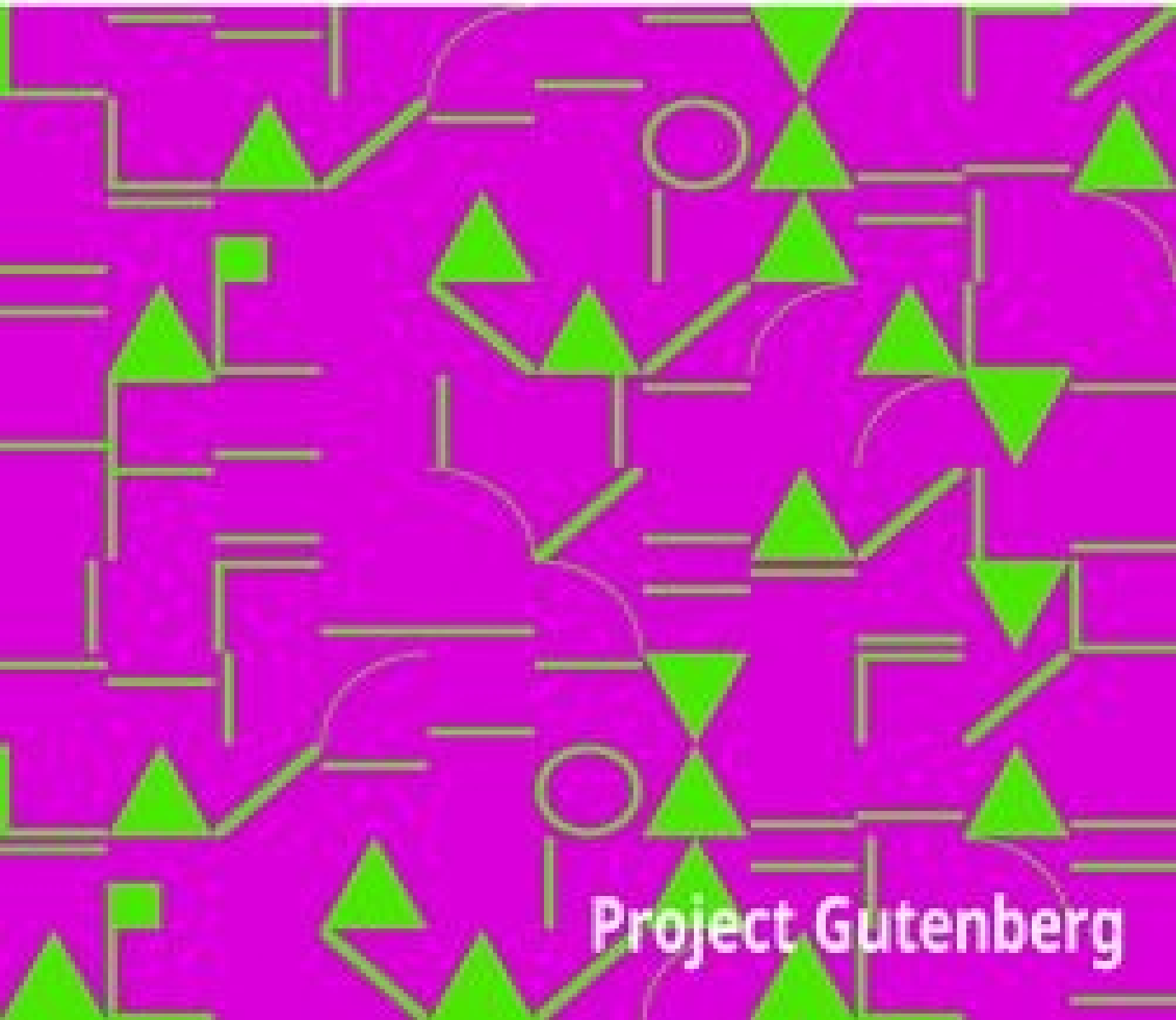
Lectures on Land Warfare; A tactical Manual for the Use of Infantry Officers

An Examination of the Principles Which Underlie the Art of Warfare, with Illustrations of the Principles by Examples Taken from Military History, from

Anonymous



Title: Lectures on Land Warfare; A tactical Manual for the Use of Infantry Officers An Examination of the Principles Which Underlie the Art of Warfare, with Illustrations of the Principles by Examples Taken from Military History, from the Battle of Thermopylae, B.C. 480, to the Battle of the Sambre, November 1-11, 1918

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Page numbers in this book are indicated by numbers enclosed in curly braces, e.g. {99}. They have been located where page breaks occurred in the original book. For its Index, a page number has been placed only at the start of that section.

Footnotes have been renumbered sequentially and moved to the end of their respective chapters. The book's Index has a number of references to footnotes, e.g. the "(*note*)" entry under "Boer War." In such cases, check the referenced page to see which footnote(s) are relevant.

LECTURES ON LAND WARFARE

A TACTICAL MANUAL FOR THE USE OF INFANTRY OFFICERS

An examination of the Principles which underlie the Art of Warfare, with illustrations of the Principles by examples taken from Military History, from the *Battle of Thermopylae* B.C. 480, to the *Battle of the Sambre* November 1-11, 1918

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PREFACE

The Lectures in this volume are based upon the official Text-books issued by the Imperial General Staff and upon the works of recognised authorities on the Art of Warfare.

The aim of the Author is to examine the Principles which underlie the Art of

Warfare, and to provide illustrations from Military History of the *successes* which have attended knowledge and intelligent application of Text-book Principles, and of the *disasters* which have accompanied ignorance or neglect of the teaching provided by the Text-books. The "dry bones" of the official publications are clothed with materials which may be supplemented at will by the student of Military History, and the Lectures may thus, it is hoped, be of assistance to Infantry Officers, either in the course of their own studies, or as a convenient groundwork upon which the instruction of others may be based.

The scope of the work may be gathered from the Table of Contents and from the Index, and it will be seen that the general Principles underlying the Art of Warfare are included in the scheme, while advantage has been taken of the revision of the official Text-books to incorporate in the Lectures the lessons gained from the experience of leaders in the Great War.

Upwards of 230 citations are made of "Battle incidents," and, as an example of the Author's methods, attention may perhaps be directed to the reinforcement of the Text-book Principle of co-operation and mutual support by the citation of an instance, on the grand {viii} scale, by Army Corps (during the *First Battle of the Marne*), and on the minor scale, by tanks, bombers, aircraft, and riflemen (during the *First Battle of the Somme*); to the successful application of established Principles by the Advanced Guard Commander at *Nachod*, and to the neglect of those Principles by "Jeb" Stuart at *Evelington Heights*, and by the Prussian Advanced Guard Commanders in 1870; and to the value of Musketry Training by instancing the successes achieved at the *Heights of Abraham*, at *Bunker Hill*, *Coruña*, and at *Fredericksburg*, which were repeated during the *Retreat from Mons* and at the *Second Battle of the Somme*.

While every effort has been made to achieve accuracy in citation, and to avoid ambiguity or error in the enunciation of Principles, the Author will be very grateful if his readers will notify to him (at the address of the Publishers) any inaccuracies or omissions which may come under their notice.

LONDON,
March, 1922.

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"Infantry Training," Parts I. and II.

CLERY, Major-General Sir C. F., K.C.B.:
"Minor Tactics."

CREASY, Sir Edward:
"Fifteen Decisive Battles at the World."

FOCH, Maréchal Ferdinand:
"Principles of War."

FRENCH OF YPRES, Field-Marshal Earl, K.P.:
"1914."

GRANT, General Ulysses S., United States Army:
"Memoirs."

HAIG OF BEMERSYDE, Field-Marshal Earl, K.T.:
"Sir D. Haig's Dispatches."

HAKING, Lieut.-General Sir R. C. B., G.B.E.:
"Staff Bides, etc."

HAMLEY, General Sir E. B., K.C.B.:
"Operations of War."

HENDERSON, Colonel G. F. R., C.B.:
"Stonewall Jackson."
"The Science of War."

NAPIER, Sir William Francis Patrick, K.C.B.;
"History of the Peninsular War."

"OLE LUK-OIE." *See* SWINTON.

SWINTON, Major-General E. D., C.B.:
"The Green Curve."

TAYLOR, General R., Confederate States Army:
"Destruction and Reconstruction."

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LECTURES ON LAND WARFARE

THE ART OF WARFARE

"The Art of War, like every other art, possesses its theory, its principles; otherwise, it would not be an art."—MARSHAL FOCH.

The Art of War, like any other art, is based upon certain fixed principles, and there is no short cut which hurries the student to his goal. The long and laborious line of study is the only safe way, and there are many pitfalls to be avoided on the road. One of these pitfalls is dug by those who maintain, whenever a new war breaks out, that all previous warlike knowledge must be thrown on the scrap-heap and attention paid only to the problems of the hour. Another is the alluring trap that Warfare is "merely a matter of common sense"; and a third is the oft-expressed idea that knowledge is required of the General, and that

compliance with orders is sufficient for the Subaltern Officer.

KNOWLEDGE OF PRINCIPLES ESSENTIAL.—With regard to the first of these difficulties, the opinions of recognised authorities on the Art of Warfare may be consulted. "The cardinal principles on which the art of war is based are few and unchangeable, resembling in this the code of morality; but their application varies with the theatre of the war, the genius and temper of the people engaged, and the kind of arms employed" (General R. Taylor, C.S. Army). "Although the manifold inventions of modern times have given to warfare {2} a wider scope and fresh materials, it remains obedient to the same laws as in the past; but it applies these laws with means more numerous, more powerful, and more delicate" (Marshal Foch). "This war has given us no new principles; but different mechanical appliances—and in particular the rapid improvement and multiplication of aeroplanes, the use of immense numbers of machine guns and Lewis guns, the employment of vast quantities of barbed wire as effective obstacles, the enormous expansion of artillery, and the provision of great masses of motor transport—have introduced new problems of considerable complexity concerning the effective co-operation of the different arms and services. Much thought has had to be bestowed upon determining how new devices could be combined in the best manner with the machinery already working" (Marshal Haig).

The laws of war are not in themselves difficult to understand, but their successful application on the field of battle requires that they should be carefully studied and considered in all their aspects. "The mind can only be trained to this by close study of campaigns, and by the solution of definite problems on maps and on the ground" (General Sir E. B. Hamley). "A lifelong experience of military study and thought has taught me that the principle of the tactical employment of troops must be instinctive. I know that in putting the Science of War into practice it is necessary that its main tenets should form, so to speak, part of one's flesh and blood. In war there is little time to think, and the right thing to do must come like a flash—it must present itself to the mind as perfectly *obvious*" (Marshal French). The same idea is expressed by the Generalissimo of the largest victorious force that was ever controlled by one mind. "Generally speaking, grave situations partially obscure even a bright intellect. It is therefore with a fully equipped mind that one ought to start in order to make war or even to understand {3} war. No study is possible on the battlefield; one does there simply what one *can* in order to apply what one knows. In order to *do* even a little one has to know a great deal, and to know it well. . . . The right solution

imposes itself; namely, the application, according to circumstances, of fixed principles. . . . Incapacity and ignorance cannot be called extenuating circumstances, for knowledge is within the reach of all" (Marshal Foch); and in the words of Napoleon's own maxim: "The only way to learn the art of war is to read and *re-read* the campaigns of the great captains."

THE "COMMON-SENSE" FALLACY.—The fallacy that warfare is "merely a matter of common sense" has been exposed by Colonel G. F. R. Henderson, in his contrast of the conduct of the American Civil War of 1861-1865, when it was controlled by President Lincoln and his Cabinet in Washington, and when it was handed over without reserve to a professional soldier in the field (General Grant). Few mortals have possessed "common sense" in greater abundance than Abraham Lincoln, and yet he permitted interference with his generals' plans, which were frequently brought to nought by such interference, and but for a like hindrance of the Confederate generals by Jefferson Davis this well-intentioned "common sense" would have been even more disastrous. "Men who, aware of their ignorance, would probably have shrunk from assuming charge of a squad of infantry in action had no hesitation whatever in attempting to direct a mighty army" (Henderson, "Stonewall Jackson").

In June, 1863, the Confederate Armies were scattered from Strasburg (in the Valley) to Fredericksburg (in Spottsylvania); General Hooker, commanding the Army of the Potomac in the field, begged to be allowed to attack Lee's Corps in detail. Success was certain, but permission was refused. The one and only idea of the Federal Government was to keep the Army of the Potomac between Lee and the Federal Capital.

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THE "HIGHER RANKS" FALLACY.—The same writer has also protested vehemently against the idea that the practice of strategy in the field is confined to the higher ranks. "Every officer in charge of a detached force or flying column, every officer who for the time being has to act independently, every officer in charge of a patrol, is constantly brought face to face with strategical considerations; and success or failure, even where the force is insignificant, will depend upon his familiarity with strategical principles" ("The Science of War"). In the same way, General Sir E. B. Hamley, in "The Operations of War Explained," points out that a commander who cannot look beyond the local situation is not competent to command a detachment, however small. In

addition, it must be remembered that superior knowledge of the art of war, thorough acquaintance with duty, and large experience, seldom fail to command submission and respect. Troops fight with marked success when they feel that their leader "knows his job," and in every Army troops are the critics of their leaders. The achievements of Jackson's forces in the *Shenandoah Valley Campaign* of 1862 were almost superhuman, but under Stonewall Jackson the apparently impossible tasks were undertaken and achieved. General Ewell, one of Jackson's commanders, stated that he shivered whenever one of Stonewall's couriers approached him. "I was always expecting him to order me to assault the North Pole! But, if he *had* ordered, we should have done it!"

THE NECESSITY FOR STUDY.—It is not pretended by any sane writer that study alone will make a perfect officer, for it is universally recognised that no amount of theoretical training can supply the knowledge gained by direct and immediate association with troops in the field; nor is it claimed that study will make a dull man brilliant, or confer resolution and rapid decision on one who is timid and irresolute by nature. But "the quick, {5} the resolute, the daring, deciding and acting rapidly, as is their nature, will be all the more likely to decide and act correctly in proportion as they have studied the art they are called upon to practise" ("The Science of War"). Theory, applied to the profession of arms, is to some a word of most obnoxious sound, but it is obnoxious only to those who refuse to listen to the advice, or to take warning from the practice, of Napoleon, of Wellington, of Foch, and of many of the most famous generals of history. "A man thoroughly penetrated with the spirit of Napoleon's warfare would hardly fail in all circumstances to make his enemy's communications his first objective; and if Wellington's tactical methods had become a second nature to him it would be strange indeed if he were seduced into delivering a purely frontal attack. . . . The same tactical principles regulate the combat of a large force and a small, and it is the thorough grasp of the principles, combined with courage and coolness, that makes a capable leader, whether of a platoon or an army corps" ("The Science of War").

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DEFINITIONS.—Strategy and Tactics have often been treated by non-military writers as if they were independent branches of the soldier's profession, but while they may indeed be separately defined it will be found in practice that they cannot be separately considered. The theatre of operations is the kingdom of Strategy, the province of Tactics is the field of battle, but when the battlefield is reached it so far transcends in importance every other point in the theatre of operations that no *tactical* end is worth aiming at in preference to striking with all available strength at the field force of the enemy, and this, it will be seen, is the goal of all *strategical* combinations. "Strategy must ever be striving for Tactical success; Tactics must ever keep in mind the Strategical situation and must constantly aim at creating fresh Strategical opportunities. Tactics without Strategy resembles a man without legs; Strategy without Tactics is like a man without arms" (General Sir E. B. Hamley). "To seek out the enemy's armies—the centre of the adversary's power—in order to beat and destroy them; to adopt, with this sole end in view, the direction and tactics which will lead to it in the quickest and safest way: such is the whole mental attitude of modern war. No Strategy can henceforth prevail over that which aims at ensuring Tactical results, victory by fighting" (Marshal Foch).

Local successes on the *field of battle* often have effects that are felt throughout the *theatre of operations*. Lord Roberts's advance on Pretoria relieved the pressure on Kimberley in the west and on Ladysmith in the east, and these centres are upwards of 300 miles apart. *The {7} First Battle of the Somme* (July 1, 1916) not only relieved the pressure on Verdun but held in position large enemy forces which would otherwise have been employed against our Allies in the East. General Byng's surprise attack at Cambrai (November 20, 1917) was followed by a determined counter-attack by the Germans on November 30, which appeared to nullify the results achieved from November 20 to 25; but "there is evidence that German divisions intended for the Italian theatre were diverted to the Cambrai front, and it is probable that the further concentration of German forces against Italy was suspended for at least two weeks at a most critical period, when our Allies were making their first stand on the Piave Line" (Sir D. Haig's Dispatches).

A tactical defeat may sometimes be risked to serve a strategic end. In June, 1864, General Hunter was operating with a Federal army in the Shenandoah Valley, and owing to shortage of supplies was forced to fall back. In so doing he uncovered the National Capital, and General Early was sent by the Confederate Commander-in-Chief to capture Washington. General Grant took immediate

steps to protect the capital by the dispatch of troops, and to further this end, General Lew Wallace,[1] on his own initiative, confronted Early's corps at the *Monocacy* on July 8, 1864. He met the enemy and was defeated, but he delayed Early's corps until the troops sent by Grant were in position. "If Early had been but one day *earlier* he might have entered the capital before the arrival of the reinforcements I had sent. General Wallace contributed on this occasion, by the defeat of the troops under him, a greater benefit to the cause than often falls to the lot of a commander of an equal force to render by means of a victory" (Grant's "Memoirs"). A tactical success may be not only useless, but actually inopportune, if it is out of accord with the plans of the higher command. On the morning of June 18, 1815, Marshal Grouchy was in {8} pursuit of the Prussians whom Napoleon had defeated on June 16 at Ligny. Although urged "to march to the sound of the cannon" (at Waterloo), Grouchy pushed on eastwards, where he found Thielmann's Prussian Corps of 16,000 men holding the passage across the Dyle at Wavre. The *Battle of Wavre* was begun at 4 p.m. on June 18, and by 11 a.m. on the next day Grouchy was victorious. But his victory was barren. His tactical achievement was useless to the higher command and had exposed his own force to considerable danger. As he sat down to pen a vainglorious dispatch to the Emperor, he received the news that Napoleon was a fugitive and the Imperial Army defeated and scattered. Grouchy's feeble and false manoeuvres had permitted Blücher to join forces with Wellington. To the Emperor's dismay it was the Prussians who came from the eastward to the sound of the cannon: "C'est les Prussiens qui viennent!"

MORAL.—It is seen that Strategy may be defined as the art of concentrating troops at the required strength, at the required time, at the required place, for the purpose of overthrowing the enemy's main armies; while Tactics may be defined as the art of arranging and handling troops so concentrated for the purpose of defeating the enemy when encountered. But although Strategy may be considered as the art of bringing an opponent to battle, and Tactics as the art of defeating him in action, there are excluded from these definitions many considerations which influence a commander in the field.

The art of war does not commence with a strategical reconnaissance from the air, or the saddle, to ascertain whether, and if so in what locality and in what strength, hostile troops are being concentrated. From information so obtained, the physical force of an enemy may indeed be determined; but "in war (said Napoleon) moral force is to the physical (that is, to numbers and {9} armament) as three to one," and upwards of a hundred years later the same idea has again

been expressed. "To understand war you must go beyond its instruments and materials; you must study in the book of history, conscientiously analysed, armies, troops in movement and in action, with their needs, their passions, their devotions, their capacities of all kinds. That is the essence of the subject, that is the point of departure for a reasonable study of the art of war" (Marshal Foch). And while dealing with moral force it must be remembered that the moral force of opposing leaders of nations or of armies is at least as important as that of the nations or armies themselves, for a war is a struggle between human intelligences rather than between masses of men. "There have been soldiers' battles but never a soldiers' campaign" ("The Science of War"). "It was not the Roman legions which conquered Gaul, it was Caesar. It was not the French Army which reached the Weser and the Inn, it was Turenne" (Napoleon). A commander must, therefore, take into account the character, the moral fibre, as well as the ability and the means at the disposal of his adversary. He must project his mind to his adversary's council chamber, and putting himself in his place must conjecture how a man of that character and of that ability will act under the given circumstances.

History supplies many examples of mental activity of this kind.[2] Napoleon predicted the impetuous onset of the Russian left wing against his right at *Austerlitz*, Dec. 2, 1805, because he knew the temperament of the Tsar Alexander. At Austerlitz, the most brilliant of all his battles, Napoleon had 70,000 troops and was confronted by 80,000 Austrians and Russians drawn up on the Heights of Pratzen. His plan was to draw the weight of the Russian attack against his right—which was so disposed as to invite the headstrong and {10} self-confident Tsar "to administer a lesson in generalship to Napoleon"—and then to launch a superior attack against the Heights, which contained a village and a knoll, the key to the position; and finally to hurl his General Reserve in a decisive counter-attack on the Russians when they were involved in battle with his right wing. When the rattle of musketry and booming of the guns showed that his right was engaged, Napoleon launched Murat, Bernadotte, and Soult against the allied centre; when Soult was master of the village and the knoll, and as the broken remnants of the enemy's centre were streaming down the reverse slopes of the Pratzen Ridge, the French centre wheeled round to the right and threw itself upon the flank and rear of the Russians, who were still heavily engaged in their original attack. These operations were completely successful and over 40,000 of the opposing armies were accounted for. Wellington defeated Soult at Sauroren in the Pyrenees (July 28, 1813) by taking advantage of a minor incident. He had ridden forward to see the disposition of the French forces, and

as his men cheered him all along the line, he turned to his staff and said, "Soult is a very cautious commander. He will delay his attack to find out what those cheers mean; that will give time for the Sixth Division to arrive and I shall beat him"—and the event turned out exactly as he had predicted. Generals R. E. Lee and T. J. Jackson frequently played upon the nervousness of President Lincoln for the safety of Washington, and by threatening to cross the Potomac induced him to withdraw troops that were advancing against Richmond.

NATIONAL MORAL.—The moral fibre of the nation and of the troops must also be taken into consideration. "The common theory that, in order to win, an army must have superiority of rifles and cannon, better bases, more wisely chosen positions, is radically false. For it leaves out of account the most important part of the {11} problem, that which animates it and makes it live, man—with his moral, intellectual, and physical qualities" (Marshal Foch).

DISCIPLINE AND MORALITY.—The discipline, courage, and endurance of the troops, as well as the cause for which they are fighting, are at least of equal importance to their armament and numbers. "If their discipline and leading be defective, Providence seldom sides with the big battalions . . . and troops that cannot march are untrustworthy auxiliaries" ("The Science of War"). "An army which cannot march well is almost certain to be outmanoeuvred. A general whose strategy is based upon time calculations that are rendered inaccurate by the breakdown of the marching power of his troops runs grave risk of disaster. It is therefore necessary that the question of marching should be studied, not only by generals and staff officers, but by regimental officers and men. It is on the latter that the hardships and exertions fall, and their cheerful endurance can best be ensured by teaching them the great results attainable by an army which can move faster and further than its adversary, as well as the dangers incurred by an army which allows itself to be out-marched. . . . Superior mobility alone enabled Frederick the Great to move 'like a panther round an ox' so as to place his army across the enemy's flank. The discipline of his troops enabled him to apply the principles of combination" (General Sir E. B. Hamley). "Nothing compensates for absence of discipline; and the constant watchfulness that is necessary in war, even when danger seems remote, can only be secured by discipline, which makes of duty a habit" (General R. Taylor, C.S. Army). At the *Battle of Hastings* (Oct. 14, 1066) lack of discipline and disobedience of orders changed the fate of the English nation and brought about the Norman Conquest. Harold, the English king, had defeated the forces of Harold Hadraade, {12} King of Norway, at Stamford Bridge in Yorkshire (Sept. 25, 1066). Four days later, Duke William of

Normandy landed in Pevensey Bay, with 60,000 horse and foot. Harold hastened south to meet him with troops exhausted by battle and marching. After halting six days in London to collect reinforcements, the English force entrenched itself on the hill of Sautlache and awaited attack. The Normans were unable to penetrate the abattis, but they gained the victory which changed the whole history of the English race by the stratagem of a feigned retreat. Harold's undisciplined auxiliaries, contrary to direct orders (which were obeyed by the "regular" troops in the centre), swarmed out of the palisades in pursuit of the fleeing Normans, who suddenly turned about and penetrated the English lines mingled with the discomfited auxiliaries. Had the "irregulars" shown the same sense of discipline as the "regulars" there had been no Norman Conquest.

With regard to marching, General T. J. Jackson once observed, in reply to an allusion to his severe marching, that "it is better to lose one man in marching than five in fighting." Acting on this principle he invariably surprised his enemy, the most notable instances being his surprise of Milroy at McDowell, of Banks and Fremont in the Valley, of McClellan's right at Gaines's Mill, of Pope at the Second Manassas, and his last and greatest of Hooker at Chancellorsville.

TIME.—Time is often a supreme factor in warfare, and the superior mobility of troops will gain for their commander a great strategical advantage. Reserves are of little value if they cannot be concentrated at the right spot at the right moment, and steamships, railways, and mechanical transport thus play an important part in war. The mobility of infantry is often the deciding factor in battle, and campaigns have been won by the legs of soldiers as much as by their arms.

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WEATHER.—The weather is an important factor in war, and its influence appears to have increased in modern times. Mists and fogs militate against observation by aircraft, and poor visibility interferes with the work of artillery. Roads are broken up by the weight of modern traffic, and in a shelled area the craters become impassable after a few days rain, making the supply of food, stores and ammunition a serious problem. Such conditions multiply the difficulties of attack, as the ground of the encounter consists principally of hastily dug trenches which become running streams of mud; and they assist the defence, as the pursuit is delayed, while the ground behind the defending force is less liable to be churned up by shell fire. The bad weather of September, 1916, caused a delay in the Allied advance against Sailly-Saillesel and Le Transloy and

made it necessary to abandon the plan at the moment when previous successes seemed to have brought it within the grasp of the commanders. As the season advanced and the bad weather continued the plans of the Allies had to be reduced, and the brilliant successes already achieved afforded some indication of what might have been accomplished had the weather permitted the plans to be carried out as originally intended.

HEALTH.—"Wars may be won or lost by the standard of health and moral of the opposing forces. Moral depends to a very large extent upon the feeding and general well-being of the troops. Badly supplied troops will invariably be low in moral, and an army ravaged by disease ceases to be a fighting force. The feeding and health of the fighting forces are dependent upon the rearward services, and so it may be argued that with the rearward services rests victory or defeat" (Marshal Haig).

HUMAN NATURE.—Human nature is affected by discipline, fear, hunger, confidence in or distrust of leaders, and by a variety of other influences, and human {14} nature is more important than armament and numbers. "No great deeds have ever been performed by an army in which the qualities of courage and steadfast endurance are wanting" (General Sir E. B. Hamley), and the steadfast endurance of a nation and of its leaders is also a factor of supreme importance. Time occupied in preparation for battle, or in manoeuvring for the "weather gauge," is seldom wasted; but it involves the risk of a weak-kneed executive yielding to popular clamour. Against the strategical and tactical genius of Hannibal, Quintus Fabius Maximus invoked the aid of time to afford him opportunities to strike. His "Fabian Tactics" have become proverbial, and earned for him at the time the opprobrious epithet "Cunctator," which the epigram[3] of Ennius has immortalised in his honour. Popular clamour led to a division of authority with Varro, and to the disaster of *Cannae* (B.C. 216). General G. B. McClellan was recalled from the Army of the Potomac on account of his failure to convert the drawn battle of the *Antietam* (Sept. 17, 1862) into a victory, and the army was handed over to General Burnside, who suffered defeat at *Fredericksburg* (Dec. 13, 1862) with terrible slaughter. "But the stout heart of the American nation quickly rallied, and inspired by the loyal determination of Abraham Lincoln the United States turned once more to their apparently hopeless task" (Colonel G. F. R. Henderson). McClellan's forte was organisation, and although at first slow in the field, he had assembled and trained a magnificent fighting force, with which he was "feeling his way to victory." He suffered defeat indeed at *Gaines's Mill* (June 27, 1862), the first act in the drama

of the *Seven Days' Battle around Richmond*. Day after day he fell back through swamp and forest, battling with Lee's victorious troops. But there was no further disaster. Under the most adverse and dispiriting circumstances the Army of the Potomac fairly held their own until {15} they reached the impregnable position of Malvern Hill. There McClellan turned at bay and repulsed with heavy slaughter the disjointed attacks of the Army of Northern Virginia. He had withdrawn his army intact and had effected a change of base, unknown to the Confederate General Staff, from the York River to the James. This proved his strategic power, as did the dispositions at *Malvern Hill* (July 1, 1862) his tactical ability, and his work was accomplished in spite of the intrigues of politicians and the opposition of the executive, and in face of the military genius of Generals R. E. Lee and T. J. Jackson. At the Antietam he forced the Confederates to give battle, and although tactically indecisive, the engagement caused the withdrawal of Lee's army into Virginia. McClellan's successors were far less competent, and the magnificent Army of the Potomac met with frequent disasters, until it formed the solid nucleus of the forces of General Meade, which inflicted upon Lee his first defeat and saved the Union at *Gettysburg* (July 1-3, 1863), and finally under Grant, in conjunction with the Armies of the West, crushed the life out of the Confederacy at *Appomattox*.

General G. H. Thomas, in command of the U.S. Army of the Cumberland, refused battle with the Confederates in Nashville until he had prepared cavalry and made every other arrangement for pursuit. Constancy of purpose was the salient feature of Thomas's military character. He would not fight until he was ready. The civil authorities urgently demanded that he should advance. So great was the tension that Grant finally sent General J. A. Logan to supersede Thomas; but before Logan arrived Thomas had won the *Battle of Nashville* (Dec. 15-16, 1864), the most crushing victory of the war.

Lord Roberts landed in Cape Town on Jan. 10, 1900, and popular expectation was degenerating into impatience when a co-ordinated advance of French's cavalry and the Sixth and Ninth Infantry Divisions {16} resulted in the relief of beleagured cities distant from the field of battle, and in the surrender on the field of Cronje's force at *Paardeberg* (Feb. 27, 1900), on the anniversary of Majuba.

THE SPIRIT OF FRANCE.—In all calculations on which a declaration of war is based the moral fibre of the actual and potential enemy nations is fully considered. It is difficult to imagine that the Headquarters Staff of the German and Austrian Armies failed to bring under review the moral of the nations

against whom their armies were to be launched in July, 1914. The Spirit of France had shown no signs of deterioration, but was to be quelled by a rapid advance through neutral territories, to bring about a bewildered collapse, as in 1870, before the Russian mobilisation was complete, and "Nous sommes trahis" was again to be heard from the disheartened troops. But the calm determination of the commander and his generals in the dark days of August, 1914, prevented the bewildered collapse, and the *Defence of Verdun* from February to August, 1916, and the cheers of the *poilus*, as they recaptured the *Chemin des Dames* in April-July, 1917, replaced the capitulation of Sedan and of Metz and the "Nous sommes trahis" of 1870.

GREAT BRITAIN.—Britain was not expected to take an active part in the struggle, and if she did the affairs of Ireland, the Suffragette movement, and the general decadence of the nation would prevent a whole-hearted prosecution of the war. A small force only could be sent to Europe; it would be swallowed up in the "bewildered collapse," and no reinforcements could be spared. The extent of the miscalculation is shown in Mr. Lloyd George's speech in the House of Commons on July 3, 1919, in which the Prime Minister stated that the British Empire had put 7,700,000 men under arms, had raised 9,500,000,000 pounds in taxes and loans, and had suffered upwards of 8,000,000 casualties on land and {17} sea. It was also shown that during the last two years of the war the British armies had borne the brunt of the heaviest fighting on the Western Front in France and at the same time had destroyed the armed forces of the Turkish Empire in the East. The risk of compelling Britain to take part was undertaken, and the first great strategical blunder of the war was committed.

AMERICA.—In the third year of the War America had gradually been brought into the arena, and a further miscalculation arrayed the hundred millions of a free and united nation against the autocracies of Central Europe.

LORD ROBERTS.—Other brains than German had considered the possibility of an armed conflict in Europe. For many years Lord Roberts had advocated universal military service in the United Kingdom, as a procedure beneficial in itself, and imperative on account of the clear intentions of the Headquarters Staff of the German Army. "Germany strikes when Germany's hour has struck," was his warning note, and although apparently unheeded by the nation, his warning was not without effect upon the training of the Regular Army.

COLONEL HENDERSON.—Military writers in the United Kingdom had also

considered the possibility of a conflict with the armed forces of Germany, and in all their treatises the moral of the nation was passed under review. Colonel G. F. R. Henderson, in "The Science of War," had even envisaged a struggle in which not only the troops of Britain and the Overseas Dominions but those of the United States would take part, and his estimate of the moral of the race on both sides of the Atlantic, and in both hemispheres, was fully justified by the events of the War. Colonel Henderson found in the race something more than toughness in its moral fibre, for he adds, "Tactical ability is the birthright of {18} our race. . . . In a conflict on the vastest scale (the American Civil War) the tactics of the American troops, at a very early period, were superior to those of the Prussians in 1866. In Strategy, controlled as it was on both sides by the civil governments and not by the military chiefs, grave errors were committed, but on the field of battle the racial instinct asserted itself. Nor were the larger tactical manoeuvres even of 1870 an improvement on those of the American campaigns. . . . But in 1878, Skobeleff, the first of European generals to master the problem of the offensive, knew the American War 'by heart,' and in his successful assaults on the Turkish redoubts he followed the plan of the American generals on both sides, when attempting to carry such positions; to follow up the assaulting columns with fresh troops, without waiting for the first column to be repulsed." After the Civil War, General Forrest, a cavalry leader of the Confederate States Army, was asked to what he attributed his success in so many actions. He replied: "Well, I reckon I got there first with the most men," thereby stating in a nutshell the key to the Art of War. "At Nachod, the Austrian commander had numbers on his side, yet he sent into action part only of his forces, and it was by numbers that he was beaten" (Marshal Foch). With regard to the moral of the race Colonel Henderson makes this emphatic statement: "In the last nine months of the American Civil War, time and again, according to all precedent, one side or the other ought to have been whipped, but it declined to be anything of the sort. The losses show this. This was due in no small measure to the quality which the troops on both sides inherited from the stock that furnished his infantry to the Duke of Wellington. Never to know when they were beaten was a characteristic of both North and South."

THE CONTEMPTIBLE LITTLE ARMY.—In place of the general decadence of the British race, upon which the German Staff appear to have relied, this characteristic {19} quality of endurance was exhibited by French's "Contemptible Little Army" during the *Retreat from Mons* in August, 1914, at the *First Battle of Ypres* (October 20, 1914), and at the *Second Battle of Ypres* (April 22, 1915). Of his "Contemptible Little Army" Marshal French writes in

his book, "1914": "The British Army had indeed suffered severely, and had performed a herculean task in reaching its present position in such fighting form, and its *moral* had withstood the ordeal. I think the Germans were probably justified in doubting our offensive powers, but the thing they forgot was the nation from which we spring."

THE NEW ARMIES.—From 1915 to 1918 the New Armies, raised, equipped, and trained during the War, and representing the Empire in arms, displayed the same inherent quality, and disproved for ever the charge of decadence that had been brought against the British race. "That these troops should have accomplished so much under such conditions, and against an army and a nation whose chief concern for so many years had been preparation for war, constitutes a feat of which the history of our nation records no equal. . . . Troops from every part of the British Isles and from every Dominion and quarter of the Empire, whether Regulars, Territorials, or men of the New Armies, have borne a share in the battle. . . . Among all the long roll of victories borne on the colours of our regiments, there has never been a higher test of the endurance and resolution of our Infantry. They have shown themselves worthy of the highest traditions of our race, and of the proud records of former wars" (Sir D. Haig's Dispatch, December 23, 1916).

"Our new and hastily trained armies have shown once again that they are capable of meeting and beating the enemy's best troops, even under conditions which favoured his defence to a degree which it required the greatest endurance, determination, and heroism to {20} overcome" (Sir D. Haig's Dispatch, December 25, 1917). "It is no disparagement of the gallant deeds performed on other fronts to say that, in the stubborn struggle for the line of hills which stretches from Wytschaete to Passchendaele, the great armies that to-day are shouldering the burden of our Empire have shown themselves worthy of the regiments which, in October and November of 1914, made Ypres take rank for ever amongst the most glorious of British battles" (Sir D. Haig's Dispatch, December 25, 1917). "The British infantryman has always had the reputation of fighting his best in an uphill battle, and time and again in the history of our country, by sheer tenacity and determination of purpose, has won victory from a numerically superior foe. Thrown once more upon the defensive by circumstances over which he had no control, but which will not persist, he has shown himself to possess in full measure the traditional qualities of his race" (Sir D. Haig's Dispatch, July 20, 1918). "Throughout this long period of incessant fighting against greatly superior numbers the behaviour of all arms of the British

forces engaged was magnificent. What they achieved is best described in the words of the French General (Maistre) under whose orders they came, who wrote of them: 'They have enabled us to establish a barrier against which the hostile waves have beaten and shattered themselves. Cela aucun des témoins français ne l'oubliera'" (Sir D. Haig's Dispatch, December 21, 1918).

After four years of fighting, at the close of a defensive campaign of the utmost severity, protracted by the efforts of the enemy from March 21-July 17, 1918, the New Armies passed from the guard to the thrust. They were everywhere victorious, and in nine pitched battles they captured upwards of 175,000 prisoners and 2,600 guns.

"In order to estimate the ardour and endurance of these troops during this final stage, it will be enough to mention the dates and importance of the main events —

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"*Battle of Amiens* (Aug. 8-13) in which the IV. Army took 22,000 prisoners and more than 400 guns.

"*Battle of Bapaume* (Aug. 21-Sept. 1) III. Army and Left Wing of IV. Army: 34,000 prisoners, 270 guns.

"*Battle of the Scarpe* (Aug. 26-Sept. 3) I. Army: 16,000 prisoners, 200 guns.

"*Battle of Haerincourt and Epéhy* (Sept. 12-18) IV. and III. Armies: 12,000 prisoners, 100 guns.

"*Battle of Cambrai and the Hindenburg Line* (Sept. 27-Oct. 5) IV., III., and I. Armies. Ended in the breaking of the Hindenburg Line and in the capture of 35,000 prisoners and 380 guns.

"*Battle of Flanders* (Sept. 28-Oct. 14) II. Army: 5,000 prisoners, 100 guns.

"*Battle of Le Cateau* (Oct. 6-12) IV., III., and I. Armies: 12,000 prisoners, 250 guns.

"*Battle of the Selle* (Oct. 17-25) IV. and III. Armies: 20,000 prisoners, 475 guns.

"*Battle of the Sambre* (Nov. 1-11) IV., III., and I. Armies: 19,000 prisoners, 450 guns."

(Marshal Foch.)

CHANGES IN METHOD.—The principles which underlie the Art of War would thus appear to be based on constant factors, but the methods of their application are susceptible to change, for in their application the principles are subject to the influence of successive inventions. Gunpowder abolished the bow and arrow and the knight in armour; the bayonet affixed to the musket superseded the pike; the rifle outranged the musket; the breech-loader and the magazine attachment progressively increased the rate of fire; smokeless powder rendered a firing line almost invisible; the flat trajectory of the small-arms bullet increased the danger-zone in an advance; the increased power, mobility, and accuracy of the field gun[4] rendered certain {22} formations obsolete in the attack; the general advance in the rate and accuracy of fire from rifles, machine guns, and artillery made attack on a strongly organised position possible only when surprise in the time and place of the thrust neutralises the advantages of the defence, or when an overwhelming barrage of shells and bullets covers the advance and smothers the enemy's resistance. The advent of a third service, by the addition of the Air to the Sea and Land Services, increased the facilities for reconnaissance[5] and added to the difficulties of concealing movement during the hours of daylight. These and similar influences have brought about changes in certain respects, amongst which the most pronounced is the increased use of field entrenchments, and tactical methods have been evolved to meet the necessities of the case, or modified to suit the new requirements.[6]

But no inventions can shift the burden of war from the shoulders of the infantryman. "Despite the enormous development of mechanical invention in every phase of warfare, the place which the infantryman has always held as the main substance and foundation of an army is as secure to-day as in any period of history. The infantryman remains the backbone of defence and the spearhead of the attack. At no time has the reputation of the British infantryman been higher, or his achievement more worthy of his renown. . . . Immense as the influence of mechanical devices may be, they cannot by themselves decide a campaign. Their true *rôle* is that of assisting the infantryman. . . . They cannot replace him. Only by the rifle and bayonet of the infantryman can the decisive victory be won" (Sir D. Haig's Dispatches).

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THE TEXT-BOOKS.—Changes in tactical methods are recorded from time to time in circulars issued by the General Staff, to be embodied eventually in the official text-books. These text-books ("Infantry Training" and "Field Service Regulations") are the foundation upon which the study of Infantry Tactics should be based, and of these books Colonel G. F. R. Henderson has left behind him the following opinion: "That portion of our own text-books which refers to Infantry in Attack and Defence is merely the essence of Tactics. There is no single sentence that is not of primary importance, no single principle laid down that can be violated with impunity, no single instruction that should not be practised over and over again." After four years of warfare, in which the principles enunciated in the text-books had been put to the most searching of all tests (*i.e.* practical application in War), the General Staff of the Army was able to preface a list of its recent publications with the following exhortation: "It must be remembered that the principles laid down in Field Service Regulations and in Infantry Training are still the basis of all sound knowledge."

At the close of the final victorious campaign, Marshal Haig emphasised the truth of this claim: "The longer the war lasted the more emphatically has it been realised that our original organisation and training were based on correct principles. The danger of altering them too much, to deal with some temporary phase, has been greater than the risk of adjusting them too little. . . . The experience gained in this war alone, without the study and practice of lessons learned from other campaigns, could not have sufficed to meet the ever-changing tactics which have characterised the fighting. There was required also the sound

basis of military knowledge supplied by our Training Manuals and Staff Colleges."

[1] Author of "Ben Hur."

[2] For an example in military fiction, see *The Second Degree* in "The Green Curve."

[3] "Unus homo nobis cunctando restituit rem."

[4] The term "field gun" was limited to the 18-pounder until the *Boer War*, when heavy guns were used as mobile artillery. In the Great War, mechanical transport brought into the field of battle guns of the largest calibre. Quick-firing field guns were first used by the Abyssinians against the Italians at the Battle of Adowa (February 29, 1896).

[5] Reconnoitring balloons were first used by the Army of the Potomac at the Battle of Fredericksburg (December 12, 1862). Aeroplanes were used in warfare for the first time in 1911, during the Italo-Turkish campaign in Tripoli, North Africa.

[6] Heavily armoured cars, known as "Tanks," were introduced during the First Battle of the Somme, September 15, 1916.

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THE BATTLE

"Theoretically, a well conducted battle is a decisive attack successfully carried out."—MARSHAL FOCH.

"The Art of War, in order to arrive at its aim (which is to impose its will upon the enemy), knows but one means, the destruction of the adversary's organised forces. So we arrive at the battle, the only argument of war, the only proper end that may be given to strategical operations, and we begin by establishing the fact

that to accomplish the aim of war the battle cannot be purely defensive. The results of a defensive battle are exclusively negative; it may check the enemy in his march; it may prevent him from achieving his immediate aim; but it never leads to his destruction, and so is powerless to achieve the wished-for victory. Therefore, every defensive battle must terminate with an offensive action or there will be no result" (Marshal Foch).

CHARACTERISTICS OF THE BATTLE.—No two battles are precisely similar, but there are certain characteristics common to every battle.

In the first place, the issue is almost always uncertain, for events which no human sagacity could provide against may occur to defeat the wisest plans. The best chances, therefore, are on the side of the commander who is provided with sufficient means to achieve his object, who forms his plans with the greatest sagacity, and executes them with the greatest ability. Decisive success has followed the combinations of great commanders, and in the long run victory pays homage to knowledge of the principles which underlie the art of war. {25}

In the second place, the human factor always plays its part in battle. Troops lacking in discipline are liable to panic in face of a sudden disaster, and even the best troops are liable to become unsteady if their flank is gained.

In the third place, a comparatively small body of fresh troops thrown into action at the right moment against greater numbers, if the latter are exhausted by fighting, may achieve a success out of all proportion to their numbers. For this reason a prudent commander will endeavour to retain under his control some portion of his reserves, to be thrown in after his adversary has exhausted his own reserve power.

To be superior at the point of attack is the Art of Warfare in a nutshell, and for this reason attacks on separate points of a position must be properly synchronised to be effective. The unbeaten enemy will otherwise possess a mobile reserve with which to reinforce threatened points. The attacks must be so timed that he throws them in piecemeal or fails to reach the point mainly threatened.

McClellan's position with the Army of the Potomac on *Malvern Hill* (July 1, 1862) was a desperate position to attack in front, but it could have been turned on the right. The hill dominated the ground to the north, and also the road on

which Lee's Army of Northern Virginia was approaching, and was crowned with numerous heavy guns, against which Lee's artillery was powerless. It was Lee's intention to open with an attack by a division, supported by two brigades, on the right of the position, and when this force was at grips with the Army of the Potomac, to assault the centre with a bayonet charge. About 5 p.m. the sound of cheering was heard near the right of the position, and mistaking this for the signal, General D. H. Hill launched the attack on the centre. The first line of defence was carried, but the Northern Army was unoccupied in the other parts of the line, and reinforcements quickly {26} beat off the attack with heavy loss. After this attack had failed, Magruder's division arrived in position and the attack on the right flank was delivered with similar results. Both attacks were carried out with superb courage, but partial blows of this nature are without the first elements of success, and McClellan's movements were not again molested.

PHASES OF THE BATTLE.—There are three principal phases of every battle. Information must be obtained by observation and by fighting; advantage must be taken of information so obtained to strike where the blow or blows will be most effective; success obtained by fighting must be developed until the enemy is annihilated.

Information and the Initiative.—Much work requires to be done in the air and on the land before the rival armies come face to face. Aircraft and the independent cavalry (advanced mounted troops and fast tanks detached from divisions for the purpose), endeavour to ascertain whether, and if so in what locality and in what strength, troops are being concentrated by the enemy. From information so obtained the Headquarters Staff are able to conjecture the intentions and aims of the enemy, and the extent to which their own intentions and aims have been perceived by the enemy. After the enemy is encountered this information is at the service of the Commander of the troops, but it will generally require to be supplemented by fighting. On each side the commander will be striving to obtain the *initiative*, to impose his will upon his opponent, for the commander who loses the initiative is compelled to conform to the plans and movements of his adversary, instead of bringing into operation plans and movements better suited to his own purposes. Each is scheming to obtain or retain the liberty of manoeuvre, in the same way as, in the days of sailing ships, a naval commander strove to get the "weather gauge" in every encounter.

The initiative won by the Strategy of one commander {27} is sometimes wrested from him by the Tactics of his adversary. This was exemplified at the *Battle of*

Salamanca (July 22, 1812). Wellington, the generalissimo of the Anglo-Portuguese forces, had decided to withdraw behind the River Tormes to the stronghold Ciudad Rodrigo, and had dispatched his train to that centre. The French Commander (Marmont), in his eagerness to intercept Wellington's line of retreat, moved part of his force to the Heights of Miranda, thus threatening Wellington's right and rear, but leaving a gap of two miles between the detached force and his main army. Wellington noted the fresh disposition of Marmont's army through his telescope, and exclaiming, "That will do!" he abandoned all idea of the withdrawal which had been forced upon him by Marmont's previous manoeuvres, and hurled part of his force against the detached body (which was defeated before Marmont could send assistance) and at the same time barred the progress of the main army, which was forced to leave the field. Wellington afterwards declared, "I never saw an army receive such a beating." If the Spanish General in alliance with Wellington had not, contrary to the most explicit instructions, evacuated the Castle of Alba de Tormes (which commanded the fords over which the French retreated), "not one-third of Marmont's army would have escaped" (Napier).

As at Salamanca, where the liberty of manoeuvre which had been won by the Strategy of Marmont was wrested from him by the Tactics of Wellington, so at the final phase of the *First Battle of the Marne* (September, 1914), the initiative was regained by tactical adroitness. Rapidity of action was the great German asset, while that of Russia was an inexhaustible supply of troops. To obtain a quick decision the Germans went to every length. Of the main routes for the invasion of France chosen for their armies, two led through the neutral territories of Luxemburg and Belgium, and only one through France, and their advance there broke {28} down, almost at the first, at the only point where it was legitimately conducted, for the German armies failed to pierce the French Front at the Gap of Charmes (Vosges), and their defeat at the *Battle of Baccarat* (August 25, 1914) led to the decisive defeat at the First Battle of the Marne. They then abandoned, for the moment, all hopes of a quick decision in a war of manoeuvre and retiring to their prepared lines of defence on the Aisne, relied upon methodically prepared and regularly constructed trench systems, and upon the hand grenade, the trench mortar, and the other weapons of close combat, for superiority in a long campaign of trench siege warfare, which endured until the collapse of Russia in 1917 freed for an offensive movement on the requisite scale in 1918 upwards of 1,500,000 men. At the *First Battle of the Marne*, the five German armies, which were following up the Franco-British left and centre, were extended from Amiens to Verdun, but on September 8, 1914, the German I.

Army (General von Kluck) was so placed by the impetuosity of the march that a wide gap separated it from the remainder of the German forces. To the north-west of Paris a new French Army, collected from the Metropolitan garrison and from the south-eastern frontier, had been assembled and pushed out in motor transports by the zeal and intelligence of the Military Governor of Paris (General Gallieni); and to avoid this menace to his flank and line of communications, and to regain touch with the other German armies, one of which (under the Crown Prince) was unsuccessfully engaged in battle, General von Kluck adopted the extremely hazardous course of a flank march, across the front of the Franco-British left wing. Upon receiving intelligence of this manoeuvre from the Air Service in Paris, General Joffre, seeing the opportunity of gaining the initiative, ordered an advance to the attack on September 6, and the First Battle of the Marne, which resulted from this order, changed the character of the fighting on the {29} Western Front. The decisive blow was strategical rather than tactical. It was delivered on a battlefield of 6,000 square miles, and involved, throughout that area, a struggle of six great armies, numbering in all 700,000 troops, against a similar number of armies of at least equal strength. No counter-attack on such a scale had previously been delivered in any campaign, and the scarcely interrupted advance of the German armies received a permanent check, while the strategic aim of the German Staff, namely, the speedy annihilation in the field of the Franco-British armies, had to be definitely abandoned.

DEVELOPMENT OF THE BATTLE.—The "atmosphere" of battle is thus depicted in "The Science of War": "When two armies are face to face and one is superior in numbers to the other, the commander of the smaller army is confronted by two problems. If the superior army is not yet concentrated, or is so distributed that the different parts cannot readily support each other, it may be defeated in detail. If the superior army is already concentrated, its commander may be induced, by one means or another, to make detachments, and thus to be weak everywhere. The first problem is solved by rapidity of manoeuvre, surprise marches, secrecy, feints to bewilder the adversary in his concentration, and action on unexpected lines. The second, by skilful threatening of points for the defence of which the adversary will detach forces; by concealment of his dispositions; and by drawing the adversary into terrain where part only of his superior forces can be employed." "The power of striking 'like a bolt from the blue' is of the greatest value in war. Surprise was the foundation of almost all the great strategical combinations of the past, as it will be of those to come. The first thought and the last of the great general is to outwit his adversary and to strike where he is least expected. To what Federal soldier did it occur on the {30}

morning of *Chancellorsville* (May 2-8, 1863) that Lee, confronted by 90,000 Northerners, would detach Stonewall Jackson with more than half his own force of 43,000 to attack his adversary in the rear" ("The Science of War"). Surprise was the chief cause of success in the *First Battle of Cambrai* (November 20, 1917) when General Sir Julian Byng launched the III. Army at dawn against the highly organised defensive position known as the "Hindenburg Line." The wire entanglements in front of this position were exceptionally deep, and had not been broken by gun-fire. Behind them the Germans were resting in apparent security and such information as they were able to obtain by raiding reconnaissances was not corroborated by the fierce and prolonged artillery bombardment which was at that time regarded as the inseparable prelude to an attack in force. The advance was preceded by battalions of Tanks, with Infantry in close support, and was followed by Cavalry, to round up fugitives and disorganise reinforcements. The artillery had previously been strengthened and was directed against the support and reserve lines, to prevent the Germans from massing for counter-attacks and to break up their formations. Aircraft carried out reconnaissance during the battle from a low altitude and harassed the defenders with fire action. An advance was made into the strongest part of the German defensive system on a twenty-mile front to a depth of five miles, and secured upwards of 11,000 prisoners, 150 guns, and considerable quantities of stores and materials, and although after-events neutralised the initial successes, the advance of November 20, 1917, will ever remain an example of the value of surprise in war. "Surprise strikes with terror even those who are by far the stronger. A new weapon of war may ensure it, or a sudden appearance of a force larger than the adversary's, or a concentration of forces upon a point at which the adversary is not ready instantaneously to parry the blow. But if the methods {31} be various, the aim is always to produce the same moral effect upon the enemy—terror—by creating in him at the swift apparition of unexpected and incontestably powerful means, the sentiment of impotence, the conviction that he cannot conquer—that is to say, that he is conquered. And this supreme blow of unexpected vigour need not be directed upon the whole of the enemy's army. For an army is an animate and organised being, a collection of organs, of which the loss even of a single one leads to death" (Marshal Foch). At almost any period of the battle, and in almost every phase of fighting, surprise can be brought about by a sudden and unexpected outburst of effective machine gun or other form of fire. "A sudden effective fire will have a particularly demoralising effect on the enemy; it is often advantageous, therefore, to seek for surprise effects of this sort by temporarily withholding fire" ("Infantry Training, 1921").

THE DECISIVE BLOW.—The preparatory action and the development usually take the form of a converging movement of separated forces, so timed as to strike the adversary's front and flank simultaneously, in order to threaten the enemy's line of communications, for the line of supply is as vital to the existence of an army as the heart to the life of a human being. "Perhaps no situation is more pitiable than that of a commander who has permitted an enemy to sever his communications. He sees the end of his resources at hand, but not the means to replenish them" (General Sir E. B. Hamley). The decisive blow will be delivered by the General Reserve, which will be secretly concentrated and launched as secretly as possible; and the commander of the whole force will so distribute his troops that about half his available force can be kept in hand for this decisive blow, on a part of the enemy's front if sufficient penetration has been effected, or on a flank. The point chosen becomes the vital {32} point, and success there means success at all points. Once routed, the enemy must be relentlessly pursued and prevented from regaining order and moral.

A battle was fought in the year B.C. 331, nearly 2,300 years ago, at Arbela,[1] in Mesopotamia, the Eastern theatre of operations in the Great War of 1914-18, and it deserves study to show the eternal nature of the main principles which underlie the Art of War. Alexander the Great invaded the territories of Darius, King of the Medes and Persians, with the strategic aim of defeating his adversary's main armies in a decisive battle. The Macedonian forces were preceded by an Advanced Guard of Cavalry, and from information obtained by the Vanguard, Alexander was made aware of the strength and position of the Persian forces. By a careful reconnaissance of the ground in company with his Corps Commanders, Alexander was able to forestall a projected movement, and by advancing in two lines of battle in such a way that his troops could at any moment be thrown into a compact figure fringed with spears, which formed an impenetrable hedge against cavalry, he found a remedy for the disadvantages of the ground, which afforded no protection to either of his flanks. After advancing in these two lines Alexander manoeuvred his troops into a phalanx, or wedge-shaped figure, and this wedge he drove into the masses of the enemy to force the wings asunder. In spite of local reverses in parts of the field, the depth and weight of the main attack carried it through the enemy's forces: the survivors were captured or dispersed, and the victory was complete.

[1] The site of this battle was probably Gaugamela, about 60 miles from the

present Arbil, which is 40 miles from Mosul, on the Baghdad road.

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HOW BATTLES ARE INFLUENCED

Once troops are launched in battle their success or failure depends upon such influences as the commander can bring to bear, upon the co-operation of his subordinate commanders, and upon the moral and training of the troops engaged.

THE COMMANDER'S INFLUENCE is shown, first in his orders for the operations, and later by the method in which he employs the forces retained in his hand for the decisive blow. Personal control, by the commander, of troops committed to battle, is not only impossible but should be unnecessary, as such control and leading is the function of his subordinates, who should be fully acquainted with his intentions and must be trusted to carry them into execution. Other, and more important, duties have to be undertaken by the commander, and it is essential that he should not allow his attention to be diverted from his main object by local incidents, which are matters for his subordinates to deal with. "A sound system of command is based upon three facts: an army cannot be effectively controlled by direct orders from headquarters; the man on the spot is the best judge of the situation; intelligent co-operation is of infinitely more value than mechanical obedience" ("The Science of War"). A campaign resolves itself into a struggle between human intelligences. Each commander will endeavour to defeat his adversary in battle, and his principal weapon is his General Reserve. If he can exhaust the reserve power of his adversary, while maintaining his own intact, he can proceed to victory at his own time, and he will endeavour to exhaust the hostile reserves by causing {34} them to be thrown in piecemeal, in ignorance of the spot where the decisive blow is to fall. During the campaign on the Western Front in 1918 the Allies were able to conserve their strength throughout the attacks from March 21 to July 15, and when they passed from the guard to the thrust they extended their front of attack from day to day, calculating correctly that this gradual extension would mislead the enemy as to where the main blow would fall, and would cause him to throw in his reserves piecemeal.

"The subordinate commanders must bring to fruit with all the means at their disposal the scheme of the higher command, therefore they must, above all, understand that thought and then make of their means the use best suited to circumstances—of which, however, they are the only judge. . . . The Commander-in-Chief cannot take the place of his subordinates—he cannot think and decide for them. In order to think straight and to decide rightly it would be necessary for him to see through their eyes, to look at things from the place in which they actually stand, to be everywhere at the same moment" (Marshal Foch). Students of military history will remember that the Prussian Commander-in-Chief and his Chief Staff Officer, during the highly successful campaign of 1870-71, did not come within sound of the guns until five pitched battles had been fought by their subordinate commanders. Outside the fog of battle, with its absorbing interests and distractions, the commander can retain his sense of proportion[1] and can decide where and when he will make his final effort. News of the battle reaches him from his immediate subordinates, and from the accounts of successes and failures he is able to judge the weaknesses and strength of his own and his adversary's dispositions, to use part of his reserves as reinforcements, {35} if he must, or to husband them with confidence in the success of the operations, until the time comes for him to launch them for the final blow.

INFORMATION.—In order that the commander's influence may be exerted to the best advantage it is essential that all vital information should reach him promptly, and that his orders should be communicated without delay. Subordinate commanders must keep their superiors and commanders of neighbouring units regularly informed as to the progress of the battle, and of important changes in the situation as they occur. Runners, who can be trusted to carry a verbal message or written order, are attached to each unit engaged and to its headquarters. Higher units than battalions can usually depend on the Signal Service for intercommunication, but whenever necessary, a supply of runners and mounted orderlies must be available for their use. This ensures co-operation, and enables mutual support to be rendered. Information received must be transmitted at once to all whom it concerns, and orders received from superiors must be communicated without delay to commanders of all units affected.

CO-OPERATION.—"Co-operation when in contact with the enemy is no easy matter to bring about. There are, however, three means of overcoming the difficulty: constant communication between the units; thorough reconnaissance of the ground over which the movements are to be made; clear and well-

considered orders" ("The Science of War"). Each commander who issues orders for Attack or Defence should assemble his subordinate commanders, if possible in view of the ground over which the troops are to operate, explain his orders, and satisfy himself that each subordinate understands his respective task. "Combination depends on the efficiency of the chain of control connecting the brain of the commander through all grades down to the {36} corporal's squad; on the intelligence of subordinate leaders in grasping and applying the commander's plans; on the discipline which ensures intelligent obedience to the directing will; and on the mobility which gives rapid effect to that will, and permits advantage to be taken of fleeting opportunities. Every fresh development in the means of transmitting orders and information rapidly, permits of an extension of the commander's influence, and makes more perfect combination possible and over wider areas" (General Sir E. B. Hamley). Even when, and particularly when, forces are engaged in battle, reconnaissance must be carried on and information gained must be communicated at once. It will frequently happen that a suitable moment for the decisive attack, or decisive counter-stroke, will be found only after long and severe fighting. Systematic arrangements for obtaining, sifting, and transmitting information throughout the battle are therefore of the highest importance. Information must be gained not only by troops and aircraft actually engaged, but by supports and reserves, who will often be able to see what is invisible to the forward troops. In such cases, more than in any other, information must be communicated at once. By intelligent observation superintending commanders can co-operate with one another, can anticipate situations as they develop, and decide at the time what steps will be necessary to meet them. A general reconnaissance will be in progress during every modern battle by observers in aircraft and in observation balloons. In addition, local reconnaissance by means of patrols and scouts will usually discover an opening that might otherwise be lost, and may warn a commander of an intended movement against him, which might otherwise develop into a disagreeable surprise.

Co-operation and Mutual Support were developed in their highest form by the Allied Corps Commanders in the *First Battle of the Marne* (August-September, 1914). {37} In this campaign close on 1,500,000 troops were engaged on both sides, and the Corps Commanders, particularly those of the French VI. Army (Manoury), III. Army (Sarrail), and the Military Governor of Paris (Gallieni), were continuously in touch with one another, and frequently rendered assistance, unasked, by fire and by movement. Co-operation of a novel kind was exhibited on a minor scale during the First Battle of the Somme. An attack was launched

on *Gueudecourt* (September 26, 1916) by the 21st Division, and a protecting trench was captured as a preliminary to the larger movement. A tank, followed up by infantry bombers, proceeded along the parapet of the trench firing its machine guns, while an aeroplane swooped over the trench firing its Lewis guns. The survivors in the trench surrendered, and the garrison was collected by supporting infantry, who advanced in response to signals from the aeroplane.

FIRE TACTICS.—It has already been noted that the battle is the only argument of war; it is also the final test of training, and on the battlefield no part of the syllabus is more severely tested than that devoted to *musketry*. The fire tactics of an army, its combination of fire and movement, the direction and control by the leaders and the fire discipline of the rank and file, make for success or failure on the field of battle. The fire must be directed by the fire unit commander against an objective chosen with intelligence and accurately defined; it must be controlled by the sub-unit commander, who must be able to recognise the objectives indicated, to regulate the rate of fire, and to keep touch with the state of the ammunition supply. Fire discipline must be maintained, so that there is the strictest compliance with verbal orders and signals, and application on the battlefield of the habits inculcated during the training period. The time when fire is to be opened is often left to the discretion of the fire-unit commander, but, generally speaking, fire should be opened by an {38} attacking force only when a further advance without opening fire is impossible; and even in defence, when access to the ammunition reserve is likely to be far easier than in an attack, withholding fire until close range is reached is generally more effective than opening at a longer range. The tactical value of a withering fire at close range from a hitherto passive defender has again and again been proved in battle. On the *Heights of Abraham* (September 13, 1759) General Wolfe had assembled his troops and he awaited Montcalm's attack. Not a shot was fired by the defenders until the attacking force was within forty paces, and three minutes later a bayonet charge into the broken foe swept the French helplessly before it. At the *Battle of Bunker Hill* (June 17, 1775) the American colonists inflicted a loss of 46 per cent. on the assaulting British force, by reserving their fire "until the badges and buttons of the tunics could be clearly identified." At the *Battle of Fredericksburg* (December 13, 1862) General Meagher's Irish Brigade of the U.S. Army of the Potomac assaulted Marye's Hill, 1,200 strong. The defending Confederates reserved their fire until the assailants were 100 yards from their position and drove them off with a loss of 937 out of the 1,200. In August, 1914, the British Regular Army, during the *Retreat from Mons*, reserved their fire until the Germans arrived at the most deadly point of their rifles' trajectory, and again

and again drove off all except the dead and mortally wounded. Throughout the Great War, troops fully trained in the British system of musketry and using the short magazine Lee Enfield rifle, proved beyond dispute the values of the system and of the weapon. In a review of the methods adopted to check the great German offensive in the spring of 1918, a circular issued by the General Staff states: "Rapid rifle fire was the decisive factor in these operations. The men had confidence in their rifles and knew how to use them."

Superiority of fire can only be gained by the close {39} co-operation of the artillery and infantry at every stage of the battle, and unless infantry co-operate, the artillery is not likely to produce any decisive effect. Long-range machine-gun fire is an important auxiliary to the artillery in covering and supporting the advance of attacking infantry. Enfilade fire, the most telling of all, is more easily brought to bear than of old owing to the increase in the effective range and in the rate of fire. Supports and local reserves will usually co-operate most effectively with forward troops by bringing fire to bear upon the flank of such bodies of the enemy as are holding up a movement by frontal fire. During the counter-attack for the recapture of *The Bluff*, in the Ypres Salient (March 2, 1916) by troops of the 3rd and 17th Divisions, the right and centre gained their objectives. The left attacking party, at the first attempt, failed to reach the German trenches, but those who had penetrated to the German line on the right realised the situation and brought a Lewis gun to bear on the enemy's line of resistance, completely enfilading his trenches, and thus enabling the left company to reach its goal.

MOVEMENT.—The influence of movement is inseparable from that of fire, as it enables fire to be opened and is a means of escaping the full effects of fire; while it is often possible to move one unit only in conjunction with the fire of another. It can also be used to relieve one unit from the effects of fire concentrated upon it by moving another unit against the enemy. A steady and rapid advance of troops has the twofold effect of closing to a range from which an ascendency in the fire-fight can be secured, and also of reducing the losses of the advancing force, for if the troops remained stationary in the open under heavy fire, at a known range, the losses would clearly be greater than if they advanced, and would be suffered without gaining ground towards the objective, while the closer the {40} assaulting line gets to the objective, and the steadier its advance, the less confidence will the enemy have in their power to stem the advance, and the fewer casualties will be suffered in consequence. No "sealed pattern" is laid down as to the movement and formation of infantry under fire, but certain definite principles are put forward in the text-books. Where security

is the first need, as in the case of protecting forces (advanced, flank, or rear guards), movement should be effected by bounds from one tactical position to another under covering fire from supporting troops; where the objective is the primary consideration, security must be subordinated to the need of reaching the objective. Against artillery fire, or long-range infantry fire, the formation recommended by the text-books is small shallow columns, each on a narrow front, such as platoons in fours or sections in file, arranged on an irregular front, so that the range from the enemy's guns to each is different. Troops coming suddenly under such fire will avoid casualties more easily by moving forward and outwards in this way rather than by remaining under such cover as may be improvised in a position the exact range of which is obviously known to the enemy. Against effective machine-gun or rifle fire deployment into line, or into "arrowhead" formation with the flanks thrown well back, is preferable to a single line extended at so many paces interval, as it is scarcely more vulnerable and is infinitely easier to control.

In retiring, losses are generally heavier than in advancing, or in maintaining a fire-fight from the position gained until a diversion by supporting troops enables a further bound to be made. The enemy is generally able to deliver a well-directed stream of lead against retiring troops, mainly because he is less harassed by the return fire. Retirements must therefore be carried out on the principle of alternate bounds under covering fire of co-operating bodies, which withdraw, in their turn, under covering fire from the troops they have protected. {41} Such alternate retirements are the essence of rear-guard tactics, but, although certain other phases of battle action justify the withdrawal of troops, it must always be remembered that a position held against counter-attack is better than a position captured by assault, for it is a position that does not require to be assaulted. It is often impossible to predict the value of resistance at a particular point, and the fate of a nation may depend upon a platoon commander's grit in holding on at all costs. In the campaign of 1814, Brigadier-General Moreau was sent to the *Fortress of Soissons*, with instructions to hold the town. His garrison consisted of about 1,200 all arms, with 20 guns. At 10.30 a.m. on March 2, the fortress was bombarded by Winzingerode's Russians and Bülow's Prussians, and at 8 p.m. an assault was delivered. This was easily repulsed and a counter-attack threw back the assailants to their own lines. The bombardment was resumed until 10 p.m., when the garrison had a total loss of 23 killed and 123 wounded. During the night the besiegers sent a flag of truce to Moreau, and on March 3 that general capitulated with all the honours of war "in order to preserve 1,000 fighting men for the Emperor." His action cost Napoleon his throne, for had

Moreau held out the Emperor would have crushed his most implacable foe, Blücher (who escaped from the toils in which he was enmeshed, *viâ* the bridge at Soissons), and the campaign would have been at an end. If Moreau had exhausted all the means of defence, as the regulations of war ordain, he could certainly have held out for another 48 hours, and as heavy firing was audible in the vicinity it should have been clear to him that help was at hand. At the *First Battle of Ypres* (October 20-November 20, 1914) the Regular Army of the United Kingdom, at the outset, was filling so extensive a gap in the defensive line, that in many parts there was but one rifle for 17 yards of front, and there were neither local nor general reserves. The {42} assaulting German forces greatly outnumbered the defenders and brought up machine guns and artillery in overpowering strength. The British artillery was not only overweighted but was so short of ammunition that Marshal French was compelled to limit their daily number of rounds. But the line was held, and a counter-attack, headed by the 2nd Battalion of the Worcestershire Regiment, on October 31, with the bayonet, restored the line at *Gheluvelt*, at the most critical moment of the battle, and the Germans did not get through the defences. This stubborn resistance threw the Germans behind their entrenchments, and the "Advance to Calais" was stemmed by French's "Contemptible Little Army." At the *Second Battle of Ypres* (April 22-May 18, 1915) surprise in the time and nature of the attack, by the secret concentration of forces and the introduction of poison gas, gained an initial advantage for the Germans and left the British flank uncovered. A Canadian division counter-attacked on the German flank, and by May 18 the Allies had regained many of the captured positions. During the First Battle of the Somme troops of the Royal West Kent and the Queen's Regiments effected a lodgment in *Trônes Wood* (July 14, 1916). They maintained their position all night in the northern corner of the wood, although completely surrounded by the enemy, and assisted in the final capture and clearance of the wood at 8 a.m. the next day. Similar instances occurred in *Bourlon Village* (November 25-27, 1917) when parties of the 13th East Surrey Regiment held out in the south-east corner of the village, during a German counter-attack, and maintained their position until touch was re-established with them 48 hours later; and in a group of fortified farms south of *Polygon Wood* (September 26, 1917) during the Third Battle of Ypres, when two companies of the Argyll and Sutherland Highlanders held out all night, although isolated from the rest of the 33rd and 39th Divisions, until a renewed attack {43} cleared the district of hostile forces. On April 9, 1918, during the Germans' desperate endeavours to break through the investing Allies' lines, the ruins of *Givenchy* were held by the 55th West Lancashire (Territorial) Division, and the right edge of the neck through which von Arnim and von

Quast hoped to extend, in order to widen the wedge into the Valley of the Lys, was firmly held, while the left edge (the Messines Ridge) was recaptured by a counter-attack by the 9th Division. The centre of the line was also stoutly held by the Guards' and other divisions, many of which had suffered heavy losses in the V. Army during the German attack in the last week of March. After 21 days of the most stubborn fighting (March 21-April 11, 1918) of which the *Attack on the Lys* had formed part, Marshal Sir D. Haig issued an order of the day emphasising the value of holding each position at all costs. "Every position must be held to the last man. There must be no retirement. . . . The safety of our homes and the freedom of mankind depend alike upon the conduct of each one of us at this critical moment. . . . Victory will belong to the side which holds out longest." Sir D. Haig's after-order, on April 23, 1918 (St. George's Day), awarded special praise to the troops under his command. The number of divisions employed by the Germans from March 21 to April 23, 1918, against the British alone was 102 (approximately 1,500,000 troops), and many of them were thrown in twice or three times. "In resisting the heavy blows which such a concentration of troops has enabled the enemy to direct against the British Army, all ranks, arms, and services have behaved with a gallantry, courage, and resolution for which no praise can be too high" (Haig's Dispatch).

COVERING FIRE.—The energetic and determined support of the infantry by fire is the main duty of machine-gun units throughout the whole course of the battle. In the attack, machine-gun platoons, Lewis gun sections, {44} or rifle sections detailed to give covering fire, must take care to select as targets those bodies of the enemy whose fire is chiefly checking the advance. Machine-gun platoons are sometimes brigaded, and at others left to battalion commanders, and their action after a temporary success in providing covering fire may depend upon their tactical distribution at the time. Infantry platoons detailed to give covering fire must join in the advance as soon as their own fire ceases to be effective in aiding the forward troops, unless definite orders to the contrary have been received.

FIRE AND MOVEMENT.—It is thus seen that Fire and Movement are inseparably associated, and judiciously employed in combination they enable infantry to achieve its object in battle, to bring such a superiority of fire to bear as to make an advance to close quarters possible, so that the enemy may be induced to surrender or may be overwhelmed by a bayonet assault; and to prepare by similar means for further advances, until the enemy is entirely hemmed in or completely routed.

[1] In fiction, this point (that the generalissimo must not allow his sense of proportion to be distorted by local successes or reverses) is clearly brought out in *The Point of View*, a story in "The Green Curve" by Ole-Luk-Oie (General Swinton).

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TYPES OF BATTLE ACTION

A battle must practically always be of the nature of Attack and Defence, but the attitude originally assumed by either of the opposing forces may be reversed during an engagement. A vigorous counter-attack by an army offering battle in a defensive position may throw the adversary on the defensive, while an assailant may fight a delaying action in one part of the field, although in another part his action may be essentially offensive. There are three distinct systems of Battle Action: the entirely defensive; the entirely offensive; and the combined, or defensive-offensive system.

THE DEFENSIVE BATTLE has seldom effected positive results, except, perhaps, at *Gettysburg* (July 1-3, 1863), where Meade permitted Lee to break his forces against a strong position, with the result that the Army of Northern Virginia had to withdraw, and the invasion of the North came to an end. It must, however, be borne in mind that General Lee was badly served by his subordinate, and General Meade's success was largely due to this factor. On the second day of Gettysburg (July 2, 1863), General J. B. Hood's 1st Division of General J. Longstreet's I. Army Corps was deploying round the left of the Federal Army south of the Round Tops. He saw a chance to strike and requested permission from Longstreet. Hood's plan was the only one which gave a reasonable chance of decisive victory with the troops available. Longstreet, in obedience to the letter of his orders, but contrary to their spirit, refused to sanction Hood's advance. Longstreet's failure to seize a fleeting opportunity sounded the death-knell of the Confederate cause.

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Burnside was defeated at *Fredericksburg* (December 10-16, 1862) by purely defensive tactics, but Lee had intended to follow up his victory by a decisive

counter-blow, which Burnside escaped by extricating the Army of the Potomac before the blow fell. Success, even to the limited degree achieved by Meade or Lee, seldom follows the adoption of purely defensive tactics. "There is no such thing as an 'impregnable position,' for any position the defence of which is merely passive is bound to be carried at last by a manoeuvring enemy" (Marshal Foch).

THE OFFENSIVE BATTLE.—The Entirely Offensive system has been employed by many of the greatest commanders, including Marlborough at *Blenheim* (August 2, 1704), *Ramillies* (May 23, 1706), and *Malplaquet* (September 11, 1709); Frederick the Great, notably at *Leuthen* (December 5, 1757); Napoleon, Wellington, and Grant, as also by the Prussian generals at almost every engagement in the campaigns of 1866 and 1870-71. The disadvantage of the system is that lack of success may entail not only a local disaster but the wreck and annihilation of the whole army.

At the *Battle of Blenheim* (August 2, 1704), Marlborough, "the greatest captain of his age," had concentrated his forces with those of Prince Eugene of Savoy the previous day and commanded an army of 56,000 men with 52 guns. He was confronted by the joint armies of Marshal Tallard and the Elector of Bavaria, amounting to 60,000 men with 61 guns. It was necessary for Marlborough to attack before Villeroy joined the enemy, or to withdraw until a more favourable opportunity presented itself. The right flank of his opponents rested on high hills, which were protected by detached posts, and the left flank on the Danube, while opposite the centre was the marshy valley of the River Nebel, with several branches running through the swampy ground. Marlborough decided that a battle {47} was absolutely necessary and he attacked the next day. Like Hannibal, he relied principally on his cavalry for achieving his decisive success, and this predilection was known to the opposing commanders. He attacked the enemy's right and left wings, and when heavily engaged with varying fortunes launched his decisive attack against the centre, where the difficulties of the ground caused it to be least expected. Marlborough lost 5,000 killed and 8,000 wounded. The vanquished armies were almost destroyed, at least 40,000 being accounted for, with 12,000 killed, 14,000 wounded and missing, and 14,000 prisoners.

THE DEFENSIVE-OFFENSIVE BATTLE.—The Defensive-Offensive system consists in taking up a position which the enemy must attack, and in delivering a decisive counter-stroke when the adversary has exhausted his strength. This system has been employed in almost every campaign. By such means Napoleon

achieved his classic victories of *Marengo* (June 14, 1800), *Austerlitz* (December 2, 1805), and *Dresden* (August 27, 1813); and Wellington his Peninsular victories at *Vittoria* (June 21, 1813), *Orthez* (February 27, 1814), and *Toulouse* (April 10, 1814), in addition to his final triumph at *Waterloo* (June 18, 1815); and it was the method adopted by Marshal Foch in the decisive campaign of 1918, which endured from March until the Armistice in November.

At the *Battle of Waterloo* (June 18, 1815), the decisive counter-stroke was delivered, in accordance with Wellington's pre-arranged plan, by a force coming from a distance to the scene of action. On the morning of June 17, when Wellington resolved to make a stand at Waterloo, he was aware that the Prussians, who were mostly young troops, had been beaten at Ligny; that Napoleon had, before that battle, over 120,000 men, and that he himself had, all told, 68,000, of whom 31,000, including the King's German Legion, were {48} British. Yet he withdrew from Quatre Bras with the full determination of standing at Waterloo and of fighting Napoleon's army, if Marshal Blücher would come to his assistance with one Army Corps. Napoleon attacked on June 18 with 72,000 men and 246 guns, against Wellington's 68,000 men with 156 guns, at 11 a.m., but he was unable to shift the line or break through the squares. At 4.30 p.m. one of Blücher's corps was delivering the promised counter-attack against Napoleon's line of communications. Soon after 9 p.m. Wellington and Blücher met at La Belle Alliance, Napoleon's headquarters before the battle, and the pursuit was in full swing.

Opportunities for restoring the battle and for turning impending defeat into a crushing victory are frequently offered during an engagement. General Lee's thin lines at *Antietam* or *Sharpsburg* (September 17, 1862), slowly fed by men jaded by heavy marching, were sorely pressed, but there was a lull in the Federal attack when Hooker's advance was checked. Had General McClellan at that moment thrown in "his last man and his last horse" in a vigorous reinforcing attack, *Antietam* would not have been a drawn battle, and Lee would not have retired at his leisure into Virginia. Lee's great victory at *Chancellorsville* (May 2-3, 1863), although marred by the accident which deprived him of Stonewall Jackson, was a striking instance of the success of the Defensive-Offensive system at the hands of a great commander, who defeated 90,000 troops with less than half that number, by a containing defence with 13,000 men and a decisive counter-stroke with the remainder.

But while this combined system is regarded by most authorities as the best, when

circumstances warrant its adoption, it is the highest test of generalship to seize the right moment to pass from the guard to the thrust. This is the problem which confronted Marshal Foch, the generalissimo of the Allied Forces, during the great {49} German offensive movement on the Western Front in 1918. The defensive *rôle* endured from March 21 until July 17, 1918, and although many local counter-attacks were made along the whole battle front, the Allies did not pass from the guard to the thrust until the decisive counter-stroke was commenced in the *Second Battle of the Marne* (July 18, 1918) on a front of 27 miles from Fontenoy to Belleau, which drove the Germans back across the Marne on July 20.

THE SECOND BATTLE OF THE MARNE (July 18, 1918).—The great German offensive of March-June, 1918, was renewed on July 15, when the artillery preparation opened shortly after midnight and troops were poured across the Marne in small boats and over pontoon bridges. The attack was not unexpected. Adequate reserves were ready and in place, and a heavy counter-bombardment on the German troops in their positions of assembly, close to their front-line trenches, caused heavy casualties. The Germans succeeded in penetrating the French and American positions in parts of the 50-mile front to a maximum depth of 4 miles south-west of Reims, but on the Plains of Champagne little progress was made and the attack lost its momentum. During the attack of March 21, 1918, the advance was not held up until it was within striking distance of its ultimate objective, and the offensive on the Aisne in May, 1918, secured an advance of 12 miles. Captured documents showed that the attack of July east of Reims was intended to reach the Marne at Eperney and Chalons, an advance of 21 miles. A feature of the earlier days of the battle was a spirited counter-attack near Fossoy (on the extreme left of the German forces) by a division of the American Army which thrust the Germans behind their first line and captured upwards of 1,000 prisoners, the ground regained in the river bend being consolidated and held by the American division. The battle continued for three days before the German {50} attack was brought to a standstill, and at 4.80 a.m. on July 18 a counter-attack by the French, American, and Italian forces changed the whole aspect of the campaign, and led to the final triumph of the Allies and to the downfall of the Central Powers.

THE ATTACK

"Surprise is at all times the assailant's strongest weapon."—"Field Service Regulations," vol. ii. (1920).

The aim of every commander who possesses the power of manoeuvre is to seek out the enemy and destroy his organised forces. The Attack is the culminating point of all manoeuvres to this end, and every commander will endeavour to achieve his aim by a sudden and unexpected assault on a part of the enemy's defences.

The achievement of this aim is only possible when a commander has assembled a sufficient force for his purpose, and has obtained, by reconnaissance and by fighting, information as to the vulnerability of the hostile position. The commander will then endeavour to break the enemy's formation so suddenly as to disconcert all his plans; to retain a compact force with which to follow up the blow without giving the enemy a moment's breathing space; to drive a wedge into the heart of his disordered masses, forcing his wings asunder; and to pursue and annihilate the scattered forces of the enemy.

"Unless a decision is quickly obtained in the opening weeks of a modern campaign the opposing armies tend to become immobile, chiefly owing to the great power conferred on the defence by modern armaments. The armies will then be distributed in great depth, and the attackers are faced with the necessity of breaking through not one position only, but a series of positions, extending back to a depth of several miles" ("Infantry Training, 1921").

Penetration, followed by the sundering of the Franco-British Armies, was clearly the intention of the German {52} High Command in the *Second Battle of the Somme*, which opened on March 21, 1918. The German Armies had entrenched themselves after the First Battle of the Marne (September, 1914), and for 43 months had been confronted by the Allied Nations of Britain, France, and Belgium, reinforced at the close by Portuguese troops and by the National Army of the United States.

Within the investing lines of the Western Front the German Armies were besieged, the barrier reaching from the Belgian coast to the frontier of Switzerland, while the armies of Austria-Hungary were similarly penned in by the army of Italy, from Switzerland to the Adriatic. The internal collapse of

Russia, in 1917, enabled von Hindenburg to assume the offensive, with upwards of 1,500,000 men released from the Eastern Front, and part of this reserve power was projected, with the Austro-Hungarian Armies, in a fierce attack on the Italian lines. The success of this manoeuvre continued until reinforcements were dispatched from other parts of the Allied lines, and a diversion in the region of Cambrai by the British III. Army, under Sir Julian Byng (November 20, 1917), prevented the dispatch of further German reserve power to the Italian Front, and necessitated a counter-thrust in France. The battlefields of France again resumed their importance as the vital point in the theatre of operations, and in the spring of 1918, profiting by the improved positions and prospects in the West, Ludendorff attempted to break through the investing lines on a 50-mile front. The attack was heralded by a terrific bombardment, and culminated in a desperate thrust against the British Armies north and south of the River Somme, the points of penetration aimed at being the British right, where it was linked up with the French on the River Oise, in the neighbourhood of La Fère, and the British line of communications in the neighbourhood of Amiens. The whole British line opposite the thrust was hurled back and the territory regained by the Franco-British {53} advance on the Somme in July, 1916, was recaptured by the German Armies. But this was not a battle for towns or territory, as the German hammer blows were intended to drive a wedge between the British and French Armies, to roll up the British flank northwards to the sea-coast and the French flank southwards to Paris, and to capture the main line of communication between these Northern and Southern Armies. By skilful reinforcement of threatened points, Marshal Haig frustrated the primary object of the attack, and by the aid of the French Armies the whole line fell back, disputing the ground with the utmost resolution, and maintaining the line without losing touch between the south and north. The German wedge was thrust in, but every attempt to effect a breach and to pour through the line was frustrated by the Allies. During the battle the French and British Armies became intermingled, and to preserve unity of control a Generalissimo was appointed in the person of General Foch, who had commanded the French IX. Army at the First Battle of the Marne in September, 1914, and the French Armies of the Somme during the advance in July, 1916. General Pershing, commanding the Army of the United States, gave a free hand to the Generalissimo to incorporate American troops wherever they might be needed in the field, and Marshal Haig and General Retain remained in command of the British and French Armies.

METHODS OF ATTACK.—The object of every attack is to break down the enemy's resistance by the weight and direction of fire and to complete his

overthrow by assault, by the delivery of a decisive blow with as large a portion as possible of the attacking force against a selected point or portion of the enemy's position. The term "Decisive Attack" does not imply that the influence of other attacks is indecisive, but rather that it is the culmination of gradually increasing pressure relentlessly applied to the enemy from the moment when contact with him is first obtained.

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TWO PLANS OF ATTACK.—There are two plans of attack. In the first, the direction in which the decisive blow is to be delivered is determined beforehand; an adequate force is detailed and pushed forward for this purpose, and at the same time another part of the force is detailed to attack another portion of the enemy's position, to keep his attention there, to pin his troops in position, to prevent him sending reinforcements to the part mainly threatened, and ultimately to drive home with the successful assault of the main attack. The rest of the force is small and is retained in General Reserve to meet emergencies.

In the second plan, a general action is developed by a part of the attacking force and the remainder is retained in General Reserve, to be thrown in when the opportunity arrives, at the right time and in the right place. In this case, the "remainder" is not less than half the available force.

The first plan can be adopted when the commander of the attacking force has definite information as to the extent of the enemy's position, when he knows where its flanks rest and when he knows the approximate strength of the forces arrayed against him. It must also be possible, without undue risk, to divide the attacking force into parties of such strength that neither can be overwhelmed by the enemy in detail, and it is to be noted that in the case of a serious check there is only a small General Reserve to restore the battle. The second plan can be adopted when information is incomplete, and owing to the strong force retained by the commander in General Reserve, the situation can be exploited and developed by fighting without undue risk.

STRENGTH OF THE ATTACK.—It must always be remembered that a commander can never be too strong when making an attack, for he can never be perfectly sure of what force he may encounter, or at what moment the adversary may make a counter-attack. An attack {55} on an enemy presupposes a superiority of force at the place where the attack is made, for war is but the art of

being stronger than the enemy at the right place at the right time, and for an attack to have a reasonable hope of success the attackers, at the point where the penetration takes place, must be superior.

DISPOSITION OF THE TROOPS.—Each phase of the Attack will normally require three separate bodies of troops for its execution: a *Forward Body* to seek out for, and when located attack, the enemy along the whole front of the sector allotted to it and by relentless pressure to wear down the enemy's resistance in order to discover the weak portions of the defence; *Supports* to penetrate the weak portions of the defence and forthwith to attack the flanks and rear of those portions of the defence which are holding up the Attack; with Local Reserves for dealing with local counter-attacks; and a *General Reserve* by means of which the commander exploits success or retrieves failure.

THE FORWARD BODY, THE SUPPORTS, AND THE LOCAL RESERVES.—The paramount duty of all leaders in the firing line is to get their troops forward, and if every leader is imbued with the determination to close with the enemy, he will be unconsciously assisting his neighbour also, for, as a rule, the best method of supporting a neighbouring unit is to advance. But an attack is often held up by well-directed machine-gun fire, and by determined and well-trained riflemen in concealed or well-prepared positions. The tactics to be pursued under these circumstances are thus outlined in "Infantry Training, 1921": "When forward troops are held up by the enemy's organised fire at close ranges they must keep him pinned to his ground and absorb his attention by maintaining a vigorous fire and working their way closer when opportunity offers. It will be the duty of the Supports to turn the flank of, and enfilade, that portion of the enemy's defences where a garrison is opposing {56} the Forward Body. To achieve this, Supports may have to quit their direct line of advance and follow in the wake of a neighbouring unit, which is able to advance. It must constantly be borne in mind that pressure should be brought on the enemy by supporting troops in places where the attack is progressing rather than where it is held up, never by the mere reinforcement or thickening up of a line of troops who have been unable to advance. There must be no slackening of pressure, meanwhile, by the forward troops who are temporarily held up, or the defenders will be able to turn their attention to the flanking attacks which are being directed against them." The Local Reserves are for local counter-attacks by fire or movement against similar efforts by the Local Reserves of the enemy. In modern campaigns this work is effectively carried out by the overhead fire of machine guns distributed in depth, and the mobile Local Reserves may thus consist of smaller units detached for the

purpose by the Forward Body or by the Supports. During the great German offensive in the spring of 1918 the *Attacks on the Somme and the Lys* were constantly held up by the vigour and tenacity of the Franco-British defence, and to meet the necessities of the case the following instructions were issued by the German General Staff: "If the assaulting troops are held up by machine-gun fire they are to lie down and keep up a steady rifle fire, while Supports in the rear and on the flank try to work round the flanks and rear of the machine-gun nests which are holding up the Attack. Meanwhile, the commander of the battalion which is responsible for the Attack is to arrange for artillery and light trench-mortar support, and should protect his own flanks from machine-gun fire by means of smoke."

THE GENERAL RESERVE.—In a modern campaign against civilised troops it will seldom, or never, happen that the efforts of the Forward Body, Supports, and Local Reserves will annihilate the enemy and so prevent him from regaining cohesion and fighting power. Even if {57} every part of the position against which an assault is delivered is captured and held, the enemy will not, by that means alone, cease to exist as a fighting force, and if he is permitted to withdraw with a semblance of order and moral the work of the Attacking Force will be of little avail. The destruction of the enemy and not the mere capture of the ground of the encounter is the ultimate aim of the commander. He will, therefore, accept the best available opportunity for the destruction of the enemy by overwhelming them in some part of the battlefield during the successful operations of his Attacking Force. It may, however, happen that the efforts of the Attacking Force are generally unsuccessful and the enemy may be on the point of gaining the upper hand. By means of the General Reserve the commander exploits the success or retrieves the failure of the Attacking Force. The commander will have selected some point or position in the enemy's defensive system against which he can direct his decisive attack. This point cannot, as a rule, be determined until it has been revealed by the successes of the Forward Body and the Supports, and when it has been selected it must be struck unexpectedly and in the greatest possible strength. While, therefore, the Forward Body, Supports, and Local Reserves must be adequate in numbers for the task allotted to them, a commander will generally retain about half his available force for the delivery of the Decisive Attack, and when this decisive blow has been delivered the Reserve will carry on the pursuit of the beaten enemy until such time as other Infantry, or Cavalry, or Tanks, have caught up and passed them. If the attacking troops fail to obtain their objective the commander has at his disposal the means of relieving exhausted troops and of dealing with the "decisive counter-attack" of the enemy.

THE COMMANDER'S PLANS.—Once troops are committed to the assault the commander is powerless to divert them to another purpose. His control is exercised in {58} the correct interpretation or adaptation of his original plan by his subordinate commanders. Before launching his troops to the attack in accordance with the decisions arrived at from information received, the commander will assemble his subordinates and the representatives of co-operating arms or formations in order that his plans may be explained. This conference should be held at such a time as will enable his subordinates to explain their *rôle* to the sub-unit commanders. Wherever possible the conference should be preceded by a personal reconnaissance of the ground over which the attack is to be made, otherwise a map of the district concerned must be substituted for the actual view.

The commander will be influenced in his plans by the state of the campaign at the time of the decision to attack. In the opening stages of a campaign in a thickly populated country, and generally throughout a campaign in less settled districts, a war of manoeuvre will lead to the "Encounter Battle," and the objective to be aimed at will be limited only by the power of endurance of his troops, the weather conditions, and the possibility of supplying his victorious troops with ammunition and food. Under other conditions, the objective will be subject to further limitations, as the defensive position will be organised in great depth, and while effective penetration will thus be more difficult to achieve it must, of necessity, be accompanied by widening in proportion to its depth in order that space for manoeuvre and facility for communication may be secured. The Infantry Attack will be conducted on the same lines in both forms of battle, but the greater the organisation of the defensive position the more limited will be the depth to which the attack can be carried on and the greater difficulty will there be in launching reserves in pursuit.

THE POSITION OF ASSEMBLY.—A column in march formation will very rarely move to its attack position, or "jumping-off place," from column of route except {59} where there are concealed lines of approach to the spot. A Position of Assembly will therefore be assigned, and this will be chosen with a view to cover for the troops and facilities for the issue of food and hot drink, the distribution of ammunition and the filling of water bottles. As a general rule, it is left to the battalion commander to select Positions of Assembly for each of his companies. When large bodies of troops are assembled with a view to immediate action, it must always be remembered that large forces cannot be moved by a single road if all arms are to be brought into action at the right moment. In April,

1864, General Banks, with 25,000 U.S. troops, moved from Grand Ecore to *Pleasant Hill* in the Red River Valley. Although lateral roads existed, his column marched on one main road only, and twenty miles separated his front and rear. As he came into action with General Forrest, of the Confederate Army, the head of his column was defeated and thrown back again and again by forces inferior in total strength, but superior on the field of the encounter. Had General Banks used two or more parallel roads, which were available for his use, the Confederates on the spot would have been quickly overpowered.

THE ATTACKING FORCE.—The commander must decide against which portion or portions of the hostile position, or along which lines of advance, his Fire Attack shall be developed. As the object of this movement is to pin the enemy to his position, to wear down his resistance generally, and particularly at the point where the Decisive Attack is to be delivered, as well as to effect a lodgment in the position, it is clear that the greater the extent of the objective the better, and one or both flanks should be threatened if possible. But whenever a Fire Attack is developed it must be in sufficient strength to occupy the enemy's attention fully and it must be carried through with vigour once begun. One {60} to three rifles per yard of the objective to be assailed is generally regarded as the requisite strength of the Forward Body, Supports, and Local Reserves. At *St. Privat* (August 18, 1870) a first and second line made a frontal attack and came under fire of the French chassepots, to which their own shorter-ranged rifles could make no effective reply. The lines pressed on, but were ultimately brought to a standstill through lack of reinforcements, which could have been sent up against the flank of the fire position which was holding up the attack, under cover of the fire of the troops in position, and would thus have carried the Forward Body to the assault.

Equally unsuccessful was Osman Pasha's attempt to break through the investing lines at *Plevna* (December 10, 1877). With 15,000 troops he pierced the Russian lines, and another resolute effort would have carried the sortie through the investing forces. But the 15,000 Supports could not get out of the town as the bridges and gates were blocked with fugitives and wagons.

THE DECISIVE ATTACK.—The commander must also decide the point and direction of the Decisive Attack. This will be made on a part of the front or on a flank, and it may be predetermined in accordance with information concerning the hostile dispositions, or it may have to be ascertained by further fighting. The advantages of a *Frontal Attack* are that, if successful, the enemy's force is broken

in two parts, the separated wings may be driven back in divergent directions and overwhelmed in detail, and a decisive victory is thus obtained. The disadvantages are that the force assaulting a part of the enemy's front draws upon itself the concentrated fire of the whole hostile line, and unless the Fire Attack can master this fire the decisive blow will be held up, while an unsuccessful frontal attack invites the enemy to advance and to envelop the assailants. The advantages of a *Flank Attack* are that {61} the enemy's line of retreat is threatened, and only the threatened flank can concentrate its fire on the assailant. The disadvantages of a Flank Attack are that the enveloping troops have to face a similar danger on their own outer flank, for upon this point the defender will almost certainly direct his counter-stroke, and for this reason a decisive blow on the enemy's flank must be followed up by strong reserves. The flank chosen for attack will be that which affords the best opportunities for converging fire from the supporting artillery, which gives the best line of advance for the infantry, and where success will have the most decisive results, the last depending mainly on the extent to which the enemy's line of retreat is threatened. Where the various requisites are in conflict, the flank affording the greatest advantages for converging fire from the artillery will be chosen. Nothing destroys the moral of men in action so speedily and effectually as a flank attack, and except by this method good infantry will seldom be beaten.

A decisive attack, to be completely successful, must be followed up by fresh troops before the assaulting waves have been checked. Lee had crossed the Potomac and desired "to defeat the last army of the Federals in the east and drive the Northern Government from Washington." The battle of *Gettysburg* lasted three days (July 1-3, 1863). On the first, the army of Northern Virginia was uniformly successful; on the second, the fortunes of battle swayed to and fro; on the third, Lee decided to make a Napoleonic decisive attack with half his available troops against Meade's centre. But the spirited attack of the first 15,000, after penetrating the line, was checked, and the remaining 15,000 did not arrive in support, so that the attack died down, was repulsed, and withdrew in disorder.

At *Chattanooga* (November 25, 1868) Grant's decisive attack was successful, although delivered against a part of the position which appeared to be impregnable, on account of the strength of the attack, through {62} distribution in depth; 25,000 men were hurled against the entrenchments in three lines, and the support of the third line carried the waves of the attack through the defences.

DETAILING THE UNITS.—The commander will detail the units for carrying out the Fire Attack, which will generally require one to three rifles per yard of the objective. This force will be placed under a definite commander, who will distribute it into a Forward Body to develop the attack in the firing line; Supports, to enable the Forward Body to assault the position; and Local Reserves to maintain or restore the advantages gained, their main function being to repel counter-attacks by similar bodies of the enemy and to maintain the offensive spirit.

The commander will also detail the units for carrying out the Decisive Attack, which will require three to five rifles per yard of the portion of the position against which it is projected. This force, under a definite commander, is distributed for the attack in depth, so that the strength and weight of the blow carries it home against all opposition. The force is retained by the commander of the whole attacking troops, to be thrown in at the right time and in the right place. It also remains in hand to restore the battle in case of an unexpected check, or to cover the withdrawal of the remainder of the troops if it is desired to break off the engagement.

THE ARTILLERY.—The position of the artillery will be settled in consultation with the artillery commander, the decision resting on the objects in view, which are, to assist the infantry in its advance by keeping down hostile gun and rifle fire—therefore, in the initial stages, a commanding position is required; during the decisive stage concentration on the objective of the decisive blow is required; and after the successful assault guns may be required to be hurried forward to repel {63} counter-attacks, to break down protracted opposition, and to complete the rout by harassing the fleeing enemy. When the attack is directed against a position the defence of which is known to have been elaborately organised, a pre-arranged covering fire in the form of an artillery barrage, lifted in successive stages as the attack advances, may require to be organised some time before the attack is launched. It will be necessary to detail an escort for the guns, unless the distribution of the troops for the attack already provides such protection. At the *Battle of Verneville* (August 18, 1870) the 9th Prussian Corps Artillery had been pushed forward against the French position at Armandvillers-Folie. The fire of the French infantry caused a loss of 13 officers and 187 other ranks, and one battery was disabled, before the guns were withdrawn. There was no infantry escort to keep the attacking riflemen at a distance. At the *Battle of Colenso* (December 15, 1899) two batteries of field artillery advanced into action without an escort, and without previous reconnaissance unlimbered on a projecting spit of land in a loop of the Tugela River. Frontal fire from hidden trenches on the opposite bank and enfilade fire from a re-entrant flank killed all the horses and the greater part of the personnel, and although the utmost gallantry was shown by all ranks ten of the twelve guns were left in Boer hands. Infantry regimental officers and battalion commanders must be acquainted with the amount of ammunition carried by their accompanying artillery, in order that ammunition may not be wasted by calling for fire on targets of secondary importance. All reserves, whether they have been specially detailed or not for the purpose, must of their own accord make every effort to assist in getting forward guns and ammunition. One of the outstanding lessons of the War of 1914-1918 is the possibility of placing even the heaviest artillery close behind the infantry fighting line owing to the mobility afforded by motor traction and to the security against {64} counter-attack provided by the deadly fire of the magazine rifles and machine guns of their escort, and of the Lewis guns allotted to the batteries themselves.

THE CAVALRY.—The opportunities for cavalry action in an attack depend upon the character of the defensive operations. Against a highly organised defensive

position there will be no openings for mounted troops until a wide penetration gives space for manoeuvre. Before the attack during an "Encounter Battle" the cavalry will have been out on reconnaissance in front of the attacking force; during the attack they may be called on to assist by dismounted fire action, and by local counter-strokes as mounted troops (against cavalry, or against infantry disorganised by the breakdown of a movement), but must not be allowed to impair their speed or freshness; after the successful assault the Pursuit is their special duty, not necessarily on the heels of the enemy, but on lines parallel to their retreat, to hamper his movements, to round up stragglers, and to threaten their communications. Generally speaking, such a position as is required will be found on a flank, or slightly in advance of a flank of the attacking force. "Cavalry make it possible for a general to adopt the most skilful of all manoeuvres, the converging attack, and properly handled, as at *Appomattox* or *Paardeberg*, to bring about the crowning triumph of Grand Tactics, the hemming in a force so closely that it has either to attack at a disadvantage or to surrender" (Henderson). In the Mesopotamian campaign a surprise attack of General Sir S. Maude's forces on September 27-29, 1917, against the Turkish forces assembling near *Ramadie*, 65 miles north-west of Baghdad, was converted into the surrender of the Turkish commander and about 4,000 all arms by the enveloping tactics of the Anglo-Indian Cavalry Division. A similar manoeuvre on March 26, 1918, by the cavalry of the Mesopotamian Field Force (commanded at that time by General Sir W. R. Marshall, {65} who succeeded after General Maude's death from cholera), resulted in the surrender of over 5,000 Turks, including a divisional commander, 22 miles north-west of Hit. The prisoners were fugitives from the battle of *Baghdadieh*, and the cavalry were astride their communications. "On the morning of the Armistice (November 11, 1918) two British Cavalry Divisions were on the march east of the Scheldt, and before orders to stop reached them they had already gained a line 10 miles in front of our infantry outposts. There is no doubt that, had the advance of the cavalry been allowed to continue, the enemy's disorganised retreat would have been turned into a rout" (Sir D. Haig's Dispatches). The absence of cavalry at the critical moment has often decided the issue of a campaign. After the action of *Gaines's Mill* (June 27, 1862) General J. E. B. Stuart was dispatched by Lee with the Confederate cavalry on a false scent to White House, south of the York River, to which base Lee believed McClellan to be retreating. But McClellan had shifted his base to Harrison's Landing, on the James River, and the Confederate cavalry did not regain touch with the Army of the Potomac until July 3, two days after the failure of Lee's attack on Malvern Hill. Had Stuart been available with his cavalry throughout that critical period McClellan's huge trains would have fallen

an easy prey to the Confederate horsemen, and the roads through the forests and swamps to Malvern Hill could have been blocked. Absence of cavalry before the first day of *Gettysburg* (July 1, 1863) hampered the Confederate leaders, and lack of information caused them to act with unnecessary caution when boldness would have carried everything before them. General Stuart had once more been sent away on a raiding expedition. After the victorious attack of General Early's division a handful of General Buford's U.S. cavalry enabled the defeated 1st Corps of Meade's army to save their guns and to retire unmolested. A thousand {66} Confederate sabres would have brushed Buford aside, and July 1 would have been disastrous to the National cause.

During the German offensive of March-July, 1918, "even two or three well-trained cavalry divisions might have driven a wedge between the French and British Armies. Their presence could not have failed to have added greatly to the difficulties of our task" (Sir D. Haig's Dispatches). During the *Battle of Cambrai* (November 20, 1917) a squadron of the Fort Garry Horse crossed the Scheldt Canal, and after capturing a German battery and dispersing a large body of infantry, maintained itself by rifle fire in a sunken road until nightfall, when it withdrew to the British lines with its prisoners. During the *Battle of Amiens* (August 8-18, 1918) the cavalry were concentrated behind the battle front by a series of night marches, and on the first day of the battle they advanced 23 miles from their position of assembly. Throughout the battle they rendered most gallant and valuable service. During the Second *Battle of Le Cateau* (October 6-12, 1918) cavalry were instrumental in harassing the enemy in his retreat and preventing him from completing the destruction of the railway, and when the infantry were held up by heavy machine-gun fire from Cattigny Wood and Clary "a dashing charge by the Fort Garry Horse gained a footing in Cattigny Wood and assisted our infantry to press forward. Further east, Dragoon Guards and Canadian Cavalry were instrumental in the capture of Hennechy, Reumont, and Troisvilles" (Sir D. Haig's Dispatches). In the early stages of the campaign in *North Russia* (August-September, 1918) a handful of cavalry on either bank of the North Dwina River could have kept the Bolshevik forces constantly on the run, and could have prevented the successive reorganisation of their demoralised forces, which the slower progress of the pursuing infantry was unable to accomplish. A few squadrons of cavalry could have dispersed the whole {67} Bolshevik force in the Archangel Province. Tanks are usefully employed in the pursuit, as artillery, the only effective enemy of the tank, is unlikely to remain in action with the rearward troops of a disorganised enemy; and a new terror has been added to the pursuit by the advent of self-propelled, man-carrying Aircraft,

armed with machine guns and bombs, and possibly even with light quick-firing artillery. During the final stages of the victorious *Allied Advance* in November, 1918, the retreating German Armies were continuously harassed from the air. "Throughout the day (November 5, 1918) the roads, packed with the enemy's troops and transport, afforded excellent targets to our airmen, who took full advantage of their opportunities, despite the unfavourable weather. Over 30 guns, which bombs and machine-gun fire from the air had forced the enemy to abandon, were captured by a battalion of the 25th Division in the field near Le Presau" (Sir D. Haig's Dispatches).

THE ROYAL ENGINEERS.—The position and employment of the Royal Engineers will be determined by the commander who issues orders for the Attack, and as the main function of this corps in the Attack is the removal or bridging of obstacles to the advance, and the strengthening of the position when captured, the Royal Engineers will probably remain with the troops to which the decisive attack is entrusted.

MEDICAL ARRANGEMENTS.—The position of hospitals and clearing stations will be settled in consultation with the S.M.O. Aid posts and advanced dressing stations will be established under battalion arrangements in connection with the medical officer of the units concerned.

SUPPLY.—The position of the Train, with its reserve supplies of ammunition and of food for men and horses, will depend upon facilities for communication with the attacking force and upon security against artillery fire {68} or surprise attack from the air or land. The position will probably be well in rear, and at the junction of roads leading forward to the attacking troops. Rations will be brought up to units under arrangements by the commanders of the battalion or other units concerned.

THE COMMANDER'S POSITION.—The position of the commander who issues the orders for the Attack must be fixed, and must be made known to subordinate commanders, as it will be the place to which reports will be sent. In the case of a small force the commander will generally stay with the General Reserve; if the force is fairly large, and composed of all arms, he will probably be on the main artillery position; but in the case of a large force he should be well out of reach of the distraction of local incidents. If the commander of a large force moves from his stated position he must leave a senior officer of his staff to represent him on the spot and to forward urgent communications to him

in his changed position. In the case of a small force a commander who vacates his stated position must arrange to leave a runner in the position stated as his headquarters, in order that messages may reach him without delay.

BATTLE REPORTS.—The successful exploitation of success depends largely on the accuracy of the information gained by the commander from all parts of the battlefield. Reports are required from all who have information to impart and they should be made out on previously prepared message cards, stating the exact position of the sender at the time of the report; the progress made by the unit under the command of the sender, or by neighbouring or other units whose action has been observed; the degree of the enemy's resistance; enemy movements; and the plans of the officer making the report and the method to be adopted in carrying out such plans.

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REORGANISATION AND PURSUIT.—Once a successful assault has been delivered, subordinate commanders must immediately regain control of their commands, and must see that the fleeing enemy is pursued by fire, while local reserves follow up and secure the position against counter-attack. Superior commanders must take steps to organise the pursuit, to cut off the enemy's line of retreat, and to complete his overthrow. No victory is ever complete if the enemy is permitted to retire unmolested from the field of battle, and given time to recover order and moral. "Never let up in a pursuit while your troops have strength to follow" was a favourite maxim of Stonewall Jackson. The pursuit is the task of the infantry until it is taken over by aircraft, cavalry, and tanks, and the limits to which the infantry will carry the pursuit will be fixed by the commander, who will bear in mind the principle that "Success must be followed up until the enemy's power is ruined" ("Field Service Regulations," vol. ii. (1920)). If the fruits of victory are to be secured the work must be put in hand whilst the enemy is still reeling under the shock of defeat. A few hours' delay gives him time to recover his equilibrium, to organise a rearguard, and to gain several miles on his rearward march. In modern warfare motor transport may enable the comparatively immobile infantry to achieve the mobility of cavalry, if arrangements for embussing them have previously been made, and in a few hours infantry may thus be transported beyond the reach of pursuit.

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FORMATION OF INFANTRY FOR THE ATTACK

"Only by the rifle and bayonet of the infantryman can the decisive victory be won."—MARSHAL HAIG.

The formations in which Infantry move to the Attack must be such as will enable them to achieve their object by the combination of Fire and Movement. For this purpose, the forward troops must be furnished with supports belonging to the same unit as themselves, in order that a connected leading may produce a joint action of the whole.

THE PLATOON.—The smallest unit which can be divided into independent bodies, each capable of Fire and Movement, is the platoon, the four sections of which can pin the enemy to his position by fire and can manoeuvre round his flanks. The normal distribution of the platoon for the Attack is either the Square or the Diamond Formation. In the *Square Formation*, two sections are forward covering the frontage allotted to the platoon, and the remaining two sections are in support, in such formation as may keep them in readiness for instant manoeuvre with due regard to the avoidance of unnecessary loss. In the *Diamond Formation*, one section leads to reconnoitre and to pin down the enemy, while the remaining three sections are held in readiness to manoeuvre for the decisive attack at the point in the enemy's defence which offers the best prospect of success. The Diamond Formation is that best suited to an Attack in an Encounter Battle, when the nature of the enemy's dispositions are imperfectly known. It possesses the great advantage of preserving {71} the power of manoeuvre for three-quarters of the platoon until the action of the leading section has developed the situation.

In each case (except when the Attack is launched against a highly organised defensive position), the forward sections will be preceded by *Ground Scouts*, to find the most covered line of advance and the best fire positions, and to guard against ambush. These Ground Scouts advance until checked, when they remain in observation until joined by the leading sections. During the early stages of the Attack in an Encounter Battle *Flank Scouts* may be required until such time as the deployment of the platoon renders them unnecessary.

Against a highly organised defensive system platoons may not be able to advance to the Attack without a barrage, and it is essential that all movements should conform exactly to the timing of the barrage and that the troops should keep under the back edge of the shrapnel curtain, so as to deliver their assault before the enemy has time to bring rifles and machine guns into play. Under such circumstances, Ground scouts must be dispensed with. Such a position will not be attacked without careful previous reconnaissance and the lines of advance will have been chosen beforehand. The Square Formation will be that usually adopted for attacks on highly organised defensive positions, with the two rifle sections forward and the two Lewis-gun sections in support. The Lewis-gun sections are thus able to protect the flanks of the rifle sections, and to deal with isolated enemy machine guns, or concealed bodies of riflemen, which might come into action with reverse or enfilade fire after the forward sections have passed over the occupied ground.

THE PLATOON COMMANDER.—The platoon commander must explain the situation to his subordinates and point out the line of advance. He should usually move with the forward sections during the preparatory {72} phase of an Attack, and when the forward sections have been committed to the Attack he should assume control of the supporting sections and move with them. If his platoon is in support, he will thus be with the forward sections before the platoon is involved in the fight. The success of Infantry in the Attack depends not only on dash, control, and leading, but upon the intelligent co-operation of support commanders, who must keep themselves acquainted with the course of the battle by intelligent observation and will thus possess an "appreciation of the situation" before involving their men in action, and can direct the supports to the right spot at the right time, to influence the battle by fire and by movement, without hesitation or delay.

THE COMPANY.—The normal distribution of the company, when acting with other companies of the battalion, is two platoons forward and two in support. To meet the expectation of a stubborn resistance, or to cover an unusually extensive frontage, three platoons may be forward, with one in support; and where information as to the enemy's dispositions is lacking, but strong opposition is unlikely, one platoon may be forward with three in support, thus enabling the company commander to use any or all the supports to influence the attack on obtaining information as to the point in the enemy's position which offers the best prospect of success. When the frontage allotted to a company is above the normal, the leading platoons should not endeavour to cover the whole front, but

gaps should be left between them; otherwise the men will be so widely extended as to deprive the leaders of the power of control.

When a company is acting independently, the normal formation will be two platoons forward, with one in support, and one in reserve.

THE COMPANY COMMANDER.—The company commander will allot the tasks and the frontages of his {73} platoons and give orders as to their distribution, and must state where he will be himself during the Attack. His position will be determined by the necessity of keeping informed throughout the Attack of the situation and of the progress of his platoons, and he is responsible that all essential information on these points is passed back to the battalion commander. He must also keep in touch with companies on his flanks, sending out patrols for this purpose, if necessary; and must use every opportunity afforded by the fire or smoke provided by other units or arms to get forward or round the enemy's flanks. He will use his supporting platoons to push through where the resistance is weak in order to turn the flank of those portions of the enemy which are holding up the advance. As soon as this temporary phase has been brought to a successful conclusion the company commander must reorganise his platoons and secure their advance on the objective. When the objective has been gained the position must be consolidated and patrols sent out to prevent surprise.

THE BATTALION.—The distribution of the battalion depends entirely upon the nature of the task allotted to it. Where the enemy's dispositions are known and considerable resistance is anticipated in the earlier stages of the Attack, the battalion will normally be distributed with two companies forward, one in support and one in reserve. The forward body should thus be strong enough to develop the Attack to such a point that a decisive blow can be delivered by the supports against the main resistance, and the reserve company is in hand for the completing stages of the action or for stabilising the local battle. Where the enemy's dispositions and the degree of resistance are still the subject of conjecture, one company only may be forward, with two in support, so that the main strength of the battalion will not be committed to any definite *rôle* before it is needed and before the situation of the enemy is discovered.

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THE BATTALION COMMANDER.—"The powers of personal control of a

battalion commander upon the field of battle are limited, and success will depend, in a great measure, on the clearness of the orders which commit his leading companies to the Attack" ("Infantry Training, 1921"). The battalion commander should be supplied with any details concerning the enemy and of co-operating troops. He must understand his objective, the limits of his frontage, and the extent of help which he will receive from the other arms. In addition to such information as is supplied regarding the enemy's strength and dispositions, particularly with regard to wire (or other obstacles) and machine guns, he must ascertain the best positions of assembly for his companies, the best lines of approach to the objective, the most covered line of advance for his supports and reserves, and the best position for his own headquarters during each stage of the Attack. In his orders for the Attack he will reveal all information concerning the movements and dispositions of the enemy and of co-operating troops and arms; he will allot tasks to the companies and to the machine-gun platoon (if not brigaded) and will define the frontage of the forward companies; he will also detail the assembly positions, give compass-bearings for the advance, describe the action of other arms in support, make the necessary signalling arrangements, notify the zero hour, arrange for the synchronisation of watches, notify his own position before, during, and after the Attack, and indicate the point to which reports are to be sent, notify the medical arrangements, and issue instructions as to the collection of stragglers, the escort and destination of prisoners, the supply of ammunition, and the equipment to be worn. The quartermaster will receive orders as to the bringing up of rations during the battle. Before issuing to the Attack a proportion of officers and other ranks will be detailed to remain behind, to replace casualties when the engagement is over.

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The position of the battalion commander will be chosen with a view to keeping in touch with the progress of the Attack in all its stages and of influencing the fight by means of the reserves. Personal control is difficult to exercise once troops are committed to the fight, but opportunities for rapid decision were frequently offered to battalion commanders in the Great War, and seized with a success which transformed a check into a victory. In 1916 a battalion commander of the Coldstream Guards, seeing his command disorganised by fire and resistance, by personal example rallied and reorganised the waves of the Attack and added the necessary momentum to the assault, which then reached its objective. On April 14, 1917, the commander of a battalion of the Royal Newfoundland Regiment witnessed the launching of a local counter-attack by

the Germans on the village of *Monchy-le-Preux*, and by a rapid advance with the fighting portion of his headquarters, staved off the attack until the arrival of reinforcements from the 88th Brigade enabled it to be driven back in disorder. On November 30, 1917, during the German counter-attack from Fontaine Notre Dame to Tadpole Copse, in the Northern Sector of the *Cambrai* zone, the Germans forced their way into our foremost positions, and opened a gap between the 1/6th and 1/15th London Regiments. Local counter-attacks led by the two battalion commanders with all available men, including the personnel of their respective headquarters, once more restored the situation. In March, 1918, during the most critical period of the German thrust at Amiens, a battalion commander of the Border Regiment again and again, on horseback and on foot, personally restored the situation.

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DEFENSIVE ACTION

"The soul of the Defence is the Counter-Attack."—MARSHAL FOCH.

Defensive action may be initiated by a commander in the field, or it may be imposed upon him by the enemy, and a commander may rely upon fortification to assist him in defeating the enemy, or he may employ manoeuvre to effect or to postpone a decision.

A commander may desire to pin the enemy to an attack upon a fortified position, garrisoned by a portion only of his force, while he detaches another (and probably greater) portion to attack the enemy from an unexpected quarter. An outstanding example of this form of action is exhibited in the *Battle of Chancellorsville* (May 2-3, 1863), where Lee kept at bay Hooker's army of 90,000 with one-third of his force and detached Stonewall Jackson with 30,000 men to attack the Federal rear. Action of this kind is peculiarly effective, but it requires a secrecy which modern aircraft would almost certainly unveil, and if the manoeuvre failed to escape observation it would probably result in disaster both to the retaining force and to the detached troops.

A different form of the combination of defence with manoeuvre is the

Defensive-Offensive battle, with examples of which the history of Warfare is amply supplied—Marengo, Austerlitz, and Waterloo being typical battles of this nature. In this form of defensive action a commander invites the enemy to attack a well-chosen position, and after exhausting the enemy's strength and holding up the assault, the commander passes from the guard to the thrust and overwhelms {77} the exhausted foe by an irresistible and sustained counter-attack with all the means at his disposal.

A position is sometimes occupied as a matter of necessity, sometimes merely as a matter of tactical prudence. At *Nachod* (June 27, 1866) the Prussian Advanced Guard hurriedly established a defensive position and kept at bay the whole Austrian Army, while the Prussian Army emerged in security from a defile and manoeuvred into battle array. The *Pass of Thermopylae* was occupied in B.C. 480 by 1,400 Greeks under Leonidas, King of Sparta, to withstand the Persian hosts of Xerxes, and although the Greek force was destroyed by an attack from the rear (through the disclosure of a secret path by a renegade in the Persian service), the resistance offered to the "invincible" Persians emboldened the Greeks in their future encounters, and led to the ultimate defeat of the invaders. According to the legendary history of Rome, Horatius Cocles and two companions defended the *Sublician Bridge* over the Tiber against Lars Porsena and the whole army of the Etruscans. This legendary heroism was equalled or surpassed during the *Second Battle of the Somme* (March 21, 1918). "The bridges across the Crozat and Somme Canals were destroyed, though in some cases not with entire success, it being probable that certain of them were still practicable for infantry. Instances of great bravery occurred in the destruction of these bridges. In one case, when the electrical connection for firing the demolition charge had failed, the officer responsible for the destruction of the bridge personally lit the instantaneous fuse and blew up the bridge. By extraordinary good fortune he was not killed" (Sir D. Haig's Dispatches). At *Rorke's Drift* (January 22, 1879) a force of 80 other ranks of the 24th Regiment, under Lieutenants Chard and Bromhead, with about 40 hospital cases, drove off the repeated attacks of 4,000 Zulus, part of Cetewayo's army which had surprised and annihilated the garrison {78} at *Isandhlwana* earlier the same day. An astounding feat of arms was performed by a small body of troops during the withdrawal of the British Army in face of the overwhelming German attack at the *Second Battle of the Somme*. A detachment of about 100 officers and men of the 61st Brigade, 20th Division, was detailed to cover the withdrawal of their division at *Le Quesnoy* (March 27,1918). Under the command of their Brigade-Major (Captain E. P. Combe, M.C.) the detachment successfully held the enemy

at bay from early morning until 6 p.m., when the eleven survivors withdrew under orders, having accomplished their task.

There are many instances of the occupation of an area for an actual or potential tactical purpose. Before the *Battle of Salamanca* (July 22, 1812) a Spanish force had been detached by Wellington to cover a ford of the River Tormes by occupying the castle of Alba de Tormes, but the force was withdrawn without Wellington's knowledge, and Marmont's defeated army retired unmolested over the ford to the fortress of Valladolid. In the campaign of 1814, Napoleon placed a garrison of 1,200 in the *Fortress of Soissons*, but on March 3,1814, the garrison capitulated without exhausting all the means of defence as the regulations of War ordain, and the bridge at Soissons enabled Blücher and Bülow to unite their forces across the River Aisne. In the Waterloo campaign, Wellington stationed 17,000 men at *Hal* and *Tubize*, 8 miles from his right on the field of battle at Waterloo, to repel a possible turning movement and to form a rallying point if his centre was broken, and with 67,000 men took up a position astride the Nivelle-Brussels and Charleroi-Brussels roads which met at Mont St. Jean. He was deprived of the services of this detachment and modern criticism has been directed against this disposition of his forces. It is, however, permissible to suggest that the security of his right flank, and the possession of a rallying point, inspired him with the confidence which enabled him to {79} withstand the sustained attacks of Napoleon until the arrival of Blücher's corps permitted him to overwhelm his adversary.

A further form of defensive action is the occupation of a series of extemporised positions and the orderly withdrawal to a further series before the actual assault of the enemy, resistance being combined with manoeuvre for the purpose of delaying the enemy's advance or of holding up his pursuit. Delaying action of this kind is commonly employed in rearguard fighting, when the object to be gained is time rather than position, and the offensive action of the defender is limited to local counter-attacks at favourable or desperate moments. But the guiding principle in all defensive operations, including delaying action, must be that "when an enemy has liberty of manoeuvre, the passive occupation of a position, however strong, can rarely be justified, and always involves the risk of crushing defeat" ("Field Service Regulations," vol. ii. (1920)).

THE OFFENSIVE SPIRIT.—Although there are many forms of defensive action the soul of the Defence in every case is a vigorous offensive spirit. In the Active Defence, the Decisive Counter-Attack, ending in the overthrow of the enemy, is

the manoeuvre originally in view when the defensive *rôle* is adopted. In the Passive Defence against superior numbers. Local Counter-Attacks end with the recapture of a tactical point or the repulse of a determined assault, and in the Delaying Action they overwhelm by surprise fire or assault a detached force which has advanced with such rapidity as to enable the defenders, without undue risk, to cut off and annihilate the isolated enemy body. Whatever the tactical situation, it is by the vigour of the offensive spirit alone that success may be achieved in the face of a determined enemy.

MODERN WARFARE.—In modern warfare the defensive position plays a part of increasing importance, owing {80} to the great power conferred on the defence by modern armaments. "Machine guns and barbed wire permit the rapid organisation of defensive points of a value which cannot be disputed. In particular, they have given to a trench, or to a natural obstacle, a solidity which permits a front to be extended in a manner unsuspected before this war; they permit the prompt consolidation of a large system that is easy to hold" (Marshal Foch). "The modern rifle and machine gun add tenfold to the relative power of the Defence as against the Attack. It has thus become a practical operation to place the heaviest artillery in position close behind the infantry fighting line, not only owing to the mobility afforded by motor traction but also because the old dread of losing the guns before they could be got away no longer exists" (Marshal French). It is thus possible to hold the forward positions of a highly organised defensive system with a minimum of exposure to loss, the extra strength of the position counterbalancing the reduction in numbers, but a preference for defensive action of this kind may generally be regarded as an admission that a victorious outcome of the campaign is not anticipated at the time of its adoption in the theatre in which it is employed. "It is of paramount importance that in those parts of a theatre of operations where a commander aims at decision a war of movement must never be allowed to lapse into position warfare so long as a further advance is possible. Position warfare can never of itself achieve victory" ("Field Service Regulations," vol. ii. (1920)). However strong entrenchments may be they will not defeat the adversary's main armies, nor can they withstand indefinitely the attacks of a determined and well-armed enemy. It is scarcely even probable that an army behind entrenchments can by that means alone inflict such losses on its assailants as will enable the initiative, or liberty of manoeuvre, to be regained and the assailant's main armies to be defeated. The operations on both sides {81} are in the nature of a siege, and however prolonged the siege, the advantage will be gained in the long run by superiority of aggressive action in the air and over and under the ground. In

addition to the absence of opportunity for the grand offensive there are two further points of difference between defensive action in Position Warfare and the defence in a War of Manoeuvre. The first of these is the inevitable absence of flanks to be assailed, as the operations necessitate a connected line of strong points from sea to sea, or from the sea to the impassable barrier of neutral territory. Mounted troops are therefore doomed to inaction in their most important sphere, until the lines have been breached and the enemy is forced to retreat, and the opportunities for delivering flank attacks are meanwhile confined to the infantry, and will be due to irregularities in the alignment of the strong points, upon which enfilade fire may be brought to bear. The second point of difference is the abundance of time at the disposal of commanders for developing and rehearsing elaborate systems of attack and defence, and for obtaining detailed plans of the hostile works, through continuous reconnaissance by the Air Service. In most countries there must be, of necessity, a prolonged period of inactivity on both sides in a Position War, owing to the severity of winter conditions, or to the occurrence of the rainy season, and during that period it will seldom be possible to penetrate the enemy's main defences on such a scale as to bring about the grand offensive. But this is a period of inactivity in appearance rather than in fact, for no defensive system is ever perfect, no strong point but needs further consolidation, new trenches are constantly constructed or improved, and fresh areas are covered with wire entanglements. Guns of all calibres, underground mines and light mortars are ever at work, demolishing, wounding, and killing, while lachrymatory and asphyxiating shell-fire is to be expected at all times. On a smaller scale, snipers on both sides have a daily bag, and {82} observers are ever at their posts noting every change, however insignificant, and every new piece of work; "listening posts" are detecting hostile plans, while patrols are collecting information and raiding parties are reconnoitring, destroying defences, and inflicting losses, it being the first principle of a raid that it should result in greater losses to the enemy than to the troops which carry it out.

ENTRENCHMENTS.—Entrenchments have been employed in the defence from the earliest times. The Roman walls in Britain, the Great Wall of China, the earthworks in the Russian War of 1854-1855, in the American Civil War of 1861-1864, in the Russo-Turkish War of 1878, and the Russo-Japanese War of 1904-1905 are notable examples. But in no war previous to that of 1914-1918 have they played so important a part.

One of the most famous series of entrenchments in previous wars were those

constructed in 1810 by Colonel R. Fletcher, of the Royal Engineers, at *Torres Vedras*. These fortifications extended for 50 miles and contained 126 closed works, mounting 247 guns, and behind these lines Wellington amassed stores and reinforcements until the retreat of Masséna enabled him to resume the initiative. In front of these lines everything that could support the French armies had been removed; behind them Wellington's forces were well provided in every respect. On October 10, 1810, Masséna was confronted by the entrenchments, the existence of which had been kept a profound secret, while their strength prevented them from being carried by assault. Before the end of October a Portuguese spy wrote to Wellington: "Heaven forgive me if I wrong the French in believing they have eaten my cat" (Napier). During the night of November 14-15, Masséna broke up his camp and withdrew. But it was not the lines of Torres Vedras which won back the Peninsula. Spain and Portugal were saved by the bold march northwards {83} to Vittoria. "In six weeks Wellington marched, with 100,000 men, 600 miles, passed six great rivers, gained one decisive battle, invested two fortresses, and drove 120,000 veteran French troops from Spain" (Napier).

DEFENSIVE SYSTEMS.—"Whether it is the intention of the commander to resume the offensive at an early date or whether it is likely that the defensive system will be occupied for a considerable period, the principles on which the construction of all defences should be undertaken are the same. All defensive systems should be planned from the outset in such a way that they can easily be adapted to the requirements of a prolonged defence. The ground must be thoroughly reconnoitred and should at the first be divided into a series of tactical posts and defended localities. These posts should be self-supporting, but should be so sited that the garrisons mutually support each other by fire. The gaps between the posts must be covered by the fire of the garrison of the posts, and machine guns may also be sited to bring fire to bear from positions in rear and to the flanks" ("Infantry Training, 1921"). This principle must govern the choice of the position to be defended as well as the organisation of the position for defence, and troops detailed for the defence of an area must continue to improve the defensive arrangements in that area until such time as the offensive is resumed.

CHOOSING A POSITION.—The framework of the modern defence consists of artillery and machine guns; into this framework are fitted the defence posts or defended localities garrisoned by infantry, who are responsible for holding their ground at all costs and for inflicting the greatest possible loss on the enemy. A

commander will require a position which affords elasticity for increasing the resistance as the attackers penetrate the defences, and depth will thus be essential. He will require a position wide enough to prevent the whole of his front being masked by a retaining attack of a part of the {84} enemy's forces while a strong flank attack is simultaneously delivered; and in a War of Manoeuvre he will require facilities for the Decisive Counter-Attack.

The depth of the position will develop automatically in a War of Position, but it must always be sufficient to enable troops to assemble in rear of the forward position before moving up and to afford rest to troops when withdrawn from the front line. The width of the position will generally depend upon the strength of the defending force, the guiding principle being to keep about half the force in General Reserve; if, therefore, the remainder of the force is insufficient for the purpose of holding the defences the position is too wide for the tactical requirements of the Active Defence. In Position Warfare, however, a defensive system must necessarily be extended beyond the limits that are practicable in the Active Defence, and the numbers available for the garrison are supplemented by denying ground to the attack by means of obstacles, the removal of which is prevented by machine-gun and rifle fire.

THE OUTPOST ZONE.—For the Active Defence of a position the defensive system will consist of an Outpost Zone and a Battle Position. The Outpost Zone is garrisoned by a protective force which keeps a constant watch on the enemy and absorbs the first shock of the attack, watch being kept by means of well-concealed sentry posts on the Line of Observation, supported by a chain of small self-contained defensive posts, while resistance is offered by a series of self-contained, mutually supporting defence posts on the Outpost Line of Resistance.

THE BATTLE POSITION.—The Battle Position will be established in the area in which the commander decides to fight out the battle and break the enemy's attack. It therefore forms the keystone of the whole defensive position and must be organised in depth to afford elasticity for defensive action. "In principle, in order to protect {85} the battle position from being obliterated by a preliminary bombardment, it should be beyond effective range of the enemy's mortars" ("Field Service Regulations," vol. ii. (1920)).

THE SEMI-PERMANENT SYSTEM.—When a campaign is prolonged in any area without decisive results a War of Position may be developed by one or both of the combatants. In such cases the Outpost Zone is developed into an intricate

trench system, with protective avenues leading from front to rear and with deep dugouts to protect the garrison from artillery fire. The Battle Position will probably coincide with the Outpost Zone, the trenches being used for the purposes of observation until the fire positions are manned to resist an assault.

In parts of the line on the Western Front of the Great War, "Pill-box" forts, constructed of concrete, took the place of continuous lines of trenches. These machine-gun forts were garrisoned, according to size, by groups from 5 to 50 strong, and were echeloned in plan, to sweep all approaches, and together to command with their mutually supporting fire the whole area over which they were spread, the intervening ground being entangled with wire so placed as to invite attacking troops into places where flanking fire may be poured into them. The advantages of the pill-box system over the continuous line of strong points are principally defensive. Fewer men are required for them than for the trench systems, and there is less liability of loss from artillery fire. But there are certain grave disadvantages. Well-directed artillery fire is liable to destroy some of the pill boxes, and a direct hit from a heavy gun will possibly put a larger fort out of action, thus crippling the defence by the removal of a peg on which the whole scheme depends. Supports and reserves are necessarily far in rear and must be brought up through the open to repel successful attacks, while a defensive scheme {86} composed entirely on the pill-box plan is less suitable for aggressive action than entrenchments, there being fewer facilities for assembling troops prior to the attack.

COMMON CHARACTERISTICS.—Whatever the system of defence or phase of warfare, every commander must guard his flanks and keep in touch with neighbouring units. He must always be ready to assist a neighbouring commander by enfilade fire or by a relieving counter-attack; or to throw back a defensive flank in the event of a neighbouring post being captured by the enemy. Each post, occupied for the Defence (except in Delaying Actions, where manoeuvre takes the place of a settled resistance), forms a self-contained centre of resistance, capable of all-round fire, and the duty of the garrison is to defend the area allotted to it to the last man and the last round.

THE ACTIVE DEFENCE.—The Active Defence may be considered according to the reason which prompted the commander of the force to occupy the position. It may have been deliberately chosen as a position which the enemy must attack, and in the hope of delivering during that attack a crushing and decisive counter-blow; or it may have been chosen of necessity, to meet an

attack by deployment on the ground of the encounter, with the same hope of delivering a decisive counter-stroke when the opportunity arrives.

There is little difference in the steps to be taken by the commander, as in the first case a General Reserve is specially detailed for the counter-stroke; and in the second, the position will be held with as few troops as the tactical situation permits, in order to provide as large a General Reserve as possible for the Grand Offensive. A commander will be influenced by many considerations in his choice of a defensive position:—

(i) *The position must suit the plan of operations*; it must be "in the enemy's way," and this the commander must be able to judge from the map. It is {87} to be noted that to bar the enemy's way it is not always essential to get astride his lines of advance, as a position on parallel lines, threatening his flank and rear, cannot be ignored by the enemy, unless he is strong enough to detach a part of his force to mask the defender's position, while he proceeds to his objective with his main army. "It was a mistake to assume that in order to cover Turin one had to stand astride the road leading to that town; the armies united at Dego would have covered Turin, because they would have stood on the flank of the road leading to that town" (Napoleon).

(ii) *The position must not be too extensive* for the troops at the disposal of the commander, and this will be governed by the extent of the line to be actually held. It will consist of a series of mutually supporting tactical points, which can be held as "pivots on which to hinge the defence of the position," and the object must be to obtain the maximum of fire effect on all ground over which the enemy can advance with the minimum of exposure to his fire. A rough-and-ready rule is that unless one rifle per yard of the frontage occupied can be supplied by the "troops to hold the position" (which should not exceed one-half the available force) then the position is too extensive and should be narrowed. On the other hand, too narrow a front may enable the enemy to develop, early in the engagement, strong flank attacks, which may make the position untenable before the time is ripe for the assumption of the offensive. The *Condé-Mons-Binche* line held on August 22-23, 1914, by Sir J. French's army (I. Corps, General Sir D. Haig; II. Corps, General Sir H. L. Smith-Dorrien) had a total width of 25 miles, and the troops at disposal, including General Sir E. H. H. Allenby's Cavalry Division, consisted of about 75,000 all arms. The frontage actually held did not exhaust half this force at the rate of one rifle per yard, and a position in rear had also been selected, between Jerlain and Maubeuge, with a

frontage of 15 miles. The *Retreat from Mons* was {88} due not to the excessive width of frontage, but to the success of the German attack on the French V. Corps at Charleroi (August 23, 1914), which left the right flank of the British Army "in the air," while two German Corps were working round the left flank. The British III. Corps (General Sir W. P. Pulteney) did not arrive until the retreat was in full swing. At the *First Battle of Ypres* (October 31, 1914) many parts of the line were held with one rifle for 17 yards, and there were no Supports or Local or General Reserves. Yet the line was not only maintained but a counter-attack at Gheluvelt thrust the attacking Germans behind their entrenchments.

(iii) *There must be a clear field of fire* to prevent the enemy approaching unmolested within effective range, and particularly within close range, from which the enemy will endeavour to establish an ascendency in the fire-fight.

(iv) *The flanks must be secure,* or at least as strong as possible. A flank resting on a deep river or a marsh may be regarded as secure, and a flank extending to the sea, or to the boundary of a neutral State. A flank on high ground which commands all approaches and provides means of distant observation may be called strong. It is a great advantage if one flank can be posted so strongly as to compel the enemy to make his main attack on the other, as this will enable the defender to forecast the direction of the decisive attack and to dispose his General Reserve to meet and overwhelm it.

(v) *There should be facilities for cover* on the position and concealed avenues of approach from the rear. A crest affords cover on the reverse slopes and woods provide concealment, while time enables artificial means to be adopted. Tactical cover can be provided by cavalry and advanced troops in the early stages of manoeuvre-battle, and in removing this cover the troops can withdraw in such a way as to lure the enemy on {89} to a false position. They can also induce premature deployments by the enemy, and movements across the front of the real position.

(vi) *There should be good artillery positions* to provide effective fire on all hostile avenues of approach, and counter-battery work on hostile artillery positions. There should also be firm ground and good roads for the movement of guns, and an absence of landmarks for the enemy to range on. Guns of the heaviest calibre take part in all modern battles, their disposition being settled in conference with the artillery commander. A battery of field artillery requires 100 yards frontage for its six guns, and there is usually an interval of 25 yards

between batteries.

(vii) *There must be depth* to allow for the disposal and movement of the Supports and Reserves, and for manoeuvres to recapture the forward defences, or to issue to the counter-attack.

(viii) *There must be good lateral and frontal communication* in order that any part of the line can be quickly reinforced. A position astride an unfordable stream, or high ridge or deep ravine should therefore be avoided. At the *Battle of Dresden* (August 26, 1813) the Allies were encamped on the left bank of the Elbe. Their forces were posted on the heights, but the position was cut transversely by a deep ravine, so that the left wing was isolated from the centre and right. This vicious disposition did not escape the penetrating eye of Napoleon, who attacked their isolated wing with superior forces and routed it completely, with the capture of 10,000 prisoners, before any assistance could arrive. The task of creating lateral communications, if none exist, is of the utmost importance, as they enable a commander to achieve the primary object of every military manoeuvre, to meet the enemy with superior forces at the desired point.

(ix) *There should be good lines of withdrawal*, and these should be horizontal, or only slightly oblique, to {90} the main position, and not parallel with the general alignment. This is a point of the first importance, for if the Lines of Communication lead straight to the rear a force that is overwhelmed by the attack can withdraw to selected positions and towards its base, if it can keep the line intact and prevent its flanks being turned. A wide base, with alternative lines of approach, is of the greatest value, and when there is undue risk of the Lines of Communication to a base being intercepted, an alternative base, with lines of withdrawal thereto from the unexposed flank, is an acceptable safeguard, as the defence can be protracted while the withdrawing force concentrates upon the changed base. Such a change of base was effected by Marshal French during the *Retreat from Mons*, and amongst many historical examples may be quoted General McClellan's transfer of the *Army of the Potomac* from the York to the James River in July, 1862, during the *Seven Days' Battle around Richmond*. General Grant changed his base no fewer than five times during the *Campaign in the Wilderness* (May, 1864), from Washington to Orange and Alexandria Railroad, then to Fredericksburg on the Rappahannock, then to Port Royal, further east on that river, then to White House on the Pamunkey (a branch of the York River), and finally to the James River. "His army was always well supplied,

even his enormous numbers of wounded were carried straight away to the base and thence to Washington, without any difficulty, and he had no obstacles whatever to fight against as regards either feeding his army or keeping up the supply of ammunition" (Henderson). In withdrawing a defeated wing it may even be advantageous to rally the troops at a point distant from the field of battle, and to cause the pursuer, uncertain as to the direction of the retreat, to make detachments which can be overthrown by sudden counter-attacks, or to lure a pursuer from the field where their presence is required, as Grouchy was lured after Napoleon's defeat of the Prussians at Ligny {91} (June 16, 1815). The object of Napoleon's attack on the Allies was the separation of Wellington's Anglo-Belgian force from the Prussian Army under Blücher, and after the defeat of the latter at Ligny the Emperor directed Marshal Grouchy to pursue the Prussians and to drive them eastwards. Grouchy conducted a leisurely pursuit and engaged an insignificant part of the Prussian Army (*The Battle of Wavre*, June 18-19, 1815), while the main body of the Prussians moved westwards and assisted in the overthrow of Napoleon at Waterloo.

(x) *There should be favourable ground and a good line of advance for the Decisive Counter-Attack*. In order, therefore, to overthrow the enemy, a position should not be chosen behind an impassable feature which neither side can cross. At *Ramillies* (May 23, 1706), one wing of the enemy was posted behind a marsh, where it was both unassailable and unable to attack. Marlborough, therefore, ignored that wing entirely, and bringing his whole force against the remaining wing, won easily a decisive victory. The only occasions when an impassable feature is welcome are in the Passive Defence of a small force against overwhelming odds (as was seen in August, 1914, when the Belgians occupied a position behind the *River Gette*), and in the Delaying Action of a Rear-guard fighting for time for the Main Body to get away. In such cases a Decisive Counter-Attack is not contemplated.

OCCUPATION OF A DEFENSIVE POSITION.—The framework of the *defence* is provided by artillery and machine-gun fire; the backbone of the *offence* is the infantry. The Commander will *divide the troops* into (a) *Troops to hold the position*, and (b) *General Reserve*, the golden rule being to make (a) as small as the tactical situation permits in order that (b) may be as large as possible, and its work absolutely decisive. Under no circumstances {92} should the General Reserve be much below half the available force.

Of these two portions, the *Troops to hold the position* consist of infantry

occupying a series of mutually supporting tactical strong points, not necessarily continuous, and of irregular alignment so as to cover with the defender's fire not only the ground over which the enemy can advance, but the front and flanks of neighbouring strong points. This line will be strengthened, as and when necessary, by throwing in the supports, and it will be assisted at critical moments by the local reserves, which, coming up unseen, will deliver local counter-attacks on the assaulting enemy, and will thus restore the battle at threatened points by relieving the pressure on the front line. Their work completed they will be rallied and withdrawn again into local reserve, and it is highly important that they should be kept well under control, or their successful efforts may be neutralised by local reserves of the attacking force. At *Talavera* (July 27, 1809) a portion of the British force followed up the repulsed French columns too far, and being in turn broken and driven back, was pursued closely by the enemy and retired in disorder to the position. At the battle of *Fredericksburg* (December 13, 1862) two brigades emerged from the Confederate position and drove Meade's division of the Army of the Potomac out of their lines. But they rushed on with reckless impetuosity and were finally driven back with heavy loss. Local counter-attacks keep alive an offensive spirit in the defenders, exhaust the enemy's powers, draw his reserves into the battle, and thus prepare the opportunity for the Decisive Counter-Attack. The local reserves of flank sections should usually be echeloned in rear of the flank, which can thus be protected at need by determined counter-attacks on the flank of the enveloping force.

The General Reserve is for the Decisive Counter-Attack and is held for this purpose in the hands of the {93} commander of the whole force, in order that it may be used to crush and overthrow the enemy's main attack. The opportunity for this effort is generally obtained only when the enemy has thrown into action his own General Reserve for the decisive attack, and has received a check. A bold and resolute counter-attack at that moment is bound to achieve a decisive success. But the assumption of the *grand offensive should not be confined to the General Reserve alone*. Commanders of sections of the defence who are permitted by the local situation to do so, must at once join in the decisive counter-attack, unless express orders to the contrary have been received; and any definite success obtained must be the signal for the whole force to press the enemy with the utmost vigour. This opportunity will be fleeting, and there must be no delay in seizing it. Every preparation must therefore be made in anticipation of the opportunity so that a pre-arranged plan may be put into execution. "To initiate a counter-attack on a large scale without due time for preparation, co-ordination, and movement of troops is to court failure, with

heavy casualties and resulting demoralisation" ("Field Service Regulations," vol. ii. (1920)).

That the soul of the defence is the counter-attack was shown at the battle of *Spottsylvania* (May 12, 1864). General Hancock's Corps (from Grant's combined armies) had assaulted and captured part of Lee's entrenchments in the Wilderness of Virginia; 20,000 men had assaulted and captured the Salient, taking 4,000 prisoners; they then pressed forward, and sweeping everything before them, drove a wedge right into the Confederate position. "But Lee, recognising the weakness of the Salient, had caused another line of entrenchments to be constructed about half a mile in rear. By this second line the Federals were suddenly brought up. The confusion was very great, the battalions had intermingled in the excitement of the charge, and the officers could neither make their orders {94} heard nor form their men for another rush. Lee threw in his reserves. He made a tremendous counter-attack. Every single battalion he could collect was ordered to attack, and the vigour of the blow was such that the whole of these 20,000 men were driven back beyond the first line of entrenchments, and the Confederates recaptured their first position" (Henderson).

He will select positions for the Artillery, in consultation with the commander of that arm, the objects in view being: to command lines of approach so that the assailant may be shelled and forced to deploy early and so to indicate his plan of attack; to delay the advance; to combine with the infantry in the close defence of the main position; to support local counter-attacks; to destroy hostile batteries by counter-battery work; and to combine eventually in the Decisive Counter-Attack. The increased mobility of guns of the heaviest calibre owing to motor traction, and the increased defensive power of the protective quick-firing small arms, enable guns to be placed close behind the infantry firing line without undue risk of capture.

He will divide the position into sectors, each garrisoned by a distinct unit, under a definite commander. The mutually supporting tactical points (farmsteads, villages, woods, ridges, knolls, etc.) will usually be held in groups, under group commanders, with definite subordinate commanders, and the group commander will probably control the local reserves of that group, with which he can assist any of the units in times of need. The units from which such groups are formed will usually be complete sections.

He will decide the position of the General Reserve. This will be the locality best

suited for the advance to the decisive counter-attack, if it is to be delivered from a distance; or near the point where the enemy's decisive attack is expected, if it is intended to hurl the General Reserve into the flank and rear of the enemy's main {95} attack while it is heavily engaged with the troops holding the position. As surprise is essential to success, the position of the General Reserve should be concealed as long as possible. The position of the General Reserve will depend upon the ascertained intentions of the enemy. At the *Second Battle of the Somme* (March 21, 1918) the intentions of the German commander were ascertained during the first day's fighting. "As by this time (*i.e.* the evening of March 21) it had become clear that practically the whole of the enemy's striking force had been committed to this one battle, my plans already referred to for collecting reserves from other parts of the British front were put into immediate execution. By drawing away local reserves and thinning out the front not attacked, it was possible to reinforce the battle by eight divisions before the end of the month" (Sir D. Haig's Dispatches).

He must decide the position, and to some extent the action, of the Cavalry. Before defensive action in a War of Manoeuvre the cavalry have been out on reconnaissance, and during the early stages they have endeavoured to lure the assailants on to a false position. During the battle they will frustrate the efforts of opposing mounted troops, will protect a vulnerable flank, and will assist generally by dismounted fire action. After the victorious counter-attack they will emerge in pursuit. In case of a reverse they will delay the enemy's victorious advance by fire action and by mounted tactics to protect the withdrawing forces from the depredations of hostile cavalry. A position near a flank will usually be occupied.

There have been many examples of protection by cavalry of a force that has been worsted. After the *Combat of Roliça* (August 17, 1808) General Delaborde retreated by alternate masses, protecting his movements by short, vigorous charges of cavalry. At *Chancellorsville* (May 3, 1863), and on the first day of *Gettysburg* (July 1, 1863), a handful of United States {96} cavalry held up the pursuit and staved off disaster. At *Königgratz* (*Sadowa*), (July 3, 1866), the charges of the Austrian cavalry drove back the Prussian Horse and enabled Benedek's defeated troops to get back in safety. At *Rezonville* (August 16, 1870) von Bredow's Cavalry Brigade was ordered to charge the French batteries and their infantry escort, in order to give some breathing time for the hard-pressed Prussian infantry. The charge was successful and the time was gained, but as at *Balaclava* (October 26, 1854) there were few survivors from "Von Bredow's

Todtenritt" (death ride). After the battle of *Le Cateau* (August 26, 1918) and during the *Retreat from Mons*, the British cavalry, under General Allenby, effectively held off the enemy and enabled the British troops to move unmolested. During the great German offensive in the spring of 1918 the withdrawal of the troops at *Cugny* (March 24, 1918) was made possible by a brilliant mounted charge by a squadron of the 16th Cavalry Brigade, which broke through the German line, taking over 100 prisoners, and sabring a large number of the enemy. During the retreat in that area units of the 2nd and 3rd Cavalry Divisions proved so effective in delaying the enemy's advance that other units were horsed during the progress of the battle in order to increase the supply of cavalry. "Without the assistance of mounted troops, skilfully handled and gallantly led, the enemy could scarcely have been prevented from breaking through the long and thinly held front of broken and wooded ground before the French reinforcements had had time to arrive. . . . The absence of hostile cavalry at this period was a marked feature of the battle. Had the German command had at their disposal even two or three well-trained cavalry divisions, a wedge might have been driven between the French and British Armies. Their presence could not have failed to have added greatly to the difficulties of our task" (Sir D. Haig's Dispatches).

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He must select a rallying place in rear of the main position from which to recapture the front line, as General Lee recovered the "Salient" in the Wilderness of Virginia.

He must arrange for the reorganisation of his victorious forces and for the pursuit and complete overthrow of the enemy.

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PROTECTION AND RECONNAISSANCE

"Surprise consists in the hard fact that the enemy suddenly appears in considerable numbers without his presence having been known to be so near for want of information; and without it being possible to assemble against him for want of protection."—MARSHAL FOCH.

Every commander of a force, however large or small, is responsible for the protection of his command against surprise, and a force can only be regarded as secure from surprise when protection is furnished in every direction from which interference is possible. Detachments are therefore provided by every commander, their duty being to warn him if hostile forces are discovered in the vicinity of such forces, and to gain time, at all risks and at any sacrifice, for the commander of the troops they protect to carry out his plans unimpeded by the enemy. "A mission of protection does not necessarily imply a defensive attitude, it will often be better performed by an offensive" (Marshal Foch). There is the closest connection between Reconnaissance and Protection. It is only by finding out the location, strength and movements of the enemy that a commander can decide how best to protect his troops, and the forces he employs to protect his troops against surprise will very largely prevent the enemy finding out his own strength and dispositions. Detailed and timely information about the enemy and the theatre of operations is a necessary factor in War and the value of the information depends on whether it can reach the authorities in time to be of use.

Facilities for reconnaissance have been enormously increased by the introduction of man-carrying, self-propelled Aircraft. Before their introduction reconnaissance {99} at a distance from the forward troops was limited by the speed and endurance of the cavalryman's horse, and by the skill of the cavalry scout in penetrating the preventive screen of hostile cavalry, and in escaping the net spread out to catch him on the return journey. His radius of operations was comparatively small, that of the aërial observer is practically unlimited, as his machine will carry him over the hostile area, and unless he is driven down by opposing aircraft, or crippled by defensive fire from the ground, he returns in a comparatively short space of time to his base, with his budget of news, and may bring with him a series of photographs.

POSITION WARFARE.—When opposing forces are entrenched at no great distance from one another, photographs taken from the air lead to the discovery of new works from which the intentions of the enemy can be predicted. On the Western Front in the Great War, photographs taken from the air revealed the construction in the German training area of actual sectors of British trenches in facsimile, thus indicating the rehearsal of an attack on a definite part of the line. Hostile aircraft are prevented from carrying out similar observational journeys, the resistance of defending squadrons is overcome, and whenever a favourable target is presented, casualties are caused by bullets and bombs. Observers report all suspicious movements and changes in trench construction, and from

photographs taken at daily intervals maps of hostile trenches are constructed and revised. Infantry patrols and raiding parties are sent out by night and by day, and information is gleaned from the uniforms and badges of captured prisoners as to the distribution of hostile troops, while changes in the plan of trenches, in the siting of wire entanglements, or in the emplacements of guns and mortars are duly noted. In addition, troops in observation posts, in or ahead of the front line, in favourable and unsuspected {100} localities, are constantly observing the enemy, and sentries over all posts containing troops are ready at all times of the day and night to alarm the local garrisons. Resistance is afforded by a series of mutually supporting strong points, sufficiently garrisoned by troops who guard against surprise and hold their ground against attack. Entrenchments, with dug-outs and shelters, provide protection from fire, and barbed wire entanglements prevent unbroken rushes by the enemy, and entice him into openings that are swept by rifle and machine-gun fire. Box respirators and other appliances nullify the effects of gas, and camouflage disguises the position of trenches, troops, guns, and dumps, and so screens them from observation and direct bombardment, while it provides unsuspected means of observing the enemy's movements.

MANOEUVRE WARFARE.—In a War of Manoeuvre the steps taken to obtain security against surprise vary with the situation of the troops. Hostile aircraft flying high from the ground are dealt with by counter-attack by armed aeroplanes, but as aërial fighting requires space for manoeuvre hostile machines flying within 3,000 feet of the ground must be dealt with by machine gun, Lewis gun, or concentrated rifle fire, except in cases where it is essential to conceal from the enemy that a certain position or locality is occupied, and where the troops are so well hidden as to escape detection unless they open fire. Movement is easily detected by low-flying aeroplanes, and in fair weather troops can be recognised as hostile or friendly by an observer at 500 feet, while movements of formed bodies on a road are visible at 5,000 feet. Troops remaining stationary in shaded places may easily escape observation, and if small bodies in irregular formation lie face downwards they are difficult to detect, even in the open. When a force is in movement, detachments move with it to afford protection in every direction from which interference {101} is possible; and when a force is at rest, detachments with similar duties secure it from disturbance and keep off attack until it can be met or developed without disadvantage. These phases are dealt with under the headings of "THE ADVANCED GUARD," "FLANK ATTACKS AND FLANK GUARDS," "THE REAR GUARD," and "OUTPOSTS."

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THE ADVANCED GUARD

"Fabius, the saviour of Rome, used to say that a commander could not make a more disgraceful excuse than to plead, 'I never expected it.' It is, in truth, a most shameful reason for any soldier to urge. Imagine everything, expect everything."—SENECA, "*De Ira.*"

Every moving body of troops must be protected by detachments, the force detached to precede the advance being known as an Advanced Guard, and when a body of troops so protected halts, the responsibility for protection during the halts remains with the troops which have been protecting the march until they are relieved, the commander of the Advanced Guard exercising his discretion as to halting at once or moving forward to occupy a position which may be of more tactical advantage.

STRENGTH.—The strength of this Guard depends on the proximity of the enemy, but it must always be strong enough to brush aside slight opposition, so that the advance of the force it is covering may not be delayed by small hostile forces, and to resist the enemy, when encountered in strength, for such time as will enable the force it is covering to prepare to meet or deliver an attack. No general rule as to the numerical strength of an Advanced Guard can be given, as the number of troops required depends almost entirely upon the tactical situation and the country through which the protected force is passing. It should, however, whenever possible be composed of a complete unit or formation under its own commander, and it is found in practice that an Advanced Guard will seldom be less than one-eighth or more than a quarter of the whole {103} force. When a large force is advancing in several columns on parallel roads it will be preceded by a "Strategical Advanced Guard," which protects the front and flanks of all the columns. The "Tactical Advanced Guard" provided by each column may then be reduced in strength.

DISTANCE.—The distance at which it moves ahead of the force it is covering depends upon the nature of the country through which the force is moving, upon the strength of the Main Body, and upon the tactical situation, but it must always be sufficient to enable the Main Body to deploy, to get into battle formation—unmolested by the enemy's artillery, if required to do so. It is clear, therefore,

that the larger the Main Body the greater the distance must be, as more time will be required for deployment. The Advanced Guard of a Brigade of infantry, with artillery, would move at a distance of 1 to 2 miles between the Main Guard and the Main Body, with the mounted patrols of the Vanguard 4 to 5 miles ahead of the Main Body. These mounted patrols would discover the presence of an enemy, and with the supports of the Vanguard would feel for his strength and ascertain his dispositions. The Main Guard would either assist in brushing him away or would resist, in the best available position, any attempts to attack the Main Body while the latter formed up for battle.

IN ADVANCES.—Infantry forming part of an Advanced Guard to a force advancing must always act with dash and resolution, but their action must always be regulated by the one motive of complying with the intentions of the commander of the force they are covering. Any action contemplated by the Advanced Guard commander must therefore be considered from the point of view of its effects upon the plans of the commander of the main body, but if these plans are not known, the guiding principle will be *to regulate his action solely in the interests {104} of the force he is covering*, and by driving in the advanced troops of the enemy he will obtain information which will assist his superior in coming to a decision, without interfering with his liberty of action, whereas hesitation and delay may give the initiative to the enemy. For this reason, a wide turning movement by the Advanced Guard troops is seldom possible, as time is thereby lost and the front of the Main Body is uncovered. "The ruling factor should be the discovery of some tactical locality held by the enemy, the capture of which will compel his whole line to fall back. If this point can be discovered the whole energies of the Advanced Guard should be directed against it alone, and elsewhere a defensive attitude should be adopted, to avoid surprise of or interference with the Main Body" (General R. C. B. Haking).

It must always be assumed that the enemy will have taken all the necessary steps to protect himself and to hamper reconnaissance by an adversary. If, therefore, hostile troops are known to be in a certain locality, opposition must be expected before that locality is reached, and study of the map should enable the Advanced Guard commander to determine the approximate neighbourhood in which opposition may be expected.

IN RETREATS.—While it is clear that a force advancing towards the enemy must always be preceded by an Advanced Guard it must not be forgotten that a force withdrawing from the enemy must also be so protected, even when it is moving in or towards friendly territory. Such a force will not only prevent the Main Body being surprised by an energetic enemy, pursuing swiftly and getting round to attack where he is least expected, but will also prevent the Main Body being delayed by obstacles, and can delay the pursuit by preparing bridges, etc., for demolition, which can be completed by the Rear Guard when the Main Body has passed over {105} them. It can also reconnoitre the route to be followed, so that the Main Body can proceed without delay.

TRAINING.—In formulating any scheme for the exercise of troops in Advanced Guard work all officers and other ranks should be made to understand the nature of the scheme, and should be informed (a) whether the force is advancing or retreating, whether it is moving before or after action with the enemy, and whether it is in a friendly or a hostile country; (b) what is known of the enemy; (c) the direction and objective of the march; (d) the general intentions of the commander of the Main Body; and (e) the general instructions issued to the commander of the Advanced Guard. "Unless such exercises are carried out in a practical manner, young officers and inexperienced N.C.O.'s will get the impression that an Advanced Guard consists merely of a procession of small bodies of infantry, strung out at fixed intervals on a single road. It is of the highest importance that the training should be carried out on the lines that would be adopted in action" (G.H.Q. Circular).

TACTICAL PRINCIPLES.—"Speed of advance is the first consideration when not in contact with the enemy. Hence an Advanced Guard will move on a narrow front along roads and other channels of communication, with such distances between advanced and supporting bodies as to avoid possibility of surprise. When in contact with, or in the vicinity of, the enemy, security and speed of advance are equal considerations. Hence the Advanced Guard should move by

bounds on a broad fighting front across country" ("Infantry Training, 1921").

Before an Advanced Guard commander moves off in compliance with his instructions he will take certain steps in accordance with these tactical principles. He will divide his troops into two portions, known as the *Vanguard* and the *Main Guard*, and as the duties of the {106} Vanguard are reconnaissance in general, as well as the protection in particular of the Main Guard, it will contain a large proportion of mobile troops, with infantry for assault and resistance, and engineers for clearing the way through or over obstacles. Aircraft, in advance of the Vanguard, not only increase the area under search and expedite the discovery of the enemy, but prevent surprise and assist the Advanced Guard as a whole by close co-operation in feeling for and fighting the enemy when encountered. "In order to reconnoitre one must compel the enemy to show himself wherever he may be. To this end he has to be attacked until the extent of his position has been clearly defined. But the attack is made with the intention not to bring on an action. The skirmishing lines will advance, but they must be able to disengage themselves at a given moment. Pressure is exercised from a distance without allowing the forces exerting that pressure to become tied up" (Marshal Foch). The duty of the Main Guard is Resistance, that is to say, fighting. It will therefore consist mainly of infantry, with artillery and machine guns, and the troops will move in the order in which they will come into action. The Vanguard will be preceded by scouts, special attention being paid to roads and tracks parallel with the advance. This screen is followed by the remainder of the Vanguard, in collected formation, until it is in contact with or in the vicinity of the enemy, with protection at all times against local surprise. The Main Guard follows, in touch with the Vanguard, and with local protection. Both portions have definite commanders, and the commander of the whole Advanced Guard will probably move with the supports of the Vanguard. The commander will also determine the *relative distances* between the Vanguard and the Main Guard, these being regulated by the strength of the Advanced Guard, and being based upon the necessity of one part supporting the other. The distance of the {107} Advanced Guard ahead of the Main Body may have been mentioned in the operation orders, but if it is left to the discretion of the Advanced Guard commander he will be guided solely by the interests of the force he is covering, and his decision will be influenced by the nature of the country (whether it is open, or intersected by woods, hedges, sunken roads, etc., which make observation even by aircraft a matter of great difficulty) and by the tactical situation, such distance being chosen as will suit these conditions, while admitting the fulfilment of the objects in view, viz.:—to obtain information

concerning the enemy and to prevent hostile reconnaissance; to prevent surprise and delay; and to enable the Main Body to deploy into battle formation without interruption by the enemy's fire.

It is also the duty of the commander to ensure *communication* between the various parts of the Advanced Guard and between that force and the Main Body, by arranging for mounted orderlies and cyclists, signallers and connecting files, in addition to the contact patrols furnished by the Air Service, and to such telegraphic and telephonic communication as can be provided in the field by the Signals. This is of the first importance, as the action of the commanders of the Advanced Guard and of the Main Body will depend on information received, and not only must information be gained by every available means, but it must also be communicated without delay to all concerned while it is fresh and before it becomes stale. It must also be remembered that negative information (*e.g.* that such and such a village has been thoroughly searched and no trace of the enemy found) is at least of equal value to positive information. The repetition or confirmation of information already sent are also of importance, as it is clearly of value to a commander to know positively that the enemy is still absent, or still present, at a certain time in a certain locality. In the American Civil War, during an encounter battle between {108} advanced troops, the commander of the cavalry of the United States Army held up the Confederate advanced troops. A sharp fight took place at *Sulphur Springs* (October 12, 1863) and the United States cavalry commander became so absorbed in the battle that he failed to send information to headquarters, and General Meade did not learn that he was in contact with the Army of Northern Virginia until late in the afternoon. In the campaign of *Fredericksburg*, General R. E. Lee, with the Army of Northern Virginia, was confronted by General Burnside, with the Army of the Potomac. On November 15, 1862, a patrol of Confederate cavalry discovered Burnside's troops moving eastwards, and another patrol brought news the same day that gunboats and transports had entered Acguia Creek on the Potomac. These two pieces of information, collected at points 40 miles distant from one another, gave Lee an insight into his opponent's design. Information gained by aircraft on September 4 and 5, 1914, and communicated immediately to General Joffre, led to the discovery of the flank march across the Franco-British front by the German I. Army, and to the decisive counter-attack at the *First Battle of the Marne* (September 6, 1914).

The Advanced Guard commander must be careful how he becomes seriously engaged, and must avoid any enterprise not strictly in accordance with the

known intentions of the commander of the Main Body. The tendency to independent action of this kind, which militates against the success of the best laid plans, was very observable in the early battles of the Franco-Prussian War of 1870-1871. Actions were hastily entered on by Advanced Guards, maintained with varying success by the gradual arrival of reinforcements, and finally concluded with barren results and losses in excess of those inflicted. At the *Battle of Spicheren* (August 6, 1870) the Advanced Guard of the 14th Prussian Division commenced the battle, which had to {109} be sustained for three hours by 11 battalions against 39. During the next three hours 8 more battalions arrived, and at the conclusion of the battle only 27 battalions and 10 batteries in all had come into action against a whole French Corps, and there were two French Corps within reach of the one engaged. Had these "marched to the sound of the cannon," as Napoleon would have marched, the 14th Prussian Division would have been unable to extricate itself without complete disaster. At the *Battle of Worth* (August 6, 1870) the Prussian Crown Prince had expressed his intention not to engage the French on that day. Yet the Advanced Guard of the V. Corps brought on a battle into which the Bavarian Corps was perforce drawn. The Crown Prince sent word for the action to be discontinued, but the advanced troops were so seriously involved in the battle that reinforcements had to be sent into action. Although tactically successful the battle was out of accord with the settled plans of the Commander-in-Chief. In the same way the Advanced Guard of the VII. Prussian Corps, contrary to the letter and the spirit of the orders of the commander of the I. Army, precipitated an action at *Colombey* (August 14, 1870). Other troops were drawn into the fight, and finally the whole of the I. Army was engaged in a battle which its commander not only disapproved but had expressly forbidden. The battle had no tactical or strategical results, and heavy losses were sustained on both sides. "Precipitate action of this kind prevents the troops being engaged in the most advantageous manner. For when a small force is engaged against a larger one it becomes necessary, as reinforcements arrive, to move them up to support some point already hard pressed, and the whole force is thus used up and disseminated, instead of being employed collectively where an effective blow may be struck. Thus the direction of the fight is surrendered to the enemy, as at Spicheren and Colombey. The French positions were so strong that the German {110} reinforcements as they arrived were frittered away in support of troops already engaged, and the state of the latter during the action was frequently very critical. At Colombey the battle resolved itself into a desperate struggle along the front of the French position, where the Prussians made little impression, while their losses considerably exceeded those inflicted on the French" (Clery). It is thus seen that the

commander of the Advanced Guard must limit his aggressive action in accordance with his instructions and with the tactical and strategical requirements of the force he is covering. But his action in *protecting* the Main Body is unfettered by any considerations of prudence, and must ever be vigorous and resolute, any risks being taken that ensure the safety of the Main Body. On the morning of the *Battle of Nachod* (June 27, 1866) the Advanced Guard of General Steinmetz's V. Corps (of the Army of the Crown Prince of Prussia) was in bivouacs on a plateau, after emerging from a long and narrow defile through which the Main Body must march to the open country beyond. About 8 a.m. the cavalry of the Vanguard was checked by the advanced troops of the VI. Austrian Corps. It was imperative that the Prussian Advanced Guard should hold the plateau until the Main Body had extricated itself from the defile. By the rapid and accurate fire of the infantry and horse artillery, and the co-operation of the cavalry against the Austrian squadrons, the thin line was maintained for more than three hours. Less than 7 battalions of infantry, with 13 squadrons of cavalry and 3 batteries of light artillery, kept in check 21 battalions, 11 squadrons, and 4 batteries. Had the Advanced Guard suffered itself to be driven back on the Main Body in the defile a disaster could scarcely have been avoided, and owing to the steadfast endurance of the Advanced Guard the Main Body was able to drive the Austrian Corps from the field.

ADVANCED GUARD PROBLEMS.—The Advanced Guard commander must be able to appreciate without delay {111} the situation which confronts his force, and to solve the problem before him with regard solely to the interests of the force he is covering.

(a) If the Vanguard is held up by the enemy who is ascertained to be inferior in strength to the Advanced Guard, the commander will transmit information to the Main Body and will attack vigorously to disperse the enemy, in order that the movements of the Main Body may not be delayed. A fire attack would be organised on the front of the enemy, supported by close-range artillery fire, and a turning movement with Lewis guns and rifles on one or both flanks. If the enemy held to a covered position they could be ejected by rifle bombers or light mortars from a flank, while artillery and machine guns prevented aimed fire at the attacking force.

(b) If fire is opened on the Vanguard and definite information as to the strength and dispositions of the enemy cannot be ascertained, such information as had been gained would be transmitted and a bold procedure would be adopted in

order that the information might be supplemented as quickly as possible. The commander would reinforce his Vanguard with infantry from the Main Guard, and should be able to force the enemy to disclose his position and strength, but unless ordered to do so would take care not to become so involved in action that the Main Body would be compelled to come up and extricate them.

(c) If the enemy is encountered when the Advanced Guard commander knows that it is the intention of his superior to deliver an attack the information would be transmitted with an outline of the steps taken in seizing and securing all tactical points that will be of service to the Main Body. The Advanced Guard would work on a wider front than would otherwise be used by a force of that strength, and the artillery would be posted with a view to its position being adopted as the main artillery position.

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(d) If, under similar circumstances, the intention not to be drawn into a decisive engagement is known by the Advanced Guard commander he would limit his activities to reconnaissance of the enemy's position and numbers, and while hampering the enemy and preventing him from finding out particulars concerning the Main Body, he must take care not to become involved in a general engagement.

(e) A case may easily occur in which vigorous action is demanded, whether the commander of the Main Body intends to attack at once or to defer an engagement. Such a situation would arise if the Vanguard discovered the approach of the enemy towards a ridge or other position of tactical advantage, and if the Advanced Guard commander could, by a rapid advance, forestall the enemy in the occupation of such a position, his failure to do so, or hesitation in waiting for explicit orders to do so, would be a grave neglect of duty.

(f) In the American Civil War a tactical blunder of another kind, due to the impetuosity of the commander of the Independent Cavalry of the Army of Northern Virginia, prevented the Southern commander from obtaining a great strategical advantage over the Army of the Potomac. The latter force had been withdrawn by General McClellan, after the Seven Days' Battle around Richmond, to a secure position at Malvern Hill, where the assaults of the Army of Northern Virginia were beaten back with heavy losses. McClellan continued the withdrawal and had reached Harrison's Landing on the James River. The

Independent Cavalry of the Southern Army had previously been dispatched on a false scent, but at 9 a.m. on July 3 touch was regained with the Northern forces, which were sighted from *Evelington Heights* (July 3, 1862), a commanding ridge within two miles of the bivouacs of the Army of the Potomac, which was resting in apparent security, with inadequate precautions against surprise. General J. E. B. Stuart, the Confederate cavalry commander, {113} reached Evelington Heights with 1,200 sabres and carbines and one light howitzer, and the whole Army of the Potomac, 90,000 all arms, was in bivouacs in full view from the Heights, and it was clear that his presence was not suspected. The nearest column of the force he was covering was six miles away, and there remained about ten hours of daylight. It is easy to see, after the event, that this was a case where "Silence is golden." Stuart should have sent the information to Lee and to every column commander, urging them to press on at all speed, while he occupied the Heights with his dismounted men with the determination to hold his position with fire action, if discovered, until the arrival of one or more columns of the Army of Northern Virginia. But he failed to appreciate the situation, and forgetting the larger question, he seized the opportunity to spread panic in the ranks of the Army of the Potomac, and opened fire with his one light howitzer. The Northerners recovered from the panic caused by this unexpected attack, when it was realised that only one gun was in action against them, and attacked and captured the Heights, and were strongly entrenched there before the nearest Confederate column arrived.

(g) Among the examples of Advanced Guard work in Marshal Foch's "Principles of War" is a problem for a battalion as the Advanced Guard of a Brigade. "What is the problem the battalion commander has to solve? It consists in preparing for the brigade to go into action against an enemy who may debouch from Bettwiller. What does the brigade require for such an action? It requires the *space* necessary for the full employment of its forces, and the *time* necessary for their arrival and deployment. In order to achieve that double task the battalion commander orders his troops to occupy *the whole space necessary*, and places them in points where they may hold on for the *necessary time*."

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FLANK ATTACKS AND FLANK GUARDS

"A man thoroughly penetrated with the spirit of Napoleon's warfare would hardly fail to make his enemy's communications his first objective."—-Col. G. F. R. HENDERSON.

The Flanks are the most vulnerable points of an army, for an attack upon these points subjects the defenders to enfilade fire, and is delivered by troops arrayed in attack formation against an enemy that is not in a position to repel the attack. The consequences of a successful Flank Attack are so far-reaching that every effort will be made by a commander to bring about such a consummation in order that he may sever his adversary's communications, bring him to the end of his resources, and deprive him of the means of replenishing them.

If, therefore, there is any possibility of a column on the march being attacked in flank a force must be detached to protect that flank, and if both flanks are exposed to attack both must be similarly protected. The flank is the most vulnerable part of a moving column, and an attack driven home upon that part has every prospect of success, for it will be delivered by a force that is distributed in depth against a force that is protracted in width after changing front to meet the attack, and the absence of depth in the defending force will deprive the defence of the principal source of strength in resisting attack.

An independent column is liable to attack on either of its flanks, unless the nature of the country through which it is passing provides security for one or the other in the form of an impenetrable feature (such as a wide, {115} trackless marsh), or an impassable barrier (such as a neutral frontier). The outer columns of a force moving on parallel routes will have an exposed flank, while their inner flank is protected by maintaining touch with the neighbouring column.

Flank Guards may be furnished by the Main Body, or by the Advanced Guard, and this point will be made clear in the orders for the operations. Their composition, strength, and distribution, and the interval at which they move on the flank of the Main Body, are similar to those of an Advanced Guard, while their action under all circumstances is governed by the same tactical considerations, the principle underlying every action of a Flank Guard commander being compliance with the known intentions of the commander of the Main Body, and the sacrifice of the interests of the Flank Guard to preserve the interests of the Main Body. The same duties of reconnaissance and protection have also to be carried out, and communication with the Main Body has to be

maintained. For the purposes of reconnaissance and communication Aircraft are even more effective than in Advanced Guard work, while observation patrols supplement and confirm the reports of aërial observers. The work of protection varies with the nature of the country through which the Guard and the Main Body are moving at the particular time. In open country the Flank Guard may be keeping pace with the Main Body at a regularly maintained interval, and on parallel lines. In close country, and in hilly or mountainous districts, it may be necessary to occupy a successive series of tactical positions on the exposed flank, any of which can be reinforced and held at need to safeguard the passage of the Main Body. In order that the whole column may be protected, from the head of the Main Body to the train in rear, unbroken touch must be maintained both with the Advanced and the Rear Guard, and incursions between these forces and itself must be prevented by the Flank Guard.

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In addition to the protection of a column on the march, Flank Guard work is of the highest importance on the Lines of Communications and in the protection of Convoys. On the *Lines of Communications* raids from the air or land may always be expected in Manoeuvre Warfare, and one flank is usually more vulnerable than the other. A *Convoy*, when parked, is liable to attack from any quarter; and when on the march it may be assailed from any direction, especially when the adversary can detach mounted troops, or infantry rendered mobile by motor transport, or raiding bodies carried in Aircraft. Frequently, however, one flank only of the Lines of Communications is vulnerable owing to the geographical or tactical situation, and the work of protecting traffic or Convoys on the Lines of Communications is Flank Guard work, with due precautions against surprise from all quarters, the Main Guard remaining with the Convoy and securing its safe arrival at its destination, rather than seeking an encounter with the enemy. The most efficient way to protect a Convoy is to piquet the road daily with troops sent out from posts on the line; but when it is necessary to send a Convoy by a route which cannot be protected in this way a special escort must be provided. The commander of an escort will not engage the enemy if his task can be accomplished without fighting. If fighting is inevitable the enemy should be engaged as far from the Convoy as possible, and it will not be halted and parked, except as a last resort. In the case of mechanical transport the whole of the escort will be carried in motor vehicles, and except where parallel roads are in existence, little can be done to secure flank protection while on the move. A portion of such escort will move with the Convoy and a portion will be sent

ahead to secure any bridges or defiles which have to be passed, the outlet of any defile being secured before the Convoy is permitted to enter the defile. In the case of a horsed Convoy the escort will usually consist of infantry, with a proportion {117} of mobile troops. Small Advanced and Rear Guards will be detailed and sufficient men will be posted along the column to ensure order and easy communication. The remainder of the escort will usually move on that flank from which attack is most likely.

The far-ranging raid on the Lines of Communications was a notable feature of the American Civil War. It was freely employed on both sides and was often harmful to the object of the attack and usually profitable to the raiders, especially to those of the South, by reason of the replenishment of stores. General Turner Ashby, the dashing cavalry leader in the Shenandoah Valley, was a constant source of terror to the Northern Generals, and his death while protecting the movements to *Cross Keys* (June 6, 1862) was a terrible blow to Stonewall Jackson, who employed his mounted troops with more skill than any other commander, Confederate or Federal. General R. E. Lee possessed a great cavalry leader in J. E. B. Stuart, "but cool-headed as he was, Lee appears to have been fascinated by the idea of throwing a great body of horsemen across his enemy's communications, spreading terror among his supply trains, cutting his telegraphs and destroying his magazines. Yet in hardly a single instance did such expeditions inflict more than temporary discomfort on the enemy; and the Confederate Armies were led more than once into false manoeuvres for want of the information which only the cavalry could supply. Lee at *Malvern Hill* and *Gettysburg*, and, on the side of the North, Hooker at *Chancellorsville*, and Grant at *Spottsylvania*, owed defeat in great measure to the absence of their mounted troops on raiding excursions. In the Valley, on the contrary, success was made possible because Jackson kept his cavalry to its legitimate duty" (Henderson "Stonewall Jackson"). In the Russo-Japanese War a column of 500 Cossacks, under Colonel Madritov, made a bold raid on the communications of the Japanese I. Army in the last days of April, 1904. The raid involved a {118} ride of 240 miles and was carried out in entire ignorance of the imminent attack upon General Zasulich's force by the Japanese I. Army at the *Battle of the Yalu* (May 1, 1904). On arrival at his objective Colonel Madritov found nothing to attack, as the base of the Japanese I. Army had been shifted from the Korean frontier to a shorter sea base at the Yalu mouth. On his return he found his General in disordered flight, and had his small force been available at the Battle of the Yalu it could have protected the retreat to Hamatan and Feng-hwang-cheng. Raids and attacks outside the centre of operations, however daring, have no permanent

value.

In the South African War a disaster to a Convoy at *Sannah's Post*, or *Koorn Spruit* (March 31, 1900), was caused by the absence of precautions in front of a retreating force, the wagons being permitted to enter a defile (the Spruit crossed the road at right-angles and was held by the Boers) before the exit had been secured. Earlier in the same campaign a Convoy of 800 wagons was lost at *Ramdam* (February 13, 1900). An ambushed force of Boers killed all the transport animals and the wagons were abandoned. No escort had been provided for the Convoy, which entered the ambushed area without previous reconnaissance. Throughout the South African War the activities of De Wet emphasised the vulnerability of the Lines of Communications.

Where the tactical situation permits, arrangements should be made to protect the Lines of Communications by offensive action. An engagement may be invited in a suitable position, the protecting troops holding the raiders with a Delaying Action while reinforcements are summoned to converge on the battlefield for the purpose of surrounding and exterminating the raiders.

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THE REAR GUARD

A Rear Guard is essential to a force advancing in order to pick up the stragglers, to keep off marauders, and to prevent surprise by an energetic enemy who may detach a force for a surprise attack on the rear of the advancing column.

But its most important work is the protection of a retreating force, and this work will vary in difficulty with the freshness and enterprise of the enemy and the spirit and determination of the force that is being pursued. Generally speaking, Rear Guard fighting against an unexhausted enemy is the most difficult and most dangerous of all military enterprises. When a Rear Guard halts to fight it is being separated every minute from the Main Body, which is moving away from it, while every minute brings reinforcements to the enemy. The work requires great tactical skill, as it is the duty of the commander to delay pursuit by occupying positions from which he withdraws at the last moment, without becoming involved in a general engagement, from the meshes of which it may be necessary

for the Main Body to return and extricate him. The work also requires great moral courage, as it is the duty of the commander to risk the loss of his force if by so doing he is adopting the only means of saving the Main Body.

STRENGTH.—The strength of the Rear Guard will depend upon the energy, strength, and closeness of the pursuit, the condition of the Main Body (and whether it is withdrawing voluntarily or upon compulsion after an unsuccessful engagement) and upon the nature of the country, but it will generally amount to not less than {120} one-fifth or more than one-third of the whole force, and will be selected, as a rule, from those who have been least severely engaged.

COMPOSITION.—Its composition depends upon the work to be performed, and this calls for detachments of all arms of the land service, in addition to *Aircraft*, which can prevent surprise by reconnaissance over the hostile area and can harass the pursuing columns by day and by night by fire-action with Lewis guns and bombs. *Mounted troops* are required to extend the area watched and to prolong the resistance by reason of their superior mobility, in addition to their counter-action as cavalry. *Artillery* are required to open long-range fire on the enemy's columns and so to cause delay by deployment; and to concentrate upon them while in, or emerging from, a defile. *Infantry* and *Machine-gun Platoons* are required for prolonged fire-fights and local counter-attacks, during which sudden bursts of machine and Lewis-gun fire will do the greatest execution. *Engineers* provide sappers for the creation of obstacles and traps, and for the demolition of bridges and viaducts. *Mechanical Transport* may be required to add to the mobility of the infantry. The *Medical Service* is called upon to provide attention and ambulances for the wounded and for the sick and worn-out troops.

DISTRIBUTION.—The Rear Guard is divided into two parts—the Rear Party and the Main Guard. The *Rear Party* consists, like the Vanguard of the Advanced Guard, of patrols and supports; the rest of the force forms the *Main Guard*, and marches in the order in which the troops are required, viz.: Artillery (with escort), Mounted Troops (if any remain over from the Rear Party), Infantry, Medical Services and Ambulances, and the Sappers of the Royal Engineers. The guns can thus open fire whenever required, and the sappers, who are furthest away from the pursuit, will have the longer time to prepare obstacles and demolitions, the {121} latter being completed by the Rear Party. Communication must always be secured and maintained between the Rear Party and the Main Guard, and between the Rear Guard and the Main Body.

DISTANCE.—The distance at which the Rear Guard works is governed by the duty it has to perform, viz.: to permit the withdrawal of the Main Body to be carried out without interruption by the enemy, and to effect this it will usually be necessary for the Machine Gun and Infantry Platoons of the Main Guard to keep within effective range of positions from which hostile artillery might molest the Main Body. The commander will probably remain with this part of his force, as its work is of the highest importance; in any case his position must be made known and there should be definite commanders of the Rear Party and the Main Guard. But while the distance separating the Rear Guard from the Main Body must be sufficient, it must not be too great, or the enemy may penetrate between it and the Main Body, and not only will the Rear Guard be cut off and liable to destruction but it will cease to protect the Main Body.

TACTICAL PRINCIPLES.—The tactical work of a Rear Guard is carried out according to the following principles:—

The Rear Party watches, and it must watch *all* the roads and tracks by which the pursuing force can advance, and is responsible that the enemy does not get round the flanks (which may or may not be specially protected by Flank Guards). Reconnaissance by Aircraft for the discovery of intended outflanking movements is probably of greater value in Rear Guard work than in any other military action. The Rear Party also resists the hostile advanced troops as long as possible, withdrawing before it is outflanked. "An outflanking manoeuvre is specially convenient when attacking a Rear Guard, for the latter cannot fulfil its mission once it has been turned" (Marshal Foch).

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The Main Guard fights for time. If the withdrawal is more or less unmolested, or if such pursuit as is offered can be dealt with by the Rear Party, the Main Guard can continue its march, taking care not to close in on the Main Body; and while falling back it can demolish bridges, create obstacles, prepare ambushes, and so on, employing all devices (within the laws of war) for delaying the enemy. When hotly pursued it must gain time at all costs for the army it is covering, and must not allow itself to be driven back on to the Main Body; or it will hamper that force and cease to protect it. Time can be gained by compelling the enemy to halt to reconnoitre a position, by making him deploy into attack formation, and by making him go out of his way in order to envelop a flank. But before an attack reaches a position in such strength as to ensure success, and before the

enveloping force can achieve its object, sub-divisions of the Main Guard will withdraw in succession under covering fire from those still in the line, which also withdraw in their turn under covering fire from the sub-divisions in their new positions, to tactical points further back, from which again they cover the withdrawal of the forces which had protected their own movement.

Certain points must be noted about the positions chosen for these successive fire-fights, and the choice of the positions is so difficult that an experienced staff officer should be specially detailed for the work, Positions chosen must be in the enemy's way and the lines of withdrawal to them must not converge; they must be easy to defend and difficult to attack; the flanks must be secure from direct attack and effective enfilade fire, necessitating a wide detour (and consequent gain of time from the enemy) before they can be threatened; long-range artillery fire on the lines of approach should be possible in order to delay and break up the enemy's advance; and each position chosen for the next line of resistance should be unseen by the {123} pursuing enemy, and sufficiently far away from the line last occupied to induce him to resume his march formation. This will necessitate a repetition on the part of the enemy of all the stages of the attack—the discovery and the report on the position, the decision to attack, and the deployment into attack formation. It will often be of advantage for a Rear Guard to take up a delaying position one or two hours before dark, as the enemy will then have to attack with darkness approaching and may wish to defer the attack until daylight, thus gaining several hours for the protected force.

"The first position taken up by a Rear Guard after an unsuccessful fight must be held longer, as a rule, than the subsequent positions, because when once the defeated army has got well away along the roads and has regained some semblance of organisation, the march continues without interruption unless some obstacle has to be crossed" (General Haking, "Staff Rides"). It can also be noted that as it is seldom the intention of the Rear Guard commander to deliver a decisive counter-attack, he can detail a very large proportion of his force to hold the successive positions, with local reserves, for purely local counter-attacks; and for the same reason, an obstacle in front of his position (which would make that position unsuitable for the Active Defence, as it would prevent the advance of the General Reserve to the decisive counter-attack) is most welcome in the Delaying Action of a Rear Guard fighting for time for its Main Body.

When at length a line of resistance is evacuated, the heavy artillery will be withdrawn first to move to a distant fire position, then the slow moving infantry

and the light artillery (under the protective fire of the aircraft and mobile troops), and last the cavalry and other mobile troops, who by reason of their superior mobility, can hang on to the last and can protect the flanks of the Rear Guard as they fall back, before {124} resuming their work as a Rear Party, observing and resisting the advanced troops of the pursuing force.

During a close pursuit the Rear Guard commander will be called upon to exercise all his faculties and to exert all his tactical ability in handling his command. One of the most anxious times before him will be when the Main Body is passing through a defile, as such a passage will not only delay its march but will make its columns particularly vulnerable and helpless. In the case of defiles Napoleon's maxim must be borne in mind: "It is contrary to the principles of war to let one's parks and heavy artillery enter a defile if the other end is not held also." At *Sannah's Post* (March 31, 1900) the train was permitted to enter a defile caused by the banks of the Koorn River without the previous occupation of that defile, and all the wagons were captured. This not only emphasises the necessity for an Advanced Guard in retreat, but points to the need of tactical knowledge on the part of the Rear Guard commander, especially in mountainous country or in terrain cut up by woods and marshes, where the train is liable to cause delays, as the withdrawing force is compelled to march in a long drawn column. Extra time must be gained by the Main Guard to enable the Main Body to emerge from the defile. The Rear Guard commander must therefore adapt his plans to suit the country through which the Main Body has to pass, as well as the country in which he will himself fight Delaying Actions. A good map and ability to use it, and close co-operation with the Main Body, must be determining factors for success or failure.

TRAINING.—When troops are being exercised in Rear Guard work opportunities should be taken to explain the difficulties of choosing suitable positions, of withdrawing from them when involved in battle, of the paramount necessity for mutual support, and of accepting {125} any risk that may be required to safeguard the Main Body. Stress should be laid upon the importance of Fire Tactics (the judicious combination of Fire and Movement), the greatest of all factors in a successful Rear Guard battle, and upon the ability to read and understand a map, an essential qualification in all movements of troops and indispensable in Rear Guard fighting. From the map a platoon commander must be able to predict the probable line of the enemy's advance against the line of resistance as well as the best route to be taken when, at length, he withdraws his platoon to another fire position in rear; while he must be prepared to throw his

platoon in local counter-attack on the flank or rear of an assaulting party that has become detached from its supports and therefore affords a fleeting opportunity for a local fighting success, and a rapid advance for this purpose along a route unseen to the foe, a speedy reorganisation after victory, and a rapid withdrawal to the point of issue, or to a line in rear, can best be achieved by use of the map and reconnaissance of the ground of the encounter.

EYE FOR GROUND.—One of the secrets of Napoleon's extraordinary successes was his "eye for ground." "It was not until I went to Jena and Austerlitz that I really grasped what an important part an eye for ground like Napoleon's, or blindness as to ground like his opponent's at both those battles, may play in Grand Tactics, that is, the art of generalship" (Colonel G. F. R. Henderson, "The Science of War"). The same was true of General R. E. Lee, particularly in the Wilderness Campaign, when it was not only the entrenchments but the natural features of the ground on which he relied in his defensive tactics. "His eye for ground must have been extraordinary. The campaign was fought over a very large area, an area of very close country, with few marked natural features; and yet in the midst of woods, jungles, and streams, with very little time at his disposal, he always seems to have selected positions than which none could have been stronger" (Colonel G. F. R. Henderson, "The Science of War").

EXAMPLES OF REAR GUARD WORK.—During the Retreat from Mons the Rear Guard of the II. Corps of the British Expeditionary Force delayed the pursuit by the daring and devotion of its cavalry and artillery, and by subordinating its plans to the interests of the Main Body enabled the Corps Commander (General Sir H. Smith-Dorrien) not only to throw off the pursuit but to effect a junction with the other wing of the British Army. The retreat took place after the First *Battle of Le Cateau* (August 26, 1914), and during the period of the retreat the insecurity of the British Army through the breakdown of a co-operating force rendered it liable to disaster. But the moral of Marshal French and his commanders, the stubborn fighting instincts of the British race, and the excellence of the musketry training of the Regular Army in times of peace, prevented the retreat from becoming a rout. The care taken in training the troops in Fire Tactics, and particularly in reloading with "eyes on the mark and butts to the shoulder," was most abundantly justified. The accuracy and volume of the rifle fire deceived the enemy as to the nature of the troops employed against them, and the dismounted troops and infantry with their rifles were reported as "battalions of machine gunners."

During the *Second Battle of the Somme* (March, 1918), the British III, and V. Armies fought a series of Rear Guard battles, and the enemy's advance was made at a very heavy cost. "Units retreated stubbornly from one position to another as they found them turned and threatened with isolation; but at many points fierce engagements were fought, and whenever the enemy attempted a frontal attack he was beaten off with loss" (Sir D. Haig's Dispatches). The machine gun proved its effectiveness again and again during the British {127} withdrawal, and twelve machine guns of the 63rd Division, posted in *Les Boeufs* (March 24, 1918), held up the enemy's advance from Morval at a critical period, and enabled the division to reach the position assigned to it. The losses inflicted on the enemy by machine-gun and rifle and Lewis-gun bullets were so heavy that by March 25 Von Below's XVII. Army was described in German dispatches as "quite exhausted." During the same battle a detachment of about 100 officers and other ranks, under the command of the Brigade-Major of the 61st Brigade, held the enemy at bay from early morning until 6 p.m. at *Le Quesnoy* (March 27, 1918) and enabled the 20th Division to retire to its destined position.

At the *Combat of Roliça* (August 17, 1808) the French General Delaborde was outnumbered by the Anglo-Portuguese forces under Sir A. Wellesley, and being driven from his first and second positions he withdrew to the mountains. During his retreat "he brought every arm into action at the proper time . . . and retreated by alternative masses, protecting his movements by short, vigorous charges of cavalry . . . and he fell back, disputing the ground, to Quinta de Bugagliera" (Napier).

In December, 1808, and January, 1809, General Sir John Moore withdrew to Coruña before the armies of Napoleon (and when the Emperor returned to Madrid, before those of Marshal Soult). "He conducted his long and arduous retreat with sagacity, intelligence, and fortitude" (Napier), and it is interesting to note that as in the Retreat from Mons in 1914 and at the Second Battle of the Somme in 1918, so in the rear-guard actions which preceded the embarkation of Sir John Moore's Army, the musketry of the British troops was the deciding factor: "the English muskets were all new, the ammunition fresh; and whether from the peculiar construction of the muskets, the physical strength and coolness of the men, or all combined, {128} the English fire is the most destructive known" (Napier).

At *Bristow Station* (October 14, 1863) during General Meade's campaign in Northern Virginia (after his defeat of General Lee at Gettysburg, July 1-3, 1863),

a surprise attack by Stuart's cavalry and infantry from General Rode's Division caused the withdrawal of the Federal troops. General Warren covered the retirement and eventually withdrew his own forces unmolested after beating off several attacks with close-range musket fire.

Jean Victor Moreau, one of the greatest generals of the French Republic, became a general of division at the age of 33, and by his skill in extricating his forces from apparently certain disaster established in retreat a far greater reputation for generalship than his brilliant victories secured for him. In the spring of 1796 he defeated Latour at *Rastatt* and the Archduke Charles at *Ettlingen*, and drove the Austrians back to the Danube, but owing to the defeat and retreat of Jourdan he was compelled to regain the Rhine in a desperate and apparently hopeless effort. Yet he not only preserved his army intact but brought with him over 5,000 prisoners. In 1798 he again saved his army from destruction when hard pressed by the Russians and Austrians in Italy. Retreat was by no means his only or favourite manoeuvre, as he subsequently gained victory after victory over the Austrians in the campaign of 1800, drove them back behind the River Inn, and won the decisive victory of *Hohenlinden* (December 3, 1800), where the Austrians and their Bavarian allies lost 17,000 men and 74 guns against a total loss of 5,000 on the side of the French.

OUTPOSTS

Opposing forces come into conflict through the encounter of the Advanced Guards of moving columns; through the approach of a pursuing force to the Rear Guard of a retreating enemy; through the attack of a moving force on an enemy in position; and through the renewal of an engagement which has died down between opposing forces.

Every commander will endeavour to prevent interference with his plans and future movements, and while striving to surprise and outwit the enemy he will exert every endeavour to prevent the application of this vital principle by the enemy. The commander of a force that is at rest will require security for that force in order that its rest may be undisturbed, and he will require the security to

be assured in order that his plans for the overthrow of the enemy may be developed. He will, therefore, detach a portion of his force to ensure this security by observation, to prevent the secret occupation of localities the hostile possession of which will interfere with his plans; and by resistance to hostile movements he will secure the rest of the Main Body.

The force detailed to protect troops at rest is known as Outposts, and their duty is to preserve the security of the Main Body. Outposts protect the Main Body from surprise by Observation, and if attacked they gain time by Resistance until the commander of the Main Body can put his plans into execution by the occupation of the position in which he intends to receive attack. Observation is carried out by Aircraft, by Patrols (mobile troops by day and infantry by night), and by Sentries; Resistance is provided by Sentry Groups and by troops {130} in defensive positions, called the Piquets, which have other troops as Supports. In certain cases a Local Reserve and a General Reserve are also provided.

STRENGTH.—Work in the Outpost Line is most exhausting. Not a man or a horse should be employed there if their services can be dispensed with, and although the number of troops allotted for the work depends almost entirely upon the nature of the country and the tactical situation, it is laid down in the text-books that if an unnecessarily large proportion of the whole force is so employed the force will suffer in efficiency. It can also be seen that although the work is of the first importance and fraught with the greatest difficulties, it is clearly possible for a comparatively small body of troops to carry it out. Observation requires intelligence and vigilance rather than numbers; Resistance can be provided by the Delaying Action on a wide front of small numbers of skilled troops with the relative advantage conferred upon them in defence by machine guns and small arms, and with the assurance of support from their Main Body close at hand.

OBSERVATION.—A force can only be regarded as secure from surprise when every body of the enemy within striking distance is so closely watched that it can make no movement by night or day without its becoming known immediately to the observers of the Outposts. By day the Outpost commander will carry out Reconnaissance some distance ahead of his position by means of Aircraft and Patrols of mounted troops and cyclists, while the commander of each Outpost company keeps the approaches to the position under observation by sentries, so posted as to see and hear unobserved by a hostile force. By night, the Aircraft and mounted troops are unable to render much assistance as moving patrols, and

the work of Reconnaissance and Observation falls upon the platoons of the Outpost companies.

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RESISTANCE.—For the purposes of Resistance the Outpost commander will rely upon his infantry and upon such artillery and machine guns as may be allotted to him, and if the area he is occupying is that in which the commander of the Main Body will meet attack the Outposts will be provided with a greater proportion of artillery and machine guns. Resistance is offered by the entrenchment of each Sentry Group in an all-round post, and depth and elasticity are given to the defence by the establishment of entrenched Piquets in selected, mutually supporting positions commanding with their fire every avenue of approach, covering the flanks of neighbouring Piquets, and so arranged in plan as to bring converging fire upon the enemy as he advances to the attack. These Piquet positions will be strengthened, when required, by the Supports, who will either assist in manning the defences of the Piquets or will occupy similarly prepared defensive posts on the flank. Local Reserves may sometimes be required for local counter-attacks, and in certain cases a General Reserve is provided. The degree of Resistance to be offered by the Sentry Groups depends on the tactical situation and will be specified by the Outpost commander. In certain cases the Sentry Groups are permitted in face of a heavy attack to fall back to the Piquets, but if they do so they must be warned of the danger of arriving headlong on the Piquet only just ahead of the enemy. In consequence of this danger such retirements are rarely permissible at night. The Piquets are generally posted on the Outpost Line of Resistance, in which case they hold their positions to the last man and the last round, until further orders are received from the commander of the force protected.

DISTANCE.—The distance of the Outpost position from the troops protected is regulated by the time the latter will require to prepare for action and by the importance of preventing the enemy's field artillery from {132} approaching within effective range of the ground on which these troops will deploy if attacked. Heavy guns and mortars, although motor traction gives them great mobility, are unlikely to accompany the enemy's Advanced Guard, and preparation to withstand or prevent their fire will not usually be required from Outpost troops. The effective range of shrapnel is 5,500 yards, the limit of the effective range of machine guns is 2,000 yards, and of Lewis guns and rifles the effective limit is 1,400 yards. The position on which the Main Body will deploy

will thus be protected from the shrapnel of field artillery, if the possible fire-positions of that arm are brought under effective fire from machine guns 3,500 yards from the Position of Deployment, with Lewis guns and rifles about 500 yards further forward. On the other hand, especially in the case of small forces (against which artillery will not be likely to be sent), the distance must not be such as would permit of the Outposts being cut off, or as would necessitate the employment of an undue proportion of men on Outpost duty.

THE OUTPOST COMMANDER.—Before halting, a commander should first decide on his dispositions in case of attack, and then arrange the quartering of his command and the general position of the Outposts. In the case of a small independent force the commander of the force will usually himself detail the whole of the Outpost troops, and will either retain the command in his own hand or appoint an officer to command them, In such a case the disposition of the troops will probably be that of a perimeter camp, preparation being made against attack from all directions. In the case of large bodies Outpost troops will usually consist of all arms, and a definite commander will always be appointed. This commander will, when necessary, divide the Outpost line into sectors, delegating responsibility for the holding of each sector to the commander of a subordinate unit or formation, and defining the limits {133} of sectors by distinctive features such as trees, cottages, or streams. The tops of hills or the bottoms of valleys are not suitable as tactical boundaries, and roads should be inclusive to one or other sector, for a road used as a boundary may be neglected by one of the commands it divides under the impression that it is the duty of the other command to patrol it.

INFORMATION AND ORDERS.—The Outpost commander must have definite information on the following points:—

I. What is known of the enemy and information concerning friendly bodies of troops working against the enemy.

II. The intentions of the commander of the force he is protecting, where the Main Body will rest and the period it will stay there, and whether it is intended to engage the enemy if he advances, and if so on what position.

III. The general line of the Outposts, the troops at disposal for the work, and whether there are other troops on the left and right.

IV. The hour at which the Outposts are to be relieved and the place to which reports are to be sent.

After receiving the above information he will give such orders as are immediately necessary for protection against surprise. He will then allot the task of Observation to his mobile troops and will decide on a Line of Resistance for the Outpost troops. He will co-ordinate his arrangements with those of neighbouring Outpost commanders and will ensure that no ground on his flanks remains unwatched.

The Outpost commander will then issue orders to his subordinate commanders on the following points:—

(1) Information concerning the enemy and his own troops so far as they affect the Outposts.

(2) The general line to be occupied and his frontage and limits of each subordinate commander.

(3) The distribution of the mobile troops, artillery, and machine guns.

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(4) Instructions as to the degree of resistance to be offered and the general line of the Outpost Line of Resistance.

(5) Special arrangements by night.

(6) Regulations as to smoking, fires, and cooking.

(7) The hour at which the Outposts will be relieved.

(8) The place to which reports are to be sent.

(9) Instructions as to the accommodation of the Reserves (if any are provided) and whether the Supports (and Reserves, if any) may take off accoutrements, etc.

When he receives information that the Outposts are in position, he will transmit the information to the commander who appointed him.

THE OUTPOST LINE OF RESISTANCE.—Retirements under fire to a supporting line are dangerous, especially at night. As a general rule, therefore, the Piquets should be posted on the Outpost Line of Resistance. Co-operation, intercommunication, and the exercise of command will be facilitated by placing the Piquets along well-defined natural features, or in the vicinity of roads. But the tactical situation may demand that the line adopted should afford facilities for a most stubborn resistance as well as facilities for observation, and the former necessity will far outweigh the latter.

If the force is likely to remain halted for several days, especially if the operations are likely to lapse into Position Warfare, commanding ground is of great value to the artillery, and the Outpost Line of Resistance will probably develop into the Outpost zone of a defensive position. On the other hand, if halted for only one night, artillery will not be largely employed, and commanding ground is not essential.

THE OUTPOST COMPANY.—The Outpost Company is the Outpost infantry unit, the company commander providing Piquets, Supports, and Detached Posts as required. Upon receiving his orders the commander will move his command, with due precautions against {135} surprise, to the allotted ground where the men will be halted under cover. Before proceeding to the part of the line assigned to him the commander of the Outpost company will detail a force to precede his advance and cover his operations, and the force so pushed forward will not be withdrawn until his Piquets have entrenched themselves. By the map he can decide the number of Piquets he will require, in accordance with the number of roads to be watched, the facilities for resistance, and the requirements for patrolling. The extent of frontage allotted to an Outpost company depends upon the number of avenues of approach (roads and tracks, and open, unfenced country) to be watched, and under ordinary circumstances a frontage up to 1,500 or 2,000 yards may be allotted to a company with 4 platoons at fighting strength. Each Piquet should consist of a complete unit and should be posted on a good defensive position. The Support (or Supports, if more than one is detailed for the company frontage) should also be composed of a complete unit, and should generally be posted 400 to 800 yards in rear of the Piquets, with good lines of approach to each. *Detached Posts* may be required, to watch an extreme flank, or to occupy a position in front of the Sentry line, where the enemy might otherwise collect unseen for the attack or initiate steps for hostile reconnaissance. A further use is to deal with traffic through the line, where a main road has no Piquet upon it. The Outpost company commander must inform

his Piquet commander, and his immediate superior, of his position, as all reports received by the Piquets require to be sent to him, and his superior commander will need to keep in communication with him at all times. The first duty of a Piquet commander (who is almost invariably a Platoon commander) is to consolidate his position by entrenchment and by all available means, and to prepare a range card, so that the enemy may not approach without heavy loss; and if the Piquet has a Support ordered to reinforce it in case {136} of attack, the entrenchments must be constructed to accommodate the supporting troops (including the Sentry Groups thrown out, if these have been ordered to withdraw to the Piquet in case of a heavy attack). The commander must impress on all men of his Piquet the importance of gaining a clear mental picture of their surroundings while daylight lasts, so that they may the more easily find their way about by night. On his way to the position the Piquet commander will decide from the map what roads he has to watch and where sentries will need to be posted, and he will provide from his platoon, patrols and sentries (with the necessary reliefs for the patrols), will detail the various duties, and will make the necessary sanitary arrangements. His sentries should be posted as expeditiously as possible, and his patrols sent out at once. The number of patrols to be furnished depends upon the nature of the country, and as each patrol requires two reliefs, their number should not be greater than circumstances demand. The duties of infantry patrols are to search the ground and buildings, etc., for about 2,000 yards in front of the sentry line, to find out whether the enemy is there or not, and if the enemy is found to be close at hand to watch his movements and report frequently. The number of Sentry Groups depends upon the nature of the country and the height of the line of observation, but between them the groups must be answerable for the whole of the ground in front of their Piquet (up to its junction on the left and right with neighbouring Piquets). A Sentry Group consists of 6 men under a N.C.O. (2 on duty and 4 off), and groups are usually posted not more than 400 yards from their Piquet, and hold their ground unless ordered to withdraw. If invisible from their Piquet a connecting sentry should be posted by the Piquet commander. Sentry Groups required for night dispositions only will not be posted until after dark. In order to prevent the men of the Piquet being unnecessarily disturbed at night the N.C.O. and {137} men of each relief must be made to bivouac together, apart from other reliefs and from the remainder of the Piquet. A sentry will always be posted over the Piquet, to watch the Sentry Groups and connecting sentries, and ready to alarm the Piquet at any moment of need. Patrols consist as a rule of a complete unit of 3 to 8 men under a N.C.O., and should be formed of men trained as scouts, although it will sometimes be possible to use only single scouts for this purpose, owing to the

vigilance of the enemy. Standing patrols may also have to be furnished, if required to watch some special point, particularly at night, or at the junction of roads converging towards the Piquet line, at cross roads, etc., when they are out of sight of the sentries. The Piquet will stand to arms, every man in his allotted place, an hour before dawn, and will remain alert until the patrols (which are invariably sent out about that time) have reported absence of movement by the enemy. Outposts are generally relieved at dawn, so that the force is doubled at the hour of danger. All troops in the Outpost Line must entrench themselves, if posted as sentries, or in the Piquet or Support positions, and must be ready at any moment to resist a sudden attack. A detachment of Royal Engineers will usually be available to superintend the consolidation of the main position.

DAY AND NIGHT WORK.—By day, the work of an Outpost Line will consist in Reconnaissance of the approaches for some miles by the Aircraft and mounted troops and cyclists, while infantry, with artillery and machine guns, hold the Line of Resistance. By night, the mounted troops will be withdrawn, except such "Cossack Posts" (standing patrols of mounted troops) and "Vedettes" (mounted sentries), as it may be deemed necessary to leave established in front of the line, while Aircraft will have much difficulty in discerning movement. The whole work of observation and resistance therefore falls on the infantry, who may be in their day {138} position or may be withdrawn to the reverse slope of a ridge, in order to obtain a sky line by night upon which to train their rifles.

Neglect of the Principles of War is almost inevitably followed by disaster, and Protection is the first of the Tactical Principles. During the later stages of the Franco-Prussian War a French force of the strength of a brigade was billeted in the *Chateau of Chambord* (December 9, 1870), which stands in a large park, near Blois. No outpost precautions were taken, and the Chateau was captured by two companies of Prussian infantry. The minor disasters suffered by British arms in the South African War were almost entirely due to neglect of the warnings contained in the official text-books. In spite of the established superiority of the Boers in mobility and vigilance the most elementary precautions against surprise were frequently neglected. At *Tweefontein* (December 24, 1901) a force of Yeomanry was surprised in an unprotected camp by a mobile force of Boers, and heavy losses were suffered. The mystic atmosphere of Christmas Eve was insufficient protection against the militancy of Christian De Wet.

BATTLE OUTPOSTS.—When a battle dies down at night, or when the forces are in close proximity and a battle is imminent, the whole of the troops must be

kept in readiness for instant action. Protection by Outposts in the normal formation is generally impossible and can only be provided by patrols, who keep touch with the enemy without causing unnecessary alarms or looking for purposeless encounters, and by sentries over the Forward Troops, which take the place of the Piquets. The troops must be ready at any moment to repel attacks with bullets and bayonets. Unless otherwise ordered, the patrols should refrain altogether from aggressive action and should confine their operations to secret observation of the enemy.

It is, however, essential that touch with the enemy {139} should be maintained as advances, withdrawals, and other surprise movements, are usually prepared and often carried out under cover of darkness when hostile troops are within striking distance. In the American Civil War, by losing touch with the Northern Army, the Southern Army permitted it to escape although it had been very severely mauled. During the Third Battle of Ypres (July 31-November 6, 1917) the Allies renewed the attack on a six-mile front from Zonnebeke to Langemarck (the junction of the Franco-British Armies in Flanders). This action, known as the *Battle of Broenbeck*, or *Brombeek* (October 9, 1917), was marked by the successful repulse of counter-attacks by the 1st Battalion Royal Newfoundland Regiment through the correct employment of Battle Outposts. Germans massing for the counter-attack in Taube Farm were pinned by Lewis-gun and rifle fire, while a message sent to the supporting artillery caused the annihilation of the enemy; another attacking force was destroyed by Lewis-gun and rifle fire, before it was launched. A defensive flank was also formed under heavy fire, and from this flank a further counter-attack was similarly dealt with. The casualties of the Newfoundlanders throughout this battle were 50 killed, 14 missing, and 132 wounded out of a total strength of 500 all ranks, and the losses inflicted by them probably exceeded 800.

After the *Battle of Fredericksburg* (December 13, 1862) the Army of the Potomac under Gen. Burnside eluded the vigilance of Gen. R. E. Lee, who had defeated it on December 13, 1862. Burnside withdrew (December 15, 1862) across the Potomac to Stafford Heights with the whole of his army, under cover of a heavy storm. If special orders had been given by the Outpost commanders for constant and vigorous patrolling, and if scouts had been instructed to penetrate the Federal lines from time to time at all risks, Burnside could have been attacked at a disadvantage while on the move and should have been driven into the Potomac. {140} During the battle itself a Confederate Brigade was surprised in its own front line through failure to patrol a triangular wood which

jutted out in front of the position and screened the brigade on the left with which touch was not maintained. At all times of action with enemy forces all ground to the front or flank must be kept under close observation, or surprise may lead to disaster.

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TACTICAL RECONNAISSANCE

Reconnaissance during battle has been dealt with under "Influences on the Battle" and in other lectures, and owing to the close connection between the two subjects a number of points concerning reconnaissance in general have been noted in dealing with Protection. It has also been seen that observation by Aircraft, Patrols, and Sentries is essential to Protection both in Position Warfare and the War of Manoeuvre, and that Reconnaissance is the essence of Protection. There remain, however, two forms of Reconnaissance that have not yet been considered, namely: the Reconnaissance of a Position with a view to attacking it, and the Reconnaissance of an unoccupied position with a view to occupying it for defence.

RECONNAISSANCE FOR ATTACK.—The first of these is the constant duty of all commanders in the line during Position Warfare, and it is carried out by Patrols and Raiding Parties, who provide information which supplements the photographs and reports of the Air Service, and enables a commander to arrive at a decision. In a War of Manoeuvre reconnaissance by the Air Service is equally important, and it is supplemented by the work of the Patrols of the Advanced Guard, but principally by that of specially selected Intelligence Officers, working in conjunction with, or independent of, the Vanguard. Such officers would be in possession of information which it might not be possible to reveal to the commander of the Patrols of the Vanguard, and their special training would give an added value to their report. The chief {142} points to be ascertained concerning a hostile position are:—

I. The extent of the position occupied.

II. Weak points of the position.

III. Points, the capture of which would facilitate enfilade or reverse fire, and would thus render the rest of the position untenable.

IV. Best line of attack.

V. Supporting positions, for covering, converging, enfilade, and traversing fire.

It should be possible to gather this information without alarming the enemy, or giving notice of impending attack.

Information on further points can be gained by fighting, and *Reconnaissance by Raids* is a common feature of Position Warfare. By such means additional information can be gained, as to:—

VI. Names of regiments holding the position, judged from identity discs, badges, buttons, etc.

VII. Whether preparations are being made for an attack (discoverable by ear as well as eye), or bombardment, etc. (from examination of shell dumps, etc.).

VIII. Position of machine guns (Pill-boxes or other), mortars, etc.

IX. Condition of intervening ground and of the wire entanglements.

X. Effects of recent bombardments.

XI. Moral of the enemy.

RECONNAISSANCE FOR OCCUPATION.—In the Reconnaissance of a Position with a view to occupying it for the purposes of receiving attack, the points to be noted are:—

I. The best line for the establishment of a series of mutually supporting tactical points to be held by the infantry.

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II. The best means of protecting the flanks.

III. The best position for the artillery and machine guns.

IV. The tactical key to the position.

V. The line from which attack may be expected.

VI. The best line for the counter-attack.

VII. The positions for the supports and reserves.

and, additionally, in the case of a War of Manoeuvre:—

VIII. The best position for the cavalry.

IX. Alternative positions in rear from which, after reorganisation, to recapture the front line, with the best line of withdrawal to them.

Additional information would be required in Position Warfare as to the best lines for avenues communicating from the old to the new position, and as to the time required to consolidate the new position against attack (including the conversion of the parados into parapet, etc.).

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NIGHT OPERATIONS

There are several reasons why darkness is preferable to daylight in certain military operations. Secrecy is usually the aim of all movement, and the increased power of observation due to the advent of the Air Service has caused an increase in the necessity for certain movements being made during the hours of darkness. In all Night Operations (except marches undertaken by night to avoid the heat of the day) surprise is the main object; secrecy of preparation is therefore essential, and steps must be taken to prevent discovery of the intended movement, and to prevent the information leaking out through the indiscretion of subordinates. Orders will be communicated beforehand only to those officers from whom action is required, and until the troops reach the position of assembly no more should be made known to them than is absolutely necessary. It

may even be advisable, in order to deceive spies, that misleading orders should originally be given out. Secrecy of intention as well as of preparation is essential. Frederick the Great is reported to have said, "If I thought my coat knew my plans I would burn it!"

NIGHT MARCHES.—Night Marches are the movement of columns in march formation, and their object may be merely to avoid the heat of the day; but they are also one of the chief means by which a commander can outwit, deceive, and surprise the enemy—the principal aim of the strategist—by outflanking his position, by anticipating him in the occupation of a locality, or by eluding him by the secret withdrawal of a force which appeared to be in a situation favourable to his plans. {145} Forces may also be secretly concentrated to decide the issue of a battle that is imminent, or of a battle that has begun in daylight. Long marches of this nature rarely culminate in an attack, and when shorter movements are made with such an object in view, the "March" may be said to terminate when the Position of Assembly is reached, and from that point to become an "Advance" or an "Assault." There are certain essentials to success:—

I. *Direction* towards the objective must always be maintained. The route must therefore be reconnoitred beforehand, and marked by the Advanced Guard during the march, and if there are any intricacies in the route, such as deviations from a well-defined road, local guides should be secured. Across open country a general direction can be maintained by means of the stars, and when these are not visible, by the compass. (See Chapter VIII., "Manual of Map Reading.")

II. *Protection* against surprise attacks must be provided by Advanced, Flank, and Rear Guards, but (except in the obvious case of columns of mounted troops only) mounted troops will not be employed in this service. The Advanced Guard will be small, and will usually consist of Patrols within 100 yards of the column, followed by connecting files, with the rest of the Advanced Guard in collective formation. The Rear Guard will also be smaller and nearer than during a daylight march. Flanks will usually be protected by small bodies holding tactical positions, posted by the Advanced Guard, and withdrawn by the Rear Guard.

III. *Secrecy* must be maintained, and orders issued as late as possible, and the preparations carried on without ostentation. The march {146} itself must be conducted in absolute silence and without lights of any kind. Care must be taken to prevent or muffle sounds, and horses likely to neigh must be left with the train. In the case of a march to elude the enemy, Outposts will remain in position until daylight and will be secretly withdrawn, to rejoin the column at the first opportunity, and bivouac fires, etc., will be kept burning.

IV. *Connection*.—Every commander must have and must maintain a fixed place

in the column, and an orderly officer must be detached from each unit to headquarters, so that instructions may be conveyed to such commanders at all times. Units must be closed up, and the usual distances lessened or dispensed with, and connection must be maintained between units and their sub-divisions. The pace should be uniform, but not more than 2 miles an hour can be expected on a dark night, including halts. The time and periods of halts should be arranged before starting, and units must regain any distance lost before halting. After crossing or clearing an obstacle the column should advance its own length and then be halted until reported to be closed up again, and staff officers should be detailed to superintend these matters. In addition to these general principles there are certain axioms, which must become "rules of thumb" with all concerned:—

An officer must march in rear of each unit.

All ranks must be informed what to do in case of alarm or attack.

Fire will not be opened without orders.

Magazines will be charged, but no cartridge placed in the chamber.

There must be absolute silence, no smoking, no lights.

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When halted, men may lie down in their places, but must not quit the ranks.

NIGHT ADVANCES.—Night advances are the movement of deployed troops to gain ground towards the hostile position with a view to delivering an assault at dawn. They may take place as a preliminary to an engagement, or to continue one already begun with increased prospects of success. In the first case they are usually the sequel to a Night March, and in either case they are generally followed by an attack at dawn. Surprise is the main object, even when they are undertaken for the purpose of gaining ground difficult to cross in daylight, from which to renew an engagement, as frequently happens during a campaign in a War of Manoeuvre, while such advances are common features of Position Warfare. In any case the ground won must be consolidated immediately, as a counter-attack at or before dawn may always be expected, and if the ground offers difficulties for entrenching, the necessary materials must be carried by the troops. Successive advances of this nature may enable the troops to reach a jumping-off place for the final assault, and such advances may be made on

successive nights, the ground won being defended meanwhile against counter-attacks. Unless troops are already deployed for the advance, a Position of Assembly will need to be selected, with a further Position of Deployment; but these positions sometimes coincide. The deployment will be, as a rule, into shallow columns on a narrow frontage at deploying intervals, in order that the final deployment of the leading columns into the Forward Troops of the Attack may take place without delay when the moment for the assault arrives. On reaching the objective of the advance these columns would deploy into line, and each unit would entrench itself on the new position. As it is essential for success that *direction* should be maintained and *connection* preserved, the ground over which the advance is to be made must be {148} examined beforehand and landmarks noted, and touch must be kept by means of ropes or any available device. Care must also be taken in consolidating the position that the entrenchments have a general alignment towards the enemy and that they are so sited as to protect from enfilade fire.

Night Assaults.—Night Assaults are delivered by troops already deployed into attack formation. It is an established tactical principle that "when the conditions of the fire-fight are likely to be favourable, it is probably better to accept the inevitable casualties that must result from a struggle for fire supremacy, rather than adopt the undoubted hazards of a night assault." These conditions are frequently so unfavourable in Position Warfare, owing to the strength of consolidated positions and to the increasing accuracy and density of artillery fire, that assaults are made of necessity in the hours of darkness, in preference to those of daylight. During the *Battle of the Somme* (July 1-17, 1916) a night advance was made by seven divisions on a front of about 4 miles. The troops moved out in the early hours of July 14, for a distance of about 1,400 yards, and lined up in the darkness below a crest some 300 to 500 yards from the enemy's trenches. Their advance was covered by strong patrols and their correct deployment had been ensured by white tapes laid out on the ground earlier in the night of July 13-14. The whole movement was carried out unobserved and without touch being lost in any case. The assault was delivered at 3.25 a.m., when there was just sufficient light to be able to distinguish friend from foe at short range, and along the whole front attacked the troops were preceded by an effective artillery barrage. They swept over the enemy's first-line trenches and consolidated their position in the defences beyond.

On the night of February 10-11, 1917, the 32nd Division attacked and captured 1,500 yards of trench {149} line at the foot of the *Serre Hill*. The division

formed up after dark and the attack began at 8.30 p.m., the objective was captured, and at 5 a.m. a determined counter-attack was repulsed. The capture of the *Vimy Ridge* by Canadian troops was due to an assault launched some time before dawn on April 9, 1917: and the British victory of Messines (June 7, 1917) to an assault launched at 3.10 a.m. In the latter case the Wytschaete-Messines position, "one of the Germans' most important strongholds on the Western Front, consisted of forward defences with an elaborate and intricate system of well-wired trenches and strong points, forming a defensive belt over a mile in depth, and the Germans had omitted no precautions to make the position impregnable" (Sir D. Haig's Dispatches). Nineteen deep mines under this position were fired at 3.10 a.m., and this was the signal for the assault, which was immediately successful and was carried out under intense artillery protecting fire. By nightfall of June 7 the whole position had been recaptured, heavy losses inflicted, and over 7,000 prisoners taken at a comparatively slight cost, by the II. Army, under General Sir H. C. O. Plumer. During the German offensive in 1918 a counter-attack by three brigades was launched by night against the village of *Villers Brétonneux*. The attack was launched at 10 p.m. on the night of April 24-25. By daybreak the village was surrounded, and by the afternoon it was entirely recaptured with upwards of 1,000 prisoners. Among the offensive operations which preceded the general advance of the Allies in July, 1918, was a highly successful night attack by the 2nd Australian Division, on a front of about 2 miles, south of *Morlancourt* (June 10, 1918). At 4.35 a.m. on May 12, 1864, one of General Ulysses Grant's Corps, under General Hancock, assaulted "the Salient," part of General Robert Lee's entrenchments in The Wilderness of Virginia (*Spottsylvania*). 20,000 men were assembled and a night advance was made, {150} directed by compass, on an unusually dark and stormy night, with part of the line of the advance densely wooded. The assault was ordered for 4 a.m., but a dense fog delayed the signal until 4.35 a.m. When the order was given, one of the divisions had some difficulty in making its way through a wood and marsh, but contrived to keep up with the others, and reached the abattis at the same time. The assault resulted in the capture of 4,000 prisoners and inflicted losses with the bayonet of over 2,000, with a total loss to the assailants of about 2,000. This manoeuvre consisted of a night march by compass of a whole corps to a Position of Assembly within 1,200 yards of the hostile outposts, of an advance before dawn, and of a final assault of 20,000 troops. The captured salient was afterwards retaken by the Confederates by a decisive counter-attack, rendered possible by the provision, in rear of the salient, of a second line of entrenchments (see *Battle of Spottsylvania*).

Owing to the risks of confusion and the limitations imposed on the attacking movement, Night Assaults do not now carry the same comparative advantages over Daylight Attacks as was the case before the introduction of *Smoke*. Hence they will be restricted to attacks on a very limited objective, as in the case of raids or attempts to capture special tactical localities. But by employing Smoke only two elements of Surprise can be achieved. The *direction* and *weight* of the blow are concealed, but the appearance of Smoke will warn the enemy to expect an attack, and the *time* of the blow is thus revealed. Smoke will probably be employed extensively in modern warfare and, except against an ill-trained and undisciplined enemy, assaults by night will generally be undertaken to gain tactical points, to drive in advanced troops and Outposts, to capture advanced and detached posts, to rush an isolated force guarding a bridge or defile, and in carrying out enterprises of a similar nature, in order to gain advantages {151} for further operations in daylight. When more important assaults are made, a larger force than a brigade will seldom be thrown against a single objective, although a series of objectives may be simultaneously attacked with success over a wide front. A Night Assault was delivered by two Federal brigades on the Confederate bridgehead at *Rappahannock Station* (November 7, 1863). One of the brigades was ultimately repulsed, but the other penetrated the Confederate position and cut off the retreat. Upwards of 1,500 of the defenders were captured or killed, and the small remnant evacuated the bridgehead. In the Second Afghan War, General Sir F. Roberts marched up to the high passes leading out of the Kurram into the interior of Afghanistan, with a column of 3,200 all ranks and 13 guns. He was opposed by the Amir's force of about 18,000 men with 11 guns at *Peiwar Kotal* (December 2, 1878). Sir F. Roberts detached the greater part of his force to occupy the heights on the flank of the Afghan position and attacked at daylight. The Night March and subsequent attack were completely successful. The enemy was defeated with great loss and all his guns captured, the British losses being 20 killed and 78 wounded. *Tel-el-Kebir* was an example of a Night March in battle formation of a force of 11,000 infantry, 2,000 cavalry, and 60 guns, to attack an entrenched position at dawn, the object being to surprise the enemy and to cross the danger zone without exposing the assaulting troops to a prolonged fire action. It resulted in a victory which decided the Egyptian campaign, and added the Nile Valley to the British Empire. Sir Garnet Wolesley's force advanced in four columns marching abreast, with its left resting on the railway, and was successfully carried out, the troops reaching a position, varying from 300 to 900 yards distance from the objective, the assault being delivered at the conclusion of the march. The Egyptian Army, under Arabi Pasha, fought steadily, and again and again renewed the fight, after falling back

{152} within their entrenchments, but their flank was turned and the whole position captured. The British loss was only 459 all ranks, and the Egyptians lost upwards of 2,500 killed and wounded, the remaining 23,000 being dispersed or captured. A daylight advance and assault of so strong a position could not have been successfully carried through at so small a cost to the attacking troops. In the South African War there were two examples of the unsuccessful Night Attack. Major-General Gatacre essayed a Night March followed by a Night Attack upon the Boers' position at *Stormberg* (December 10, 1899), but he was misled by his guides in unknown ground and was himself surprised by the Boers and forced to retire with a loss of over 700 officers and other ranks. On the following day Lord Methuen delivered an attack upon Cronje's position between the Upper Modder River and the Kimberley road. In a Night Attack on *Magersfontein Hill* (December 11, 1899) the Highland Brigade came under heavy fire while still in assembly formation and lost its Brigadier (A. G. Wauchope) and 750 officers and other ranks. In the later stages of the South African War, however, Night Marches followed by Raids were employed with marked success, particularly in the Eastern Transvaal in November and December, 1901.

Except when the assaulting troops are already in position, it will be necessary to choose Positions of Assembly and of Deployment, and to precede the advance in the preliminary stages by lines of scouts, ahead and on the flanks, within 100 yards of the following troops. On arrival at the jumping-off place these advanced scouts will await the arrival of the assaulting force, and they should be directed to mark the ground for the various units. A scout from each Forward Platoon can thus mark the inner flank on which his Platoon will rest, and the direction of the whole line will be assured.

The troops will usually advance, during the earlier {153} stages, in shallow columns on narrow frontages, at deploying intervals, and may maintain this formation until the halted line of scouts is reached. Owing to the frequent necessity for halts to correct intervals, etc., and the inherent difficulties of movements by night in open formations, no greater rate than 1 mile an hour can be counted on. When several objectives are in view a corresponding series of Positions of Assembly and Deployment will be required, and care must be taken that the various advancing forces do not converge.

Owing to the difficulty of recognition, a distinguishing mark will usually be worn by the troops engaged, a watchword will usually be adopted and made known to all ranks, and the commander and staff should wear easily

distinguishable badges. If hostile patrols are encountered it is essential that they should be silenced, and any one encountered who is deficient of the badge and ignorant of the watchword should be similarly treated.

The risk of an assault being held up by unforeseen obstacles must also be provided against, and Engineers or Pioneer Infantry should be present for removing such obstacles. If fire is opened by the enemy it is clear that all hope of surprise has vanished, and the troops must then press on at all costs; for if they advance as rapidly as possible they have a reasonable prospect of achieving their object, whereas a halt will increase the enemy's power of resistance, and withdrawal will almost certainly end in disaster.

In order that secrecy may be observed, details of the assault will usually be withheld from all except superior commanders from whom action is required, until the Position of Assembly is reached; but before the troops leave that position all ranks must be made to understand the objective in general, the particular task of the unit, and the formation to be adopted at the Position of Deployment. In addition to this information, and to a knowledge of the general tactical principles involved, {154} there are certain axioms which must become "rules of thumb" with all ranks:—

Fire must not be opened without orders.

Magazines must be charged but no cartridge placed in the chamber.

Until daylight the bayonet only to be used.

Absolute silence to be maintained until the signal for the assault is given.

No smoking; no lights.

If obstacles are encountered each man will lie down in his place until they are removed.

If hostile fire is opened, all ranks must press on at once with the utmost spirit and determination and overpower the enemy with the bayonet.

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FIGHTING IN CLOSE COUNTRY

Close country has a marked influence on Tactics owing to the restrictions it imposes on view and on movement. Forest, jungle, and bush, mountains and ravines, rivers and streams are natural obstacles, while cultivation adds woods and plantations, fences and hedges, high growing crops, farm houses, villages and towns, with sunken roads below the surface of the adjoining land, and civilisation brings in its train a network of railways and canals with embankments and bridges, and the natural difficulties of close country are thereby increased. The obstruction to movement is more or less constant, except in "continental" climates, where frost and snow render movement possible in winter over the deepest rivers or marshes, and over roads and tracks which are scarcely practicable in the summer season. The obstruction to view is greater when trees and hedges are in leaf than when the leaves have fallen.

When the advantages and disadvantages of fighting in close country are weighed in the balance there appears to be a distinct tendency in favour of the Attack over the Defence.

An Attacking force can usually obtain cover in the early stages of the action and loss can therefore be avoided in approaching the objective, while the screening of its movements and dispositions generally enables the Attacking force to surprise the Defence as to the direction and weight of the blow to be delivered. Troops fighting in close country are often unable to see what is going on around them, and the "sense of security" is lessened by the knowledge that a flank may be successfully assailed without warning. This favours the {156} Attack more than the Defence, as the counter-attack, which is the soul of all defensive operations, requires previous organisation to be thoroughly effective.

SAVAGE WARFARE.—In Savage Warfare the inherent difficulties of fighting in close country are often increased by the disparity of numbers on the side of the civilised troops and by the fanatical courage of the savages. Discipline, self-reliance, vigilance, and judgment in the application of the Principles of War, are required to overcome these added difficulties. A vigorous offensive, Strategical as well as Tactical, is *always* the best method of conducting operations in Savage Warfare, and for the purpose of Protection vigilance must be exercised to an even greater degree than in any other form of warfare. At *Isandhlwana* (January

22, 1879) the British camp at the foot of Isandhlwana Hill was surprised and overwhelmed by a Zulu Army, 10,000 strong, and almost the whole of the garrison killed; and yet in the evening of the same day 120 all ranks (40 sick being included in that number) beat off the repeated attacks of 4,000 Zulus at *Rorke's Drift*. In the operations after the fall of Khartoum a desert column under Major-General Sir J. McNeill was surprised in dense bush while constructing a zeriba at *Tofrik* (March 22, 1885), but after twenty minutes' fierce fighting the Mahdist Arabs were driven off with more than 1,000 killed. In the operations in Upper Egypt against the invading Mahdists a vigorous strategical and tactical offensive led to the *Battle of Toski* (August 3, 1889) and resulted in the defeat and complete destruction of the invaders, with but slight loss to the Anglo-Egyptian force under General Sir F. W. Grenfell. At the beginning of the Christian Era three well-disciplined Roman legions were decoyed into the fastnesses of the *Teutoberger Wald* (A.D. 9) and there attacked and annihilated by the Cherusci, a Saxon tribe, under their king Arminius, and this defeat of Quintilius Varus is included by Sir Edward Creasey among the {157} "Fifteen Decisive Battles of the World." Fighting in close country against more or less savage tribes is frequently the task of British troops in East and West Africa, while the Indian Frontier constantly requires to be defended by expeditions against tribal levies in hilly and mountainous districts. In "Field Service Regulations" (Part II.), 1921, the peculiarities of various savage races by whom the Outposts of the British Empire are liable to be assailed are carefully noted.

IN CIVILIZED WARFARE.—The military history of Europe and America abounds with accounts of fierce fighting in close country. In all ages woods and villages play an important part in war. They form natural magnets for troops operating in their neighbourhood. The fact of their being easily visible, and named on maps, causes them to be adopted as objectives in the Attack or as boundaries in the Defence, and in all operations troops are instinctively drawn towards them in search of cover, or to obtain water, supplies, and shelter. Their situation is also likely to make them of tactical importance, as woods are frequently on the slopes of hills and may be occupied in a defensive scheme to force an assailant to deploy before reaching the main position, while villages are naturally situated on roads, which must be guarded as they are the normal avenues of approach for all troops. In Position Warfare the wood and the village are of the highest importance, and whenever they are situated along the alignment, or near the front, of a defensive position, they may always be assumed to be occupied and strongly organised as part of a series of mutually supporting tactical points. The names of woods, large and small, and of the most

insignificant villages, were of everyday occurrence in reports on the fighting on the Western Front in the Great War as the scene of furious encounters, of attacks and counter-attacks, and there are 67 references to copses, woods, and forests in Marshal Haig's Dispatches. It {158} appears, however, to be generally admitted that close country in general, and woods and villages in particular, favour Delaying Action rather than a protracted Defence, and in Position Warfare the advantages are therefore in favour of the Attack on account of the facilities offered for surprise through the concealment of movement.

There are many instances of successful Delaying Action in woods and villages. Some of the characteristics of such fighting were exemplified in the Franco-Prussian War. At the *Battle of Gravelotte* (August 18, 1870) the Bois de Vaux, on the left of the French position, induced Marshal Bazaine to mass his reserves on that flank, as it appeared to invite attack; whereas he was defeated by a turning movement on the *other* flank. During an attack through the Bois de Vaux a Prussian infantry battalion became so scattered that all cohesion was lost, a common danger in wood fighting. At the earlier *Battle of Spicheren* (August 6, 1870), however, two battalions maintained their order and cohesion in Pfaffen Wood, and by moving through it in narrow columns were able to debouch in good order. A tendency to loss of discipline through loss of control was exemplified at the same battle. Other Prussian troops had captured Gifert Wood and the officers were unable to organise an attack on a further position through the reluctance of the troops to leave the shelter of the wood. At the *Battle of Worth* (August 6, 1870) two French battalions held up the attack of 18,000 Prussians for over an hour in the Niederwald, although no fortifications were employed; the difficulty of debouching from a captured wood was then experienced by the Prussians, as the farther edge was kept under heavy fire by French troops in the neighbouring Elsasshausen Copse. A decisive counter-attack cannot usually be organised in such warfare, although Lee managed to employ 17,000 troops for that purpose with complete success at the *Battle of the Wilderness* (May 5-6, 1864). Local {159} counter-attacks, however, are the normal incidents of defensive operations in woods, and in the Niederwald, at the *Battle of Worth*, several spirited counter-attacks were made by the 96th French Regiment.

Villages are even more attractive to troops than woods, and they figure in all battles as local centres of resistance. One of the most spirited defences of a village took place at the *Battle of Sedan* (September 1, 1870) when a heroic struggle was maintained by French marine infantry in the village of *Bazeilles*,

and after the white flag had been hoisted over the Fortress of Sedan the fight was stubbornly maintained at the village of Balan, the second line of defence of the Bazeilles position. Visitors to the battlefield of Sedan are shown a little inn with the title, *A La Dernière Cartouche*, in commemoration of the struggle. A highly successful Night Attack was made by the French on the village of *Noisseville* (August 31, 1870), the normal difficulties of defending the village being increased by the surprise and the darkness.

THE ATTACK ON WOODS.—The opening stages of the attack on a wood resemble those in the attack on any other position, but once the outer fringe is gained the potential advantages offered by the narrow field of view and fire must be exploited to the full and surprise at weak points must be achieved. Flank attacks are exceptionally deadly under these circumstances, as they may succeed before the other defending troops are aware of the threatened attack, but the utmost precaution is necessary to avoid traps, and scouts must precede all movement, while advances must be made by rapid bounds to avoid aimed fire at close range. Supports and reserves must follow close to the forward troops in order to preserve cohesion and to afford immediate help. Machine guns and light mortars are of very great value to give close support, the latter taking the place of artillery and inflicting losses on {160} stockaded defenders. Small woods should usually be attacked from the flanks under heavy fire from artillery until the attack turns inwards, while machine guns and Lewis guns are posted to prevent reinforcements reaching the wood and to cut off the retreat of the defenders. During the German counter-attacks at Cambrai (November 30-December 4, 1917) *Tanks* were effectively employed in wood and village fighting, and were in a great measure responsible for the capture of *Gauche Wood*, acting in co-operation with dismounted Indian cavalry of the 5th Cavalry Division and with the Guards' Division; but although they reached the outskirts of *Villers Guislain* they were forced to withdraw, as the supporting infantry were unable to co-operate owing to the fire of the enemy's machine guns. At the *Battle of Messines* (June 7, 1917) a tank enabled the infantry to proceed with the advance by overcoming the machine guns posted in Fanny's Farm. Generally speaking, however, tanks are unable to manoeuvre in woods, owing to the many insuperable obstructions, and their sphere of usefulness is limited by the availability of rides or other cleared avenues of approach. During the fighting for the interior of the wood "reconnaissance during battle" is of the highest importance, and the flanks of the attacking force will need to be specially guarded, on account of the liability to counter-attack. Touch must also be kept, to avoid loss of direction. In the *advance from the captured position* great tactical

skill is required, and if the defenders have established a fire position within close range it may only be possible to issue from the wood when co-operating troops have cleared or neutralised that position. It may even be necessary to hold the rear edge against counter-attack and to debouch, after reorganisation, from both flanks or from the opposite edge, to advance in two bodies against the flanks of the fire position under harassing fire from the troops in the further edge. If the fire position is to be carried by direct assault, or if {161} it can be got under control and the advance is to be continued, the successful troops must be reorganised within the wood (care being taken to avoid concentration in salients) and must deploy before advancing, to bound forward in one rush until clear of the wood.

DEFENCE OF A WOOD.—The outer edge of a wood is particularly vulnerable, but some portions of it must of necessity be occupied for purposes of observation and resistance (particularly at night), while the unoccupied portions are heavily entangled and made subject to enfilade fire from the occupied positions, machine and Lewis guns being particularly suitable for the defensive positions, in concealed and strengthened emplacements. The perimeter should be divided into sections garrisoned by complete units under definite commanders. Lines of defence must also be established in the interior, and lateral communications opened up through the trees, with easily distinguished marks to direct troops issuing to counter-attacks, and time will be saved by making several tracks rather than one wide road. The second line of defence should contain an all-round defensive position from which all avenues of approach can be swept by machine and Lewis guns, and this position should also provide facilities for sorties to counter-attack. If the wood is too far from the Outpost Zone of the defence to serve as a factor in the scheme steps must be taken to neutralise the advantages offered to an attacking force in a concealed avenue of approach, either by the use of gas, or by bringing such a fire on the exits from the wood that a debouching enemy may suffer heavy loss or annihilation. In most cases, an attacking force will be harassed, and a show of opposition will be made, in such a wood by *fighting patrols*, and obstacles can be placed in the near edge, with entanglements outside, so planned as to induce the attacking force to collect in lanes enfiladed by machine guns.

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THE ATTACK ON VILLAGES.—There are three phases in the attack on a village as in the attack on a wood. In the fight for the outer edge, the front will

probably be harassed by a fire attack, while one or both flanks are assaulted by all four sections of the platoon, under cover of fire from machine guns and Lewis guns.

The second phase may require reorganisation before the attack on the village itself, during which, reconnaissance, co-operation, and dispatch of information, are of the highest importance. All captured points must be immediately consolidated and the attack must be prosecuted with the utmost vigour. Troops must be trained to enter buildings from the rear, and to advance along the right edge of roads, close to the walls and buildings there, to make hostile fire difficult without undue exposure. Light mortars and rifle bombs, which can be fired into windows partially barricaded, or to fall behind street barricades, are an important adjunct to the rifle and bayonet, and machine guns and Lewis guns will have many opportunities in assisting or repelling a counter-attack and of keeping down the enemy's fire from a commanding position at the end of a street. *The Tank* is at its best in this form of warfare, as it can surmount or demolish almost any street barricade, and can be followed up at once by the infantry, but it must always be regarded as an auxiliary to the infantry, and not as a principal.

In the third phase, the advance from the captured village, while the supports are "mopping up" such of the garrison as have survived the capture, previous reorganisation and deployment will probably be as essential as in wood fighting, and during all the phases of the struggle in woods and villages sudden counter-attacks must always be expected and local reserves to repel them must be provided. In issuing from the village, rapid bounds to points from which the fire positions in rear can be brought under control will also be required.

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DEFENCE OF A VILLAGE.—It is difficult to avoid the inclusion of villages in a scheme of defence on account of the facilities afforded for water, cover, and shelter, but while villages assist in the Delaying Action they are liable to become "shell traps" in a prolonged defence, unless there is good cellarage accommodation, while the local effect of a bursting shell is also increased.

There are certain principles common to all defensive action in village fighting:—

(1) The garrison should consist of a definite unit or formation under a definite commander.

(2) The forward troops should be posted in front of the edge of the village, partly because of the vulnerability of the actual edge to artillery fire but mainly to prevent the attack from establishing itself in the forward buildings. In the case of a small village it will often be advantageous to occupy positions on the flanks commanding the edge by fire, with a view to enticing the attack into the "funnel" thus provided.

(3) Supports and Reserves must be centralised in order that they may be readily available for instantaneous local counter-attacks, by which means alone a village can be defended against a determined enemy.

(4) Houses should be loopholed and windows sand-bagged, while house-to-house communication must be improvised to increase the defenders' power of manoeuvre.

(5) The interior of the village should be defended by the cross fire of machine guns and Lewis guns, but while churches and halls, and the inner edge of village greens and of squares, should be prepared for determined resistance, such places should not be occupied as billets, owing to the risk of loss from artillery bombardment.

(6) The natural difficulties of maintaining control in village fighting require to be counteracted by increased effort and vigilance on the part of all leaders, and special arrangements must be made for collecting information in report centres, the position of which must be made known to all ranks in the defending force.

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CHARACTERISTICS OF THE VARIOUS ARMS

"The full power of an army can be exerted only when all its parts act in close combination, and this is not possible unless the members of each arm understand the characteristics of the other arms. Each has its special characteristics and functions, and is dependent on the co-operation of the others" ("Field Service Regulations," vol. ii. (1921)).

"An intelligent understanding of 'the other man's job' is the first essential of

successful co-operation."—MARSHAL HAIG.

INFANTRY

"Infantry is the arm which in the end wins battles" ("Field Service Regulations," vol. ii. (1921)). The speed with which infantry can advance, and the distance which can be covered in one day, are the only limits to the striking power of well-trained infantry. In the Great War these limits were largely removed by the use of Mechanical Transport, and this means of transportation will be used increasingly in Modern Warfare, in order to bring fresh troops into or near the scene of action, or to expedite the removal of exhausted troops from the battlefield. Against these natural limits to mobility are the compensating advantages of the power of infantry to move into and over almost any ground by day or by night, and the rapidity with which trained infantrymen can find or improvise cover.

The main object of battle is to close with the enemy and to destroy him by killing or capture, and it is this power to close with the enemy which makes infantry the decisive arm in battle.

THE RIFLE AND BAYONET.—The rifle is the principal infantry weapon, and the British "Short-magazine {165} Lee-Enfield" rifle is the best rifle in action. A trained rifleman can fire 15 aimed shots in a minute, reloading with the butt in the shoulder and eyes on the mark. With the bayonet affixed the rifle is the principal weapon of close combat for delivering or repelling an assault, and in Night Assaults infantry depend entirely upon the bayonet.

THE ENTRENCHING TOOL, carried by all other ranks, is an invaluable adjunct to the rifle bullet and to the bayonet. In a War of Manoeuvre, when infantry are frequently compelled to improvise defences on the field of battle, by night as well as by day, the value of the Entrenching Tool can scarcely be exaggerated. In Position Warfare, and in the organisation of an area for prolonged defence in a War of Manoeuvre, heavier tools and materials of all kinds are available for the consolidation of the defences, but for the rapid construction of temporary defences by day or by night the Entrenching Tool alone has been proved to be highly effective. When troops are "digging themselves in" at night with this weapon care must be taken that some system is adopted to obtain a more or less regular line facing in the right direction. By the

extension of the men of an infantry section at arm's length facing the enemy, and by moving the two men on each flank two paces outwards, and the two centre men two paces backwards, and then causing the section to dig "on the line of their toes," there will result (even on the darkest night) a short fire trench with a central traverse. This sectional trench can be connected at the first opportunity with trenches dug by other sections similarly extended. During the *Retreat from Mons* (August-September, 1914) the "Contemptible Little Army," under Marshal French, frequently obtained, by means of the Entrenching Tool alone, shelter from bullets, and a system of fire trenches which cost the pursuing Germans hundreds of lives and materially delayed their movements.

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THE LEWIS GUN.—The Lewis gun is an automatic rifle, firing the same ammunition as the S.-M.-L.-E. rifle, and two Lewis-gun sections are included in each infantry platoon. The rate of fire is increased by the automatic action of the gun, the maximum rate permitting a drum of 47 rounds to be fired in less than ten seconds, while one or two rounds only may be fired if so required. The mobility of the Lewis-gun sections is the same as that of other sections of the infantry platoon.

RANGES OF RIFLES AND MACHINE GUNS

Close range. Up to 800 yards. *Effective* range. Over 800 yards up to 2,000 yards. *Long* range. Over 2,000 yards up to 2,900 yards.

GRENADES.—Hand grenades and rifle grenades are adjuncts to the rifle and bayonet and the Lewis gun. Their principal use is in clearing fortified posts, especially in Position Warfare. The *hand grenade*, or bomb thrown by hand, is limited in range by the skill and strength of the thrower, and 30 to 40 yards may be regarded as the maximum distance. The *rifle grenade* is effective up to about 400 yards, and is generally employed to provide a local barrage or to search cover. In the latter case, a high angle of descent is used as with mortars or howitzers.

LIGHT MORTARS.—The *Light Mortar Section* is an integral part of every infantry battalion, and although sometimes brigaded for special purposes the sections normally work with their own battalions. A section of 2 light mortars,

firing 11-lb. bombs, consists of 1 officer and 20 other ranks, and requires 2 horses and 1 G.S. limbered wagon. Owing to the high angle of descent the bombs can be fired behind, and can search, high cover, while the mortars themselves are not very conspicuous objects and can be {167} readily moved for short distances, while they "come into action" in 30 seconds. The comparatively slow flight of the bombs, however, enables the enemy to discover the location of the mortars, and necessitates the use of expedients to avoid counter-artillery fire. A maximum rate of 30 to 40 rounds a minute can be maintained for two or three minutes, if ammunition is available, and at an angle of 45 degrees a range of 700 yards can be obtained.

MACHINE GUNS.—"The principal characteristic of the machine gun is its power of delivering a concentrated volume of fire which can be sustained almost indefinitely, subject to limitations of ammunition supply. The ease with which the gun can be concealed in action and its fire controlled enable advantage to be taken of surprise effect" ("Field Service Regulations," vol. ii. (1921)). The *Machine-gun Platoon* is an integral part of every infantry battalion, but in Attack machine guns are frequently grouped for the purpose of providing overhead or other covering fire, while in Defence they form, with the artillery, the framework into which the defensive dispositions are fitted, and by reason of their fire-power machine guns enable a commander to economise in the number of infantry allotted to a purely defensive *rôle*. The ranges are those given above for rifles and Lewis guns, and the rate of fire is about 20 times that of a rifle, while 1,500 to 2,000 rounds may be fired continuously at a moment of need.

MOUNTED TROOPS

CAVALRY.—The principal characteristic of cavalry is its mobility. This enables it to attack unexpectedly; to defend with determination while retaining the power to break off an action more easily than infantry; to gain information and to afford protection at a considerable distance from the force protected; and to confirm {168} and exploit the success obtained in battle. "Cavalry is capable, if required, of undertaking most operations for which infantry would usually be employed, but the demands made by the care of horses reduce the number of rifles which can actually be placed in action; and it therefore lacks depth in comparison with similar infantry formations" ("Field Service Regulations," vol. ii. (1921)). The cavalry arms are the lance and sword for mounted action; horse artillery usually work with cavalry, and the arms employed by cavalry for dismounted action are

the rifle, the machine gun, and the Hotchkiss rifle. Examples of the employment of cavalry in modern warfare are given throughout the "Lectures."

MOUNTED RIFLES.—The characteristics and methods of employment of mounted rifles are similar to those of cavalry, with the exception that they are not equipped for mounted action. Mounted rifles, like cavalry, enable a commander to extend his attack or defence in a manner that is most bewildering to infantry, and attempts by infantry to outflank a defending force of mounted rifles are generally frustrated by the mobility of the defending force, as was exemplified in the South African War of 1899-1902.

CYCLISTS.—Under favourable conditions cyclists possess greater mobility than cavalry, and they can develop greater fire-power, as no horse-holders are required. They are, however, dependent upon roads, they are vulnerable on the move, they cannot fight without dismounting, and they must return to their bicycles after action; whereas cavalry horse-holders can meet dismounted troopers at a prearranged spot.

ARTILLERY

"The *rôle* of artillery is to assist the other arms in breaking down opposition, and to afford all possible {169} support to the infantry, with whom the eventual decision rests" ("Field Service Regulations," vol. ii. (1921)).

All classes of artillery are included in modern military operations. Motor traction enables the heaviest guns to be brought to the battlefield and to be removed when a commander decides to withdraw from battle, while the increase in the defensive power of obstacles and small arms fire, combined with the increase in mobility afforded by motor traction, enables all but super-heavy artillery (which require a railway mounting) to be placed close behind the infantry in Attack and Defence. It is, however, obvious that the closest support can be given by the guns that are weakest in shell-power, on account of the superiority in mobility possessed by the lighter guns.

In Modern Warfare a great proportion of the work of artillery is carried out, of necessity, in the hours of darkness, owing to the frequency of movement by night to avoid aërial observation, and to the consequent use of indirect artillery fire to inflict losses during such movements. The artillery personnel therefore

requires to be relieved with greater frequency than in the days before the use of aircraft.

The growth of artillery during the war was symbolical of the continual changes in the methods of warfare, its numbers and power increasing out of all proportion to the experience of previous wars. "The 486 pieces of light and medium artillery with which we took the field in August, 1914, were represented at the date of the Armistice by 6,437 guns and howitzers of all natures, including pieces of the heaviest calibre" (Sir D. Haig's Dispatches). "From the commencement of our offensive in August, 1918, to the conclusion of the Armistice some 700,000 tons of artillery ammunition were expended by the British Armies on the Western Front. For the fortnight from August 21 to September 3, our daily average expenditure exceeded {170} 11,000 tons, while for the three days of the crucial battle on September 27, 28, and 29 (*Second Battle of Cambrai*) nearly 65,000 tons of ammunition were fired by our artillery" (Sir D. Haig's Dispatches).

In the Table of Artillery Ranges on p. 173, the effective ranges of light artillery firing H.E. shell are based on the use of No. 106 fuse. "The invention of a new fuse known as '106,' which was first used at the *Battle of Arras* (April 9-June 7, 1917), enabled wire entanglements to be easily and quickly destroyed, and so modified our methods of attacking organised positions. By bursting the shell the instant it touched the ground, and before it had become buried, the destructive effect of the explosion was greatly increased. It became possible to cut wire with a far less expenditure of time and ammunition, and the factor of surprise was given a larger part in operations" (Sir D. Haig's Dispatches).

Artillery is classed under the designations Light, Medium, Heavy, and Super-Heavy.

LIGHT GUNS.—*Pack Guns*, with a calibre of 2.75 inches, are weakest in shell-power, but they possess a mobility greater than any other artillery and can be moved in country which would present insuperable obstacles to wheeled traffic. *Pack Howitzers*, with a calibre of 3.7 inches, are particularly valuable in close country, the high angle of descent enabling the attack or defence to search the steepest cover. *Horse Artillery Guns*, firing a 13-pound shell, are the most mobile of all wheeled artillery and are normally employed with mounted troops. All ranks of the Royal Horse Artillery are mounted, and its mobility is scarcely less than that of cavalry. *Field Guns*, with a calibre of 3 inches, firing an 18-

pound shell, are the principal artillery weapon of a field army. Although inferior in mobility to Pack or Horse Artillery, they have greater shell-power and afford the principal support to infantry in closing with or repelling the enemy. Their power to inflict casualties {171} by enfilade fire with shrapnel makes them specially suitable in the defence, and the accuracy of modern weapons enables them to co-operate in the Attack with covering fire, under the protection of which infantry may advance unimpeded to the assault. In addition to their normal functions, and to their employment in counter-battery work, they can be employed in the reduction of defences by bombardment with High Explosive shells, in neutralising an area by the use of gas shells, or in providing artificial cover by the production of *Smoke*. *Field Howitzers*, with a calibre of 4.5 inches, have increased offensive power and practically the same mobility as field guns.

Light guns are the principal weapons for protection against *Aircraft* and for defence against *Tanks*. The Tank is powerless against artillery, and its most effective enemy is light artillery. During the *First Battle of the Somme* a new terror was added to the British attack by the introduction of the Tank, which surmounted inequalities in the ground, crushed the wire defences, and crossed the trenches. Although accompanied by infantry, it was regarded as an all-conquering and decisive factor. At one period of the battle, however, a number of Tanks were placed out of action by a single field gun, manned and fired with the greatest gallantry by a single German artillery officer, who fired point-blank at each Tank as it surmounted the crest of a rise. Infantry were in close support, and a single Lewis-gun section could have prevented the use of the field gun.

MEDIUM GUNS.—Medium guns, firing a 60-pound shell, are principally employed in counter-battery work and in fulfilling the functions of 18-pound field guns at a greater range and with greater force. *Medium Howitzers* occupy the same relative position, their offensive power being greater than that of the Field Howitzer.

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HEAVY GUNS.—Heavy guns of 6-inch calibre, firing a shell of 100 pounds, are used against targets beyond the range of light and medium guns, and with greater effect. *Heavy Howitzers*, of 8-inch or 9.2-inch calibre, are principally employed against covered batteries and strong defences, or for destroying wire entanglements with instantaneous fuses.

SUPER-HEAVY GUNS.—Super-heavy guns of a calibre of 9.2 inches and upwards are usually carried on railway mountings, and while they possess a high muzzle velocity, considerable shell-power, and a high degree of mobility (which enables them to come into action in any part of the battlefield where suitable rails have been laid), their arc of fire is very restricted and their "life" is short. *Super-Heavy Howitzers*, of 12-inch or 18-inch calibre, possess similar advantages and disadvantages to super-heavy guns. Their normal use is the destruction of permanent defences, the breaking down of bridges, etc. The 12-inch weapon is also used on tractor-drawn mountings and is highly effective in counter-battery work.

The table on p. 173 is based upon particulars given on p. 26 of "Field Service Regulations," vol. ii. (1921).

ROYAL ENGINEERS

"All arms are responsible for the construction of their own works of defence. It is the duty of the Royal Engineers to assist them by engineer reconnaissances, plans, advice, technical supervision, provision of materials and the construction of works requiring special technical skill. . . . Although trained as fighting troops, engineers should be regarded as reserves to be used only as a last resource; casualties in their ranks are not easy to replace, and they may become needlessly involved in the fighting and lost for work which may have an important bearing on the operations" ("Field Service Regulations," vol. ii. (1921)).

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TABLE OF ARTILLERY RANGES

Weapon	Effective Range (Yds.)	
	H.E. Shell	Shrapnel
Light Artillery		
Pack Guns (2.75 in.)	5,800	4,000
Pack Howitzers (3.7 in.)	5,900	
Horse Artillery Guns (13 pr.)	8,500	5,000
Field Guns (18 pr.)	9,500	5,500
Field Howitzers (4.5 in.)	7,000	

Medium Artillery
Medium Guns (60 pr.) 15,500 —
Medium Howitzers (6 in.) 10,000

Heavy Artillery
Heavy Guns (6 in.) 19/20,000
Heavy Howitzers (8 in.) 12,300 —
" " (9.2 in) 13,000

Super-Heavy Artillery
Super-Heavy Guns (9.2 in.) 24,500 —
" " (12 in.) 28,200 —
" " (14 in.) 35,600 —
Super-Heavy Howitzers (12 in.) 14,300
" " (18 in) 23,000

Weapon Maximum Range (Yds.)

Light Artillery H.E. Shell Shrapnel
Pack Guns (2.75 in.) 5,800 5,500
Pack Howitzers (3.7 in.) 5,900
Horse Artillery Guns (13 pr.) 8,500 6,400
Field Guns (18 pr.) 9,500 6,500
Field Howitzers (4.5 in.) 7,000

Medium Artillery
Medium Guns (60 pr.) 15,500 15,300
Medium Howitzers (6 in.) 10,000

Heavy Artillery
Heavy Guns (6 in.) 19/20,000 19/20,000
Heavy Howitzers (8 in.) 12,300
" " (9.2 in) 13,000

Super-Heavy Artillery
Super-Heavy Guns (9.2 in.) 24,500 24,500
" " (12 in.) 28,200 26,100
" " (14 in.) 35,600 —
Super-Heavy Howitzers (12 in.) 14,300

" " (18 in) 23,000

The maximum range of *Medium Mortars* is 1,500 yards;
of *Light Mortars* 700 yards.

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CAREY'S FORCE.—During the *Second Battle of the Somme* "a mixed force, including details, stragglers, schools personnel, tunnelling companies, army troops companies, field survey companies, and Canadian and American Engineers, had been got together and organised by Major-Gen. P. G. Grant, the Chief Engineer to the V. Army. On March 26 these were posted by General Grant, in accordance with orders given by the V. Army commander, on the line of the old Amiens defences between Mezières, Marcelcave, and Hamel. Subsequently, as General Grant could ill be spared from his proper duties, he was directed to hand over command of his force to Major-Gen. G. G. S. Carey. Except for General Carey's force there were no reinforcements of any kind behind the divisions, which had been fighting for the most part since the opening of the battle. . . . On March 28 our line from Marcelcave to the Somme was manned by Carey's Force, with the 1st Cavalry Division in close support. . . . On March 29 the greater part of the British front south of the Somme was held by Carey's Force, assisted by the 1st Cavalry Division and such troops of the divisions originally engaged as it had not yet been found possible to withdraw. In rear of these troops, a few of the divisions of the V. Army were given a brief opportunity to reassemble" (Sir D. Haig's Dispatches).

TANKS

Tanks are moving fortresses containing light artillery, machine guns, and rifles, and while capable of inflicting heavy losses by fire they can also destroy obstacles, weapons, and personnel. Their garrisons are protected against the fire of small arms and from shrapnel bullets, but they are very vulnerable to other forms of artillery fire. Their mobility and radius of action are governed by the amount of petrol carried and by the physical endurance of the crew, but except over deep cuttings, {175} broad streams, swamps, very heavily shelled ground, rocky and mountainous country, or in thick woods they can move without

difficulty. "The power of delivering successful surprise attacks against almost any type of defences is one of the most important advantages of the use of Tanks in large numbers" ("Field Service Regulations," vol. ii. (1921)).

During the *First Battle of the Somme* (September 1-November 18, 1916) "Our new heavily armoured cars, known as 'Tanks,' now brought into action for the first time, successfully co-operated with the infantry, and coming as a surprise to the enemy rank and file, gave valuable help in breaking down their resistance. . . . These cars proved of great value on various occasions, and the personnel in charge of them performed many deeds of remarkable valour" (Sir D. Haig's Dispatches).

AIRCRAFT

Two classes of Aircraft are used in the field. Aeroplanes, which are self-propelled and have an almost unlimited radius of action; and Kite Balloons, which, in favourable weather, can be towed by a lorry and can be moved frequently without loss of efficiency.

AEROPLANES are of the greatest value for reconnaissance and inter-communication, and not only obtain, and return to their base with, information of the highest value, but facilitate personal reconnaissance of the battlefield by commanders and staff officers. Their offensive and defensive action is also very great and the moral effect of their offensive action is of the highest value. Although aeroplane squadrons are mobile units they lose efficiency if the units are moved too frequently. The action of aircraft in various phases of fighting is dealt with throughout the Lectures.

KITE BALLOONS carry two observers, who can remain in telephonic communication with the ground up to a {176} height of 5,000 feet. Inflated balloons can be moved in favourable weather at a maximum speed of 8 miles an hour while at a height of about 500 feet. Their extreme vulnerability to artillery fire prevents their use close to the battle front.

GAS

"The advisability of employing gas as a military weapon is a matter for

consideration by the authorities concerned before a campaign begins. Once authorised, however, and assuming that weather conditions are favourable, gas may be expected to play a part in every action. . . . The different methods in which gas can be employed make it a weapon which can be used by all arms, thus *Artillery* deal with gas shells, *Infantry* with light mortar gas bombs, *Aircraft* with aërial gas bombs, and *Engineers* with all methods of use that call for special manipulation" ("Field Service Regulations," vol. ii. (1921)).

Gas was introduced by the Germans during the *Second Battle of Ypres* (April 22-May 18, 1915), and the numerous experiments and trials necessary before gas can be used, and the great preparations which have to be made for its manufacture, show that its employment was not the result of a desperate decision, but had been prepared for deliberately. During the *First Battle of the Somme* (September 1-November 18, 1916) "the employment by the enemy of gas and liquid flame as weapons of offence compelled us not only to discover ways to protect our troops from their effects, but also to devise means to make use of the same instruments of destruction. . . . Since we have been compelled, in self-defence, to use similar methods, it is satisfactory to be able to record, on the evidence of prisoners, of documents captured, and of our own observation, that the enemy has suffered heavy casualties from our gas attacks, while the means of protection adopted by us {177} have proved thoroughly effective" (Sir D. Haig's Dispatches).

SMOKE

Smoke can be discharged from *Artillery* shells, Artillery or *infantry* mortar bombs, Infantry rifle grenades, smoke candles, *Aircraft* bombs, *Engineers'* stationary generators, or the exhaust pipe of *Tanks*. It is used to conceal movement for the purposes of surprise or for reducing casualties, and can be so employed as to impose night conditions on the enemy while one's own troops retain the natural visibility; but while the weight and direction of an intended blow may thus be hidden from the enemy a warning is given of the time of its delivery. It is possible, however, to mystify, as well as to surprise, the enemy by the use of smoke, and its strategical and tactical value will ensure its adoption in Modern Warfare. In the closing battles of the Great War "the use of smoke shells for covering the advance of our infantry and masking the enemy's positions was introduced and employed with increasing frequency and effect" (Sir D. Haig's Dispatches).

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OPERATION ORDERS

Combatant officers of every rank are required to issue orders of some kind or other, and orders for operations should always be committed to paper when circumstances permit. The object of an operation order is to bring about a course of action in accordance with the intentions of the commander, and with full co-operation between all units.

Operation orders of a complicated nature are unlikely to be required from the pen of infantry officers in the junior ranks, and the rules for drafting orders are stated in detail in the official text-books, for the use of officers of the ranks that will be required to issue them.

The general principles underlying orders of all kinds are that they should be "fool proof," and it has been remarked that the writer of orders should always remember that at least one silly ass will try to misunderstand them. They must, therefore, be void of all ambiguity, and while containing every essential piece of information, and omitting everything that is clearly known already to the recipients, they should be confined to facts, and conjecture should be avoided.

"An operation order must contain just what the recipient requires to know and nothing more. It should tell him nothing which he can and should arrange for himself, and, especially in the case of large forces, will only enter into details when details are absolutely necessary. Any attempt to prescribe to a subordinate at a distance anything which he, with a fuller knowledge of local conditions, should be better able to decide on the spot, is likely to cramp his initiative in dealing with unforeseen developments, and will be avoided. In {179} particular, such expressions as 'Will await further orders' should be avoided" ("Field Service Regulations," vol. ii. (1921)).

Apart from the standing rules as to the printing of names of places in block type, including a reference to the map used, dating and signing the orders, numbering the copies, and stating the time and method of issue, etc., the general tenour of all operation orders will always be: *The enemy are. . . . My intention is. . . . You will. . . .* In other words, all that is known about the enemy, and of our own troops, that is essential for the purposes of the order, should be revealed; then the general intention of the commander who issues the orders; then the part in the

operations that is to be played by the recipient. But the method of attaining the object will be left to the utmost extent possible to the recipient, with due regard to his personal characteristics. "It is essential that subordinates should not only be able to work intelligently and resolutely in accordance with brief orders or instructions, but should also be able to take upon themselves, whenever necessary, the responsibility of departing from, or of varying, the orders they may have received" ("Field Service Regulations," vol. ii. (1921)).

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