steel collar of the Field Artillery, with its three adjustments, was a good, serviceable one, but about the thirteenth day of heavy marching, when the adjustments had reached their

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limit, it became a nuisance and padding of the neck, to which the collar did not lend itself readily, had to be resorted to. The breast collar which has been substituted for the steel one is not so well adapted to traction. The writer believes he was the first to introduce the breast collar in the Field Artillery. With the consent of Captain Lucian G. Berry (now Colonel, retired), breast collars were used in his battery, one to each section, with a view to replacing steel collars when these had reached their final adjustment and had begun to gall. It was noticed at the time that the breast collars then used, when necessary, on leads and swings only, did not give promise of being superior as a regular equipment, to the steel article. It automatically adjusted itself, or came near doing so, but its see-saw motion when used on thin horses indicated that it would not be superior to the steel collar in the long run. However, its simplicity of adjustment, even by green troops, appealed to those in command. No matter what collar may be used, it is bound to gall when the *current* fat has been drawn upon extensively. With any collar used there is bound to be trouble in very warm weather with that part of the neck where the collar is supported. This trouble—"sore neck"—occurs oftener and is more pronounced in the case of wheelers where the weight supported is greater, the snap of the pole continues and the air circulation poor. Leather neck pads are unreliable as they absorb moisture, become rough and hard in time and are not readily cleansed. The best neck pad or plate known is the "zinc," as it is smooth and easily cleansed. With this pad there is little excuse for sore necks if the weather is cool. When the weather is warm and the sun beats upon the zinc pad blistering of the neck is bound to follow, even though the pad rests upon the mane. It was found by test that a wet sponge when placed on the pad prevents galls or blisters even in more warm weather. The sponge should be charged with water at each halt.

A fruitful source of "sore necks" is the "footing the pole" by long-legged wheel drivers.

### SHOEING

When marching in rain on muddy roads the horn of the hoof-wall readily absorbs water; in this soft state the clinches are not sufficiently resistant to withstand the suction of the mud, therefore the shoe is "pulled." When replacing "cast" shoes, either hot or cold, where the horn of the hoof has been softened by long-continued rains or by wet standings, such shoes should not be driven too tightly as they are apt to press unduly on the sole and cause lameness.

The predominance of No. 3 shoes in cavalry and No. 5's in field artillery indicate the quality of the horses in use.

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### GAITS

The straighter the shoulder and shorter the forearm the shorter and harsher the stride. When the rate of march is not regulated by the rate of progress of the slowest horses at a given gait, the sooner the slowest horses go into the discard. A good walking horse is a joy to the heart, for a good, free walking horse is smooth at the trot and elastic at the gallop. It has been said that some horses can walk—heel and toe—at a rate of five miles an hour for one hour. We have tested hundreds of horses at the walk, 154 pounds up; none of them could do even half a mile at the five-mile rate. If we take an average cavalry troop with a compliment of one hundred horses, this is what we are very apt to find:

Twenty very good horses as cavalry horses run.  
Twenty-five good horses.  
Forty fair horses, and  
Fifteen poor horses.

The very good, under full pack and favorable conditions may walk at a rate of four and one-half miles; the good at four and one-quarter miles; the fair at four and one-eighth miles, and the poor at four miles flat. When such a troop is assembled and mounted the good, and very good horses may be found in the hands of the noncommissioned officers, and the old soldiers who by virtue of their service are usually in the first platoon. The fair horses generally fall in after these, with the poor horses on the extreme left. It is among the poor horses that at the "close up there," trotting at the walk and galloping at the trot may be noticed when the right is in front. It looks reasonable to a horseman that no matter which flank of a troop may be in front, the slowest horses should lead with the object of properly regulating the rate of march and conserving the poor and fair horses who are the ones most deserving of the horseman's consideration. Fatigue, exhaustion and waste always marches at the tail end of a cavalry command when the best horses set the pace.

In field artillery the best teams may be found in the first section, and the poor teams in the maintenance section. The traction in the maintenance section is the heaviest of a battery; it is in this section that horse-flesh is wasted most rapidly, as here the slow walkers are most frequently forced to short trots in an effort to keep the carriages in place.

Fortunately light field artillery and mountain batteries do nearly all of their marching at the walk, although the personnel may

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claim that it can keep up with cavalry. Light artillery may keep up with cavalry for an hour but after that, like cavalry making a frontal charge on a battery in action, it pays the price. Well-commanded cavalry is capable of doing five and one-half miles an hour or more under favorable conditions. Field artillery (light) is "put to it" to do four miles an hour after the first hour at the five and one-half mile rate.

It has been stated by riders that the trot eases the horse and that it should be indulged in frequently while on the march. If it is meant that by trotting frequently the horse reaches camp earlier and is thus earlier relieved of his load, the statement is not far from being correct, but if it is thought that the simple change of gait tends to refresh the horse in any way, the theory has no foundation in fact. It would be ridiculous to maintain that a column of infantry marching under full pack could be refreshed by double timing it for five hundred yards. At the walk the horse comes very close to having three feet on the ground all the time. At the trot he has but two at any time and the change from one diagonal to the other sends his entire frame with its load, into the air for an instant, and the instant either diagonal hits the ground there is a shock that is more noticeable in green horses than in the old timers who have acquired the knack of trotting close to the ground—battery or pack mule fashion. The very good and good horses of a cavalry troop are capable of doing the trot at the rate of eight miles per hour for short distances under full kit and good conditions. The poor horses have difficulty in doing seven miles. Now if it is conceded that the rate of march at any gait is governed by the leading set of fours, or by the leading carriage, it would seem logical to place the slowest horses at the front; always with the object of conserving horseflesh. In cases of emergency the gallop may have to be taken up in the field. There is no advantage in discussing here either the gallop or the charge. These gaits are necessarily of short duration and are governed by military necessity which recognizes no law but that of war.

### DISTANCE

The instructions governing field marching are laid down in drill regulations and kindred publications. These regulations are founded on the experience of years. They are sound in both theory and practice. The whole problem of distance marching is, and must remain, dependent on horsemanship, terrain, and forage and water supply.

The endurance of the military horse has been tested under varying

## FIELD HORSEMANSHIP

conditions for at least two thousand years; with this experience the horseman should familiarize himself and govern himself accordingly, always bearing in mind the quality of the animals at his disposal and the forage and water supply available. There is no getting away from the fact that the continued mobility of a horsed command as a whole is dependent on the endurance, and on the rate of speed of the majority of its horses which are comparatively slow movers.

### LEADING

The horseman will lead with the object of preventing galls and resting the horse. He will, if permitted, lead up hill to save loins and hocks, and down hill to save backs, shoulders and legs. The field artillery horseman dismounts everybody and leads up hill. As it is not safe to lead artillery teams down hill the drivers are mounted, and one cannoneer mounts to each brake. When a man sits in the saddle hour after hour without dismounting to walk, the adductors of his legs and thighs become tired and begin to feel numb. To relieve these he soon learns the trick of doing a "split"; this method of gaining relief consists in slightly turning the body to right or left and then placing one leg well to the front and the other well to the rear. This is hard on the horse's back and is productive of injury thereto. There is but one serious drawback to leading—the mounting disturbs the balance of the load and tends to accentuate the pressure on the near side of the saddle piece, especially when the rider is short-legged and the horse tall.

### MARCHING AT NIGHT

Night marching is dangerous unless the road is well known and well scouted. The rate of march should be slow and done only at the walk. The horse is a good marcher at night and undoubtedly has a keener vision at that time than his master. Night marching calls for an extra feed, and when practicable an extra drink of water.

When marching at night one cannot closely observe the conduct of the riders; many of them go to sleep in the saddle and bob around with the motion of the horse. Leading is the remedy for this condition.

### WEIGHT

Somebody somewhere has stated that one pound on the back is equal to four pounds on the wheel. This is a rather broad statement, but in a way it seems plausible. The more civilized and luxurious we become the more impedimenta we are inclined to accumulate, and try to transport. Take bedding rolls for instance.

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The weight on the riding horse's back is always with us in the field; next to shortage of forage and water it is the one thing that plays havoc with his mobility. The horse in the field is in as bad a plight as was Sinbad the Sailor; he is unable to shake it off.

The total weight carried by a ridden horse in campaign is dependent on the riding weight of the rider and this varies from time to time as changes take place. The weight of full equipment, arms, ammunition, etc., that a cavalry horse is called upon to carry on his head and saddle piece is close to ninety pounds, which is at times increased by the addition of one ration and one feed. The riding weight of the average cavalryman is not far from 150 pounds—the maximum riding weight may reach 165 pounds or more. With the trooper in the saddle the average concentrated weight on the horse is usually 240 pounds and may be as high as 270 pounds. The constant dead weight on the near wheel horse of field artillery, when on the march, is about 77 pounds, which is well distributed. When to this is added the weight of the driver, who, as a rule, is heavier than a cavalryman, the weight on the horse will average about 240 pounds. The dead weight on the near side swing, or lead, is about 63 pounds. It is claimed that these dead weights must stand. This being so, the opinion is ventured that the riding weight of a cavalryman and an artillery driver should be placed at a maximum of 150 pounds, and his waist line at 35 inches. This would benefit both man and horse. The most surprising thing in connection with the weight placed upon the back of a cavalry horse is that he is able to transport it all day and to a distance of from thirty to even fifty miles. It is not surprising that he goes to pieces under conditions that force him to the limit of his endurance. The less he is understood the sooner this limit is reached.

In cavalry, when many horses give out, men are dismounted. In field artillery, when the pinch comes, weight on the back that is not absolutely necessary may be transferred to the wheels and when the worst comes to the worst individually mounted horses may be placed in harness, the theory being that all artillery horses have been trained to draft and that they are interchangeable.

### SORE BACKS, NECKS AND BREASTS

These, when they appear, rob the horseman of his peace of mind, for he knows that once the skin, especially of the saddle piece, is broken the wound is invaded by pus cocci from the saddle blanket, or from sweat-soaked leather. He also knows that if the systemic resistance of the horse has been reduced by overwork or starvation irreparable damage soon takes place.

Sore backs may be due to any of the causes noted below: defective conformation; long-continued pressure; low condition; careless

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saddling and unsaddling; neglect of saddle piece on arrival in camp; sagging of cantle roll; scuffing slickers; pounding of rifles; "splits"; caked blankets; sandy blankets; wrinkles; stray coat strap buckles, and strap ends; too much trotting; "sitting" the trot; unequal lengths of stirrups; mounting by short-legged riders; bites; rolling on sharp stones; cracked pommel arch; deliberate injury; starvation.

Breast and shoulder galls are brought about by dirty collars; slovenly adjustment of collars; misfit collars; poor collar conformation; low condition of flesh; fatigue; bites; unequal length of traces; neglect of breast and shoulders upon arrival in camp; starvation.

Sore necks are usually caused by rough, dirty neck pads; heated pads; neglect of pad seat; in-growing hairs; careless harnessing and hitching; misfit collars; "footing the pole" by driver; fatigue; slouching forward by cannoneers on limber; starvation.

There is no known specific for sore backs. The only sure remedies are discipline, inspection, vigilance and prevention. The good horseman will not show his back all day to his command, but will review his command frequently with the object of reading the well-known signs of distress made by weakening horses and will take steps when practicable, to aid such cases. When horses become fatigued they droop their heads with the object of relieving the muscles of the neck from the weight of collars, bridles, bits and halters; also to ease the muscles of the posterior region of the shoulders which are being pressed upon by the burs of the saddle bars.

Drooping heads lead to toe stubbing, stumbling and falls. When the head begins to droop, it should be supported by the snaffle only. The curb action has a tendency to lower the head, therefore its use on a fatigued horse should be avoided.

As every little reduction of weight helps in marching, the gear attached to the head should be reduced to a minimum when a mounted command is being forced close to the limit of its endurance. A strong, heavy halter is a necessary part of the equipment, and double bridles are considered so by Cavalry. Under severe strain the weight of the halter and the curb could be better borne on the back. The real solution of the weight problem in Cavalry lies in using an extra wagon, or a truck for pack carriage. *It would save money in the long run.*

### THE VETERINARY OFFICER

When attached to a command the post of a veterinary officer should be at the rear of that command, so that he may ride up on his cases and thus conserve horse-flesh. If the veterinarian should happen to be a horseman he will ride slowly to the head of the column at each halt and from that position review the horses when the march is resumed. He should know what to look for and should



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familiarize himself with the equine haling signs of distress which are too often a closed book to mere riders.

It is the duty of the veterinarian to fight against sore backs, necks and shoulders; he should not spare himself in this matter, and if he be a horseman, he will not. He should acquaint himself with the riding tricks and failings of those who sit in the saddle and take steps to correct them if they have a tendency to cause trouble.

By studying the methods of horse conservation practiced by the old soldiers—there are still a few of them left—much valuable knowledge of a simple character may be gleaned by the young veterinary officer who is a horseman, whose heart is in the military service, whose sympathies are with the animals in his professional care and whose loyalty to the command with which he may be serving is beyond question.

"By their led horses ye shall know them."



## MARTIN'S HORSES

THE Fates are ironic. Private Martin had gone through five battles in the late war untouched, to be mortally hurt at drill. Martin was a lead driver. A trace slipped under his near horse's leg and he would not wait for a cannoneer, but swung down to unhook. While he worked his pair started forward, threw him, and the heavy limber wheel passed over his body. His chief of section raised him, the battery commander galloped up, impressed a passing car, and in the arms of his captain, Martin rode to the hospital. He was carried immediately to the operating room, and while three surgeons worked over the limp body, the battery commander sat by, waiting for the verdict.

After an hour of unremitting effort the chief surgeon turned to the captain, "No use," he said. "We've done all we could. He'll die inside of an hour. We have given an opiate, but he may come out of it before he dies."

"Isn't there anything or anyone that can save him?" asked the captain, but the surgeon shook his head. "No, he's beyond help. You are going to stay with him? We have to work on that woman in Ward Three. If he is in pain, call me."

They carried the body gently to a bed and left. As the captain drew a chair to the bedside the boy's eyelids fluttered, and his eyes opened. "Captain," he whispered, "I heard what they said. I'm goin' West."

"Nonsense. Doctors always believe the worst. I'll bet that in a month you'll be back with the battery."

"You are trying to kid me into feelin' better, Captain. But the Doc' wouldn't 'a said that if it wern't so. An' I feel it myself. I've seen too many bumped off not to know."

"Is there anyone you want sent for?"

"No, there's no one. I came out of a home when I came in the army."

"But isn't there anything I can do for you?" asked the captain.

"Yes, there's one thing. It's my horses, Beauty and Baby. They're good horses"—he paused to gain strength—"best in the battery. I'd hate to think that a guy like Flateny or Pocus 'ud get 'em. Captain, would you let Private Willom take 'em? He's a good man, and he'll see that they are treated right."

The captain bent over and took one of the boy's thin hands in his own. "Martin," he said, "Willom will get your pair. And I promise you that as long as I am with the battery, I'll personally see that they are fed and cared for."

"Thank you, Captain. I feel better about leavin' 'em now." The last words were hardly audible. His eyes closed. His horses cared for, Private Martin went to sleep.

By MARTIN GALE,  
In the *Fort Sill Guidon*,

# CONCERNING THE USE OF EFFICIENCY REPORTS

BY "ARTILLERYMAN"

THE many activities of the army make a heavy demand upon its personnel in order to make adequate assignments. These assignments, particularly some years past, have been based upon the knowledge of one officer by another, now out of the question even if efficient. The army has outgrown that system.

The War Department maintains more or less detailed records of officers based upon efficiency reports. These reports give an excellent idea of an officer's general past performance, based upon the impression made upon his immediate superiors. They often fail to give an idea of the individual's particular capabilities unless he has brought them to the fore. They fail to give a measure of an officer's inherent capacities, many of which are subject to rather accurate measurement. Such records as are available are apparently not put to much use beyond the War Department. Just how far these records have any bearing upon selection for specific duties by the War Department is not generally known by the army. To the majority, the efficiency report is regarded with suspicion. It is best known as an instrument that causes embarrassment when the classification boards have their annual meeting. The expressed opinion of most officers is hostile toward the efficiency report probably because the system is not understood.

There is an annual problem of personnel assignment that is acute. Its demands always appear to be beyond the possibilities of the personnel pool. That is the personnel slate for the summer camps. The corps area slates are probably never completed to the satisfaction of the staff, for the demands made upon the War Department can not be completely covered. However, it is generally known, in the late spring, about what officers, by name, will be available. The camp commander arrives at camp with a list of names, sometimes with a complete paper organization worked out by the corps area. The qualifications of a great proportion of his officers are unknown to him. The result—hit-and-miss assignments, many unnecessary and painful failures, a feeling that his needs have not been foreseen, and a dissatisfaction on the part of many officers attending the camps because many are not needed when the machine begins to operate, meaning lost leaves of absence.

Even with the present type of efficiency report, the War Department could provide corps area commanders with some sort of a

## CONCERNING THE USE OF EFFICIENCY REPORTS

qualification card, and it is understood that something of the kind is under consideration. It is probably not desirable or necessary to show on these the officer's general rating. It should show special qualifications to act as instructor in such broad subjects as equitation or motors, and administrative qualifications such as mess officer, finance, supply, and general qualifications in miscellaneous subjects such as athletics, publicity, dramatics, music.

A card of the above type would not show its value for several years. It would be inaccurate initially, but would ultimately be such an excellent index for assignment that a perfectly unknown officer, arriving in any corps area, could be very accurately placed to his probable satisfaction and to that of the camp commander. In time, if it appeared desirable, such a record might show the results of such tests as that for mental alertness, and others that may appear to be of value. But above all, this card should be regarded as an aid to assignment rather than as a measure of the individual's value to the service, and entries giving any other impression should be avoided. In some cases, of course, definite impressions will be inescapable.

No one enjoys the performance of a duty for which he is not fitted. The average man, on the other hand, enjoys the performance of those professional duties which he knows he can handle, or for which his past experience particularly fits him. In this connection, the qualification card will perform useful functions in the promotion of high morale:

It will make it possible to assign officers efficiently on a workable slate, eliminating guess work.

By the increased efficiency of assignment, the pool of hangers-on to meet unforeseen requirements can be greatly reduced, permitting more summer leaves of absence, or a broader use of officers, or both.

It will make for greater contentment in the camps by providing for adequate placement.

Passing from the qualification card idea, there are other steps that will make for increased efficiency in the use of personnel. Many industrial tests are of demonstrated value in the placement of untried prospective employees to the work for which their capacities best suit them. Certain of these could be profitably used throughout the service. They require little time to apply. They can provide an index of great value for the efficient assignment of men to work. The intelligent application of the principles involved requires a limited understanding of certain characteristics of the human mind. For example, a recruit must be selected for training as a visual signaller. How is this invariably done?—"Sergeant, pick out a likely man and go to it." Judgment is fallible in matters of this kind.

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Much time may be wasted in the training of a signaller who, in spite of *his* best efforts, can never be more than a mediocre visual signalman. And yet, it is not difficult to quickly determine the existence of the quick perception, the visual memory, and the necessary retentiveness required for this duty. And in the case of a 'phone operator, even granting clear diction and proper resonance of voice, a sound memory is also vital.

Just how far the above methods can be applied to commissioned personnel is food for a lot of thought. Our personnel system is an outgrowth of the war, and not being familiar with its centralized operations at the present time, its aims as limited by present policies, it is difficult to criticize constructively. However, it appears to be limited to the collection of records and not so much concerned with placement, in the full sense of the word. Placement is a vital factor in contentment. There are many dissatisfied officers in the army. Is it the proper answer to that condition, "Let him get out if he doesn't like it"? It does not sound like a good answer, for they usually stay in; they knock, thereby inspiring knocking about them, and the air is filled with the din of it. This is a personnel problem. A personnel bureau should get under the skin of its subjects. This requires a sympathetic attitude, which now generally exists, but sympathy is only a part of the requirement. Records are required in order that sympathy can be properly applied, and these records must be more than a collection of efficiency reports and of current questionnaires (Statement of Preference). The personnel bureau should not only meet the man more than half-way, but it should know him: his interests and hobbies, his capacities and demonstrated qualifications, his moods, and his weaknesses—in fact, the man that his *friends* know. The existence of such an individual record will tend to eliminate the remark, sometimes heard: "You've got to have a friend to get a good job." The personnel bureau should be that friend.

The army had until recently a personnel adjutant, now gone down in history. He was a sort of clerk, mainly concerned with payrolls and allied matters. It appears that this office might well be restored in every post and camp as an initial forward step in personnel administration. But his duties should take a rather different slant than heretofore. He should interest himself in *personnel*, human beings rather than records, and in local placement and in matters affecting the efficiency of assignment. He would be the field contact man of the central personnel bureau and intimately concerned with the man on the job. It would not be a suitable assignment for a junior officer. The duties of the office could best be performed by a trained observer and a student of human nature. The subject is of so great interest that many would apply themselves to it. The

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provision of the National Defense Act for the sending of officers to universities as students and to the great industrial plants as observers furnishes the means of developing personnel specialists, and through this leaven to pass the knowledge along to others. Nor should such a specialty tend to rob any branch or service of the services of its officers. A practical knowledge of psychology, of industrial scientific personnel management,—of *human nature*, is a very essential element of command. Recent studies have developed principles that the army can not afford to ignore.



## WITH THE MOTORS

BY LIEUTENANT WILLIS S. BRYANT. 5TH F.A.

As an officer, having been with horse-drawn artillery or mountain battery up until 1922, it was very natural that the viewpoint of the motor-drawn artillerymen could not be seen. Since being assigned to a motor regiment and having the good fortune to command a unit on an extensive trip through North Carolina, it is only fair to the old Militors to tell just what they can do.

I have seen trucks and tractors perform under all sorts of conditions; I have seen horses pull tractors and guns out of mud holes and I've also seen tractors go through mud holes where horses bogged down with a three-inch gun. Much can be said for each, and since all seem agreed on the ability of the horses, I will endeavor to tell of what one gas outfit did.

On September 15, 1923, the Commanding General, 13th Field Artillery Brigade, ordered the Fort Bragg exhibition battery organized and made ready for the road and the "draft animals" were to be Militors. This battery organized and the following is a list of the matériel of the organization:

Four Militors, each loaded with approximately two tons of equipment and personnel, drew in draft, respectively, the 240-mm. howitzer platform, top carriage, cradle and tube.

One Militor, loaded as above, pulled a four-ton shop trailer loaded with 3 tons of 240-Howitzer erecting frame and incidental equipment.

One Militor, two-ton body load, pulled a ten-ton trailer on which was carried a five-ton tractor.

One Militor, two-ton body load, pulled a four-ton shop trailer carrying two French 75's, tentage and miscellaneous equipment.

One Militor, two-ton body load, pulled a four-ton shop trailer carrying one D. H. 4-B airplane (Liberty Motor) complete.

One Militor, three-ton body load, pulled the rolling kitchen.

One Militor, three-ton body load, pulled the water trailer.

One Militor, three-ton body load, was spare.

These various draft loads ranged in dead weight (exclusive of rolling kitchen and water cart), 6½ tons to 14½ tons. The trucks assigned the battery were not "picked" but came off the "service line" complete with tools.

## WITH THE MOTORS

The first thing done was to drain the oil pans and put in new oil, grease all around, gas up and check the mileage on the speedometers of all vehicles. Next the spring measurement was taken as follows:

- (a) Truck empty, distance from top axle to chassis frame.
- (b) Truck with body load, distance from top axle to chassis frame.
- (c) Truck with draft load, moving, distance from top of axle to body frame.

At the end of the trip these same measurements were taken again and the difference averaged less than one-quarter inch. These trucks were not designed for draft except on very short hauls and yet showed such little wear and "settling"! This fact speaks volumes for design. The excellent results in this one item is due entirely to the system of oiling springs. This consists of a large cavity in the spring shackle fitted with a screw cap, the oil being poured in and the cap replaced. The movement of the spring allows oil to escape and keeps them well lubricated.

September 19, 1923

### FORT BRAGG TO PINEHURST

This, our first day, was marked by worry and doubt on the part of officers and men, and when the main column was reported one hour behind schedule at the "lunch sector," visions of wrecked matériel arose. A hasty trip back by the battery commander's car proved that sand was the trouble. A hill about a quarter of a mile long was rather sandy and the trucks broke through it, in some cases to the axles, but a bit of digging helped them to pull themselves with their draft loads out. After clearing this place the speed was up to standard.

The draw-bar of the 240-mm. howitzer platform developed too much play at the spring joint and the carriage began to whip. Sergeant Musick, who was later seriously injured at Charlotte, secured an old buggy axle and lashed it to the draw-bar which stiffened it enough to make fair speed safe. The entire column arrived at Pinehurst Fair Grounds at 4:30 P.M.

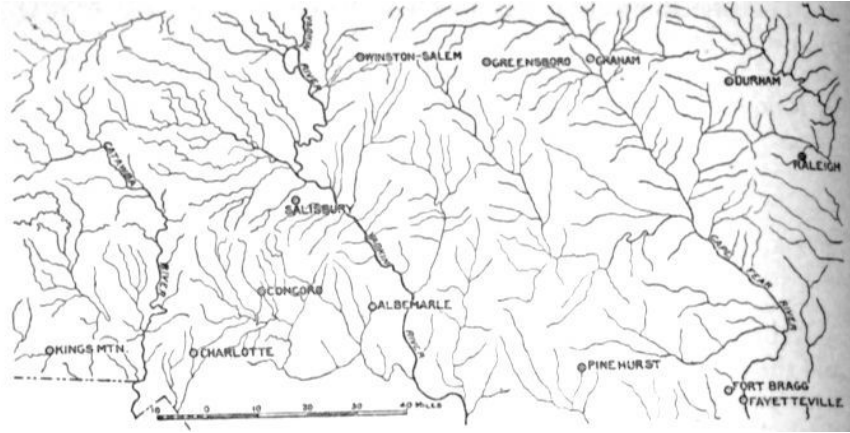
September 20th

### PINEHURST TO ALBEMARLE

The roads began to get hilly but the trip was made *on schedule*. The heavy column was due in Albemarle at 4:30 P.M. and arrived at 4:20 P.M. Graphite grease reached us here which eliminated all wheel trouble. Two limber wheels lost considerable rubber on this



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run. A long-distance message to the Regimental Commander of the Fifth at Fort Bragg telling him of this trouble gave us service "deluxe." A complete limber was delivered in camp that night at 11:00 P.M. *via* G. M. C., and a "hurry-up driver." Some service that!

September 21st

### ALBEMARLE TO CHARLOTTE

The trip was made in good condition. The battery lunched at Concord with twenty-two miles to go. We reached Charlotte at 1:15 P.M. This run is mentioned elsewhere.

The battery remained at Charlotte until October 5th, when the majority of the personnel and the heavy column left for the King's Mountain celebration of the battle of that name. The trip was made in good shape, and no trouble of any sort marred the stay of the battery.

October 7th

### KINGS MOUNTAIN TO CONCORD

This proved to be the red letter day for the battery and all our trouble occurred in Charlotte or between that city and Concord. The entire column had cleared Charlotte and was lunching by the roadside about two miles from the outskirts. Several bolts were discovered lost on the 240-mm. draw-bars. These held steel straps in position that had been designed and put on in Charlotte to make a stiff joint. Sergeant Musick, Battery "C," 5th Field Artillery, was sent back on a motorcycle to secure other bolts and collided with a motor car. He was thrown off against the curbing and cracked three vertebræ besides stunning him. He was left in a hospital in Charlotte and did not rejoin his outfit until Thanksgiving. We missed him when work on the 240 was necessary.

## WITH THE MOTORS

In the meantime one truck had burnt out a set of exhaust valves and this vehicle was left in the care of the mechanics, while the spare truck took its load in column. It required an hour and a half to grind in a new set and move on.

All North Carolina motor car owners seemed to be out that day. They are also noted for reckless driving, which evil was a contributing factor toward what appeared to be a disaster. Going down a steep hill on a sharp curve, the driver of the truck pulling the ten-ton trailer and its load was "drifting" at about twelve miles per hour, when a big Packard came tearing around the bend in the middle of the road. The truck driver swerved out and applied the brakes at the same time, which checked his speed considerably, but he found himself at the edge of the road on a steep bank where the earth was soft. He opened it up with a jerk to keep from slipping over. This was too much for the pintle which (very conveniently) snapped, and the trailer with a five-ton tractor, all the steel wheel mats for the 240-mm. howitzer, spare limber and other equipment on board atop of which rode three men, jumped over the bank and went tearing down through the woods until it lodged in a miry place twenty feet below the road. Looking at it wedged between two pine trees and buried to the axles in mud, it appeared that there would be no chance of moving it with anything we had in the column. However, we set to work unloading the trailer and hooked the tractor to it and gave the word to "go." The tractor, after a good deal of struggling, pulled the trailer part way out, but could not negotiate the steep bank into the road. By that time we had plenty of spectators.

Two Militors were brought back and we decided to couple them together for the pull but found there was room enough for one only. So with a prayer and a steel cable we hooked the truck to the combined load of the tractor and trailer, took up the slack and yelled "go." We need not have been so worried about it. The trouble was we didn't *know* the Militor and that pull made life-long friends for the old truck. Never a quiver, slip or sputter: it kept on going and out came tractor and trailer. It was a wonderful exhibition of power. The Militor has it and then some!

Later in the day a Ford Coupe tried to run under one of the Militors, but was unsuccessful.

October 8th

### CONCORD TO SALISBURY

This was a short run over macadam road and every vehicle kept its place in column and nothing unusual occurred except broken fan belts. We had become used to such a thing by this time.

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October 9th

### SALISBURY TO GREENSBORO

Our main worry about this stretch of road was a large suspension bridge over the Yadkin River, just out of Spencer, but the Bridge Tender (toll bridge) said, "We ain't stopped anything yet and the bridge is still good"—so, as it was our only way, all personnel except the drivers were ordered to dismount and walk over when no vehicles were on the bridge. The drivers were not worried and went across with wide-open throttles.

A detour from Lexington took the column almost to Winston-Salem over a dirt road. A wooden bridge about forty feet long was rather "sway-backed" and our pioneer crew was the *Band!* Leaving them under the supervision of the Chief Mechanic to repair the bridge, the headquarters car went on to "spot" the route. We struck macadam road again between Thomasville and High Point and from there on to Greensboro was a boulevard. The column reached Greensboro at 3:30 P.M. and camped at the Fair Grounds. The 240-howitzer and the airplane were subjects of interest to all in that vicinity.

October 13th

### GREENSBORO TO GRAHAM

There were no difficulties on this run which was but twenty-four miles. The first plan was to proceed to Durham that day. On our arrival at Graham we interviewed Colonel Don Scott and such elaborate preparations were made for our entertainment it was decided to stay over and leave for Raleigh the next day. We had been notified before starting on the trip that we were expected to lunch there as guests of the city. The whole county turned out, some four thousand booklets were printed with a program to cover our visit. We aided Graham in opening her "Great White Way."

October 14th

### GRAHAM TO RALEIGH

One Militor developed bad brakes and in attempting to stop on a hill was unsuccessful and rammed the 240-mm. tube which was just ahead. The oil pan was seriously damaged and a new one was secured from the State Highway Commission. All other vehicles performed in the approved manner except the Dodge car. A new magneto and carburetor were necessary. We camped at the State Fair Grounds for the balance of the week and on Sunday morning, October 21st, we left for Fayetteville.

## WITH THE MOTORS

October 21st

### RALEIGH TO FAYETTEVILLE

Going down Fayetteville Street in Raleigh the driver of the Militor pulling the ten-ton trailer changed from second to third and opened up too quickly with the result that the eight steel rivets holding the draw-bar were sheared off and left the trailer running wild. Another truck lost the adjustment screw off the carburetor and had to travel as spare because nothing could be done to change the adjustment and the mixture was too rich for it to pull a load. It kept its place in column without a draft load.

The ten-ton trailer and its truck were left in Raleigh with the transportation officer and the repairs were completed by noon through the help of the State Highway Commission and this truck with its 14¾-ton load pulled in at the Cape Fear Fair Grounds in Fayetteville at 6:15 P.M. and had stopped long enough on the road to get lunch for the personnel. The distance measured sixty-eight miles and added to the mileage there are numerous steep hills to negotiate, but the truck did it easily without one moment of trouble. The road was sand-clay the entire distance and the reader can imagine how it "travelled."

Picture an engagement and the "heavies" seventy or more miles away! Militor trucks will bring them up in a maximum of five hours and then another two hours for the guns to be mounted. Mobility? Yes, indeed. Those trucks will on fair roads step up with a ten-ton load to twenty-five miles per hour and not be injured by the speed—and they will keep it up.

October 28th

### FAYETTEVILLE TO FORT BRAGG

The command remained at Fayetteville until Sunday, October 28th, and once more we hit the road for home. On the way out, a truck pulling the lightest load (rolling kitchen) burnt out a wheel-bearing. This, on examination, was due to the retaining washer nut splitting, which allowed the washer to slip out, unseating the bearing. The inner and outer bearings were ground to pieces before the vehicle could be stopped. No bearings were available to replace the damaged ones, so the Light Repair Dodge hurried on to camp and the mechanics took a bearing from one of the trucks that had reached park and put in the one in Fayetteville. It came into camp one hour later.

The writer cannot help "crowing" a bit about the trucks and the mobility of the 240-mm. howitzer. The various items of interest to the transport man are listed below—and the bad points are covered as thoroughly as the good ones, but there are few *bad* points to mention.

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**THE POWER UNIT.**—The Militor has the same engine as the F. W. D., but the gear ratio is the secret of the tremendous power developed and insures a reserve to meet any emergency. The country became hilly after leaving Pinehurst, but no truck stalled nor was it necessary to shift below second gear. On the steepest hills they kept up a four-mile gait with ease. The Wisconsin motor is all that is required and it gave an excellent account of itself on the trip.

**GEAR SHIFT.**—Gears must be shifted with a "snap" and this can be done only after driving one of these trucks awhile in order to get the "feel." One truck gave trouble due to adjustment—which was not correct—but after a fifteen-minute delay to allow the mechanics to put on a new lock nut, it rejoined the column and no further trouble was experienced. This occurred on the third day out.

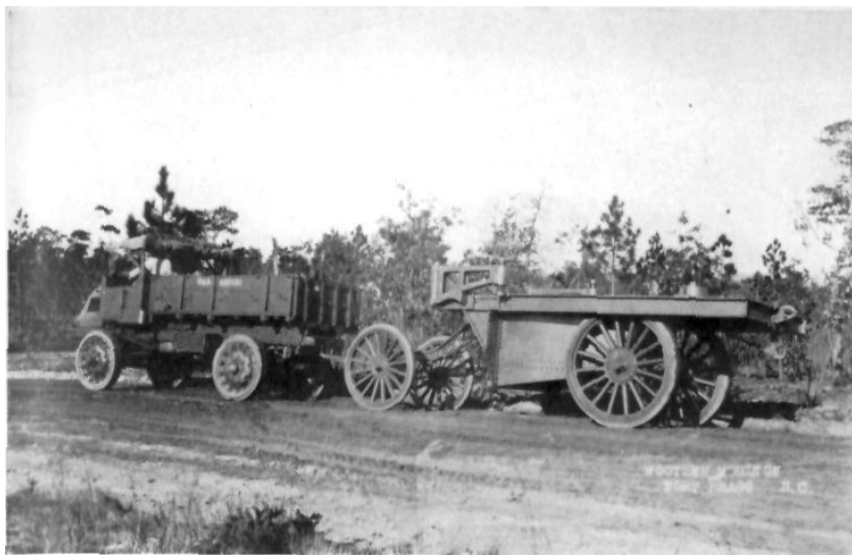
**STEERING.**—It takes a "he man" to swing on the "bull wheel" all day, for steering is the worst point about this truck with fan belts a close second, but after that is said all the bad points have been listed. When a sixty-mile run in a day is contemplated the cab of a Militor is no place for a small man. All drivers should be at least five feet six inches in height in order to reach the controls comfortably and, in a pinch, to brace with his feet against the sides of the cab.

We found at the end of a day's run the drivers "eased down" from the cabs and were glad to rest. They didn't wander around the towns much in the evenings.

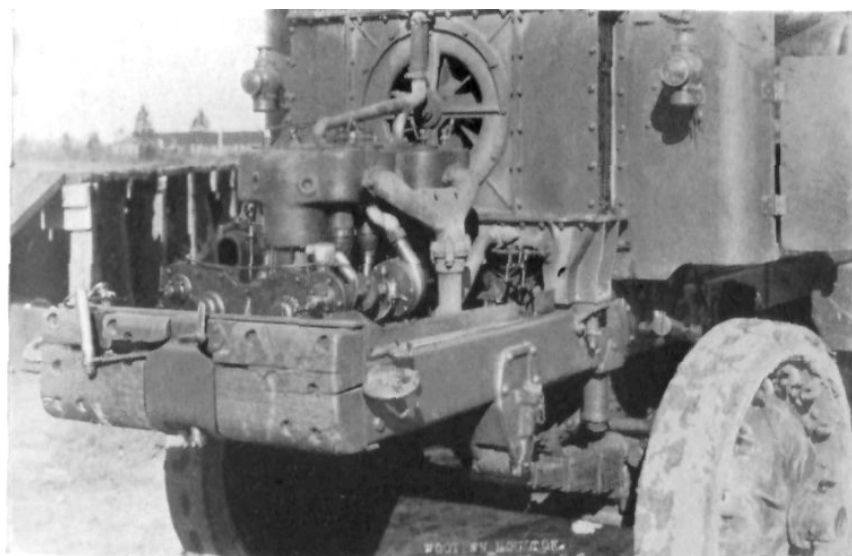
**FAN BELTS.**—The present type of fan belt is not strong enough to stand heavy work. The cooling system is in rear of the engine—like the old Mack Truck—and a vertical fan, that looks like a small water wheel, circulates the air through the sides of the radiator. The fan is mounted on a hub while the radiator is mounted around it. A new belt has been provided and is doing excellent work. (See photo of Power unit.) The Supply Officer of the regiment was kept busy making leather belts to keep us going. Only one truck came in with the belt that it started with. Breaks were too frequent to count but twenty-four belts were worn out by the truck column.

**VALVES.**—Two trucks burnt out a set of exhaust valves each. These were so badly burned and cracked that they were thrown away and new ones were ground in at once. One truck had to have a new set of exhaust valves at Albemarle and the other one at Charlotte two weeks later. Both of these trucks were pulling comparatively light loads.

**SPEED.**—Taking the total travelling time and the actual road distance gives the average speed for the column as 9.3 miles per hour and on a short run, say thirty miles, this could be raised easily,



THE 240-MM. HOWITZER PLATFORM



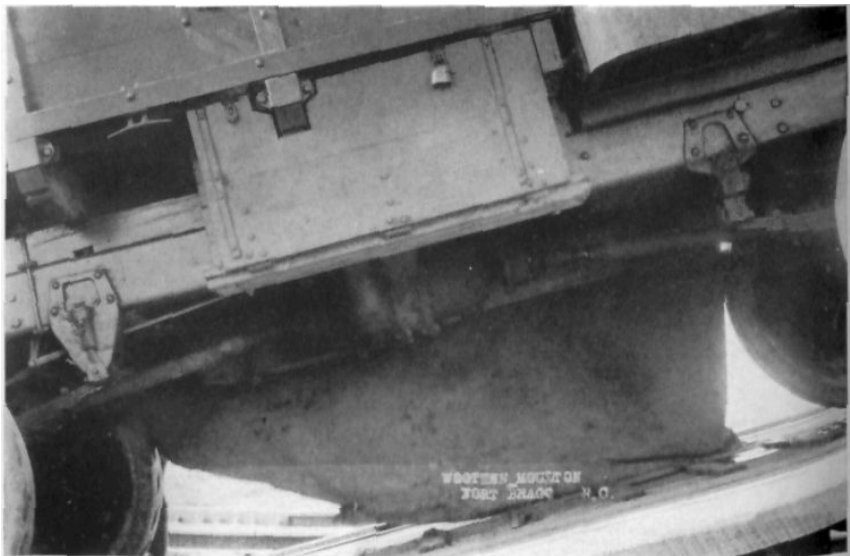
THE POWER UNIT

Showing the Cooling System and Fan. Note the Oil Reservoirs on Front Springs at the Spring Shackle.



**THE SPRING JOINT IN THE DRAW-BAR**

This is the Weak Point That is a Menace in Travel. The Only Play at this Point Should be Vertical to Allow for Limbering.



**THE TRANSMISSION AND PROPELLER SHAFTS**

Note the Oil Reservoirs on the Springs.

## WITH THE MOTORS

as witness the trip from Concord to Charlotte on September 21st. The road between these two towns is nothing to brag about, as part of it is an old macadam road full of holes and the rest—red clay! A storm was brewing and it looked as though it would be a whopper. It was! We knew that travel over a wet clay road was not to be desired, so the kitchen section halted at Concord to prepare lunch and feed the heavy column when it arrived. The writer went on to Charlotte to prepare the camp. At 1:15 the entire column entered Charlotte, having made the twenty-two-mile run in—nothing, as word had been passed back to "open up" and beat the storm. They did by ten minutes.

Possibly it was a dangerous thing to speed up, but we had orders to find out what the old Militor could do. It sounds like a foolish statement, but we didn't find out what the limit was! One thing we do know and that is this—the Militor can pull a 240-mm. howitzer load over ordinary roads with ease at the rate of more than *twenty miles an hour*.

GAS AND OIL.—This truck is a "gas hog," as it will average little better than two and one-half miles to the gallon, and this item considered by itself makes the price of operation prohibitive—but—the repair bills are practically nothing. Comparing the upkeep of this vehicle with others the Militor is cheap to operate. The average mileage for the heavy column was one and three-quarters miles per gallon of gas and thirty-five miles per quart of oil. Pretty steep? Yes, but look at what they pulled!

WHEELS.—The wheels of the Militor have better traction than the F. W. D. The tread is 8 inches while that of the F. W. D. is but 6, and here is another point about power: The F. W. D. has a full floating axle while the Militor has a dead axle and is driven by a drive shaft mounted above the axle on the end of which is a small driving gear meshing with a big internal gear in each of the wheels.

ROAD CLEARANCE.—Another good feature of this truck is the road clearance,—a full sixteen inches. The F. W. D. has but nine. The figures speak for themselves.

PERFORMANCE.—The Militor is without a peer in motordom, for these trucks did more than was expected of them on this trip.

*First.*—The trucks were given ten-ton tractor loads in addition to carrying load of two tons.

*Second.*—It was imperative that good speed be maintained in order to cover the allotted distance on schedule and they always arrived at their destination within thirty minutes of the time specified and every time except once the thirty minutes were on the good side of the schedule.



## THE FIELD ARTILLERY JOURNAL

*Third.*—Our inability to stall a truck on a hard pull on any of the types of roads encountered shows tremendous power and reliability.

*Fourth.*—Pulling several times their weight, far removed from a supply base, and coming in under their own power in excellent shape and with so little repair required, speaks volumes not only for the truck but for the far-sighted men who designed it.

Remember this; the trucks had been in daily service for nearly two years when they started on this trip. None was "picked" for the command. The order called for eleven Militors and they were delivered. The same trucks went back on the "service line" and are going along yet,—no repairs have been necessary. That is a lot to say but it is a fact. If I should ever be called on again to make a long trip carrying a full load, besides towing ten-ton tractor loads, I'd ask not for tractors but for Militors, and I'm sure I'd reach my destination and not be worried about repairs.

240-MM. HOWITZER EQUIPMENT.—Undoubtedly no 240-mm. howitzer ever went overland for the distance or travelled at the speed this one did. Our first day out developed hot wheels, and at Pinehurst I discussed the matter with a Standard Oil agent who promised to have something meet the column at Albemarle, our second stop. At that place a delivery of a fifty-pound can of graphite grease was made and there was no more hot wheels from there on. The column used about seventy-five pounds of this grease which was paid for out of our own funds. In fact, all repairs were paid for in this way.

The matériel travelled at an average speed of 9.3 miles per hour and except for minor weaknesses listed below, no 240-howitzer transport difficulties were experienced, and it is believed that the mobile qualities of this weapon can no longer be disputed. At times this speed was greatly exceeded, partly due to circumstances, and partly for experiment; but regardless of the speed, the 240 matériel rode without heating (except for the first day) and without damage except minor cases.

Certain defects in the construction of the 240-mm. howitzer transport wagon was found. The draw-bars gave most of the trouble. Being made of wood, they are greatly weakened by the bolts used to attach the metal parts and the strain due to draft and necessary backing cause them to crack and break. Considering the tremendous weight of the 240-mm. howitzer load a weak draw-bar is a dangerous element. So far as could be determined during the convoy, the spring joint in the draw-bar is unnecessary. The buffer plates under the strain of hauling curl at the edges and allow the limber to whip from side to side. This action is transmitted to the heavy rear carriage and brings undue strain on the entire load.

## WITH THE MOTORS

On carriages where this "whipping" occurred the rubber tires of the limber wheels show excessive wear and in some cases large pieces of rubber were actually thrown off. Where these weak joints developed, steel straps were bolted around the joints, making the draw-bar rigid, and this entirely eliminated this danger. It is recommended that draw-bars be of tubular steel and rigid. It is believed that all trouble will be eliminated this way.

The highest speed attained was on a down-hill run of about two miles straightaway. They rode steady with perfect safety to all concerned and an examination of the wheels found them *cool*. This fast run was mainly for testing the lubricating qualities of the mixture of graphite grease. The Standard Oil Company furnished gas, oil and grease during the entire trip at tank wagon prices less tax, which meant a great reduction in the expense sheet of the column. It is recommended that cup grease as a lubricant for the 240-mm. howitzer be discontinued and graphite grease substituted.

THE FOUR-TON SHOP TRAILER.—The construction of this vehicle is not all that it should be. It is too weak at the most important points. The standards for the top, to which the sides are fastened break off and allow the top to drop also, the sides become "bulgy" and we had considerable difficulty in keeping the sides up and in several cases, a rope or small chain was necessary in order to fasten the sides to some part of the loads. Due to the amount of equipment carried by one section the size of the trailer cannot very well be reduced, but changes in construction are desirable.

The springs are under the axle, making for little or no road clearance in a three-inch rut. The springs might better be above the axle.

The draw-bar twists and bends, and if cramped on a turn, which often happens, the steering rod knuckle in rear of the front axle will break.

The speed and efficiency of a section is dependent on this vehicle, for it is the first carriage into position.

OTHER VEHICLES.—Motor equipment, in addition to the above heavy transportation, includes: Two Dodge touring cars, five passenger; five reconnaissance cars (White); two motorcycles, with side cars; one tank truck, Liberty class B; one White truck,  $\frac{3}{4}$  ton; one Dodge light repair car; two ambulances (G. M. C.); one G. M. C. truck,  $1\frac{3}{4}$  ton. This additional equipment functioned excellently, except for minor breaks and repairs.

# FOREIGN MILITARY JOURNALS A CURRENT RÉSUMÉ

ITALY

## "Rivista di Artiglieria e Genio," November and December, 1923

THIS double number, which covers both the months of November and December, contains considerable matter of Field Artillery interest. The leading place is given to the continuation of Colonel Ettore Ascoli's study of the development of counter-battery work in the Italian Artillery during the World War. In discussing the offensive and defensive employment of heavy and medium calibre artillery during 1916 and the early part of 1917 he states that the following principles were involved: On the offensive, care must be taken to time the counter-battery activity in order that this fire may be delivered on the hostile artillery when and where it holds up the advance of our infantry; on the defensive, counter-battery work must be subordinated to interdiction and defensive barrage; however, if it is found advisable to react against enemy demolition fire, the heavy and medium calibre batteries should do so by directing their fire against the enemy's trenches, observatories, gathering places and other sensitive points.

Major di Caccuri's study of the production of explosives in Italy during the war and their use after the war is concluded in this number. He discusses their employment in mining, dyeing, fertilizing, ditch digging, and loosening the undersoil for agricultural purposes.

Colonel Ferdinando Cona, Infantry, of the Italian General Staff, contributes an intensely interesting article entitled, "What the Infantry Wants of the Artillery in Battle," in which the author advocates the decentralization of divisional artillery command in battle and urges the closer relations with the infantry to the point of placing the divisional artillery units under the direct orders of the infantry regimental and battalion commanders. He insists that the batteries stay closer to the infantry they must support and says that in these days of larger scale production, loss of artillery matériel is no more dangerous than the loss of infantry personnel. Colonel Cona claims that close proximity of the divisional batteries to the infantry would not only make communications easier and surer, but

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it is the best way for the infantry to obtain artillery fire against targets which, due to their range or their nature, are too great for infantry weapons to handle.

Colonel Aurelio Ricchetti, Artillery, of the General Staff, presents "Some Ideas on Landing Operations," in which he shows a few of the practical difficulties connected with these undertakings. He points out the possibility of using pontoons for landing artillery and tanks, and claims that small scale landing operations to be effective must be accomplished during the enemy's mobilization and concentration periods.

Colonel Angelo Guidetti, of the Engineers, gives an interesting discussion of the defense of Italy's new northeastern frontier, applying the lessons of the war to the problem of defense by fortifications and concentration of troops at vital points.

Lieutenant Colonel Laviano, Artillery, begins his article on the reorganization of the Italian Artillery in this number. He argues that Italy should greatly reduce horse-drawn artillery and substitute therefore pack- and motor-drawn artillery to a still greater extent than she has already done. He states that of the 350,000 horses used by Italy during the war, 150,000 were obtained in foreign markets and most of these were artillery horses. Colonel Laviano claims that horse-drawn artillery should be reduced not only on account of Italy's shortage of horses, but also because motor traction gives better results. He says that exhaustive tests of the Guerini demountable "cingoli" (wide treads on the wheels) show that trucks can be put to extensive use in wet and plowed fields and up difficult slopes.

Under "Miscellaneous" considerable attention is given to a lecture by Major de Montaby, Chief of Staff of the 1st French Air Division, which was delivered at the Artillery School at Metz on the subject of airplane observation for artillery. The reorganization of the French and Spanish artilleries are also discussed and the following books on artillery subjects are reviewed:

Major Guido Splendorelli—*Defense Against Attack Supported by Large Masses of Artillery.*

Major Sallustio Regii—*Powders, Explosives and Their Effects—Internal Ballistics.*

Lieutenant Colonel Giovanni Ferreri—*Dugouts in Mountain Warfare.*

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FRANCE

### **"Revue Militaire Générale," November, 1923**

Commandant Pujo gives warning in his article on "The German Infantry" that their ancient enemy looks beyond a mere interior police and frontier guard. At the declaration of the next war, their army will comprise thirty divisions; two months later, sixty divisions, and, if the Ruhr is unoccupied, still later one hundred divisions.

The infantry division will number 700 officers, 17,000 men, and 300 trucks, and will be composed of three infantry and two artillery regiments, a pioneer battalion, a signal detachment, two air squadrons, a truck section, and supply services.

At the beginning of the war there will be a retrograde movement accompanied, however, by active counter-strokes and surprises. Finally, an organized position will be reached which will be held and from which the traditional German enveloping offensive will be launched.

The latest infantry defensive tactics are then studied in more or less detail. Emphasis is placed on the counter-attack and the necessity for concealment and camouflage in order to obtain the element of "surprise."

The widespread belief that the German General Headquarters had unquestioned coöperation from its allies and, of course, within its own army, is dispelled in Captain de Gaulle's "The Other Side of the Curtain." Before July, 1914, the Germans and Austrians had no common plan! They did not even know each other's plans of concentration and operation. Each lacked confidence in the other. Even at the opening of hostilities Field Marshall Conrad von Hötzendorf, Chief of the Austrian General Staff, did not know when the German eastern army would attack; and a single commander even on this front was not thought of.

The greater part of the article is an account of Falkenhayn's jealousy, manifested in various ways, of the Hindenburg-Ludendorff team; of the contempt, lack of consideration, and slights of all the German leaders, except Mackensen, for Conrad and the Austrians; and of the usual lack of coöperation of the two armies.

The "Operation of Lodz, November 11-20, 1914," is described in this instalment of General Camon's "Ludendorff's Strategy on the Russian Front." He relates how Ludendorff carried out the Napoleonic manœuvre of pushing a force secretly concentrated at some distance from the flank of the enemy against the rear of the

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Grand Duke's Army in order to cut his only rail communications. But Mackensen's force, which operated against the Russian rear, advanced too slowly on the right, due to insufficient terrain, for exerting its full power; and the left inclined to the right, to surround the Russians holding the right wing, thereby abandoning its mission of cutting the southern railroad. The retreating Russians used this line, reorganized, and advanced against Mackensen's left and almost captured it. General Camon criticizes both Ludendorff and Mackensen for not really "conducting" the operation since each remained at his headquarters 100 miles distant, more or less.

Captain R. Baillot, under the title "General Maillard and the Origin of the Doctrine of Modern War," gives this soldier the principal credit for upsetting the false French military doctrines and principles of 1870 and in renewing and bringing up to date those of Napoleon.

A critical study of the tactics and methods employed in the operations of the First Colonial Corps during the 1917 spring offensive concludes "A Flank Operation of the World War." Commandant Charbonneau condemns the rigid time table for the rolling barrage and points out the necessity of having one which can be corrected at any moment. This can be accomplished by studying and classifying all foreseen obstacles, so that time tables for very short bounds can be drawn up, and by good liaison. In the "Conclusion," under the heading "Artillery," the following principles are enunciated:

The length of the preparation should be reduced to that period which will ensure the element of "surprise," either in time or space.

Compensate for the short duration of the preparation by increasing the density of fire. The medium artillery and heavy howitzers would be used against defensive works; the light artillery and heavy guns in counter-battery and interdiction fires.

In order to insure the raising of artillery fire after a halt during the advance, arrange clear and precise signals—preferably by means of airplanes.

### **"Revue Militaire Générale," December, 1923**

Although there are certain, almost absolute, principles governing the employment of the infantry, the methods of applying them, due almost entirely to changes in weapons, are undergoing a continuous evolution. Thus writes Commandant Padovani in "A Short History of the French Infantry." The methods of combat have only

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a relative and temporary value and represent simply the conditions of employment and of the armament of the moment.

The changes in the methods of combat are outlined from the days of the sling, bow and arrow and javelin, the pike, sword, breastplate and helmet, the pike and arquebus or musket, and finally the bayonet and musket up to the present. The swing of the pendulum between the principles of manœuvre and shock action and that of fire power is described. Just preceding the World War, despite the regulations, the principle of movement had pushed the power of fire into the background. And accompanying this was the doctrine of the offensive carried to absurdity—the offensive always and everywhere.

It is then pointed out how, during the war, the machine gun necessitated trenches; and the latter, grenades in order to reach the troops sheltered therein. The infantry lacked the power to cross a position organized in depth so the automatic rifle appeared, then the 37-mm. gun—especially effective against machine guns, and finally the trench mortar. All of these had their effect on infantry organization and methods of combat.

During 1917 and 1918, the single rifleman fighting alone ceased to exist and the half section of twenty men became the combat unit. Of the personnel of this fighting "team," some serve its automatic weapons and the others protect it from close attack.

But all progress had been in fire power and manœuvre took its proper place only with the introduction of the tank. The latter also raised the morale of the infantryman since it is in such close support.

Today the combat unit is composed of thirteen men, including its chief. Six of them serve the automatic rifle and six are grenadiers; eleven of these twelve are armed with the rifle or carbine, three of which have grenade attachments.

The principal difference between present-day infantry and that of other times is due to the use of machines of all kinds. And the great similarity lies in the fact that it is man who operates these machines; and substantially, especially as regards primitive instincts and qualities, he is the same as the man with the bow and the arrow.

This instalment of General Camon's "Ludendorff's Strategy on the Russian Front" describes how the German Chief could not complete his operation—expected to give a decisive result—against the rail lines of communication into Warsaw from the East. His forces were not sufficient due to the heavy losses sustained against the 10th Russian Army in the preliminary battle of Augustowo, February 7–21, 1915; and the Grand Duke launched an offensive

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against the main German force near Augustowo. The Russian offensive in the Carpathians and the great losses suffered by Mackensen, due to his having pushed the demonstration for this operation too strongly, also weighed in Ludendorff's abandoning his plan.

In the continuation of his study of "The German Infantry" under the subhead "Its Combat Methods," Commandant Pujo takes up offensive principles and methods.

Captain de Gaulle concludes his article entitled "The Other Side of the Curtain" by pointing out other instances manifesting Falkenhayn's jealousy of Hindenburg and Ludendorff and his duplicity towards Conrad which prevented the latter's coöperation. Quarrel followed quarrel in the relations of the two Chiefs of Staff.

The Roumanian declaration of war was the finishing stroke to Falkenhayn—who had always declared this intervention impossible. Hindenburg and Ludendorff then took the reins of leadership. The German and Austrian Chief reached an understanding (September 6, 1916), but it was too late. The Austro-Hungarian army had been reduced to almost nothing by two years of defeats. Conrad fell with Francis Joseph's death on November 2nd; and the accord ended with the Emperor Charles' plan to secretly break all ties with Germany.

### **"Revue d'Artillerie," November, 1923**

"A Tactical Problem" is the statement and solutions, by Colonel Mussel, of the map problem which was part of an examination for entrance to the Ecole de Guerre. The problem illustrates the handling of an interior division in an approach march and making contact with the enemy. The use of the artillery and the elaborate arrangements for ensuring liaison between all units are the outstanding features of the problem. The artillery is so distributed that half is available at all times to open immediate fire in support of the advance guard. The terrain of the problem is west and northwest of Château Thierry, and is familiar to many who were in the A. E. F.

"An Essay on Aerial Ballistics" is the conclusion of Major D. P. Bloch's article, which was begun in the previous issue. The author derives formulæ for the computation of bomb trajectories, and discusses the effects of wind, rotation of the earth, variation of gravity effected during the flight of the bomb, and the possibility of bombing across the wind.



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"Remarks on the Artillery Duel," by Lieutenant Colonel Mayoux, continues the discussion of the rôle of corps artillery in warfare of movement. Before the deployment of the main body, the corps artillery should avoid impeding the infantry, should be able to fire on short notice, and keep in such formations as to minimize losses. Counter-battery at this stage is carried out with concentrations of at least three battalions, and on account of high ammunition expenditure, should be confined to important targets. During the engagement, counter-battery is much the same as in a stabilized situation; the information service, however, is less reliable, and hostile batteries are not tied so closely to prepared positions. Counter-battery is of doubtful value unless the hostile battery has been in action a few hours previously. After a break through, the corps artillery is decentralized; the light guns, being as mobile as the divisional howitzers, are attached to the divisions; the reënforcing artillery is returned to the army, and the remainder of the corps artillery is moved forward as soon as traffic conditions permit.

The author proposes the addition to the organization of the corps artillery of what amounts to a brigade staff, in order to give the colonel commanding the corps artillery an adequate means of handling reënforcing artillery.

"German Anti-aircraft Artillery," by Major P. Vautier, is a résumé of the state of this branch of German artillery in 1914, its development and expansion during the war, and its status at the present. The author traces the increase in calibre and power of the weapons used, but finds that the methods of fire control, and of applying data to the guns, did not keep pace with this development. In everything but self-contained range finders, the fire control apparatus was not particularly accurate, and was difficult to operate.

In 1914, the Germans had 18 anti-aircraft guns; at the Armistice, 2200. The Germans claimed 1588 planes and one dirigible shot down or disabled by anti-aircraft fire during the war. At the present time the Germans have 119 anti-aircraft guns in the coast defenses, and 28 on automobile mounts with the mobile army.

"Unilateral Observation," by Major H. Menjaud. Instead of the familiar Phi and Omega, the author proposes the use of two quantities which he calls  $h_1$  and  $h_2$ . The former is the range change necessary to move the burst one mil, as viewed from the observing station; the latter is the range change necessary to bring back to the line of observation a burst which has been moved one mil in deflection. Knowing the position of the gun, target, and observation station, the values may be obtained by the use of the wind rose in the range tables. The values may also be found approximately by firing.

**"Revue d'Artillerie," December, 1923**

"Why the Army Wants the Decigrade" is a response, by Captain L. Hurault, to Colonel Pagezy's plea for the mil, which appeared in the September issue. The decigrade, as the sole unit of angular measure, was officially adopted in 1921, as the result of the unanimous recommendations of a board appointed to study the subject. The author believes that the feeling of the artilleryman for the mil is largely a matter of sentiment, since the gunner sets his sights, the observer makes his changes, the battery officer lays his gun, in terms of graduations, the unit of the graduation being immaterial. For ease of divisibility of the circle, the grade is only slightly less convenient than the artillery mil; and for that matter, if divisibility were a criterion, one might as well advocate the abandonment of the metric system. A major advantage of the grade is the fact that it is the unit in use in practically all branches of civil life, and is not peculiar to the army. He concludes "that the grade is a logical, easily handled unit, which is well adapted to all the needs of the military service. \* \* \* The mil has run its race. It was the angle of positions of slight defilade, observing stations within voice range of the guns, hasty calculation of data, and sudden opening of fire. It is not the angle of the modern artillery!"

"The Artillery of Louis XIV," by Major H. Pichat, is part of a series "Contributions to the History of the French Artillery" which have appeared from time to time in this magazine. The author describes briefly the development of artillery matériel from the beginning of the fifteenth century, showing the efforts made then, as now, to reduce the number of calibres to the minimum necessary to fulfil the desired missions. He touches on the ballistic theories of the times, which led to the development of a gun firing at point blank, and a mortar firing at high angles.

He describes the type of cannon of the time as being cylindrical, with a knob at the breech, two handles and two trunnions near the centre of gravity, a reënforce at the muzzle. The carriage consisted of two heavy flasks of wood, strengthened by a number of transoms. The flasks, wheels and axles were strengthened by iron reënforces, which reduced the mobility of the carriage. A lunette was secured to the rear transom. While the artillery of the time was very heavy and clumsy, several instances are quoted to show that it had more mobility than tradition has usually ascribed to it.

"The Employment of Large Calibre Trench Mortars" is the first part of a paper by Major A. Schneider, discussing the advantages

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and disadvantages of this type of weapon, and giving numerous examples of their employment in offensive actions. His conclusions are that in the attack of a position whose front line is strongly entrenched and held, there should be at least one 150-mm. mortar for each 40 metres of front, firing from 200 to 250 kilograms of projectiles for each metre of front. This would require, for an average attack division, four battalions of three batteries each of this type of weapon.

"A Device for Simulating High Bursts Ranging," by Major E. Jourdanet, describes an instrument, and method of use, which simulates accurately high-burst ranging on a reduced terrain. The instrument is simple in construction and operation, allows application of probable errors in range and times of burst, and approximates the trajectory very closely.

"Graphical Constructions or Calculations," by Captain J. Govin, is a study of the comparative efficiency of these two means of preparing firing data. As a preliminary, the value of the artilleryman's equipment, such as small scale maps, firing maps, coördinates on such maps, etc., are examined. In the present paper, various systems of map projections are considered, particularly regarding distortion, and the errors which will be encountered in using map distances and angles.

"Interdiction Fire." The author, Captain Courbis, concludes that interdiction fire is only worth while during the hostile preparations for an offensive, when the roads are usually congested. Intermittent firing on a sensitive point allows a road being made around that point, or a passage during lulls in the firing. He proposes, therefore, to put down for a very short time, the concentrated fire of a large number of guns along a considerable length, a main avenue of approach. This should cause serious losses all along the road, block the road with disabled matériel, disorganize troops caught by the fire, and make all other passing later apprehensive to the same fate. The batteries firing would be diverted from their usual missions but a short time, and on account of their numbers, could not easily be located by ranging sections.

"New German Artillery Regulations" is a brief résumé, by Major E. Laurent, of several subdivisions of the new regulations which have appeared recently. "Dismounted Drill" follows the infantry regulations very closely, the cannoner being trained in infantry combat. Under "Combat Regulations" detailed instructions

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are given in the use of weapons forbidden to the German Army, "in order to show their effectiveness . . . and teach how to deal with them." The following fires for effect are prescribed: barrage, annihilating fire (C. O. P.), destruction, harrassing, rolling barrage, and fire on transient targets. Camouflage and open warfare methods are stressed, as well as map firing, firing with aerial observation, and adjusting by means of flash and sound ranging.

Under the heading "Varied Information" is a quotation from an article by General Rhone, appearing in the *Artilleristische Monatshefte* of September-October, 1923, in which the General says, "This article was already written when I learned that the shrapnel is doomed to disappear from the ammunition supply of the German artillery." The General opposes this abandonment of the type of projectile which he has championed for so long.

### BELGIUM

#### **"Bulletin Belge des Sciences Militaires," November, 1923**

A review of the principal articles appearing in the November, 1923, issue of the *Bulletin Belge des Sciences Militaires* reveals only one article of special interest to our arm.

The first article, "Les Operations de l'Armee Belge Pendant la Campagne de 1914-1918," relates to correspondence between de Broqueville, the Belgian Minister of War, and Edward Gray as to the defense of Antwerp. (9 pages.)

Major d'E. M. Barthelemi continues (for 18 pages) his "Principles et Methodes de Guerre," *Guerre de Secession d'Amerique*. The account is of the operations in the East in 1862 by McClellan and the reaction of the Confederates thereto. The written account of General Lee's instructions to General Stuart for a cavalry reconnaissance in force along the Chickahominy, and the application of certain principles of war to the orders and reports thereon are most interesting.

"La faute politique de l'invasion de la Belgique, August, 1914" (the political mistake in invading Belgium in 1914) (24 pages), is a very long yet interesting discussion of the results incurred by the invasion of Belgium by the Germans and which caused England to enter the war. It is a reprint from the *Revue de France*, July, 1921. It treats in considerable detail the efforts of M. Paul Cambon, then the French Minister to England, to secure from the English a statement which he could send to his

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people assuring them of the support of the English army as well as their navy. It was only upon the date of mobilization of both France and Germany (August 2, 1914) that he was able to secure the promise of the British fleet in the event the German fleet attacked the French coast or its vessels. Hours were precious. The French were in dismay. The president of France wrote a personal letter to King George asking his assistance. In his reply of August 2nd, King George promised to do personally all that he could to bring the Kaiser and the Czar into accord. He reaffirmed his sympathy with the French, but doubted his ability to move his cabinet to take part in the war.

It was not until the news of the ultimatum, sent to Belgium demanding the free use of their Kingdom for the passage and use of their troops, reached London, that the decision was made. The dismissal of the English protest against the invasion of Belgium aroused a storm of emotion in England. Instructions were sent to Sir E. Goschen to return from Belgium and a state of war was announced commencing from 11:00 A.M., August 4th. This action of the cabinet was ratified on the 6th by the House. We all know the consequences.

"Notes sur l'artillerie portée," by Capitaine-Commandant A. E. M. R. Beretze-Colet. This article (of 13 pages) touches only the high spots on *portée* and motorized artillery as used by the French and Americans and appears to be written only as a matter of interest to his fellow Belgian officers.

He tells how, in 1917, grain and horses began to run short in the French Army. At that time the French had nine regiments of *portée* regiments and which rendered remarkably fine service. Accordingly, forty more regiments were planned. Of these thirty-four were actually organized and used during 1918. The Germans turned to motorized artillery at the end of the summer of 1918, six regiments being reported organized. The Belgians had no motorized artillery until after the Armistice. The scarcity of gasoline in war is emphasized by quoting Clemenceau's note to President Wilson, "Gasoline is the life blood of war; a drop of gasoline equals a drop of blood." He treats in a general way the equipment of the French *portee* batteries, ending by foreseeing its possible assignment to cavalry divisions.

### **"Bulletin Belge des Sciences Militaires," December, 1923**

The series of articles recounting "les Operations de l'Armee Belge Pendant la Campagne de 1914-1918" continues (for 14

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pages). The operations of the day of October 5, 1914, are told in great detail.

Major d'E. M. Barthelemi also continues his "Principles et Methodes de Guerra," using as an example this time the Battles of Mechanicsville (or Seven Days) and Manassas. It covers some 15 pages with several maps annexed. Major Barthelemi then draws some splendid lessons from the errors made in these battles. His style is clear, fine, and delightful to read. He pays special attention to the difference between McClellan and President Lincoln, ending by the appointment of General Burnside in his place.

"Le tir en Marchant du Fusil-mitrailleur" (marching fire, using the automatic rifle), by Major General Buisseret, Commandant of the Infantry School (15 pages). This article is one of the first of its kind in print. Little or nothing is known of the automatic rifle abroad and especially to its value in marching fire. This latter until recently was considered to be of only moral effect, and of no material value.

During the summer of 1923 a study of the automatic rifle in marching fire was made, using candidates for commission or sous-lieutenants as troops, none of whom had ever fired from the hip or used marching fire, nor were they given any training preparatory to these tests.

The following conclusions were reached:

1. Standing fire, by single shots, gave very superior results over those obtained by firing clips or strings of shots.
2. Shots made after advancing by short, rapid advances were nearly equal to standing fire.
3. For marching fire the percentage attained were about three-quarters of those for standing fire. Range: 50 to 80 metres.

It was found that two shots every two steps gave the best results, both moral and material. General Buisseret recommends further study of this subject.

"Peut-on-arreter un Avion en Plein Vol? (Can one stop an airplane in flight?), by Henri Dackweiler, *Chef de laboratoire a l'Institute d'hygiene de chimie et de biologie de l'armee* (4 pages).

This is a reply to the question raised in the press recently whether a recent German discovery could, by radio force, stop the motor of an airplane while in flight.

His answer is "yes." He explains that by greatly increasing the frequency of our alternating current, and at the same time radiating a great amount of current, say a thousand kilowatts, its effect will

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be to counteract the generative action of the magneto or induction coils of the airplane, probably burning them up. Tesla, by similar means, burned up the generator windings of the Colorado Light and Power Company in 1898, using only 300-kilowatt apparatus, from a distance of several kilometres, and without antennæ of any kind.

The author suggests the use of engines of the Deisel type to meet this interference.

### ENGLAND

#### **"The Journal of the Royal Artillery," November, 1923**

THE CONTINUOUS SUPPORT OF THE INFANTRY IN THE MOVING BATTLE (MAJOR BURNE)

The author points out the difficulties encountered in open warfare situations during the World War and the lessons as he sees them that we can learn from the war. He emphasizes the most important principle that governs the action of artillery; namely, that it is an auxiliary to the infantry; must appreciate the infantry's point of view; anticipate its needs; and be ready with the proper support at the proper time. By "continuous support" the writer means continuous potential as well as active support; that is, guns actually firing or in a position of observation or readiness all the time.

Next we find a comparison of the open warfare and the trench warfare or stabilized situations. The former is the more interesting but also the more difficult to handle. In trench warfare the whole plan of attack is known to start with; but the plan changes in moving warfare. Units become split up and need separate support; artillery gives it but it is necessary for the artillery to split up also. This constitutes decentralization. The higher commanders can not give all the directions now and the initiative falls on the separate artillery commanders. They must act on information as it is passed back and not wait for orders from the rear. Major Burne takes pains to add that the artillery must pass back all information nevertheless.

Another difficulty in open warfare situations is that of obtaining observation posts far enough forward so as to observe 200 metres short of our shortest range, so that there will be no danger of the infantry's invading the effective zone before the fire can be changed. It is necessary to go nearer the front line with a consequent lengthening of communications. The writer's plan is to establish one observation post near the battery first, and then get one farther toward the front in addition. He admits that it takes more men to do this.

The author then digresses for a moment to point out the defects as he views them of the British battery commander detail. He makes the recommendation that the signal operators should work in pairs to promote efficiency and that there be three such pairs in the

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battery detail. Two pairs would be used in the normal functioning of the battery and the third pair would be available for use with a detached platoon or section. The author then gives an example of how to establish three observation posts forward in succession by means of these three pairs of signallers. Then the writer comes again to the difficulty of knowing just where is the front line. The foremost line visible is not necessarily our foremost line; there may be friendly troops farther forward in danger of our own guns. Friend, too, may be easily mistaken for foe if the light be at all bad. Our battery commander details must be elastic and able to respond to the movements of the infantry front line as a horse does to the reins of a rider. Close coöperation between infantry and artillery is necessary in order to overcome this difficulty. We must use good telescopes for our part and the infantry must use some sort of signals to us and not forget them.

The artillery must signal to the infantry when the fire is to be lifted so that the infantry can begin the assault. This can be done by a burst of smoke shell or by firing salvos in a prearranged manner. The use of the watch is not always reliable.

Then Major Burne takes up the question of whether or not the artillery commander should accompany the infantry commander and arrives at the conclusion that he should not. They have not the same duties. The artillery officer has his particular reconnaissance which he must not skimp. It should be easy for the two to exchange messages.

Then there is eulogy to the horse. Major Burne, who, it seems to me, must have had a lot of experience with battery commander details in open warfare situations, pins a lot of faith on the mounted officer or mounted messenger. He says "A speck of dirt can put a machine out of order, but it takes a good many specks of dirt to quench the vitality of the horse." In liaison, in reconnaissance, in advance, in retreat the horse is always dependable although it requires a good horse to stand the grind.

Finally the author considers the difficulty of knowing just when to withdraw. The decision should come only after conference with the infantry commander. The guns must stay as long as possible in position to help the infantry, but must be withdrawn soon enough so that it will not require fresh infantry to extricate them. When the artillery does withdraw, it does so by "leap-frogging" in a battery, single guns or platoons at a time.

### THE EMPLOYMENT OF PACK ARTILLERY IN OPEN WARFARE (MAJOR LEAH)

The writer starts by making a résumé of the Great War in-so-far as the development of new weapons and new methods is concerned.



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He says that every one entered the war confident that there was nothing new to learn. But in view of inventions that came, we see that we must have more open minds. Trench warfare developed and, although we found means to break that up by smoke, gas, tanks, better maps, and the rolling barrage, yet we have found no antidote for the calm that follows the rolling barrage. And that is where we propose to use the accompanying gun. He states that the British have replaced the light Stokes mortar by 3.7-inch pack howitzer.

This pack artillery is a part of the divisional artillery, but may be assigned to the infantry for close support. The questions that arise are as to when it will leave the tactical control of the artillery commander and when it will return, and also, by whom it will be controlled technically and tactically when it has been assigned to infantry.

The conclusion is reached that the accompanying guns should be assigned to the assault battalions very early, before the artillery commander is even sure they will be needed. Otherwise they may arrive too late. At the beginning of operations this assignment should be made. Sometimes the infantry are averse to having the guns always around for the reason that they draw the fire. This can be overcome by a closer personal acquaintance between the artillery personnel and the infantry and also by training together. In case the pack artillery is needed with the divisional artillery during the opening fire, it follows through with the support. The guns are returned to the control of the artillery brigade commander as soon as static or defensive warfare begins.

The author then takes up the control of the accompanying guns. Artillery assigned to the advanced guard, for example, is technically controlled by the senior artillery officer in accordance with the tactical handling indicated by the commander of troops. When the artillery is assigned as accompanying artillery, special orders are issued to indicate that the infantry commander has supreme control technically as well as tactically. Technic must be sacrificed if necessary to give the infantry the close support that the infantry commanders want. The artillery commander might be senior to the infantry commander, but that should not matter. There will be an artillery liaison officer with the front-line infantry whose duty it is to get the exact location of targets. The infantry commander should look upon the artillery commander as his adviser.

Major Leah then considers the question of how much the artillery commanding officer should be with the infantry commanding officer. He must absorb the infantry commander's plan, but he has to make special reconnaissance of his own. And so it is better for the artillery commanding officer to reconnoitre independently after he has

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obtained information as to the present orders and the probable plans, any further need of the guns, and a timed rendezvous.

The infantry commander is supreme in all things. He should have a method of conferring with the artillery commander. For instance, the infantry commanding officer states the mission for the artillery and then asks the artillery commanding officer (who has completed his reconnaissance and come to the rendezvous) how he proposes to carry out this mission. A plan is suggested and they discuss it. The infantry officer comes to a decision and gives his orders. Once the battle has been begun, the artillery commanding officer may rejoin the guns, but he is responsible for communication with the infantry commanding officer.

The problem of the positions for forward guns is taken up under two heads: first, position with respect to front line; second, position with respect to crest. To give close support to the front line, the artillery must place projectiles close in front of the infantry and not yet endanger them. An observer in the front line with ability to get messages to the guns quickly, is essential to close support. As to the accuracy of firing, we are not much concerned with the position of the guns; if anything, it is better to be a little back with the howitzer than too far forward. But the factors that do enter in are communication, ammunition supply, moral effect, and freedom of manœuvre.

Communication by voice is the general and the best method. The telephone is too slow and the wire may become cut. Pack artillery can keep close up to the observation post in pack or draught, is not very conspicuous and can go anywhere that infantry can go without using their hands.

Knowing the amount of ammunition available and needed, a position must now be selected so that the ammunition service will not be continuous. If it is not, the utility of the guns will be diminished and the casualties will be increased.

The farther forward the guns are the greater the moral effect on the infantry but the greater the danger of being taken in counter-attack.

Everything must give way to good observation, but if equally good conditions are available farther to the rear, the guns should not be emplaced in the front line.

As to the position of the forward guns with reference to a crest, the writer shows that the guns should be as far as possible behind the crest and at the same time be able to keep good communication with the observation post. The advantages of this position are that it is then possible to clear the crest; the guns can protect the crest by fire in case of successful enemy counter-attack; and it is more

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favorable for anti-tank work, for if the guns were close to the crest they would have to run up to the crest itself or perish in the attempt.

The author does not speak highly of the pack howitzer as an anti-tank weapon. It is impossible to get a gun which is a first rate gun for close support and for anti-tank work at the same time. The qualifications are different. The essential qualities of an antitank weapon are high rate of fire, high muzzle velocity, and wide and rapid traverse. The 18-pounder almost fulfils these qualifications and the pack howitzer does not. But the 18-pounder, though it could be used with profit as an anti-tank gun, is not as good a weapon for close support as the pack howitzer; if far up, it is too vulnerable; if far back, it can not see what is going on. Other tanks are a good defense against tanks.

Those things that will effect most the future development of the close support weapon will be the use of gas and the tank. Gas will make it almost impossible for the mule to manœuvre, even if the respirator is good, for then mustard gas will handicap the animals. The tank will have more speed and fewer mechanical defects. It will be necessary to have a gun purely for anti-tank work.

### SMOKE AS A WEAPON OF WAR (MAJOR HOLLAND)

The writer starts out by telling the object of smoke. It is an important means of securing that vital factor of war, surprise. It effects concealment also for the purpose of reducing casualties. When placed close to the object it is intended to blind, it produces artificial night and takes away the enemy's confidence and feeling of superiority.

Then Major Holland goes on to tell something of the history of the use of smoke as a weapon. It has been used for thousands of years on land and sea as a means of concealment and to blind the enemy and surprise them. At first, the smoke was made by simply burning green wood or lighting grass or woods. Later, smoke bombs were made. Smoke screens then became more or less automatic when black powder was used and the use of controlled smoke was forgotten. And then came the use of smokeless powder and all were so pleased with having gotten rid of smoke that no one visualized the increased power in the hands of a commander who harnessed that smoke to his use and so forced the enemy to fight in the dark.

And then came the Great War. During the first year of the war the only instance of smoke being used was when a haystack was set on fire to cover the withdrawal of a company. In September, 1915, smoke candles were used, but the disadvantage of candles is that our own infantry have to start in the dark, too. In 1917,

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smoke shell began to be used by the artillery and was fired in the rolling barrage so that the enemy had to use unaimed fire. There were many instances of attacks being made successful by the use of smoke. The enemy had great difficulty in organizing for counterattacks if at all. Sometimes there was a mixed grill of smoke and gas sent over. The enemy's thoughts were usually toward his respirator instead of his rifle. Smoke can be used very effectively in defense also, to cover withdrawals. It must be placed close to the body to be blinded and a minute or two is needed for it to spread.

There are disadvantages to the use of smoke on land as found by experience during the war. It is difficult to keep direction, but this may be overcome by training and by the use of guiding lights. Smoke draws fire on the infantry if the smoke tactics are faulty; the smoke screen must well overlap the object to be concealed and must never be used to conceal halted troops. Smoke grenades are yet another weight for the infantryman to carry; but the infantry vote for them and are willing to carry them. With a flank wind the smoke interferes by obscuring our targets. Finally, a change of wind upsets all the smoke plans and in issuing orders for an operation this must be kept in mind. But notwithstanding these disadvantages, smoke has an undoubted value in aiding surprise and in saving casualties.

The writer then goes on to show the great advantage of smoke on sea and in the air. He compares the use of smoke in naval tactics to the use of smoke in tank tactics.

Then Major Holland shows the different ways that smoke can be produced. At sea, the methods are by smoke generators on the ships, smoke buoys thrown overboard, smoke from funnels, and smoke generators on kites towed to make a ceiling of smoke. On land, there are smoke generators actuated by hand, smoke candles, hand grenades, rifle grenades, mortar bombs, smoke shell of various calibres. Tanks can project smoke by guns or rifle grenades or by diffusion from the exhaust. There are improvised methods such as burning red phosphorus in the open, setting fire to straw or damp hay tightly packed in sacks, tar barrels, green wood, etc. As to the air, smoke bombs may be dropped to the ground or smoke clouds may be generated in the air for self-concealment.

Smoke candles and hand grenades are clumsy but the rifle smoke grenade is a good weapon for the infantry. The smoke shell for artillery has come to stay and has a great many uses tactically. Tanks will project smoke to cover their own advance and diffuse smoke to cover the advance of other tanks.

Smoke tactics need more study. We must remember that the artillery may suffer in observation if the infantry call for an indiscriminate

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use of smoke. The proportion of smoke shell to be carried is another question to investigate. There seems to be no question that smoke, at times, is a very effective weapon. We should not wait for another war before developing it.

### **"The Journal of the Royal Artillery," December, 1923**

ANTI-AIRCRAFT ARTILLERY (COLONEL H. W. HILL)

This is a very interesting article dealing with the capabilities and the limitations of anti-aircraft artillery. The writer divides his subject into the following divisions: organization, equipment, missions, and anti-aircraft gunnery.

The anti-aircraft artillery is army artillery. There were during the war from four to six batteries with each army and as an army front might be from ten to twenty miles in length, it meant that the sections were quite widely distributed. A battery consisted theoretically of four guns, but the number often rose to seven. The guns were mostly 13-pounders and mounted on trucks. This was necessary in order to distribute the guns to the best advantage and to protect rail heads, dumps, and congested areas. In moving situations the batteries had more initiative of their own. Anti-aircraft batteries were assigned to the Corps for administration. The batteries themselves were distributed in depth in order to simplify battery administration and relief.

The telephonic communication was all on special anti-aircraft lines. They also had their own repair units and extra guns always ready.

The missions of anti-aircraft artillery as pointed out by Colonel Hill are (1) to keep enemy reconnaissance and artillery machines as far back or as high as possible, (2) to interfere with bombing, photographic and long-distance reconnaissance planes, (3) to defend captive balloons, (4) to defend special localities, (5) and, finally, to destroy hostile aircraft. It will be noticed that destruction of planes is not the prime object. It is better to keep away ten planes than it is to let them come close, destroy only one and allow the others to carry out their work unmolested. Besides, we can not be sure of getting one plane in ten.

In attacking hostile artillery ranging planes, short bursts of fire should be employed at predicted points. Bombing and photographic planes have to fly in straight lines and offer better targets so that rather long bursts of fire can be used. The author shows how the air forces can coöperate with the anti-aircraft artillery by leading a hostile plane which is in pursuit of it over the battery. The defense of captive balloons is difficult and the guns are kept loaded and laid to correct distance to the flank of the balloon on the most probable

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line of attack. A very important function of the anti-aircraft artillery is to report immediately any unusual activity of the enemy's planes from which could be deduced information as to the probable plans of the opposing commander.

The writer then takes up the subject of anti-aircraft gunnery. The actual burst range is the thing to be computed. It is taken as a function of the angle of site and the height of the target. The gun is laid for angle of site automatically since the method of laying is direct and the height is measured by a magnificent instrument capable of measuring within 3 per cent. The burst range is laid off on the range scales of the guns and the fuzes are cut for this range also. No fuzes are set during action as the delay would be too great. Great speed is one of the essentials.

Colonel Hill shows the difficulties of anti-aircraft work when he points out how to compute the vertical and horizontal corrections to be made to allow for movement of the target. These corrections may vary from 0 to 200 mils. He quotes formulas for these corrections and then shows that they may be reduced to simple rules. One of the bugbears of anti-aircraft work is the correction for the wind.

The British guns were on trucks and were too heavy and not sufficiently mobile. A self-propelled mount of the caterpillar type would be best. A steady mount is required with such a high rate of fire, and it will be necessary to make the trunnions lower than 8 feet from the ground as in the British type. Frequent changes of position are necessary. Observation of the same target from two stations is almost impossible in times of activity as it is difficult for both stations to spot the same target. Barrage fire against airplanes is ineffective as it would take an absurd number of guns to cover a portion of three dimensional space. One need of the anti-aircraft artillery is some sort of a mechanical sound locator to pick up targets at night so that they can be fired upon by searchlight. The sound locators used in the war were not good because the operator got very tired. This paragraph is a condensation of some of Colonel Hill's observations. He does not speak of the future policy of anti-aircraft artillery but merely chronicles experiences of the war.



## IN MEMORIAM

BRIGADIER GENERAL MONTGOMERY MEIGS MACOMB (retired), U. S. Army, the first President of the Field Artillery Association, died in Washington, D. C., on *January 19, 1924.*

General Macomb was one of the most distinguished officers of our service. He was also one of the most widely known, and universally admired.

He graduated from West Point in 1874, and served in the various grades in the Artillery Arm until appointed a Brigadier General in 1910. He was retired in that grade for age on October 12, 1916.

His ability and versatility were so universally recognized that his service covered a wide range of duties, including membership on the Wheeler Survey of the western part of the United States, membership on the Intercontinental Railway Survey (connecting North and South America), commanding a light battery in the Spanish-American War, three tours on the General Staff and duty with the Russian Army as an observer during the Russo-Japanese War. He closed his active career while President of the Army War College.

During the World War, he was brought back on active duty and commanded the Field Artillery School and Post of Fort Sill for a time.

During his long service, he was a member of too many important boards to even attempt to enumerate them. The members of the Field Artillery Association are more deeply indebted to General Macomb than they realize. But for him, there would probably have been no Association and FIELD ARTILLERY JOURNAL.

General Macomb was born to the service, his father having been a Colonel in the Corps of Engineers, his uncle having been Quartermaster General, and his great uncle, General Alexander Macomb having been Commander-in-Chief of the Army from 1835 to 1841.

General Macomb was always in the forefront of progress. No man had less respect for the past than had he, if it interfered with development, progress and efficiency. At the same time his unusually keen mind, his vast fund of military knowledge, and his wide experience prevented him from following false gods and heresies.

His distinguishing characteristic was thoroughness. A typical illustration of this occurred in the Intercontinental Railway Survey, in which his section extended from Mexico to Panama. Instructions were sent from Washington to save time by merely running a line of stakes and omitting triangulation. Notwithstanding these instructions, General Macomb triangulated his entire line, thus making its relocation easy for subsequent parties.

His death, after a short illness, when apparently so strong and sturdy, was a grief and shock to his relatives and many friends.

It is doubtful whether during his entire army career there was another officer in our service, more widely and favorably known, than was General Macomb; it is still more doubtful whether there was one held in greater affection by his brother officers than was "*Monty Macomb,*" as he was universally known to his friends. He combined to an unusual degree, ability, force, and knowledge with tact, personality and charm. Any officer who can leave behind him a reputation such as General Macomb's may well feel that his life has been a success; and without qualification, he may say "I have kept the faith."

# CURRENT FIELD ARTILLERY NOTES

## Plans for Reserve Training for 1924

THE primary object of the training for the reserve during this training year, as announced by the War Department, will be proficiency in mobilization, *i.e.*, organization, recruiting, assembly, supply, administration and initial training. Provisions are made this year for assignments and instruction of individual reserve officers, and particular classes of reserve officers, as made necessary by special conditions in their respective cases. But the outstanding feature of the tentative plans is the functioning for the first time of the reserve units.

Organized reserve units (regiments in the general case) for active duty training for fifteen days during the coming summer are being selected by the corps area commanders from both the non-divisional group and from divisional units. Not all units can be called. The funds appropriated will probably provide for about 1000 officers and 100 enlisted reservists in each corps area. This limits the possible number of units. War Department authority is granted for calling units at reduced strength so as to provide for more units. But no unit is to be called unless the command and staff of its subordinate units will be suitably represented. It will be the policy, when a unit is ordered to active service at reduced strength, to comply with the recommendation of the commanding officer of the unit in selecting the officers to go to camp and those to be excused. Likewise requests of individuals to be excused will be passed upon by the unit commander. Officers who belong to units not selected for active duty this summer will be attached to some other unit for the active period.

Reserve units ordered to active duty will either be at a C. M. T. Camp; with a corresponding unit of the Regular Army; or at a unit camp. The present plans contemplate that in each corps area not to exceed one reserve regiment shall be employed as such at a C. M. T. Camp. The fifteen-day period for reserve units so employed will be divided into two periods, the first being devoted to an intensive course of practical instruction to fit them to take over and perform the duties incident to the instruction of C. M. T. C. organizations during the second period, which will be of one week's duration. The practical working of this plan may be illustrated by the present plans of the Third Corps Area. One regiment of Infantry, Organized Reserves (brought to full war strength in officers by attachment thereto), is ordered to Camp Meade, Maryland, from July 1st to July 15th to actually take over the instruction of the C. M. T. Camp during its second week, July 9th to 15th. The



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purposes sought by this particular instruction is explained more fully under C. M. T. Camps on another page of this JOURNAL.

As pointed out above, there will be some reserve units ordered to active duty for their fifteen-day period with corresponding units of the Regular Army. It is ordered that these attachments shall not interrupt or materially derange the regular training schedules of the latter. However, these schedules will be supplemented daily by other and additional instruction appropriate to the needs of the reserve officers concerned. Again illustrating from the Third Corps Area, three regiments of Field Artillery (75-mm.), Organized Reserves, will be ordered to Camp Meade for attachment to the Sixth Field Artillery—one during each of the periods July 1st to 15th, July 16th to 30th, and August 1st to 15th.

Where unit training is not accomplished by the foregoing systems, corps area commanders are to resort to unit camps for the reserve units alone. The schedules for these camps will aim to attain the general object of proficiency in mobilization duties. They will include practical tactical instruction by means of terrain exercises and such technical instruction as the available facilities permit.

Provision has been made for instruction appropriate to the grades of the officers concerned. Schedules will be designed to meet the requirements of field and staff officers and other schedules for the needs of battery officers.

While the foregoing unit training will cover the major portion of active duty for reserve officers, there are a number of more or less special cases in the plans for the year. Summer training is provided for a limited number from the general assignment, branch assignment, and territorial assignment groups. Approximately ten reserve officers will be given a special course at the War College during the year. Five more from the General and Branch Assignment Group and two from each corps area will take a special course at the Command and General Staff School at Fort Leavenworth. Approximately fifty reserve officers will take courses at the Special Service Schools. The allotment of these for the Field Artillery at Fort Sill will be announced later. Corps area commanders may also select and order officers, including the necessary staff officers, to active duty for not more than forty-five days, including thirty days as instructors at C. M. T. Camps, in numbers approximately as follows:

1st Corps Area.....	29	6th Corps Area.....	39
2nd Corps Area.....	45	7th Corps Area.....	47
3rd Corps Area.....	38	8th Corps Area.....	39
4th Corps Area.....	47	9th Corps Area.....	29
5th Corps Area.....	47		

## CURRENT FIELD ARTILLERY NOTES

### **Special Classes for Detailed Officers at Sill**

February 2nd saw the graduation at Fort Sill, Oklahoma, of the Special Class of twelve officers detailed from other branches for four years in the Field Artillery or returned from duty away from Field Artillery. This class started last September. A new class of thirteen officers began the course on February 10th. These are all colonels, lieutenant colonels or majors detailed for four years in the Field Artillery to provide for the deficiency in those grades in our arm. Of the thirteen, two are from the Cavalry, seven from the Infantry, and two are from the Quartermaster Corps.

Of the twelve in the class completing their course on February 2nd, five go to duty with regular units, six go to duty with Organized Reserves, and one goes to duty with the National Guard.

### **Regimental Coat of Arms, Distinctive Insignia and Standard for Reserve Regiments**

Although many of the reserve regiments have adopted their regimental coat of arms and distinctive insignia, the 313th Field Artillery claims the honor of being the first to have its regimental standard completed and in being. It is shown in an accompanying illustration. This, of course, follows the prescribed design. In the eagle's beak appears the regimental motto, "*Per virtutem ad ardua tendimus*" (By Valor We Attempt Difficult Things). The crest of all reserve regiments, a minute man, appears above the eagle's head. The shield on the eagle's breast is the regimental coat of arms. This is white (ermine) with a wavy blue line across it, on which is a gold lion. The standard is of red silk with gold fringe. The eagle and various designs are embroidered in colored silk. The meaning of these colors and designs is made clearer by reading from the regimental history.

The 313th Field Artillery, 155th Field Artillery Brigade, 80th Division, was organized at Camp Lee, Virginia, in August, 1917. The enlisted men were drawn from the northeastern counties of West Virginia, the officers from Maryland, Virginia and New Jersey. The regiment left Camp Lee in May, 1918, landed in Bordeaux, France, trained in the province of Brittany, and was in reserve during the St. Mihiel attack. On September 25, 1918, the regiment went into position near Verdun on the right flank of the American line. It remained continuously in action until November 11, 1918, a total of forty-seven days, having advanced along the left bank of the Meuse to near Stenay, one battalion having crossed the river on November 10th.

The coat of arms is based on this history. The ermine is from

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the arms of Brittany. The blue wavy line represents the Meuse River, and the golden lion is from the arms of Stenay.

The distinctive insignia in gold and colored enamel is a combination of the coat of arms surrounded by the motto. It is worn on the shoulder straps of the service coat and the front of the campaign hat. It is now being worn by the regiment.

### **Observations from the Command Post of a Regular Field Artillery Unit**

The regular field artillery units are bracing themselves for the work of the coming summer. Recruits—men enough to carry on as units—is one of the serious problems in most cases. Training and administration have their own various problems in each particular case. The following paragraphs, under title of "Observations from the Command Post," are taken from *The Salvo*, a mimeographed paper issued semi-monthly at Madison Barracks. They indicate a few of the local problems and the spirit in which they are being met.

"The Commanding Officer must calculate the correct 'data' to get the best 'effect' for Madison Barracks. He may not sense bracketing salvos in 'adjustment'; but he will 'register' with sights laid on the aiming stake of the Second Battalion, Seventh Field Artillery, the 'Best Battalion' and the aiming points, Madison Barracks—"The Best Post."

"Whether 'short' or 'over,' no one need be doubtful in 'closing' with that deflection. It is not a question of asking the organizations to do the impossible in order that the possible may be accomplished. I give it as my fixed opinion that if Battery 'D' is not the best battery in the Field Artillery, then it must be Battery 'E,' and if not 'E,' it must be 'F' or Headquarters Battery. The Second Battalion, Seventh Field Artillery, rates that opinion on its record.

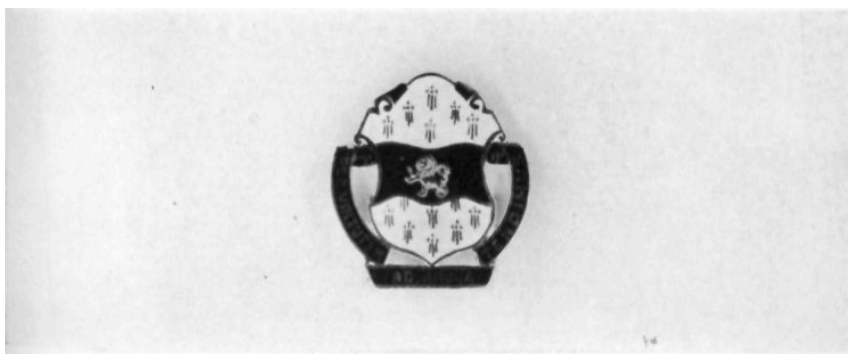
"Was it not the first to get over there? The first to lay down a barrage in battle? Did not Battery 'D' suffer the first casualty of a United States Light Artilleryman in the World War? And was not the first American Field Artillery officer to give his life on the roster of Battery 'F'? And what battalion suffered more casualties than any other in the Field Artillery? The Second Battalion, unless it was the First Battalion, Seventh Field Artillery. And finally it was the last to get back from overseas.

"That's a record to shoot at, but on account of that past and glorious tradition, our 'elevation' must never drop below that 'plane of site' in present or future.

"The following are some miscellaneous 'corrections of the moment' as observed from the command post. Since December 1, 1923, the strength of the post rose from 383 to 431 men, only to



REGIMENTAL STANDARD OF THE 313TH FIELD ARTILLERY



DISTINCTIVE INSIGNIA OF THE 313TH FIELD ARTILLERY



A SECTION FROM BATTERY "E," 7TH FIELD ARTILLERY  
On Recruiting Duty in New York City. This Section Won Third Place in the New York National Horse Show.



IN THE CORRAL  
Madison Barracks.

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drop back on the transfer of 25 recruits to Fort Sill. But we are on the up grade again, and instead of transferring 25 men per month to Fort Sill for four months, or a loss of 100 men, a total of forty has been sent, which is quite enough in itself.

"In the matter of fatigue, the hauling of some 800 tons of coal by the batteries has been avoided, which is no small item, and if the harvesting of the required 1000 tons of ice can be done other than by fatigue details, every effort is now being made to do so.

"In the matter of discipline, which can be defined as the carrying out of orders obediently, promptly and willingly, and in the absence of orders to do what your best judgment dictates your orders would be in the circumstances, the most important word therein is 'willingly.' That is where the spirit and team work enters into the duties of a soldier.

"If anything is worth doing, it is worth doing right, for who does not take a pride in doing a thing well? And if any organization is worthy of its name, it is worthy that all therein give their best to it, for who would take any pride in belonging to an undisciplined, inefficient outfit?

"The old soldier generally finds that his officers are his best all-round friends. Discipline is necessary, but fairness must be the guide.

"In the matter of conduct, which, on the average, has been excellent, no one desires to issue individual 'Sunday School Certificates,' but it is expected that one conduct himself as a soldier and a gentleman as becomes a Seventh Field Artilleryman."

### **Reserve Unit Training on Inactive Duty**

The character of the activity of the 380th Field Artillery is indicated by the following memorandum. This paper was sent out not only to the officers of the regiment, but to all regular, national guard and reserve field artillery officers near enough to attend.

#### HEADQUARTERS 380TH FIELD ARTILLERY

408 Old Custom House, 3rd and Olive Sts.,  
Saint Louis, Missouri

January 23, 1924.

#### MEMORANDUM

A meeting of all field artillery officers in this city will be held at the Armory, Grand and Market, on the evening of February 11th at 6:30. A regular army beefsteak mess will be served at the cost of approximately ninety (\$.90) cents. *It is important that you send in, by return mail, the attached slip in order that the mess officer may prepare the necessary rations.*

This is the second monthly meeting, and you are urged to attend,

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as you will not only enjoy the company of your former comrades, but will receive instruction and information along artillery lines that will be a necessity in the event that you are called out for duty. Moreover, you will be better prepared should you attend the annual summer camp.

Field artillerymen have always shown a keen interest in their profession and the organization has been very closely knit. It is believed that you will enjoy this next meeting so much that your future attendance will be assured.

The following remarks in this paragraph refer only to officers assigned and attached to the 380th Field Artillery: Inasmuch as the War Department holds unit commanders responsible for the instruction of the officers under their command, the Commanding Officer of the 380th Field Artillery invites your attention to the fact that your attendance at the monthly meeting will be considered in any efficiency reports which may be called for by the War Department. Battalion and battery commanders will be responsible not only for their own attendance, but the attendance of the officers under their command. If it is impossible to attend, notification setting forth reason for non-attendance should be sent in on the attached slip.

Make a real effort to attend and return the attached slip, notifying these headquarters of your intention to attend, or not to attend. Remember, the Mess Officer has to prepare the mess.

By order of the Regimental Commander:

T. R. MCCARRON,  
Acting Executive Officer.

### **Strength of R.O.T.C. Units**

Some interested members have asked that the differentiation as to voluntary and compulsory training be shown among the R. O. T. C. units whose enrolment was published in our last JOURNAL. Of the twenty field artillery units, the enrolment in six is voluntary. These six are Harvard University, Leland Stanford, Jr. University, Princeton University, University of Chicago, University of Utah and Yale University. The remaining units have compulsory enrolment for at least part of the course. These latter are purely military schools or have received land grants or other assistance from the government and in return render this service.

### **1924 C.M.T.C.**

The War Department in its tentative training program is favoring the method of "associate organizations" for the Citizens' Military Training Camps for the coming summer. This was successfully

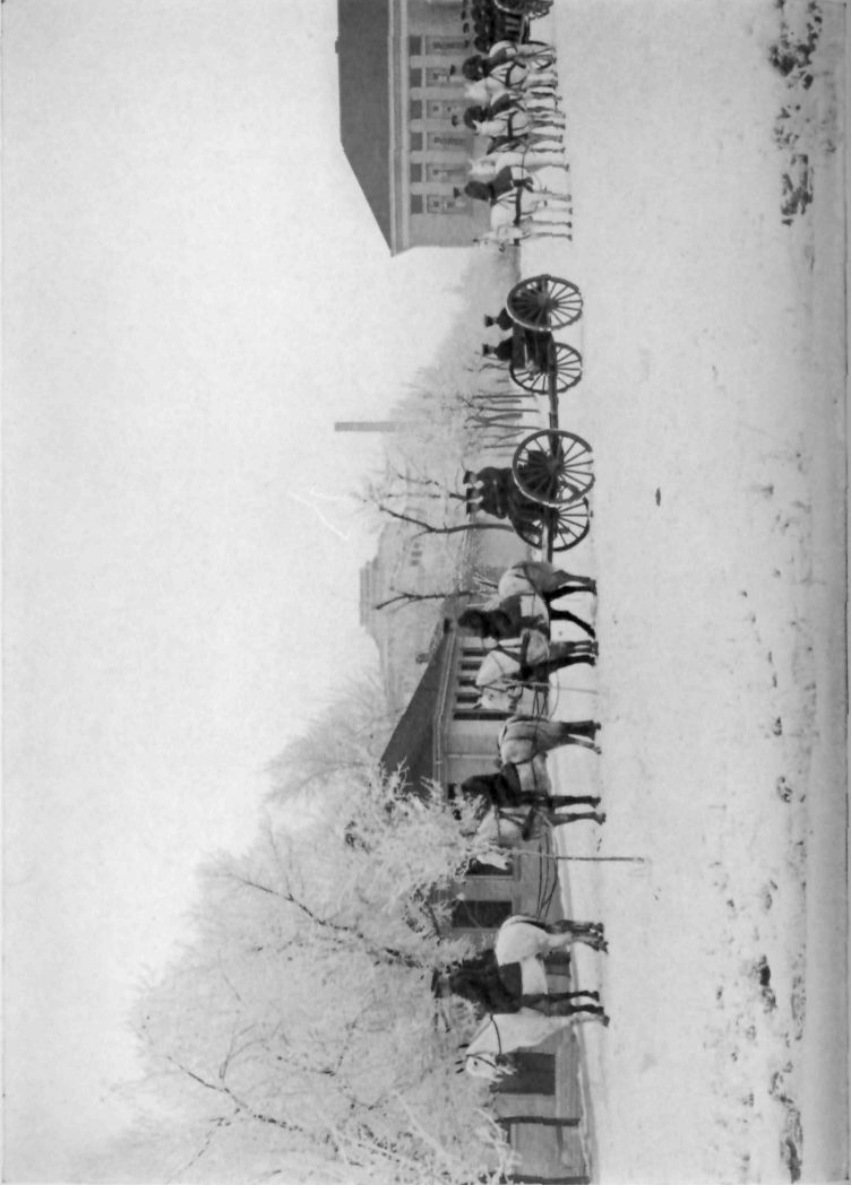


EQUITATION  
Seniors at the University of Utah R.O.T.C.



FRESHMEN AT GUN DRILL  
University of Utah R. O. T. C.





SECTION AT DRAFT INSTRUCTION  
Sophomores, University of Utah R. O. T. C.

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tried in one corps area last year. In this method of organization candidates are used to form additional subdivisions of existing tactical units of the Regular Army. For instance, in a field artillery regiment or battalion, each battery would have one or more additional platoons formed from candidate personnel. The regular organization acts as a parent or associate unit, and all administration, supply and training of the attached candidate units are conducted by the personnel of the regular unit, assisted by the additional personnel made available for the purpose. The commanding officer of each company, troop or battery commands the composite unit and is responsible for all instruction in it. Battery, battalion and regimental commanders would have the same responsibility toward C. M. T. C. candidates as toward their own regular personnel. Responsibility for instruction would be direct from commanding officer to regimental, battalion and battery commanders. The candidates will be messed and quartered separately, however, and do their own fatigue and police. Those who recommend this system point out its simplicity and the fact that it permits the systematic care and instruction of candidates to be begun with the minimum of delay.

In the note on another page of this JOURNAL relating to reserve training for 1924, the proposed utilization of reserve units in instructing the C. M. T. C. candidates is pointed out. The regular army personnel will of course be maintained continuously on duty with each C. M. T. C. organization to the extent that it may be necessary to insure continuity of instruction, administration and supply. However, during the week that the reserves are conducting the training, the regular army personnel will be withdrawn from the exercise of active command and employed in a supervisory capacity only, except in those cases where it appears that the reserve personnel is unable to function satisfactorily.

Among the purposes to be accomplished by employing reserve units at C. M. T. Camps, the following are pointed out by the War Department:

To provide the experience and practice necessary for the proper performance by organized reserve units of similar duties incident to mobilization.

To provide practical training (particularly for line officers) in handling men and matériel.

To develop a definite sense of obligation and responsibility on the part of reserve unit commanders for the building and maintenance of their units as efficient training cadres.

To provide for units and officers of the Organized Reserves a

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definite and continuing participation in the military training and instruction of the youth of the country.

To stimulate the growth of the Enlisted Reserve Corps by establishing contacts between the organized reserve units and the young men residing in their respective areas.

To provide instructor personnel, in excess of that which can be furnished by the Regular Army, needed at C. M. T. Camps.

### **Field Artillery Equipment in Competitions**

Some criticisms are being made of the embellishment of field artillery matériel in the horse shows and competitions this winter. The most experienced field artillerymen, while hesitating to criticize too harshly, agree that objectionable instances are occurring. The tendency is not new. Ardor in competition and perhaps some confusion of *means* and *ends* have always kept this evil with us. The present policy of shining the buttons of the uniforms, which were formerly specifically required to be dulled, may be causing a general impression that any former limits are off. If this is contributing to an unusual appearance of the evil mentioned above, it seems agreed that the impression should be checked.

No picture can be more beautiful than a good field artillery section turned out with every item as contemplated by regulations. What this latter condition is would require a very great list. In any case of uncertainty the old rule that each item is originally issued as it should be kept, is a safe guide. When an article is painted—or varnished as some cases permit now in garrison—keep it well painted or varnished. When an article is bright metal, keep it as bright as limitless care and elbow-grease can make it. But do not scrape off the paint in order to present a polished surface.

An officer of long experience pointed out in connection with another phase of this question that a sloppy soldier can easily appear with a nickel-plated firing mechanism for his gun. But the brightness of the nickel is in no way an indication of the efficient care of the piece which is the real end sought.

### **Enlisted Specialists Course at Fort Sill**

The Communications and Horseshoers' Courses for enlisted specialists, which began September 15th, were completed February 2nd. Two candidates failed in each course. In the Communications Course Sergeant Schoffman, 151st Field Artillery, Minnesota National Guard, received the highest grade. There were thirteen successful candidates from the National Guard and ten from the Regular Army in this course. In the Horseshoers' Course there were six candidates from the National Guard and seventeen from

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the Regular Army. Private Sinkas, specialist fourth class, Battery "A," 2nd Field Artillery, was rated highest in the class.

This course is being repeated beginning February 15th.

### **Reserve Handicaps**

The following is quoted from the Bulletin of the 81st Wildcat Division:

"You have read the extract from the message of the President, our Commander-in-Chief, to the Congress which is now in session, you have read the greeting from the Secretary of War and from the Chairmen of the Senate and the House Military Affairs Committees. What are you going to do? What do you think? What do you want? Have you told your representative what you expect? Neither the President, Mr. Weeks, Senator Wadsworth nor Mr. Kahn control the destiny of the Organized Reserves, but certain committees and sub-committees in the House and Senate to all intents and purposes do. Your Congressman and your Senator are supposed to be your representatives on the floors of these two houses. They cannot properly represent you unless you let them know what you want.

"Did enough reserve officers get to attend the camps this year? No.

"Why? Because the last Congress did not appropriate sufficient funds.

"Did those of you who attended camp draw eight cents per mile? No.

"Why? Because the last Congress cut you down to four cents per mile.

"Has your regular army executive been around to instruct you during the year? Probably not, unless he drove over in his own car and paid the bill out of his own pocket.

"Why? Because the last Congress did not appropriate sufficient funds for this purpose.

"Has he a comfortable office properly equipped so that you can drop in and get the latest information on your military work without spending money out of your own pocket? Probably not, unless some charitable community has given it to him or he is paying for it himself.

"Why? Because the last Congress did not appropriate sufficient funds for rent of division and regimental headquarters offices.

"Have you had to pay money out of your own pocket to obtain text-books to take the correspondence school courses in order to keep yourself ready to serve your Country? A great many have.

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"Why? Because no money was appropriated by the last Congress for this purpose.

"The whole reason for this paragraph is to impress upon you the fact that your representatives were in that 'last Congress' and the average congressman or senator wants to represent his district or his state, but he can not do it unless you let him know what you want. The present session, which will not get down to real work until after the first of the year, will very shortly take up for discussion and vote the sum to be appropriated for the Organized Reserves for the period July 1, 1924, to June 30, 1925. If you are satisfied with the way things are going, O. K., if not, tell your representatives. Give them a chance."

