

27TH YEAR OF PUBLICATION

THE FIELD ARTILLERY JOURNAL

MAY-JUNE, 1937

THE PROPOSED DIVISION PASSES IN REVIEW

—LT. COL. T. J. J. CHRISTIAN, FA

"BRIDGEHEADS OF THE MARNE"

—COLONEL CONRAD H. LANZA, FA

SAINT BARBARA OF THE BATTERIES

PUBLISHED BIMONTHLY BY

THE UNITED STATES FIELD ARTILLERY ASSOCIATION

May-June, 1937

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A Message to the Officers and Soldiers of the Field Artillery



The proposed new division will be given a test this fall in the Eighth Corps Area. In these maneuvers, as well as those in which artillery will participate during the various summer camps, it is important that we use our imaginations. Perhaps more than for any other combat arm, it is necessary that the artillery visualize the situation in terms which cannot fully be materialized in peacetime.

It is not alone that the firing be simulated, that chemical attacks be but represented, rather than sustained; and personnel reliefs, sentinel-posting, camouflage, fortification, and defense against air and ground attack be undertaken in conditions free from the threat of actual casualty; but it is important that ammunition supply be given serious attention. We should remember that the projectile is the true weapon and the only reserve of the field artillery. In simulated operations we are prone to overlook the enormous appetite of the cannon and the difficulties of supplying it with ammunition. If our trucks can deliver more ammunition in a given time than could horse-drawn trains, then there will be required more manpower to handle it; more traffic on roads and in the vicinity of positions; more time to store; and more dumps to establish.

This is but one of the features with which we must deal, but it is one which has sometimes been overlooked in the past, and, in a period of great change, one which is of considerable weight.

UPTON BIRNIE, JR.,

Major General, U. S. Army,

Chief of Field Artillery.

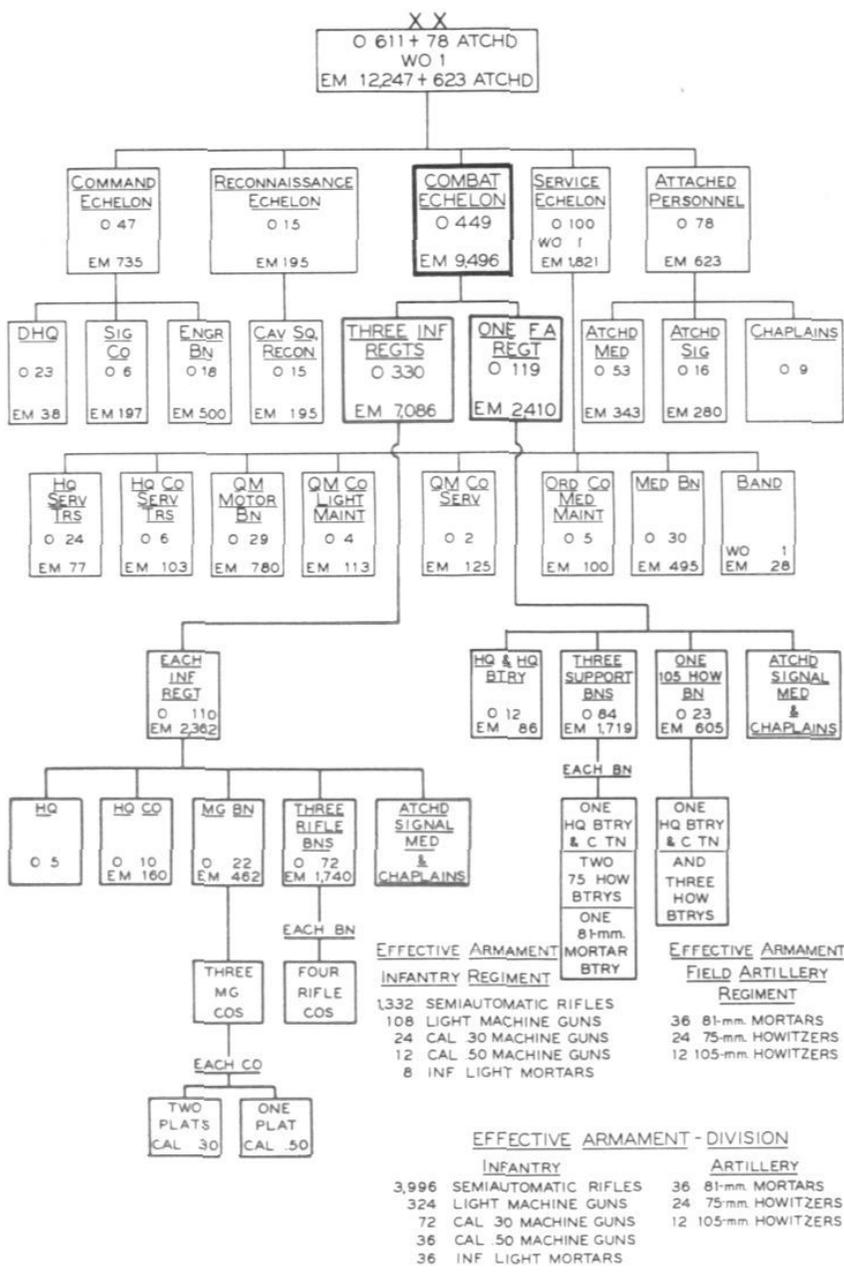


CHART OF CERTAIN ELEMENTS OF THE PROPOSED INFANTRY DIVISION

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The Proposed Division Passes in Review

BY LIEUTENANT COLONEL T. J. J. CHRISTIAN, FA

WHEN Paul, the Apostle, first epistled the Thessalonians to "Prove all things, hold fast to that which is good (Thessalonians, Book II, Chap. 1, par. 21, dated AD 54) he penned a perfect directive for the test of "the proposed division and higher units."

Verily, in the topsy-turvy world drift of the present era, might not the truth of this simple verse find timely application in any field of human activity—be it military, social, economic, or political?

Perhaps this conservative biblical text is more modernly expressed by the sage who said: "When it is not necessary to change, it is necessary not to change." A static organization stagnates into obsolescence and becomes outmoded; we must have change for progress, but change in itself does not necessarily signify progress. Basic faults in any system demand correction, and outmoded methods and organization should, of course, be changed. It is conservative but sound, however, to base such changes upon simplicity, thorough logical analysis, and proven practical experience, rather than upon drastic departures towards untried and theoretical ideas.

We have lately witnessed a state of flux in organization to such extent that the word has become almost synonymous with reorganization. During this status of fluidity, it has been said that "there is

nothing permanent but change." We must have "open minds" for "open warfare" and "stabilized" minds harden the intellectual arteries.

The accentuated modern need for mental flexibility is not discounted, for the tempo of evolution has been stepped up by comparatively lightning changes. These conservative and liberal schools of thought remind one of the difference between the fundamentalist and the modernist; the only difference is that the modernist says "there ain't no hell," while the fundamentalist says "the hell there ain't."

Military history records the slow and almost imperceptible evolution of the long-bow, the war chariot, the blunderbuss, the wheeled cannon, the modern era of the magazine rifle, recoil mechanisms, smokeless powder, the machine gun, the airplane, toxic gas, motorization, and mechanization. The only elements that have not changed in the marches of martial time are man himself, and the immutable principles of war; and yet, it has been truly said that each succeeding war has always been fought with the weapons of the preceding war. In the past, it has seemed that the necessity of actual emergency has been the only forge which could weld in the white heat of war new and improved weapons into definite form and usage. Neglect (or inertia) during intervening

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years of peace, to keep abreast or ahead of modernized military progress, often has kept nations, at the outset of hostilities, just *one war behind* in modernized organization, armament, and training.

It seems an ageless span between the era of the modernized seventy-five to the dim epoch when the youthful David first practiced fire direction (and conduct of fire) by "bringing to bear (with pebble and sling) at the proper time and place" a destructive fire upon the target—and smote, with range and deflection correct, his giant enemy, Goliath.

But in two decades intervening between the World War and the present, the accelerated evolution of modern trends has almost reduced the battalions of 1914 to a state of obsolescence.

Very few new weapons have been introduced to disrupt or exploit the early operations of a future war, but the improved present means and methods have outstripped those of the near past as to compare in transportation the automobile with the stage coach. And so, perhaps, many nations have now learned the lesson of military history to keep one jump ahead by peacetime modernization, and forward-looking plans to keep abreast with the rapid changes in armament, equipment, training, and organization of the present and future trends.

A resumé of recent organizational changes in the Field Artillery may lend concrete and up-to-date emphasis to these random reflections.

During the past several years, important and frequent changes have occurred in the organization of the Field Artillery arm. The complete reorganization and extension of motorization in 1934 is past history.

This reorganization added many new active units, increased the number of motorized firing batteries by 18 percent, and afforded a more effective framework

for mobilization expansion. In some respects, this expansion of active units and redistribution of personnel resembled the parable of the loaves and fishes except there were no basketfuls left over), as it was accomplished with a scant increase of grades and ratings, at a nominal cost, and with the physical transfer, except at the flagpole, of only several hundred enlisted men.

These changes, or overhauling of the Field Artillery, were followed closely in 1935 by the enlisted increase of the Army, whereby the Field Artillery was expanded in the 7th grade approximately 50 percent of the then existing total strength. The following year a generous increase in vitally required grades and ratings was authorized. The need for additional active field artillery units still existed, and is now considered to exist for a balanced force. During this transitory period of rapid changes in personnel, armament, and equipment, new tentative or special tables of organization, to keep stride with new conditions, were apt to become obsolescent before they were prepared, processed, and the printer's ink given time to dry.

In the offing were the Service-wide studies on the Modernization of the Division and higher units, and the Supply System for the field forces. This modernization program presaged a reorganization from the cellar to the ceiling of the present organizational structure.

Parenthetically, it may be of interest to add that new special tables have been and are now issuing for every type of field artillery unit. These tables are expected to stabilize and coordinate present peacetime organizations of similar-type units in the interim awaiting further changes in organization of the Army. For the first time, these new tables of organization closely approximate actual personnel strengths in grades and

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ratings; and, though peace tables, they are believed to reflect adequate means for essential combat strengths, with the exception of commissioned personnel and combat trains. If one is seeking a course of training in infinite minutiae, or patience in detail, preparation of a Table of Organization, or, for that matter, a Table of Basic Allowances, is highly recommended.

And now we arrive, at long last, to the magnum opus of reorganization—The Proposed Division.

During the past two years, much fuel has been added to the flame of the burning questions concerning the reorganization of the division and higher units, and the modernization of the supply system of the field forces. In probably no other field of thought has there been so much conjecture, wide discussion, comprehensive and constructive study, and lively differences of opinion, as upon the timely and vital subject of modernization of the organization of the Army.

It is natural to expect that this cross-section of opinion regarding the reorganization of the division should hold divergent views and many varied solutions; no doubt this is a healthy situation of pros and cons, as two or more heads are better than one, and both the advantages and disadvantages of numerous factors must be weighed exhaustively in order to reach thoroughly thought-out decisions.

Chapters could be written on this intensely interesting topic, and, indeed, volumes of studies and recommendations from many sources have been presented. By no means has the least discussion and debate revolved around the field artillery component of the proposed division.

There are certain fundamental factors of major interest for which, for the sake of clarity and brevity, reference will be made to the accompanying graphical

comparison of the salient features between the present and the proposed divisions.

The first item (Item I) relates to strengths. It is generally agreed that one of the faults of our present division is that it is too bulky and too unwieldy to be highly mobile and easily manageable in a warfare of movement.

Upon the conclusion of the World War, General Pershing recommended a smaller, lighter division, organized upon the triangular system, for increased maneuverability in open warfare.

The proposed division represents a reduction in total strengths of approximately 41 percent; in infantry strength of approximately 44 percent; in artillery strength of approximately 56 percent; while the strengths of the service troops of the present and proposed divisions do not differ in comparison by so wide a margin. The latter is noteworthy, as relatively the strength of the service troops—which are nearly one third of the infantry strength and approximately the strength of the field artillery component in the proposed division—have not been decreased to correspond with the reductions in the strengths of the two principal combat arms.

Undoubtedly, the reasons for the above may be found, in general, to be based upon the policy of providing, organically, only the most essential "housekeeping" equipment and transport within combat units, and transferring field trains to the service train. What has been done in the proposed division is to consolidate service activities and call them service troops. It may be considered that certain services are performed in both the present and proposed divisions, but in the present division some of the troops performing them are artillery and infantry, whereas in the proposed division they are all service troops.

With this revised conception of service

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troops, we find, in the proposed division, a policy of relegating contingent means to rear and higher echelons, a more centralized system of pooling, and a literal adherence to functional divisions of responsibility and control among the arms and services. The latter policy is of particular interest to the artillery, as relates to personnel for the proposed functions of ammunition supply and signal communication. In effect, the elimination of the brigade ammunition train, and the transfer and control of this unit's operation to service troops, together with the insertion of an attached signal platoon in the regimental headquarters battery constitutes, respectively, a change of hat cords from Field Artillery personnel to that of the Quartermaster Corps—technically supervised by the Ordnance Department—and to the Signal Corps.

In regard to the ammunition-supply system, it is proposed that there should be one ammunition-supply system for all types of ammunition used in the division. It is further proposed that the system, as far as practicable, should be based upon the refill principle, which means that a division should carry in its service trains, as a reserve for its units, such quantities of ammunition as may be required to reload completely the combat trains in the division. This significant departure eliminates the present brigade ammunition train as such.

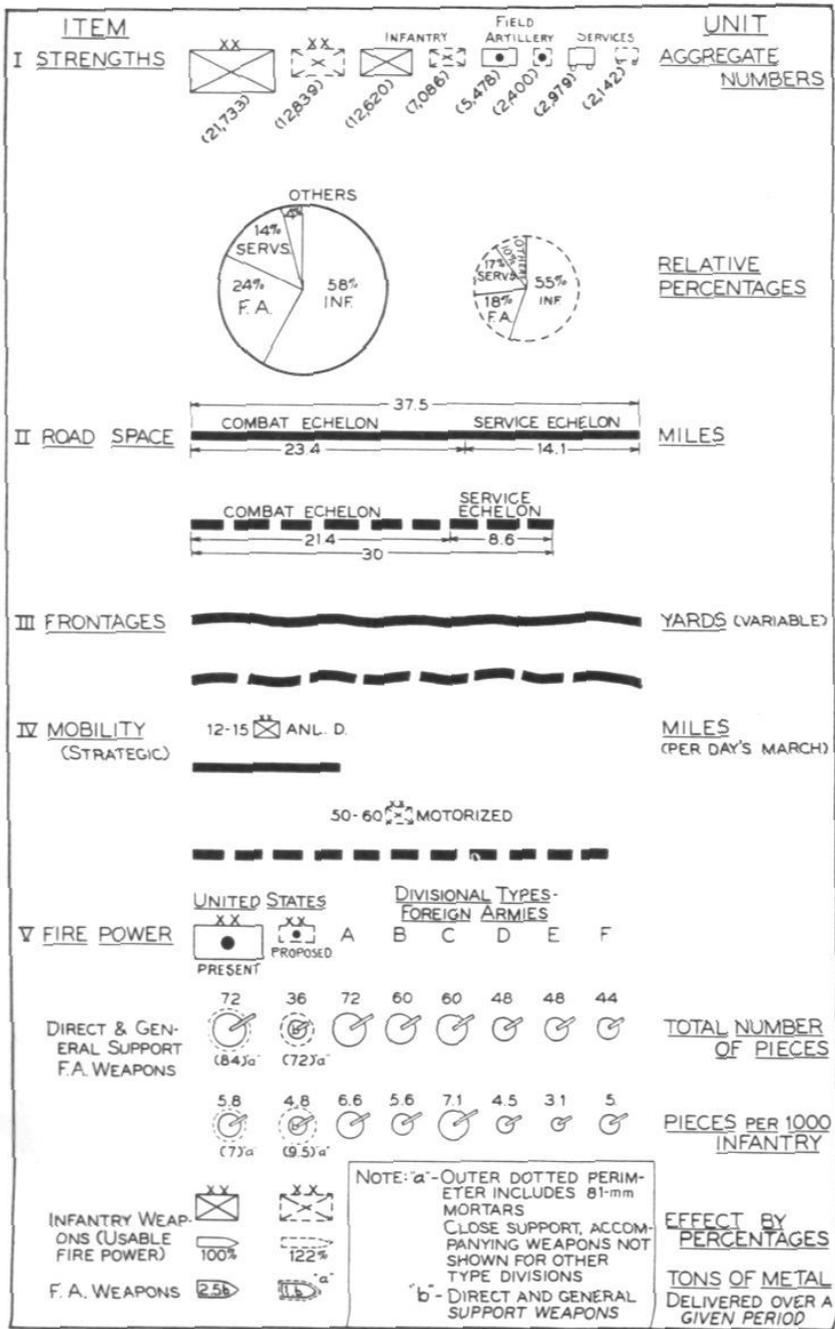
The other feature of personnel functions relates to the important question of signal communication. The proposed division provides for the substitution of signal-corps personnel for part of the artillery personnel in the artillery communication net. It is proposed that a signal-corps detachment should be responsible for communication at regimental headquarters and for lines to the field artillery battalions, but not for communication within the battalions.

Tentative tables of organization for the proposed division provide for a signal-corps detachment of one officer and 41 men attached to the regimental headquarters battery, but not for message-center personnel nor telephone operators at regimental headquarters. The latter are provided by field artillery personnel.

Whatever may be the conflicting views on these controversial changes whether the functions of ammunition supply and signal communication represent atoms in the molecule of field artillery combat—this deponent sayeth not, as it is not considered prudent to venture any comments either for or against these particular proposals. The purpose of this article is to present an unbiased, informative analysis of some of the salient features of this vitally important subject of reorganization. In this modest attempt, the writer refrains from expressing any opinions which might be construed as critical of an organization which has been approved for test. Prejudices or preconceived convictions in advance, favoring the beliefs of any arm or service, are not considered conducive to a fair and open test of the proposed reorganization.

With new developments in weapons and equipment, military thought goes through a cycle of debate as to their proper place in organization; yet, all such clouded questions along functional lines have been progressively clarified by a cardinal principle—analysis of the characteristics and mission of the arm, followed by endowment of the arm with the means to the end. This appears to be the sound policy for fixing unit responsibility and preserving principles of command.

The next three features listed on the diagram are most important factors in the consideration of a proposed division, but happily, they are not such controversial subjects.



GRAPHICAL COMPARISON OF SALIENT FEATURES, PRESENT (SOLID LINES) AND PROPOSED (BROKEN LINES) DIVISIONS, WAR STRENGTH.

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Briefly, considering each in turn, the item of Road Space may present at first glance an erroneous impression. It appears that the road space of the new division, notwithstanding its great reduction in strength and decided increase in mobility, has not been materially reduced over that of the normal division. The Item IV factor of Mobility immediately enters into this equation. On account of the "high speeding" of the day's march afforded by motorized columns, what is familiarly termed "road space" for the present slow-motion division is, in reality, "time length" for the proposed division.

The most interesting point of logistics here involved, is that the time required for the motorized division to pass a point (its time length), remains constant, for all practical purposes, at any rates of speed over about five miles per hour. This statement is obvious when it is considered that the greater speed largely offsets the required increased distance between vehicles. Therefore, in planning march tables for the proposed division, time length and not road space will always be the main concern when the rate of march exceeds that of the present division.

The next factor is that of Item III, Frontages. This third feature is related to Item V, infantry firepower. On account of the increase of usable firepower in the proposed division, and notwithstanding the drastic reduction in infantry strength, the assumption is that the front occupied by the new division will be no less than, and will approximate that of, the present division. The inclusion of four rifle companies in the proposed infantry battalions, or one more than normal, also seems to confirm this assumption as a conservative one. In the event that such an assumption is proven by actual test as approximately correct, then it follows as logical that the artillery firepower, based upon the division front to support, should

be no less in the proposed division than in the present division. While frontages, and the number of guns per 1,000 infantry offer general yardsticks, the weight of artillery metal that can be delivered, which measures the square yards of hostile areas effectively covered, seems to afford a more conclusive criterion of determining the number and calibers of artillery pieces. In the organization of the proposed infantry-artillery team, the organization, strength, and armament of the infantry component must, necessarily, exercise a decisive and controlling influence on the organization and armament of its associated artillery component.

Item IV concerns the very important factor of mobility. It is noted that the proposed division, whose elements are completely motorized, with the exception of rifle companies, has been geared up to a fourfold differential. By utilizing reserve vehicles of the Motor Battalion, and the organic transport of the proposed division by a system of shuttling, it is believed the whole division can be moved on its own wheels a distance of about fifty miles in one day.

The distinction must be clearly drawn between strategic mobility, involving motor speed on highways, and tactical movement, involving operative mobility in the combat zone.

When it is considered that the tentative tables of organization set up for the proposed division indicate a grand total of 1,875 organic motor vehicles, one can reflect that the time length of the combined combat and service echelons will be appreciable even in strategic movements on the open road. In contradistinction to the highway speed, the tactical, operative mobility within the combat zone is easy to discern when one recalls any trip by automobile to a big football game over the weekend. We may roll along at a speed of forty plus

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until the vicinity of the stadium is reached, and that is strategic mobility; but in that battle zone of traffic jams, police whistles, and hectic halts, it is far quicker, both coming or going, to park at a reasonable distance—if one can and walk to the game! And that is tactical mobility.

It must be remembered that most offensives in the World War were stopped because they could not go two miles or less per hour, and not because they could not go twenty miles or more per hour. However, if the tactical mobility can be maintained, as heretofore, the advent of motorization has added immeasurable advantages in strategic mobility. Herein lies the greatest advantage in the proposed division—mobility, the principle of war which is so conducive to initiative and to surprise.

The introduction of motorization may well prove as revolutionary in the art of tactics as the invention of gunpowder, and perhaps the pendulum of movement for future warfare will swing back in its cycle past the World War, and find its lessons in the fast changes of direction, movement, and surprise, in the open warfare of the Civil War.

The law of physics, MV^2 , applies in the age-old striving to increase simultaneously those two most vital elements of combat—mobility and firepower. Unfortunately, these factors are inversely proportional, so that one is generally increased at the expense of the other. The main objective of the proposed division is to increase mobility and concurrently to add striking power—in short, to produce a more effective fighting machine. The V^2 can readily be raised, yet the Mass, or requisite firepower, must possess sufficient weight in the hammer to sustain the accelerated blow.

Despite the speed of motor columns, which completely revises the slow-motion conception of time-and-space factors, it is well to reflect that battles

will still be won by fire and movement; and, in the final analysis, freedom of maneuver, and *certainty* of movement on the battlefield, will be dependent, as heretofore, upon firepower.

We now arrive at the Item V and last consideration: Firepower.

This problem is approached with particular attention to the firepower of the proposed field artillery weapons. It is apparent that in comparison to the increase of usable infantry firepower, that of the field artillery has not been relatively increased. In increasing the divisional firepower, a sharp differentiation should be made between infantry and field artillery firepower as affecting respective strengths. The infantry is able to present the paradox of reorganizing with greatly reduced strength in its component, and simultaneously increasing its firepower by an increase in the number and types of semiautomatic weapons and machine guns; the field artillery has no similar method of increasing the rate of fire of its cannon, for a substantial increase of field artillery firepower requires, for effective service, the addition of more guns, more ammunition, and more men. No doubt the vastly increased firepower of modernized armies will require corresponding increases in neutralizing artillery firepower, yet the infantry—field artillery firepowers are distinct within their own spheres on account of the differences in respective targets.

War experience shows that infantry losses have been inversely proportional to the artillery ammunition fired in the infantry's support, and the number of guns per 1,000 infantry has progressively increased with each succeeding war, as have the casualties caused by field artillery weapons. In attempting to test, in the absence of enemy opposition, the adequacy of firepower of the field artillery component, a determining

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factor should include evaluation of the artillery armaments with which it might have to duel. Other things being comparable, that division which is inferior in artillery armament will be no match for its opponent.

An analysis of the total number of direct and general supporting pieces and the number of such pieces per 1,000 infantry in the divisional field artillery of six major powers is shown under Item V. Several definite trends are discernible in the field artillery armament of modern armies; namely, a decided tendency towards motorization, inclusion of heavier calibers, substitution of howitzers for guns in the division, and development in two zones: First, hostile rear areas, where larger calibers of great destructive effect are to be used; and second, that short "twilight zone" immediately in front of the infantry, where hostile machine guns are to be encountered, and where instant fire is desired. A quantitative comparison of armament as shown on a chart is apt to be misleading, unless a qualitative comparison as to calibers also is considered. This consideration presents the question of types of calibers proposed in the field artillery component, and the qualitative effectiveness of the 75-mm. howitzer and 105-mm. howitzer as compared to the 75-mm. gun-howitzer (M-2) and the 155-mm. howitzer, respectively.

Without doubt, advocates of the 75-mm. and 105-mm. howitzer as organic field artillery armament of the proposed division consider the main advantage of superior tactical mobility and closer support with curved-fire cannon, while proponents of the modernized 75-mm. gun and the 155-mm. howitzer hold the view that *qualitatively* these weapons are superior in range and effectiveness, and that they possess a degree of mobility comparable to that of the division itself. The fact must be recognized that the modernized 75-mm. gun is also a

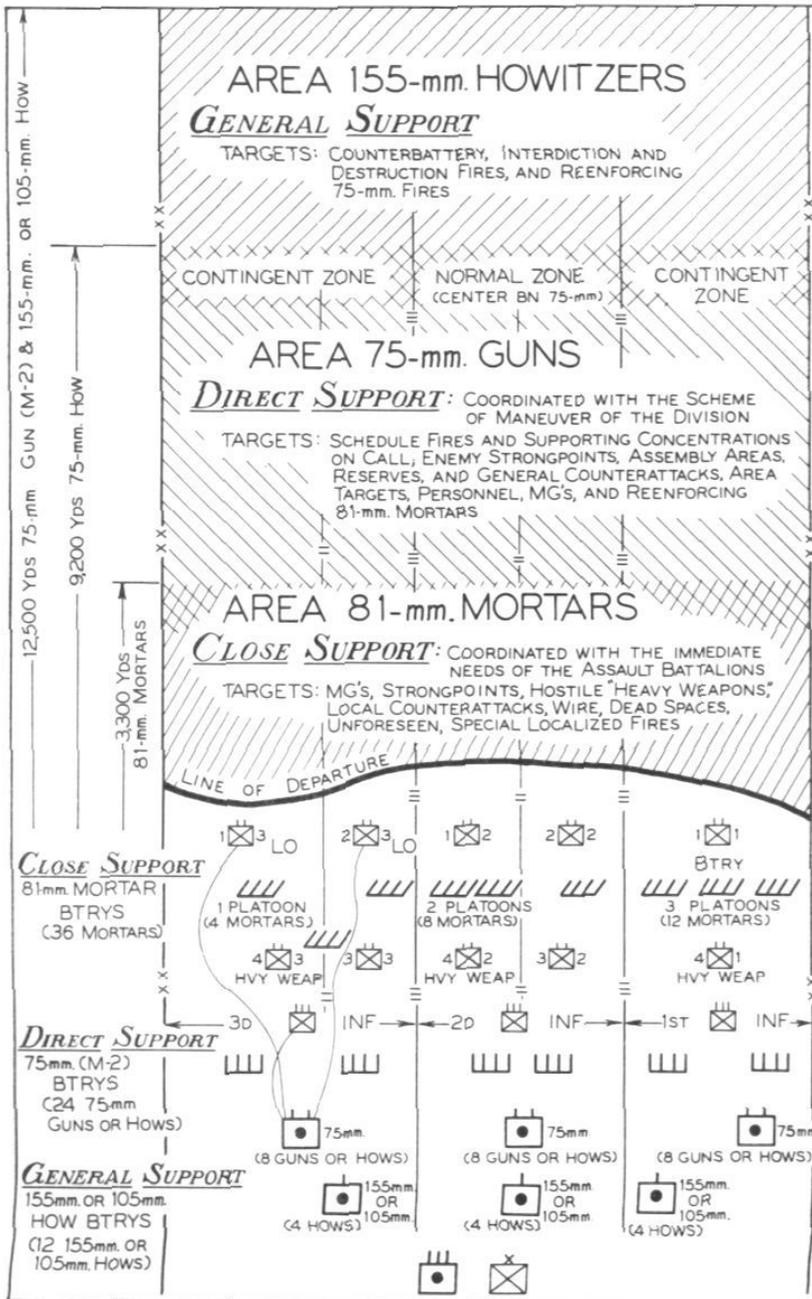
howitzer. It is further felt that, from the standpoint of availability and costs, the replacement of the 75-mm. gun and the 155-mm. howitzer is unjustified.

Upon the basis of quantitative comparison, the organization of each support battalion with two instead of three light batteries for direct support may be considered to provide inadequate supporting firepower. The comparison shown does not appear in such unfavorable light when the thirty-six 81-mm. mortars are included in the category of direct-support armament. On account of the great differences in range and tactical employment, logical comparison of the 81-mm. mortar and 75-mm. gun or howitzer is difficult. It is noted, however, that a comparison is also shown under Item V of the chart to include not only direct-, and general-support field artillery weapons, but 81-mm. mortars in the present and proposed divisions. The rôle of the 81-mm. mortar as close-support accompanying artillery will probably prove a paramount issue. This problem has involved much thought and discussion and will be pressing for a sound solution in the field tests.

In commenting upon the pros and cons of this interesting topic, and possible methods of employment of the 81-mm. mortar batteries, reference is made to the accompanying chart.

It is noted that the line of demarcation is drawn distinctly between the three categories of close-, direct-, and general-support artillery. The respective missions, target areas, and relative positions are indicated on the schematic tactical set-up.

It is considered that diversion from planned fires will find its most justifiable application when it contributes to the effectiveness of the action of the infantry as a whole, and the needs of the infantry battalions to overcome local resistance on their own immediate fronts, which are unquestionably recognized



TACTICAL SET-UP
 ILLUSTRATING ROLE OF 81-MM. MORTAR FOR CLOSE SUPPORT. SCHEMATIC DIAGRAM
 SHOWING ARTILLERY SUPPORT OF THREE INFANTRY REGIMENTS IN ATTACK.

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as pressing, are best met by accompanying artillery. In such circumstances, the unforeseen, special, and localized fires are effected by the infantry—artillery liaison on the spot, where artillery communication is simple.

A psychological factor is introduced with this advanced echelon of 81-mm. mortar batteries; one-half of the number of artillery pieces in the proposed division are up where the fighting is, so that this forward artillery is not only supporting the attack, but is attacking in close trace with the infantry assault battalions. As to the question of which arm, the infantry or the artillery, should man this highly efficient weapon, the answer would seem to depend on a clear-cut determination as to which arm is to be responsible for this close-in, quick-fire, support mission. If it is to continue to be an artillery mission, it is logical that the artillery should have the weapon. On the other hand, if the infantry is to have the weapon, it follows that the artillery should be relieved of the mission. It does not seem economical employment nor sound organization for both combat arms to have the same type of weapon for the same mission.

The accompanying chart shows, in the three infantry regimental sectors, three different combinations of employing the three platoons of four 81-mm. mortars each, in the three front-line mortar batteries.

As in the 1st Infantry zone, the 81-mm. battery, which forms an organic element of the light artillery battalion in direct support, might be held together under central control and employed in the fire-direction scheme of the battalion. In defense and in preparation for an attack, it might be so used to better advantage than by a plan to attach one platoon to each infantry zone.

Perhaps it will be more normal employment in the role of accompanying artillery so to attach these batteries and

platoons to infantry regiments and battalions. It would seem that any unnecessary delays in calls for fire would defeat the main purpose of these batteries, so that the responses would normally be direct from the infantry unit to the 81-mm. battery or platoon.

Such decentralization of employment suggests habitual attachment rather than direct-support employment. The question arises as to whether the 81-mm. battery would be attached to the 4th (heavy weapons) battalion of the infantry. It might conceivably be so attached and placed in direct support of the attacking battalions, thus keeping the platoon fires in the hands of the battery commander.

Another method of extreme coordination and centralized control suggests itself where the battery commander, in direct support of the regiment, would control the fires of his three platoons through a fire-direction center. This would appear to be a doubtful procedure. Also, the battery could be split into platoons and each assigned in direct support of assault battalions.

There are other possible combinations of attachment or direct support. The platoons of one or more batteries could be attached to the infantry regiments, and the remaining mortar batteries held in direct support of the main effort. On account of the limited range of the mortar within its normal infantry zone, flexibility of fire to cover contingent zones appears a doubtful task. Despite the fact that the expression "according to the situation" has been worn threadbare, it would seem that the method of employment of the mortar batteries will depend upon their most effective use in the particular situation. Therefore, it may be found erroneous to anticipate their habitual and rigid role as either "attached" or in "direct support." They

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should be handled flexibly so as best to carry out the special missions occurring at the time in the different phases of action. In the final analysis, the tactical employment is resolved from the missions.

The basic reason for providing these close-support units is to furnish instant action and to fill a gap of accompanying artillery fire which has long existed. It would seem to follow that in most situations the operation of these "front-line platoons" as a sort of three-battery battalion in direct support of regimental fronts would tend to defeat their *raison d'être*. The opinion is ventured, therefore, that the 81-mm. units will be employed usually, but not always, as platoons attached to assault battalions, and that their fires will be locally requested and informally obtained on targets of opportunity.

The responsibility of 81-mm. ammunition supply, charged to the light battalion combat train, obviously presents many difficulties to the normal replenishment of the 75-mm. batteries. Without question the greatest obstacles will be found in the last mile forward. Will ammunition carriers manhandle these loads up to the front-line positions? What communication will be required for the 81-mm. battery, SCR 194 radio sets to the battalions, and light wire as an intrabattery communication net to platoons, or simply runners? These and many other questions of employment arise for solution by practical test. One can tell what the house really looks like after it is built, but it is most difficult to prevision the projected structure from architectural blueprints.

In the consideration of the Corps and Army units, when composed of divisions of the type approved for test, it seems manifest that the principle be accepted as

a fundamental concept that the increased dependence of the proposed division, divested of many supporting troops and auxiliaries, places normal reliance upon higher echelons—particularly upon the Corps.

It must be clearly recognized that the proposed division will normally require reinforcing means from higher echelons for sustained combat. In applying the principle of compensation as regards artillery, it would seem logical that the *total power* of the artillery of a reorganized Corps should be *not less* than is now provided in a normal-type Corps. On account of their more close association and integration with the type divisions proposed for test, the reorganization of the "higher units" would seem to demand a parallel or symmetrical organization—particularly of the Corps—with the division organization so as to lend itself easily to reinforcing the organic weapons and troops of its divisions.

The proposed division is the keystone of the organizational arch. Its important field test next fall should establish the point of origin or foundation for the organization of higher units. In the meantime, the remark of an enthusiastic femme at a West Point hop is recalled. She exclaimed to her cadet O. A. O.: "Oh, I just love the Army; by the way, where is *it* now?" We know where it is at the moment, and we can speculate with keen interest as to whither it is bound. The Army appears to be definitely "on the way" towards a more modernized and effective fighting machine.

In reaching that goal directly, detours may be avoided at the crossroads by checking with an occasional backsight, and heeding the signpost which cautions: "Prove all things; hold fast to that which is good."



Santa Barbara.

Saint Barbara of the Batteries

Editorial Note. For several years a picture of Saint Barbara, with the inscription, "Patron Saint of Artillery," has appeared on the inside front cover of THE FIELD ARTILLERY JOURNAL. Some of our readers have written, asking, "Who was Saint Barbara? How does she happen to be the patron saint of artillery?" This article is an attempt to answer these questions. The JOURNAL is indebted to Miss Christine Gwynn, Miss Marion Burleigh, and Miss Mary M. Winter, students at Georgetown Visitation Convent, D. C., for much of the material included herein, which they have so kindly placed at its disposal.

SANTA BARBARA does not appear in the official martyrology of the Catholic Church, whose Encyclopedia, listing a considerable bibliography with respect to the question, nevertheless records that veneration for the saint has existed since the Seventh Century (and some authorities say, since the Third).

Her story, as taken from "Sacred and Legendary Art"—Jameson:* "There was a certain man named Dioscurus, who dwelt in Heliopolis; noble, and of great possessions; and he had an only daughter, named Barbara, whom he loved exceedingly. Fearful lest, from her singular beauty, she should be demanded in marriage and taken from him, he shut her up in a very high tower, and kept her secluded from the eyes of men. The virtuous Barbara, in her solitude, gave herself up to study and meditation; from the summit of her tower she contemplated

the stars of heaven and their courses; and the result of her reflections was, that the idols of wood and stone worshipped by her parents could not be really gods,—could not have created the wonders on which she meditated night and day. So she contemned in her heart these false gods; but as yet she knew not the true faith.

"Now, in the loneliness of her tower, the fame reached her of a certain sage who had demonstrated the vanity of idolatry, and who taught a new and holy religion. This was no other than the famous doctor and teacher, Origen, who dwelt in the city of Alexandria. St. Barbara longed beyond measure to know more of his teaching. She therefore wrote to him secretly, and sent her letter by a sure messenger, who, arriving at Alexandria, found Origen in the house of the Empress Mammea, occupied in expounding the Gospel. Origen, on reading the letter of St. Barbara, rejoiced greatly; he wrote to her with his own hand, and sent to her one of his disciples, disguised as a physician, who perfected her conversion, and she received baptism from his hands.

"Her father, Dioscurus, who was violently opposed to the Christians, was at this time absent; but previous to his departure he had sent skilful architects to construct within the tower a bath-chamber of wonderful splendor. One day St. Barbara descended from her turret to view the progress of the workmen; and seeing that they had constructed two windows, commanded them to insert a third. They hesitated to obey her, saying, 'We are afraid to depart from the orders we have received.' But she answered, 'Do as I

*This account appeared in THE FIELD ARTILLERY JOURNAL, for November-December, 1920.

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command; ye shall be held guiltless.' When her father returned he was displeased; and he said to his daughter, 'Why hast thou done this thing, and inserted three windows instead of two?' and she answered, 'Know, my father, that through three windows doth the soul receive light—the Father, the Son, and the Holy Ghost; and the Three are One.'

"Then her father, being enraged, drew his sword to kill her, and she fled from him to the summit of the tower, and he pursued her; but by angels she was wrapt from his view, and carried to a distance. A shepherd betrayed her by pointing silently to the place of her concealment; and her father dragged her thence by the hair, and beat her, and shut her up in a dungeon; all the love he formerly felt for his daughter being changed into unrelenting fury and his indignation when he found she was a Christian. He denounced her to the Proconsul Marcian, who was a cruel persecutor of the Christians. The Proconsul, after vainly endeavoring to persuade her to sacrifice to his false gods, ordered her to be scourged and tortured horribly; but St. Barbara only prayed for courage to endure what was inflicted, rejoicing to suffer for Christ's sake. Her father, seeing no hope of her yielding, carried her to a certain mountain near the city, drew his sword, and cut off her head with his own hands; but as he descended the mountain, there came on a most fearful tempest, with thunder and lightning, and fire fell upon this cruel father and consumed him utterly, so that not a vestige of him remained."

Other accounts of Santa Barbara differ only in slight detail from this story. Collected from many sources, they are in substantial agreement. The date attributed to this occurrence is December 4, 303 A. D.

The legend of Saint Barbara has been the inspiration of the great masters of the brush and pallet for centuries. The painting most familiar is that by Palma Vecchio, reproduced herewith. Encomiums without number have been bestowed upon this, his unquestioned masterpiece. It is the design of the central panel over the altar of St. Barbara in the Church of Santa Maria Formosa in Venice, Italy. This was done in the 15th Century at the request of the Venetian Bombardieri, or artillerists. The model is supposed to be the beautiful Violante, Palma's daughter, and the first love of the artist Titian, who also used her as a model.

It is not generally known that in Raphael's Sistine Madonna, a picture familiar to nearly everyone, the kneeling figure on the Madonna's left, is that of St. Barbara. The other kneeling figure is that of St. Sixtus.

The names of the artists who portrayed her are legion. Among the most celebrated, in addition to Palma and Raphael, are: Van Eyck (Museum at Rouen), Luini (fresco group in the Brera), Domenicho, Ghirlandajo (Berlin Gallery), Holbein (Munich Gallery), Matteo de Siena, Cosimo Roselli, Michael Coxis, Van Der Goes, Pinturicchio (Vatican Gallery), Rubens (Dulwich Gallery), Pietro Rosa, Brusasorci (Church of St. Barbara at Mantua), and Mazzuoli (Church of St. Barbara at Ferrara).

Her history was frequently worked into the intricate designs of knightly armor, particularly in the case of a celebrated piece of the armorer's art, now in the Tower of London, which the Emperor of Austria sent to Henry the Eighth of England, in 1509, as a present.

In art she generally is represented by the tower, cannon at her feet, and with either a feather or a palm in her

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THE SISTINE MADONNA. BY RAFAEL, THE KNEELING FIGURE AT THE READER'S RIGHT IS SAINT BARBARA.

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hand, the legend being to the effect that when she was scourged by her father for her obstinacy, the scourge was turned into a harmless weapon by divine intervention. Sometimes she holds the sacramental chalice.

Devotion to Saint Barbara by artillerymen, and soldiers in imminent danger of death, has existed for centuries in nearly all the European countries, particularly in Italy, France (as St. Barbe), and Germany. Her name is invoked in the rites of the Russian Orthodox Church. Hollweck mentions honors accorded her in Brazil, Bolivia, and Ecuador, and that relics said to be hers were transferred by the Emperor Justin to Constantinople; from there to Venice; in 1009 A. D. to Torcelli, near Venice; and from there to their present resting place at Buriano, Italy.

Of the original of our picture Adolph Philippi wrote, speaking of Palma the Elder in "Die Kunst Der Renaissance in Italien." that: "Only once did he rise to a great, an almost monumental style, and that was when he painted for the Venetian artillerists the altar-piece for their chapel . . . with St. Barbara . . . upon the central panel—a figure so truly grand that it is worthy to rank with the finest ideal creations of Italian painting."

The Mission of Santa Barbara, California, around which a large city has grown, was founded on her feast day, December 4th, by the Franciscan monk, Lasuen. This mission escaped destruction and survived many dangers, including the Indian revolt of 1824. It is said that the French retain the name. "Saint Barbe" for the powder magazines of their modern men-of-war.

Saint Barbara's Day has been observed frequently of late years in our own field artillery. A story in THE FIELD ARTILLERY JOURNAL of 1934 treats of a dinner given

on the day and year at the University Club, Boston, at which Colonel Richard C. Burlison, FA, was toastmaster, and Colonel Emmanuel Lombard, then and now the French Military Attache, and a distinguished field artilleryman, was the principal speaker. This celebration was under the auspices of the Field Artillery Reserve Officers of the First Corps Area.

In the January-February, 1921, FIELD ARTILLERY JOURNAL, the then Major Joseph Mills Hanson, FA-Res, made out a very able case for the substitution of St. Jeanne d'Arc as patron saint of artillery, and quoted extensively from the records to show that she was one of the first artillery commanders, locating her pieces at the Siege of Orleans well, and employing them wisely.

And it is true that our own Molly Pitcher deserves a preeminent place among the members of her sex who have followed the guns, and, as in Molly's case, helped serve them. There are many of her sex, still, who "also serve, who only stand and wait."

Yet gentle Saint Barbara, living in an age when cannon were unknown, has been adopted as the patroness of artillerymen all over the world. Not because she knew a trail handspike from a prolonge: not because of any fancied resemblance of the lightning bolt that felled her father, to the muzzle blast: nor because devotion to her was either guaranteed or supposed to save the devoted from danger or from death.

It was none of these, but rather that she exemplified the serenity that faces danger without sacrifice of principle to avoid it; because she was the "Blessed are the pure in heart, for they shall see God"; because she first was chosen as the particular patroness of those in danger of sudden death—and who more, in those days of close-range combat

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and non-bore-safe fuze than the artilleryman?—and of the devout who wished to make their peace with the Almighty before battle, and to face the end with soldierly spirit.

It was in this guise she first was represented in ancient painting and in sculpture, and the brotherhood of the red guidon were quick to seize upon her, and to claim her as their own.

*"They are burst asunder in the midst that
eat of their own flatteries,
Whose lip is curled to order as its
barbered hair is curled . . .
Blast of the beauty of sudden death, St.
Barbara of the batteries!
That blow the new white window in the
wall of all the world."*

*". . . While that the east held hard and hot
like pincers in a forge,*

*Came like the west wind roaring up the
cannon of Saint George,
Where the hunt is up and racing over
stream and swamp and tarn
And their batteries, black with battle,
hold the bridgeheads of the Marne
And across the carnage of the Guard, by
Paris in the plain,
The Normans to the Bretons cried, and
the Bretons cheered again . . .
But he that told the tale went home to his
house beside the sea
And burned before Saint Barbara, the
light of the windows three,
Three candles for an unknown thing,
never to come again,
That opened like the eye of God on Paris
in the plain."*

—From the "Ballad of Saint Barbara,"
by G. K. CHESTERTON.
(G. P. Putnam's Sons)



O'Brien's Bulldogs

BY A. R. GINSBURGH, CAPTAIN JAGD (FA)

BEYOND the sally-port in the corridor, at the foot of the stairs of the Administration Building at West Point, stand two bronze, smoothbore, muzzle-loading, six-pounder field guns, bearing the following inscription:

"O'Brien
"Lost without
"dishonor at the bat-
"tle of Buena Vista
"by a company of the
"4th Artillery.
"Re-captured with
"just pride and
"exultation by the
"same regiment at
"Contreras.
"Drum."

These O'Brien-Drum guns, or O'Brien's Bulldogs, as they better were known to the soldiers of the Mexican War, played a dramatic role in one of the most heroic episodes in the history of the field artillery of the United States Army.

It was early on the morning of February 22, 1847. The United States and Mexico were at war. Back home, the American people were recalling that it was Washington's birthday and a fitting occasion to revel in the memories of past successes of American arms. With supreme confidence in the future destiny of their country, public orators and newspapers characteristically were belittling the strength of the present adversary and already discussing the spoils of victory. With contempt for Mexico and Santa Anna, the urchins in the streets were singing the popular ditty

of the day:

"Old Zack's at Monterey
"Bring out your Santa Anner;
"For every time we raise a gun,
"Down goes a Mexicanner."

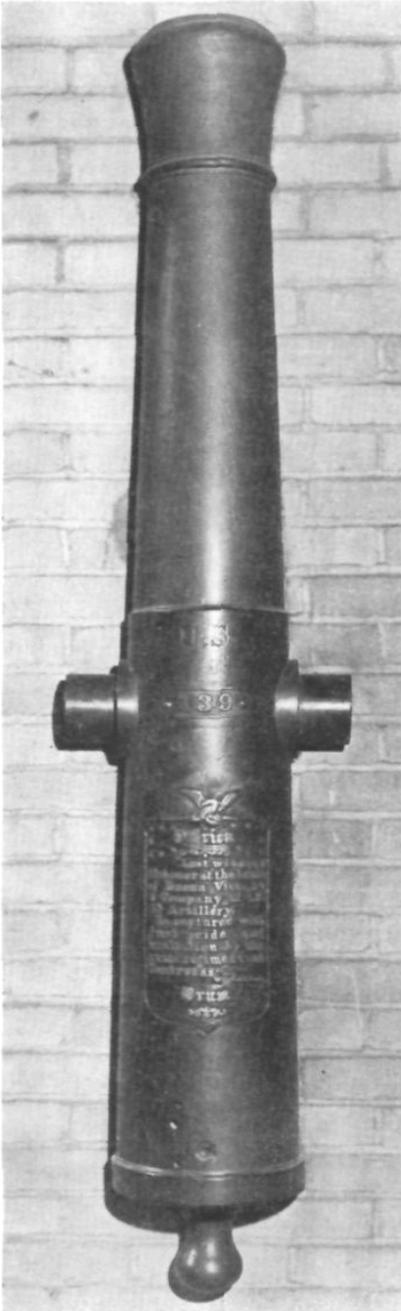
Away to the south in Mexico, however, and not so far from Monterey itself, Zachary Taylor, with a wholesome respect for Santa Anna, was marshaling his depleted forces and preparing for a desperate stand against the well-trained Mexicans, superior in numbers and fighting on their own ground.

For two days, the American Army under Taylor had been falling back in orderly retreat. The plain at Agua Nueva was no place to meet the attack of a superior force especially strong in cavalry. Thirty miles to the south, at Encarnacion, Santa Anna, learning that Scott had withdrawn most of his experienced troops for the campaign in the south against Mexico City, determined to overwhelm Taylor's smaller force, hurl it back across the Rio Grande, march into Texas and compel the abandonment of the American expedition against his own capital.

A reconnaissance in force brought Santa Anna's plans to Taylor. Immediately he withdrew and took up a position about eleven miles north of Agua Nueva, a little to the front of the hacienda at Buena Vista, where he awaited the Mexican attack.

It was an ideal position. At this point, the road from San Luis Potosi to Saltillo becomes a narrow defile. To the right, extends a valley of deep and impassable gullies. To the left, rugged

O'BRIEN'S BULLDOGS



ridges and precipitous ravines stretch far back toward the mountain which bounds the valley.

Taylor disposed of his troops. Captain Washington's Battery, Company B, Fourth Artillery, as then officially designated, was posted to command the road. The First and the Second Illinois and the Second Kentucky Infantry were assigned the crests of the ridges on the left and to the rear. The Arkansas and the Kentucky Cavalry were to occupy the extreme left near the base of the mountain, while the Indiana Infantry Brigade, Brigadier General Joseph Lane, commanding, the Mississippi Riflemen, the light batteries of Bragg and Sherman, and the rest of the troops were held in reserve.

Close on the heels of Taylor, in the meantime, followed Santa Anna. While the American troops had marched but twelve miles, the Mexican forces had covered forty-two. Now on the morning of February 22, they were ready to attack.

At eleven o'clock that morning, Santa Anna asked Taylor for his unconditional surrender as follows:

"You are surrounded by 20,000 men and can not in any human probability avoid suffering a rout and being cut to pieces with your troops; but as you deserve consideration and particular esteem. I wish to save you from a catastrophe and for that purpose give you this notice, in order that you may surrender at discretion, under the assurance that you will be treated with the consideration belonging to the Mexican character; to which end you will be granted an hour's time to make up your mind, to commence from the moment when my flag of truce arrives in camp."

Some historians maintain that Santa Anna was bragging, that he had no such force as 20,000 at his command. At any rate, the American Army under Taylor consisted of but 5,000 and making all due allowances for camp-followers

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and women in the Mexican Army, it still generally is accepted that the ratio was at least two to one and perhaps nearer to three to one in favor of the Santa Anna forces.

Taylor did not accept Santa Anna's offer. In less than an hour, back came the American General's answer:

"I decline acceding to your request."

Santa Anna began his maneuvers. He shifted his infantry to the right. It was evident that an attempt would be made to turn the left flank of the American Army. To meet it, Taylor sent forward Brigadier General Lane with the Indiana Brigade and a part of Washington's Battery to take up a position on the extreme left.

In command of this part of Washington's Battery was Lieutenant John Paul Jones O'Brien, a West Point graduate of about ten years' service, a quiet, serious, religious, sensitive, studious young man of limited battle experience, who up to that time principally had distinguished himself as the author of "A Treatise on American Laws and Practices of Courts-Martial," published in 1846, and, incidentally, still an excellent text-book on the subject. It is with his work and that of his men on February 22 and 23, 1847, that this article now principally deals.

Given his assignments, he reconnoitered the ground, selected a position on the elevated plain and brought up his guns. He was armed with one twelve-pounder, one six-pounder, and one four-pounder Mexican gun. Once in position, he began to build and fortify works. Soon, night fell but preparations continued.

At dawn, February 23, O'Brien's men were awakened to the tune of reveille in Santa Anna's camp. Evidently to give an impression of great numbers, the call was not sounded simultaneously throughout the Mexican Army. Each outfit seemed to wait until the last echoes of reveille of its

adjoining unit had died in the distance before sounding its own.

Immediately after reveille, the artillerymen were treated to a magnificent and impressive sight. Santa Anna drew up his cavalry and infantry in a long line. The bands, he massed in front. At a given signal, they opened with strains of sacred music. Soldiers knelt and prayed. A body of priests in splendid robes passed along the line bestowing their benedictions. Smoke of incense mounted the clear, radiant sky and came down upon O'Brien's position. The bewildered and begrimed artillerymen sniffed, watched, and dug.

Services over, the Mexican troops proceeded to give a parade-ground demonstration of their intricate drills. One evolution followed another. All the colors of the rainbow seemed to be represented. Silken banners and plumes of many bright hues floated in the air, Soldiers wearing red, green, yellow, crimson, sky-blue, and turkey-blue raiment followed in rapid succession. Even the horses appeared in uniform. All the horses in each corps were of the same color. Cavalrymen galloped across the plain and let out tremendous "vivas" which rolled in mighty echoes from the mountain.

Fascinated, O'Brien and his men watched the performance, but it was only an interesting prelude to the deadly struggle ahead. Soon the demonstration was over. Mexican patrols established contact with American outposts. The battle was on.

O'Brien pushed his howitzer close to the mountain and took under observation a body of Mexicans who were advancing along its slope, evidently on a mission to get possession of the head of the ravine near which American troops then were posted. Closer and closer came the Mexicans. O'Brien waited until they were about 1500 yards in front of him and opened fire. There was little or no effect. In the meantime, a battery

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of heavy artillery opened fire on O'Brien's guns. He shifted his fire. Still there was no effect. He gave the command to cease firing, limbered and moved forward to a position less than 500 yards from the Mexican lines. Again O'Brien opened fire. His shots were taking effect. Now he was in the midst of battle. In a cool manner, he observed and adjusted his shots. He seemed to have stopped the Mexican onrush.

At that moment came orders from Brigadier General Lane to move the battery still farther forward to check the advance of some lancers who were reported up the ravine. A regiment of infantry composed of volunteers was directed to support the artillery efforts. O'Brien obeyed his orders. The infantry, however, instead of advancing to support him, fled at the first shower of Mexican canister and retired in disorder.

O'Brien found himself within musket range of 300 Mexican infantrymen. From the left, a Mexican battery poured grape and canister. O'Brien coolly maneuvered his guns and opened fire against the lancers as directed. The effect was tremendous. Every shot, shell or canister seemed to tell. The enemy wavered and fell back. Reinforcements, however, kept right on coming. But fifty yards now separated O'Brien's bulldogs from the Mexican lines. It was at this time that he noticed that his support had entirely disappeared. Now the whole main body of the Mexican Army seemed to be pressing down on him. Still he continued to fire. His complete destruction appeared imminent.

Unsupported, unable to make headway against the heavy column bearing down upon him with destructive fire, deeming it useless to remain alone and needlessly sacrifice his pieces. O'Brien gave the order to limber up, in the very face of the Mexican Army, and retire. All the horses and cannoneers of the Mexican four-pounder had been killed or disabled. That

piece he abandoned. The others were in little better condition. Somehow, however, he succeeded in withdrawing them and retiring to safety.

He called the roll. Not a single gunner remained. He tried to get replacements from nearby sources but failed. He returned to Captain Washington and pleaded for permission to go back to the firing line. His battery commander turned over to him two six-pounders. O'Brien returned to battle.

O'Brien took a position facing a strong line of Mexican infantry and cavalry reinforced by a heavy battery of artillery. He was supported by a small body of infantry posted in two ravines on his left and right. The remainder of the American artillery and infantry were engaged with the enemy about a half mile or more to his left.

The accuracy of his fire had a desultory effect on the Mexican lines. He kept the enemy in check while the American troops on the left drove the body opposed to them around the head of the ravine. There they united forces with those against whom he was firing.

He received orders at that time to move forward. Promptly he advanced and again opened fire. The enemy he found strongly reinforced by infantry and lancers. Recognizing their preponderating numerical superiority, the Mexican forces now charged the American lines, drove back the infantry, and prepared to attack O'Brien's battery.

Between the Mexican main body and the American Army now stood no artillery other than O'Brien's bulldogs. A call was issued for Bragg's and Sherman's batteries but it would take time for them to arrive. O'Brien carefully aimed his guns. Each round brought Mexican casualties. He ran out of shot. He waited until the enemy came closer. He turned on with canister. Mexicans were dropping but others kept coming. He was running out of ammunition. He

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was wounded. Again all his cannoneers were killed or disabled. One horse, then another, was shot under him. Now he was aiming the guns and firing the shots himself. Not until the enemy came within a few yards of the muzzles of his guns did he turn back to run, but at that very moment Bragg's battery came galloping into action. O'Brien, with less than fifty men, had held up an army of several thousand and made possible the victory that Bragg now achieved.

Bragg turned the tide. The Mexicans were driven from the field, but they carried away with them O'Brien's precious bulldogs. No one blamed O'Brien for the loss of his guns. On the contrary, he was praised on all sides. Brigadier General Lane reported:

"O'Brien who commanded the battery of light artillery on my right is deserving of special praise for his courage and self-possession throughout the day, moving and discharging his battery with all the coolness and precision of a day of ordinary parade."

Sherman, not only for himself but for Bragg, was later quoted as follows:

"O'Brien did more to secure victory to our arms than he (Bragg) himself."

Brigadier General John E. Wool, in describing the Battle of Buena Vista, had the following to say about O'Brien:

"The Mexican forces concentrated on the left made a bold move to carry our center, by advancing with his whole strength from the left and front. Lieutenant O'Brien was ordered to advance his battery and check this movement. He did so in a bold and gallant manner, and maintained his position until his supporting force was completely routed by an immensely superior force. His men and horses being nearly killed and wounded, he found himself under the necessity of abandoning his pieces."

Perhaps the most eloquent testimonial of O'Brien's courage and ability to act under fire came from the Mexican report of the battle:

"We have to lament the loss of very good officers and soldiers who threw themselves upon two pieces of artillery and an ammunition wagon which the enemy defended with fire with a heroism unexampled. If their horses had not been killed they would undoubtedly have carried off these pieces which they so gallantly defended. The ground around them was covered with blood. It is certainly an act which reflects much credit upon the individuals of both armies who disputed their possession and they are worthy of the admiration of all military men who know how to appreciate the merits of their companions."

Despite the praise, O'Brien keenly felt the loss which even his brevet for gallant and meritorious conduct did not assuage. In a large measure, his feelings were shared by all the men of the Fourth Artillery. The age-long precept of the artillery, that a battery must not lose its guns, too deeply had become impressed on the hearts and in the minds of the soldiers in the regiment.

"Better to have lost the guns and saved the day," consoled the rest of Taylor's Army but now that the Battle of Buena Vista had become history, the regiment was virtually in mourning over the capture of O'Brien's Bulldogs.

Six months later, almost to the day, soldiers of Company G. Fourth Artillery, led by their battery commander, Captain Simon H. Drum, advancing his skirmishers on the outskirts of the village of Contreras on the road to Mexico City, received a severe fire from two six-pounders. Someone in the company recognized the guns as O'Brien's bulldogs. The word passed down the line. With Captain Drum himself in the lead, the battery charged.

A shot struck Color Sergeant Goodwin and he dropped. The flag, rent by grape shot, its dart head and tassels shot away by Mexican cannon balls, wavered and almost fell. Lieutenant Benjamin seized it and sprang forward.

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With a wild yell, the men of the battery jumped into the enemy works and rushed at the guns. The first to get hands on them was Captain Drum. Close behind came Lieutenant Benjamin and the rest of the battery.

Then, there was no time to stop for congratulations, but that night, after the Battle of Contreras, of August 20, 1847, had added another notable chapter to the history of American arms, the soldiers of the Fourth Artillery proceeded to celebrate and to tell in no unhesitating terms the whole army of their brilliant exploit. They put the guns up on exhibition, and officers and enlisted men from every organization came to inspect the trophies and to join in the festivities of the occasion.

The merriment in camp brought General Scott, and the impressions of the evening caused him to make the following entry in his official report of the battle:

"One of the most pleasing incidents of the victory is the re-capture in the works by Captain Drum, 4th Artillery, under Major Gardner, of the two six-pounders, taken from another company of the same regiment, though without loss of honor, at the glorious battle of Buena Vista—about which guns the whole regiment had mourned for so many long months."

In the exuberance of the occasion, General Scott gave the guns to Drum's Battery and promised that with an appropriate inscription they should be held "in perpetual token of its achievement."

Again in the hands of the Fourth Artillery, these guns played a vital role in the Battles of El Molino del Rey and Chapultepec.

After the Mexican War, Company G found itself on duty at West Point and the guns, as inscribed, came to their present post of honor at the United States Military Academy.

The Field Artillery Association Medal

The Executive Council of the Field Artillery Association authorized, last year, as an expenditure from the surplus of funds collected for the pair of artillery horses given to Master Leroy Johnson several years ago, the award of the Field Artillery Association Medal.

The award is to begin this summer, to that Senior ROTC student, in each summer training camp of the ROTC, who shall, by his conduct in camp, and outstanding soldierly qualities, best exemplify the high standards of the field artillery arm.

Captain Rex Chandler, FA, who has just completed the course at the Command and General Staff School, Fort

Leavenworth, Kansas, was the designer of this medal. Certain suggestions advanced by Captain A. S. Bennet, FA, Fort Sill, Oklahoma, also were incorporated in the design. The design was executed by the N. S. Meyer Co.

The medal is bronze, with scarlet ribbon. The obverse features the Palma Vecchio portrait of Santa Barbara, patroness of artillery. The reverse is blank, awaiting the engraving of the person to whom awarded.

A supply of these medals will shortly be in the hands of the Secretary of the Association, pending requisition by the senior field artillery officer present at each camp.

"The Arte of Shooting in Great Ordnance"

BY COLONEL THOMAS M. SPAULDING, USA, RET.

THE first of anything has a special interest of its own. A first effort may be crude and not too successful but mere priority gives it a certain standing, and if its creator really made a good job of it at the first attempt it is all the more notable. The first English book on artillery is a quaint affair but it is a very good piece of work and singularly modern in its substance, if not in its language. Its writer himself refers to it as "this barbarous and rude thing," which should go far toward disarming reviewers and other critics. He was too modest.

By picking out occasional remarks in his writings and by diligent research among old official papers, literary detectives have pieced together a scanty biography of this man. William Bourne, though they have had to leave large gaps in it. He was born at Gravesend, on the Thames just below London, spent his life there, and there died in 1583. He was a leading citizen of the place and at least as early as 1562 became a "jurat" or alderman. In one of his books he speaks of having served as a gunner, presumably in the local defences, but by occupation he was an innkeeper. On one occasion he was "amerced for selling Beer and Ale in Pots of Stone and Cans not being quarts full measure," but the fine imposed was only sixpence, and it is surmised that the dark deed was committed by a waiter or bartender without the proprietor's knowledge. He had little or no education and his English is a masterpiece of involved and clumsy construction. Nevertheless he was something of a mathematical genius and mastered the

subject in all its branches so far as it was then understood. His first publications were a series of almanacs. There followed in 1573 a treatise on navigation, so popular that six later editions were published. Several other books were well received, and in 1587 appeared "The Arte of shooting in great Ordnance. Contayning very necessary matters for all sortes of Servitoures eyther by Sea or by Lande." It was written as early as 1578: why publication was so long delayed is unknown. There is said to have been another edition in 1596 and there was certainly one in 1643.

"The Arte of Shooting" is a rare book, even in England, and exceedingly so in this country. The copy which I have been privileged to read is in the Library of Congress, and an unusually fine and unusually interesting one it is. It is bound up with two other treatises, as was often done at the period of its publication. A purchaser would assemble enough books to make a fair-sized volume and have them bound together, sometimes without considering whether they were related in subject matter. The two companions in the Library of Congress are books for navigators. The covers are stamped with the arms of the ninth earl of Northumberland, and this book is believed to have been part of the small library which he had with him to lighten the tedium of his imprisonment in the Tower. It later belonged to the famous collection of Henry Huth.

The first English book on artillery was preceded by only a few on the continent. The earlier Italian works were little read in England, and it seems that

"THE ARTE OF SHOOTING IN GREAT ORDNAUNCE"

English gunners were almost incredibly ignorant and stupid. "English men have had but little instructions but that they have learned of the Douthmen or Flemings in the time of King Henry the eight." Accordingly foreigners held them in slight esteem and the only good word said of them was that "they are hardie or without fear about their ordnance." They did make use of the ordinary artillery instruments,—the gunner's quadrant and the inch ruler for measuring the elevation of the piece; but so blindly that in setting the quadrant they gave no thought to whether the gun were above or below the target, and they would give the muzzle of one piece the same elevation in inches as another of half or twice the length. Then they silently marvelled at the dispersion of the shot, and propped the muzzle up or let it down until they secured a hit. Bracketing was unknown, as might be expected, nor does the idea occur to Bourne. With gunners too ignorant to learn from their own experience, and scientists rather disdainful of practical tests, the progress of gunnery was slow. The Italian mathematician, Tartaglia, had broken ground some forty years before with brilliant theorizing, but it is said that Bourne was only the second man to test the theories by experiment, the first being the Spaniard, Collado. Bourne offers his conclusions with modesty, for "I have not had so greate prooffe but that I may be deceived, for I have no other prooffe but at my owne charges."

A considerable part of the "Arte of Shooting" would be a satisfactory textbook for beginners even at the present day. Perhaps if it were introduced at West Point the cadet might find more charm in the study of gunnery than at present. The chapter on the effect of the quality of powder is not obsolete, nor that as to the weight of the charge. "If you doe give the peece more than hir dutie, you doe overshoot the marke: if you do give hir

lesse than hir duty, you shoote short of the mark." So also as to wind. In some other chapters the principles are still sound although their application is different with breechloading guns and fixed ammunition. "You must drive the wadde and shotte home unto the powder in the peece."

In reading old military narratives we are bewildered by the jargon of demy cannons, culverings, sakers, minyons, fauconets; so Bourne's careful description of each class of gun is invaluable,—length and weight and caliber, weight of powder and shot. Then there are long descriptions of the practical use of artillery against fortifications, against shipping, and under other conditions of service. In one chapter the writer becomes a naval gunner and describes the service of ordnance aboard ship. There is a little on ricochet fire but neither Bourne nor anyone else as yet grasped its possibilities.

The discussion of the trajectory is interesting as marking a step in the progress of knowledge. It is hard for us to realize that for two centuries after the first use of gunpowder on the battlefield men assumed the trajectory to be a straight line. Tartaglia made the revolutionary discovery that it is a curve but had not much notion as to its nature. Bourne plots a line that has some resemblance to reality. He has no idea as to the equation of the curve but divides it into four parts, each having its own distinctive character. It was not until some years later that Galileo declared it to be a parabola. By theory and experiment Bourne satisfied himself that the maximum range is attained with an elevation of forty-five degrees and that elevation beyond that point reduces the range. This leads him to consideration of mortars, which "must be mounted above the compasse of five and fortie degrees, for that these peeces are used at the seege of Townes, for the annoyance

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of their enemies, that is to say, to the intent to beat downe their lodgings or houses, with diuerses other purposes more."

One closes the book with a feeling of hearty respect for the abilities of William Bourne and for the patriotic spirit which was the cause of his undertaking the

work. And we are impressed with the fact that all artillerymen belong to one branch of the animal kingdom, whether they lived in the sixteenth century or the twentieth. Queen Elizabeth's gunner was the progenitor of those that roam the earth today, and not a prehistoric monster now happily extinct.



Special Notice

U. S. FIELD ARTILLERY ASSOCIATION PRIZE ESSAY, 1938

A PRIZE of \$100 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 Executive Council of the Association, in announcing the essay prize, offers, in addition, a prize of \$50 to that student of the 1937-38 Regular Course of the Field Artillery School whose required thesis shall be adjudged best by the Commandant of the School or by his delegates.

The following rules will govern the *essay* 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' names 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, 1938. 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.

Artillery Missions and Doctrines

BY COLONEL ALLEN J. GREER, FA

A "DOCTRINE" is a set of opinions based on fact or experience, and which is reasoned out. "Dogma" on the contrary, does not mean necessarily a true principle, but merely a belief that rests on authority, precedent, and assertion, rather than on facts.

The habit of officers to accept as fact mere principles and rules asserted by their superiors, is a foe to progress in any army. The military profession has always been exceedingly conservative and slow to accept innovations in doctrines, weapons or tactics, until the exigencies of war force a change. In times of peace, as memories of war grow dimmer, and as experience lessens, theories become more frequent, and are more apt to be unsound. Therefore, all theories should be carefully analyzed in the light of history, and so far as conditions permit, thoroughly tested before being brought into action. To be sound, theory must be based on experience, and deductions that logically may be drawn therefrom, hence correct doctrines must be based on sound theories. Clausewitz says: "Principles, rules and methods are conceptions indispensable to a theory of the conduct of war, insofar as that theory leads to positive doctrines, because in doctrine the truth can only crystallize in such forms."

In seeking to find correct doctrines for the employment of our military forces it is necessary to review certain phases of recent wars in order to separate true from false theories, and since infantry and artillery are so inseparably bound together, and the latter's actions so dependent upon those of the infantry, both must be discussed.

Concerning our Civil War General Fuller said: "Today ninety out of every hundred professional soldiers still believe in the bayonet, a weapon which proved next to useless in this war and in every war since fought." Even a century before this, Frederick the Great had discovered as the result of his early battles, that artillery fire not shock action, was the deciding factor in battle. Napoleon said that warlike races always want to fight at close quarters, but to get there the way must first be prepared by artillery fire. "*L'arme à feu c'est tout, le rest ce n'est rien.*" And, "It is by fire and not by shock that battles are won." However, in the Austro-Prussian War of 1866, notwithstanding the superiority of the Austrian artillery, the Prussians were victorious, not only on account of better smallarms and able leadership, but because of the false doctrines of the Austrian infantry, which placed little dependence on fire, but relied on shock action and the bayonet.

Notwithstanding these precedents, prior to the World War the French had an almost fanatical belief in the offensive with the headlong assault and bayonet charge. Little consideration was given to the necessity of having this assault prepared and supported by adequate artillery fire. Failure to regard the experiences of former wars, and a lapse into false theories in time of peace, led to their ill-considered offensives in the early days of the war and attacks that failed with heavy casualties, due to lack of adequate artillery preparation and support.

While a doctrine for field artillery means primarily its mission or tactical employment, still, to be complete,

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it should also include what should be the proper character of its armament and organization.

At present there are only general and brief statements in our Army of what may be considered as an artillery doctrine, all of which trace their origins most probably to the Provisional Drill Regulations of 1916, which said: "The reason for the existence of field artillery is its ability to assist the other arms, especially the infantry, upon the field of battle." Tactical Employment of Field Artillery asserts: "The mission of Field Artillery is to assist the other arms, especially the infantry and cavalry, by fire power." The Digest of Infantry Doctrines says: "The artillery mission is to support the other arms by fire during combat," and F.S.R. says: "The principal mission of the artillery is to support the infantry by fire." General Bishop wrote almost the same: "The primary mission of the field artillery is to facilitate the maneuvers of the infantry and cavalry in the presence of the enemy and in their advance toward an enemy." The Regulations of 1916 have thus materially influenced opinions of artillery employment, and it seems appropriate to inquire into their origin. No such expressions as those quoted appear in previous regulations, and as that was the French teaching at the time we adopted the rapid-fire gun and French methods of fire, it is almost certain that we borrowed their doctrine also.

General Herr states: "The French doctrine of 1914 was that artillery was only an accessory arm, having just one mission, the support of the infantry." To be able to carry out its mission the artillery had to be light and mobile. The usefulness of heavy artillery would be rarely felt, but it was prudent to have a few batteries of heavy guns for exceptional missions. It was also felt that

massed fire was unnecessary, and it would be useless to have too much artillery. The 75-mm. gun, on account of its accuracy and rapidity of fire, could cover a sector of 200 meters. The war would be one of movement, of courage of individuals, and not of materiel. The 75 would suit all purposes, and its function was not to prepare the attack, but to support it, and this gun would fulfill all needs of the artillery.

During the long peace in western Europe from the Franco-Prussian to the World War, experience was forgotten and theories had arisen which proved fallacious, and the French doctrine for the employment of infantry and artillery was unsound; in fact it was a dogma, not a doctrine.

The extracts, quoted from our own publications, essentially repeat as the mission for artillery what General Herr states was the French doctrine of 1914. Repeated assertion then has established as "doctrine" for our artillery, a principle which the experience of war showed was an obsolete theory—in short, an unreasoned "dogma."

The German theory was quite different from the French. From 1897, when the French introduced their 75-mm. gun, up to 1905, they were undoubtedly superior to the Germans in artillery, but after that, while they remained more or less static, the Germans reconditioned their 77-mm. guns and introduced a mobile 150-mm. howitzer. In 1909 they made their 105-mm. howitzer a rapid-fire weapon, and their number was doubled, displacing a like number of 77-mm. guns. French methods of fire were also adopted. The Germans, like the French, believed in the superiority of the offensive, but admitted the necessity at times of assuming the defensive. They believed the infantry could not advance unless adequately supported by artillery,

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and this meant an artillery fight in the first phases of an engagement, hence heavy artillery would be necessary to silence the enemy's guns and permit the light artillery to fulfill its mission of supporting the infantry. At the beginning of the war they had 5,500 light field pieces, three-fourths being 77-mm. guns; one-fourth being light howitzers. They also had 2,000 heavier cannon. The French had 3,960 light guns and only 308 heavier pieces. The German medium and heavy cannon were of recent models, mostly obsolescent, and with little mobility. It was not surprising, then, that the Germans with their heavier and longer range guns frequently caught the French in column in the earlier days of the war and prevented their opponents from giving adequate artillery support to the infantry.

While both French and Germans had fallacies in their doctrines, the latter foresaw more clearly the nature of the conflict, and much more accurately estimated the manner in which artillery should be employed. Neither foresaw the vast quantities of ammunition that would be required nor appreciated the truth of Bismarck's accurate prediction which was based on his memory of Sedan, where artillery had the dominant role and infantry an accessory one only: "The wars of the future will be decided by artillery. Troops can be replaced in time of need; big guns must be made in time of peace." Nor did they foresee that gunners on the field of battle might be almost as numerous as riflemen. In fact in some cases, as at Malmaison, artillerymen outnumbered infantrymen. This was literally an artillery battle, where on a front of 10 kilometers there were 624 75-mm. and 986 heavier guns, or a gun to 6.2 meters of front, without counting trench mortars. The guns actually won the ground, and the infantry moved

forward and occupied it with very few casualties.

Winston Churchill describes another instance: "Antwerp presented a case, till the great war unknown, of an attacking force marching methodically without regular siege operations through a permanent fortress lined behind advancing curtains of artillery fire. Fort after fort was wrecked by two or three monster howitzers, and line after line of trenches was cleared by field gun fire, and following these the German infantry, weak in number and raw in training, inferior in quality, walked into the second greatest fortress in Europe."

General Petain said the German plan at Verdun "was to mass great strength in material rather than in men, using this materiel to drain the force of the opposing army without great expense in effectiveness."

For their campaign against Rumania the Germans placed their main reliance upon their heavy artillery. Buchan thus describes the crossing of the Danube: "In 1877 the Russians had taken 33 days to cross. Mackensen did the same work in eighteen hours * * * There was practically no opposition, for the enemy's overwhelming superiority in guns made it impossible for the Rumanian river guards to make even a show or resistance." The same author in describing the German situation in 1916 said: "Hindenberg's main reliance now as ever was in artillery on all the fronts; while he kept the guns up to strength, he provided a smaller complement of men." Of the same period Ludendorff said that the artillery became "the keystone of the battle and the mainstay of the front."

But the most outstanding case of the war where guns were the deciding factor was in the last great German offensive. On July 14, 1918, some German prisoners were captured and

from these the exact hour and place of their offensive, scheduled for the next day, was learned. Consequently the French put down a counterpreparation fire with all their batteries, obliterating the front-line trenches where the Germans were assembling, destroying numbers of their infantry. At the appointed time the Germans jumped off, but the methodically prepared French artillery fire paralyzed their effort with terrific casualties. The attack had been ruined by artillery alone.

Casualty lists must be considered as of evidential value in comparing the relative importance of the arms. American casualties are variously given, but the losses inflicted by artillery on our troops were, from shell, 56 percent, and from gas, 27 percent. More than 80 percent were, therefore, from artillery fire, and only about 10 percent from rifle and machine-gun bullets.

Enough evidence has been presented to show that artillery frequently is the dominant factor in combat, and instead of playing a subordinate role as a mere auxiliary and accessory, has become a companion arm with the infantry, of equal importance. They are mutually dependent on each other, and all doctrines for the conduct of war should be premised on this idea, and the unity of the two arms is a vital necessity for success.

Tactics, Armament, and Organization

Tactics, armament, and organization are so closely interrelated that discussion of one necessarily involves the others, for the tactics of an army must conform to its armament, and the latter must be adapted to its missions. Both, in turn, are controlling factors in organization. The complexity of artillery missions demands a variety of weapons, each adapted to its particular purpose.

Division Artillery

The infantry division is the smallest organization in which all the major arms are combined; therefore its needs will be considered first. Hohenlohe says: "The infantry is strictly the Army, the nation in arms." In the end of ends it is the deciding factor in nearly every battle. T.E.F.A. states: "The primary mission of the division artillery is to support the infantry*** of the division. It fires on those enemy elements causing losses to the infantry ***, impeding its advance or imperilling its security. The light artillery is employed principally against personnel, accompanying weapons, tanks, and material targets of small resistance." The objective then is primarily the hostile infantry, and as the most dangerous weapons to our troops that the enemy will possess are machine guns, these, therefore, will become the targets for our artillery. The weapon of the division artillery should be determined by its mission. The French 75-mm. gun, which is now our principal light artillery weapon, with its high velocity and flat trajectory, decidedly limits available firing positions, and there are frequently extensive dead spaces in its immediate field of fire. Its weight (2657 pounds in firing position) materially lessens its mobility, and further tends to prevent it from carrying out its mission of close and constant support of the infantry. Its limitations during the war forced it at times to remain far behind the infantry, with consequent long lines of communication, which frequently were interrupted, increasing the already greatly difficult problem of communication. The deficiencies of the flat-range trajectory gun were appreciated by the Germans, for at the end of the war almost half of their light artillery was equipped with the 105-mm. howitzer.

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Accompanying Artillery

Neither the Allies nor the Germans entirely solved the problem of close contact between infantry and artillery in offensive operations. As attacks progress they tend to break into small combats and liaison is interrupted, with consequent difficulties in securing the increasingly necessary support of the infantry by the artillery. To supply this, light batteries and guns were taken from the division artillery and attached to the infantry. The accompanying batteries fired at ranges up to 2500 yards; the guns under 1500 yards. More instances of failure than of success are recorded, due largely to the character of the guns, their conspicuousness, and vulnerability. The Germans, according to Ludendorff, were preparing to organize special batteries of "infantry guns," when the war ended. The recognized need for this immediate support demands accompanying artillery of some kind with a special weapon suited to its mission. It must be in fact "infantry artillery," a name probably originated by Marmont.

While our new 75-mm. howitzer is greatly superior to either the French 75 or the German 77-mm. gun for close support of the infantry, even it lacks the required battlefield mobility, and there may be many instances where it could not give the close support needed for the infantry to function. To supply the deficiencies existing during the war, resulting from inadequate armament, trench mortars were used, usually as part of the infantry battalion combat team. However, their inaccuracy and lack of range left the vacancy unfilled.

Recently our Army has adopted the 81-mm. Stokes Brandt mortar. Its range (maximum with the heavier 14½ pound projectile of 1,280 yards, and with the 7½ pound projectile 3,280 yards), with its

high degree of mobility, and its accuracy, causes it to approach closely the requirements for an accompanying gun without infringing upon the mission of the division artillery. So closely are they related to both infantry and artillery that it becomes a debatable question to which arm they should belong.

General Herr thinks that accompanying artillery, which meant to him light guns or howitzers proper, should belong to the artillery, on account of the better technical training they would receive. But the mortars require no technical training that cannot be acquired very easily by the infantry. Their tactical use in combat should then be the determining factor.

F.S.R. 46 states: "Infantry is essentially the arm of close combat. This rôle, rather than the nature of its armament, distinguishes the infantry as a combatant arm. The armament of infantry is adapted to the execution of its mission as the arm of close combat."

The mortar will nearly always be used at ranges less than 2000 yards, and in the majority of instances a platoon will probably be used to support each infantry battalion, and as two battalions will usually be on the line, one platoon may be used for general support of the infantry regiment, or attached to the battalion making the main effort. If a mortar company is habitually to be attached to an infantry regiment, then it should belong organically to the regiment with which it would live, march, and fight, and thereby be better trained tactically, better supplied, be one in spirit with its daily and nearest comrades, and better supervised during action.

Division Artillery Armament

The division artillery should be armed and organized to carry out its mission to fire on personnel and accompanying

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weapons, principally machine guns. It must have sufficient mobility to follow the infantry closely, and to go into positions not suited for flat-trajectory, long-range guns. Marmont said: "The first merit of artillery, after the courage of the gunners and the exactness of their aim, is its mobility." And Napoleon's phrase, often called to his marshals, applies directly to the handling of artillery: "Speed! Speed! Activity!"

Our pack 75-mm. howitzer weighed 1419 pounds in firing position before we converted it to motor-drawn, and increased its weight to 1950 pounds. While of course iron wheels and oversized rubber tires added to this weight, the principal reason was a much lengthened and bulkier split trail. Part of this was due to adapting the weapon to antitank defense purposes, formerly a mission of division artillery, which seems to be deflecting it from its true purpose. Attempts to have weapons suited for many purposes frequently end in compromises that make them unfitted for any. While artillery should of course fire on tanks whenever they appear, antitank defense must be a function of special units of the front-line troops—the infantry—and they must have weapons made for this purpose, and division artillery should not be detached from their normal missions and units except in case of emergency.

Division artillery must be able to fire rapidly, and this requires fixed ammunition, and not semifixed as in our 75-mm. howitzer at present. This can be changed easily, however, by making fixed ammunition loaded with charges corresponding to the zones that will most probably be used. A suggested arrangement is to have 80 percent loaded with Zone 2 charges, and 20 percent with Zone 4 charges. Zone 4 gives a maximum range of 9200 yards, and should rarely be

used, for Zone 2 with its maximum range of 5337 yards and a consequent effective range up to 4000 yards, would be the type of ammunition suitable in the great majority of situations. When the target is 4000 yards or more away, it is time to displace. With these two types of ammunition the light howitzer has adequate range for division artillery.

Wherever possible, division, like heavier artillery, should be used in mass, and should, in its schemes of fire, have the greatest number of scheduled concentrations possible. When these concentrations are located on the map or air photo (a most valuable accessory), observation and corrections are greatly facilitated for forward observers, and massed fire can effectively be controlled by the battalion commander and transferred as the combat develops.

It is recognized that the 75-mm. howitzer will not be able to answer all demands that may be made upon division artillery. For fire missions the 155-mm. howitzer would be highly desirable as a supplementary weapon, but its weight and lack of mobility are prohibitive. There may be emergency calls for counterbattery, for destruction of light obstacles, or opportunities to fire on massed tanks or infantry out of range of the light howitzers. For all these purposes and as a complementary weapon the 105-mm. howitzer is suitable. Its maximum range is 12,146 yards, and while its weight in firing position is 3500 pounds, and therefore, too great to keep in close contact with the infantry, it can by fewer displacements follow up, maintain touch with the lighter howitzers, and materially add to the fire power of the division. During the displacements of the 75's the 105's can take over their schedules, but the mission normally to be assigned will be that of general support.

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Number of Guns Required

To accomplish its mission the division artillery should have an adequate number of guns. This requirement governs organization. To provide properly for both, it should be assumed that the division will be part of a larger force. In rare instances, when it is acting independently, special units must be attached temporarily.

Although figures can never be definite as to the amount of artillery a particular operation will require, certain approximations based on war experience can be made. As a general rule the number of light guns needed will about equal the combined number of those of medium and heavy caliber. Study of modern wars shows that attacks without adequate artillery support have nearly always resulted in heavy casualties to the infantry, and failure to accomplish decisive results. Depending upon the determination of the enemy, and how thoroughly a defensive position has been prepared, the attacking army will require against a zone defense a maximum of 18 light batteries per thousand yards of front, and a minimum of 10. As our army is to be trained for open warfare, our basic figures should be for that type of combat, and we may assume as approximately correct the estimates given in T.E.F.A. These are 3 light and 3 heavier batteries per 1000 yards of front for the holding attack, and 5 light and 4 medium and heavy for the main attack. The average will be then for the attack in open warfare, 4 light batteries per thousand yards of front.

Assuming our division has three regiments of infantry, two of which would be in the front line and one in reserve, we would probably have four battalions in the front line. Each one would have a frontage in the usual case of about 1000 yards, or the division would have about 4000 yards in an attack and

about 5000 yards in defense or even more.

T.E.F.A. states: "The division light artillery is organized for combat so as to provide adequate direct support for each front-line infantry battalion." With each battalion attacking on a front of 1000 yards four light batteries would be its normal support, assuming these batteries have 4 guns each. For a division there would be required 16 batteries of 64 guns. Heavier guns are, of course, additional.

Organization

One of the principal arguments for the change from the division of two brigades of two regiments of infantry each, to the triangular form of division with three regiments only, as advocated generally now, is the abolition of an extra headquarters, through which orders must pass, with consequent delays. The artillery should be organized to conform to this type of unit also.

An almost basic rule of organization is that a leader should command the greatest number of men or units that he is capable of doing with the facilities furnished him. In the battery the unit is the gun, and with the recognition generally that shrapnel has become obsolete, there is every reason for the battery of light artillery, at least, to consist of six guns. A captain can control the fire of this number, and the battery should therefore, have them.

The battalion should consist of the largest number of batteries that the battalion commander can efficiently direct. We have followed French precedent and assign three batteries to the battalion. A battalion in action firing constantly is compelled to rest either the batteries in rotation, or the batteries to rest their guns. If a battalion consists of four batteries, and is assigned a zone in which to fire, the battalion commander could divide it

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among three batteries, keeping one under his direct control for fire on targets of opportunity, and alternating batteries so as to rest their pieces. Also, by using this battery with a forward observer to register it, the massed fire of the whole battalion could be transferred to the target, abandoning temporarily its schedule. The four-battery battalion permits both mass and elasticity of fire superior to one with fewer batteries. With such a battalion supporting a regiment of infantry with two battalions in the front line, the commander could subdivide it if necessary, assigning two batteries to support each infantry battalion. It has an additional advantage in permitting displacements by half-battalions. Of course it would be more difficult to handle a battalion consisting of four batteries than one of three batteries, but even so the task is lighter than that of a similar commander in the infantry.

The regiment should consist of at least three battalions, and the colonel can without difficulty command that number. If we have two regiments of infantry on the line their direct support has been provided for by the two 75-mm. howitzer battalions of 4 batteries each, with each of these having 6 guns. The 3d battalion (the 105-mm. howitzers) should be for general support and should consist of 4 batteries also. It is possible, on account of the weight of the ammunition, that each battery should have only 4 guns, but as road space means principally time, it is believed that with the efficient motor transport that is found at present, this problem will not prove so difficult. Therefore, each battery of this battalion should have, provisionally, 6 guns.

For the division frontage we should have then 48 light 75-mm. howitzers for direct support, and either 16 or 24 105-mm. howitzers for general support. With the first, we have the 64 light guns that

are almost a minimum; with the latter, 72 guns, a better organization.

A very natural question arises as to what will happen when a division having only light artillery, is opposed by one of the German type that has no pieces less than 105-mm. in caliber, and has also 155-mm. howitzers; therefore, would outrange and outweigh our weapons. The answer to this is that our division will be part of an army corps and an army, which will have medium and heavy weapons especially designed for such conditions, since one of the principal missions of heavier artillery is counterbattery. It is not the number of guns nor the fire power in a division that counts, but the number and fire power in the army. In fact division artillery should not abandon its own primary mission of supporting the infantry, in order to fire on the enemy artillery. Napoleon's observation can be almost literally applied: "It was impossible to make artillery fire on masses of infantry when they were assailed by an opposite battery *** from the irresistible instinct of self-preservation. It is nevertheless true, you immediately stand on your guard against the enemy who attacks you. You seek to destroy him lest he destroy you, when your fire should be directed against the masses of infantry which are of much greater importance to the fate of battle." The target for the division artillery should be and remain the enemy riflemen, machine guns, and accompanying weapons.

Medium and Heavy Artillery

Both medium and heavy artillery have missions of counterbattery, of destruction fires, for preparing an attack, and for interdiction. The particular mission regulates the type of weapon to be employed. Our present assignment of these weapons to the corps and to the GHQ Reserve artillery, to be

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allotted to the army as needed, was based on war experience and no change seems necessary. However, carrying out the principles set forth for division artillery, and to reduce the great overhead with which our army is afflicted, we should have, for both types, regiments consisting of three battalions, and battalions consisting of four batteries, which should have four instead of six guns. This last is desirable on account of the weight of the guns and ammunition, and the difficulty of finding a position where all the guns of the battery could be placed and be under the direct control of the captain.

Tactical Methods

The most important combination on the battlefield is the infantry—artillery team. More than cooperation and liaison are needed between them, there must be unity. The division artillery should think with, live with, train with, fight with, share danger and losses with, and if necessary, die with the infantry. Their first feeling should be, not that they belong to the Field Artillery branch of the Service, but that they belong to a certain Infantry Division.

"The primary mission of the division artillery is to render close and constant support to the attacking infantry." This can be done in one way only—the artillery must keep close to the infantry. Thus alone can there develop the feeling of complete comradeship that is more important for morale than slightly better results obtained by the artillery firing at longer ranges. If infantrymen are to accept artillerymen into the circle of battle comrades they must know they have mutually shared danger and losses.

"The Franco-German War" edited by General Maurice, says of the Battle of Vionville: "The artillery formed right to the end the unswerving mainstay of this battle array. Anyone who studies the battle of the 16th of August is driven to regard this arm with admiration: shoulder

to shoulder with the infantry it emulated it in joyous self-sacrifice, and only thus were the fearfully thinned ranks of the infantry able to maintain the field conquered with so much blood." And Hohenlohe says of the Battle of St Privat: "Wherever the infantry passed to the decisive result, the artillery, as at Gravelotte, advanced absolutely into the line of skirmishers and supported the sister arm, fighting with it shoulder to shoulder." Von der Goltz says that in this battle the Artillery of the Guard lost 25 percent of their horses and 20 percent of their men, of which 75 percent were due to infantry fire. Is it remarkable that there should have developed the wonderful morale and esprit that existed in the German army in 1870, and the feeling of mutual confidence and comradeship between infantry and artillery that was part thereof?

During the Civil War the Army of the Potomac time after time depended upon and trusted Hunt and his artillery, which fought in and close to the infantry lines. He saved McClellan's army at Malvern Hill, made Antietam "artillery hell" for Lee's army, and did more than any one person to make Gettysburg a Union victory. Sherman's army affectionately called Captain Dilger "Old Leatherbreeches," and his habit of pushing his guns so far up among the riflemen caused Generals Stanley and Granger to say they were going to order bayonets for his guns. The infantry were immensely proud of his performances.

While the Confederate artillery was always outnumbered, outranged, and outweighed by the Union artillery, nevertheless it gave valiant support to its infantry and thoroughly earned their confidence. At Fredericksburg, Chancellorsville, Second Bull Run, the Wilderness, and Cold Harbor, the Confederate

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guns, fighting in line with the infantry, or immediately in rear, using canister at ranges from 100 to 400 yards, gave the infantry close and constant support, and supplied the fire power the inferior Confederate forces badly needed. The long list of casualties among artillery officers in field and battery grade furnishes ample evidence of their gallantry, and the proximity of the guns to the front line.

These instances have been cited to show the moral effect on infantry when artillery fights and shares the dangers with them. Moreover, practical considerations demand that the division artillery be close to the front line. Only by so doing is constant liaison between the two arms assured. While command liaison between the infantry colonel and the artillery battalion commander is desirable, this rarely will be practicable, for the artillery commander should usually be at his OP, directing personally his batteries from there, while a staff officer should be with the infantry. Incidentally, cooperation could be increased by having an infantry officer with the artillery also. Forward observers will be always with the infantry front-line companies, and casualties will frequently occur among them, but with the improved methods now practised, it would be entirely practicable for infantry officers to take over temporarily observation of fire duties.

Hohenlohe advocated that the guns should always be a few hundred yards behind the lines of skirmishers, but this will not always be practicable, although it should be the case when the position is suitable, and when ammunition can be supplied them. Rarely should they be more than 3000 yards from their targets. It is perfectly possible with the light howitzers to be in position 1500 yards from the enemy machine guns and defiladed from them, yet be able to reach

these guns with our own higher-angle howitzer fire. With these howitzers, supplemented by the accompanying mortars, the infantry can obtain constant support and artillery fire, which must precede their advance and continually accompany it. During the attack, as the infantry advances, the fire of artillery from initial positions becomes less effective, and when the advance goes beyond the range of the heavier guns, the attack tends to break into a number of minor engagements. At this time the light artillery must have displaced forward to carry out its most important role, that of providing the protective fires, the heavier artillery no longer can give. The war showed that the great difficulty for the infantry was not in capturing the first lines which could nearly always be taken, but commenced after they passed beyond the ranges where artillery ceased to give them powerful protection. Counterattacks must be faced, and as the enemy will not be in intrenchments, but in the open, the light artillery can fire most efficiently on the targets best suited to them, and they must furnish all the artillery support until the less-mobile heavier artillery can displace to new forward positions. As Napoleon said: "The better the infantry, the greater the need to husband it and support it by good batteries."

On the defensive there must be an adequate number of guns close to the front to execute the necessary fire missions and barrages, but especially general counterpreparation. Such positions can be obtained and ammunition supplied more easily than during the attack. The necessary fire power is thus furnished, and if some guns are lost, they will have paid for themselves in the toll taken from the enemy.

The 105-mm. howitzer battalion should also be close to the front in

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both offensive and defensive situations. Special missions should be assigned to it, and on rare occasions it can be used for counterbattery, but only when special opportunity is offered, and it is impracticable for the corps artillery to do it.

Corps and Army Artillery

One of the first requirements for corps and army artillery is that there should be an adequate number of guns with accuracy of fire and length of range. Their long range gives the army commander a reserve of fire power and an ability to concentrate that fire and so obtain the elements of surprise. In the days of Frederick and Napoleon it was necessary to concentrate guns to obtain massed fire, and Napoleon said: "Whoever can move a mass of guns by surprise to a given point is sure of victory." Power cannot be obtained by independent firing units, but only in mass, and violent massed fire for a few minutes is superior to prolonged slow fire of a much greater number of rounds. One of the reasons for Napoleon's victories was his continual use of massed fire of artillery, which his opponents failed to do for a long time. When finally he saw them massing their guns at Leipzig he cried angrily: "At last they have learned something." During the Austro-Prussian War, the Austrian artillery used massed fire and proved itself noticeably superior to the Prussians, who brought up their guns individually and so used them. Profiting by the lessons of this war, the Prussians four years later, in the Franco-Prussian War, employed their guns in mass, and this was a contributing cause to their success.

That heavy and long-range guns can be gotten into position for massed fire without being discovered was shown by the Germans in getting ready for their

Verdun and their 1918 offensives. The real reserve that Marshal Foch had in 1918 was his mobile, heavy artillery. As attacks slowed down at certain points he moved this reserve secretly to another, and continually obtained both surprise and combat superiority by massing his fire power. It is quite feasible to have heavy artillery, posted on a front of forty miles, concentrate its fire on the enemy's front of less than thirty miles. This ability to concentrate without moving the guns, to transfer and to mass the fire on critical points, gives the greatest instrument of maneuver that a commander can possess.

In attacks on positions where the enemy has intrenched, overwhelming fire of heavy artillery is necessary to permit the infantry to advance to the assault. It was only in 1918 that the Allied artillery had acquired adequate numbers of guns and ammunition that gave the power that assured victory. The ammunition supply is just as vital as the number of the guns. Its consumption in war is enormous. For instance on the Somme, July 1, 1916, the French fired 270,000 rounds of 75s, 80,000 heavy, and 30,000 trench-mortar shells, and this number was even exceeded on other occasions. Airplane observation is essential for long-range artillery firing, and competent air observers must constantly train with the artillery to get the best results.

Summary

For the efficient and successful employment of field artillery a sound doctrine based on experience is necessary and the following are believed to be some of the essential features of such a doctrine:

1. The primary mission of field artillery is to annihilate the military forces of the enemy with fire and destroy their morale and effectiveness for combat.

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2. Artillery is not, as was the case in the past, merely an auxiliary or accessory arm for the purpose of assisting the infantry and cavalry. On the contrary, it is a companion arm, of equal importance to the infantry. Neither arm is independent, but each is mutually dependent upon and essential to the other for successful results.

3. Artillery and infantry combined harmoniously are the basic elements of the unified combat team. In every situation the infantry should give thought not only to their own problem, but to that of the artillery also, and the needs of the infantry always should be the artillery's first consideration.

4. In order that artillery and infantry should have a common viewpoint and conception of functions, their field training should be combined.

5. The principal mission of division artillery is to support the infantry with adequate fire.

6. Corps and army artillery have a variety of combat missions including that of preparing the attack, destroying the enemy's works, counterbattery, harassing, and interdiction fires. During the attack they support the infantry during their advance. In the defense they furnish counterpreparation fires and barrages.

The heavy artillery is the great reserve of fire power directly at the disposal of the army commander.

7. Artillery, whenever possible, should be employed in mass.

8. Artillery weapons should be made so as best to perform their missions. Division artillery should be light and highly mobile, to enable it to keep close to the infantry front lines and so furnish close and constant protection. Corps and army artillery must have range and weight of projectile to perform their special missions.

9. A battery should have as many guns as the captain can efficiently control. For light artillery, six; for medium and heavy artillery, four. The battalion commander should have under him the largest number of batteries he can properly direct, usually four. The regiment should have at least three battalions.

10. While all artillery should fire on tanks whenever they appear, antitank fire is not a mission that should be considered a primary one for field artillery. It belongs instead to the front-line troops—the infantry—and they should have special units with weapons designed to perform their basic mission.



First and second wagon soldiers in Hawaii are Major General Andrew H. Moses, Department Commander, and newly promoted Major General Charles D. Herron, Division Commander . . . First and second in Ohio National Guard drill attendance for February were the 135th and 136th Regiments of Field Artillery . . . And the Honor Battalion of the Illinois Guard for April attendance is the 1st Battalion 123d FA, with 59.2%, all three Illinois regiments of FA, the 123d, 122d, and 124th, having better than 90%.

Talking Shop

Over in this corner is the huddle where the conversation is climaxed with, "Why don't you write that up for *The Journal*?" Contributions should be brief. Those received will be acknowledged, and printed when space permits.

Again—Horse vs. Motor

In the January-February issue of the FIELD ARTILLERY JOURNAL I read with much interest the article by Colonel Wentworth and Captain Blakeney entitled "Horse vs. Motor."

I think both of these discussions were very timely in view of the almost complete motorization of the National Guard. There is no doubt that under certain conditions horses are more efficient and under other conditions motors are more efficient and I think all National Guardsmen would be much interested in having further articles on this subject published in the JOURNAL.

To summarize the various points made in these two articles, together with opinions that I have heard expressed, I feel that horses are more efficient:

1. At night.
2. In a country where roads are scarce such as certain parts of the West and Southwest of the United States.
3. During a war—the last two miles of a march, including going into actual position.
4. For purposes of reconnaissance.

On the other hand the motors are better:

1. Where it is necessary in maneuvering of troops to cover long distances.
2. In a country with many good roads.
3. For expanding National Guard or other military organizations to war strength, drivers for motor vehicles can be trained much more rapidly than drivers for horses.
4. Handling of motors by National Guard units in their armories and at camp is a much simpler proposition than the handling of horses and gives more time

for training personnel in other military duties.

The regiment of the National Guard in which I am serving, the 110th Field Artillery, has been working to solve one of the problems that, in my opinion, constitutes the greatest disadvantage of a motor-drawn regiment; namely, the difficulty of reconnaissance. We have had constructed three two-horse trailers, one for Regimental Headquarters and one for each Battalion Headquarters. These trailers are drawn behind a station wagon in the various Headquarters Batteries and in a maneuver, when the motor vehicle has drawn up as close to the infantry lines as possible on a road, the horses are unloaded from the trailer and staff officers then are able to make the final reconnaissance on horseback, and have thereby all the advantage in that respect that is enjoyed by a horse-drawn regiment. The speed of such a reconnaissance as compared with a reconnaissance on foot that is necessary for a motor-drawn regiment has been of tremendous assistance in various maneuvers at the summer encampment and has given us a distinct advantage over other regiments not so equipped.

I think such a proposition is well worth consideration for more universal adoption in the National Guard. My idea in writing to you on the subject is to suggest that you have additional articles on this interesting subject and that you might secure such articles from various members of the regular army who would be better qualified than I am to discuss its merits.

HENRY C. EVANS,
Lieutenant Colonel,
110th Field Artillery.

NINTH FIELD ARTILLERY WINS LOGG TROPHY



U. S. Army, Air Corps Photo, 15th Photo Section

CHAMPIONSHIP BASKETBALL TEAM OF THE UNITED STATES ARMY IN THE STATE OF WASHINGTON. WINNERS OF THE WILL J. LOGG TROPHY. THE 9TH FIELD ARTILLERY, FORT LEWIS, WASHINGTON.

Kneeling, left to right: Pvt. 1st Class George A. Ylikopsa, Lieut. Edward A. Grove, Pvt. 1st Class R. R. Sayer, Corporal A. P. Riggs, Pvt. E. H. Lock, Pvt. R. W. Robertson.

Standing, left to right: Lieut. Colonel R. G. Kirkwood, Commanding the 9th Field Artillery, Lieut. H. W. Wolf, Pvt. 1st Class W. M. Ramsay, Corporal Arthur O. Harris, Sergeant K. A. Priddy, Pvt. 1st Class R. W. Carraher, Corporal R. N. Whan, Pvt. 1st Class J. T. Edwards, and Corporal J. L. Weber, Team Manager.

The cup in the foreground is the Will J. Logg Trophy. This is a three-year trophy and when the 9th Field Artillery won the tournament on April 25, it was for the third time. The trophy is now the permanent possession of this regiment.

Teams competing for this trophy were from the 7th Infantry, Vancouver Barracks, Wash., the 4th Infantry, Fort George Wright, Wash., the 6th Engineers, Fort Lawton and Fort Lewis, Wash., the 9th Field Artillery and the 10th Field Artillery, Fort Lewis, Wash.

"Bridgeheads of the Marne"

BY COLONEL CONRAD H. LANZA, FA

*"Where the hunt is up and racing over stream and swamp and tarn And their batteries, black with battle, hold the bridgeheads of the Marne."—Ballad of Saint Barbara, by G. K. Chesterton.**

Up to now—Colonel Lanza has told (July-August, 1936, issue) of the plan for the German attack of July 15, 1918, and the Allied plan to meet it. In the January-February, 1937, number, he described the operations as they appeared to the German troops and their high command. Here he tells the same story—but from the side of our own Third Division, who repelled, at the Jaulgonne Bend, the full fury of the attack.

A large fold-out map, to accompany this article, will be found on the last page of the magazine.

ON 29 May, 1918, the American 3d Division, less artillery, was ordered to proceed from near Chateau Villain, France, by forced marches to the south bank of the Marne between Chateau Thierry and Dormans.

The division had been training since 20 April. The sudden and unexpected movement was caused by German penetration of French lines along the Chemin des Dames on 27 May, and a subsequent advance of the enemy towards the Marne. The 3d Division felt that its training period had been too short, especially as previous training in the United States had been retarded by winter weather. Besides, there had been difficulties in securing equipment. But, under the circumstances, there was nothing else to do but to go into line, to meet the unquestioned emergency.

*This and other verse extracts in this article are from the "Ballad of Saint Barbara," by G. K. Chesterton. (G. P. Putnam's Sons.)

The first element to arrive on the Marne was the motorized 7th Machine Gun Battalion. It started at 2.00 PM, 30 May, marched over 100 miles, and went into action in Chateau Thierry at dark on the 31st. It remained in action for three days, and was a material factor in preventing the enemy from crossing the river. The situation quieted down soon after, the line stabilizing east of Chateau Thierry, with Germans north, and Allies south, of the Marne.

The remaining units of the 3d Division met no opposition in occupying their positions. During the first three weeks of June, the line extended from Etampes to Mezy, inclusive. Not having their own artillery, the French attached to them their

214th Artillery	6 batteries, 75-mm. guns;
120th Artillery	6 batteries, 105-mm. guns;
334th Artillery	3 batteries, 155-mm. howitzers.

During this period, the 4th and the 30th Infantry, of the Division, assisted in minor operations west of Chateau Thierry; while the 7th Infantry improved its training by operations in the Belleau woods.

During the last days of June, the four infantry regiments of the 3d Division were brought into line, side by side, in one sector, from Chateau Thierry, exclusive, to the Surmelin valley, inclusive, as far east as coordinate 193.5. This was a front of about 8 kilometers. On 3 July, the first units of the 3d Field Artillery Brigade arrived. They went into line that night, finding everything necessary for firing

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already prepared by French officers. Because of difficulty in securing horses the remainder of the brigade followed slowly, by battalions. Not only was there a shortage of horses, but about 20% of the horses present were sick, or became so, within two or three days of date of issue. To prevent spread of infection, care had to be taken to keep organizations well separated. The light regiments were sent forward first, and the howitzers followed. The last battalion was en route to occupy positions when the battle of 15 July started.

The position held by the 3d Division along the Marne was about 12 kilometers. In this sector the Marne is about 70 to 80 meters wide, and 3 to 4 meters deep. There were no bridges, except ruins of one opposite Mezy, and there were no fords. On both sides of the river the banks were firm, and from 1 to 1.5 meters above the normal water level. Hills approach close to the Marne, rising, in some cases, to an elevation of 170 meters above the river; there were good OP's available to both sides, overlooking the valley. The lower slopes, and the valley, contained many cultivated fields, mostly planted in wheat. On 15 July, this wheat was approaching maturity, and was high enough to conceal infantry moving through it. Numerous woods, north and south of the Marne, offered concealment over a large area, effectively preventing observation of possible hostile movements. The woods were sufficiently extensive to shelter large masses of artillery, and field fortifications. They were a serious tactical obstacle. Villages were constructed of stone houses. They were fire-resistant, and afforded possibilities of being organized as strongpoints, and for concealing troops.

The position was divided into four subsectors, each assigned to one infantry regiment, in order from left to right—4th,

7th, 30th, and 38th Infantry. The first two regiments formed the 5th Brigade, under Brigadier General Fred W. Sladen; the other two regiments, the 6th Brigade, under Brigadier General Charles Crawford. In each regiment, its three battalions were deployed in column. The forward battalions had isolated pits and machine-gun emplacements along the river bank, as a line of observation. A stronger line, intended as the first defense, was established along the railroad, which runs parallel to and close to the Marne. The railroad embankment afforded good infantry positions; it could be of great use to whichever side held it.

The main line of resistance, garrisoned by one battalion in each subsector, extended along the slopes of the hills south of the Marne. It was nowhere distant from the Aqueduct, and was named after it. It was intended to be a continuous line, but only portions of it were organized. Dugouts were completed for use as CP's and as dressing stations. The trenches were in general located on edges of woods. Owing to difficulty in digging away roots of large trees, and rocks, the trenches were shallow, and did not afford even reasonable protection against artillery fire. Very little wire was available, and only some isolated points had any. The French corps had directed that this line be arranged in depth, with rifle and machine-gun groups, in checkerboard formation. Something had been done as to this, but it was believed that the main reliance, in case of attack, should be on the trenches. The majority of American officers were opposed to trench warfare, and believed that open warfare was much preferable. As the last German advance from the Chemin des Dames had been across country in open-warfare fighting, it was expected that succeeding battles would be along this line. So an elaborate trench system

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was believed to be undesirable. The machine-gun battalions were, however, distributed in considerable depth, between the front and main lines of resistance, arranged to support each of these lines in succession.

The 10th Field Artillery, plus the 1st Battalion (French), 214th Artillery (all 75-mm. guns), was assigned to support the 6th Brigade, with positions in the general vicinity of Grèves Fme (190-255), and Bois de la Jute. One battery was located near Janvier Fme (194-256), beyond the division right boundary, in order to be able better to fire along the Surmelin valley; and one gun was detached, and posted near the Bois d'Aigremont, lined up with the prolongation of the ruined bridge across the Marne, between Mont St. Pére and Chartèves, with the sole mission of firing on this bridge, if the enemy should try to repair it, and cross over on it.

The 76th Field Artillery, plus the 2d Battalion (French) 214th Artillery (all 75-mm. guns), and the (French) 120th Artillery (6 batteries, 105-mm. guns), were assigned to support the 5th Brigade, with positions in the general vicinity of a line: Pt. Ballois—Gd. Ballois—les Courbeaux Fme (southwest area). This group had enfilade fire along the Marne valley from Gland to Mont St. Pére.

The 18th Field Artillery, plus the 2d Battalion (French) 334th Artillery (all 155-mm. howitzers), was in general support. One battalion was in position near la Trinité Fme (185-252), and the remaining battalions were west and southwest of St. Eugène. The 3d Trench Mortar Battery had positions in the main line of resistance.

The ranges for the light regiments on the left were 4,000 meters, minimum distance to the Marne, up to 7,000 meters. On the right the range to the Marne was about 4,000 meters. Should the enemy cross, ranges would decrease. The range

for the howitzers, as a minimum, was about 6,000 meters to the Marne.

On the right of the 3d Division was the French 125th Division. It made the same dispositions for defending the Marne as the 3d Division—disposition in depth, holding the front only lightly. Its four front-line battalions had attached to them the following American troops from the 28th Division:

Companies B and C, 109th Infantry,
posted on both sides of Sauvigny;
Companies L and M, 110th Infantry, on
the Marne east of Sauvigny.

Until the first week in July, the French XXXVIII Corps commanded the entire Marne sector, from Chateau Thierry to Dormans, inclusive. At this date, definite information had been obtained that the enemy would attack across the Marne in this area, and new corps were brought into line. The right boundary of the French XXXVIII Corps now became the same as the right boundary of the 3d Division. The French 125th Division, with attached American troops, became part of the French III Corps. Both corps were part of the French Sixth Army. The Sixth Army provided an additional defense line, in rear of the front-line divisions. It was located at such a distance from the Marne as to be beyond the probable zone of a hostile artillery preparation, and was manned, ready to meet any enemy forces which might penetrate the forward areas. Troops in advance of this line could retire, and reform and reorganize in its rear if necessary. This line extended through la Giletterie—la Trinité Fme—Gd. Heutebise Fme—Tilvot Fme—Les Biez Fme—Croix Goberge (woods) — southeast to railroad bridge over the Dhuis River—northeast to hill 700 meters south of St. Agnan, and thence eastwards. In the zone of the 3d Division, this rear line was held by the French 73d Division;

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in the zone of the French 125th Division, by the American 55th Brigade, less the 4 companies in front.

The 55th Brigade held the line from Croix Goberge (incl), eastwards to hill 192, south of St. Agnan (also incl), with the 110th Infantry on the left, and the 109th Infantry on the right. In each regiment two battalions were in front line, less 2 companies of the 109th Infantry. Dugouts for CP's, and trenches, were complete before occupation, having been constructed by Italian troops prior to arrival of the Americans. As the trenches were largely in open country, they were visible from the air, and it was certain that the enemy knew of them.

The corps had foreseen that if the enemy attacked, a probable line of advance would be up the Surmelin valley. To provide against hostile penetration in this area becoming too threatening, two *bretelle*,* or flank, positions were provided. The first extended from the le Rocq Farm and Chateau southeast to Bochage Farm; and the second from the woods east of Bochage Farm, along north edge of woods south of St. Eugene, through Monthurel, to hill 216. Trenches for these lines were partially completed.

Everyone expected the enemy to attack. Nothing had been *seen* indicating any such intentions. In fact, day after day passed without the OP's finding a single target. During daylight the north bank of the Marne looked to be uninhabited. But the Germans had been on the offensive since early spring. They had made gains, but had not yet won any vital objectives. They certainly had not won the war. It was natural to expect them to renew the attacks, and it was thought to be only a matter of time before their next offensive would occur. There remained the question

of where this would be, and when.

I

*Speak low and low, along the line the
whispered word is flying*

*Before the touch, before the time, we
may not loose a breath:*

*Their guns must mash us to the mire and
there be no replying,*

*Till the hand is raised to fling us for the
final dice to death.*

The Marne appeared to be the logical place for an attack. As the 3d Division looked at it, across their position lay the short road to Paris. Officers and men were convinced that Paris undoubtedly was the objective of the Germans. Chateau Thierry was the nearest point held by them to this great metropolis. The angle at this point was largely held by Americans, and it was felt that these positions were the key point. They were the rocks of the Marne, on which the safety of Paris rested. The Americans watched carefully. The OP's saw little, and then nothing unusual. Patrols were sent out to ascertain the enemy's intentions. They were not always successful; some of their own men were occasionally left in hostile hands. But they took some prisoners. These united in stating that they understood that there was to be an attack, but none knew when, or where. The French captured a German engineer officer near Dormans about 30 June. He had swum across the river to reconnoiter, and had on him a map with marks indicating a contemplated river crossing. This became rapidly known, and was locally interpreted as meaning that the enemy was going to attack east along the Marne, obviously to include Dormans. Early in July, hostile artillery fired what seemed to be registration fire. To the troops this indicated that an artillery preparation was in the making. Naturally an attack

*Diagonal lines connecting outpost and resistance positions, to contain local penetrations.

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would follow. During the same period, numerous suspicious noises were heard at night; movements of vehicles, and hammering on metal, which gave the impression that bridge materiel was probably being assembled close to the Marne.

But what impressed the troops most, and made them feel that a hostile attack was absolutely certain, was the movement into their area of an extraordinary mass of French artillery. This commenced late in June, and was very active in the first half of July. It was all corps and army artillery; came in at night: went into position without noise; never did any firing. It was quite a considerable distance from the front line, most of it over 6,000 meters, but it was there. And near each battery, and at dumps in the woods, was gathered what appeared to be an enormous mass of artillery ammunition. What was this for? Its distance from the front precluded the idea that the Allies intended to attack; it could only be for defense purposes. Then there were constant orders about digging more trenches, and some of these were very far to the rear. And strange infantry was known to be in rear of the front-line divisions. As this sector of the front was believed to be the critical point—as this was the place where the enemy was nearest to Paris—the troops considered all these arrangements as very proper, and fully justified by the importance of the sector.

II

*Our guns were set toward the foe; we had
no word for firing.*

*Grey in the gateway of St. Gond the
Guard of the tyrant shone;*

*Dark with the fate of a falling star,
retiring and retiring,*

*The Breton line went backward and the
Breton tale went on.*

But one matter they did not understand. The commander of the French XXXVIII Corps was General de Mondesir. He had several conversations with General Dickman, commanding the American 3d Division. They discussed the impending battle. General de Mondesir believed that the enemy would try to force a crossing in the double bends of the Marne between Gland and Passy-sur-Marne, covering this crossing with heavy concentrations of artillery fire from the Bois de Barbillon and the Foret de Ris. He saw no particular advantage in attempting to hold the foreground against such an attack. He was prepared to see his infantry evacuate the forward area at the first sign of a hostile attack, and retire to behind the rear line of defense south of St. Agnan. Most of the artillery would also be back of this line. In fact, all of the French Divisions east of the 3d Division were to fall back. He assumed that the American troops would do the same, and would not hold their front positions, and that the Germans would probably succeed in seizing the bend and occupying Crezancy. He thought that the two bretelle lines meeting near Bochage Farm would contain the enemy and hold him.

The foregoing statements, advanced by the corps commander as suggestions, did not please 3d Division headquarters. They were still further shocked when the liaison officer with the French 125th Division, on their right, advised that it really was true that that command was preparing to evacuate its present positions, and fall back, maybe 5 to 6 kilometers, at the first signs of a hostile attack. And he added that the other French divisions further east were apparently going to do the very same thing. The French artillery attached to the 3d Division advised the 3d Field Artillery Brigade, when they moved in, that they had prepared alternate positions well back, to which they were

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ready to move as soon as the enemy started to advance. They thought it would be a good idea for the American artillery to do the same.

The corps commander thought it unnecessary to have strong forces in forward areas. He had orders from the Sixth Army not to oppose the enemy's crossing of the Marne too strenuously, but to stop them on his rear line. This was out of effective range of most of the hostile artillery, and could not be effectively shelled unless the Germans displaced their batteries forward over the Marne, and accumulated new stores of ammunition. Such an operation was bound to take much time. The rear line was garrisoned. There was reason to believe that the enemy did not know this, and would run up against it unprepared, and be unable to penetrate it. But if gaps were made, the Ninth Army, with complete corps and divisions, was close by in GHQ reserve, ready to intervene. The Sixth Army's mission was to hold the enemy along the Marne, slightly south of it if possible, but without incurring serious losses. With the exception of army commanders, no one knew that a counterattack between Soissons and Chateau Thierry was contemplated by the C-in-C. The 3d and the 28th Divisions did not suspect it. They did not connect the intent to withdraw from advance positions with any proposed later operations.

Early in July, the French XXXVIII Corps withdrew from the 3d Division 4 battalions of infantry, for either corps or army reserve. They were located well to the rear. Under the urge of the 3d Division, that they could ill lose such a large fraction of their force, in view of existing orders for a strenuous defense of their front, three of the battalions were returned to the Division on or before 13 July. Upon further representations that the one remaining battalion was absolutely necessary to effect a relief of front-line

battalions, this battalion was also returned on 14 July.

For division reserve, the 4th Battalion 4th Infantry (less 1 company) was located at les Aulnes bouillants farm. The 1st Battalion 7th Infantry (less 1 company), by army orders was in the bretelle position, northwest of Bochage farm, but it was released to the division early on 15 July. All other infantry was under regimental control on the night 14/15 July, located as follows:

4th Infantry—holding the sector from Blesmes, inclusive, westwards.

7th Infantry—CP at le Rocq Chateau.

3d Battalion, plus Company D, Machine Gun Company, and Company D 8th Machine Gun Battalion, in front line, generally following the railroad.

2d Battalion, holding the Aqueduct line (main line of resistance).

30th Infantry—CP at near 190.1 and 257.4, in the Bois d'Aigremont.

1st Battalion, plus Company K, and Machine Gun Company, in front line, holding the area: Fossoy (excl); le Ru Chailly farm (incl); Mezy (incl); and Crezancy (incl).

3d Battalion (less Company K) holding the Aqueduct line (MLR).

2d Battalion, in the Bois de la Jute, in reserve.

38th Infantry—CP near le Chanet.

2d Battalion, with Company A 9th Machine Gun Battalion, holding the front line from Mezy (excl) to Min Ruiné (incl) and as far south as coordinate 258.6.

3d Battalion on main line of resistance from le Chanet, through Conigis, to Launay.

1st Battalion (less Companies A and C) near Paroy. Companies A and C, on main line of resistance in the Bois de la Jute, connecting with, and attached to, the 2d Battalion 30th Infantry.

Division orders outlining the plan of defense prescribed that all units hold the ground entrusted to them, and that

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lost ground be immediately regained by counterattack. A stubborn defense was to be made at the most advanced line and was to be continued by each unit, however small, even though the enemy succeeded in advancing on both sides and in rear of the unit. These orders were approximately the same as a directive from Marshal Foch issued on 8 July, for places to be held.

It was the general opinion that when the enemy attacked, the infantry elements scattered about on the comparatively open and flat ground near the river would, with the assistance of the artillery barrages, by rifle and machine-gun fire, cause losses to the enemy, interfering with his plans, and breaking his organization, so that he would be unable to bring any organized attack against the main line of resistance along the Aqueduct. It was assumed that the hostile artillery fire in the area south of the Marne would be materially less violent than on the positions in rear, as it was believed that the enemy could not control his fire if in great volume, and close to his own infantry, so as to avoid hitting the latter. All infantry regiments understood that, if the enemy crossed the river, and established himself anywhere, he was to be driven out by counterattacks. There was no counterattack plan, and no artillery support arranged for in advance.

On 14 July, information was received from higher authority that the enemy would attack the next day. The hour of attack was not known. The Army decided to break up this attack as far as possible by firing an artillery preparation before the attack started. It was assumed that the German infantry would assault somewhere around 4:00 AM, or about daylight, and their advance would be preceded by a hostile artillery preparation, which might start as early as 10:00 PM, or perhaps not until 1:00 AM. But it was felt that it was quite

certain that enemy units, now in back areas, would start moving forward at dark, or around 8:00 PM, and that roads and crossroads for a long distance back of the front would be crowded with troops. While the exact spots where these troops would assemble was unknown, it seemed evident that the woods near the Marne would probably be the places.

The artillery preparation was ordered for from 8:00 PM to 11:00 PM. All artillery was to take part in it. The division artillery was to conform to directions from the corps chief of artillery. The mission of the preparation was:

- a. For batteries which were forward, about 25% of the total—distant road junctions, lines of approach, and probable concentration points.
- b. Batteries which had been retired, about 75% of the total—woods, and other targets which were north of, and close to, the Marne.

Among the corps artillery was the American 66th Field Artillery Brigade, less 2 battalions 146th Field Artillery. With this exception, the corps and army artillery were French.

Promptly at 8:00 PM the artillery preparation started. Up to this hour, the OP's had not seen anything unusual; the day had passed very quietly. As there had been several previous warnings as to the enemy attacking, when nothing had happened, the men in line were not at all certain that this might not be again a false alarm. Especially after the artillery started firing, it was noticed that the enemy apparently did not pay any attention to it, as there was no return fire, so there was doubt as to what was to follow. Consequently, the 7th Infantry, which had started the night before to exchange the positions of its 2d and 3d Battalions, by mutual transfers from front line to reserve, went right along with this plan.

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The Allied artillery fire was severe. The OP's could see the bursts, and a few targets commenced to burn, one of which was undoubtedly an ammunition dump; the rest might have been houses, or minor construction. But the real effect of the preparation could not be determined in the darkness. Besides, there was some slight rain, and visibility was at times poor. On the other hand, not an OP, nor an outpost, reported anything as to enemy targets close to the front. This was just as quiet, and apparently as deserted, as on other nights.

The artillery preparation stopped at 11:00 PM, according to plan. Again the front was tranquil. Only a few Allied batteries continued to fire problems. The 3d Division, at 11:40 PM, received a telephone message from the Corps announcing that the French Fourth Army had just reported that, from information received from 20 prisoners taken by them in a raid, it was certain that the enemy would attack that night, as had been previously predicted, and the enemy artillery would start their preparation at midnight. The Corps added that the Army ordered that the counteroffensive artillery preparation, for which plans were complete, be fired immediately. The 3d Field Artillery Brigade received this order at 11:45 PM, and a few minutes later all batteries were firing according to the COP plan. This provided for heavy concentrations of fire on woods and towns close to the Marne, which would undoubtedly be full of hostile troops preparing to cross the river, together with barges at probable points of crossing. It was just before midnight when the last batteries received this order and took up the fire on the targets allotted to them.

Still everything was quiet on the enemy side of the river. There was no return fire, and our infantry officers walked freely about inspecting the

positions of their men, and watching the tremendous display made by their own artillery firing at targets which they could not see. At the batteries, everything worked smoothly, and communication was excellent. The mist and rain cleared away, and visibility became very good.

At 12:10 midnight, a tremendous flare arose from the German lines as their artillery opened their preparation. A terrific rain of shells came over. At first, few fell on front lines; they appeared to be directed more on the main lines of resistance, and all roads, villages, and other important points, as far to the rear as an east and west line through Courboin. With both sides firing, there were between 40 and 50 batteries, or 160 to 200 guns, to each kilometer of front, with more than twice that number of bursts per minute. This required the expenditure of around 5 tons of ammunition per minute, with 7 to 8 bursts per second, over a 1,000-meter front. A large percentage of shells were gas. These quickly forced the general use of gas masks.

All communication went out within 20 minutes. The batteries were unable to communicate with the OP's, or with the battalion and higher CP's, except by runners, or by radio. Of the latter, messages were subject to considerable delay. Brigades, and the division, had next to no information as to what was occurring, except that the artillery was making a tremendous effort. Batteries, receiving no information as to targets, and no instructions, fired according to the previously prepared plan for a hostile attack.

The 10th Field Artillery, and the 1st Battalion French 214th Artillery, fired on the south edges of the Bois de Barbillon, the Foret de Fère, and the towns of Mont St. Pére and Chartèves. They kept up this fire notwithstanding heavy

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hostile fire on their positions. The 3d Battalion 18th Field Artillery had just arrived that night from its training area, being the rear element of the 3d Field Artillery Brigade. When the German artillery preparation started it was engaged in occupying positions near les Ptes Noues (185.7-251.7). The battalion ammunition train was unloading ammunition. Suddenly the entire battalion was taken under fire of heavy hostile artillery. It was an accurate fire, and immediately caused casualties and damage. In each battery one gun was destroyed by a direct hit, and the cannoneers were driven away from the other guns. The ammunition details ran to shelter. Later, when the fire lessened, men were sent back to establish the positions. Battery E reoccupied, and manned three pieces which eventually went into action.

III

*They are firing, we are falling, and the
red skies rend and shiver us,
Barbara, Barbara, we may not loose a
breath—
Be at the bursting doors of doom, and in
the dark deliver us,
Who loosen the last window on the sun
of sudden death.*

In the neighboring area, the 76th Field Artillery also received heavy fire. They managed to keep all guns in action but two belonging to Battery D.

Casualties were severe from the start of the hostile artillery preparation. The main line of resistance, and the bretelle line, were in places visible from the German lines north of the Marne, and other portions must have been observed in air photographs. They received heavy punishment. Not only had there been little attempt to camouflage the trenches, but their relief had been light, under the expectation that open warfare would characterize the next battle, and that the

trenches were only for temporary use. Under fire from heavy artillery, the trenches were blown in, and in some places completely demolished. Most troops had their kitchens close by; field trains were not far away. They were concealed in the woods, or were supposed to be concealed. But they received considerable shelling from early hours. Some kitchens were destroyed; in others the gas affected the food and water, so that nobody dared to touch either. This had serious results, for it became impracticable to serve breakfast, or dinner later during the day, and as the battle progressed and the day became hot, the personnel, forced to wear gas masks most of the time, and with nothing to eat or drink, lost strength and morale. Field trains lost most of the animals, and became unserviceable for moving up supplies and ammunition. Reserve troops received about as many shells as troops in the forward areas.

The artillery received no information as to targets. The OP's were distant; all lines were out, and stayed out. All that could be seen from the vicinity of the batteries were bursts of enemy shells, and gas. Beyond doubt the enemy was making a furious attack, but where his infantry was no one knew. Firing was restricted to barrages along the Marne, and to known or suspected targets north of the river.

The 18th Field Artillery (155-mm. howitzers) had bad luck. The 1st Battalion fired according to program until about 2:00 AM. It then had to stop, as all of its ammunition disappeared in one enormous flare and explosion due to enemy hits. The 2d Battalion was caught while in march order between Courboin and St. Eugène (center of map). Battery C abandoned three howitzers, but operated the remaining one. Battery D was unable to obtain any ammunition until around 6:00 AM, when both of these battalions received some from the

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ammunition train. The 3d Trench Mortar Battery, in position on the main line of resistance, lost all of its pieces, and was unable to utilize any of them. The corps and army artillery, being in general well to the rear, did not suffer as much, and they fired continually at their assigned missions.

Dawn came at 4:00 AM. Visibility increased gradually; an hour later, in bright sunshine, it was excellent. Careful and anxious examination was made of the terrain. A tremendous rain of shells was still falling, extending well south of a line through Courboin. It was especially heavy on towns and woods, and along lines of communication. Smoke could be seen rising in the Marne valley. Clouds of gas lay at numerous places in woods, and occasionally elsewhere. All guns were firing, and from the front the rattle of machine guns was heavy and constant. The firing activity was at a maximum. But no enemy was to be seen, and at the CP's, where officers were hoping for information, not a word had arrived. The nervous strain was severe. It was quite plain that the enemy artillery preparation was causing heavy casualties; had cut all wire communication; and had blocked or delayed traffic. But what was happening at the front was unknown.

The first information came from the French 125th Division at 5:00 AM. A short radio despatch stated that a violent enemy artillery bombardment of the Jaulgonne bend was in progress; that poison gas was in the Surlélin valley; but that no infantry attack had been reported up to 4:30 AM. At 5:15 AM, the 6th Brigade, at Montbazin (191-251), relayed this message to the 3d Division, adding that, from where they were, they could see heavy shelling of Courboin and the road leading south therefrom. They added that the enemy bombardment did not seem to extend east of the Jaulgonne

bend, and appeared to be slackening. At this hour, Allied planes were noted proceeding to the front, and the CP's hoped that within a short time they would receive some reliable reports.

The next information arrived at the 30th Infantry CP, in the Bois d'Aigremont. It came from their front-line battalion. No hour, or place from which sent, was shown. It stated:

"Enemy has crossed the RR near Mezy heading towards Crezancy, and another has crossed near le Chailly going towards Fossoy."

This arrived around 5:20 AM. Realizing the importance of this information, the regimental commander, Colonel E. L. Butts, in accordance with the prepared plan of defense, ordered his 2d Battalion, from regimental reserve, to counterattack. By radio, he sent a message forwarding the information he had, and his intentions, direct to the 3d Division. The radio detail had been scattered by the artillery shelling, and it took over an hour to get them together and send the message. It failed to reach division headquarters, but the 5th Brigade caught the message at 6:45 AM. They immediately forwarded it by motorcycles to the division, and to their own two regiments. The 6th Brigade also received the radio message at their station, and they relayed it to the artillery at 7:00 AM. As the location of the friendly infantry was nowhere stated, the artillery stopped firing south of the Marne, except along the river and railroad, which clearly appeared to be in enemy possession.

The 3d Division, on receipt of this message, ordered the 6th Brigade to "counterattack with all available troops at once and regain lost ground." Almost at once after sending this the 3d Division received more information. This came originally from the front-line battalion of the 38th Infantry, at

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an hour and from a place not stated. It arrived at the 38th Infantry CP, near Courtelin (192-256), by pigeon around 6:00 AM. It read:

"The Boche have penetrated Mezy and are driving French back on right beyond RR. I am going to fall back gradually unless I get help on flanks." The 6th Brigade received this information about 6:55 AM, and the 3d Division a half-hour later.

General Dickman, at 7:30 AM, sent a personal message to the 6th Brigade stating: "Make counterattack at once to Mezy-Moulins line with all units of 38th Infantry." He reported to the corps:

"Enemy has crossed the Marne between Fossoy and Dormans. Has crossed the railroad and reached Mezy. Our troops are withdrawing slowly."

At 7:45 AM, Colonel U. G. McAlexander, commanding the 38th Infantry, reported to his brigade commander that unverified reports indicated that the French had given way on his right. At 8:00 AM, he reported that the enemy was across the river opposite Mont St. Pére, and possibly opposite Jaulgonne. Five minutes later he sent a message stating:

"Send reserves soon as possible. My lines have held but those on both flanks reported to have partially withdrawn."

These messages appear to have been based on reports of individuals coming back from the front. They included wounded, stragglers, and at this hour some details bringing German prisoners. At 8:20 AM he made the first report as to capture of prisoners, estimating them at a few hundred. He added "Protect my flanks." At this hour enemy artillery fire was falling heavily over all the country, and the battle was in furious progress. Still no information from the OP's. Troops on the main line of resistance at this time could see parties of infantry moving along the east slopes of the

Surmelin valley. They were not certain who these were.

By this time the 7th Infantry CP, at le Rocq Chateau, had been severely shelled. The bombardment caused many casualties, some confusion, and some loss of morale. Gas casualties were, however, few. Of the front-line troops which were to have been relieved during the night, Company K and one platoon of Company M were all that were able to withdraw, and become the regimental reserve. All of the animals which were near the front, and most of the transportation, were destroyed by the enemy artillery.

In the 30th Infantry sector, front-line troops in numbers began coming to the rear after 7:00 AM. Some went back to the main line of resistance, while others followed up the west side of the Surmelin valley, until stopped by officers of the 38th Infantry near le Chanet (192-256). These officers reformed the men, and later returned them to their own regiment. In withdrawing, the 75-mm. gun lined up to fire on the ruined bridge near Mezy was abandoned, after almost continuous firing from midnight until 6:00 AM.

The light artillery regiments had difficulty in maintaining their fire. In the 10th Field Artillery, Batteries A and B had exhausted their supply by 4:00 AM, and had to stop firing. Battery B received 1,000 rounds shortly afterward, but this was gone by 6:00 AM. Battery C lost two pieces from enemy shell fire. It kept up its fire with the remaining two pieces and was able to maintain its ammunition supply.

After ordering the counterattack by the 38th Infantry, and after having been advised that the 30th Infantry reserve would counterattack, the 3d Division received an order from the XXXVIII Corps at 7:45 AM, directing that its main line of resistance be held

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at all costs. This was promptly repeated to the two infantry brigades. The 6th Brigade, about 8:15 AM, sent an officer to the 38th Infantry with instructions to Colonel McAlexander to comply with the division order to counterattack. At the same time they reported to the division that the CP of the French 131st Artillery, to their right, stated that large numbers of hostile infantry were advancing south through the woods northeast of Janvier Farm (194-256). The artillery activity was still extraordinary. The Air Service turned in reports as to hostile infantry crossing the Marne on both sides of the Jaulgonne bend. It was impossible to obtain planes to adjust fire, but they gave correct coordinates, and the artillery placed an extremely heavy fire in and around these points.

Between 8:30 and 9:00 AM the picture, at the various CP's, was that the enemy attack in the 4th Infantry sector was only artillery fire. There was still no information from the 7th Infantry front, and it was not known what had happened here. It was hoped that no information meant good information. From the 30th Infantry nothing more had been heard since their 5:30 AM message, announcing that the enemy had passed Mezy en route to Crezancy, and that they had then ordered a counterattack by the regimental reserve. If the enemy had kept on, there was by now ample time for him to have reached Crezancy, and the despatch of the 38th Infantry, indicating that troops on both their flanks were withdrawing, indicated that this might be the case. If Germans were at Crezancy, where would they be next? Obviously their next advance would bring them against the main line of resistance in the Bois d'Aigremont. The artillery had no information as to where the hostile infantry were; except

that none had been reported south of the railroad—this, however, was a long time ago, and certainly unreliable as to the present situation. The 38th Infantry appeared to be holding their sector; they had even taken prisoners, but they had announced an intention to abandon their forward area, due, as they stated, to inability of their neighbors to hold. The enemy artillery fire was still heavy, and lay everywhere over the country. Lines of communication were cut; reports were slow in coming. The French on the right appeared certainly to have withdrawn, and hostile troops might now appear at any time from the east. Stragglers were coming back, and motorcycle and other messengers gave accounts of what they had seen farther to the front. There was a desire to know what was the result of the counterattack by the 30th Infantry. More than three hours had elapsed since it had been ordered, but nothing more had been heard about it. If it had been successful, a report to that effect could have been expected; no report after such a long interval might indicate that affairs were not well in this area.

The danger point seemed to be the high ground in the Bois d'Aigremont, on both sides of le Souvrien Farm. If the enemy succeeded in seizing this position, he might penetrate the front, the 38th Infantry would be nearly surrounded, and untold damage might result. The XXXVIII Corps was notified of this estimate of the situation, and the suggestion was made that reinforcements in this area were advisable. Time was pressing, and the corps did nothing at the moment. So the 3d Division, at about 8:55 AM, decided to employ the division reserve of three companies of the 4th Infantry, located on their left, near les Aulnes bouillants Farm, and sent them an order, direct, to proceed via le Rocq to

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the Bois d'Aigremont at once, reporting to Colonel Butts.

Ten minutes after this order had been issued, the XXXVIII Corps advised that the French 73d Division, in army reserve in rear of the 3d Division, was being ordered to counterattack through the Bois d'Aigremont. At 9:10 AM this information was sent out to the two infantry brigades. It was transmitted gradually downwards, and as no time had been set for this counterattack, or statement made as to from where the 73d Division was coming, it gave the impression that the counterattack was imminent, and would occur within a few hours. The time needed to march the division to the front, to deploy, and then to attack was not thought about. In the excitement of the battle and the urgent desire for help, no one seems to have realized that this French division could hardly arrive in line until late that day.

The radio was now working better and messengers had discovered routes which were practicable. Around 9:30 AM the division received a message, as of 9:05 AM, from the 30th Infantry, stating:

"Reserves needed by 30th Inf."

They gave no information as to the situation. The division had already ordered its only available reserve to the Bois d'Aigremont, and an entire division was also about to go there, so it did not seem that anything more could be done, unless the line were weakened by withdrawing troops from other portions of the front. The 7th Machine Gun Battalion was at la Pisserole (near Viffort) (187-249), the last reserve of the division, but the division did not like to let this go. A few minutes later another message from the 30th Infantry, dated 9:18 AM, came in, which read:

"Commander 30th Infantry requests immediate reinforcements. Ammunition

and artillery fire heavy northwest of Crezancy."

This garbled message seemed to indicate that the enemy had reached Crezancy, or was near that village, and that heavy artillery fire was desired northwest of that place, probably the woods about one kilometer away. The artillery was notified accordingly, but it was impossible to state what kind of targets were supposed to be there, nor was it certain that this was the correct place at which to fire. But it did seem clear that the wooded hill, just south of Crezancy, which was on the main line of resistance, was threatened.

By 10:00 AM there was some slackening in the enemy artillery fire but it was still heavy. A report from the 38th Infantry arrived stating that Germans were advancing through the woods northeast of Janvier Farm; they reported their own lines as still holding fast, but requested protection to their right flank. The 3d Division saw no way in which they could assure protection against a hostile advance east of the Surmelin. If the French 125th Division was falling back, there was nothing the 3d Division could do to prevent it. So they directed the 6th Brigade:

"Inform CO, 38th, that if support on his right gives way, he will fall back on Bois de la Jute and join 30th Inf. 73d French Division now advancing to position Bois de la Jute."

The important facts appeared to be that the enemy was, or might be, attacking south of Crezancy, and that the right of the division probably would be turned by the hostile movement east of the Surmelin. All energies were to be directed to establishing a new line bending at Crezancy to the south and following the edges of the woods along the Aqueduct.

More bad news came in from the right. The 110th Infantry was in the second

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line, supposedly out of range of the enemy main artillery preparation, holding from the Croix Goberge to east of Condé-en-Brie; the 109th Infantry extended this line along the high ground south of St. Agnan to include hill 192. Notwithstanding their distance from the front, they had received considerable artillery fire, and the French 125th Division was certainly retreating. Their liaison officer stated that at the CP of that division, the headquarters packed up and sent to the rear, or destroyed, all records and property, commencing at the very beginning of the artillery preparation. French troops could be seen retiring from an early hour on the roads leading south. This withdrawal, and the effects of the artillery shelling which they were receiving, induced the 109th Infantry repeatedly to inform their 55th Brigade that they would not be able to hold if the enemy appeared. The brigade commander ordered them to hold anyway, and directed a sharp observation to discover hostile forces. The artillery support in this sector was furnished by French artillery, and they had numerous OP's in, or near, the line held by the American troops. Up to 9:00 AM no targets had been seen. But about this hour the OP's near the Croix Goberge reported infantry moving south across the valley from 1,000 to 2,000 meters away. They were unable to determine whether this was the enemy or Allied troops. Whoever they were, it indicated to the 3d Division that the front east of the Surmelin was being driven in.

Something had to be done to prevent a catastrophe to the 38th Infantry, still believed to be in their original positions. General Dickman thought it advisable to withdraw troops possibly from the 4th Infantry and send them towards the Surmelin. It was certain at this hour that no hostile attack was

being made in the 4th Infantry sector, and it seemed possible to weaken it without incurring any great danger. But before issuing orders to this effect he consulted General de Montdesir, commanding the XXXVIII Corps. The corps commander did not approve of the suggested changes. He had foreseen that the enemy probably would succeed in making some advance up the Surmelin valley. He had warned the 3d Division about this, and had ordered bretelle lines to contain the enemy if he were successful. So far there was no information that the bretelle lines had been attacked, much less that they would fail to hold. It was by this time certain that the extreme right of the German attack was near Fossoy. The direction of advance of the enemy was southeast, so that troops west of that village were not likely to be threatened. For this reason, the French 73d Division, which was entirely west of the Surmelin, had been promptly released by him, and made available to hold the enemy in the Surmelin valley. It remained for the 3d Division to arrange directly with the 73d as to how the latter best could be employed. This they might do directly. General Dickman, feeling that his right was in a dangerous position, sent a message to both the 6th Brigade and the 38th Infantry at 10:30 AM as follows:

"Germans are counterattacking against St. Agnan and clearing north of Janvier Fme which they had lost. Connection must be maintained with 125th Div. at Paroy (192-258). If necessary bend back your right flank in that direction. Corps prevents my sending you any assistance."

Attention now was given to coordination with the French 73d Division, whose liaison party was present. Haste was lent to the discussion by the receipt of the first reliable information

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from the 7th Infantry. This indicated that withdrawal of troops from the west sector might not be so advantageous.

Timed 9:20 AM, the 5th Brigade reported that very heavy enemy artillery fire was falling on the woods between Nesles (185-255) and Fme aux Charmes, part of the woods being untenable. Part of an engineer company sent to the assistance of the 7th Infantry had been badly cut up and efforts were in progress to assemble parts of the 4th Infantry, from their right, to assist the 7th Infantry. A little later it was learned that the 7th Infantry had finally reported, as of 9:25 AM, that two of their companies were occupying a line extending southwest from le Rocq to the Fme aux Charmes. They asked for two companies to reenforce this line, two more to reenforce the bretelle extending southeast from le Rocq, and still two more to occupy the north edge of the Bois d'Aigremont. They also asked for machine guns. The 5th Brigade, in transmitting the message, stated they had no reenforcements, but thought that the expected arrival of the French 73d Division would suffice.

After consultation between the 3d and 73d Divisions, it was agreed that the latter would be engaged as follows:

One battalion infantry to les Aulnes bouillants Farm, to replace the 3d Division reserves sent to assist the 30th Infantry and to support the 7th Infantry.

One regiment infantry to the line Bois de la Jute—Condé-en-Brie, to extend the line along the west side of the Surmelin valley. The regiment to keep but one battalion in reserve.

One battalion infantry, to west of Coufremaux (193-252), to protect the right rear. Remainder of division assemble in the area Redon—Chamblon (lower center). The 73d Division, en route, was directed to these positions and the 3d Division, at 10:50 AM, notified its brigades of the foregoing arrangements.

The Air Service had been giving considerable assistance to the artillery. They located enemy bridges and ferries across the Marne, and the corps artillery had these under heavy fire, placing dense barrages around the approaches and exits of points of crossing. The Air Service did not adjust individual batteries but reported on the general effect of the fire, and changes in location of targets along the river. Interference by hostile planes made it impracticable to maintain observation planes over a target long enough to secure individual bracket adjustments.

Due to slackening of fire, and discovery of practicable routes for messengers, some information from OP's came in. The first, dated 5:07 AM, and received at 8:30 AM, reported a hostile smoke screen near Fossoy. At about the same time, a second message was received, dated 7:42 AM, from in rear of Fossoy, stating that no enemy was in view on either side of the Marne. About 11:00 AM, an OP reported, as of 9:25 AM, that 500 soldiers were in the woods east of Fossoy: they did not know whether these were friends or enemies, but they believed they were enemies. The first real target appears to have been reported about 11:00 AM, and came from an OP well out on the left outside of the sector of attack. It reported that at 10:50 AM about one battalion of hostile infantry, marching by companies, was on the road leading northwest from le Ru Chailly Farm. It failed to report in which direction the enemy was moving, but the 76th Field Artillery took the road indicated under fire without delay.

The enemy Air Service was very active. They were constantly in the air, and paid special attention to machine-gunning the main line of resistance. It was an extremely hot day, the sun burned hotly on the men in the

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trenches. Few were protected by shade. Because of gas, masks were in almost constant use, and food and water were lacking. Enemy shells, mostly of large caliber, had been falling rapidly since midnight, and casualties were very heavy. The men felt the strain: many were exhausted. Due to greater distance from the front and defilade, cannoniers at batteries had fared better, but they also had had strenuous work.

It now was possible to determine some phases of the situation. The enemy bombardment was certainly ending, and this indicated that further advances by his infantry were not likely. It appeared that the counterattack ordered by the 30th Infantry at 5:30 AM had not been made. The 6th Brigade had repeated this order at intervals, but the 2d Battalion in reserve in the Bois d'Aigremont did not move. The forward battalion had evacuated the area in front of the Aqueduct line, and it was assumed that the Germans had occupied this territory. The commander of the 30th Infantry still desired to counterattack, but did not consider that his own troops were in any state to do so. He decided to await the arrival of the division reserve of three companies of the 4th Infantry, en route

to le Souvrien Farm (Bois d'Aigremont), and have them counterattack. No information as to this was sent to the artillery, and no liaison was established for this purpose.

The 7th Infantry could not find out what had happened to their forward troops. In the absence of information they established a line south and west of Fossoy composed of elements of numerous companies. Some observers of these companies saw hostile batteries north of the Marne firing; they failed to get this information to the artillery in time.

The 38th Infantry kept some track of events in their sector. They received reports from their forward troops, who reported holding all original positions, but complained of friendly troops on both flanks retreating, leaving them uncovered. Of the two withdrawals, the one on the west was the least dangerous, as the Surmelin valley was open to view from OP's on the high ground east of that stream. The stream itself, with the two villages of Moulins and Paroy strongly held, made a good defense line. To the east, the situation was not so good, for the enemy could advance out of sight through woods.



—Photo by U. S. Signal Corps

CAMOUFLAGED PONTON BRIDGE, NEAR MEZY, CONSTRUCTED BY COMPANY F 6TH ENGINEERS 3D DIVISION WITH BOATS CAPTURED FROM THE GERMANS. JULY 24, 1918.

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and might turn to his right and take the 38th in flank. Instead, therefore, of counterattacking to the line Mezy-Moulins, as ordered by the division at 7:30 AM, Colonel McAlexander detailed Companies B and D to attack from east of Paroy, toward hill 231—almost due east. The counterattack got off about 9:00 AM, and had considerable success. It encountered German infantry moving south, and struck these in flank. About 400 prisoners and several machine guns were captured, and a defensive line established extending south from Min Ruiné to east of Paroy. This fully protected the forward battalion.

Farther south from the vicinity of this fight lay Janvier Farm. It was in French territory, but Battery A 10th Field Artillery was stationed there in order to have a better direction of fire towards the northwest. French batteries were nearby. Six minutes after the German artillery preparation commenced, telephone communication was out, and thereafter stayed out. The only order received from higher authority was at 2:00 AM, when a courier from battalion headquarters advised Battery A that, in the absence of information, fire was to be continuous, at discretion of the battery commander, on barrages or other targets. The battery fired without rest until 3:30 AM, when it appeared that the ammunition was giving out. Details were sent to adjacent batteries and some ammunition was brought up by hand; fire at reduced rate was maintained. Messengers were sent to the combat train and to the battalion, asking for more ammunition. The combat trains made an effort to reach the battery, but failed under the enemy shelling which blocked all roads. At 3:45 AM hostile planes bombed and silenced a French battery, which was adjacent. At 5:30 AM, fire ceased, as there was no more

ammunition, and none left in the vicinity. By this time many men had been wounded.

IV

*When the long grey lines came flooding
upon Paris in the plain,
We stood and drank of the last free air
we never could taste again;
They had led us back from the lost battle,
to halt we knew not where
And stilled us; and our gaping guns
were dumb with our despair.*

The battery had seen no targets up to this hour. French infantry was withdrawing past the battery going south, disappearing into woods. They left a detachment which dug itself in around Janvier Farm. The enemy artillery fire stopped at 6:30 AM, and a few minutes later individual hostile infantrymen commenced to engage the French. The latter asked for assistance from the battery to defend the position. The French commander stated that German infantry had gone by to the east, and might attack from the rear. One platoon French 75's was in action, but the remainder of the French batteries had withdrawn, or been silenced. Battery A considered withdrawing, but this was impossible, as the animals had been close by, and at this hour only one remained, all the rest having become casualties from HE and gas shells. The battery had an OP under an officer. By 7:00 AM it was evident that the OP was in hostile possession. At 7:25 AM the order was given to disable the pieces and abandon the position; the personnel to reassemble at Condé-en-Brie, which was announced as the rendezvous point. About one third of those present were casualties, and in withdrawing the wounded were carried off on improvised stretchers. The experiences of this battery as to ammunition were typical. The counter artillery

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preparation fired from 8:00 PM to 11:00 PM, followed by almost continuous fire from about 11:40 PM, exhausted the ammunition at some batteries and caused a reduction in the rate of fire at others.

The difficulties as to ammunition became known to the division, and they utilized all transportation to bring up more shells. Up to 11:00 AM the enemy artillery fire blocked roads extensively, but after that hour it was possible, by using care, to replace ammunition stocks.

At noon, the 30th Infantry sent in a report, stating that their front-line battalion had fallen back, but that they held the line from Crezancy west. They understood there were some enemy at Fossoy, and also in front of them. They had received the order to counterattack, but had not done so as it was considered unnecessary. They believed that the mission of driving out the enemy south of the Marne was an artillery one. They could see about eight Allied planes, apparently ranging for some artillery on Marne crossings, and from where they were our fire on these points appeared to be perfect. Consequently, if the eight planes would range for targets located in their foreground, the artillery ought to have no difficulty in forcing the enemy there to come in and surrender. About 200 prisoners were now in their possession. Owing to lack of food and water, a very hot day, severe casualties, and having to wear gas masks for ten hours, the regiment was exhausted, and relief was requested. They could, and would, hold on until this was effected. They estimated their losses as 500 for the front-line battalion, and 250 more for the balance of the regiment.

Although the 30th Infantry did not counterattack, they did direct the three companies of the 4th Infantry, received

from division reserve shortly before noon, to do so. Two of these companies, L and M, with Company A 38th Infantry, from near le Souvrien Farm, counterattacked around noon, advancing toward Crezancy. They found this village occupied by the enemy, but, attacking resolutely, occupied this place, driving the enemy north. No pursuit, or further advance was made. This attack was not coordinated with the artillery.

Over on the right, the 55th Brigade was holding the line from Croix Goberge, through Condé-en-Brie to hill 192, south of St. Agnan. As early as 9:00 AM they had observed infantry in small numbers assembling on the high ground north of Celles-les-Condé and St. Agnan. The OP's in this sector saw this too. They differed in opinion as to who this infantry was. Some OP's reported them as the enemy, some as Americans, and some as French. Our infantry observed through their field glasses. It was only about 1,200 meters from our trenches to across the valley of St. Agnan, and visibility was excellent. But, in the bright sunshine, it was impossible to distinguish the American olive drab from the French grey blue or the German olive green. The infantry could not agree as to who these people were. About 10:00 AM quite a number of men were across the valley, and they started to construct a trench. Everybody could see this plainly, but the OP's split in reporting it. Some thought the trench was facing south, indicating this was the enemy, but others thought the trench was facing north, indicating that these were friendly troops who had withdrawn from positions along the Marne. Nothing was done about it, except to watch.

Around 12:00 noon, a few men from north of the valley started down towards St. Agnan, and disappeared

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among the trees and houses. It was believed these might be messengers, but as no one arrived in our lines it was next thought they might be stragglers. A little later men by twos and threes followed down into the valley. As there was known to be no water on the high ground, and it was very hot, it seemed possible these might be details to fill canteens. But nobody went back, and the increasing number of men accumulating in the valley, with corresponding additions replacing them in the trench which they had now finished, aroused suspicion.

The infantry commander decided that he ought to do something, and about 1:00 PM ordered an officers' patrol to go towards St. Agnan, and find out who these infantrymen might be. The patrol started about 1:20 PM. Their first obstacle was their own barbed wire. As their uniforms were in good condition, and the possibility of replacing them was dubious, they did not desire to spoil them. They crossed the wire with care, and then re-formed. They advanced downward through an orchard. They had gone only a short distance when they received rifle fire from the direction of St. Agnan. They replied, and then received machine-gun fire. They were now satisfied that this must be the enemy in front of them. They were also convinced that such information should be immediately reported back. They retired, and were once more confronted with their own barbed wire. But in view of the importance of their mission, haste was considered essential; they crawled rapidly through the wire, and paid no attention to damage to clothing.

The OP's now were convinced that the infantry across the narrow valley were hostile, and our infantry agreed. The artillery was notified that the territory north of the valley was no

longer "off limits," and they could fire at it. At this time the artillery had little ammunition at battery positions, and did not know when, and how much, they would receive. They had to consider that the enemy might renew his attack next morning, by which time ample stocks of shells ought to be on hand. So only a few problems were fired at the new target, now quite well dug in.

At 1:30 PM, when the infantry patrol got into difficulties, enemy artillery commenced to shell the trenches of the 55th Brigade, south of the St. Agnan valley. All shells were 155-mm. or 210-mm. or larger. The fire was quite accurate. Some shells exploded in the trenches, and others burst so close that they blew the trenches in. Word was received that a counterattack was to be made by French troops at 6:00 PM, in which the American troops might participate. This was interpreted to mean that there would be no need of infantry until that hour. In view of the shelling they were receiving the local commander authorized releasing the men, less small detachments and all CP's, to take advantage of the nearest available cover. None of the OP's were able to locate any hostile battery.

Meanwhile, the 3d Division was attempting to determine where the enemy front line in their sector was. It was believed to be through Fossoy and Crezancy, it being unknown whether these two places were in German or American possession. The enemy at Fossoy was considered a dangerous element, and the 5th Brigade, at noon, inquired of the division as to what could be done to hasten a counterattack on Fossoy and Mezy. The division had no reserve, but they saw no further use in holding the bretelle line extending southeast from le Rocq, in view of the advance of the French 73d division to the Bois de la Jute, and

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the accumulation of troops from the 4th, 30th, and 38th Infantry regiments in the Bois d'Aigremont. They had never thought much of this bretelle line, and had established it only because the corps had ordered it. They did not hesitate to abandon it. At 12:45 noon they ordered the 1st Battalion (less Company D) 7th Infantry, holding the bretelle line, placed at the disposition of the 5th Brigade, to "counterattack through Fossoy on Mezy at once." The brigade transmitted the order at 1:20 PM; they did not provide for cooperation with the 30th Infantry on the right in view of previous instructions directing that regiment to counterattack. As to the 7th Infantry on the left, the brigade felt these were the very force needing special help. No arrangements were made with the artillery to cover the proposed counterattack. The 3d Field Artillery Brigade, by noon, had no lines in except to their 76th Field Artillery, located on the extreme left, and, in this regiment, one of its two battalions was out, due to its CP having been destroyed by enemy shells. Battery commanders within the division were operating on their own initiative, and from OP's close to the batteries. As the batteries were in general not very near the front, their local OP's discovered little.

The 1st Battalion 7th Infantry had not been attacked; but it had been shelled as part of the enemy artillery preparation. The bretelle line was in open country, and there was no camouflage. The enemy artillery fire was accurate, and when at 2:00 PM the order to counterattack was received, the losses sustained were estimated as 325 men out of about 600. The men were worn by the strain and heat, and the lack of food and water. They had small information as to where the enemy was, and very little

about supporting troops. The commander decided his line was not facing in the right direction; he withdrew his men, and re-formed in the unnamed woods just north of Le Houy Farm (189-255). He found two 75-mm. batteries in adjacent woods, who had OP's in trees. All the information they could give him was that there were no targets on this side of the road leading east from le Rocq. This was as far as they could see. They promised to support the attack if it met opposition in advancing to this road.

Shortly after 3:00 PM the counterattack started, with two companies in line and one in support. Preceded by scouts, it advanced to the road leading east from le Rocq, with the left of the line clearing le Rocq chateau. This road, lined with trees, was about on the skyline when looking from the Marne southwards. Le Rocq chateau was a large building, affording an excellent view of the Marne valley; it had a tower with a pointed top—very good for a base point. But no one had told the infantry about artillery base points. They had noticed nothing unusual up to this time, and they reached the vicinity of the road without trouble. They looked around. They had a magnificent view north. They saw hostile balloons, but these seemed to be a long way off, and not particularly dangerous. A dip in the ground prevented a near view of the terrain of more than 400 or 500 meters. The scouts were sent out before renewing the advance, and were observed disappearing down the grade. The last signal they gave was that no enemy was in sight.

The CP of the 7th Infantry had been at le Rocq. They had been shelled out, but were not far away. They had been unable to find out where their front line was, except that an improvised line was in process of being built up west of le Rocq. The major commanding this line had reported that

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his right was hard pressed. He did not state where his right was, or where the enemy was, but it was assumed that the vicinity of Fossoy was meant. The counterattack, with its left directed from le Rocq towards Fossoy, seemed to be just what was needed. There appeared to be every reason why it should proceed. So around 3:30 PM the counterattack followed its scouts, jumping off from the tree-lined road extending east from le Rocq. The only things moving in front were those German balloons—but they were a long way off. The 7th infantry ordered the attack to go to le Ru Chailly Farm instead of to Mezy.

The counterattack had not gone more than a few meters before it received without warning a tremendous burst of fire from the enemy artillery. Large-size, medium-size, and small-size shells, gas and HE, exploded all around them. It seemed as if all the German artillery was concentrating on this battalion. The men fled back to the road to seek shelter in ditches, leaving dead and wounded scattered over the ground. The fire did not last long, but when it ended, the counterattack was dead. After some delay Company C, which was in battalion reserve some distance away, made a second attempt to cross the road. But when they emerged from the trees, they, too, had that terrific enemy barrage come down on them. Most of the company fled to the rear, but a few found shelter behind a hedge about 400 meters to the front. As long as they stayed under cover no further difficulty arose, but several attempts made to move forward brought down each time terrific artillery fire, which blocked all advances. This battalion did, however, make liaison on its right with the 30th Infantry, in Bois d'Aigremont. Late that afternoon, a single platoon, which had been rallied,

worked down the tree-sheltered road leading north from le Rocq, and at dusk reached Fossoy. They found no troops there, either friendly or hostile. They advanced farther, and eventually reached le Ru Chailly Farm. Dead and wounded of both sides were discovered, but no troops.

Nothing about this counterattack reached higher headquarters for a long time. The artillery was not notified, and furnished no special assistance. The 7th Infantry notified the 5th Brigade as to changing the objective of the counterattack and that, as of 3:15 PM, they had accounted for 11 companies in all. They wanted assistance, and they suggested that the French battalion supposed to be en route to les Aulnes bouillants be made available to throw into line. The brigade asked that this battalion be moved up by truck if possible. The major commanding the counterattack personally reported to the provisional line of the 7th Infantry stating that his command had been dispersed. It was not until night—8:45 PM—that the remnants of the battalion were located; one part was in the Bois d'Aigremont, and another part had connected with the provisional line of numerous elements west of Fossoy. This counterattack ended the battle for the day in the 3d Division sector.

During the afternoon the French 73d Division was moving into position for a counterattack to be launched at 6:00 PM. The army decided to include the French III Corps in the counterattack, and attached the 73d Division to that corps (less elements for local defense in the American 3d Division zone of action). The 73d Division was directed by the III Corps to counterattack in conjunction with the 125th Division, including the American 55th Brigade. The plan was for the 73d Division, with five battalions of infantry in line, to jump off from the

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vicinity of the Surmelin, and advance northeast against the line: Janvier Farm—St. Agnan, while the 55th Brigade, supported by elements of the French 125th Division, was to advance from the south side of the St. Agnan valley against the front from St. Agnan east. The 73d Division front was about 6,000 meters, or about 1,200 meters per battalion. Their artillery support consisted of 16 batteries of 75's, and 8 batteries of 155-mm. howitzers, all French, or about 16 pieces per kilometer. This front was so large, for the forces available, and the information of the enemy was so meager, that the division commander thought he should have assistance, and about 4:00 PM he requested the 3d Division to order all their elements which might be east of the Surmelin to join in the attack. The 125th Division also urgently requested the 3d Division to assist in the contemplated counterattack. The 3d Division hesitated. They had received no news as to the counterattack of the 7th Infantry. But they received about this time a report from the 7th Infantry, which had been verbally transmitted through at least two CP's. As received it read:

"Germans have between 20 and 30 batteries lined up in the open on opposite hill opposite my left platoon. Austrian 88 on hill opposite."

The message was evidently garbled, but it seemed to indicate that the enemy might be preparing a strong attack against the left of the division sector. So the artillery was notified about the 30 hostile batteries, and no assistance was sent to the French divisions.

The artillery were unable to locate the reported 20 to 30 hostile batteries. Lines of OP's were still mostly out, and many CP's had been wrecked, making communication dependent mainly on

courier, hence slow. The enemy Air Service was still very active, and our own planes concentrated their attention on hostile river crossings. The planes failed to confirm the large number of batteries stated to be in the open, and just where this was could not be ascertained.

Interrogation of German prisoners was fairly completed during the afternoon. They belonged to the 398th Infantry, 6th Grenadiers, and attached services, all from the German 10th Division. All prisoners concurred that their advance was to be made only to a distance of 6 to 7 kilometers from the Marne, as far as the vicinity of St. Eugene. On reaching this line they were to dig in and consolidate.

The 3d Division felt that the danger point was the Bois de la Jute, north of St. Eugene, liable to attack from the north and/or from the east. They did not feel justified in detaching troops to take part in the proposed counterattack of the French divisions. As 6:00 PM, the hour for this attack, approached, it became evident that the French 73d Division would hardly be at the line of departure in time. They therefore postponed the attack until 7:30 PM. Some of the artillery did not receive this information, and started to fire at the earlier hour. The 55th Brigade front line also did not hear of the postponement, and the fire of their artillery indicated that the attack was to be launched. But it now appeared that the infantry had, at 2:00 PM, received authority to "take advantage of the cover" in the vicinity, and had so thoroughly done so that only a few men could be located. It seemed so hopeless to counterattack with these that they did not do it. When 7:30 PM arrived, in view of misunderstandings, and the fact that it was doubtful whether all units would even by that time be in line, the counterattack was finally postponed until next day, at an hour to be

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announced later. This ended operations for this day.

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We have omitted an account up to this time as to what happened on 15 July, in the forward areas. Not even an approximate account arrived of these events at regimental and higher CP's on that day, and the artillery knew practically nothing about it. As the facts are now known, they will be given briefly, in order from west to east.

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On 14 July the 3d Battalion 7th Infantry occupied the front along the Marne from Blesmes to le Ru Chailly Farm, inclusive; the 2d Battalion, the main line of resistance on the high ground near the Aqueduct. Company D was in regimental reserve, and the 1st Battalion (less Company D) on detached service in the bretelle line. The forward battalion had no definite defensive line, but was assigned the entire area between the Marne and the high ground to the south. Some rifle groups were close to the river; other rifle groups and machine guns were posted along the railroad; in all these amounted to two companies. The remaining two companies, plus the regimental machine-gun company, and Company D 8th Machine Gun Battalion, were in support in woods south of the railroad.

On the night of 14/15 July, the 2d Battalion started to relieve the 3d Battalion, and the enemy attack, at 12:10 midnight, caught the troops with the two battalions well mixed. Both the main line of resistance and the forward area contained mixtures of troops of both battalions. The enemy artillery preparation covered very thoroughly the entire sector of the regiment. There was much gas in it, and masks had to be worn. Communication was shot out within 15 minutes, and the OP's in the area were unable to send any messages

to the artillery. Up to the time the lines were cut they had seen only flashes, and bursting shells. For a time troops moved around seeking their positions, and Company K and one platoon of Company M reached the main line of resistance. All the rest of the 2d and 3d Battalions were mixed up in the forward area.

The defending infantry saw, at first, enemy rifle flashes across the river. They opened fire on these. They could see our own artillery barrages falling on the north side of the river, and they reinforced this fire as well as possible. They received severe trench-mortar and machine-gun fire in return, and some artillery fire, and, about 3:30 AM, a very strong artillery fire from large-caliber guns. This cleaned out the rifle groups north of the railroad, and made gaps in the railroad line itself. By 4:00 AM it was evident that hostile infantry was across the Marne opposite le Ru Chailly Farm. No one knew how they got there. This hostile force started to advance in thin lines astride of the railroad. It was now light, and the enemy, although advancing with caution, could be seen. The help of the artillery was badly needed, but with all lines out the information could not be forwarded. There was one platoon of infantry at le Ru Chailly; they defended the place until only 15 men were left. They sent a man for assistance. He found the platoon that they had relieved, under cover, only a short distance away. This platoon at once counterattacked. They reached le Ru Chailly Farm, but the enemy did too. The fight was settled by the use of hand grenades, of which the enemy had many and the Americans none. The Germans occupied le Ru Chailly Farm.

Looking toward the east, what appeared to be hostile troops could be observed towards Mezy. To clear up this situation, about 5:00 AM a combat

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patrol under an officer was sent eastward, to establish liaison with the 30th Infantry, from whom nothing had been seen or heard. At this hour the noise of battle was terrific. Smoke and gas were plentiful; the artillery shelling was not falling much in the area, but appeared to be going over. Machine-gun fire was everywhere, and it was impossible to tell, at even short range, which were friends, and which were enemy. The combat patrol disappeared, in the smoke and noise of battle, in its endeavor to learn what was happening towards Mezy, and was never seen or heard from again.

Soon after, the enemy was certainly coming on Fossoy, from the direction of Mezy. Other Germans at le Ru Chailly started southwest. About 7:00 AM the situation was serious. The senior officer present had located a number of elements of the mixed battalions, and he sent out runners to reform on a line through Fossoy woods to the Bois d'Aigremont. It took a long time to get this order to the scattered units under the constant fire, which never let up. It was impracticable to re-form on this line. The men, in trying to occupy it, met such severe fire that the line did not stabilize until about 9:00 AM, when it ran roughly around Fossoy, and Fossoy Chateau, both exclusive, and at about 200 to 300 meters away. This line held. Fire on it declined gradually, and after 11:00 AM was only slight. The men were worn, having been up all night, with little food and water. Their commander reported that fresh troops would be needed to drive through Fossoy, and on beyond. From their positions they could see no targets, and were uncertain as to just where the enemy was.

East of le Ru Chailly, the 30th Infantry held the sector to include Mezy and Crezancy. Both these villages were

occupied, and were prepared for defense. The front area was held by the 1st Battalion, plus the regimental machine-gun company, Company K, and an additional machine-gun company. Two companies held the railroad and river line, the remainder were distributed in depth back to the Fossoy-Crezancy road. Battery F 10th Field Artillery furnished one 75-mm. gun for direct fire; it was posted in edge of woods, near coordinates 190.9-259.5. This battalion had employed considerable camouflage and believed itself well dug in, and well concealed.

When the battle started, detachments along the river and railroad did not receive a severe fire; they held their positions. Through shell fire communication was cut, and no reports could be sent to the rear. About 2:00 AM fire was received from a strong force of trench mortars and machine guns, just north of the Marne, supplemented by artillery fire. This caused casualties, and gaps developed. The first sign of enemy infantry being south of the Marne was near Mezy. This village was entered by a hostile patrol about 2:30 AM. An OP was in the tower of the church watching events, but paying no attention to the immediate vicinity. A voice called the officer in charge to the entrance; he was disagreeably surprised to find it was the enemy, who led him into confinement.

By 3:30 AM the Germans had occupied the railroad in places. Daylight developed the fact that the enemy was across and advancing. The groups south of the railroad opened fire. Machine-gun fire was incessant, but there was little artillery fire falling in the area; it was going over. The American resistance was vigorous, and centered on the defense of the north edges of woods about on coordinate 259.5. It stopped the enemy. Minor counterattacks

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were made, which captured about 200 prisoners, found to belong to the German 398th Infantry and the 6th Grenadiers. Around 5:00 AM German artillery fire commenced to fall on American positions, and our counterattacks declined. Instead, a long fire fight resulted, with little change of positions. Casualties increased. Fatigue commenced to appear. The men had not slept that night; had been wearing gas masks since midnight; they had no food or water. It was very hot. The ammunition began to appear nearly exhausted. No help was coming.

About 7:30 AM the battalion commander decided that the French idea as to abandoning forward areas to the enemy, and resisting on a rear line, was just about the right thing to do. He saw no use of staying where he was. He thereupon issued orders to withdraw, and personally going to the rear, ordered his two leading companies to follow. He passed near Crezancy, and stopped to order the rear elements of his command to retire. The withdrawal was not controlled; some went back along the west slope of the Surmelin, while others went to the Bois d'Aigremont. The general impression from this movement was that the enemy was close behind, and led to assumptions that the enemy had or was occupying the line Fossoy-Crezancy.

The 38th Infantry held the sector from Mezy, exclusive, east as far as coordinate 193.4. The 2d Battalion, with Company A 9th Machine Gun Battalion, held the forward area. There was no definite line of defense. Rifle groups were close to the river, with machine guns and supports along the railroad, and other supports in rear where the terrain offered cover and concealment. The north edges of Moulins and Paroy were prepared for defense, the stone houses lending themselves to this

mission. The ditch along the Moulins-Paroy road was prepared for use as a trench with a view to firing on the low ground to the west. Since it was known that the French regiment on the right had announced an intention to abandon the forward area as soon as a serious attack developed, it was foreseen that the enemy might advance across the Marne to the east. To provide against this event, scattered trenches were constructed on the high ground south from the Moulins Ruiné, facing east.

Direct artillery support was furnished by the 1st Battalion 10th Field Artillery. Battery A, whose fortunes we have already discussed, was near Janvier Farm; Battery B was near le Souvrien Farm; Battery C and the battalion CP were near St. Eugene. Of the infantry companies, G and H held the railroad and river line, including Moulins; Company F was in support in the ravine from Moulins to the Moulin Ruine, and Company E was in support at Paroy.

The Surmelin is an unfordable stream, 30 to 40 yards wide. The railroad bridge across it is a stone arch bridge, connected with Mezy by an embankment about 18 feet high. This embankment overlooked low ground north to the Marne, which at the time of battle was covered with high wheat.

The initial enemy artillery fire went largely over, and it was possible for some time to circulate among the defending troops. But around 1:00 AM the fire on the river positions was so severe that it was impossible to move, and all communications were severed. About 2:40 AM Germans commenced to cross the Marne in boats pulled back and forth by ropes. The river line had suffered so many casualties that they could not successfully oppose this, and the railroad line was too far away in the darkness to enable accurate fire to be brought upon points of crossing.

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But it prevented the enemy from leaving the shelter of the river bank, and west of the Surmelin the Germans were closely confined to the vicinity of the Marne. Before 4:00 AM, hostile infantry could be dimly seen, advancing south from the Marne. It was not yet daylight, and there was considerable smoke. The high wheat afforded concealment, but it was possible to observe the enemy's approach. A very hot fire of machine guns and automatic rifles was directed against the enemy. Our artillery was still firing barrages along the river bank, and between these two means of defense, the enemy was stopped. His rolling barrage passed over our infantry; it was clear that the enemy was not behind it. Renewed attempts to advance west of the Surmelin, which had no artillery support, and were now in broad daylight, were broken down through a cross-fire of machine guns from the railroad embankment and Moulins.

East of the Surmelin the enemy reached in places the railroad, but he did not cross it. Constant and severe fire was everywhere, but the 38th Infantry held. It became evident about 6:00 AM that the enemy was in Mezy; and that he had also passed beyond the right of the position going south. Men could be seen going south from Mezy, but it was unknown whether these were friendly troops retiring, or enemy troops advancing. Word was sent to the rear, reporting both flanks turned.

Machine guns along the railroad east of Mezy prevented repeated attempts of the enemy to advance in this sector. They had good protection, and good view of the foreground. Several times hostile batteries attacked their positions. As soon as it was noted that enemy artillery was attempting a bracket adjustment on the railroad embankment, the machine guns dropped behind, and under cover moved a few hundred

meters to the right or left, and took new positions. The machine guns in Moulins covered the foreground during the few minutes required for change of positions. Repeatedly moving, these machine guns maintained their positions to the end of the battle.

About 7:00 AM the troops west of the Surmelin were ordered to withdraw to Moulins, and the troops east of Moulins were directed to form a new line through the north edge of the village. It was impossible to get this order to all elements, and only some withdrew, but the new line was formed. The men coming back brought back about 200 prisoners, mostly from the 6th Grenadiers; a few from the 5th Grenadiers.

Around 9:00 AM Companies B and D started a counterattack northeast from Paroy. It had considerable success, as it struck the flank of Germans moving south. About 400 prisoners were taken, together with several machine guns, and a line was established extending south from Moulins Ruiné, which protected the right of the forward battalion.

Around 9:00 AM hostile infantry was discovered in Crezancy. It now appeared fairly certain that men seen moving south from Mezy must be the enemy, and they were now liberally fired at by troops within view. It was impossible to notify the artillery of the positions of either the enemy or of our own troops, as the enemy artillery bombardment still continued preventing the repair of lines of communication, all of which were out. About 10:00 AM some of the elements still west of the Surmelin in the vicinity of the railroad observed what appeared to be a large body of hostile infantry, advancing north from woods one kilometer south of Mezy. This enemy attack met machine-gun fire from east of the Surmelin as well as from the

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railroad. It had no artillery support, and was driven back. It was the last hostile movement in the sector, as shortly after the enemy artillery preparation ended, and was replaced by desultory fire.

The regimental commander, after estimating the situation, directed his advanced troops to retire to a line through Paroy. He considered that, with both flanks in the air, the position then occupied was untenable. All wounded were brought off, and the withdrawal made after 4:00 PM. It was gradual, and not interfered with. An ambulance visited Moulins as late as 6:00 PM without meeting any enemy. In view of the enemy being in Crezancy, the line was further withdrawn to through Launay, where it stabilized for the night.

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Late the night of the 15th, a battalion of the 111th Infantry reported for duty in the Bois d'Aigremont to make secure that position, believed to be seriously threatened by the enemy. As nearly as the 3d Division could determine at the end of the day, the enemy held the line Fossoy (inclusive)—Crezancy (probably exclusive)—Paroy (exclusive)—les Etangs Farm (inclusive)—Bois de Condé (inclusive); thence east on the north side of the St. Agnan valley. The movements ordered for the next day were the corps orders for the counterattack by the 73d Division. This was extended by later orders to include, from left to right, the French 125th Division, and the French 20th Division. The 55th Brigade was ordered to furnish one battalion of the 109th Infantry to assist the French 20th Division. The artillery of the divisions engaged, plus the corps and army artillery, were to support the attack, scheduled for daylight, or about 4:00 AM.

July 16th opened hot and fair. There had been no infantry activity during the

past night, but there was considerable artillery fire. As day broke, the artillery fire increased, and machine-gun fire started generally in the area east of the Surmelin. West of this stream, troops in line were shelled; again there was difficulty as to food and water, intensified by means of the great destruction of transportation the day before.

At 3d Division headquarters, there was anxiety as to the situation around the Bois d'Aigremont, and the proposed attack of the French against the Bois de Condé. Would the enemy attack first? There was difficulty in obtaining information from the front. Communication was better, but still poor. To the 30th Infantry, the lines were again out, and it was necessary to route messages by courier, through the 4th Infantry, thence parallel to the front by courier, to the 7th and the 30th Infantry. General Dickman, around 5:00 AM, sent messages to the 5th Brigade and direct to the 30th Infantry, to find out the situation in their front. He added: "If Boche has not been reenforced, chase him out." Received four hours later, the 30th Infantry, at 9:25 AM replied, to its brigade:

"Will not be able to give the information now. Am personally investigating. Am ordering a counterattack with fresh troops today. Notify Div. and ask them to leave me alone."

The "fresh troops" were the battalion of the 111th Infantry. This battalion did counterattack at 2:00 PM north from the Bois d'Aigremont. It advanced to across the Fossoy and Crezancy road, receiving heavy artillery fire from hostile artillery. It failed to locate any targets, and stopped, claiming that friendly artillery was firing directly in its front, making it impracticable to advance further.

The French counterattack of the 73d,

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125th, and 20th Divisions, which should have started at an early hour, was postponed until 10:00 AM. An artillery preparation was to begin at 9:15 AM. The mission of the attack was to drive the enemy out of the Bois de Condé, and east thereof. The 1st Battalion 109th Infantry (less Company D), plus Company K, was detailed to assist, and was to advance with its right along the road extending north from hill 192 to Evry (southeast of St. Agnan). The officer commanding this battalion received a copy of the attack order. It was written in French, with which language he was unfamiliar. So, after looking at the order from several directions, he decided it was unintelligible, and marked it *file*. Later he received a short message, also in French, the body of which read "H est dix," or *H hour is 10:00 AM*. This meant nothing to our commander, so he made an assumption that it was unimportant, and added it to the file (pocket in OD shirt). He then forgot about these French papers.

At 9:15 AM the artillery preparation started. Our commander recognized it. Being a careful officer he repaired to his OP nearby, to observe events, and take advantage of any situation which might present itself. Not having read his order, he did not know the mission of the artillery, or how long its fire was to last. At 10:00 AM the rolling barrage came down right in front of him. He saw it at once, and looked for infantry in attack formation to follow it. He could see none. He was painfully surprised; he could not believe that any one would order a rolling barrage, and omit detailing infantry to go along with it. However, there certainly was none.

The barrage started to roll. Our commander watched it; he hoped to see some delayed infantry hastening to catch up. None appeared. Our

commander was certain that somebody was AWOL on an extremely important occasion. He hoped it was a Frenchman; it did not occur to him that it might be himself. He felt sorry for him, whoever he might be.

The barrage rolled on; it reached the stream line, and mounted up the farther slopes of the St. Agnan valley. No one followed it. It stopped on the German trenches. The Germans disappeared; and then the barrage rolled relentlessly onwards over the hill. After a decent interval it expired, in compliance with instructions from superior authority. The Germans came back; they reopened fire; and their artillery shelled our lines. Our commander, convinced that there was nothing he could do, sorrowfully returned to his CP. He thought somebody was in to catch hell, and very justly so. Perhaps it was a Frenchman.

The French did not counterattack. They claimed that they waited for the Americans, who never started. General Lebrun, commanding the III Corps, ordered the attack renewed at 12:00 noon, all units to advance regardless, and keep going until they reached the Marne. The artillery was to support the attack with heavy fires, and another rolling barrage. But the artillery had fired much ammunition; they had little left. The artillery preparation was limited to a few problems against particularly important points. The barrage once more started right on time. Because of the reduced state of the ammunition supply, it was a thin barrage, and the infantry failed to recognize it.

This time the French did start out. Due to woods, and the fact that hill 192 had a number of small noses, the 109th Infantry did not observe their advance at once. But later, when it was seen that our Allies were moving

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forward, Company C, which was the base, moved out. It immediately received intense machine-gun and artillery fire from the opposite hills, and from the villages of St. Agnan and Evry, which it had been assumed were unoccupied. The company had difficulty in crossing its own barbed wire, but did so after a delay, and advanced about 300 meters, when it arrived opposite its advanced barbed wire. This was in plain view of the enemy, only a few hundred meters away, and the attack died right there.

Company K, next on the left, left its trenches 15 minutes late. One platoon got over the first wire, and half-way to the second belt. The other platoons were stopped almost as soon as they started by artillery and machine-gun fire. Company C received a report that Company K had been defeated. The only help near them were a few men from the 103d Engineers, scattered through the trenches, including some near the lower barbed wire. The Engineers had no orders and did nothing. Company C went back.

Company B started an hour late, or at 1:00 PM. At this hour they were the only ones moving forward in this sector, and they received a warm reception from the enemy. Expecting support from Company A, which was to follow in support, Company B succeeded in getting over both lines of wire, but were stopped shortly afterwards. They held their ground until around 3:30 PM, and then fell back. The support company received such a hot fire of shells that it never got started. It took refuge in the upper trenches. Its captain was killed. His successor had to crawl around sizing up the situation. Everybody was asking for artillery support. Communication with the artillery was bad, as the lines were cut. The artillery claimed that they were giving all the support their

ammunition permitted. Besides, no definite targets had been located. Just where was the enemy? It appeared that he was in St. Agnan and Evry, but our infantry had started for those places. Were they there now? Nobody knew. It was decided to do nothing, but to seek shelter in the trenches and local dugouts.

About 3:00 PM word was received that the French, on the right, had not succeeded in their counterattack, and that the troops were to be reassembled in the original trench line. During the day, the MP's had discovered a large number of stragglers in woods in rear. These men claimed to be acting in accordance with orders of the previous day, to "take advantage of the cover." Two hundred of them now arrived, organized as a provisional company; they were posted in support in rear of the right.

The III Corps ordered a new attack for 6:10 PM, preceded by an artillery preparation commencing at 5:50 PM. The artillery did not have ammunition for a longer preparation. It was directed that all organizations, in the same order as in the early afternoon, must jump off at the prescribed hour. The orders were translated and distributed.

The enemy was thoroughly aroused. He was now firing artillery problems; the trenches of the 109th Infantry appeared to be the favorite target. Problems came one right after another, and the trenches were a dangerous place in which to stay. Orders of the previous day, "to take advantage of the cover," were not repeated, but the men individually thought that this ought to be done. Some officers thought so, too. Our own artillery, conserving ammunition for the proposed new attack, were not returning the enemy's fire in anything like the volume it was being received, and the infantry thought they

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were not receiving proper artillery support. They saw no use in staying there until 6:10 PM. They withdrew, in part individually, in part in detachments under their officers.

At 5:50 PM, the artillery commenced the preparation. It was a good one. At 6:10 PM the rolling barrage came down once more before the positions of the 109th Infantry, and started again to roll across the valley. There was no one on hill 192 except one officer and a few machine-gunners. The enemy returned the artillery fire with interest, and the machine-gunners, unable to stand the strain, followed to the rear, leaving hill 192 unoccupied. The barrage relentlessly rolled to its destination; but there was no infantry behind it. The infantry blamed the artillery for inefficient counterbattery fire; the artillery replied that not one hostile battery had been located, either by the OP's or by the infantry.

In the 3d Division there was little fighting this day, but the enemy shelled and gassed the area with vigor. Communication was poor and intermittent. The OP's were reestablished, but were unable to find any targets, except north of the Marne, and then not many. From air observation it was known that the enemy had no bridges or crossings over the Marne west of the Surmelin, but east of that stream hostile movements across the river were reported. As of 11:00 AM, the 30th Infantry stated that the front line was from Fossoy to Crezancy, exclusive or inclusive not stated. The 7th Infantry extended this line to woods near le Ru Chailly Farm—not clear which woods were meant. The 38th Infantry was definitely established as from Launay thence south. The artillery reported they could not determine where the line was west of the Surmelin; the OP's could not distinguish it. But no fire had, or would

be, delivered south of the Marne until it could be established where our infantry was.

During the afternoon the 30th Infantry was withdrawn from line. It reported itself exhausted. The 111th Infantry, balance of which was arriving, replaced the 30th Infantry. The 38th Infantry offered to return to the Marne at any time, provided its right was covered. Pending operations south of St. Agnan, which, if successful, would have covered the right of the 38th, nothing was done.

The 17th July brought no fighting west of the Surmelin. The 7th Infantry reoccupied its old forward zone, without finding any enemy. It advanced east into the old sector of the 30th, now 111th. Infantry, and found neither enemy nor friendly troops. They were unable to enter Mezy, due to severe artillery fire, which they attributed to their own artillery. The 3d Field Artillery Brigade reported that they had delivered no fire south of the Marne, in this area, because of inability to discover any targets, or definite information as to our own infantry location. The 111th Infantry made only a slight advance, claiming artillery fire was too severe to enable them to reach Mezy. The 38th Infantry did not change its lines, but patrolled actively.

Over in the St. Agnan valley the plan still was to counterattack. Initial orders were for a counterattack partially encircling the Bois de Condé, which was first scheduled for 4:15 AM. Companies D and H. 109th Infantry, west of Dannejeu Farm (196-254), were to take part. They were directed to fall back, to enable the rolling barrage to start from their present lines. Owing to a postponement of the attack, the barrage did not come down at 4:15 AM, and the infantry reoccupied their trenches, which appeared safer, after waiting what seemed to be a reasonable time. Then the barrage did come down, fell right

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on the companies, and led to the abandonment of their positions. The men reassembled at the company kitchens, in the St. Agnan ravine. As the artillery fire ceased an assumption was made that there would be nothing more doing, at least for some time, so arms were laid aside, and locating their mess kits, the men lined up for breakfast. Everybody was hungry, and the breakfast looked good. Nobody suspected any danger. In the midst of the general contentment, hostile infantry suddenly appeared, making a counterattack of their own. Neither side recognized the other until they were about 100 meters apart. The Germans opened a hot fire. Abandoning all equipment, the men of the 109th who were not casualties jumped down into the ravine and fled in all directions. The enemy ate the breakfast, after which he retired. After a long interval the remnants of Companies D and H were rallied, and later were able to reoccupy, without opposition, their old positions.

The III Corps was determined to have that counterattack. This was the third day it was to have taken place, and nothing much had yet been done in this line. After the failure of the 4:15 attack, a new artillery preparation was ordered. It was to consist of:

7:05 AM to 8:05 AM: Shelling of enemy infantry positions in the zone of attack.

8:05 AM to 8:15 AM: Continue the foregoing, and add shelling of enemy lines of communication, with the mission of destroying them.

8:15 AM: Rolling barrage starts, to be continued to carry the infantry clear across the St. Agnan valley.

This attack was once more postponed, so as to have the infantry jump off at 11:00 AM. As thus modified, it did start, with the three French Divisions—73d, 125th, and 20th—from west to east in line. The American troops in this sector were considered exhausted, and none were

detailed to take part. This attack succeeded only in reaching the north side of the St. Agnan valley, making but minor gains.

V

*"The touch and the tornado; all our guns
give tongue together,*

*St. Barbara for the gunnery and God
defend the right,*

*They are stopped and gapped and battered
as we blast away the weather.*

*Building window upon window to our
lady of the light.*

*For the light is come on Liberty, her foes
are falling, falling,*

*They are reeling, they are running, as the
shameful years have run,*

*She is risen for all the humble, she has
heard the conquered calling,*

*St. Barbara of the Gunners, with her
hand upon the gun.*

This concluded the operations of the American Rocks of the Marne in this great battle. The enemy held his positions east of the Surmelin to include the night of 19-20 July. On that and the preceding night, he withdrew to north of the Marne, without any patrols discovering this. On the morning of the 20th, French troops, east of the Surmelin, at daylight finally started a powerful counterattack, with particularly strong artillery support. It went right through to the Marne, with the Americans watching. But the enemy had flown. Except for artillery fire, there had been no opposition, and during that day old positions on the river were reoccupied.

The losses in this battle were less than at first supposed. The 30th Infantry on 15 July reported its strength as 3,584 present. It estimated its losses for that day as about 25%, or, say, 900. General Dickman, on 17 July, when the regiment had been withdrawn from line, in a letter recommending the promotion of the regimental commander,

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stated that "the casualties of this regiment amounted to nearly 50%." On that day it was thought they were this, and if true would have amounted to about 1,700 or more. According to the Medical Department, the killed and wounded for the 30th Infantry were:

15 July	389
16 July	112
17 July	61
18 July	33
Total	595

This loss was slightly over 16% of the strength present. The difference consisted in men captured by the enemy and in stragglers.

Some other losses during the same period were:

between Americans and French because of a misconception of Marshal Foch's plans.

It is certain that the Commander-in-Chief in war should keep his plans secret. But if the troops have no confidence in him, it may result in embarrassment. Had the C-in-C in this case been an American, the troops probably would have had confidence, and would have carried out orders without question. But they felt the French had discredited themselves by failing to win the war in the past four years, and attributed this to poor leadership and lack of fighting qualities. They looked with growing suspicion on anything that bore the mark of the French armies.

2. Prior to the attack, assumptions had been made that when it came there

Unit	Strength 14 July	Losses estimated at the time	Losses actual killed and wounded
7th Infantry	3,814	500	678
38th Infantry	3,749	743	596
109th Infantry	3,687	761	373
110th Infantry	unknown	unknown	173

COMMENTS

1. Marshal Foch's plans were based on accurate information that the Germans would attack with a mission of capturing Reims. He knew at first that the attack would not occur earlier than 15 July, and, later, that it would be that very day. He knew that the attack would be on both sides of Reims. He decided to withdraw in the zone of the enemy's proposed attack, and counterattack three days after the enemy committed himself, on both sides of the Chateau Thierry salient.

Marshal Foch kept his plan secret. The Americans on the Marne knew nothing about this counterattack. They felt themselves the Rocks of the Marne, the key defense to Paris. They could not understand abandoning the foreground to the enemy, and retiring to a rear position. No American texts discussed a defense of this kind. Much bad feeling resulted

would be open warfare, with lots of maneuver. The feeling was to get away from trench warfare. So not many trenches were dug. And these were often of but slight relief.

When the attack came, the trenches were found to be so shallow as to give insufficient cover. In spite of the desire to use open-warfare methods, and repeated orders from higher authority to counterattack the Germans, the only open-warfare movements were,

- a.* The 7th Infantry used three companies to counterattack, which attack broke down before it came in sight of the enemy.
- b.* Two companies of the 4th Infantry recovered Crezancy, having advanced about 1 kilometer.
- c.* Two companies of the 38th Infantry made a very successful counterattack.

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- d. Ineffectual attempts were made several times by the 109th Infantry to counterattack.

In 5¼ infantry regiments, with 63 combat units, only 7 units did attack, and only 4 of these contacted the enemy. The remaining units stuck to their trenches. Can we count, in the future, on the disappearance of trench warfare? Notwithstanding preference for open warfare, can we be certain that in the future we can obtain it?

3. There had been ample time to prepare for the battle. The artillery had provided numerous OP's, and numerous liaison officers. Just the same, liaison was poor between artillery and infantry. Lines of communication all went out. Messages by courier were the only means of sending information. With roads blocked, this broke down. The artillery fired along and north of the Marne; they hesitated to fire south of the river. They did not know where their own infantry was. The infantry could not tell where its front lines were. When the OP's saw infantry, with visibility excellent—it couldn't have been better—they were unable to tell to which side the infantry belonged. The artillery was as unable to follow the infantry combat as were the infantry themselves.

4. At times, the artillery lacked ammunition, and had either to slow down their firing or stop. They fired a counter artillery preparation from 8:00 to 11:00 PM, on 14 July, to break up the enemy's concentrations of troops; they repeated this commencing about 11:40 PM, and kept it up for nearly 12 hours.

When ammunition was stacked in dumps near the guns, they were frequently blown up by enemy shells. If ammunition was sent forward from the rear, shell fire on roads blocked it. The solution seems to be to have plenty of ammunition, in as many small dumps as possible, not too far from the guns. In a first-class battle, we can not count on

using roads, and must expect enemy fire to make some hits on our dumps.

5. Having kitchens and transportation near units in line was convenient and appeared to lend itself to the moving-warfare idea. They were nearly all lost. This reduced the morale of some troops very materially, by depriving them of food and water, which was either destroyed or believed to be contaminated by gas. The loss of transportation, of course, precluded any open warfare, had there even been any desire, after the battle once got a good start, to try this.

6. Air observation was satisfactory as to targets crossing the Marne. It reported the points of crossing, and the artillery successfully destroyed these places, one after another, during daytime. The Air Service gave almost no results as to targets on land. They saw little among the wooded terrain and fields covered with high wheat, and when they did see troops, could not tell whether they were friendly or hostile.

7. It seems to the author that one of the lessons of the Battle of the Marne is that the artillery ought not to depend upon the infantry for designation of targets. The infantry have troubles of their own, without acting as observers for the artillery. They have plenty to do, attending to their own business, and part of the artillery's business is to help the infantry, without waiting to be asked, and without waiting for some one else to tell them at what to shoot. The artillery has its own lines of communication, and should have enough observers, on the ground, and in the air, to find its own targets. From these, if all can not be fired on at once, preference should be given to those which are most dangerous to our winning the battle. In the Marne battle, this was the enemy's points of crossing over the Marne, something which the infantry did not, and in most cases, could not see. The artillery did do

this. At times the infantry thought they were not getting artillery support, or not enough artillery support, but what won the battle was the infantry holding the rear line, behind which the artillery so

thoroughly shelled the critical points along the Marne that the enemy never even tried a serious attack against the thin infantry line covering the main artillery positions.

Third Division Reunion

All former Third Division men are cordially invited to attend the 18th Annual Reunion and Convention to be held in Washington, D. C., July 15th to 18th inclusive. Official convention headquarters

will be at the Wardman Park Hotel. For information and details, communicate with William A. Shoemaker, Secretary, Convention Committee, 3811 25th Place, N. E., Washington.

All of us who were on the Western Front will remember the inevitable sequence of all offensives; first, the lorries lumbering up the newly made roads, then the efforts of labour battalions with great rollers to make good the roads, loosened by shells and churned into mud, and soon after, the abandonment of the effort, the long strings of horses and mules carrying on their backs what could no longer be transported on wheels.

A few miles back the same phenomenon happened a little later. Lorries with rations and stores operating smoothly for the first week or two, then with greater and greater difficulty, and finally, horse-drawn guns and horse-drawn vehicles alone capable of meeting the needs of the army.

I have been watching these things now for thirty years, and the experience is invariable. As peace continues and real war recedes further and further into antiquity, more and more fantastic are the theories which are involved. In peace time the pundits decide that armies and guns shall move quicker and quicker; guns shall be smaller and swifter; mechanical contrivances shall become more and more important—what is now termed "mechanization." But in real war armies move slower and slower, guns become bigger and bigger and slower and slower, and all the mechanical devices, after the first thirty-six hours, fail, and are scrapped in favour of the only means of transport that really survives in the front line in war—the men and the horses.

A second fallacy is the idea that by "mechanizing" our forces—a hateful, ungrammatical word, but it seems to have crept into the language—we can create a powerful force with fewer men. I am persuaded that this is a delusion as profound as the theory that there will be no more war. War is a rough-and-ready business, a case of making things do. All the elaborate arrangements dependent upon petrol supplies may give one a good start, but nothing more, when the real clash of arms comes. In moving warfare, as before, the infantryman will walk on his feet and carry his rifle, the cavalryman will bestride his horse, which moves him swiftly from place to place, can keep alive in most countries with but little help, and, itself almost immune from gas poisoning, can transport him safely above the lethal gas, which must float within a few feet of the ground. Woe be to the country which trusts solely to a mechanized army! . . .
—From "Fear and Be Slain," by Lord Mottistone, C.B., C.M.G., D.S.O. Published by Messrs, Hodder and Stoughton, Ltd., St. Paul's House, E. C. 4, London.



THE OMISSION of the THANKS TO THESE department in this issue is not due to the fact that there were no thanks to award. Quite the contrary. It is just that the custodian of that department is in the 5th Echelon shops for repair, and found it too much to handle by remote control. When he is run off the assembly line, glittering with Duco, and sporting an OK tag, the department will be reestablished.



THE OFFICE FORCE has been busy ringing up new memberships. Apparently the challenge issued in the last number was accepted in no uncertain manner, and there are two 100-percent organizations to report to you this issue. First in the field was Captain C. A. Kaiser, FA-Res, adjutant of the Fort Lewis CCC District, who sent in 14 new memberships, and a renewal, to make his district 100-percent. This was no mean feat. Captain Kaiser's field artillerymen are scattered the length of the Northwest, and it is reasonable to suppose that some of them are so far back in the woods that airmail letters have to be delivered by parachute and pack train. But he reached them. The JOURNAL'S congratulations to him and to them.

An extremely close second is the 111th Field Artillery, whose commanding officer, Colonel Wm. H. Sands, let no grass grow under his feet in announcing that his unit would be the first regiment to register 100-percent

membership, and sent in 48 memberships, the record number, so far as is known, in years.

In the future, great care will be taken by the JOURNAL to avoid issuing dares to either of these officers, although we play with the idea of suggesting that the job of circulation manager is open.

Herewith, moreover, two standing columns:

One Hundred Percent Units

Fort Lewis CCC District
111th Field Artillery

Memberships Obtained

Colonel Wm. H. Sands, 111th FA—48
Major John H. Fye, FA—16
Captain C. A. Kaiser, FA-Res—14



HEARING THAT Miss Marion Burleigh, one of the collaborators on the Santa Barbara article, had service connections, we inquired, and learned: She is the daughter of a Colonel of Infantry, the late John J. Burleigh; niece of a Cavalryman and of a Medical officer; granddaughter of a Cavalryman; great-granddaughter of a Quartermaster, and sister-in-law of a Field Artilleryman.

Just an All-American girl.



FROM a recent issue of the *Cavalry Journal*, containing an account of a competitive 150-mile ride by officers of the 8th Cavalry:

"It is believed that Lieutenant Wilson, one of the Thomason Act Reserve

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officers, on *Polaris*, travelled the greatest distance, probably between 190 and 200 miles. He displayed wonderful spirit at the Cross Roads. He had lost his way during the night, and arrived there six hours behind the leader. The judge at that station offered him an automobile ride back to Fort Bliss and promised to send his horse in by a member of the detachment. Although he had already ridden 150 miles, he refused the offer, stating that he felt that the enlisted men in the troop would like to see *Polaris* finish. He covered the remaining 46 miles in remarkable time, crossing the line at a gallop, with his horse in excellent condition."

To Lieutenant Wilson, Cav-Res., to *Polaris*, to the officers and men with whom they serve, and from whom they draw their inspiration—*Salud!*

QUOTATION from a letter, accompanied by a new membership:

"The following conversation took place in my quarters the other day:

"Mrs. C.—'What was that thing you were so taken up with at ——'s party last night? You know—that gray-covered magazine?'

"C.—'Oh, that! That's the FA JOURNAL. Lots of good articles and stuff.'

"Mrs. C.—'How come we don't have it in our house? I don't see why you run away and hide at a party just to read magazines, when we have plenty at home.'

"C.—'I know, but—'

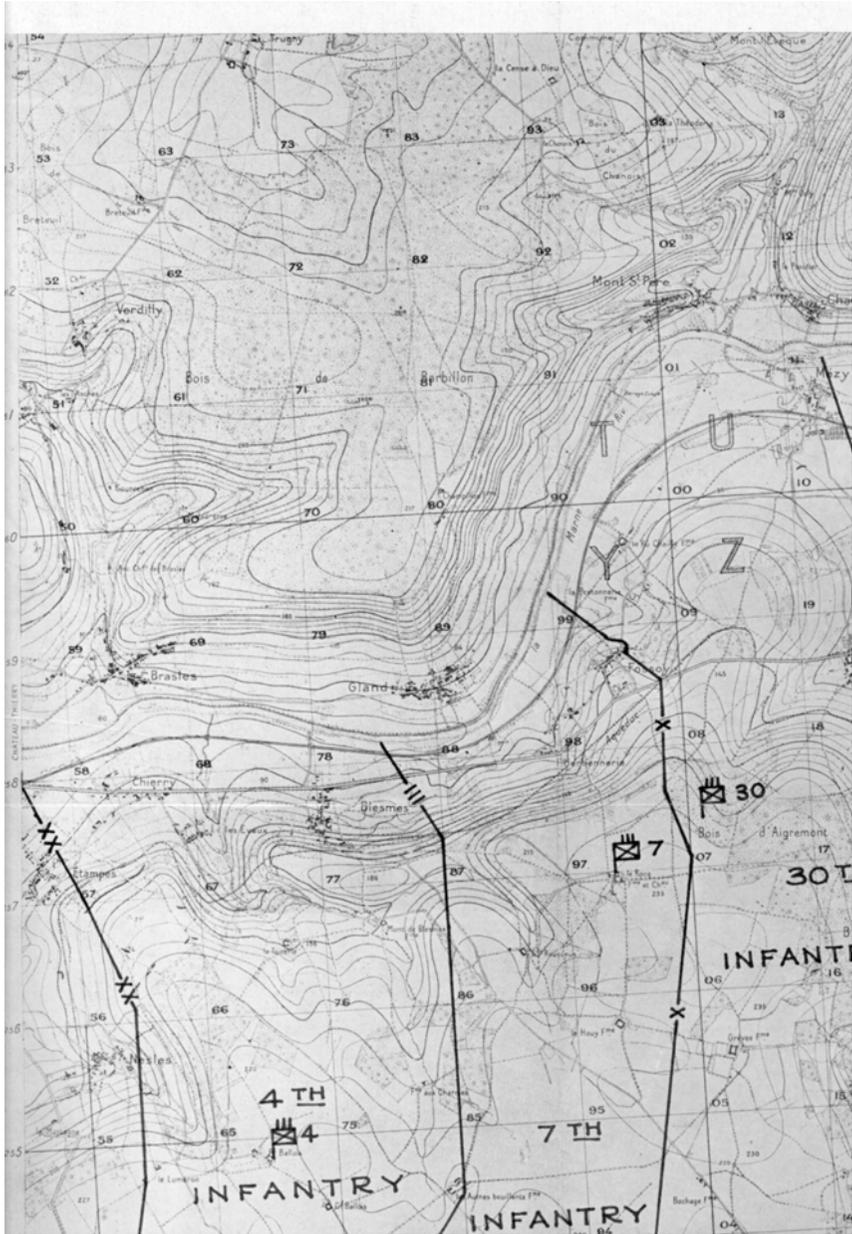
"Mrs. C.—'But we don't get that one, is that it? Why not? I thought all Field Artillery officers got the JOURNAL.'

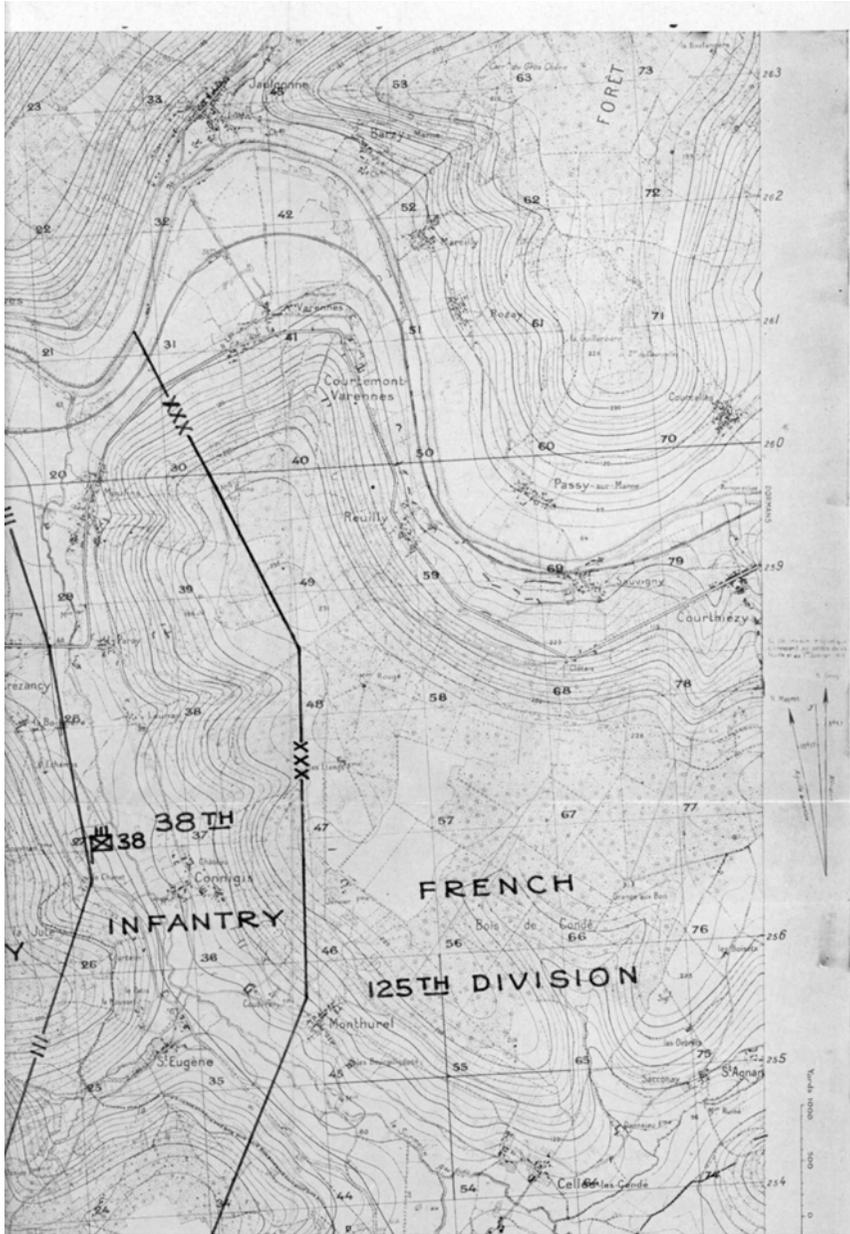
"C.—'Well—I should subscribe. Almost seven years, and I should have, a long time ago. I guess I will.'

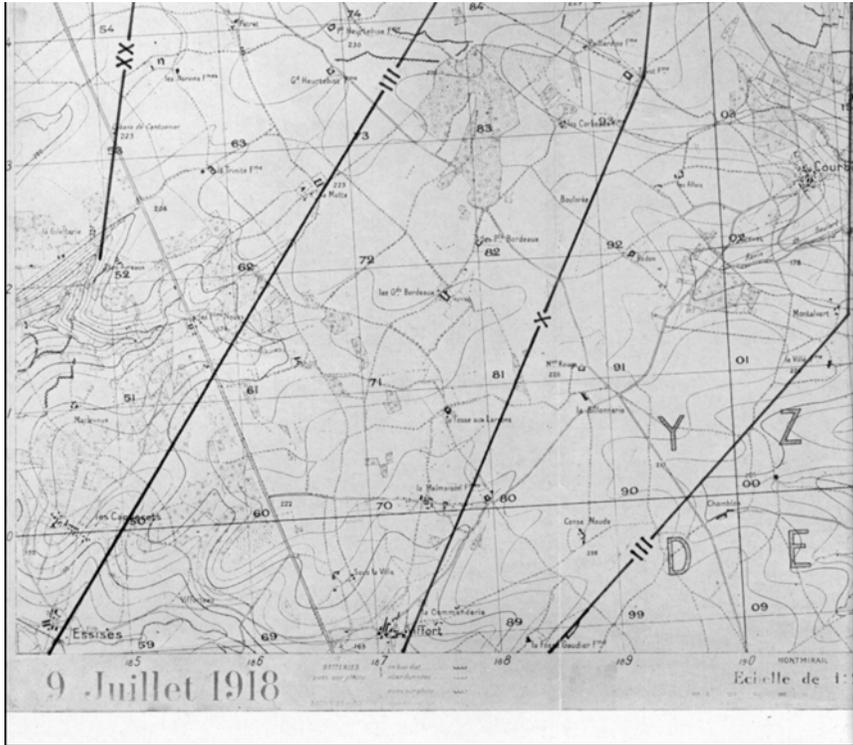
"So here is my three dollars. It's well nigh time."



This is a reproduction of the lower two-thirds of the Conde en Brie sheet of the 1:20,000 French Plan Directeur. It has been reduced half-size, to a scale of 1:40,000. The grid square is in kilometers. To avoid possible confusion, it is suggested that only the coordinate numbers on the bottom and left edge of the map be used. The coordinates given in the text locate, in most cases, only the southwest corner of the square concerned.







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