

THE FIELD ARTILLERY JOURNAL

NOVEMBER-DECEMBER, 1935

PUBLISHED BI-MONTHLY BY
THE UNITED STATES FIELD ARTILLERY
ASSOCIATION

November-December, 1935

CONTENTS

General Malin Craig, Chief of Staff	<i>Frontispiece</i>
General Malin Craig	489
The Small Group Firing Machine	491
By Capt. S. Y. McGiffert, F. A.	
Polo Activities at the Field Artillery School	504
The United States Field Artillery Association	509
A Former Cadet Reviews the R. O. T. C.	510
By Lt. S. D. Distelhorst, F. A. Res.	
Type Problem	512
Fifty Million Frenchmen Can be Wrong	513
By Capt. C. T. Lanham, Infantry	
Mud and Morale	536
By Leah Stock Helmick	
The First Army Maneuvers	540
By Col. Conrad H. Lanza, F. A.	
11th Field Artillery Wins Hawaiian Division Baseball Championship	566
Notes on a Regimental March, Truck-Drawn	568
By Col. Carl A. Shem, 135th F. A.	
A March on Hard Surfaced Roads	572
By Major Pierre Mallett, F. A.	
It's Hi! Hi! He! In the Horse Artillerie!	578
By Lt. Col. Ralph Hospital, F. A.	
Notes on War of Movement	582
A Digest by Lt. Col. John S. Wood, F. A.	
Assignment of Field Artillery Officers to Organizations (As of October 1, 1935)	590
Field Artillery Notes:	604
Field Artillery Dinner: Nine Hundred Mile Practice March.	
Table of Contents, Year 1935	605
Special Notice—U. S. Field Artillery Association Prize Essay, 1936....	612

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VOL. XXV

NOVEMBER-DECEMBER, 1935

No. 6

THE FIELD ARTILLERY JOURNAL

EDITED BY
DEAN HUDNUTT

MAJOR, FIELD ARTILLERY, UNITED STATES ARMY



Patron Saint of Artillery

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GENERAL MALIN CRAIG, CHIEF OF STAFF

THE FIELD ARTILLERY JOURNAL

VOLUME XXV

NOVEMBER-DECEMBER, 1935

NUMBER 6

GENERAL MALIN CRAIG

THE President of the United States on October 2 appointed General Malin Craig Chief of Staff of the Army to succeed General Douglas MacArthur. This appointment is a fortunate one for the army inasmuch as General Craig carries with him to this high office a varied experience not often found even in officers of high rank.

Graduated from the Military Academy in April, 1898, General Craig was assigned to the infantry. Later he was transferred to the cavalry, with which he served for the remainder of his career in the line—a career which took him to Cuba, China, the Philippine Islands, France, Panama and stations throughout the length and breadth of the United States, which placed him in positions of responsibility with troops, with the Staff and at the Army Service Schools and which brought him experience in four wars: the Santiago Campaign, Philippine Insurrection, the Boxer Rebellion and the World War. In the latter he saw service at the front from October, 1917, to the Armistice, participating in the Second Battle of the Marne, the Battle of St. Mihiel and the Meuse-Argonne. For this service he received the Distinguished Service Medal, the French Croix de Guerre with two palms, the French Legion of Honor, the British Companion of the Bath, the Belgian Order of the Crown and the Italian Order of the Crown.

As a commander of troops General Craig combines those qualities of leadership which win for him the efficiency, esteem and loyalty of his subordinates. The flood of congratulatory telegrams from former members of his command give eloquent evidence of his popularity with soldier and officer alike.

As staff officer, General Craig's experience included that of Chief of Staff of a Division, of a Corps, and of an Army. In these positions General Craig never assumed the exalted attitude of the so-called "Brass Hat." His dynamic personality, his unflinching

THE FIELD ARTILLERY JOURNAL

good humor and his consideration for the man behind the gun made him the ideal Chief of Staff.

His thorough knowledge of tactics placed him in key positions at the Army Schools, first as instructor at the Army Service Schools at Fort Leavenworth, next as Director of the Army War College, then as Commandant of the Cavalry School at Ft. Riley and finally as Commandant of the Army War College.

His fair dealing and efficient administration as Corps Area Commander won for him the high regard of the Organized Reserve, the National Guard and the civilian population generally. Upon his appointment as Chief of Staff he received letters and telegrams of congratulation from every State Adjutant General, from every National Guard Division, and from practically every State and City Chapter of the Reserve Officers' Association in the Ninth Corps Area, which he commanded for over four years.

His tall military figure commands attention; his humor and pleasing personality win him hosts of friends; his professional knowledge, his energy, his common sense and keen insight into the knottiest of problems inspire confidence that his tour of duty as Chief of Staff will be a highly successful one.

THE SMALL GROUP FIRING MACHINE

"The Applicatory System of Training Should Be Employed Wherever Possible"—TR 10-5

BY CAPTAIN S. Y. MCGIFFERT, Field Artillery

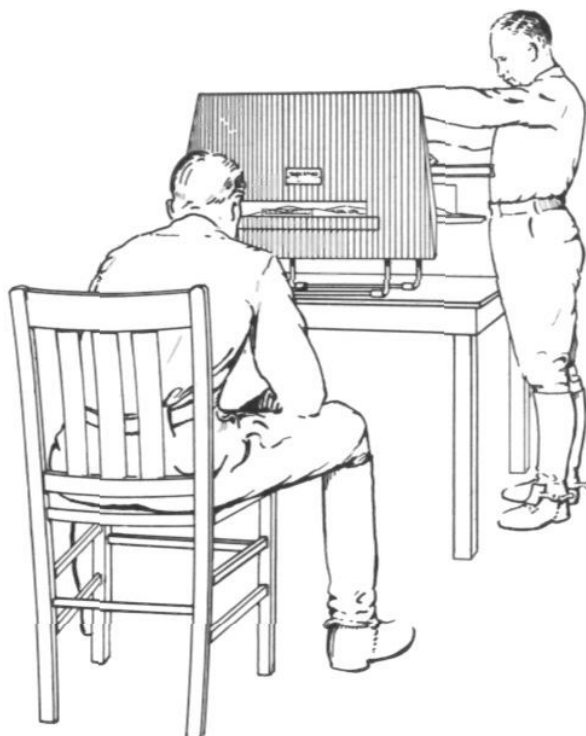
AUTHOR'S NOTE: In 1931 a small article by Captain Warlimont appeared in a German Military Magazine, describing an artillery firing device which was at that time in use at Fort Sill. Except for that article, nothing has ever been published concerning the enterprise known as "The Train Board."

In the beginning, I want to emphasize the reference to the word *enterprise*, inasmuch as we have considered that the important thing has become the *method* of instruction, rather than the particular vehicle of instruction. The object of our efforts has been the production of firing skill rather than the technical design of a firing machine, although we have sought to achieve the production of this firing skill by means of a specific type of machine.

BY firing ability and skill, we do not mean simply firing knowledge. We are not referring to the ability to calculate data, or to solve a written examination, upon the theory or practice of artillery fire. We refer to instructive action based upon the elementary firing habits, which can be acquired only through extensive *experience* or intensive *practice*. Being unable to provide the extensive experience, we undertook to provide as widely as possible a practical means capable of intensive use. While the production and development of the means for this practice has been within our control, the application and use of this means has of necessity been a function of the student's, instructor's, or commanding officer's interest in firing skill.

Since 1926, Capt. Adams and I have been trying to ascertain what training conditions exist in the National Guard battery, the small Organized Reserve Group, and in Regular Army separate batteries, in regard to the development of firing skill. When these organizations were able to secure some sort of extensive firing practice, even under unfavorable conditions, it was considered that our problem would be solved. After extensive questioning, we reached conclusions about as follows. In practically every instance, the individual officer has been exceedingly conscious of his limited firing experience. Some officers avoided assignments which required the conduct of fire; others, resigned to their difficulties, developed considerable interest in secondary activities, in which they found the means of satisfying their professional ambitions. A small number of officers attempted to practice some sort of firing by themselves. In no case was there apparently any

THE FIELD ARTILLERY JOURNAL

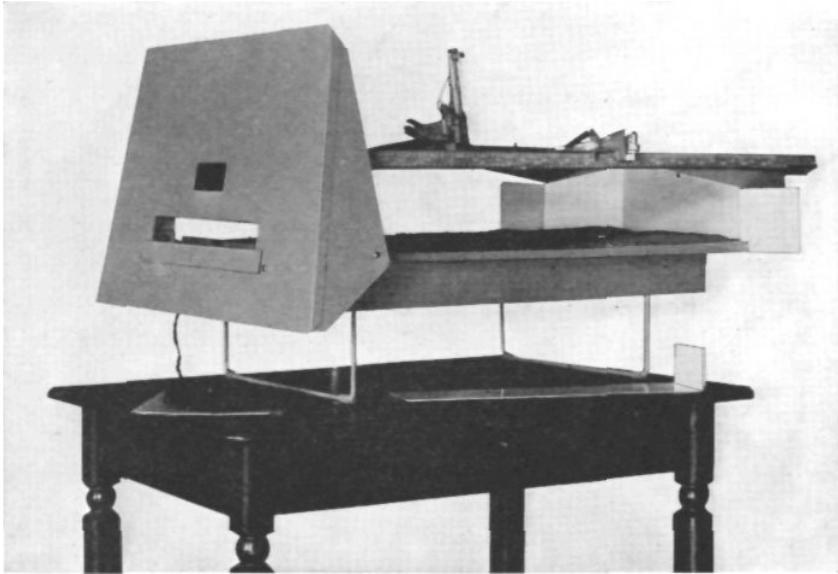


A TWO-MAN FIRING GROUP

strong interest in firing practice, unless the unit or group commander was particularly interested in firing. Usually the limited time which the small group devoted to officers' training was by schedule, and, in order to include all professional subjects, the meager time remaining, after the administrative problems and mandatory subjects were covered, was negligible insofar as its influence upon firing was concerned. There was evidence of individual enthusiasm for firing, but in the larger groups firing was a thing to be taken for granted; at least, an art to be acquired somewhere else, or to be done "When we go to camp."

The existing firing practice devices occupied a distinctly secondary position, since their announced purpose was only to serve as an introduction to actual firing, which, in turn, was regarded as the only possible method of acquiring skill. Service practice, however, was so limited that it could do little more than retard the loss of such skill as the individual officer might previously have attained.

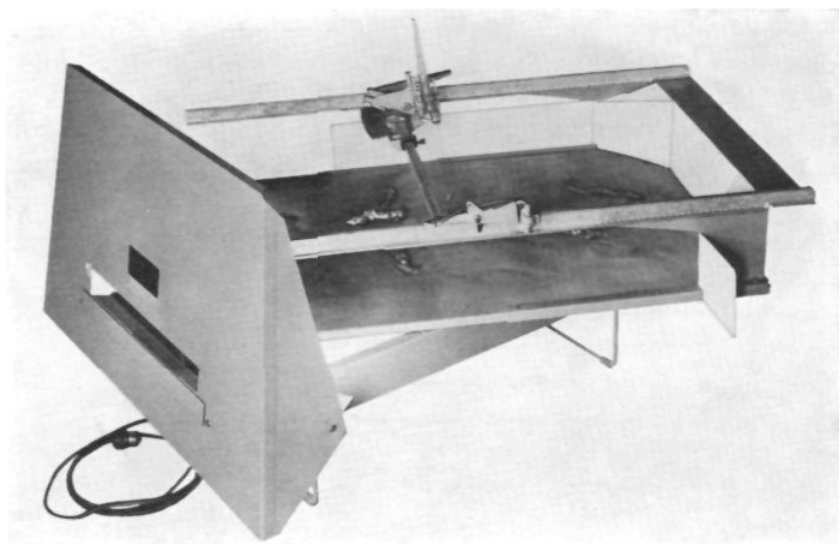
THE SMALL GROUP FIRING MACHINE



THE SM-5 TRAIN BOARD

Many ingenious devices were constructed, intended to simulate firing, but the principal interest unfortunately remained in their construction, rather than in their employment. Most part-time officers have only their evenings to devote to their military duties. Any sort of firing practice which requires daylight can only be undertaken upon their Sundays and holidays. The long winter season in the north greatly reduces the opportunities of out-of-door instruction, as will inclement weather. The out-of-door range is usually situated far from the officer's home, in the outskirts of the city in which the Reserve or National Guard officer lives. The inconvenience in travel to and from the range, as well as the time involved, restrict the number who make the trip and the frequency of attendance at instruction held at the range. There is also the fact that much time is spent in commuting, which time might more adequately be spent in firing. The scarcity of ammunition, safety precautions, and the necessity of gunners and their equipment all reduce the possibility of extensive service practice or its modification. Besides these objections, only the larger groups could obtain this type of training, and as a consequence, the amount of individual practice was proportionately reduced.

THE FIELD ARTILLERY JOURNAL



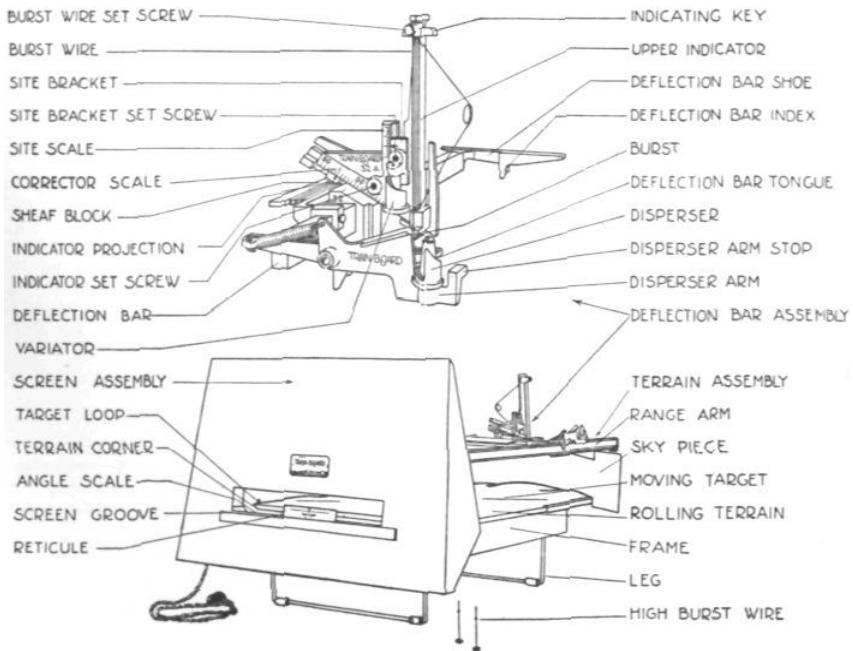
VIEW FROM ABOVE, AN "SM-5" TRAIN BOARD ARRANGED FOR LATERAL FIRE, THE GUNS BEING ON THE OBSERVER'S LEFT.

The available indoor devices received little use. In the first place, they were not obtainable "ready made" but had to be constructed, which called for materials and a skilled mechanic. Not many of these devices reached completion, nor extensive use after completion. Blackboard firing, although it did not permit observation, was cheap, simple to operate, and thoroughly dependable. The value of blackboard firing, however, was dependent upon the skill of the instructor. The larger groups had instructors, but no one, however skillful, could be expected to possess sufficient energy to stand at the blackboard hour after hour, day after day, until each Reserve or National Guard officer became skillful, assuming that these officers had the time to devote to that purpose.

The existing devices, furthermore, provided for instruction in only one or two types of problems, and several devices of different types were necessary. With all reduced scale ranges, few observers are able to follow the problem due to the increase of the angle T . Additional observers are able to follow little of the observation, and generally only the firing record. Large groups tend to reduce the number of problems fired in any session, due to discussion and the difficulty of retaining the interest of the additional observers in any particular problem.

THE SMALL GROUP FIRING MACHINE

All previous training activities involved group instruction, rather than individual development. The officer who conducts the fire of a battery in battle is alone and decidedly thrown upon his own resources. The individual officer cannot be accountable for his lack of skill when the means of acquiring that skill are not at his disposal. Should this officer be furnished a means of extensive firing practice, that individual could then apply himself at his own convenience, independently of his class instruction. If individual officers could be examined and their state of proficiency be determined, a standard of firing skill might be set, and the officer, whose firing was below standard, could improve the quality of his firing entirely by his own efforts. This supposition did not seem an impossible one for the reason that as a general thing the skill and speed in firing of the officers at Fort Sill varied with the quantity of firing which they had previously done. If an individual part-time officer fired a great number of problems, his speed and skill would consequently increase. Finally, if the nature of this firing was without expense, and, at the same time, sufficiently realistic and accurate, the individual could learn to fire,

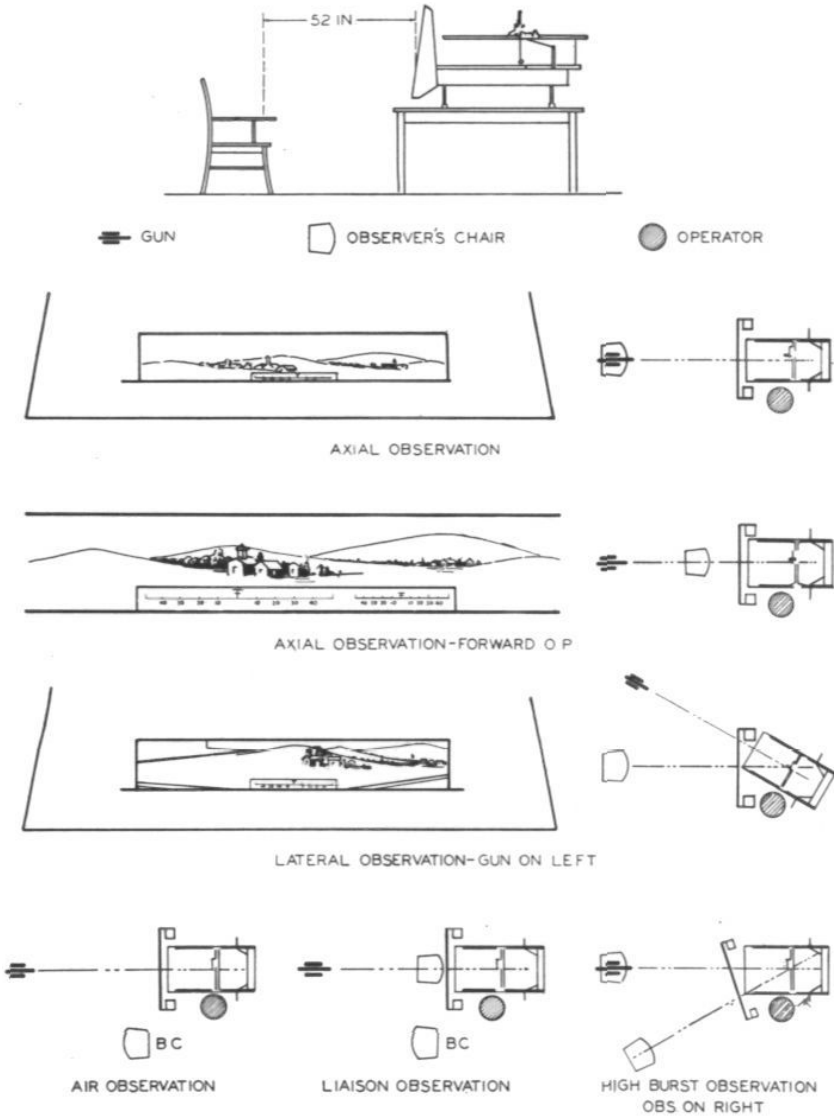


THE PARTS OF A TRAIN BOARD

THE FIELD ARTILLERY JOURNAL

by applicatory methods, from the very beginning of his gunnery instruction.

Our object in developing the small group firing machine was to produce some very inexpensive means by which individuals could secure some sort of skill in firing through their own efforts. This



SEATING ARRANGEMENT FOR OBSERVER WHEN FIRING A TRAIN BOARD

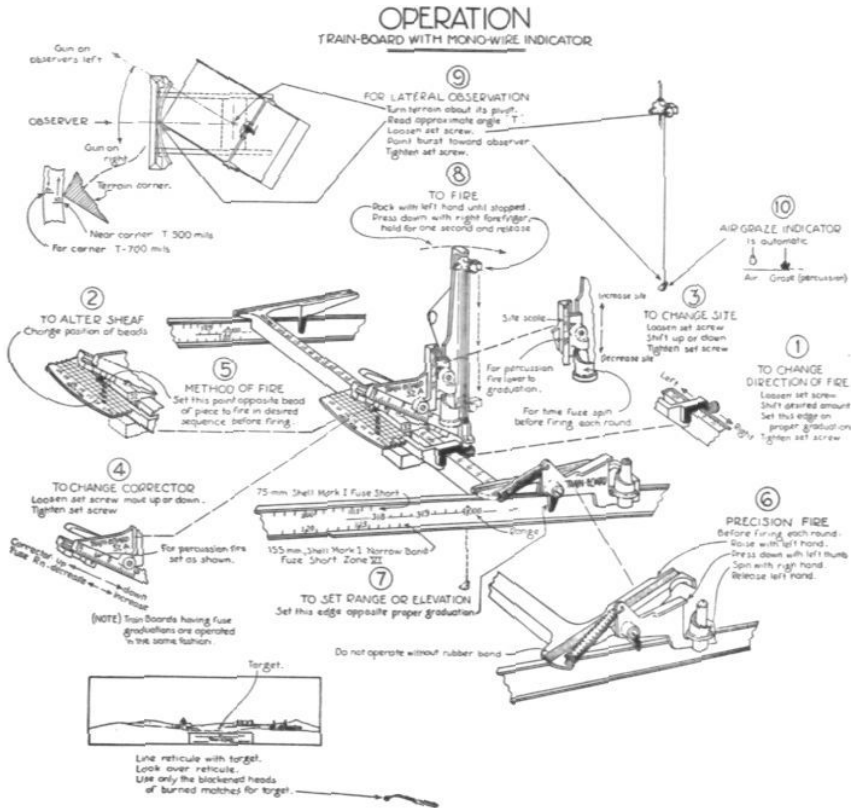
THE SMALL GROUP FIRING MACHINE

means had to be adaptable to both the Regular and the part-time officers' purposes. With such a convenient means of producing skill, the responsibility for acquiring this skill could be placed upon the individual. Firing could then become more popular, and be more generally practiced.

It is not intended to make this article a complete set of directions for the operation of the Train Board. The Train Board and its operator present the person about to fire with every facility that is necessary, the range table, the equivalent of an observing instrument, the artillery range, unlimited ammunition, and a four-gun battery which can fire either time or percussion fuzes with their projectiles. The visible target area permits the battery the minimum range of 3,200 yards and a maximum range of 4,800 yards. It has a width of area corresponding to 260 mils. The battery represented may be equipped either with French 75mm guns or 155mm howitzers. The angle T may become as much as 1,600 mils in either direction. The observer-target distance is the same as the range, when observer seats himself so that his eye is fifty-two inches from the screen. For every twenty inches he moves his chair closer to the screen he reduces this distance a thousand yards. If he is acting as a liaison observer, he will observe from the screen itself. In air observation and liaison problems the battery commander is not the observer, and seats himself so as not to see the firing although the Train Board operator executes his commands. The air observer's sensings are given to the battery commander by the Train Board operator from actual observation, in the first case; in the second case, the liaison observer gives the battery commander his actual observations as seen through the screen. The firing commands are given by the battery commander to the Train Board operator, who becomes the telephone operator at the Op, the complete communication, as well as the personnel of the firing battery. In other words, everything which a person must have in order to be able to fire is included in the single facility, and, in addition, it is capable of use in firing all types of problems. The operation of the Train Board is entirely mechanical. It is simple, due to its few moving parts. This simplicity has two advantages. In the first place, the Train Board is seldom out of order; and in the second place, the simple operation permits an inexperienced person

THE FIELD ARTILLERY JOURNAL

without artillery knowledge to manipulate its operation, and still afford the observer a realistic problem. Due to the Train Board's construction it does not have to be locked away for protection, but can be conspicuously placed so as to be used at the convenience of any officer who may have a few minutes in which to fire. That officer does not require a second officer, or a specially trained individual as an operator, but can have any person at hand operate the device for him. Children have operated the Train Board.



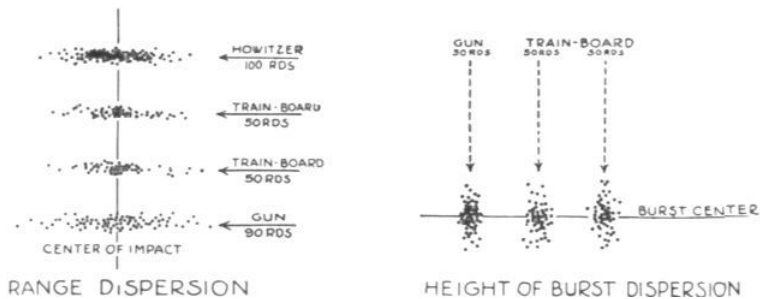
OPERATION OF TRAIN BOARD EQUIPPED WITH MONO WIRE INDICATOR

The details of mechanical operation are illustrated in the diagram. Dispersion, or whether an air burst, or graze, is to be indicated, are of no concern to the operator. Lateral observation does not differ from axial observation from the point of view of

THE SMALL GROUP FIRING MACHINE

the operator. The burst appears and disappears instantaneously in correct operation. As a result, the visible burst is apparent for about two seconds, which corresponds, however, to the period of maximum observation in an actually fired burst, as measured by means of moving pictures. Beyond two seconds, in an actual burst, the sensible elements diminish rapidly, the smoke begins to drift, and effect is no longer visible. The short period of burst display quickens the eye of the observer, and a decided improvement is usually noticed in the rapidity of sensing on the part of officers who constantly use Train Boards. The existence of the burst wire is not apparent to the observer in the short period of display. The observer is watching the target and the burst intently.

Care is exercised in the size of targets selected to prevent their being too large for the scale represented. Thus, it would be ridiculous to adjust on a piece of chalk, which in scale size approximates a city block. The realistic appearance of the landscape, as well as the appearance and behavior of the burst in space, are necessary to hold the interest of the officer firing, to convince him that such inaccuracies of adjustment as may be made are errors directly attributed to himself, rather than to the inaccuracy of the device, or its faulty manipulation. It is essential that the transition from Train Board firing to service practice is as natural as possible, and in order to get an exact adjustment of each element of fire, the same care must be exercised that is required to make an adjustment in actual firing. While the observer has no fixed observing instrument, he maintains a constant direction of observation by keeping his eye aligned with the center of his mil scale and the target.



THE COMPARATIVE ACCURACY TO SCALE, ACTUAL FIRING AND AN SM-5 TRAIN BOARD

THE FIELD ARTILLERY JOURNAL

The screen conceals the operating mechanism from the observer and supports the mill scale (reticule). Two bright lights are fixed behind the screen. They illuminate the landscape; however, this illumination is a secondary function; its primary function is to prevent the observer's anticipating the location of his fire by watching the shadow of the operating mechanism upon the landscape. The lights also offset the glare on the transparent mill scale. A white background or sky piece silhouettes the landscape and burst, just as the sky does in an actual landscape. When the landscape is turned for a "big T lateral," an additional side piece is fitted to the regular side piece so as to extend behind the field of observation.

Each element of fire can be duplicated and all alibis are eliminated, since the effect of each piece can be actually shown upon the landscape.

The Train Board is capable of representing either the simplest forms of firing or the most elaborate. Its portability permits its being taken home by the individual officer, or placed for group firing in a room with a number of other Train Boards. The Train Board weighs about sixty pounds. Should necessity demand, it is capable of becoming a sole means of preparation for firing, and in the absence of frequent service practice, is a most convenient alternative.

The model Train Board known as "SM-5" is the specific machine referred to in this article. It was first produced late in the fall of 1932. Its redesign and final check was completed in June, 1935, together with directions for operation. Although it had nearly two hundred predecessors, this type is little known, except in Hawaii.

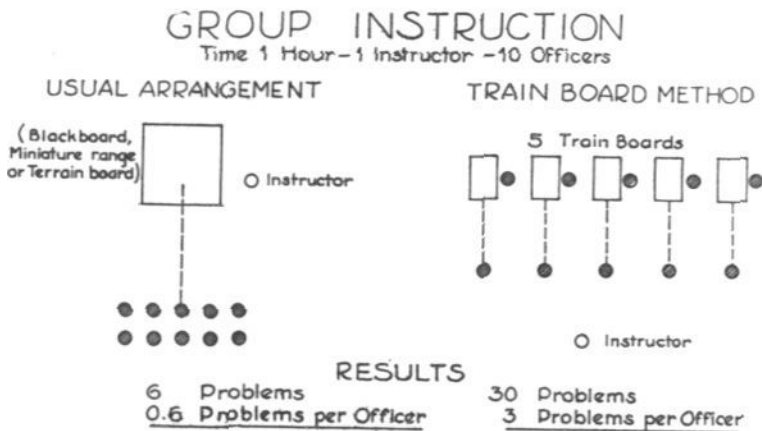
In the battery the Train Board has proven of value in training the Reserve officers and selected noncommissioned officers for their service practice. One Train Board was placed in a Detail Section room. The noncommissioned officers manipulated the Train Board for each other, and progressed to lateral firing entirely among themselves without the presence of an officer instructor. During a time when there was a shortage of officers in the battery, gun drill was conducted by the noncommissioned officers, alternating in the firing of Train Board problems which were in turn, transmitted to the firing battery by telephone, flag,

THE SMALL GROUP FIRING MACHINE

or voice relay. The firing battery and the detail always trained simultaneously. Train Boards accompanied the battalion on the march, and an hour's Train Board firing each evening after supper became a battalion routine. Train Board firing went hand in hand with service practice. The daily gunnery class hours became firing hours during which each officer fired three or four problems of the type to be fired at the next service practice. A Train Board was available for each unit in the battalion, with three officers for each machine. The battalion commander passed from group to group supervising the firing. Operators and observers alternated, and the firing was pushed until the time was up.

It may seem that I am returning to a discussion of mechanical construction when I mention the size of the Train Board. The fact that only one man can fire a problem seems to be an objection; however, only one man fires at any firing point. In its small size lies the secret of the Train Board's utility. Earlier in this article, the development of firing skill was emphasized.

The largest range is of no value unless it is being used, nor is any other firing device. Convenience increases probability of use, and the greater the probability of firing, the greater the firing skill that will be developed by a specific means.



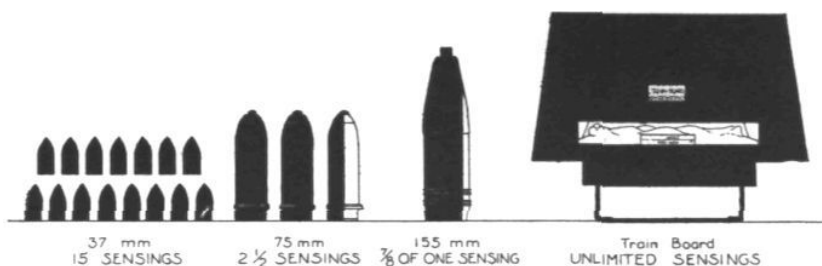
WHEN TIME IS LIMITED, MORE PROBLEMS CAN BE FIRED BY SMALL GROUP ORGANIZATION, EVEN BY BEGINNERS

THE FIELD ARTILLERY JOURNAL

While considering the development of the skill of the individual officer, we should discuss the small group. Each isolated National Guard or Regular battery falls into this class. The group consists of the battery commander and several lieutenants. Due to the informality of the small group, the battery commander becomes in reality a "firing coach," rather than a "gunnery instructor." In the National Guard, there are many such small groups generally without either unit instructors or the facilities to be found in larger organizations. The Train Board was intended to meet the requirement of such situations, in which more elaborate firing means would be out of the question. The existing devices had been designed for larger group instruction, and assumed the presence of a gunnery instructor who demonstrated or supervised the performance of the entire class.

Small group instruction has decided advantages. Its informality causes the observers to relax. The extensive individual firing gives confidence. The operator sees each principle of fire materialized and the interest and enthusiasm of the group lend an incentive to firing. The member of the group who acts as firing coach has more than a casual interest in the firing of his group and it is not difficult to secure firing coaches.

After watching many small groups, we became convinced of its greater value and generally wider application. Conducting fire oneself is vastly more valuable than watching another do so when we are considering the production of firing skill. In the small group there is more firing and less watching. The problems fired are much faster and the individual receives more direct attention than is possible in the large group under a single instructor.



THE COST OF A SINGLE TRAIN BOARD IN COMPARISON WITH THE COST OF AMMUNITION

THE SMALL GROUP FIRING MACHINE

The question of the gunnery instructor's absolute supervision of each problem has frequently been raised. If our officers' training has been of value during the last ten years, there certainly must have been produced a sufficient number of officers in both the National Guard and the Regular Army Regiments who are sufficiently qualified to be permitted to coach the less experienced.

It frequently happens that graduates of Sill listen to the same explanations and calculations which they themselves can read from their texts as well as the instructor. Small group instruction gives incentive and interest to the more experienced men, many of whom have never been permitted to exercise any particular professional initiative at the firing point. The same lieutenants being critiqued by the same captains for the past ten or fifteen years has been a not too unfamiliar picture. To provide the means of utilizing many officers as instructors would be impossible unless more groups were created. The increased facilities could not be obtained except with some small, cheap device similar to the Train Board. There is no difficulty on the part of the single unit instructor to coordinate and test the firing of the members of the small groups. This scheme has been successfully applied, and it has put new life into unit instruction.

How long does it take to produce a person capable of firing? To consider an axial precision or percussion bracket problem, given a person who has finished a year of high school, no military experience, and a Train Board, it can usually be done in a single day. The same person can be taught to fire small T lateral in a second day and big T lateral in two more days. When we think of the years most of us spend upon our profession as field artillerymen, we should be nearly perfect. Of course, you will say that a person who learns in so short a time forgets his firing rapidly; he does, but so do we. Every officer requires constant practice to be able to fire well. That constant practice is offered by the Train Board and by other means to a less degree.

Therefore, in conclusion, we may consider that the justification of the Train Board lies in its ability to reach beyond the former limits of organized instruction; to increase the extent of firing available to all individual officers, and thereupon improve the quality of their firing.

POLO ACTIVITIES AT THE FIELD ARTILLERY SCHOOL

THE season now coming to an end has seen an upward trend in polo affairs at Fort Sill. The past few years, 1933 and 1934 in particular, had been rather lean ones, the former due in large measure to the C.C.C., with most of the younger officers gone for that season, and a consequent lull in the development of players and young ponies. Players and ponies were a year older in 1934, and the year was used in getting things started again. In consequence, intrapost polo was frequently hard fought and interesting, but when outside teams were brought in, or a team was sent to outside tournaments to represent the Field Artillery, our team more than often bit the dust. Regardless of the hard fight put up by the personnel of the team, their mounts chased those of the opponents around and around. This seemed more the pity in view of the ample portion of thoroughbred blood in the annual shipments of remounts received at the school.

As to fields, time does them no harm, and they have prospered. During the recent regime of Lieut. Colonel R. E. D. Hoyle as Polo Representative and Major G. D. Wahl in active charge of the fields, a water supply system—from salvaged materials from old Camp Doniphan—has been added to the three Clubhouse fields. These three fields are of Bermuda grass, and there are now three other respectable practice fields available. Our Number One field is pretty generally conceded to be the best field in the Southwest.

Undoubtedly the signal improvement of this season has been the bringing of new ponies into the game. Retaining but three ponies, each of which was playing its first season in 1934, the Post Team has over thirty, of which eight are privately owned by team members, endeavoring to deliver fast polo. Of course not all of these are ready, but enough have taken their places in the sun to keep a team on the field for six—or eight—periods. The team has not yet been called on for the ninth, which would probably be one too many.

Making enough green ponies to mount a team is no verbal process. Late in March the new mounts were given a try out in a series of practice games against the Wichita Falls and El Ranchito

POLO ACTIVITIES AT THE FIELD ARTILLERY SCHOOL



FIELD ARTILLERY SCHOOL POLO TEAM 1935
LT. GORDON K. CUSACK, CAPTAINS C. N. McFARLAND, EUGENE McGINLEY,
HOMER W. KIEFER

clubs. These games were beneficial to players and ponies, and helped materially in preparing for the Annual Fort Sill tournament held at the end of the school year. This tournament was held during the week of June second to ninth, with eight teams entered. Visiting teams were El Ranchito, Oklahoma University, Oklahoma City and Anadarko. Four local teams competed, as follows:

Field Artillery

No. 1 Lieut. G. K. Cusack
No. 2 Lieut. C. N. McFarland
No. 3 Lieut. E. McGinley
Back Lieut. H. W. Kiefer

Freebooters

No. 1 Lieut. H. C. Fowler
No. 2 Lieut. C. E. Berg
No. 3 Lieut. S. H. Fisher
Back Lieut. A. J. Sirilo

Academic Division

No. 1 Maj. H. L. Watson
No. 2 Capt. C. E. Sargent
No. 3 Lt. W. N. Gillmore
Back Captain H. Cort

School Troops

Lieut. F. G. Terry
Maj. H. D. Jay
Capt. Hugh Gaffey
Lieut. V. B. Barnes

All games by handicap.

The Field Artillery team won the tournament with comparative ease, save only for its first match, that against the University

THE FIELD ARTILLERY JOURNAL

four. To their handicap goals they clung like glue until well into the second half, and had they had three or four more strong ponies the result might well have been different. The collegians were hitters, and their teamwork must have been a source of pride to their coach, Captain George Hayman, Field Artillery. Having lost their first match, they sailed comfortably through to win the consolation tournament.

Few teams have been more frightened than El Ranchito's—runners up of the tournament—in the closing stages of their first round match against the Academics. Having promptly made up their handicap, they were leading 8 to 4 with two periods to play. Then in the fifth period, our men started clicking, and Sargent—nobly assisted and passed-to by his mates—poured three goals through the posts. But the game ended 8 to 7 in a closing period that saw El Ranchito refuse to let that tying goal go through. The Academics tried everything but the forward pass in the closing minutes.

SUMMER TOURNAMENTS

The above tournament winners, with Lieutenant V. B. Barnes, F. A., as substitute, were selected to compete in the August tournaments at Colorado Springs and Denver. While Colorado's climate generally outdoes Sill's in August, the prospect of the trip would have been pleasing in any event because of the opportunities afforded to develop team-work and the team's young ponies. Hitherto team-work had almost been relegated to the background by reason of the necessity of getting through games against galloping teams without the ignominy of an involuntary visit to the stables or woods. Young horses like to run.

Mobility is the thing these days, and polo teams like to keep up. So trailers were decided upon. A satisfactory model was borrowed from Mr. Horace Robbins of Wichita Falls, and underpinnings purchased from an Oklahoma City Salvage Yard. With the consent of the Commandant, the School Matériel Department and Carpenter Shop collaborated on the construction of four trailers, one of which appears in the picture. The trailers are rugged and each holds five horses comfortably. They are probably safe at any reasonable speed, but thirty-five miles an hour is our limit. It is also well to hold to a few convoy rules, such as keeping about two hundred yards' distance so that faster moving

POLO ACTIVITIES AT THE FIELD ARTILLERY SCHOOL



cars can cut in and out, and lessen the chance of your being sideswiped. We found it best to close up going through towns, and to ask for a police escort if several miles of stoplights were involved. The trailers can be towed behind any modern light passenger car if the country is flat. If there are steep hills along your route it is better to make character with your Commanding Officer and get him to let you have a truck.

The trailers got their initial try out on the trip to Colorado, and proved most satisfactory. The ponies having been protected with blinkers (celluloid eye pieces) from bugs, and by leg wraps and bell boots from leg and coronet injuries, there were no casualties except minor scratches suffered by the few suspicious horses who questioned their safety in the trailers so strongly as to require extra inducement to get them in. However, a couple of days' travel, and a few practice loadings for the backward ones, and all entered readily.

The team arrived at Colorado Springs July 29th. A practice game to test the effect of the altitude was held the next day. There was no noticeable effect. Our first tournament game for the Lyle cups took place on August second. This tournament was limited to teams of nine goals. Due to this limitation, Captain McFarland, who stepped down in favor of Lieutenant Barnes, was promptly drafted by our opponents (Denver), and was the victim of his own coaching when the Field Artillery won by 11

THE FIELD ARTILLERY JOURNAL

to 4 after giving away two goals. In the finals, on August 4th, against an eight goal Broadmoor team, consisting of W. G. Emslie, Charles Waring, R. W. Lewis, and Reginald Sinclaire, the Artillery was again successful, winning 10 to 2. Charles Waring, at three goals, with a season of polo under and with Mr. Devereux Milburn, and well mounted from the Lipan Spring Ranch of his father, Colonel Dick Waring of the Remount Reserve, was expected to be quite a batch of poison to our team. However, he was unfortunate enough to be suffering from a painful cut on his mallet wrist, which had necessitated several stitches, and this interfered considerably with his hitting. His riding and position play were spectacular and sound.

We were entered in three more tournaments, two at Colorado Springs—the Foxhall Keene and Penrose Gold Cups—and one in Denver—the annual Invitation. These events were played on handicap, but without limit, and Captain McFarland rejoined the team, which won all three without serious trouble. Lieutenant Barnes was in constant demand in each event, and acquitted himself as well for the opposition as he had for his own team. He is a promising player.

Colorado Springs and Denver joined forces against the Field Artillery on August 18th, a selected team consisting of Messrs. L. C. Phipps, Jr., Charles Waring, R. W. Lewis, and Reginald Sinclaire taking the field against us. Individually excellent and well mounted, the Coloradoans' teamwork occasionally suffered, as is usually the fate of hastily thrown together teams. While it was a ding dong battle, the Field Artillery mounts were going smoothly, and the teamwork of the players was probably the best to date. The Army team conceded three goals but came out on top 11 to 7.

It was indeed a privilege to stretch out on the Denver fields, which rank with the best in the country. The race tracks which surround them were packed with spectators at all match games, and the Army had no end of rooters in spite of the alien territory.

The tournament season there wound up with a round robin event in which the Field Artillery team was broken up, and teams selected by Captains McFarland, McGinley and Kiefer took the field. When these three eventually rack up their mallets and turn

POLO ACTIVITIES AT THE FIELD ARTILLERY SCHOOL

to golf, the future of the last named appears most assured, as he will need no lessons in that cardinal principle of the links which has to do with bargaining on the first tee. His well-balanced team, consisting of L. C. Phipps, Jr., Captain R. L. Howze, Cavalry, R. W. Lewis and himself at back, won in straight games. All games were close and well contested, however.

Except for cut-in and practice play, the local season ended on September 29th, when the Commandant presented cups to the winners of the annual fall handicap tournament. Primarily intended for the low handicap players, and to encourage new arrivals and beginners to turn out, twenty-four players were drawn into six evenly matched teams for this event. The tournament was won by Lieut. Cusack, Lieut. Colonel C. A. Baehr, Lieut. E. A. Walker, and Lieut. L. W. Haskell.

Development of more new ponies is the program for the off season.

The United States Field Artillery Association

In compliance with Article VII, Section I, of the Constitution, notice is hereby given that the Executive Council has fixed 4:45 P.M., Thursday, December 12, 1935, as the time of the annual meeting of the Association, to be held at the Army and Navy Club, Washington, D. C.

The business to be disposed of will be the election of six members of the Executive Council. Of these, three are to be elected from the Regular Army, two from the National Guard and one from the Field Artillery Section of the Officers' Reserve Corps and the transaction of such other business as may properly come before the meeting.

In view of the fact that the Constitution requires fifty per cent of the members in the United States to be present in person or represented by written proxies to constitute a quorum, it is urgently requested that the return post cards which will be mailed to the members of the Association be filled out and returned to the Secretary of the Association.

A FORMER CADET REVIEWS THE R.O.T.C.

BY 2ND LIEUTENANT S. D. DISTELHORST, FA-Reserve

R. O.T.C. training and appropriations have not been wasted on thin air and barren ground according to the Army's wisest men, and it is no blot on the bars of a young Reserve second lieutenant with a two months' old commission to agree with them. Most college trustees and regents are proud of the added prestige brought to their respective institutions by the presence of the R.O.T.C. unit and faculty cooperation is generally assured. The men who are responsible for the welfare and management of their schools and colleges back military training not only as a matter of educational policy but also personally. These men, interested in the national defense problems as well as the morale of their own units, contribute drill efficiency decorations, citizenship essay prizes, and tactics solution awards as their personal offering to the interested cadets. Technically they feel that compulsory military training is like compulsory English or history courses. They are necessary for graduation and if the student refuses to take the courses required by his curriculum he can not receive his degree. They suggest other schools where only the desired courses can be obtained. After all, the number of schools offering the advantages of military training are few compared with those that do not. Conscientious objectors to military training are as absurd as conscientious objectors to calculus and chemistry.

Some students in every scholastic institution decry their fate at having to spend five hours a week doing squads right and learning about triangles of R. r, and mils. Initially, they feel it is a waste of time to have to wear a uniform and perform manual labor in the service of the piece when the only target is a chalk mark on the armory wall and the ammunition is a dummy. They fail to see the military and civil benefits that accrue from the course that must start with a working knowledge of the French 75 and the solution on paper of simple gunnery problems. Cadet smokers with refreshments and previous camp motion pictures and slides are practical methods for breaking down this feeling. Inter-battery athletics, practices for which are held during one drill period a week under the supervision of a

A FORMER CADET REVIEWS THE R.O.T.C.

cadet battery officer, also build up an esprit de corps that helps to end this antagonistic attitude on the part of young cadets. In the four years at college men grow up from that stage of gawky little-boyhood, but if their minds are not changed in this regard after two years, they subside and let the more military minded carry on. For this reason two years of compulsory military training is necessary in an attempt to acclimate the student to a military education. Taking away the compulsory feature materially weakens the morale of the unit.

The undermining elements at work on the college campus seem much exaggerated and are relatively ineffectual. Peace demonstrations are incited by one or two men from radical groups who cover their real desires in an insidious attack on the R.O.T.C. Their real aims unknown, they try to enlist sympathy against war as an aid in attaining these aims. They propose to view the R.O.T.C. as an artful piece of war propaganda. Together with other military students, in the role of a curiosity seeker, I have attended these so-called peace demonstrations held in the past several years at my university. Organized anti-military movements never got very far. The last demonstration was the "universal class walk-out" at 11 o'clock on April 12th of this year. Here on the steps of a campus building the major portion of the meager crowd consisted of curiosity seekers. They harassed the self-appointed speaker all during his talk and the meeting ended with a stronger student loyalty toward the R.O.T.C.

On my first tour of duty as a Reserve officer I was transferred to the R.O.T.C. camp on reporting to Headquarters. There I served my active duty as an instructor with the same battery in which I had served the previous year as a cadet. The boys were still interested and eager to learn. Gold-bricking was not practiced. Daily cleaning of materiel was indulged in with the same high spirits as after-supper baseball games, and the summer of hard work was thoroughly enjoyed.

Much of the success of the R.O.T.C. is due to the type of officer who serves on this duty from the Regular Army. They enter into the social life of the college group and readily receive the support and whole-hearted cooperation of everyone from the president of the institution down. They are competent instructors and men whose character is copied by the formative

THE FIELD ARTILLERY JOURNAL

cadets with military aspirations—a credit to those officers and the service, as well as a future asset to the cadets themselves.

Military carnivals and parades are the most effective methods of combatting subversive movements, as well as popularizing the unit. Quiet forging ahead is not the most effective way of securing additional cooperation and recognition; publicity and ceremonies are of inestimable assistance. Social functions in the form of cadet luncheons, banquets, and dances with invited outside guests go far in making friends for the corps.

That which is learned in a four-year cadet course, in addition to the intensive training for a civil occupation, make a man twice as valuable to himself and his ultimate employer. Promptness and the ability to take and carry out orders on one's own initiative are among the lessons which can be learned in no other college course. If forced to select the most valuable of the two experiences, I should be very much inclined to choose the military training I received over my general education.

TYPE PROBLEM

Lateral Precision, Large T

T.R. 430-85

Target: Abandoned artillery piece. *Mission:* To destroy. *Matériel:* 155mm Howitzer, Model 1918. *Visibility:* Good. *Initial data:* Plotted. BC on the right.

T = 580, R = 7,800, r = 4,200, s = 9, c = 7, d = 13, c/s = 7/9 = .8, c/d = 7/13 = .5.

Initial commands: No. 1 adjust, B. D. left 195, Shell Mark I, Charge VI, Fuze Long, No. 1, 1 Round, Quadrant.

<i>Commands</i>	<i>Elev.</i>	<i>Deviation</i>	<i>Sensings</i>		<i>Remarks</i>
			<i>Range</i>	<i>Deflection</i>	
	340	30 Left	?	?	30 × .5 = 15
	355	5 Right	+	+	On line at 353. 30 × .8 = 24.
Right 30	329	10 Left	—	?	
	334	Line	—	—	
Left 15	344	20 Right	?	?	
	334	20 Left	?	?	
	339	3 Right	+	+	F = 10
Right 8, 3 rds.	337	4 Right	+	?	Sense by rule
		3 Left	—	?	
		Line	—	—	
Left 4	337	2 Left	—	?	
		10 Left	—	?	
		5 Left	—	?	4/12 × 10 = 3.3
	340.3	Cease Firing, end of problem.			

Classification: Satisfactory.

FIFTY MILLION FRENCHMEN CAN BE WRONG

BY CAPTAIN C. T. LANHAM, Infantry

*"All formula for avoiding thought die hard . . .
and as fast as one formula dies, another takes
its place."*—THE POST IMPRESSIONIST.

THIS historical vignette deals with the experiences of certain elements of the French 42d Division on August 21, 1914. In common with most honest narratives of battle it sets forth many errors. I say "errors" in the sense that they are so considered today, for in 1914 they were accepted as standard procedure. Whatever value this study may have lies in the profound implications of that single statement.

Will today's orthodoxy be tomorrow's tragic mistake? Are we sacrificing to the great god *Form* and neglecting the greater god *Substance*? These are questions that might well be pondered. Neither the answer of the majority nor the answer of authority is necessarily conclusive. For instance, on August 21, 1914, the world might have reasoned that "Fifty Million Frenchmen Can't be Wrong," but by nightfall of August 22 the world knew that Fifty Million Frenchmen Had Been Wrong.

André Maurois sums the matter up in this statement: "The truth is that *reality* is always different from what we expected. . . . The most precise analyst cannot even outline the infinite variety of the *Real*." Although he made this observation with reference to the world of art its application is universal. In particular does it apply to the military. Today no man can accurately

Author's Note: With the exception of certain orders, dispositions, intelligence reports, etc., that are given in *Les Armées Françaises dans la Grande Guerre*, the author has been unable to locate any original sources in this country that deal with the specific incidents set forth in this battle study. The only detailed account available appears to be an article by Colonel Etienne, which appeared in the May, 1925, issue of *La Revue d'Infanterie* as the third instalment of a series entitled "L'Infanterie dans la 'Prise de Contact'."

Colonel Etienne has drawn largely from four sources: The march journal of the 19th Battalion of Chasseurs, the accounts of a captain and a lieutenant who were members of this unit, and a lecture on the artillery phase of the 42d Division's operations on August 21, 1914, given by Colonel Verguin to the students of the "Cours d'Artillerie du Centre d'Etudes" at Versailles.

This problem is based almost entirely on the Etienne narrative. Several minor assumptions have been made for the purpose of the problem, such as the locations of various units at certain times.

This discussions of the several requirements do not purport to be *approved solutions* or to carry the stamp of authority. They merely represent the opinions of one infantryman.

THE FIELD ARTILLERY JOURNAL

predict the ultimate rôles of aviation, mechanization, and motorization. We think this and we surmise that, but not until battle is joined shall we learn the final truth. In 1914 the French "75" had only been tested in the "polygon;" its possibilities were seen through a glass darkly. Then there was an amusing but inconspicuous little weapon called the machine gun! Can you name the man who foretold its future? Indeed, I am inclined to think that our beautifully evolved theories of war are like our theories of the ladies, in that "you never can say 'til you've tried 'em, and then you're like to be wrong."

It is not likely that any nation shall be much better prepared materially to meet the terrible reality of war than was France in 1914. Material preparation was not lacking but *mental* preparation was. Thought had atrophied and in war that is fatal. The not too blind and not too fickle goddess of Chance bestows her favors on that army whose leaders are blessed with a flexible mind. The standard procedure, the set form, the stereotyped solution can never meet the wildly improbable situations that characterize battle. Only those leaders who have the moral courage to jettison their mental cargo of military platitudes and attack their elusive target with the directness permitted by an unencumbered mind, will long endure in war.

This battle narrative is a case in point. Again and again it is marked by the sheer inability of leaders to cope with reality. But then the war was new and the copy-book maxims had served them well in peace. Later most of them learned. Some never did.

* * * * *

On August 10 Joffre decided that von Moltke's great wheel to the west had progressed sufficiently to present a vulnerable flank. That night he uttered the word that unleashed his impatient armies. By dawn of the 21st a million eager Frenchmen were tramping to the north. On the right of the Third Army, with its flank exposed to the east, marched the VI Corps (Third Army) with its 12th, 42d, and 40th Divisions echeloned to the right rear. (See Map No. 1 from here on).

Sometime during the night of August 20-21 the 42d Division received its directive for the march. The 12th Division would march via Ollieres — Hans-dev-Pierrepont — Pierrepont. Its

FIFTY MILLION FRENCHMEN CAN BE WRONG

leading elements would clear Spincourt at 6:00 A.M. The 42d Division would march on Mercy-le-Bas. The leading element of its advance guard would pass Gondrecourt at 6:00 A.M. The 40th Division followed by the 54th Reserve Division would march in the wake of the 42d. The 10th Light Cavalry (less one troop) and the 12th Light Cavalry would maintain contact between the 12th and 42d Divisions. The 7th Cavalry Division would cross the Spincourt-Conflans high road at 5:30 A.M., and move into the Landres-Murville area. It would be supported by two infantry battalions from the 42d Division. Such, in effect, were the major provisions of the corps order.

One thing remained—information of the enemy. The 42d Division had been in this area for some time and plenty of information had been forthcoming. (This has been plotted on Map No. 1.) French aviation had reported an enemy cavalry division located in the vicinity of Malavillers covered by a long line of outguards as indicated. Hostile cavalry supported by infantry had organized several localities for defense in the Hancourt-Spincourt area. To the east numerous field works had been noted and a number of towns had been prepared for defense. Troops of the German XVI Corps and landwehr formations had been reported in this same area. Four infantry regiments had been definitely identified. Farther to the north, beyond the frontier, heavy troop movements to the west had been continually reported.

General Verraux, commanding the 42d Division, had this information in his possession or available to him the night of August 20-21. He was now face to face with his first decision of any importance. He must plan the march of his division from its present location to the area about Mercy-le-Bas that is shown by the broken line on Map No. 1.

FIRST REQUIREMENT

General Verraux's march order to include

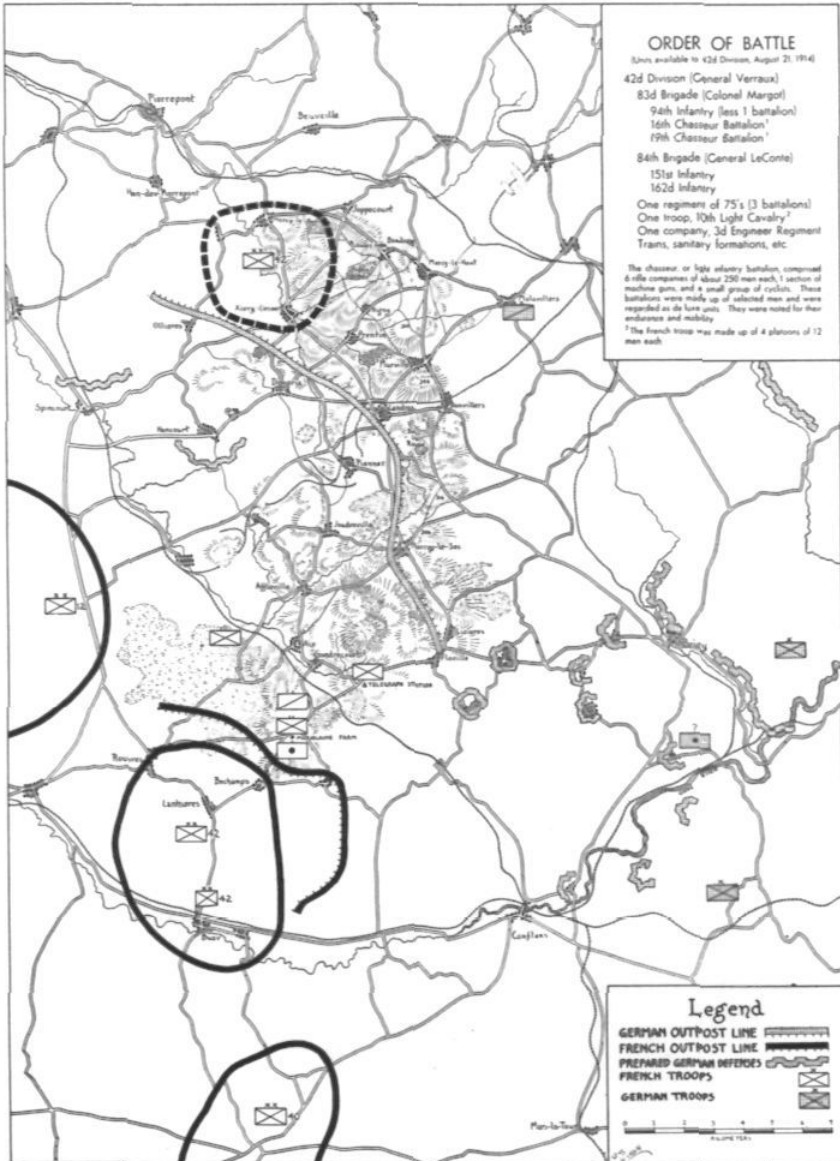
- a.* Plan of march;
- b.* Security measures for march.

Note: The units available to the 42d Division on August 21 are shown in the Order of Battle on Map No. 1.

HISTORICAL SOLUTION AND DISCUSSION

The 42d Division marched in a single column via Gondrecourt—Affleville—Joudreville—Domprix—Xivry-Circourt. The advance

THE FIELD ARTILLERY JOURNAL



MAP NUMBER 1

FIFTY MILLION FRENCHMEN CAN BE WRONG

guard marched in this order¹:

- 1 troop, 10th Light Cavalry;
- 19th Battalion of Light Infantry;
- 2 battalions, 94th Infantry;
- 1 battalion of 75's;
- 1 company, 3d Engineers;

(C. O., 83d Brigade, Advance Guard Commander.)

The 19th Battalion of Light Infantry with one platoon of the 10th Light Cavalry attached, was designated as flank guard and directed to march on the Chanois Farm via Gondrecourt—Aix—Norroy-le-Sec—Landres—Murville—Higny.

One company of the 94th Infantry was ordered to move to the telegraph station located two kilometres east of Gondrecourt and remain there until the entire division had passed.

The main body followed the advance guard at 2½ kilometres. The trains, etc., under escort of one company of the 16th Battalion of Light Infantry, followed the main body at one kilometre. They were ordered not to cross the Spincourt—Conflans highway without further orders.

These were the major provisions of Operations Order No. 33 issued by the 42d Division during the early morning hours of August 21.

It is difficult to follow the reasoning that prompted this order. From the information available to General Verraux three things literally leap to the eye.

1. A serious engagement may develop at any time during the march to Mercy-le-Bas.

2. At the very least, continual harassment may be expected from the large bodies of hostile cavalry that are operating in this general area.

3. The enemy infantry reported a few kilometres to the east constitute a serious threat to the right flank of the 42d Division.

Under these conditions the decision to march in a single column cannot be understood. The possibility of battle renders the early development of the division a paramount consideration. The road net being ample, the march should certainly be conducted in

¹Note: Operations Order No. 33, of the 42d Division, shows the 19th Battalion of Light Infantry as the last element of the advance guard. Apparently some other order intervened for this battalion marched immediately behind the cavalry until it reached Aix. At this point it turned off toward Norroy le Sec and assumed its flank guard mission.

THE FIELD ARTILLERY JOURNAL

at least two columns—and these should be echeloned to the threatened flank. Even if the possibility of a serious engagement be discounted, the inevitable harassing action of enemy cavalry would in itself condemn the long single column. Every delay, and the advance guard can expect many from the aggressive Uhlans, will be reflected all the way back to the trains. Furthermore, from the detailed information in his possession, General Verraux can certainly anticipate at least isolated instances of stubborn resistance. The double column by its continuing threat of envelopment will dislodge these small groups almost by a gesture; the single column will have to deploy its advance guard and bludgeon its way through.

Finally the ever-present flank threat should unquestionably have ended any hesitation to march in two columns. The possibility of a hurricane cavalry attack sweeping over the crest of the hill range to the east, brushing aside or containing the 19th Battalion of Light Infantry, and striking the long flank of that single column should have made General Verraux shudder. The double column would do more than halve that very real risk for it would provide depth, space for maneuver, and a reserve.

The itinerary selected for the flank-guard battalion seems equally obscure. A glance at the map shows that this route is almost constantly flanked at short range by hill after hill, most of which are heavily wooded. Colonel Etienne suggests this alternate route and his point seems to be extremely well taken: "The Fleville—Lixieres ridge line, Norroy-le-Sec, hills 306 and 316, the Bois de Rappe, hill 344, hill 354, Chanois Farm."

It is regrettable, of course, that more cavalry was not available. This flank battalion and the main body, too, could well do with additional cavalry for reconnaissance purposes. The fact that so little cavalry was available to this division must be attributed to the corps commander, General Sarraill. He appropriated the 10th and 12th Chasseurs à Cheval for his own purposes. The 7th Cavalry Division scheduled to operate in the Landres—Murville area may have been a comfort to General Verraux, but it was not under his command and the 42d Division was responsible for its own security. A single squadron at the disposal of this division might possibly have averted much that happened on this day.

FIFTY MILLION FRENCHMEN CAN BE WRONG

Although General Verraux may have been blessed with but one troop of cavalry it was no excuse to let his reconnaissance go by the board. There is no evidence that he took any steps during the early morning hours of August 21 to supplement or even to verify the information already at hand. So far as we can tell today, and we may well be wrong, General Verraux moved blindly forward without sending out a single reconnaissance group. The enormity of such an error, particularly under the conditions here existing, cannot be overemphasized. Certainly requests should have been made to corps for aerial reconnaissance at the crack of dawn. Patrols on foot, on horse, on the beloved French bicycle, should have started out fifteen minutes after the corps march order was received. Even if General Verraux's information was accurate and reliable up until dark of August 20 he had no assurance under the shining sun that the enemy would remain "put" during the long hours of the night. The fact that he had taken the precaution of establishing an outpost system about his division bivouac indicated that he was not oblivious to the possibilities open to the nearby enemy . . . *or was it merely a matter of form . . . an adherence to regulations.*

But let's get on with our story.

SITUATION CONTINUED

At about 4:30 A.M. the 19th Battalion swung out of the little town of Lanhères, where it had bivouacked, and headed for Gondrecourt where it would take its place at the head of the advance guard of the 42d Division. As early as they were, General Verraux was still earlier. The division commander stood by the road near the Marjolaine Farm and watched this proud chasseur unit swing by. He was particularly pleased with this battalion for it had already acquitted itself well under fire. Six days earlier it had had an affair of sorts with a German battalion (or what was reported as a battalion) and had put it to flight. To themselves and to the rest of the division they were now veterans . . . tried and true. Perhaps that was one reason why they were selected for the perilous flank mission.

South of Gondrecourt a halt was called and extra ammunition issued. While this was going on and while the remainder of the advance guard was moving into column the battalion commander scoured his front, including Gondrecourt, with patrols. At 6:15 A.M. the long column moved forward.

THE FIELD ARTILLERY JOURNAL

Now during the first part of this march, as Colonel Etienne points out, the 19th Battalion had a double responsibility. He says, "on the one hand it must cover the march to the north and on the other cover its own flanks at a distance of 1,500 to 2,000 metres." At this stage of the march the battalion commander took no chances nor did he seek some conventionalized formula that would obviate the necessity for thought. He met the problem and solved it on its own merits by adopting a formation roughly resembling a triangle, "the left leading and the remainder widely echeloned to the right and to the rear." The cavalry platoon (less three troopers) marched a short distance in advance of the leading company. The battalion commander marched at the head of his command. The last company of the battalion was charged with the mission of protecting its right flank. To assist it in this task the major turned loose three of his cavalymen.

We shall follow this battalion in considerable detail after it turns east at Aix and takes up its proper flank guard mission. Meanwhile we must ride back down the column past the two battalions of the 94th Infantry and take a look at the battalion of 75's.

It is just 6:30 A.M. The caissons are rumbling along the road toward Gondrecourt. The leading piece is about one kilometre north of the Marjolaine Farm. The artillery commander rides at the head of his battalion. Fog eddies and swirls about the countryside. Suddenly, far off to the front, somewhere north of Gondrecourt, comes the faint but unmistakable crack of rifle fire. The artilleryman cocks his ear to the north. He knows, or should know, that the leading element of the advance guard must be close to Aix.

SECOND REQUIREMENT

His actions and orders, if any, within the next three minutes.

HISTORICAL SOLUTION AND DISCUSSION

The artillery commander instantly deployed his battalion. By 7:00 o'clock his batteries were all nicely in position on the high ground about 1½ kilometres north of the Marjolaine Farm and their observers were watching the fog roll over the French countryside. Meanwhile, the little flurry of rifle fire had long since died out and the infantry column was plodding steadily down the road. The incident was the result of a Uhlan patrol working

FIFTY MILLION FRENCHMEN CAN BE WRONG

up an appetite for breakfast by taking a few pot shots at the leading element of the advance guard. The long French column lumbered to a halt while the point, possibly assisted by the advance party, routed out the German patrol.

Now, I may be seriously mistaken, but it seems to me that in this entire action I smell the unmistakable odor of a slightly decayed peace-time maneuver. Doesn't the set-up strike a familiar chord in our own memory? The column marching down the road with advance guard out; the point fired on by an outlined enemy; the inevitable deployment; the invariable pitched battle with blanks banging and breathless umpires racing back and forth waving flags; and finally sweet victory. Certainly the instant reaction of this artillery commander would lead one to believe that his thought process had become automatic, that his mind was schooled to accept a few scattered shots a mile to the front as the inevitable and invariable herald of immediate and general battle. He was not to be caught napping. Not even when the fire died out did he recall his batteries. Fire up front, no matter how much or how little, meant battle. He was in position. True, he couldn't see very much from that position because of the fog, but that was more or less beside the point. He had complied with the dictates of that omnipotent and ubiquitous god called *Form*. But the saddest commentary of the whole procedure is this: At 10:30, at noon, and at 2:30 . . . three times more . . . the major repeated the same process—and accomplished precisely nothing.

Now hindsight, particularly from the vantage point of twenty years, is no great virtue and criticism *after the event* is always easy. Nevertheless, if we are to profit by the experiences of others we must examine their successes and failures with a critical eye.

What, then, can we find of interest in this artillery incident? Almost the first thing to strike the eye is the major's position at the head of his artillery battalion. If his reconnaissance officer had been forward with the advance party or at the head of the support this might not loom so large. However, it appears that no representative of the artillery marched in advance of the battalion commander. This is a grave error. The place of the artillery commander, or at least of his representative, is far

THE FIELD ARTILLERY JOURNAL

forward where the situation can be nailed as it breaks, the infantry's needs determined, and the artillery disposed, if need be, to meet the circumstances at hand. From the Major's actual location, a mile or more in rear of the leading infantry elements, he could do no more than act blindly.

The second error, and indeed one that largely grew out of the first, lay in the unnecessary deployment of his entire battalion. This occurred four times. In each instance it was occasioned by a few shots far to the front whose significance he had no way of determining. If the artillery commander had dropped off a battery we might possibly find some justification from the point of view of caution. But it is not seen how any extenuating circumstance can be offered for the repeated deployment of his entire battalion on the sole ground of a few scattered shots. Indeed, on each occasion the incident was regulated and the fire had ceased before his rapidly tiring batteries had lumbered into their useless and too distant positions.

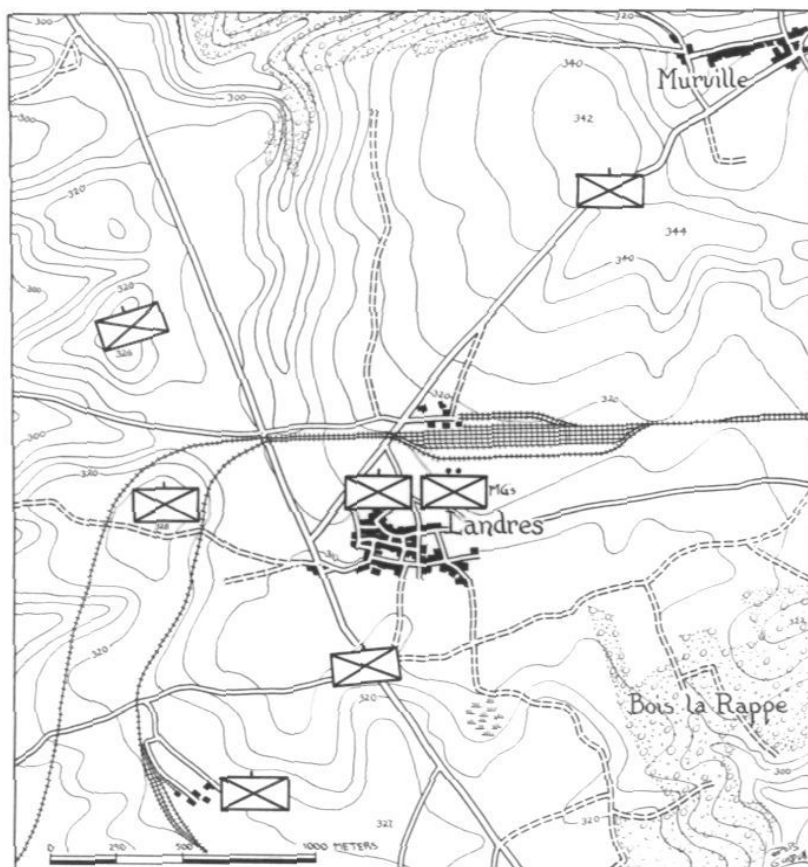
After each of these ill-advised deployments the battalion had to be reassembled, marched back to the road, double the infantry column, and, at an increased gait, regain its place with the advance guard. This procedure was exhausting to both men and animals, but of far greater importance was the fact that during these considerable periods of time the infantry battalions of the advance guard were completely out of touch with the artillery and therefore unable to call on it if the need arose.

Today, of course, this artillery battalion would be handled in a different manner. At least one battery would always be in or close to some *previously reconnoitered and predetermined position* from which it could cover the advance of the infantry. In other words, the artillery would divide and advance by the "leap-frog" process.

SITUATION CONTINUED

Following its inconsequential brush with the Uhlan patrol the 19th Battalion, still in its widely echeloned formation, continued on to Aix without further incident. Here it turned to the northeast and tramped on toward Norroy-le-Sec while the remainder of the division marched north through Affleville. At Norroy-le-Sec the 19th again had a bit of a skirmish with a German cavalry patrol. This was swept aside without difficulty and the 19th

FIFTY MILLION FRENCHMEN CAN BE WRONG



SKETCH NUMBER 2

plodded stolidly on to Landres which it reached at noon. Here a brief halt was called.

In the light of subsequent events the disposition of the battalion at this time is particularly interesting. This disposition is shown schematically on Sketch No. 2. Each company was partially deployed. Section and platoon columns echeloned, in general, to the right flank were the popular formation. Several things stand out in this set-up. First it is definitely not a textbook picture. Companies are disposed to take advantage of the terrain. If the need arises the battalion can fight as a unit on the high ground just west of Murville, on the ridge line west of Landres, or in Landres itself. Second, the battalion cannot be gobbled up as a whole. The units are so disposed that they can put up a stout fight in any

THE FIELD ARTILLERY JOURNAL

direction. Not even a single company can be knocked off before support arrives. The section of machine guns is located at Landres, a pivotal point; it can be rushed to the support of any one of the six companies. In short, here is a business-like layout that definitely precludes any possibility of surprise and at the same time affords the battalion every opportunity to make the most of the means at its disposal.

Look well at this disposition! We may have occasion to harken back to it.

The halt here was only momentary. Again the 19th moved on. The leading companies turned Preutin and its woods from the southeast. The last two companies swung east of Landres and moved on toward the high ground southwest of Murville. These two companies were echeloned to the right rear, and the same echelonment was adopted within the companies themselves. The three troopers assigned to the 6th Company (the last company) had galloped off to the right flank to reconnoiter. Throughout the entire march German cavalymen had been seen in the distance, appearing and disappearing, but doggedly following the movement of the battalion.

The situation at this time is concisely expressed by a Lieutenant B, a participant, whom Colonel Etienne quotes as follows: "Major M and the battalion officers had no exact idea of the situation. At Landres we met a cavalry captain and several troopers (cuirassiers of the 7th Cavalry Division, if my recollection is correct). We asked him for information; he knew nothing definite."

"The inhabitants of the villages through which we passed said that the Germans had left that morning but that they did not know in which direction they had moved.

"Just as we were about to cross the Murville-Landres road we were halted in order to let a cyclist group from the 7th Cavalry Division pass. These cyclists were moving toward Murville. Almost immediately thereafter we saw the commanding general of the 7th Cavalry Division and two of his staff officers trot by in the direction of Murville.

"We were all convinced that the enemy infantry was still far off."

FIFTY MILLION FRENCHMEN CAN BE WRONG

Now a startling thing occurred! Over the crest of hill 344¹ came the three mounted scouts of the 6th Company at a dead gallop. At undiminished gait they raced between the last two companies and throughout their passage they shouted the same message over and over again . . . "The German cavalry is charging! The German cavalry is charging!"

By this time these companies had crossed the Landres-Murville road and were heading slightly east of north. They still marched in their wide stair-step formation.

THIRD REQUIREMENT

Actions and orders of the two company commanders.

HISTORICAL SOLUTION

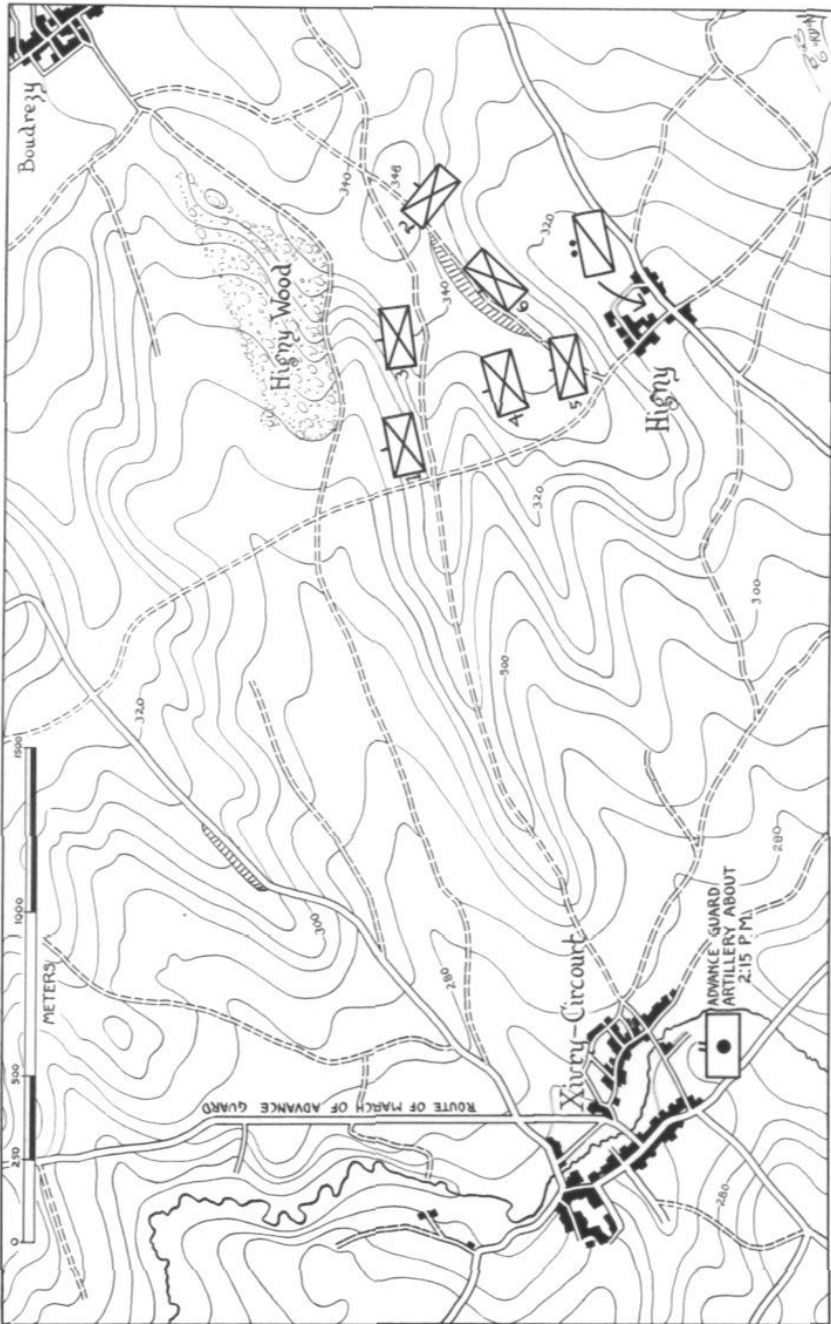
Both companies fixed bayonets and deployed at a dead run, wheeling into line facing hill 344. With muscles tensed for the whirlwind shock of cavalry they waited. Every finger curled about a trigger; every eye stared at the crest. Hours seemed to pass but actually the drumming hoofs of the three mounted scouts were still reverberating when over the hill thundered *one lone German lancer!* No man shall ever know the thought in that lone horseman's mind when he beheld the terrible spectacle of 500 French infantry . . . waiting . . . waiting. But this we do know . . . with lance lowered to the charge he hurtled forward and took the tremendous volley head on. On that 21st day of August one lancer of the German 13th Dragoons rode triumphantly into Valhalla.

SITUATION CONTINUED

The two companies now resumed their formation and moved on toward Higny. The August sun beat down mercilessly on the hard marching chasseurs. They had been on the go since 4:00 A.M. Their last breathing spell of any consequence had been at Gondrecourt. All day they had climbed continually to the north. Now throughout the entire battalion fatigue became evident. Everyone hoped for a halt. Almost like an answer to their unspoken wish a mounted messenger rode from company to company with word from the major that the battalion would assemble north of Higny on the wheat-covered slopes of hill 348 facing in the direction of the Chanois Farm.

¹This location may not be exact but the incident took place somewhere close by, and 344 fits the picture.

THE FIELD ARTILLERY JOURNAL



SKETCH NUMBER 3

FIFTY MILLION FRENCHMEN CAN BE WRONG

FOURTH REQUIREMENT

Security measures taken and dispositions prescribed by the battalion commander.

HISTORICAL SOLUTION AND DISCUSSION

The battalion commander designated the 2d Company as right-flank guard. It went into position facing northeast on a line generally southeast of the southeastern point of the Bois d'Higny. Its left flank rested about 400 metres from the edge of the woods. The remaining companies, the 1st, 3d, 4th, 5th, and 6th, closed up as shown on Sketch No. 3. The unimproved road running across hill 348 from the northern exit of Higny afforded a natural protection from the north owing to a long cut that ran almost all the way across the face of the hill. Here the 6th Company took up its position, fully deployed.

In view of the battalion commander's disposition at Landres his disposition here is altogether bewildering. If his closely grouped battalion had been thoroughly outposted a great many favorable points could undoubtedly be uncovered. But this battalion was not outposted. Not 500 metres away lay the Higny Wood *which had not been reconnoitered*. With the exception of one or two patrols sent out by one company (apparently the 6th) to keep an eye on Boudrezy, there is no indication that a single security detachment was posted. The 2d Company may have afforded some protection to the right flank of the battalion but it took no measures to protect its own flank so far as we can tell today.

In short, here was a battalion, numbering about 1,500 men, grouped on a wheat-covered plateau, with an unreconnoitered wood at almost point-blank range, unprotected by patrols, and in a country known to have been occupied by the enemy only that morning. Suppose, for instance, that a German infantry battalion had hidden itself along the edge of that wood and in the high wheat that grew on that plateau. What then? What reason had this battalion commander to believe that German infantry or dismounted cavalry, were not in these woods and in that wheat? Such terrain under such conditions should literally shout . . . "Beware of ambush!" But let's get on.

SITUATION CONTINUED

The companies close up. The men are blowing hard and glad to get a rest. In Higny the handful of cavalymen assigned to

THE FIELD ARTILLERY JOURNAL

the battalion are watering their horses. From the hill the chasseurs can see the main column marching steadily toward the north. The advance guard is moving through Xivry-Circourt. In the direction of Murville they see French cyclists pedaling along. Here and there peasants are working in the fields. It is hard to believe that a war is really on.

But the long rest the chasseurs had anticipated was not to be. Scarcely had the 6th Company moved into position along the road than the major gave the signal to sling equipment. Warily the tired infantrymen clambered to their feet and slung their packs. A hell of a rest!

The forward movement started and at that instant the entire southeastern face of the Higny Wood and the wheat field to the right flank erupted in a blast of lead. Rifle and machine-gun fire knifed through the bewildered battalion. Under the stunning shock of such complete surprise few units would stand. The 19th Battalion stood!

This was to be no skirmish with a Uhlan patrol but a real fight. The 19th immediately sought to recover its equilibrium. The two right platoons of the 2d Company swung to the northeast and achieved their deployment by crawling through the high wheat while German bullets clipped the blades above them. The 1st and 3d Companies deployed facing to the north. The 4th and 5th deployed more or less in place, one behind the other. The 6th Company, protected from the north by the embankment, remained in this position in reserve. The machine-gun section moved along the road occupied by the 6th Company to a point abreast of the 2d Company.

The battalion, somewhat recovered from the initial shock of this surprise, now settled down in earnest to the business at hand. The crack of musketry gradually mounted to a deafening pitch. But now a shriller note rose over the field. Somewhere artillery was firing and the shells were falling squarely on the French position. The hard-pressed Frenchmen looked at one another in instant agreement . . . this could be none other than their own artillery firing short! But whatever their feeling on the subject may have been they held their ground and continued the furious fire fight. At the same time the battalion commander dispatched several mounted messengers to the advance guard artillery with

FIFTY MILLION FRENCHMEN CAN BE WRONG

word to cease fire. He was to learn later that he had maligned the French artillery . . . the shell fire was coming from German batteries, probably horse batteries from the 8th Cavalry Division.

A few minutes later, in fact, at about 2:30 P.M., a second message was sent to the advance guard, this time requesting the support of the artillery battalion.

Not more than fifteen minutes had elapsed since the first shock. The enemy was definitely known to occupy the Higny Wood and the northeastern slope of hill 348. The battalion commander had no idea of the location of the German artillery. As a matter of fact it had only dropped a few shells on the battalion and then ceased firing. The situation had not yet fully developed but the major was aware that an attempt was already being made to penetrate between the 2d and 3d Companies and believed that an attempted envelopment of his right flank was getting under way.

FOURTH REQUIREMENT

The message sent by the commanding officer of the 19th Battalion to the artillery with the advance guard.

HISTORICAL SOLUTION AND DISCUSSION

According to Colonel Etienne the message merely requested artillery fire on the Higny Wood. A bit later the statement appears that "the artillery battalion was requested to support the 19th Battalion which was stopped by violent rifle and machine-gun fire coming from the southern edge of the wood one kilometre north of Higny."

Is this message sufficient for the artillery to act on? The range from the high ground northeast of Xivry-Circourt is about 3,000 metres or roughly 3,600 yards. The artillery is provided with excellent maps. The day is now crystal clear. From Xivry-Circourt the Higny Wood must stand out like a sore thumb. These are some facts that must be considered in the artillery problem presented.

However, the message sent to the artillery left out several factors not only of vital interest to the artillery but perhaps of life and death interest to the infantry. It made no mention of the location of the French infantry units. It made no arrangement either as to time or signal for the artillery to lift its fire. And finally it failed to prescribe any definite line or terrain feature, such as the southern edge of the Higny Wood, beyond

THE FIELD ARTILLERY JOURNAL

which the battalion would not advance or at least would not advance until a certain fixed time. Now this message was obviously deficient on every one of these counts, and probably several more. But here the question arises . . . was it possible or practicable for this battalion commander to incorporate these items in his message to the artillery? I vote in the negative.

In the first place, this was a meeting engagement. The situation was not fixed. As Colonel Etienne puts it, "here everything was moving, both the enemy and ourselves." By the time the battalion commander had formulated a nice precise message to his artillery friends the entire situation could do an about face. No one short of a soothsayer could foresee what would happen from one moment to the next.

So it reduces to this: artillery fire is badly needed but with the artillery and its observers, 3,600 yards away it is dangerous to ask for it in this moving situation. If fire support is requested the infantry must give the artillery some assurance that units will not advance beyond some unmistakable line until some set time or until some prearranged signal at which the artillery will lift its fire. But since the infantry cannot tell what will happen from moment to moment, the dangers of this procedure are evident.

What is the answer?

FIFTH REQUIREMENT

Action of the artillery commander upon receipt of the 19th Battalion's request for fire on Higny Wood.

HISTORICAL SOLUTION AND DISCUSSION

The actions of the artillery commander are not reported in detail. However, it appears that he did four things in the following sequence: (1) made a detailed reconnaissance for positions; (2) moved his entire battalion into positions on the high ground "a hundred metres northeast of Xivry-Circourt;" (3) "arrived at an understanding with the 19th Battalion;" and (4) at 5:00 P. M. *two hours and fifteen minutes after he received the infantry's request*, opened fire on the Higny Wood with one battery.

There are so many things wrong with this particular picture that it is difficult to know where to start. Suppose we begin with the 19th Battalion. The division commander had not allotted his flank guard any artillery. The flank guard itself came under the

FIFTY MILLION FRENCHMEN CAN BE WRONG

command of the advance guard commander. If it became involved in a serious fight it would have to call on the advance guard artillery for support. Therefore, common sense would seem to dictate that an artillery representative march with this battalion. This was not done.

Next, no matter what computation is employed and despite the most liberal allowances for unforeseen delay, the two hour and fifteen minute interval before fire was opened cannot be *satisfactorily* explained. It is inferred that the artillery commander *personally* performed every one of the four tasks itemized in the historical solution. When it was all over he had three batteries in position 3,600 yards away from the hard pressed infantry. From that position and that distance it was impossible to follow the fluctuations of the infantry struggle. He could and did fire on the Higny Wood but with only one battery and after an unconscionable period of time. Perhaps he had arrived at an "understanding" with the 19th Battalion that its troops would not advance beyond the southern edge of the wood. Of course, in view of the direct request for fire on a definite area he might have been justified in opening on the Higny Wood at once while a representative settled matters with the 19th Battalion. In that event he should have been able to smother the wood with his battalion in a matter of minutes.

Another important consideration is the fact that the advance guard proper was again deprived of all of its artillery. While its infantry battalions marched on toward Mercy-le-Bas, its artillery battalion squatted down on the outskirts of Xivry-Circourt and flirted with the situation that had developed on the flank. It would certainly have been prudent for the division commander to have replaced this "lost battalion" with artillery from the main column. Which, of course, brings us to the point that we cannot hold the artillery commander responsible for everything. The final responsibility devolves on the advance guard commander, although he probably accepted his artilleryman's recommendations.

Looking back it appears that a highly workable and practical solution to this affair could have been brought about by the immediate dispatch of one battery to the vicinity of Higny while the remaining two batteries continued with the advance guard. Thus the 19th Battalion would have had direct, active, and invaluable

THE FIELD ARTILLERY JOURNAL

support in less than 30 minutes after its message reached the artillery. Had an artillery representative marched with the 19th Battalion this figure would probably have been cut still further. In all likelihood he would have recommended this same direct action. Furthermore, he would have had a suitable position and O. P. located to which the battery could have immediately moved without lost motion.

The heart and soul of the whole matter is not merely artillery in direct support . . . but artillery and observers so placed that no phase of the infantry struggle is overlooked and control so perfect that the great sledge hammer of the artillery can be instantly switched to accord with the swiftly moving infantry situation.

No matter how we regard this incident we are forced to the conclusion that the artillery commander was lost in that often bewildering forest of technique. It is not likely that he overlooked a single rule laid down in his artillery manual . . . *except perhaps the primary mission of artillery*. True, it took him two hours and fifteen minutes to complete his set-up; true, he eventually used only one-third of it; true, a battalion of infantry, less than two miles away, was being bled white during this process; but still one cannot afford to gloss over such an important thing as form.

Again it is high time we returned to our story.

SITUATION CONTINUED

The attempt to penetrate between the 2d and 3d Companies was frustrated by a headlong charge of the 6th Company for which it paid dearly. The fight then swung to the right flank, which the enemy sought to envelop. The right platoon of the 2d Company was driven back and then in a furious counter attack retook its lost ground. But pressure continued to build up on this flank. From moment to moment it became more difficult to stave off the dogged German envelopment.

On the north the fight continued with undiminished fury. The 4th and 5th Companies had long since been forced to move to the assistance of the 1st and 3d. Meanwhile, the 6th Company had been pulled back to its old position along the road where it was again held in reserve.

Two-thirty, three-thirty, four-thirty, and still the fight surged back and forth. At 5:00 o'clock the first artillery fire fell on the Higny Wood. The immediate effect of this long awaited fire was

FIFTY MILLION FRENCHMEN CAN BE WRONG

to enable the infantry on the north to push forward and seize the edge of the forest. And there, of course, it had to remain unless it wished to run the gamut of its own artillery.

The struggle on the right flank had turned the wheat field into a shambles. Around the machine-gun section the dead were literally heaped one on top of the other. No one remained to man one gun but the lieutenant in command of the section. In a matter of moments a German bullet had laid him out with his crew. Apparently no one else alive knew how to operate this new-fangled weapon. At last it was learned that a sergeant in the 2d Company knew something about it. Word went to him. He wormed his way through the wheat to the position and again the machine gun chattered.

The envelopment progressed. The 2d Company began to give ground. At this juncture the battalion commander again called on his reserve. The 6th Company sprang from its sheltered position. The captain shouted a command and dropped dead. But the company carried on. The envelopment was again temporarily blocked. But still there was no decision. In every quarter of the field the dead piled up.

Then occurred one of those minute incidents that so often determine the outcome of battles. A wounded bugler stretched on the ground suddenly and without authority sounded the charge. Instantly another bugler leaped to his feet, repeated it, and dropped with a bullet through his head. It was enough. The 19th Battalion swept forward. A moment or two of furious hand-to-hand combat followed and then the Germans broke. A bloody pursuit dogged them as far as Boudrezy.

Quoting from the reports of the advance guard and flank guard commanders, Colonel Etienne states, "The 19th Battalion had had an affair with a battalion supported by machine-gun units. The German battalion was almost annihilated. The Higny Wood was a veritable charnel house."

No accurate reports exist as to the casualties suffered by the 19th Battalion. The figures vary from 220 to 600. Considering the conditions under which they fought the larger number does not appear excessive. The initial surprise that caught them in such a dense formation should have accounted for several hundred.

So ended this sanguinary encounter at Higny Wood. That

THE FIELD ARTILLERY JOURNAL

night the valiant survivors trudged into their bivouac area at the Chanois Farm . . . their mission accomplished. The behavior of the 19th Battalion on this day should assure it a permanent niche in the rich history of France.

The remainder of the 42d Division, more fortunate than its flank guard, continued placidly on to its march objective without encountering any serious resistance. It would have its turn the next day!

* * * * *

Looking back twenty years we can realize that this day's work was an infallible portent of the morrow. From almost every point of view the 42d Division failed to meet the *potentialities* of the situation. That it escaped unscathed (discounting the unnecessary slaughter in the 19th Battalion) is no more than a testimonial to its luck. On the next day it paid the penalty in full for warfare by rote: on that day division after division was overwhelmed by complete tactical surprise and by nightfall entire armies were streaming southward in confusion.

Today the French pendulum has reached the other extremity of its arc. The headlong offensive of 1914 has given way to extreme caution. Infantry moves at a snail's pace. Divisions crawl from crest to crest with sometimes as much as two-thirds of their strength in a practically fully deployed advance guard. It is no longer called an advance guard but that makes little difference since to all intents and purposes it has replaced the 1914 variety. We wonder how this rigid conception will fare against the swift-moving tank attack or against motorized infantry? We wonder about its flanks and its rear. The French say the day of surprise is over, and still we wonder. When this new doctrine or dogma or theory clashes with flesh and bone and iron and steel and lead we shall know. Until then we can only surmise.

That same thought was expressed in the beginning of this paper. In a sense it sounds "defeatist." It appears to advocate the abolition of theory, of training, of maneuvers, since the realities of war always differ from our peace-time conceptions. It does to this extent: if theory soars in the blue empyrean, if training becomes cut-and-dried, if maneuvers become stereotyped playlets of a mass exhibitionism, then we would do well to chuck the whole lot.

FIFTY MILLION FRENCHMEN CAN BE WRONG

It is only too true that we can never reproduce situations as wildly improbable and illogical as those that flourish in battle. But we *can* turn our imaginations loose. We can concentrate on the unexpected. We can promote confusion in our maneuvers. We can blow hell out of the C. P.'s and tear up communications right and left. We can rule out key men and key leaders at the decisive point and at the worst times. We can jump a lieutenant into a battalion commander's job in the midst of an attack and push the battalion commander into his colonel's shoes. We can give false information of the enemy, or inaccurate information, or no information. We can work our chief umpires into brain fever by requiring them to invent the unexpected . . . the unexpected . . . the unexpected! It will not take much of this to relieve us of our preconceived ideas and our mental catalog of approved solutions. Bit by bit we will come to the inevitable conclusion that there is no substitute for thought and that to think, *and think in time*, the muscles of the intellect must be kept supple. And then when the lid does blow off we will not be stunned into immobility or waste decisive minutes wondering how or why it happened . . . *but act*.

MUD AND MORALE

Jumbo, Another Artillery Horse

BY LEAH STOCK HELMICK

MORALE is high in the ranks of the 1st Field Artillery at Ft. Sill, Oklahoma! For official word has been received that the old horse Jumbo, long-time "Top-Kick" of Battery D's stable, may spend the rest of his days with his regiment.

When an order was issued last spring that all animals must be disposed of, except the youngest and strongest, many a trooper was uneasy. Practically every regiment has its "self-made" horse, one that by his own individuality holds a unique place in the daily life of the organization, and whose loss would be a major blow to the outfit.

First of such favorites to face the firing squad, was 29 year old Jumbo, at Ft. Sill. He was reported by an inspector as "totally unfit for military or commercial use." It was "bad news" for his soldier friends.

For a quarter of a century, this big bay horse had been the backbone of the herd—a powerful worker himself and a fire-eating boss that permitted no shirking from others. His mighty neck muscles required a specially made collar. In the difficult pulls over "Colonel Bill's" test "Draft Course," Jumbo was the driving strength of the whole team. When guns stalled at Four-Mile Crossing or in the bottom of a wet Punchbowl, Jumbo was worth a dozen ordinary animals. As for Ft. Sill's rattlesnakes—of which, it is said, some 7,000, weighing 2 tons, were unrooted during Mt. Scott road-building—they were no more to Jumbo than horned toads in a dusty road.

Jumbo's particular job, as the years went by, was the breaking of remounts. He taught the youngsters their job with speed and efficiency. If a new horse stalled, he sank vicious teeth into the remount's neck and shook him until he worked. One "ornery" horse balked a whole morning—he would do nothing but kick and tangle the traces. When the disgusted red-legs finally unharnessed the team, Jumbo leaped upon the remount, butchering him so badly that he had to be destroyed.

When Jumbo himself was condemned to be shot, it was a different

MUD AND MORALE

story. The men of the 1st Field got busy, raised funds, and petitioned the War Department. In view of the fact that their favorite could not possibly be sold for service, they asked that they be allowed to buy and support him at their own expense. The answer was favorable, and Jumbo is theirs for life.

Every afternoon now at feeding time, khaki-clad figures may be seen hanging over Battery D's corral fence. A peculiar incident occurs. When the stable doors slide open for supper, the waiting horses open a path for Jumbo to enter first. The men say that not an animal will step over the threshold before their leader.

Nor do the soldiers themselves play funny tricks on "The Boss." If a greenhorn pretends to offer Jumbo sugar without having it, the horse wheels like a flash and lets his heels fly. May this fiery old soldier, valued both for his labor and his temper, be a familiar sight at Ft. Sill for many years!

A heart for work and a bullying, bossing leadership are the usual qualities that make horse-heroes in the artillery.

The 6th Field Artillery had much the same kind of horse, when they were awaiting orders to go into Mexico in 1915. They had been instructed to leave behind any conspicuously marked animal. The favorite wheel horse of Battery A was a big grey. The men were so anxious to take him along that they dyed him with potassium permanganate. The result was a dirty brown. It might have served, but when the dyed horse returned to his corral, his herd failed to recognize him and attacked him as a rookie. The grey won in the fight that followed, but he lost most of his war paint.

In 1921, Evelyn Brogan published some carefully collected stories of "Famous Horses of American History." The three artillery horses there described were conspicuous for the same quality that made Jumbo exceptional. The memory of Rodney has been renewed in the recent movie, "Keep Them Rolling," but Putnam and Foxall should also be remembered.

Putnam's great heart was tested at a most dramatic moment during the siege of Pekin. According to Miss Brogan, troops were rushing to the relief of Americans in the city, when the road became congested. The leading guns were ordered to ascend the steep bank above the narrow sunken road on which

THE FIELD ARTILLERY JOURNAL

they were crowded. Putnam, a magnificent wheel horse of the first piece, carried a driver. As the six horses swung up the bank, a spring snapped and the off-horses stopped working. The astonished soldiers saw Putnam settle himself into a foothold, and, alone, inch by inch, pull the gun to the top of the slope. He became the idol of the regiment, his name was changed to Pekin, and after returning to the Philippines, he was officially "retired." He was given a military funeral at his death—probably the only horse ever to be so honored.

The same writer describes Foxhall as having a staunch heart for work, but a different nature—he was a "Madcap Maxie." He first came into notice in the Spanish-American War, when a boatload of horses was turned loose to swim from the transport to the shores of Cuba. Foxhall, instead swam five miles out to sea, with a boatload of sailors in hot pursuit! After long tropical service, Foxhall was "retired" at Ft. Sam Houston, Texas. There he attached himself to the bread cart. Each morning he dashed to the shed, where someone harnessed him to his cart. Away he galloped, without a driver, to the bakery. After backing his cart to the door to be filled, he turned around and presented himself for his own share, before returning to the battery. If it were a stormy day, he "did not choose to run." He was a constant entertainment as a buckner—no one ever rode him bareback, although he lived to be forty years old. He ranged at will, forgiven for his mischief, until he died of pneumonia, contracted during a "night out" while the troops were away.

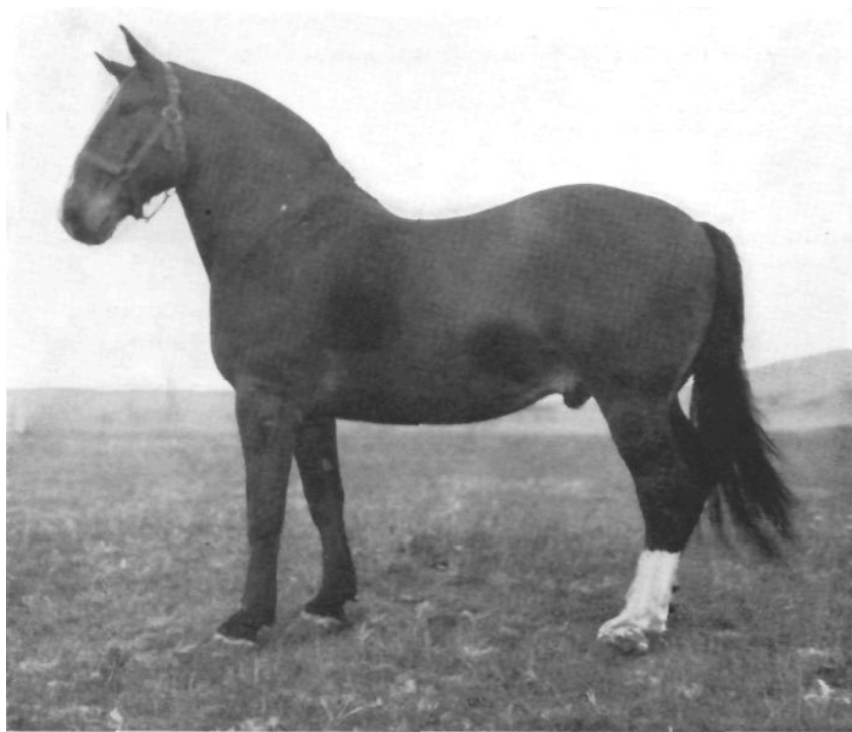
In the mud and privation of the World War there were instances in which artillery horses displayed exceptional heroism, but very few names returned with the legends. One of the most moving anecdotes was told by Ernest Harold Baynes in a recent book, "Animal Heroes of the World War."

It was the story of two little bays of thoroughbred stock, that kept their column rolling against terrific odds of weight and mud. They not only extricated their own gun from the mire, but were sent again and again to the rescue of other stalled vehicles. Other teams quit; mules, brought from nowhere, refused to try. Only the bays persisted. As a last rolling kitchen slid drunkenly into the ditch, the driver of the bays, with tears running down

MUD AND MORALE

his cheeks, begged officers to spare his team. But war is war, and the bays were sacrificed. They died that night of exhaustion.

Such endurance and fidelity, conspicuous alike in the hero Putnam, in the unnamed bays, and in the hard-working but ferocious Jumbo, contribute to the traditions of a regiment. Mud and difficult terrain will always necessitate a nucleus of draft animals in the army. When roads melt into a quagmire, it is the horse—not the motor—that saves the day. Mud—and morale—link the faithful army horse and his friend, the soldier.



"JUMBO"

THE FIRST ARMY MANEUVERS

BY COLONEL CONRAD H. LANZA, Field Artillery

UNDER authority of a letter from The Adjutant General dated 26 April, 1935, active elements of the First Army, with certain other units, were concentrated in the Pine Camp Area, New York, for field training during the period 17 to 31 August. The initial organization was:

<i>Units</i>	<i>Commander</i>	<i>Headquarters</i>
First Army Headquarters	Major General Dennis E. Nolan	Great Bend
I Corps Headquarters	Major General Fox Conner	Philadelphia
26th Division	Major General Daniel Needham	South of Philadelphia
43rd Division	Major General Morris B. Paine	Near Antwerp
II Corps Headquarters	Major General Lucius R. Holbrook	Black River
27th Division (less 1 Brig. & Tank Co.) plus 10th Inf.	Major General William N. Haskell	Pine Camp
44th Division (less 71st Inf. & 104th Engrs.)	Major General John J. Toffey	Sanford Corners
1st Division (less Hq. 1st FA Brig. & 6th FA) plus 2nd Bn, 25th FA	Brigadier General Charles D. Roberts	Gates Corners

Army Troops:

51st and 101st Signal Battalions	Great Bend
1st Squadron, 3rd Cavalry	Sterlingville
62nd Coast Artillery (Anti-Aircraft)	North of Carthage
Detch 1st Cavalry (Mechanized), (6 combat vehicles)	Gates Corners
Detch Tanks (5 tanks only)	Gates Corners
1st Quartermaster Company (Motor Maintenance)	Great Bend
40th Ordnance Company (Maintenance)	North of Carthage
97th Observation Squadron	Near Brownville
8th Photo Section	Near Brownville
Quartermaster Depot	Watertown
Army Hospital	Madison Barracks

All artillery was motorized, except in the 44th Division, which was horsedrawn. The strength of troops participating was approximately,

Officers and Warrant Officers.....	2,558
Enlisted Men	33,527
	<hr/>
Total, Officers and Men.....	36,085
Animals	1,337
Tractors	55
Tanks	5
Vehicles, motor	2,920

Because of the provisions of the current Army Appropriation Act, the use of tanks of models prior to 1920 was impracticable, and Division Tank Companies had no tanks.

THE FIRST ARMY MANEUVERS

The mission of the maneuvers was:

- a. combined field exercises, for training troops, rather than staffs (basic mission);
- b. training in logistics;
- c. testing active units of the Regular Army as to rapid concentration, at existing strength, for field service.

CONCENTRATION

Regular Army units were sent to the maneuver area in advance and established base camps. They later assisted National Guard Divisions in detraining, and lent their motor equipment, in part, to transport certain National Guard units from Buffalo and other cities to the maneuver area.

The 1st Division camped at Gates Corners, 4 miles east of Pine Camp, reaching there by motor transportation, except units from Camp Dix, N. J., which moved by rail. Where transportation did not permit an entire unit to move simultaneously it was made by echelon. The 26th Infantry moved in three echelons, on successive days, from Plattsburg Barracks, returning the empty vehicles the same day for next day's use, making a 320-mile march per day for the vehicles. The 28th Infantry moved in one echelon each from Forts Ontario and Niagara. 1st Division units from New York City marched with one over night stop. The 5th and 25th Field Artillery which were stationed at Madison Barracks had only 24 miles to march. The 7th Field Artillery moved in one day from Fort Ethan Allen.

National Guard Divisions moved partly by rail and partly by motor transportation. Train movements were coordinated by the Army, which assigned separate railheads and railhead detachments to each Division. Train arrivals and departures were determined by the capacity of the railhead facilities.

The Army hired civilian motor transportation in sufficient numbers to bring the equipment of all troops up to 2,920 motor vehicles. Several hundreds of the hired vehicles were taxicabs from New York City, Syracuse, Buffalo and other cities, rented with chauffeurs. These hired chauffeurs in most cases had had no experience driving outside of cities, but they did well and, under supervision, moved in convoys with speed and regularity. In proceeding to Pine Camp from their home cities, they were loaded to capacity with National Guard troops. The largest convoy consisted of 321 motor vehicles from Buffalo, loaded with the personnel of the 106th Field Artillery and the 174th Infantry.

THE FIELD ARTILLERY JOURNAL

This convoy left at 4.00 A. M. and arrived at its destination, 210 miles away, at 4.00 P. M. the same day. Another large convoy of 238 motor vehicles brought troops from New Jersey with one over night stop. In marching in convoy, the leader in a radio equipped car rode at the head of the column and fixed the speed. He received reports by radio from a similar car at the tail of the column, which regularly reported its location and casualties, if any. When it appeared that the column was lengthening out, the gait was reduced; when the column was well closed up, this was an indication that the gait might be increased.

The concentration was accomplished on schedule, all troops being moved into their camps as prescribed. The handling of equipment from railheads to camps was made with the use of motor transportation of the Regular Units.

LOGISTICS

Base Camps: For reasons of economy and because the number of motor vehicles was considerably less than necessary for war operations, the maneuvers were held in an abnormally restricted area. Base camps were selected for convenience of supply and the comfort of the troops, and had no relation to the tactical situations. The tactical situations ignored the camp locations and assumed that the troops were at hypothetical camps in accordance with military requirements. A control line was established, in advance of the real camps, and in maneuvers the troops were not permitted to cross this line before the time they would have crossed it had they started from the hypothetical camps.

Supply: The Quartermaster Department established a Depot at Watertown from which all troops were supplied. The Depot was a railroad freight station hired for the purpose. Supplies were received and on the basis of daily telegraphic strength returns were distributed, principally by rail. A train left every afternoon, carrying one day's supplies in separate cars for each Division, which were parked later at each railhead. Each railhead had its own detachment organized to receive, inspect and redistribute supplies daily. It functioned as near as possible as it would in war. Certain supplies were furnished by contractors direct to railheads. These included fresh milk, butter and eggs, fish, meat, gasolene and oil. At first, some Divisions took a long time inspecting and rearranging their supplies for issue; they had trouble

THE FIRST ARMY MANEUVERS

in dividing the supplies, but after some experience difficulties were overcome. The record for Division railheads was 1¼ hours for issue, including loading on trucks, after which about an hour was required to haul these supplies to camps, where another redistribution had to be made.

Forage, straw for bedding, crude oil for sanitary purposes, kerosene for lanterns, firewood, etc., were delivered in bulk, for the entire maneuver period before their commencement, at Division dumps.

Rations: The ration privilege was suspended. The Army prescribed a bill of fare for each day and the Quartermaster issued the necessary ingredients. Every organization received a copy of the bill of fare so that mess sergeants and cooks knew how the articles received were to be used. Officers had the value of one ration—60 cents—deducted from their pay vouchers, and messed with their commands.

Water: Water was obtained in part from village systems and in part from flowing streams. A joint inspection of streams was made by the Medical Department as to quality and by the Engineer Department as to quantity. Where required the 1st Engineers erected tanks filled by pumps mounted on trucks. In villages the Engineers erected pipes with faucets connected to hydrants.

Army Hospital: A base hospital was maintained at Madison Barracks, which was at an average distance of 25 miles from camps. In addition to the station hospital two barracks were used as wards and arrangements made to take over as many additional barracks as might become necessary. The staff consisted of Regular and Reserve Medical officers and was prepared and equipped to handle all classes of sickness and injuries. The sanitary arrangements throughout the maneuver area were so good that the number of sick was only about one-third of that expected. There was only one fatality, due to a plane accident.

Post Offices: The Post Office established additional temporary Post Offices and provided additional clerks at existing Post Offices to handle the increased mail.

Circulation: The New York State Police had charge of circulation on roads within the maneuver area. They established headquarters at Black River. They were assisted by Military Police.

There was a great increase of traffic due to the troops and to

THE FIELD ARTILLERY JOURNAL

visitors who came in considerable numbers. The State Highway Department cooperated by completing all scheduled road repairs before the maneuvers started. Consequently all roads were open. No parking was allowed on roads anywhere, at any time, but parking places off of roads were available. Traffic posts were divided between the State Police and the MPs, to avoid duplication of details, by agreement with the Army G-1. MPs were authorized to arrest civilian offenders, to be turned over to the nearest civil officer as soon as practicable, and State Police arranged to arrest military offenders, to be turned over likewise to the nearest military command. However, no arrests were made, as the conduct of all was excellent. Better still, while 15 motor accidents had been expected which would involve casualties, according to the local law of averages, there were no motor accidents and no casualties, due to the excellent police of traffic by stationary posts and traveling motorcycle police.

FIELD TRAINING

Umpires: One hundred and forty-nine officers were detailed as umpires. Most of them were field officers, graduates of service schools. They functioned in three sections. The Chief Umpire and staff was at the Umpire CP, which was located at Sterlingville, nearly at the geographical center of the maneuver area, from where probable points of contact of opposing forces could rapidly be reached. An operation Board on the scale of 6 inches to the mile was set up, on which maneuver movements were plotted by operation officers, to whom the messages were delivered immediately upon their receipt. The messages were sent to the message center after the operation officers had finished with them, and were then recorded according to the procedure required by Regulations. A squadron of Cavalry was at the disposition of the Umpires to furnish mounts, orderlies and camp service.

Unit umpires were assigned to units. They ascertained plans and transmitted these to the Umpire CP. Based on the plans, the Umpire CP plotted movements and determined probable points of contact and probable umpire rulings required if the plans were not deviated from. Area umpires were assigned to sectors in accordance with the information thus obtained and advised of the strength and intentions of the opposing forces, and of any rulings determined at the Umpire CP.

THE FIRST ARMY MANEUVERS

Area Umpires, assigned to sectors, regardless of units operating therein, made the rulings as to whether troops could or could not advance, or should retire. They adjudged casualties. They reported all rulings to the Umpire CP. Two way communication radio cars were used to maintain contact between the Umpire CP and critical areas. One car was parked at the CP and the others circulated as required. They worked beautifully. To supplement this method of maintaining close contact between operations and the Umpires' CP, telephones were located at about 1 mile intervals throughout the maneuver zone on a separate Umpire system. Each phone was in charge of an orderly and was visited every 15 minutes by a motorcycle which collected sketches, copies of orders, and other papers left there by area or unit umpires. The orderly had a Klaxon horn to attract attention of umpires in the vicinity when he received papers or information for them.

The Umpires' CP also utilized extra officers in motor cars, who were sent out to give special rulings or secure information not otherwise obtainable. Due to the foregoing measures the operations board was never as much as 15 minutes behind events and was usually only between 5 and 10 minutes behind the operations recorded. No command had as good information as the Umpire CP, and this became the meeting point for the many distinguished visitors who visited the First Army.

Protection of Private Property: A Rent and Claims Board, organized in advance of the maneuvers, had secured, with minor exceptions, from landowners within the maneuver area permits authorizing troops to operate over their property, under the condition that the Government would pay actual damages without unnecessary delay. If there was no damage no pay was due. Most crops were harvested before the maneuvers; the little that remained was not hurt. Special arrangements were made for camp sites. The very few farmers who declined to allow troops to move over their lands had their property marked with signs reading "Off Limits."

Field Fortifications: No trenches or other military works were permitted to be made on private property. Neither were they allowed on the Military Reservation of Pine Camp. This was an artillery range, and it was feared that if digging were authorized unexploded shells might be unearthed and exploded.

THE FIELD ARTILLERY JOURNAL



THE FIRST ARMY MANEUVERS



THE FIELD ARTILLERY JOURNAL

Program of Maneuvers:

August

- 1 to 16 Regular Army units moved into the maneuver area, set up their own camps and established First Army headquarters.
 - 17 to 19 National Guard units moved in and established base camps, without assistance, except loan of Regular Army transportation for detraining.
 - 20 1st Division held Exercise No. 1—a one sided maneuver. Other Divisions trained as desired by own commanders.
 - 21 26th and 44th Division held Exercise No. 2;
27th and 43rd Division held Exercise No. 3.
 - 22 Divisions trained as desired.
 - 23 to 24 I and II Corps held Exercise No. 4.
 - 25 *Sunday*: Rest and recreation; except, 1st Division moved to Antwerp, and passed to control of the I Corps.
 - 26 to 27 I and II Corps held Exercise No. 5.
 - 28 Critique.
 - 29 to 31 Troops broke camp and returned to home stations.
- All maneuvers were two sided, except No. 1.

EXERCISES IN DETAIL

Exercise No. 1. This was a march of the 1st Division, with 62nd Coast Artillery, detachment 1st Cavalry, and Detachment Tanks attached, northeast on Route No. 3, from Fargo, with the mission of stopping an enemy force moving southwest from Plattsburg, by rail and motors, to Pitcairn (about 20 miles northeast of Fargo). The Division was to advance until the enemy was met—this information to be given by the Umpires, at an hour and place unknown to the Division commander. Upon such advice the Division was to issue orders for deployment, but was not to actually deploy, the Exercise terminating at this point, when the troops were to return to their base camps.

The Division elected to move in one column, less patrols on side roads, all motorized and marching at about 30 miles per hour until contact with the enemy was obtained. It left from Gates Corners at 7.30 A. M.

The point of the advance guard consisted of the attached mechanized unit of the 1st Cavalry. Following was the support, with infantry on trucks, a battery of 75s, tanks, and wire laying detachments which connected the head of the advance guard with the Division CP at Fargo. The advance guard marched at between 30 and 35 miles per hour and took 10 minutes to pass a given point. A mile and a half back of the advance guard, but only three minutes in time, was the head of the main body. In order to mount all the infantry it was necessary to utilize spare vehicles of the Field Artillery, the 62nd Coast Artillery and the

THE FIRST ARMY MANEUVERS

Trains. For reasons of economy batteries had present only 2 guns, so that they had some spare vehicles. At the tail of the division, with the reserve, was the 5th Field Artillery (155mm howitzers). Although motorized and with excellent Indiana trucks, the guns were judged incapable of traveling faster than 10 miles per hour and consequently, allowing for halts each hour, fell hourly 15 miles to the rear while on the march.

As a sight of motorized and mechanized troops this Exercise was impressive. It gave an idea of the rapidity with which troops move in modern warfare. To many this was a new aspect and changed their conceptions as to what was practicable and necessary in these days. The Exercise itself was simple, but it required considerable figuring by the Division staff to find the motor vehicles needed to mount the entire Division simultaneously and distribute them to the proper units. March discipline was excellent and civilian traffic moving west on Route No. 3 was not interfered with. Traffic going east was suspended by traffic police until after the 1st Division had passed.

After the 1st Division advance had gone about 25 miles, the umpires announced an assumed position for the enemy on hills to the front, and the Exercise here terminated with the issue of orders for deployment. When the Exercise closed the main body had closed up on the advance guard, the time interval of three minutes not being sufficient to stop it. Communication throughout the column by radio cars and by wire was maintained throughout.

For the following Exercises, Divisions desired to utilize available motor transportation for wide turning movements and rapid advances. This was forbidden by the Army on the ground that these were Exercises for training of troops, not for tactical instruction of large units. For the same reason commanders were instructed not to keep Reserves on hand to the extent ordinarily required in war, but to place as many troops as possible in line before Exercises were completed to insure some combat experience to all troops.

The weather was fair throughout and visibility was in general excellent during all Exercises.

Exercises Nos. 2 and 3 were similar and occurred simultaneously, on adjacent areas separated by an arbitrary neutral zone to prevent interference between one Exercise and the other. Only Exercise No. 2 will be described.

THE FIELD ARTILLERY JOURNAL

Exercise No. 2: The Red 27th Division received orders to move north from Pine Camp, to seize and hold the high ground north of Sterlingville and Reedville, in order to cover the crossing of an imaginary following division across the Black River at Great Bend during the ensuing night. The march was supposed to start at daylight from a hypothetical camp south of the Black River and the troops were not allowed to cross a line north of Pine Camp before 8.00 A. M., and then only in the order assumed for the river crossing.

The Blue 43rd Division received orders to move south to seize Reedville, and the high ground south of Black Creek, to cover the crossing of other troops over the Indian River at Antwerp. Their march was supposed to start from hypothetical camps north of the Indian River, and they were prohibited from crossing a line east and west, passing 2 miles south of Philadelphia, before 8.00 A. M.

The Red 27th Division moved in two columns. The 53rd Brigade, with 52nd Field Artillery Brigade (less 1 regiment), marched via Cold Spring on Sterlingville; the 54th Brigade (less 1 regiment), with the 105th Field Artillery (75mm guns) and 1 Battalion, 106th Field Artillery (155mm howitzers), marched via Deferiet and Doolins Crossing on Reedville. Both columns followed the roads with usual advance guards. Umpires were required by the Army not to allow the Infantry to advance faster than 2 miles per hour, assumed gait to be expected, had the troops really started from the imaginary camps far to the south with full war packs and ammunition. This rule was general.

The Blue 43rd Division moved in three columns. The 86th Brigade, with the 152nd Field Artillery Brigade (less 1 regiment), marched via Cattail Corners and Reedville on Doolins Crossing. The 85th Brigade, with 103rd Field Artillery (75mm guns), marched in two columns, each of approximately the same strength. One column marched via RJ 614 on Reedville, thence east about 1,000 yards, thence south. This was the center column of the Division. The east column of the Division marched about 1 mile east of the center column, through RJ 634, partly across country.

First contacts occurred about 9.30 A. M., between Sterlingville and Reedville, along Black Creek. The west column of the

THE FIRST ARMY MANEUVERS

Red 27th Division passed through Sterlingville and, by 9.50 A. M., occupied the low hill northeast thereof without opposition, having observed only small hostile patrols, which retired discreetly. Believing that their mission had now been accomplished, the advance guard made no attempt to continue on, and contented itself with holding the hill. They failed to report the reason for their halt to the main body, and the latter remained for hours, in march column on the road, waiting for information from the front. At 10.00 A. M., this Red column was opposite the flank march of two Blue columns through Reedville, but they were unaware of this. Neither did they have any information as to the Red east column.

The Red east column, about 9.30 A. M., when its advance elements were near Black Creek, south of Reedville, met elements of the Blue west column. The banks of Black Creek were lined with thick brush and trees, which obscured the view, and there was a long delay before deployments were made. The Red advance guard, consisting of one battalion, did not report to higher authority that it had met the enemy or why they had halted, and there was another delay before additional Red forces moved to the front. Neither side was aggressive and for over three hours neither advanced.

The Blue center and east columns met no opposition, and by noon had reached positions near RJ 648 and south thereof along West Branch which were to the right and rear of the Red east column. They made no attack. At this hour the entire Blue 43rd Division held a semi-circle around the weak Red east column consisting of but one regiment of infantry and three battalions of artillery. Red had no reserve and the east column was not in liaison with the 27th Division headquarters, which was with the west column.

About noon, the Blue 43rd Division, not having made any headway near Reedville, and aware that a hostile force had passed Sterlingville and was on their right flank, decided to attack the latter before attempting to advance south. To obtain troops for this mission, they withdrew their center column from opposite the Red right flank and had it countermarch in rear of the line with a view of attacking Sterlingville. A little later the east column was similarly withdrawn.

THE FIELD ARTILLERY JOURNAL

At 2:00 P. M. Blue started its attack on the hill east of Sterlingville. Red had at this hour only the original advance guard battalion on the hill, as the main body had not yet been informed as to the situation at the front. About 2.30 P. M. Blue occupied the hill. Having now secured its right, the Blue 43rd Division ordered a general attack for 3.45 P. M. from Reedville, southwest on Doolins Crossing. The Red 27th Division, with the west column, about the same time ordered a counterattack for retaking the hill beyond Sterlingville. These two attacks had barely started when the Army at 4.00 P. M. terminated the Exercise.

Comments on Exercise No. 2:

- A. Leadership: Little aggressiveness, due to poor information, the higher command posts receiving almost no reports. It would have been possible, around 10.30 A. M., for the Red west column to have launched a powerful attack from Sterlingville against the right and rear of the Blues at Reedville. It would have been possible for Blue, around noon, to have enveloped the Red east column, while containing other Red forces about Sterlingville. Both opportunities slipped by, neither Division having correct information.
- B. Liaison: Nearly non-existent. Front line units uniformly failed to send information to the rear, and columns seldom communicated with each other.
- C. Artillery: On both sides advance guard artillery was too far to the front. This was partly due to the fact that much of the firing was only simulated, and that consequently the near presence of hostile troops was at times difficult to determine. OPs seldom saw any targets, on account of wooded stream lines limiting the view. Some battalions in main bodies remained in march order for as much as four hours, waiting for orders. Little attention was given to securing cover from air observation, due partly to the fact that there was no combat aviation present, and not many observation planes.
- D. Infantry: Machine guns generally sited in poor locations. Reconnaissance was very limited. Infantry remained halted for hours on roads without cover from air observation. Troops failed to discover large hostile forces only a short distance away.
- E. Miscellaneous: General officers and staff officers were too far to the front. Some were in the firing line, where their attention became concentrated on local events.

Exercise No. 4 (First Day) The Blue I Corps, 26th and 43rd Divisions, supposedly north of Antwerp, were to move south at daylight, to seize the line from the bend in the Indian River, 1 mile north of Evans Mills, to the swamp 5 miles south of Antwerp, and hold it against a known superior force advancing from the Black River.

The Red II Corps, 1st, 27th and 44th Divisions, supposedly from south of the Black River, were to cross that river, move north, to secure the line: 2 miles north of Evans Mills—Sterlingville—North Wilna.

The Blue I Corps ordered their 26th Division to march south in two columns. The west column was to follow Route 11, just

THE FIRST ARMY MANEUVERS

east of the Indian River, until it reached the road forks north of Trout Brook, where the column was to split, one half continuing on to Evans Mills, while the other half marched southeast on CR 513, about halfway between Evans Mills and Leraysville. The commander of the west column split it before starting, the two halves marching side by side on the same road until they reached the road forks, when each was to go its own way. The east column of the Blue 26th Division marched from Strickland Corners on Leraysville.

The Blue 43rd Division received orders to march with one column via Cattail Corners and Sterlingville on Doolins Crossing; while the east column was to proceed via RJ 604 (northeast of Cattail Corners), and Reedville, on RJ 648.

The Red II Corps ordered its 1st Division on the right to march with its east column north from Gates Corners and with its west column from near Deferiet on Doolins Crossing. The Red 27th Division, in the center, marched with one column through Cold Spring on Sterlingville and with a second column from Leraysville towards Strickland Corners. The 44th Division, on the left, marched northeast with one column through CR 513 (northwest of Leraysville) and a west column through RJ 440, east of Evans Mills.

All columns approximated a reenforced brigade. Red columns were not allowed to cross the line just north of their camps until 9.00 A. M., while Blue was permitted to cross the line south of its camps at 7.30 A. M.

The west column of the Blue 26th Division, on arriving at the road forks north of Trout Brook at about 9.00 A. M., in splitting failed to take the road leading to CR 513, as had been intended, but took the wrong fork, marching on RJ 440. Both halves of this column arrived at Evans Mills about 9.30 A. M. and secured the village against minor opposition. As this was beyond the day's objective, no attempt was made by the Blues to advance further. They repulsed a light attack made by the Red 44th Division about noon.

The east column of the Blue 26th Division also split south of Strickland Corners. Part advanced toward Leraysville and, around 10.00 A. M., became involved in a fight along Pleasant Creek with the advancing column of the Red 27th Division and

THE FIELD ARTILLERY JOURNAL

a little later with the column of the Red 44th Division moving through CR 513. The other part of the Blue column marched on Cold Spring, where they came into contact with the advancing Red 27th Division (the latter's east column). By noon, the 26th Division was engaged with two hostile Divisions and it started falling back slowly to a line along Trout Brook to Sterlingville.

The west column of the Blue 43rd Division, in spite of some opposition, by noon reached Doolins Crossing. Here it was enveloped by the advance of the west column of the Red 1st Division, which moved north in line of small columns. About the same time, the east column of the Blue 43rd Division was similarly attacked by another column of the 1st Division. By 2.00 P. M., the 1st Division was making great progress and rather rapidly pushed the Blues back to the line: Reedville—swamp 5 miles south of Antwerp. An attack by the 27th Division during the afternoon against Sterlingville was not strong and had no great success.

The day's exercise was ended at 4.00 P. M., troops bivouacking in the field, with outposts. Movements beyond the outposts were prohibited prior to 6.00 A. M. the following morning, but there was no restriction as to movements inside the outpost line. A rearrangement of units was made, to make a more continuous line, and secure good positions for the artillery. It was nearly 11.00 P. M. before movements ceased.

(Second Day.) Hostilities started at 6.00 A. M.

Blue decided to hold its position, now occupied from: north of Evans Mills—Trout Brook—Sterlingville—swamp 5 miles south of Antwerp. Red decided to attack, with its main effort against the low hills 1 mile east and northeast of Sterlingville. The attack at this point was to be preceded by an artillery preparation and a smoke screen to cover the advance of the infantry.

It being of course impracticable to fire smoke shell, an arrangement was made with the Army Chemical Warfare officer. The latter was furnished with the plan of the artillery for the smoke screen, and agreed to set off a corresponding number of smoke candles at the hours and places indicated in the plan for the shells to fall. This was to be along the north side of Black Creek, east of Sterlingville. Weather conditions were ideal, and the smoke screen, which started at 6.00 A. M., was a great success.

THE FIRST ARMY MANEUVERS

All of the high ground east of Sterlingville for a mile was prevented by the screen from observing to the south. The screen was so thick that it stopped circulation on roads across which it drifted. It took the author one half hour to cover 500 meters, during which time his car was run into from behind and ran into another in front. Three cars were passed in ditches along this short stretch. The smoke was so thick that it was impossible for chauffeurs to see the road or the fronts of their own cars. The screen was perfect for about 45 minutes, but no infantry attack developed.

Red ordered its 1st Division to attack Sterlingville from the east and south and the 27th Division from the southwest at the same time that their 44th division extended the attack as far as the Indian River. Five tanks, of latest types, were attached to the 1st Division. It was decided to make the attack at 9.50 A. M., the tanks to lead, against the east slope of the low hill east of Sterlingville. Their advance was to be protected by a smoke screen, to be laid by the Air Corps, and an artillery preparation. The infantry were to follow the tanks.

Blue planes discovered the tanks about 8.00 A. M., approaching their jump off position near Reedville, and thereafter kept them spotted. The Blue artillery fired numerous problems at the places where the tanks were reported as hidden.

The liaison between the Red forces was poor. The tanks jumped off at 9.25 A. M., which was before the prescribed hour, and they consequently had no support from the other arms. They moved from Reedville northwest to near RJ 601, and then turned southwest to the low hill east of Sterlingville. To prevent possible damage to the tanks, their route had been carefully reconnoitered for obstacles beforehand, and to this extent their approach did not represent war conditions. The tanks were plainly visible to the Blue Infantry, who brought a heavy fire of machine guns, 1-pounders and infantry howitzers to bear against them. The tanks made no stops to fire. In war the defending infantry might have been disconcerted by advancing tanks, which were moving at about 20 miles an hour, but on this occasion, although most of the infantry had never seen a tank before, they were not at all embarrassed and calmly fired their weapons against the tanks as they came into view.

THE FIELD ARTILLERY JOURNAL

After the tanks had completed their run the Air Corps arrived and proceeded to lay a smoke screen from planes. This screen was thin and spotty and came down on the wrong side of the path the tanks had taken. It only lasted a few minutes. The simulated artillery preparation started on time, but the infantry were late and did not start until 20 minutes after the prescribed hour.

When the infantry did attack, they advanced in excellent order and enveloped Sterlingville with strongly superior forces. By 11.00 A. M. they were occupying this area. The 44th Division also advanced. They threw two battalions across the Indian River, which obtained enfilade fire on the right of the Blue 26th Division, which was east of that river. The Blue I Corps now slowly retired north.

At noon the Exercise was terminated.

Comments on Exercise No. 4:

- A. Leadership: An improvement in troop leading in lower units was evident, but there was occasional lack of aggressiveness by higher commanders. One brigade commander was found parked on a road with his column. He admitted having been there for about two hours, waiting for information from the front, so that he could make a decision; but so far had received no information from anywhere; therefore there was nothing to do. A suggestion that he send a staff officer forward, to find out the reason for the halt, was accepted as an excellent idea and eventually resulted in this column doing something.
- B. Liaison: Some improvement between front and rear, but it was spotty. Liaison between parallel columns continued to be nearly non-existent.
- C. Artillery: Tactics showed improvement, and more care was taken as to cover from air observation. Opportunities to see targets from OPs was limited, but the Air Corps reported quite a number of targets which were defiladed from terrestrial observation. This was in part due to lack of camouflage on both sides, partly avoidable. Amount of artillery present was so small, for the extent of the front, that infantry fired upon in war could have avoided the fire by slight changes in position. Batteries reported trouble with wire, poor in quality and deficient in quantity, and no reel carts.
- D. Infantry: Tactics showed marked improvement, both on the offensive and defensive. Ground often well occupied. Reconnaissance was better. Absence of water carts and rolling kitchens was felt.
- E. Air Corps: Observation Squadrons (none with the Red 1st Division) functioned well, picked up targets and dropped the information at panel stations. Neither side had any combat Air forces to interfere with hostile reconnaissance.
- F. Miscellaneous: The troops showed an extraordinary interest in the maneuvers, and generally expressed their appreciation of the opportunity of attending.

Exercise No. 5 (First Day): This was another two day exercise, and was substantially the reverse of Exercise No. 4.

The Blue I Corps, with 26th, 43rd and 1st Divisions in line from west to east located in hypothetical camps, north of and on both sides of Antwerp, was directed to move south, driving before

THE FIRST ARMY MANEUVERS

them Red forces reported advancing north from the Black River from Dexter* to Deferiet.

The Red II Corps, with 44th and 27th Divisions in line from west to east, from imaginary camps south of the Black River was ordered to advance as far as the line: 3 miles north of Evans Mills—swamp 5 miles south of Antwerp. It was in any case to defend the line from the bend in the Indian River, 1 mile north of Evans Mills, to the bend in the Black River, 2 miles northeast of Great Bend.

As the actual camps were in advance of the assumed ones, Red was not allowed to cross a line north of its camp before 8.00 A. M. and Blue a line south of its camps until 8.40 A. M. These were the times leading elements would have crossed these lines had they started around daylight from the hypothetical camps.

The Blue 26th Division marched west of the Indian River in two columns, one crossing the River at RJ 432 and then continuing on to Evans Mills. The other (east) column was to cross the river by a ford just north of RJ 432 and then march on CR 513, northwest of Leraysville. The march of this column was arbitrarily delayed by the Army, through the Umpires, to prevent a crossing of the Indian River before 11.00 A. M. This resulted in a gap existing on the left of the 26th Division. The delayed column did not arrive at the front until early afternoon, too late to accomplish much that day.

The Blue 43rd Division, also in two columns, sent the westerly one from Strickland Corners on Leraysville and the easterly column via Sterlingville on Cold Spring. The 1st Division's two columns marched, one via Reedville on Doolins Crossing and the other via RJ 648 on Gates Corners. All columns consisted of about a reenforced Brigade.

The Red 44th Division, with columns of reenforced brigades, moved them north respectively through Evans Mills and CR 513. The Red 27th Division, with columns of a reenforced regiment, sent out three columns, one each from Leraysville, Cold Spring and on the road to Doolins Crossing.

The west column of the Red 44th Division, about 9.30 A. M., ran into the west column of the Blue 26th Division, north of Evans Mills. A fight resulted, without special advantage to

*West of Watertown; not shown on map.

THE FIELD ARTILLERY JOURNAL

either side. The east column of the Red 44th Division, advancing through CR 513, with its leading elements arrived around 10.00 A. M. between Pleasant Creek and Trout Brook. They had assumed that they would meet the enemy here and were much surprised that they found nothing. Not being prepared for this situation, they stopped. There was, in fact, at this hour a gap of about 3 miles between the Blue forces north of Evans Mills and the Leraysville-Strickland Corners Road, due to the delay in the movement of the east column of the Blue 26th Division, which had not yet crossed the Indian River. Red established OPs and carefully examined the terrain for hostile forces, but saw nothing unusual. They remained immobile for hours.

About 11.00 A. M. the west column of the Blue 43rd Division on the Strickland Corners-Leraysville road arrived abreast of the immobile column of the Red 44th Division. From patrols it learnt the location of this column, while it was in contact to the front with elements of the hostile 27th Division. This latter was the weaker force by about one-half. However, the Blue commander felt he was in a dangerous situation, with a strong hostile force only 1½ miles west of him, and he withdrew about noon to west of Sterlingville.

The eastern column of the Red 44th Division decided after waiting over three hours that it was useless to advance, as it was obvious there was no enemy to the front. They knew of no enemy to their right, and had no liaison with the Red column in that direction, and saw nothing to be accomplished by moving east. Towards the west firing could be heard in the direction of Evans Mills. From their Division order it was known that the balance of the 44th Division should be in that direction. The decision was therefore made to march on Evans Mills. The column arrived there in time to participate in an attack of Blue positions north of Pleasant Creek, but it was so late that not much was accomplished. In this part of the field the opposing Red 44th and Blue 26th Divisions were of about the same strength, both trying purely frontal attacks; the Umpires ruled that neither made any progress except of a minor nature.

The Blue 43rd Division, after the withdrawal of its west column, at which time its east column was about I mile south of Sterlingville, at 12.30 P. M. ordered a general attack. Within a

THE FIRST ARMY MANEUVERS

few minutes the order was revoked and only desultory fighting took place thereafter in this sector.

During the morning hours the Blue 1st Division pushed back weak hostile forces and seized Doolins Crossing. Their east column with little opposition reached the vicinity of RJ 648. After 2.00 P. M. no sensible change occurred in the line until the Exercise was terminated at 4.00 P. M., under the conditions that troops were to bivouac in the field behind outpost lines. No movements were permitted beyond the outposts before 6.00 A. M. the next morning, when the Exercise was to be resumed. Both sides, however, rearranged their troops inside their lines and closed all gaps so as to make a continuous line. Red withdrew in the center and on the right, so that it held from the bend in the Indian River 1 mile north of Evans Mills to the bend in the Black River 2 miles northeast of Great Bend.

(Second Day.) Outposts commenced to fight against orders at 5.15 A. M. The Umpires moved all back to the positions they should have stayed in until 6.00 A. M. Blue planned to make a general attack on the Red position, with main effort on the high ground south of Evans Mills. He arranged for a smoke screen to be laid opposite this ground at 6.15 A. M., part to be fired by the artillery and part to be furnished by the Air Corps. The Army CWO obligingly furnished enough smoke candles to simulate the artillery smoke shell, and put down his screen from Evans Mills to 1 mile east thereof; the Air Corps extended this screen for another mile to the east. The smoke screens were fair, but sufficient to prevent OPs from seeing distant places. It was not thick enough to impede local movements, or prevent observation at distances averaging about 500 meters. The smoke screen lasted about one-half hour. No serious infantry attack was made in connection with the screen.

Some time later Blue started attacks all along the line. All attacks were frontal and made but slow progress. The Red resistance was passive. On orders from the Army no reserves were kept out and no counter-attacks developed. Blue this day had the Tanks assigned to its side. Out of the original 5 only 3 were able to participate in another attack, which again had been reconnoitered in advance. This attack was made at 10.00 A. M. against the extreme Red right; the general opinion was that the tank

THE FIELD ARTILLERY JOURNAL

attack was not very successful.

The Exercise was discontinued at noon, at which time fighting was in progress throughout the long line.

Comments on Exercise No. 5:

- A. Leadership: If the column of the 44th Division had pushed through the gap in their front on the first day of the Exercise, and acted energetically, the situation might have been greatly changed. Had motorized units been present, which they were not, they could have raided all CPs in rear areas, by a rapid advance through the gap.
There was another improvement manifest in troop leading of lower units, but there lacked initiative in some higher headquarters. Columns stood for hours on roads, with little or no concealment from the air, waiting for orders. One Division commander left his CP, leaving no one responsible in charge. He failed to state where he could be found, and, for two hours, messages which did arrive for him could neither be delivered nor acted upon.
- B. Liaison: Still poor, especially between columns, where it was usually non-existent.
- C. Artillery: Observation planes reported a considerable number of targets; OPs but few. The anti-aircraft artillery, with the Blues, was too far to the front, one battery being at one time in advance of its leading infantry elements. Due to good luck it escaped capture.
- D. Miscellaneous: Orders issued were in part incomplete. One Division failed to give any Boundary as between adjacent Brigades, and no Zones of Action.
The absence of means of defending important CPs was noted. One officer, with important papers, was captured by a hostile motorcycle patrol, about 2 miles in rear of the front. The patrol succeeded in bringing their prisoner back to their own lines.

GENERAL COMMENTS

The First Army maneuvers were a success. More could have been accomplished had more funds been available. The maneuvers had to be reduced from a size originally intended to what could be accomplished with the money furnished.

Both officers and men who participated in the maneuvers were enthusiastic with their experiences and the lessons that they had learned. They generally considered that the time spent this year in training was far more profitable, in improving the Army standards, than any similar peace period they could remember.

Most National Guard organizations have semi-permanent camps for their annual training, which are largely limited to teaching technique. Some States have wonderful facilities for securing the maximum possible in a 14-day training interval. Tactics or combined training is usually limited to Extension Courses. But a good solution to a map problem, solved in a comfortable office, with ready references at hand, does not insure good troop leading in the field, with no assistance obtainable. If officers received in the field nicely worded messages, as usually appear in map problems, and with all details covered, good solutions could probably

THE FIRST ARMY MANEUVERS

be expected. But with little information, sometimes none, some officers at the maneuvers were rather lost as to making decisions.

If the troops had been confronted with a bold motorized enemy the entire character of the maneuvers would have been changed. Reconnaissance to a distance of at least 100 miles would have been necessary to enable turning movements to be detected in time, and to avoid surprise attacks from unexpected directions. At the beginning of the maneuvers Divisions had intended to try such turning movements, using such motorized equipment as they possessed. It was forbidden by the Army and the infantry was restricted to foot operations, to avoid tactics, probably too complicated, and because the maneuver terrain was restricted in size.

The maneuvers were purposely simple. They were not intended to simulate modern warfare. It was evident, after the maneuvers had started, that this requirement had been very reasonable; many commanders had trouble with simple situations that were presented. It would have been impracticable to have the maneuvers use motorized columns and the adjuncts of modern warfare, without preliminary training.

All exercises, except No. 1, started with a meeting engagement; two opposing forces marching towards one another, each with orders to seize a position beyond that assigned in the problem to the other side. This type of problem insured contact, reconnaissance and occupation of positions, maneuver and combat. It was all very simple, but not too much, in view of the results obtained.

During the maneuvers, information did not flow freely from front to rear. Too frequently there was no flow. There was still less between parallel columns. This might have been expected in war, where troops engaged in a life and death struggle will not write reports, or make sketches for superiors, but it was a surprise to see this condition existing in peace. It seems clear that if superiors desire information they must send after it; they can not expect to have it voluntarily appear at their CPs. The best information was always that obtained from selected officers, sent to critical points to find out what was happening. The umpires equipped these officers with radio cars, with two-way communication, and it worked well up to distances not exceeding six or seven miles.

THE FIELD ARTILLERY JOURNAL

The following paragraphs relate to minor matters, relating to particular arms and services.

Umpires: Division of the Umpires into two groups, Red and Blue, is required by Regulations. It seems advisable to amend this, so that Umpires will be neutral, to be assigned as necessary.

Infantry: Maneuvers would be an excellent time to test new proposed formations, such as the 3-rank unit, or the consolidation of machine guns and other weapons into a single battalion.

There was insufficient blank ammunition used, much firing being simulated. Consequently troops fired upon, sometimes failed to notice it, or could not judge from the sound, the approximate strength of those firing. There were few anti-tank weapons. It was questionable whether the cal-30 machine gun would stop a modern tank.

Some regiments failed to reconnoitre to the flanks; or when made, failed to send it out to a distance sufficient to provide protection from modern weapons.

Most attacks were frontal; little effort was made to attack by infiltration or by maneuver, even when there were good opportunities for doing so. With one exception, divisions sent their infantry forward in columns on roads, when contact was expected; in the one exception the advance was in line of small columns, resulting in quick deployment as soon as contact occurred.

Some units failed to take formations suitable for avoiding attacks from tanks, artillery, or from the air. The fact that there was no combat aviation and only 5 tanks, among as many divisions, with very little artillery, made it difficult to visualize the necessity for precautions which would have been essential in war.

Some units always had the same details. For example, a regiment would always be the advance guard.

Artillery: Allowing only 2 guns per battery and no reel carts reduced the bill for transportation to the maneuver area. Coupled with assignments of motor vehicles, which were present, to make up deficiencies elsewhere, reduced the road spaces to a fraction of the normal.

Absence of reel carts did not prevent laying of wire. This was accomplished by mounting a spool on the back of any motor vehicle available; but wire could not be recovered this way. Details worked long after hours reclaiming wire; and it was practically

THE FIRST ARMY MANEUVERS

impossible after wire had been laid to establish a new line of communications during the same day.

OPs reported only a few targets. Observation planes found a considerable number, due largely to absence of camouflage, which was practicable but not done, but which would have been probable in war. For firing at targets reported by the Air Corps, a firing map was required. There was a universal demand for 1/20000 maps. Some batteries had private maps on this scale, but the issue of such maps was prohibited, as contrary to War Department policy. The map issued was the 1/62500. This scale map is suitable for marches and general information, but is quite impracticable as a firing map. To use such a small scale map for computing firing data, increases the expenditure of ammunition not less than eight times. Against targets defiladed from terrestrial observation, and for all night firing, accurate maps are a necessity to avoid tremendous wastes of ammunition.

Wire in use was often old. Some was very old and consisted of lengths of numerous models and sizes pieced together. It did not always work well.

The 155mm howitzers were unable to march with motorized troops at usual gaits. New high speed carriages are needed for these pieces. The motorized 75mm regiments worked beautifully, and the Ordnance Department deserves to be commended for the material they have provided. Batteries of this caliber went wherever they were needed.

It was incongruous to see motorized artillery marching in column with infantry limited to 2 miles per hour. The answer is that hereafter infantry is not likely to march to the theater of operations on foot and not very much in the battle area; in the latter case the infantry must use dispersed formations if moving in the daytime, and no artillery should march with them.

The amount of artillery present was less than the organic allowance of Divisions, due to some Divisions not having brought all of their artillery. In the World War even in rest sectors the organic division artillery was doubled or trebled. For offensive operations there was a great increase of artillery, so that the artillery habitually outnumbered the infantry on the field of battle. The reverse occurred at the maneuvers, where the artillery was but a fraction of the infantry strength.

THE FIELD ARTILLERY JOURNAL

Engineers: Engineer regiments, with one exception, brought no engineer equipment. This saved transportation charges, but prevented any employment of these regiments in a normal way. They operated as Infantry with the one exception.

Air Corps: All Divisions, except the 1st Division, had an observation squadron. There being no combat aviation to interfere, the observation planes worked very efficiently. Weather was good, visibility excellent, and with troops paying little attention to camouflage, the planes picked up many targets. The photographic sections also worked well. The Army had planes for command purposes. Attempts were made to maintain 2-way communication between planes and ground by radio phones, but this was not very successful, and could not be counted on.

Signal Corps: Each Division operated its own system. It was good. The Army had a separate system of communication for its own command purposes, including its Umpires. In addition, the Army furnished telephone, telegraph and teletype, and radio services to and between the Army and Corps, and between these and commercial systems and the First and Second Corps Areas. It worked well.

Message Centers: Too much importance given to recording messages rather than to transmitting them to the party addressed. Message centers operated at times to delay important information due to accumulation of papers to be recorded and indexed in turn of arrival.

Could not message centers operate as a Post Office, recording only messages marked to be *registered*? Recording the great mass of messages does not seem to accomplish anything very useful.

Command Posts: The maneuvers showed that it is possible for hostile motorized elements to penetrate a long distance within the enemy's lines. A motorcycle patrol captured an officer with important papers 2 miles back of the front, and brought him in as a prisoner. The loss of important papers from a raid on a CP, and the loss of leadership due to destruction of communications, and important staff officers, indicate that all headquarters should be equipped with measures for their own local defense.

The foregoing remark applies also to supply centers and organizations operating within the battle area.

Rolling Kitchens and Water Carts: Troops bivouacking in the field depended on their base camps for water and rations to a

THE FIRST ARMY MANEUVERS

considerable extent. Rolling kitchens and water carts are necessary for efficient field service.

CONCLUSIONS

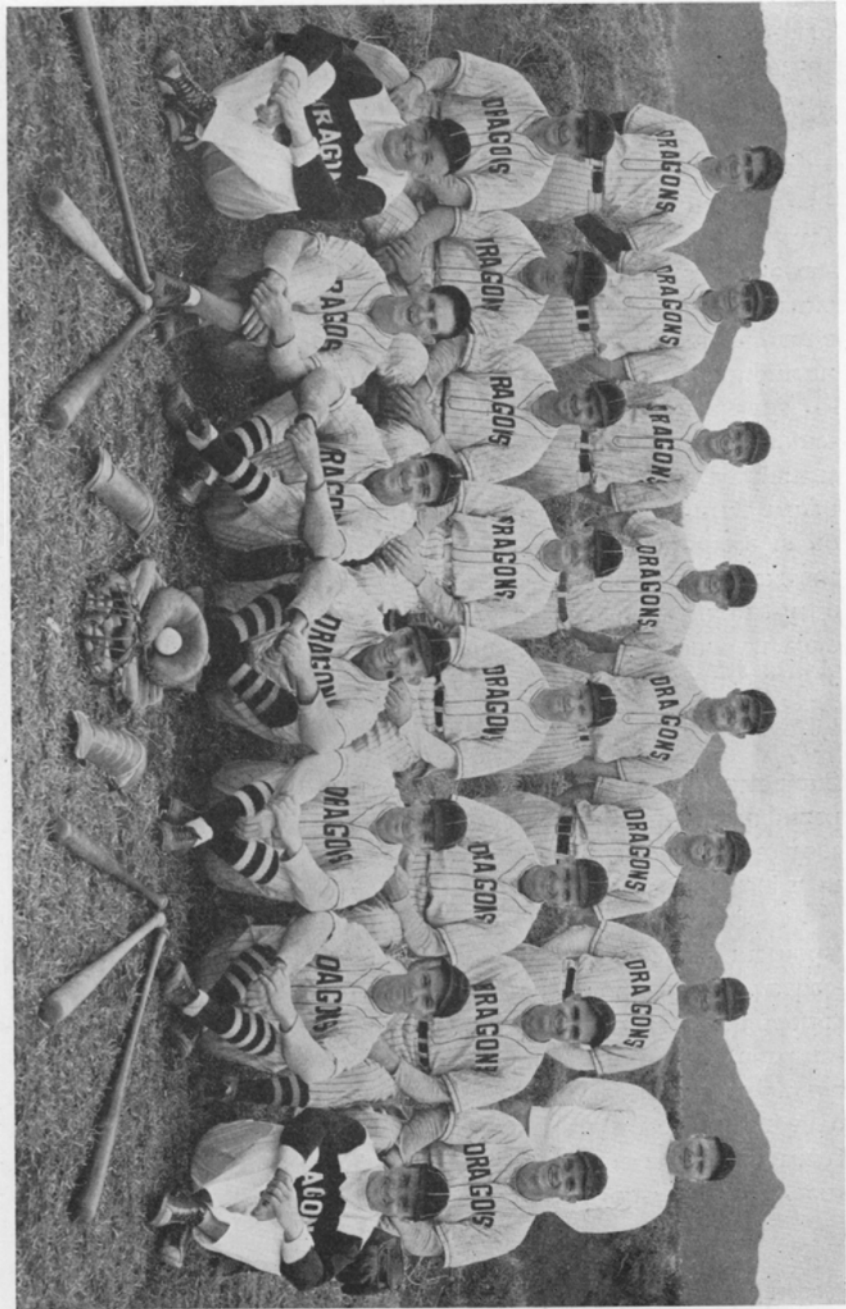
We need changes on our Training Regulations. Meeting engagements last occurred in our Civil War, but not often then; between large forces they have not occurred since. They have been obsolete for about three quarters of a century. Nearly the same can be said of the conventional advance and rear guard actions still being taught. Outside of colonial wars, such tactics are as dead as the bow and arrow days. Would it not be better to drop them and teach leadership using modern methods, transportation, arms and services?

Officers who witnessed the possibilities of motorized troops, in Exercise No. 1, were convinced that in future troops tied to foot elements will be hopelessly situated against a mobile mechanized force. The latter will make circles around foot troops, attacking when and where desired.

The First Army Maneuvers of 1935 taught a great deal, and it is to be hoped that they are but the precursor of future larger maneuvers. For this we need a suitable appropriation. In view of the present World situation our people are now talking little of disarmament. They can see that this is for the present but an ideal, wholly impracticable for the moment, and there is no opposition to granting funds for the defense of the country, which includes training in modern leadership and in modern equipment and plenty of it. The maneuvers of this year need to be supplemented by new ones of gradually increased complexity. This requires large units, large maneuver areas, and modern equipment.

It would not be fitting to close this account without paying a tribute to the conduct of the officers and men of the First Army. There were no arrests, disorders or motor accidents. The enthusiasm of the troops could not have been surpassed. If they made mistakes, they appreciated being told about it, and did better next time. For this success, the careful advance planning of the First Army Headquarters was responsible.

After seeing the First Army in action it seems a pity to allow its experience and training to be dissipated. Would it not be advantageous to make our Army staffs permanent, and keep them occupied with a program of combined training, one year in maneuvers, and the following year with a combined command post exercise?



THE 11TH FIELD ARTILLERY DRAGONS

11TH FIELD ARTILLERY WINS HAWAIIAN DIVISION BASEBALL CHAMPIONSHIP

Twenty-one consecutive victories! The record of the 11th Field Artillery ball team for the 1935 season at Schofield Barracks is unique in the annals of the Hawaiian "Athletes' Paradise."

The 11th Field *Dragons* started the season by losing the first three games and losing them decisively. Then something happened. Just what started the *Dragons* on their winning streak no one could agree, explanations varying from the Colonel's pipe to the constant wearing of a certain red plaid dress by the prettiest *Dragon* fan. The downtown sports writers agreed it was not because the 11th F. A. could play ball—their pitchers were mediocre, their fielding full of holes, and their batting was terrible. There were no stars, yet they just somehow kept on winning.

The games were usually nerve-racking to watch. When the opponents were at bat, they never seemed to have more than one out, the *Dragons* always had two. Victory was always being snatched at the 12th hour—or rather at the 15th inning—and a *Dragon* fan could be recognized anywhere by his bitten fingernails and hoarse voice.

Victories piled up—ten, fourteen, nineteen, twenty-one. The sports writers continued to write "Statistics show—the 11th F. A. was outplayed throughout the game," but there was a bewildered note in their voices. Twenty-one victories in a row and the Hawaiian Division Baseball Championship was in the bag. Just how did it happen? Certainly not because of stellar playing. Only one man, Joe Comeau, of Headquarters Battery, made the all-star team picked by the Honolulu papers. Perhaps they won because the members of the team played as one man with one idea—the *Dragons* would not be licked! They were mighty close, some of those games, but the *Dragon* spirit never faltered. They couldn't play, but they won.

The coaches, Major Charlie Glover and Captain Stew Barden, are mighty proud of their boys. Transports have carried away Penton, King, Perkins, and Kishko, but Ridgeway, Bagwell, Allen, Mohalko, Bullard, Lorenzo, Jones, Derrick, Comeau, Glossner, Hinton, Glynn, Carville, Youngs and Skarren are still in Hula land, and the 11th F. A. hopes they will be out on the diamond next spring.

NOTES ON A REGIMENTAL MARCH, TRUCK-DRAWN

BY COLONEL CARL A. SHEM, 135TH F. A., OHIO NATIONAL GUARD

ON January 1, 1935, this regiment was converted from horse drawn to truck drawn, and on August 18 started its march to Fort Knox, Kentucky, for its annual field training. Sufficient additional vehicles were drawn from the State Pool to transport the entire regiment, its equipment and personnel, making 103 motor vehicles in all, including one motor ambulance. Twenty-four 75-mm guns were towed.

The units of the regiment are widely separated over the State of Ohio, in the northeastern and western parts. The Youngstown battery, with the longest march, had a distance of 460 miles to cover.

The march to Fort Knox was made in two days. On the first day, Sunday, two columns were formed, one traversing the state diagonally, and the other starting in Toledo and moving down the western part. These columns picked up the various units as they proceeded, and effected a junction at Patterson Field, just north of Dayton, where they bivouacked for the night.

The remainder of the march was made Monday, Patterson Field being cleared at 5:50 A. M. The last unit arrived at Fort Knox at 4:05 P. M., the route lying through Cincinnati and Louisville. Every vehicle completed the march under its own power, and with one exception, in its proper place in the column.

Due to the desire of the police officials in both cities to handle the column as a unit, Monday's march was conducted as a regimental column, with 400 yards between march units and not to exceed 75 yards between vehicles. This produced a lengthy, unwieldy column, impossible for the regimental commander to control.

The return march to home stations was begun at daylight Saturday, August 31, and was conducted over the same route until Cincinnati was cleared, when the units were released to the battery commanders and permitted to take the shortest route to their home stations, making their own arrangements as to bivouac, mess, etc. Some of the batteries elected to make the entire trip in one day—the Youngstown battery was among the latter, and arrived home at 1:30 A. M. Sunday after spending twenty hours on the road, and traveling 435 miles.

NOTES ON A REGIMENTAL MARCH, TRUCK-DRAWN

The plan for the return march from Fort Knox through Cincinnati was changed to the extent that it was conducted in two battalion columns, 15 minutes (about 7 miles) apart. The distance between march units was reduced to 200 yds., to further reduce column length and facilitate control. This proved to be a step in the right direction, as better time was made with less interference from—and to—civilian traffic. Some fog was encountered during this stage—otherwise weather conditions were ideal.

The leading vehicle in the column, during all stages of the march, was ordered to maintain a speed of 32 miles per hour where possible on the open road, and the other vehicles were forbidden to exceed 35 miles per hour under any circumstances. Although the column strung out considerably on the road at times, the 3 mile differential was sufficient to close up the column in 12 minutes at the most. At 32 m.p.h. for the leading vehicle an average of better than 25 m.p.h. can be maintained over the day's march. Traffic was fairly heavy, as is to be expected on main routes.

A reconnaissance party, consisting of three reconnaissance cars, each with one officer and five enlisted men for markers, preceded the column by 20 to 30 miles. This party established control points; marked the route where errors were likely to occur; contacted civilian authorities and arranged for green traffic lights or a police escort through municipalities; selected and marked morning, noon and afternoon halting places.

At the noon halt, packed lunches were eaten and hot coffee issued, which was purchased from a civilian restaurant and delivered, one can per battery, to the halting place.

In addition to the reconnaissance party, at the noon halt, a quartering party consisting of an officer and an enlisted man from each battery and an officer from each staff, was fed first and sent ahead of the column directly to the halting place for the night. On the first day's march the quartering party, arriving at the bivouac area an hour and a half before the troops, laid out the area, staked and marked it, and arranged for the guiding in and prompt occupation by the troops. On the second day they performed similar functions at Fort Knox, except that barracks were occupied. The functioning of these two parties was very satisfactory, and no questions arose which they were not prepared and able to handle.

Since one day's march required more fuel than vehicle tanks will

THE FIELD ARTILLERY JOURNAL

contain, one extra five gallon can of gasoline per vehicle was carried in each battery. Refueling from these cans was accomplished at the noon halt in a minimum of time and the extra fuel enabled every vehicle to complete the day's march. As long as 150 miles was considered to be a day's march, the tank capacity was adequate, but since it has been demonstrated that 250 miles is easily possible and even more, either the tank capacity should be increased or else these auxiliary fuel cans become a necessity — and they should carry ten gallons each. This is particularly true where artillery is marched by regiment or larger organization, as multiple pumps at bulk stations are rare, and the time consumed in refueling a hundred odd vehicles from a single hose is prohibitive. At the Patterson Field bivouac area three tank wagons were provided for refueling, and the operation required 90 minutes, including refilling of auxiliary cans, which figures about 3 minutes per vehicle.

An empty truck marched at the rear of each battalion column, to be used as a tow truck in case a vehicle became disabled, or to which the cargo could be transferred in case the damage was such that the vehicle could not be towed. This proved to be a precautionary measure only, as they were not called into service.

Each vehicle carried a small slip of paper pasted on the corner of the windshield, containing printed directions as to the route to be followed and how to reach the unit commander at the day's destination, in case the vehicle became separated from the column for any reason.

The rear vehicle of each battery carried a small metal flag, about 6 × 6, the staff bolted to the brush guard, on which was painted the unit letter. This proved to be a great help to markers and officers at control points, as the flag's passage indicated that particular unit had cleared. It also served to separate the different units. The last vehicle in the column carried a large sign on the back which warned civilian traffic in lettering legible at 200 feet, "Artillery Motor Column Ahead."

The experience gained indicated rather conclusively that the regimental staff should plan the march and issue the march orders, but that the march should be controlled by battalion, through control points every 30 to 40 miles, and should be conducted by the march unit—the battery.

It was further demonstrated that time schedules can be very

NOTES ON A REGIMENTAL MARCH, TRUCK DRAWN

closely maintained if they are carefully prepared and if the march is adequately controlled. A distance of two minutes (one mile at traveling speed) between march units, and five minutes between battalions can be maintained, and this will permit the column to close up quickly, in case civilian authorities desire to handle it through a city as a single unit. Or the battalions can march 15 to 20 minutes apart, and pass through cities as separate columns.

The foregoing applies, of course, to situations where the entire regiment, or larger unit, is limited to one road.

Statistical information of interest regarding the march is presented herewith:

Chevrolet reconnaissance cars (issued)	12
Chevrolet stations wagons (State pool)	2
Dodge 1½ ton trucks (issued)	48
Chevrolet 1½ ton trucks (State pool)	38
Ford 1½ ton trucks (State pool)	2
Chevrolet Ambulance	1
Vehicle miles covered (round trip)	73,966
Aver. speed (running time)	26.1 m.p.h.
Aver. rate (elapsed time, morning to night halt)	20.3 m.p.h.
Max. speed of leading vehicle	32. m.p.h.
Aver. fuel consumption, reconnaissance cars	14.9 m.p. gal.
Aver. fuel consumption, trucks	10.1 m.p. gal.

A MARCH ON HARD SURFACED ROADS

BY MAJOR PIERRE MALLET, 16th F. A.

THE First Battalion, 16th Field Artillery stationed at Fort Myer, Virginia, recently completed a march from its home station to the concentration area of the First Army Reserve at Indiantown Gap, Pennsylvania, and return to Fort Myer, Virginia.

A march of horsedrawn field artillery is no novelty, most of us believe that we know just about all there is to know about marching, however this march was made through highly populous centers and entirely on hard surfaced roads, a condition that will present itself again upon receipt of future mobilization orders. There were many interesting points that came up during the march. A brief discussion of some of these might be of value to the field artillerymen.

The Battalion left the Post at 3:30 A. M., August 3rd, and after three days of marching joined the First Field Artillery Brigade then in the vicinity of Churchville, Maryland. From there on it marched under Brigade control to Indiantown Gap.

Soon after our arrival rumors were afloat that troops stationed in Virginia were not wanted in the state of Pennsylvania by the health authorities of that state because of the prevalence of poliomyelitis (infantile paralysis) in Virginia. The rumor was confirmed at 11:45 A. M. August 13th the morning after our arrival by receipt of War Department orders directing all regular troops from Virginia to proceed to their home stations without delay.

In accordance with the above order, camp was struck, baggage and equipment packed and at 3:30 A. M., August 14th, the Battalion was "on the way" headed south. It arrived at Fort Myer, August 20th, after an eighteen-day march with only two days of rest.

The itinerary of the march was as follows:

MARCH TO INDIANTOWN GAP

Date	From	To	Miles	Rate
Aug. 3rd	Fort Myer, Va.	Savage, Md.	25	4.9 M.P.H.
Aug. 4th	Savage, Md.	Baltimore, Md.	21.0	4.3 " " "
Aug. 5th	Baltimore, Md.	Belair, Md.	18.3	4.6 " " "
Aug. 6th	Belair, Md.	Churchville, Md.	10.5	4.5 " " "

A MARCH ON HARD SURFACED ROADS

Aug. 7th	Churchville, Md.	New Texas, Pa.	18.1	4.5	"	"	"	"
Aug. 8th	New Texas, Pa.	Refton, Pa.	18.1	4.5	"	"	"	"
Aug. 9th	Refton, Pa.	Salunga, Pa.	17.2	4.2	"	"	"	"
Aug. 10th	Selunga, Pa.	Colebrook, Pa.	13.2	4.3	"	"	"	"
Aug. 11th	Colebrook, Pa.	(Sunday No March)						
Aug. 12th	Colebrook, Pa.	Indiantown Gap, Pa.	17.5	4.6	"	"	"	"
RETURN MARCH TO FORT MYER								
Aug. 14th	Indiantown Gap, Pa.	Progress, Pa.	21.5	5.1	"	"	"	"
Aug. 15th	Progress, Pa.	Dillsburg, Pa.	19.0	4.7	"	"	"	"
Aug. 16th	Dillsburg, Pa.	Hanover, Pa.	22.0	4.6	"	"	"	"
Aug. 17th	Hanover, Pa.	Westminster, Md.	20.5	4.7	"	"	"	"
Aug. 18th	Westminster, Md.	Ridgeville, Md.	20.5	5.4	"	"	"	"
Aug. 19th	Ridgeville, Md.	Rockville, Md.	22.9	4.6	"	"	"	"
Aug. 20th	Rockville, Md.	Fort Myer, Va.	16	4.6	"	"	"	"
Total distance covered, 301.3 miles.								
Average march per day, 18.7 miles.								

Except for the time the Battalion marched under Brigade control the day started with first call at 2:30 A. M., breakfast at 2:45 A. M., harness and hitch, the head of the column moving out so as to pass the I.P. at 3:30 A. M. This procedure allowed all of the marching to take place during the coolest part of the day and also gave us the use of the highways with little traffic abroad. The day's march was usually finished by 8:30 or 9:00 A. M., animals and material cared for by 10:30 A. M., Mess call was sounded at 11:00 A. M., and after that a well earned rest by both men and animals.

In order not to disturb the usual routine of traffic on the highways the march unit was the platoon with eighty to one hundred yards distance between platoons. On narrow highways traffic could cut in and out between platoons and keep moving. In passing through towns and cities the column would be closed up and proceed under police escort. As about two hours of each day's march was made during hours of darkness this necessitated head and tail lights for each march unit. Various types of lights were used. A small, two-cell, electric lamp with a red glass that would clamp to the fuse rack of the caissons worked successfully as a tail light. Lanterns were carried by the Chiefs of Sections at the head of the platoons.

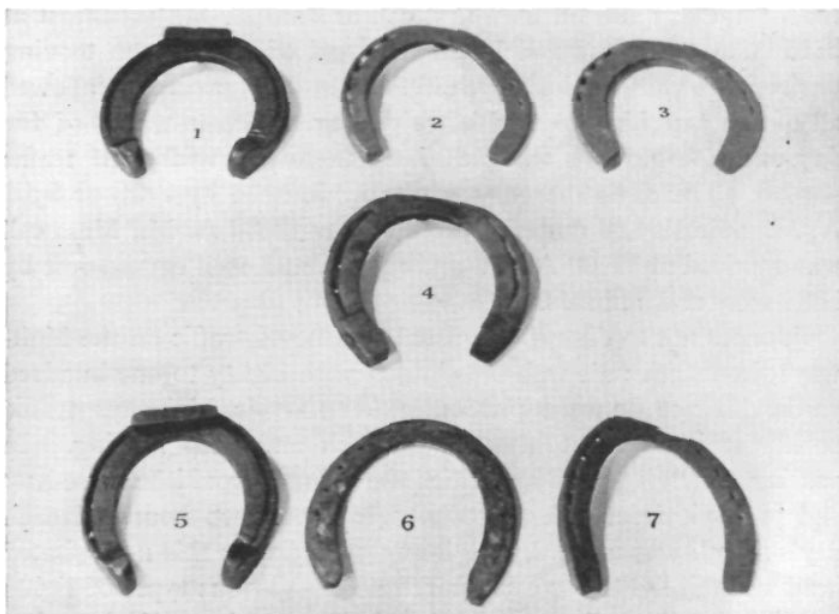
Great care had to be taken each morning in moving the column from the camp site on to the highways on account of the high speed traffic. This difficulty was overcome by lighting red highway flares, obtained from the state police, and placing them on the highway about 200 yards out on either side of the camp exit.

THE FIELD ARTILLERY JOURNAL

This slowed down highway traffic until the battalion was out on the road.

The entire march was made on hard surface roads with no apparent ill effects to any of the animals. The gait was the walk and trot. The first fifteen minutes of each day's march at the walk; from then on alternate walk and trot. Trotting took place only on level stretches of the road.

Horses were changed daily within the teams and sometimes by spare animals. Also the changing of complete teams from gun to caisson helped to equalize the loads. The use of Hippo Straps was resorted to upon suspicion of a sore neck and before the actual sore was apparent.



NO. 1. SHOE FOR DRAFT ANIMAL (NEW) SHOWING CAULKES

NO. 2. SAME TYPE SHOE AS NO. 1 AFTER FOUR DAYS MARCH (ABOUT 80 MILES)

NO. 3. SHOE FOR DRAFT ANIMAL MADE UP WITHOUT CAULKES, SHOWING ONE DAY'S WEAR (25 MILES)

NO. 4. DRAFT TYPE SHOE, SHOWING WEAR ON TOE AND NEAR SIDE OF SHOE, 3 DAYS' WEAR (ABOUT 60 MILES)

NO. 5. SHOE FOR RIDING ANIMAL (NEW)

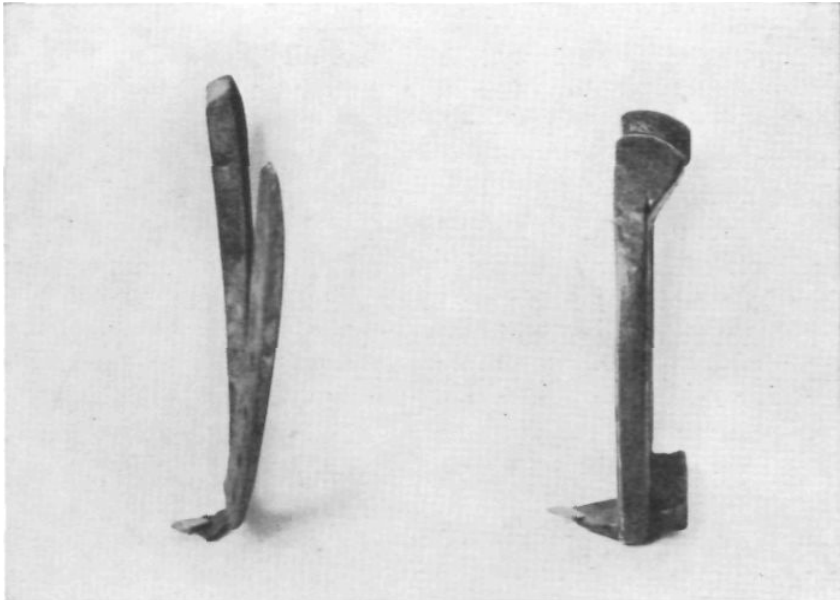
NO. 6. SAME TYPE SHOE AS NO. 5 AFTER FOUR DAYS' WEAR (ABOUT 80 MILES)

NO. 7. SHOE FOR RIDING ANIMAL, MADE UP WITHOUT CAULKES, SHOWING TWO DAYS' WEAR (ABOUT 40 MILES)

A MARCH ON HARD SURFACED ROADS

The shoeing problem presented many difficulties. Horses that walked with a drag walk, that is that would slide their feet over the road soon wore out their shoes. Some animals would wear out a set of shoes in one day's march, others in two days, and practically all animals had to be shod within a week's time. It was discovered that by building up a toe caulk and heel caulks to the same level on each shoe that they would last much longer. Caution had to be taken that heel caulks did not wear down faster than the toe caulks thereby throwing the foot out of level. In one battery 33 horses were shod in a twenty-four-hour period. As evidence of the splendid work done by the horse shoers there was no case in which an animal cast a shoe during the entire march.

Another difficulty encountered was *slippery roads*. These were a serious menace to both animals and men and such roads should be avoided where possible. Roads of this nature are extremely difficult to recognize by motor reconnaissance. Even after stopping your car and making a very careful examination of the



RIGHT VIEW, NEW SHOE, FOR RIDING ANIMAL MADE UP WITH CAULKS ON HEEL AND TOE

LEFT VIEW, SHOWING RIDING TYPE SHOE WITHOUT CAULKS, AFTER TWO DAYS' WEAR

THE FIELD ARTILLERY JOURNAL

road surface it's a two to one bet that you are wrong and your non-slippery road will turn out to be something like an ice skating rink. By experience in selection of routes this much can be said. Slippery roads usually have a high crown, that is the sides of the road slope off rather steeply, they are always made of a mixture of stone and asphalt or stone and some tar product. The appearance of the surface is most deceptive. It may appear rough or smooth and still be slippery. The presence of asphalt or tar on this surface is a sure sign of danger. Concrete highways were found to be excellent and no slipping occurred on this type of road except where an unusual amount of repair work with tar or asphalt had been carried out. Certain new types of asphalt pavement such as that now being laid in Maryland on some of its state roads and the city of Washington, D. C., make excellent footing for horses. In fact it proved to be the best type of hard surface on which to march.

The water problem was solved by transporting our canvas water troughs with a water detail in a light truck which preceded



RIGHT VIEW, NEW SHOE, FOR DRAFT ANIMAL MADE UP WITH CAULKS ON HEEL AND TOE

LEFT VIEW, SAME TYPE SHOE AFTER 5 DAYS' WEAR, NOTE WEAR ON TOE AND LEFT HEEL CAULK

A MARCH ON HARD SURFACED ROADS

the column each day. This detail had eight troughs full of water waiting when the battalion arrived at the watering point. The animals were then watered by bucket. The ideal watering points were the entrances or exits of cities or smaller towns where it was possible to utilize their water system through fire hydrants. Hydrants were selected far enough apart so that the entire battalion could be watering at the same time. This time was counted as one of the hourly halts and never exceeded fifteen or twenty minutes. Where no hydrants were available the same system was used except that water was pumped into the troughs with the battery water pumps from streams which crossed the road.

Animals were watered one hour after reaching camp each day, again at 4:00 P. M., and again at 7:00 P. M. They were watered once during the march. If possible, this was arranged for at the second hourly halt but of course this depended on the route selected.

Upon the completion of the march one of the batteries weighed its animals and found an average loss per animal of thirteen pounds, this loss was boosted considerably by several old horses in the organization. Many animals gained in weight.

A great convenience on the march was a battalion ice box. This was constructed by the Quartermaster upon special request. It consisted of an insulated box mounted on a trailer chassis with pneumatic tires. The box would hold 1200 pounds of ice and sufficient fresh meat to care for the batteries for two days.

This march is considered a successful one because it has met in every respect the requirements for such as stated in the Field Service Regulations. The Battalion arrived at its destination at the proper time and in the best possible condition.

The results accomplished are attributed mainly to the following reasons:

A thorough reconnaissance and careful selection of routes.

The time of day selected for the march.

The close supervision of the care of animals.

The care taken to insure a sufficiency of water for animals.

The superior work of the horse-shoers.

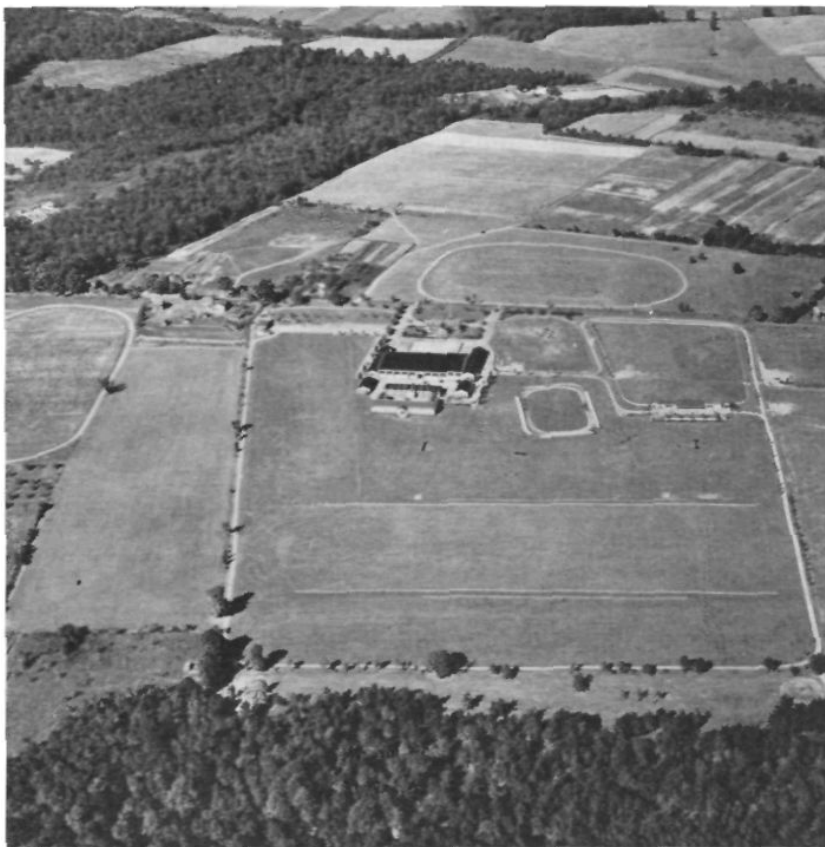
Gaits maintained throughout the march.

IT'S HI! HI! HE! IN THE HORSE ARTILLERIE!

BY LIEUTENANT COLONEL RALPH HOSPITAL, Field Artillery

SHOUT out your numbers loud and strong! The numbers are being shouted out louder and stronger each year in the 112th Field Artillery, as the artillery horse does his share in pulling the caissons around the city armories and country farms of this picturesque organization, whose interesting history constitutes a colorful spot in the development of the New Jersey National Guard.

With armories located at East Orange, Trenton Camden and Atlantic City, it is daily doing its voluntary service to the State and Federal Governments.



AERIAL PHOTOGRAPH OF TRENTON FARM—112TH F. A., N. J. N. G.

A casual observer would, without doubt, believe the picture

IT'S HI! HI! HE! IN THE HORSE ARTILLERIE!

above to be an estate in Virginia, and we couldn't much blame him, because many of its features were taken from some of the estates in that famous horse country. However, what you now see is actually an aerial photograph of the headquarters buildings and estate of the 112th Field Artillery, New Jersey National Guard, located on the Eggerts Crossing Road, midway between Trenton and Lawrenceville.

This regiment is commanded by Colonel Edward C. Rose, a far visioned officer of much World War field artillery experience, and one who has anticipated the needs of the regiment for many years in advance.

This Trenton farm consists of an 80 acre tract with another 120 acres available for military purposes, together with 15 miles of bridle paths. Besides two regulation sized, beautifully turfed polo fields, there is included a steeplechase course, over which many bitterly contested rides have taken place, and a permanent horse show ring with its carefully planned outside hunter course. To First Lieutenant Lyman H. Burbank, National Guard, United States, is due much of the credit for the continual "inspection appearance" of this farm.

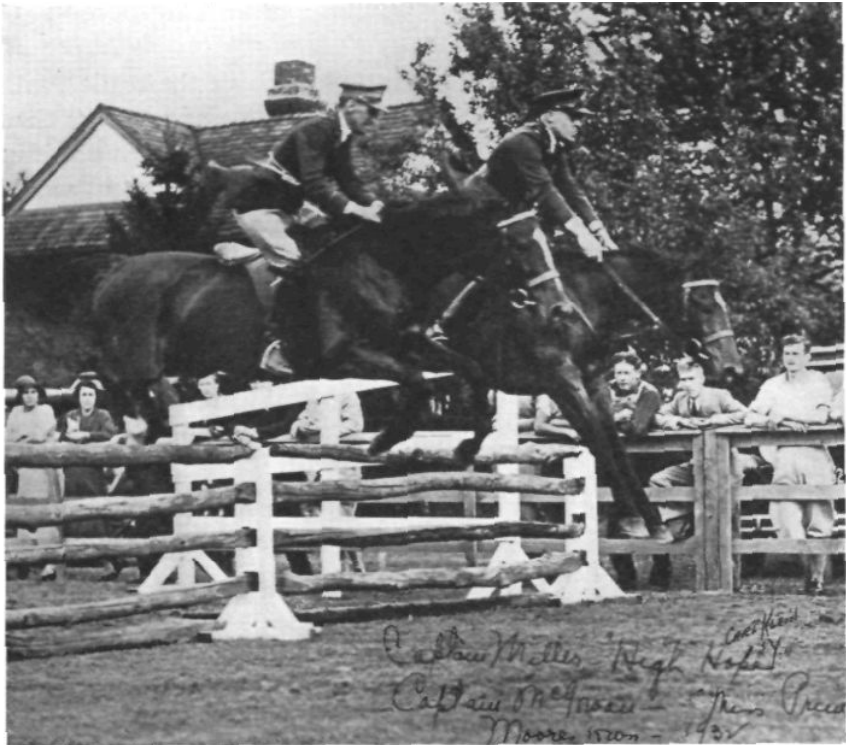
It is not the intent of this brief article to bore the reader with numerous dry historical records which would be of no more than passing interest to any one except those intimately concerned, but it is believed that a brief historical review of this regiment would be in order, as it represents New Jersey's first and only Field Artillery organization. This regiment had its birth on May 16, 1878, when Gatling Gun Company B (Sewell Guards) was organized in Camden, New Jersey. In April, 1895, another Gatling Gun Company was formed at East Orange, New Jersey, and designated Company "A". During the Spanish War these companies became Company "K", Fourth New Jersey Volunteers. After the Spanish War the companies were reorganized and in May, 1899, the present commander of the 69th Field Artillery Brigade, Brigadier General Samuel G. Barnard, was elected Second Lieutenant of Company "B".

Three batteries served on the Mexican Border in 1916 and upon completion of this service the 1st Battalion was organized, quickly followed by the organization of the regiment, the 110th Field Artillery, later becoming the 112th Heavy Field Artillery.

THE FIELD ARTILLERY JOURNAL

As such under the command of Colonel Quincy A. Gillmore, West Point, 1904, the regiment went over seas during the World War. Major General Gillmore later commanded the 44th Division, New Jersey National Guard, being the immediate predecessor of the present commander, Major General John J. Toffey, N. J. N. G.

No mention of the 112th Field Artillery would be complete without a word on polo. Regularly scheduled games are played on Sundays during its summer and fall seasons, and during the winter at least three indoor games each week are played in the ring, which is also used for games participated in by the Lawrenceville School. The names of Captain D. W. McGowan, Captain J. T. Wilson, Jr., and First Lieutenant John Lemp are well known in Eastern polo circles. A 112th team composed of Captain A. P. Moore, of the Army, Captain McGowan and Captain Wilson in 1933 won the Class "C" National Indoor Title. Lieut. Lemp was a member of the Intercollegiate championship Princeton team in 1930, and is an R. O. T. C. graduate.



IT'S HI! HI! HE! IN THE HORSE ARTILLERIE!

The "Red Room" at regimental headquarters gives silent testimony to the many polo tournaments and horse show events won by teams of this regiment, and the four horse "Road Coach" with the name "Gillmore" emblazoned on the hind boot, giving honor to a former regimental commander, has become an institution at nearly every well known eastern horse show.

Over the estate of Colonel Rose at Harbourton members of the 112th Field Artillery and their friends hunt regularly twice each week during the hunting season, with one of the best privately owned packs of English foxhounds in the United States, there being 2,000 acres of paneled country for these hunts, all of which are for the real "Reynard" and are not of the "drag" variety. In the fields of this estate periodically, throughout the year, may be seen many draft and riding animals of the regiment enjoying the freedom and excellent grazing afforded in this vast and fertile country.



AERIAL PHOTOGRAPH OF ESTATE OF COLONEL EDWARD C. ROSE

NOTES ON WAR OF MOVEMENT

BY COLONEL DIDELET

(A digest from the *Revue Militaire Francaise* of July, 1935, by Lt. Colonel John S. Wood, F. A.)

THE ideas presented in these notes are often at variance with the regulation doctrines. In setting them forth, however, the author desires only to seek the truth regarding modern warfare and to furnish an occasion for reflection and further study by others along the same lines.

To begin with, what is war of movement? We must not confuse our terms. In modern warfare there appear to be two distinct forms of operations, one of positions and the other of movement. In the first form, the defender controls the action. He selects and organizes his positions, forcing the assailant to prepare methodical attacks with all the attendant losses of men, time, and opportunity. In the second form, the attacker is in control, pushing forward without allowing his adversary time to stop and organize defensive positions. If the necessary replenishment of men and munitions can be sustained, only a fortunate counter-stroke can save the defender from decisive defeat.

The displacements effected in the conquest or defense of successive positions do not constitute true war of movement as above defined. In such warfare, there may be neither positions to attack nor to defend, yet we will have to fight just the same. We must seek to visualize the possibilities of these situations. Accordingly, a study of certain phases in the last war and a consideration of developments since then may help us to deduce the future form of war of movement.

I. LESSONS OF THE WORLD WAR

At times in the course of the World War, there were periods of true war of movement, although few of them led to decisive results. Nevertheless, they do offer certain significant lessons:

1. Identification of Terrain.

Nature has not, in general, shaped her terrain into forms capable of instant recognition and identification. Hence, infantrymen in the heat of conflict can hardly be expected to identify accurately their own position, their objective, and the limits of their zones of action, much less the exact location of enemy resistance encountered. Therefore,

NOTES ON WAR OF MOVEMENT

(a) Troops should be given directions of march rather than zones of action. A compass is easier to read than a map.

(b) A report from front line infantry stating that the objective has been reached does not mean the troops are on ground which coincides with a red line drawn on a map.

(c) When higher commanders and supporting artillery desire exact knowledge of infantry locations, they must get it themselves. They have more freedom of action and more means at their disposal than troops engaged in the front lines.

(d) Local resistance requiring immediate artillery action must be identified and fired on by the same individual. In such cases, the infantry should be able to call directly on a battery commander for assistance.

2. Speed of March.

The rate of progression in an advance is difficult to estimate beforehand. When bounds are fixed *a priori* the general result is either to halt the progress of troops who are able to advance or to set an impossible task for the others—two evils to be avoided. Consequently,

(a) Since the main purpose of prescribed halts is to give breathing spells to the infantry and to reorganize, it would appear reasonable to fix the bounds in time rather than space. The duration of each bound should be calculated on the maximum continuous effort of which the troops are capable. Of course, halting at a given moment does not preclude halting intelligently.

(b) The idea of having the artillery displace processionaly from one set line to another must be abandoned in war of movement. Instead, units must move forward very rapidly, ready at all times to support the infantry with fire.

3. Lateral Liaison.

The requirement of continuous lateral contact between advancing units has a marked dampening effect on their offensive spirit. Those who are behind can do little to regain contact, while the ones in front hold back because their flanks are uncovered. To prevent this, each unit must move ahead without regard to alignment. The ensuing risks must be accepted and met by a judicious use of reserves and by operations to effect alignment at the end of each bound. Better to accept these risks than to hold back all units because one cannot advance.

4. Rôle of the Higher Command.

Maneuver while moving forward is as difficult as maneuver under fire. Once launched in a certain direction, a unit can not be changed readily to accomplish another mission. As a result, during the progression the action of higher commanders is limited to sustaining the initial impulse and to preparing the measures required at the next halt in order to insure further advance.

5. Rôle of the Artillery.

The characteristic feature of artillery is its ability to furnish a rapid output of heavy fire. *Infantry cannot advance without artillery support nor find a substitute for it in the fire of their auxiliary weapons.* The whole attention of the infantry is, of necessity, directed toward the front. It can not be diverted toward the rear by the question of ammunition supply—a predominant factor in artillery action. In war of movement the infantryman must count more on artillery fire than on fire from his own weapons. Every effort must be bent toward developing a spirit of teamwork between the two arms.

6. Centralization and Decentralization of Artillery.

Centralization means power; decentralization, rapidity of support. For rapid advance, the infantryman must have instant and close touch with his supporting artillery. To insure this, a portion of the artillery must be decentralized from the start, the remainder being held in hand for general action. At least one battery should be detached for the immediate support of each front line infantry battalion.

7. Subordination of Decentralized Artillery.

There is no idea of placing these decentralized units under the orders of the infantry battalion commander. They are there on call to give prompt service when required, even to suggest such service if need be. On the other hand, they must not be dependent on the orders of higher artillery commanders, for they must be able to displace at will in order to fulfill their missions.

Evidently, such units will be more or less independent in their action, if any member of a team can be called independent. They will be allowed the greatest initiative as regards missions and displacements in rear of the infantry they support, and they will depend on higher units only for supply. Let them be given extra means of observation and communication, and let them push ahead!

NOTES ON WAR OF MOVEMENT

If the task proves beyond their power, they can call on the mass of the artillery for aid, acting in this case as forward liaison detachments.

II. MODERN FACTORS OF WAR

Chief among the modern factors in war are the following:

1. Sudden aggression
2. Wide fronts
3. Camouflage
4. Motors
5. Chemicals
6. Radio

Of course, certain of these have been known for a long time, but their recent development has been so marked as to create new conditions of warfare.

1. Sudden Aggression.

The decadence of international morality and the strict national discipline among certain warlike peoples combine to increase the possibilities of sudden, unannounced aggression. Explanations of motives and declarations of war are no longer needed to prepare public opinion at home. Consequently, attacks by air and by the permanent armed forces of an assailant may be expected prior to a general mobilization. If these forces succeed in breaking through the frontier defenses, they can be checked only by vigorous counter-attack in war of movement.

2. Wide Fronts.

The broad fronts of future conflicts will result both from the sudden attacks mentioned above and from the possibilities of extension offered by modern means of transport and communication. At the outset the effectives will be relatively few in number as compared with those of 1914. This condition will continue until the mobilizations and concentrations are terminated—an unpredictable period, for no one can tell just to what extent the operations of hostile air forces will disturb mobilization.

In spite of the small forces engaged at this time, the fronts of operations will remain large as each side will use its mobility to seek enveloping action, leaving wide areas very lightly defended. Whether offensive or defensive, the frontages will be much too great to offer the characteristic rigidity and impermeability of World War fronts. Their flexibility will require larger and more

mobile reserves and greater reliance on the initiative of subordinate leaders, while their permeability will demand a greater measure of self-protection for artillery and for rearward establishments of all sorts. Harassing detachments, landed from airplanes, will increase this insecurity of the rear.

3. Camouflage.

The art of camouflage has made much progress in late years. Trained troops can so conceal themselves from both air and ground observation that little can be seen of their dispositions, particularly in war of movement. Consequently, offensive movements must be undertaken very prudently. Rapidity of advance for troops must be more a matter of the speed of their reflexes than the speed of their marching. As soon as their advanced security elements are stopped, offensive forces must march in combat formations, forward elements being allowed great initiative and reserve elements being kept ready for rapid engagement. The artillery can not waste its strength against nothing, hence it must provide detached batteries to give immediate support, the mass being held in hand for later and decisive action.

4. Motors.

(a) Marches and Meeting Engagements.

The tactics of marches and meeting engagements in the past has been based on the slow pace of infantry, the few gaits of cavalry, and the early fatigue of both man and mount. These factors necessitated the old forms of advance guards, main bodies, limited bounds, contact, engagement, etc. It may be convenient to retain this vocabulary in the future, but the meaning of the terms will be different. The greater range of speeds and the tirelessness of motor transport permit rapid deployments and assemblies and distant reconnaissances which call for a complete revision of our ideas.

The tactics of combat in general will be considerably changed by the use of tanks, motorized artillery, and cross-country vehicles of all sorts. With its advantages of armor, speed, and tirelessness, the tank will be a main factor in combat. However, it has certain definite limitations: inability to operate in closely wooded country; inability to negotiate simple obstacles (ditches, streams); lack of all-round vision; vulnerability to mines and surface bombs; difficulty of concealment. As a result, tank operations may be undertaken boldly against an enemy in movement. But they must be

NOTES ON WAR OF MOVEMENT

handled with prudence against troops who have halted to defend themselves. In any case, tank offensives will require the support of artillery to overcome the distinct advantages possessed by anti-tank weapons.

A motorized force must be preceded by rapid advance security detachments and protected on all sides by combat elements sufficiently powerful to keep off enemy armored cars. It should move in two echelons, the first ready for immediate engagement and the second ready for rapid lateral movement as needed.

(b) Combat.

It is difficult to imagine a modern attack without tanks, but it is equally difficult to imagine one without infantry and artillery. In wooded areas of the zone of action only infantry can advance effectively; and, in any terrain, infantry must be present to act along with the tanks as they move forward. As to artillery, it will have not only all its old missions but the added one of acting against anti-tank weapons.

The first attack echelon will, perhaps, advance in four waves, two of tanks followed by two of infantry. The tank waves, moving by rapid and short bounds, will gain contact and open the way for the first infantry wave which will join the tanks at the end of each bound. The second infantry wave will provide fire support and clean up conquered terrain.

All troops in movement are particularly susceptible to counter-attacks by enemy tanks. They must, therefore, be prepared to meet this menace; and, as the tank itself is the best anti-tank weapon, a reserve of tanks must be kept for such work.

The tank offers two distinct advantages: it saves infantrymen and it increases the speed of progression. The latter advantage will be lost, however, unless both infantry and artillery are ready to profit by and assist the tank action. For this, infantry must be more mobile, all its auxiliary weapons, as well as its supplies, must be carried on cross-country vehicles. Certain units of the artillery must be given greater freedom of action to provide quick support, and the commanders of such units must be equipped with a low, armored, cross-country observation car furnished with instruments and radio.

5. Chemicals.

France, faithful to its treaties and to its tradition of chivalry,

THE FIELD ARTILLERY JOURNAL

is opposed to the employment of chemical warfare. But its opponents may not have the same scruples; and, during the next conflict, we may expect to find chemicals in current use. In open warfare, their action will increase the possibilities of surprise and render more difficult the exact limitation of objectives, zones of action, and rates of advance.

6. Radio.

Operations in modern open warfare can not be controlled by the old means of communication. Reliance must be placed on radio telephone, supplemented perhaps by dropped messages from planes or message projectors. In general, no codes or ciphers—*time will not permit their use*, nor will the enemy have time to profit from his interceptions.

The active development of radio telephony will enable a commander to follow closely the situation of his own forces, and it will do away with the delays and rigidity of wire lines and of the cumbersome command post system. Command posts will now be armored cross-country cars, radio equipped. Artillery-infantry liaison, in particular, will be quickened and simplified. The artillery in moving warfare can not be bogged down in the meshes of telephone wire nets.

III. GENERAL REMARKS

1. The Defensive.

In war of movement, the tactics of the weaker force will be to slow down the advancing enemy, meanwhile seeking an opportunity for swift counter-attack. The old delaying action will not suffice, with its distant demonstrations made without conviction and with the idea of withdrawal uppermost.

The only effective method will be the determined resistance of small detachments, well armed, well concealed, and well commanded, placed at vital points and distributed in depth. With their machine guns and anti-tank weapons and closely supported by artillery firing a large proportion of gas shell, they will resist to the last. Areas not covered by fire will be infected with mustard gas. Finally, frequent and bold raids by mechanized detachments will be attempted.

Such a system of defense would be particularly effective against an enemy using the old method of trying to feel out a position of resistance in order to stage a classic attack.

NOTES ON WAR OF MOVEMENT

2. Armament and Equipment.

Armament is rarely too great, but it is nearly always too complicated. In replacing obsolescent weapons, it must be remembered that replacement should mean simplification—fewer different types of arms and ammunition.

The modern soldier must be clothed and equipped like an athlete for quick movement. For instance, the light infantryman of the future will probably wear clothing of light soft wool, impervious to rain and vesicant gases; light footwear, also impervious; a light steel helmet; and a bullet-proof vest. He will carry a mask, a hand machine gun "*genre gangster*," four grenades, first aid pouch, signal panel, and canteen.

3. The Individuality of Units.

To conquer, all parts of the military machine must be in order and working together. Its effective operation, however, should result more from the polarization of individual energies than from the coordinating action of a supreme commander. The great task of a commander is to inculcate a fighting spirit among his troops, to quicken their reactions, and to develop their initiative. He must know the capabilities of his units, for they are not like pawns, interchangeable for any task. They have their individual characteristics, the product of their training, their experience, and the personality of their commanders.

* * * * *

This study has been limited to a consideration of terrestrial combat, omitting mention of the extremely important part to be played in war of movement by the air forces. Their role will depend, however, largely on the doctrine of employment of the ground troops, and it is this doctrine that first demands our attention.

ASSIGNMENT OF FIELD ARTILLERY OFFICERS TO ORGANIZATIONS (AS OF OCTOBER 1, 1935)

1ST FIELD ARTILLERY (FORT SILL, OKLA.)

Col. D. C. Cubbison

LT. COLS.:	J. A. Hoag
R. C. F. Goetz	
MAJORS:	J. A. Chase
O. E. Beezley	R. W. Beasley
E. M. Graves	R. M. Wightman
R. P. Shugg	T. C. Harry
N. J. McMahon	R. C. Snyder
CAPTAINS:	C. P. Townsley
W. Hayford, III.	M. B. Gannon
L. S. Arnold	A. S. Bennet
E. W. Searby	S. C. Lombard
W. D. Palmer	E. V. Holmes
T. E. Lewis	W. C. Lucas
S. Y. McGiffert	
FIRST LIEUTENANTS:	H. W. Wilkinson
A. E. Solem	L. C. Davis
G. B. Coverdale	J. E. Holley
D. G. Dwyre	J. F. Fiske
I. Schindler	A. R. Fitch
J. F. Ammerman	F. H. Tapping
W. F. Gallup	J. F. Greco
A. R. Hercz	

2D FIELD ARTILLERY (PANAMA CANAL DEPARTMENT)

Lt. Col. F. W. Barrows

MAJORS:	J. A. Wallace
R. H. Lewis	E. Busch
CAPTAINS:	J. C. Cook
P. J. Atkinson	K. W. Treacy
A. T. McCone	
FIRST LIEUTENANTS:	T. W. Carrithers
F. S. Gardner	F. C. Foster
M. Faulhaber	H. H. Hunt
G. W. Power	H. S. Sundt
F. W. Ellery	C. H. Gunderson
SECOND LIEUTENANTS:	D. E. Breakefield
N. C. James	

ASSIGNMENT OF FIELD ARTILLERY OFFICERS TO ORGANIZATIONS

3D FIELD ARTILLERY (FORT SHERIDAN, ILL.)

Major H. E. Maguire

MAJORS:

D. L. Ruffner

C. S. Richards

CAPTAINS:

J. P. Crehan

A. Brill

FIRST LIEUTENANTS:

S. F. Yeo

C. L. Williams, Jr.

SECOND LIEUTENANTS:

W. A. Downing, Jr.

L. R. St. John

S. E. Otto

T. S. Pollock

K. L. Davis

H. C. Platt

J. F. Surratt

R. L. Martin

L. K. Meade

R. C. Bahr

E. J. Koehler

4TH FIELD ARTILLERY (FT. BRAGG, N. C.)

Col. T. D. Osborne

MAJORS:

R. A. Gordan

L. E. Babcock

R. J. Canine

CAPTAINS:

R. J. Sothern

D. P. Harrison

M. G. Smith

J. B. Horton

A. E. Kastner

FIRST LIEUTENANTS

M. C. Walter

SECOND LIEUTENANTS:

H. J. Versace

N. M. Martin

J. F. Smoller

J. P. Pearson, Jr.

D. G. McLennan

W. S. Penn, Jr.

D. H. Heyne

D. E. Spivy, Jr.

C. B. Elliott, Jr.

5TH FIELD ARTILLERY (MADISON BARRACKS, N. Y.)

Col. R. W. Briggs

Col. H. W. Huntley

MAJORS:

W. M. Tenney

D. S. Doggett

R. A. Knight

W. B. Weston

CAPTAINS:

G. G. Heiner

R. Garey

J. T. Loomer

R. B. Whitted, Jr.

R. B. Hart

J. B. Kraft

E. O. Lee

B. L. Pearce

FIRST LIEUTENANTS:

B. W. Steinbeck, Jr.

D. F. Brown

A. H. Hogan

R. D. Black, Jr.

SECOND LIEUTENANTS:

C. Darnell, Jr.

THE FIELD ARTILLERY JOURNAL
6TH FIELD ARTILLERY (FORT HOYLE, MD.)

Col. W. P. Ennis

LT. COLS. J. M. McDowell	R. C. Batson
MAJORS: J. M. Swing C. C. Brown C. D. Parmelee	C. S. Ferrin G. P. Hays M. L. McCreary
CAPTAINS: M. H. Doty F. A. March, III. O. W. Martin R. T. Tompkins T. C. Wood B. F. Luebbermann C. F. Burbach G. R. Carpenter	R. P. Huff T. F. Hickey W. C. Huggins M. H. Burckes W. D. Paschall S. L. Cowles J. Meade F. H. Morse E. B. Gjelsteen
FIRST LIEUTENANTS: B. A. Holtzworth W. C. Bullock	R. R. Mace I. R. Schimmelpfennig
SECOND LIEUTENANTS: J. P. Craig C. H. White, Jr. J. J. Duffy	T. L. Crystal, Jr. A. B. Proctor, III. S. T. B. Johnson

7TH FIELD ARTILLERY (FT. ETHAN ALLEN, VT.)

Col. N. B. Rehkopf

Col. C. Parker	
LT. COLS. K. P. Lord	F. W. Bowley
MAJORS: H. S. Struble F. H. Boucher	D. M. Hoagland E. S. Van Benschoten W. H. McNaught
CAPTAINS: H. L. Berry I. D. Yeaton J. C. Campbell D. S. Babcock J. E. Salmon	A. E. King L. E. Jacoby W. H. Kennett W. L. Carr L. V. Chaplin
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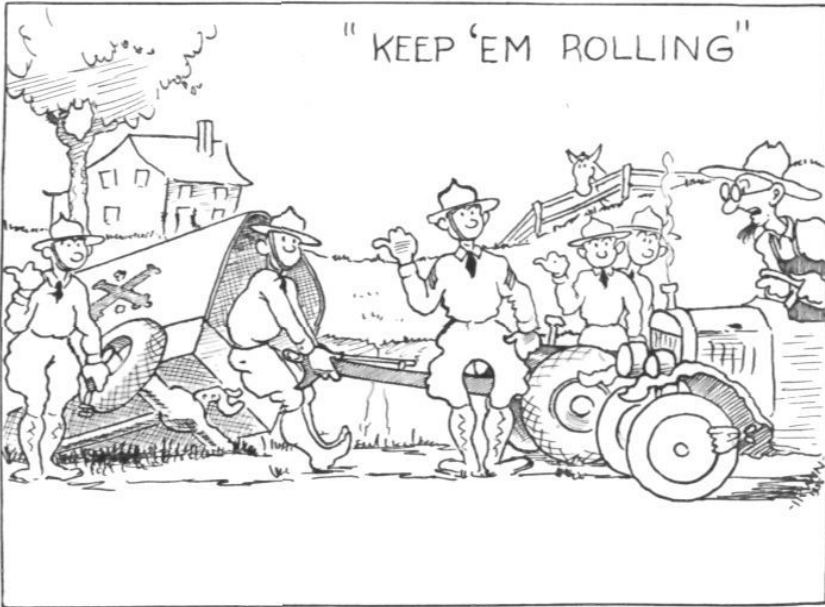
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FIELD ARTILLERY NOTES



Field Artillery Dinner

The seventh annual Field Artillery dinner for the officers and their families in and near Washington was held on Friday evening, October 11, at the Army and Navy Country Club. The club was decorated in artillery red together with autumn leaves for the occasion. General and Mrs. Birnie, assisted by Colonel and Mrs. Oliver L. Spaulding and Lieutenant J. O. Seaman, 16th Field Artillery, received the one hundred and seventy-six guests of the evening.

The place card design, reproduced above, was drawn by Major S. LeRoy Irwin.

Nine Hundred Mile Practice March

Headquarters Battery of the 1st Field Artillery is scheduled to leave the F. A. School on October 17th for a 900 mile practice march to Fort Sam Houston, Texas, and return.

The march will be via Wichita Falls, Olney, Albany, Cisco, Brownwood, Camp Brady, Fredericksburg, Camp Bullis and Fort Sam Houston. The return trip is scheduled over U. S. Highway No. 81 via Austin, Waco, Fort Worth, Bowie and Comanche, thence via Walters to Ft. Sill. It is expected to take six days to complete the march.

THE FIELD ARTILLERY JOURNAL

Contents

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

THE UNITED STATES FIELD ARTILLERY ASSOCIATION
WASHINGTON, D. C.

No. 1, January-February, 1935

CONTENTS

Brigadier General Henry W. Butner	Frontispiece
The Recent Reorganization of the Field Artillery	5
By Major T. J. J. Christian, F. A.	
Field Artillery Motor Maintenance	10
By Major J. E. Lewis, F. A.	
The 1934 Knox Trophy Battery	24
The Battle of Buzancy	28
By Colonel Conrad H. Lanza	
Sez the Stable Sergeant to the Motor Sergeant	46
Unilateral Conduct of Fire	47
By Captain Boniface Campbell, F. A.	
Artillery Strengths of the French Offensives of 1918	53
By General Fourmier, French Army A Digest by Major J. S. Wood, F. A.	
The Development Program for Artillery Design	62
By Captain C. C. Blanchard, F. A.	
United States Field Artillery Association	67
Notes on Foreign Armies	71
Motorization, Mechanization and Air Forces in the Japanese Army—Militar Wocheblatt; The Evolution of Italy's Military Forces from 1929 to 1934—Revue Militaire Francaise, July, 1934; The Initial Possibilities of the British Army for a Continental War—Revue d'Artillerie.	
Field Artillery Officers (Regular Army) Other Than Those on the Troop Duty List Published in the November-December <i>Journal</i> and Their Duties as of December 1, 1934	77
From a Private to His General	89
Problem in Forward Observation	92
Field Artillery Notes	93
Selection of Classes Command and General Staff School and Army War College; Paradise for Soldier Athletes.	
Book Reviews	95
Riding and Schooling Horses; Ulysses S. Grant; Polo Ponies; Naval Customs, Traditions and Usage.	
Military Books	96

AUTHORS ALONE ARE RESPONSIBLE FOR STATEMENTS CONTAINED IN THEIR ARTICLES

No. 2, March-April, 1935

CONTENTS

The Field Artillery Museum	Frontispiece
The Field Artillery Museum, Fort Sill, Oklahoma	101
A Boy's Appeal.....	114
The Division Howitzers and the Corps Artillery in Support of an Attack..	116
By Major George D. Wahl, F. A.	
Service Practice in the National Guard	134
By Major E. A. Zundel, F. A.	
Restitution by Tracing Paper Intersection	139
By 1st Lt. W. N. Gillmore, F. A.	
New Riding Hall at Fort Myer.....	144
Marshal Turenne and His Guns Among the Dunes.....	147
By Fletcher Pratt	
Courses at the Field Artillery School	160
The 4th Guard Field Artillery Regiment in the World War.....	163
By Capt. Thomas North, F. A.	
A Few Notes on Lubrication of Motor Vehicles	169
By 1st Lt. F. B. Porter, F. A.	
The Maintenance of Field Artillery Motorized Units and the Control of Its Motorized Supply Trains	173
By Major J. H. Wallace, F. A.	
The German Military Doctrine	181
By Colonel Rene Altmayer, French Army A Digest by Major J. S. Wood, F. A.	
Military Books	192

AUTHORS ALONE ARE RESPONSIBLE FOR STATEMENTS CONTAINED IN THEIR ARTICLES

No. 3, May-June, 1935

CONTENTS

The 155mm Howitzer M 1918 Modified for Towing by Truck..... Frontispiece (See page 286)	
Organization, Armament, Ammunition and Ammunition Expenditure of the German Field Artillery During the World War	197
By Lieut. Gen. Van Alfred Muther, Retired Translated by Captain Arnold W. Shutter, F. A.	
"——But the Greatest of These Is Charity"	212
Special Notice—U. S. Field Artillery Association Prize Essay, 1936.....	218
Roving Guns.....	219
By Lt. Col. P. De Mazenod, F. A., French Army Translated by Lt. George A. Grayeb, F. A.	
Artillery Smoke Screen	228
By Capt. L. M. McBride, C. W. S.	
Students Receive John J. Pershing Medal	234
Requirements of an Advance Guard for Support by Its Artillery	236
By Colonel Roques, French Army	
Taking the Kinks Out of S and D.....	244
By Capt. Herbert M. Hinckley, F. A. Res.	
Very Long Range Fire (Over 20,000 Meters) in the Meuse-Argonne Campaign.....	249
By Colonel Conrad H. Lanza, F. A.	
A Novel Smoke Bomb Range.....	261
By Lt. George F. A. Pearsall, 102nd F. A.	
A Riot Formation.....	266
By Lt. Col. Stewart G. Collins, F. A. N. G.	
Changing the Picture of Command and Staff Functions	271
By Colonel Ralph H. Whitney, 356th F. A.	
Type Problems	276
Army Wins Indoor Intercollegiate Polo Championship.....	278
Field Artillery Notes	280
Visit by Chief of Field Artillery; Purdue University R. O. T. C. Presents Military Carnival; Changes in Personnel in Office, Chief of Field Artillery; Field Artillery Dinner; Reconstitution of Inactive Unit; Autogyros; The Spirit of Yesteryear; 155mm Howitzer M 1918 Modified for Towing by Truck.	
Book Reviews	287
Robert E. Lee Ordeal by Fire Claudius the God	
Military Books	288

AUTHORS ALONE ARE RESPONSIBLE FOR STATEMENTS CONTAINED IN THEIR ARTICLES

No. 4, July-August, 1935

CONTENTS

Battery C, 130th Field Artillery	Frontispiece
The Liaison Problem	293
By Major John S. Wood, F. A.	
Organization, Armament, Ammunition and Ammunition Expenditures of the German Field Artillery During the World War	304
By Lieut. Gen. Van Alfred Muther, Retired Translated by Captain Arnold W. Shutter, F. A.	
Special Notice	320
Luzon Cannoneers	321
By Captain John P. Eckert, F. A.	
As to Advance Guards.....	329
By Major Harry B. Hilderbrand, Infantry	
The Development of the Field Artillery Reserve Officers' Training Corps	334
By Major Edwin P. Parker, Jr., F. A.	
Confessions of an Ex-Horseman	343
Battle Terrain Depth and Artillery	345
Field Artillery R. O. T. C. Annual Pistol Competition	356
The Mills of Neerwinden	359
By Fletcher Pratt	
The 7th Field Artillery Tours New England.....	370
The Best Radio Wavelength for the Field Artillery	373
By Lieut. G. E. Wrockloff, Jr., F. A.	
Field Artillery Notes	386
Graduates U. S. M. A. 1935, Assigned to the Field Artillery; Refresher Course at the Field Artillery School; Recent Trip of the Chief of Field Artillery; Graduates—Army War College, Naval War College—and Their Future Assignments; Graduates—The Field Artillery School—1934-35 Class.	

AUTHORS ALONE ARE RESPONSIBLE FOR STATEMENTS CONTAINED IN THEIR ARTICLES

No. 5, September-October, 1935

CONTENTS

Second Battalion, 76th Field Artillery, Unlimbering	Frontispiece
The Battle of the Meuse River	393
By Colonel Conrad H. Lanza, F. A.	
A Sermon on the "Mount"	417
By Lieut. Col. T. J. J. Christian, F. A.	
Shifts	422
By Capt. Boniface Campbell, F. A.	
Artillery and Chemical Warfare	424
By Capt. M. E. Barker, C. W. S.	
The Biweekly Inspection of Motor Vehicles	434
By 1st Lt. Maurice W. Daniel, F. A.	
Special Notice—U. S. Field Artillery Association Prize Essay, 1936	444
The Utility of Radio-Optical Waves in Radio Communication and Their Possible Future Adaption to the Communication and Fire Direction Systems of the Artillery Battalion	445
By Capt. Rex E. Chandler, F. A.	
Notes on Foreign Armies	460
Through the courtesy of Col. Robert R. McCormick, Editor, The Chicago Tribune	
Death! Then What?	463
By Capt. J. H. Doherty, Finance Department	
Field Artillery Notes	483
The U. S. Field Artillery Association; Soldier Athletics in Hawaii; Flying Flivvers.	
Military Books	484

AUTHORS ALONE ARE RESPONSIBLE FOR STATEMENTS CONTAINED IN THEIR ARTICLES

No. 6, November-December, 1935

CONTENTS

General Malin Craig, Chief of Staff	<i>Frontispiece</i>
General Malin Craig	489
The Small Group Firing Machine	491
By Capt. S. Y. McGiffert, F. A.	
Polo Activities at the Field Artillery School	504
The United States Field Artillery Association	509
A Former Cadet Reviews the R.O.T.C.	510
By Lt. S. D. Distelhorst, F. A. Res.	
Type Problem	512
Fifty Million Frenchmen Can be Wrong	513
By Capt. C. T. Lanham, Infantry	
Mud and Morale	536
By Leah Stock Helmick	
The First Army Maneuvers	540
By Col. Conrad H. Lanza, F. A.	
11th Field Artillery Wins Hawaiian Division Baseball Championship ..	566
Notes on a Regimental March, Truck-Drawn	568
By Col. Carl A. Shem, 135th F. A.	
A March on Hard Surfaced Roads	572
By Major Pierre Mallett, F. A.	
It's Hi! Hi! He! In the Horse Artillerie!	578
By Lt. Col. Ralph Hospital, F. A.	
Notes on War of Movement	582
A Digest by Lt. Col. John S. Wood, F. A.	
Assignment of Field Artillery Officers to Organizations (As of October 1, 1935)	590
Field Artillery Notes:	604
Field Artillery Dinner; Nine Hundred Mile Practice March.	
Table of Contents, Year 1935	605
Special Notice—U. S. Field Artillery Association Prize Essay, 1936	612

AUTHORS ALONE ARE RESPONSIBLE FOR STATEMENTS CONTAINED IN THEIR ARTICLES

SPECIAL NOTICE

U. S. Field Artillery Association Prize Essay, 1936

An annual prize of \$300.00 is offered by the United States Field Artillery Association for the best essay submitted by any Field Artillery officer of the Regular Army, National Guard or Reserve Corps on any subject of current interest pertaining to the Field Artillery.

The following rules will govern this competition:

(1) The award of prize to be made by a committee of three members to be nominated by the President of the Field Artillery Association voting by ballot and without knowledge of the competitors or of each other's vote.

(2) Each competitor shall send his essay to the Secretary-Treasurer of the Association in a sealed envelope marked "Prize Essay Contest." The name of the writer shall not appear on the essay, but instead thereof a motto. Accompanying the essay a separate sealed envelope will be sent to the Secretary-Treasurer, with the motto on the outside and the writer's name and motto inside. This envelope will not be opened until after the decision of the Committee.

(3) Essays must be received on or before January 1, 1936. Announcement of award will be made as soon as practicable after that date.

(4) The essay awarded the "United States Field Artillery Association Prize" will be published in the FIELD ARTILLERY JOURNAL as soon as practicable. Essays not awarded the prize may be accepted for publication in the FIELD ARTILLERY JOURNAL at the discretion of the editor and the writers of such articles shall be compensated at the established rate for articles not submitted in competition.

(5) Essays should be limited to 8,000 words, but shorter articles will receive equal consideration.

(6) All essays must be typewritten, double spaced, and submitted in triplicate.

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