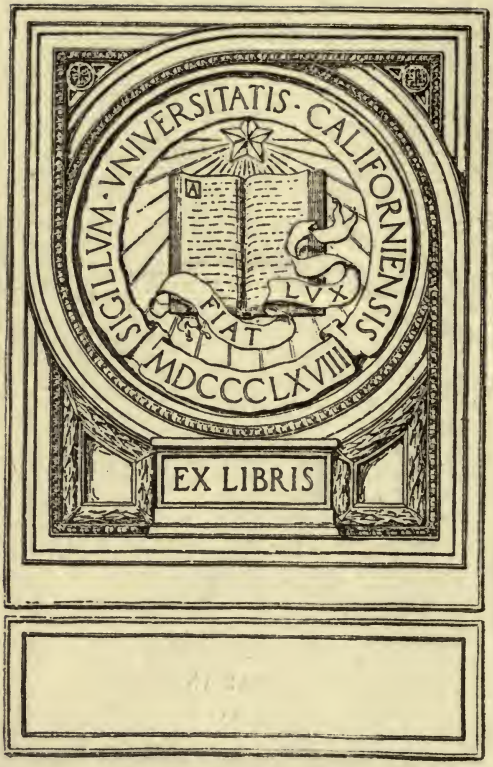
A MILITARY PRIMER


SIGILLVM · VNIVERSITATIS · CALIFORNIENSIS
LVX
FIAT
MDCCCLXVIII
EX LIBRIS

A MILITARY PRIMER

INCLUDING

An Outline of the Duties and Responsibilities of the Military Profession

AND

An Elementary Discussion of the Principles and Practice of the Service of Security and Information

---

FOURTH EDITION — Revised

By
Lieutenant Colonel Francis C. Marshall, 15*th Cavalry*.
and
Captain George S. Simonds, 22*d Infantry*

1916
THE EDWARD T. MILLER COMPANY
COLUMBUS, OHIO

FIRST EDITION . . . . . Printed January, 1907
SECOND EDITION . . . . . Printed September, 1908
THIRD EDITION . . . . . Printed October, 1913

PUBLISHED, December, 1916

TABLE OF CONTENTS

PREFACE TO FIRST EDITION.

This book is in no sense a textbook for advanced students of military science, but a book for the beginner, designed to teach the cadets of the Military Academy, at the very beginning of their military education, the objects of the profession for which they are preparing themselves, to show them the reason for the discipline to which they are subjected, and to define some of the independent duties of subaltern officers, in time of war in connection with the service of security and information.

In this service they must be trained, first, by thorough theoretical study of the general principles involved, and then by such practical applications of those principles as can be made when the enemy is imaginary, and all danger, save that of criticism, is absent.

Whether an officer so trained will prove valuable under the conditions attending actual hostilities, will always remain more or less of a problem, until tested by those conditions; but it can be asserted positively that in the present state of the military profession, no one can hope to really succeed, as an officer, who does not combine courage and loyalty with a thorough knowledge of the principles of strategy and tactics that can only come from exhaustive study.

The game of chess is the most complex game that is played with inanimate tools. The game of war possesses all the intricacies of chess, with the infinite added tangles caused by having the chess-men equipped with human minds, moved by the will, and not by the hand, of the master player, and by having the smooth squares of the chessboard replaced by the ever changing terrain of the theater of operations, where the weather often conspires with the enemy to change, and often to defeat, the most carefully laid plans.

An appreciation of the difficulties of his profession should make clear to the military student that he should hasten to prepare himself for its duties, for there will be no time to do so when war is declared.

West Point, New York, January 1, 1907.

PREFACE TO THIRD EDITION.

The United States is geographically isolated from the other great powers of the world. In Europe, Germany, Russia, France, Austria, Italy, and the Balkan States, maintain at all times enormous armies, trained and equipped in instant readiness for war. The British Empire relies mainly on a very large naval establishment for its home protection. In Asia, Japan is the only nation that maintains a modern military and naval force. The necessity for this comes from the fact that both Russia and Japan include, in their policies of expansion, the occupation of Korea and Manchuria. One great war, fought in 1904, between these two nations, resulted favorably for Japan. Her sovereignty has since extended completely over Korea, and her influence in the political and commercial affairs of Manchuria is very great. These advantages can, however, be held only by military superiority, and Japan must maintain a large army and navy in a state of high efficiency to keep what she has fought for.

The United States, set between two great oceans, and separated from her only two neighbors on the American continent, Canada and Mexico by natural boundaries at all points where the density of population is enough to require any boundaries at all, has no such need for excessive protection as influences Japan or the European States.

The policy of the government of the United States is announced in the Constitution as opposed to large standing armies. Acting on this policy, the Congress of the United States has built up a military system based on a small Regular Army, with a first reserve of National Guard troops, organized by the governments of the several States, and supported, partly by the States, and partly by the United States.

The program of field instruction of these troops culminates in maneuver exercises held from time to time in various parts of the country. The forces engaged in these maneuvers are usually very small. This book is intended to illustrate the application of the Field Service Regulations to these small forces, during the period of the maneuver exercises that precedes actual contact.

The problems discussed are little more than map-reading problems, and if, when the student has completed the book, he can read the maps readily, and, at the same time he has learned the relations the various covering detachments bear to the larger forces they protect, the purpose of the book will be accomplished.

The art of war is no less an art than the art of painting. Neither can be reduced to rule, or learned from formulas. But the student of the art of painting must first learn to hold his brush and to mix his colors. So the student of the art of war must learn to read his maps, and the meaning of his vocabulary before he can progress in the knowledge of the art.

The first and second editions of this book were designed for the use of the Cadets at the U. S. Military Academy. This edition is made with a view of meeting the particular needs of the students in other military schools and of the officers and non-commissioned officers of the National Guard.

Hartford, Conn., September 1, 1913.

"Direction by the higher leaders will always be lacking, where those leaders, in peace time, are unable to divorce themselves from the surroundings and prejudices of their particular arm, whatever it may be, and to enter wholeheartedly and unreservedly into the spirit of the Napoleonic maxim: INFANTRY, CAVALRY, AND ARTILLERY ARE NOTHING WITHOUT EACH OTHER."—General M. F. Rimington, British Army.

CHAPTER I.

THE OBJECTS OF A MILITARY TRAINING.

"The responsibility resting on an offcer in war is great. His mistakes are paid for in blood. To seek a command in war beyond his capabilities is no less criminal than for a man with no knowledge of a locomotive or railroading to attempt to run the engine of an express on a busy line."—Colonel J. F. Morrison, U. S. Army.

The prosecution of a war on land has for its object the destruction of an enemy's army or its expulsion from coveted or disputed territory. To accomplish this it is necessary for one force to overwhelm the other by a marked superiority. This superiority may be in strength, armament, supply, methods of attack, quality of the troops, or some combination of these elements, but a marked superiority there must be.

Any military establishment has for its object the training of a mass of enlisted men so that at a given moment their energy and intelligence can be concentrated to overwhelm the enemy. THE ENLISTED MEN ARE THE ARMY. In order to train them to use their strength and minds and wills together, they are united in small groups—companies of Infanty, troops of Cavalry, batteries of Field Artillery, etc., that are commanded by non-commissioned officers, chosen from among their own numbers, and by commissioned officers, selected and educated, usually, elsewhere than among their ranks.

The functions of the non-commissioned officer are mainly executive. He remains throughout his military life an enlisted man, except in those instances where, by his conspicuous merit, he is promoted to a commission. His education and training are limited to that necessary to carry out intelligently the orders of his officers, and to control the few men placed in his charge. As a rule, his term of service is a brief one.

The commissioned officer, on the contrary, must prepare himself to fulfill every function of peace and war. In the ordinary course of his daily duties, he must combine professional, commercial and mechanical talents. He must instruct

officers and enlisted men, both theoretically and practically, in their duties. He must be an engineer of a sort, a machinist, an electrician, a telegrapher. He must know how to instruct in the care, preparation, and preservation of foods. His knowledge of horses must be more than amateurish. He must possess a practical knowledge of sanitary science. He should be a good topographer and should possess an intimate knowledge of the scheme of nature and be able to traverse unknown country by day or night, without losing his direction, or overlooking, or failing rightly to interpret the signs of travel. He frequently must perform services both executive and judicial. In time of war, or other great disturbance, when the ordinary functions of government are suspended, he must be able to step in and administer the civil affairs of his own or an alien people, justly, honestly, and intelligently.

In all of these varied duties he must, for the honor of his profession, be a gentleman: a man distinguished for fine sense of honor, strict regard for his obligations, and consideration for the rights and feelings of others.

The officer serves a long probation as a lieutenant, and another long period as a company commander. As a field officer—major, lieutenant-colonel, and colonel—he is removed from immediate contact with the enlisted men, and usually issues his orders to officers only.

From the field officers the general officers are usually chosen. They are still farther removed from the rank and file, and they deal, through their staff officers, only with the colonels of regiments, or commanders of brigades, divisions, or field armies.

It is, therefore, to be seen that it is upon the officers and non-commissioned officers of the company that the real responsibility for the merit of the army rests. Their work is planned for them, and they are held to it, by the officers in higher grades, but it is only when they themselves are well equipped, industrious, and loyal that their men are well trained.

Equally important, in a very different way, to the efficiency of the army are the officers of the staff corps and departments.

It is their function to see to the organization and administration of the army, and that food, clothing, arms, ammunition, and transportation are at hand and available at the proper times for the use of the enlisted men, in order that they may confront the enemy, vigorous and well prepared, in every way, for the work before them.

An army properly composed includes in its organization all the elements necessary for its defense, offense, transportation, and maintenance: infantry, cavalry, field artillery of all sorts, engineers, signal corps, field and base hospitals, bridge trains, rail, water, wagon, and pack transportation, ammunition and supply trains. Stores of all sorts must be collected at depots convenient of access to the army, yet sufficiently remote from the actual scene of hostilities, or strongly enough defended, to be guarded against attack by any force less strong than the mass of the enemy's army itself. These depots are called bases of supply.

The directing head of the armies and the chiefs of the various corps and departments that have to do with the organizing, administering, and supplying of the forces in the field, are located at the capital of the nation. These departments, in time of peace, besides administering the affairs of the army, lay plans and provide methods to meet the contingencies of hostile movements on the part of any nation. Combined, they form the War Department, whose head in the United States, the President, ex-officio the Commander-in-Chief, directs and governs through the Secretary of War and the Chief of Staff.

When officers receive and accept their commissions in the Army, or non-commissioned officers their warrants, they are obligated to obey faithfully all lawful orders of their superiors. At the same time all persons in their commands are warned that they must be obeyed. The private soldier subscribes to a similar oath on his enlistment that he will serve honestly and faithfully the United States of America, and will obey the orders of the officers appointed over him.

The first lesson to be learned by any military person is that of obedience to legitimate authority. Not obedience because the thing ordered agrees with his views of what is correct, but be-

cause it is ordered. This is discipline. No permanent system of discipline can be built up, however, that is not based upon a proper use of authority. An officer who is capricious, or unreasonable, or unjust, cannot maintain it.

The art of making war has kept pace with the progress of civilization since the earliest times, but as regards the necessity for obedience to military superiors, and its battle value, the lesson was learned centuries ago. Discipline is not solely the product of a system of rules for the government of soldiers; it is not necessary merely to control them, but also to instill into them the instinct of obedience so that an order received is executed at once, unhesitatingly, without pausing to reason out its propriety or its necessity.

Why is discipline, of the sort striven for in military training, necessary? To understand the reason you must consider the purpose of military establishments. Armies and navies are to preserve peace in the world. They do this by making war terrible. The results of battles are obtained by killing and disabling men. The fear of death is the most demoralizing influence men can be subjected to, and yet, in battle, soldiers must face death, and overcome its fear. Discipline is the only means that has been discovered by which this fear can be neutralized.

The uninformed often wonder why the officer is placed in his unique position; why soldiers must rise in his presence, and salute him; why so much formality in their relations, one with another. It is difficult to explain, and yet there are many reasons. Soldiers are usually young men, fresh from the restraints and refining influences of home. Grouped together in barracks, or in camp, deprived of those familiar restraining influences, the ethical reasons for being good are not sufficient to make young men subordinate, orderly, industrious. A positive restraining influence must be felt, or the military group becomes a mob. This is found in the officer. He it is who keeps them at work, who preserves order by punishing disorder, impartially and severely.

The men look to their officers for all material necessities—food, shelter, clothing. The officers must know the wants of their men and anticipate them. The officer represents authority,

the men, obedience. It is for this that the Articles of War prescribe that any soldier who behaves himself with disrespect towards his officers shall be punished. However, an officer who is capricious, or unreasonable, or unjust, can command only the husk of respect; he will fail utterly to enforce discipline.

A soldier should be made to understand that when he rises in the presence of an officer, when he salutes him, while he stands at attention while addressing him, that it is to the office he is paying respect, not to the individual man.

An English officer aptly defines discipline to be "that long continued habit by which the very muscles of the soldier instinctively obey the word of command, so that under whatever stress of circumstances, danger, and death, he hears that word of command, even if his mind be too confused and astounded to attend, yet his muscles will obey."*

There is no example of a successful general of the first rank in the world's modern history who was not a good disciplinarian.

In the character of an officer no quality is so important as loyalty. Without it he loses both the respect of his superiors and the confidence of his inferiors. Loyalty to the trust imposed upon him by his superiors and equal loyalty to support his subordinates while they are carrying out his orders are demanded of the officer who would be successful.

Loyalty and discipline go hand in hand, and are the paramount military qualities. Without them, genius, high courage, ability to seize quickly and to take full advantage of opportunities, and thorough knowledge of the art of war, avail nothing in the career of an officer. Absolute loyalty and sympathy should be given to the company commander and to the commanding officer. It is rarely that their efforts are not honest and well directed and their intentions for the good of the service and in the interest of the Government. In active field service, not one officer in one hundred can succeed without the loyal and sympathetic support of his subordinates. There will come a time in the career of every officer when the exact importance of this statement will be appreciated: that is when he himself becomes a commanding

* From Discipline, by Lieut. Stewart Murray, 1st Battalion Gordon Highlanders, British Army.

officer. Loyal and sympathetic support should always be given by subordinates to those in authority, so that when the time comes for the subordinate to become the commander he can demand the same of his own subordinates, strengthening his demand by his own example.

Discipline must be acquired; loyalty is an inherent quality. That tendency that leads an officer to disregard the orders of his superiors in minor matters, and to undermine his superior's authority by innuendo or disrespect, renders him an unsuitable person to command others. Such a quality in any person is disloyalty. It presents many aspects in different natures. In one it will be manifested by a grudging, sullen unwillingness to perform his ordinary duties. Nothing that he does is done cheerfully. He surrounds himself with an atmosphere of discontent and dissatisfaction. Instead of doing things, he seeks excuses for not doing them. Another will display his disloyalty by open neglect of his duties, doing only so much as he is compelled to do, and so will instill a spirit of worthlessness and neglect into the command. Another will be defiant of authority, disobeying his superiors openly before his men. They take their cue from him, and are themselves defiant of him and of his authority.

Officers who are disloyal subalterns seldom make efficient commanders. That flaw of character that leads them to disobey or to give grudging service while in unimportant stations will, in after life, prevent them from taking full advantage of great crises. On the other hand, the officer or soldier who gives prompt, faithful, and enthusiastic service in all his duties, however small and unimportant they may be, may be sure that he will be sought to fill spheres of wider usefulness, up to the very limit of his powers.

From the moment an officer enters the service of the United States, his career is carefully and constantly watched. His manner of performing his duties, his abilities in special fields of work, his personal habits, are frequently reported on by his commanding officers. These reports are kept and consolidated in the War Department, and constitute what is termed the record of the

officer. It is in the highest degree important to his career that this record should show him to be industrious, loyal, and faithful.

War is an abnormal situation. It is only through the arts of peace that nations are built up, but, to preserve that peace, armies are as necessary to nations as strength of character and courage to resent injury are to individuals to protect them from oppression at the hands of aggressive neighbors.

A good army commands respect and insures fair treatment for the nation possessing it. For this reason it is essential that the officers of any military establishment use every effort to keep in the highest state of efficiency the troops and material upon which the dignity and peace of the nation rest.

Not only are the officers of the army responsible for the instruction of the men of their command, but they are equally responsible for their health and comfort. Food must be of a suitable quality and well prepared. Camps and barracks must be kept in a sanitary condition. To keep them so, cleanliness must be enforced among the enlisted men as to their persons, clothing, and quarters. In barracks, care must be taken as to their heating and ventilation, the distribution of the men in the squad-rooms without overcrowding, the handling of the company kitchens, the proper disposition of slops and refuse, the cleanliness of water-closets and bathrooms.

In camp, the selection of the sites, their proper drainage, the location of kitchens and sinks, and their proper care, are sanitary points of even greater importance than in barracks. All of these duties are but few of the many which must be supervised by the company officers, and their details must be learned largely by experience. In times of peace, with trained non-commissioned officers in charge, with the food supply bountiful, of good quality and never-failing, with clothing and equipment ample for every need, the performance of these duties becomes largely automatic, and the serious problem of supplying men in the field under war conditions and of keeping them in vigorous health is apt to be lost sight of.

The heavy loss from camp diseases at the outbreak of all our wars was largely the result of the ignorance of the officers who

were suddenly called from civil pursuits to take up the grave responsibilities attached to the care and command of men new to military life.

To lose men in battle is necessary and expected; to lose them of disease, in large numbers, is due, in the vast majority of cases, to preventable causes. Discipline, sanitation, and good food are the preventives of disease. It is the duty of every officer, paramount to everything else, to learn how to enforce discipline among his men, how to secure sanitary surroundings, and how properly to prepare food for troops in the field.

Milton says: "I call a complete and generous education one which fits a man to perform, justly, skilfully, and magnanimously, all the offices, both public and private, of peace and war." This is the education that the army officer should aim for; not for selfish reasons, but in order that he may reflect credit on that profession which has for its object the preservation of the nation's dignity, honor, and very existence.

In preparing himself for a military career, every young man should bear in mind, and strive to fulfill as his ideal, Alexander Hamilton's definition of a perfect officer: "He who combines the genius of the general with the patient endurance, both mental and physical, of the private; who inspires confidence in himself and in all under him; who is at all times the gentleman, courteous alike to inferior, equal, and superior; who is strong and firm in discipline, without arrogance or harshness, and never familiar towards subordinate, but to all is the soul of courtesy, kind, considerate and just."

During peace the military forces of most nations are maintained on a peace footing, with numbers greatly smaller than is contemplated for a war footing. Troops are scattered widely over the country in large or small garrisons, while the reserves necessary to place the various units on a war footing are at their homes, engaged in peaceful pursuits. At the outbreak of hostilities these scattered garrisons are assembled, the reserves are called out, equipped and organized, and recruits are enlisted and instructed.

At the outbreak of hostilities between two nations, troops are hastened towards some vulnerable frontier by both parties to the quarrel. This process of collecting and organizing the tactical units of large armies is called mobilizing. When the mobilization is completed, the armies are concentrated at suitable points and moved towards their objective. This is usually the army of the enemy.

For the present we will not concern ourselves with the functions of an army as a mass, its maintenance and transportation, or the methods to be used to maneuver it in the presence of the enemy. It is enough at this stage of the student's training to know that an army is a vast, complicated structure, slow-moving, enormously costly to keep in the field, and absolutely dependent upon an uninterrupted supply of food for men and animals, and a constant flow of recruits and remounts to fill the places made vacant by casualties.

The mass of the army, with its line of communications, is protected by groups of men that screen its operations from observation by small parties of the enemy, and give warning of the approach of his larger forces. Other men go beyond these groups to observe the enemy as far as possible, and to report on his strength, the disposition of his forces, his movements, and his probable intentions.

Men engaged in the former duties, the service of security, are called advance, rear, or flank guards, when on the march—outposts, when in camp. Those engaged in the latter duties, the service of information, are known as spies, scouts, or patrols.

Until the enemy's army is encountered, the two services are more or less distinct; when it is met, the scouts and patrols merge with the guards or outposts, and their duties are, where contact is maintained, identical. Then, as the masses of the armies approach more nearly, the screening groups of men on both sides merge with the lines of battle, and the struggle for the mastery goes on until one side gives way. In its withdrawal, unless the defeat is overwhelming, the defeated army immediately covers its movements and hides its condition behind its rear guard. Scouts and patrols are sent out as before, to feel for the enemy, and to report his movements and probable plans. The armies are rested,

recuperated, and strengthened in every possible way, to meet again on another battlefield, where the struggle is repeated.

This process goes on until one or the other, worn out, depleted of men, and exhausted of resources, gives up the struggle, and the war is ended.

All other things being equal, the advantage will lie with that general whose information concerning the enemy's army and the topography and resources of the field of operations, is most complete.

Much of the last named information can be obtained and made available in peace times, but not all of it, by any means. The greater portion of the information concerning the enemy must be obtained on the spot, and the commanding general must depend on the line of his army—especially on his cavalry and infantry—to obtain it.

CHAPTER II.

NOTES ON THE ORGANIZATION OF THE ARMY OF THE UNITED STATES.

During peace the Regular Army of the United States consists of regiments of infantry, regiments of cavalry, regiments of field artillery, companies of coast artillery, and regiments of engineers. These constitute the line of the Army, and form the nucleus of the nation's land forces. To administer the affairs of the line of the Army, to supply it with the necessary equipment, pay, food, clothing, transportation, shelter, and medical attendance, general officers and officers of the staff corps and departments are appointed and maintained.

For purposes of administration and supply, the country, in time of peace, is divided into territorial departments, each in command of a major-general or a brigadier-general. Each department commander has a staff, composed of officers of the administrative departments, who issue his orders to the troops of his command, and who supply them with everything necessary for their efficiency.

The troops, organized into brigades and divisions, are quartered in posts, scattered about the country, and their duties are limited to such as are necessary for their care, maintenance, and training.

The administrative and tactical unit, in time of peace, in the mobile part of the Army, is the regiment of infantry, cavalry, field artillery, and engineers.

The regiment of infantry consists of one headquarters company, one machine gun company, one supply company, and twelve infantry companies. The twelve infantry companies are organized into three battalions of four companies each. The regiment is commanded by a colonel with a lieutenant colonel as second in command.

The headquarters company consists of certain non-commissioned officers who have duties connected with the administration of the headquarters of the regiment, the band, and a detachment

of mounted orderlies. It is commanded by a captain (mounted) who is also adjutant of the regiment. He has charge of the records of the regiment, and is the person through whom the colonel communicates his orders.

The supply company has two officers, a captain (mounted) in command, assisted by a second lieutenant (mounted). Belonging to it are the non-commissioned officers, saddler, horseshoer, and wagoners whose duties are concerned with the supply of the regiment with clothing, equipment, armament, shelter and food.

The machine gun company is charged with the care and service of the machine guns belonging to the regiment. Its personnel consists of one captain in command, assisted by one first lieutenant and two second lieutenants, all mounted, and fifty-three enlisted men. In time of war or other necessity, this number may be increased by order of the President by twenty-one enlisted men.

The infantry battalion has four companies. It is commanded by a major who has a first lieutenant (mounted) as a battalion adjutant. The major's functions are purely executive. He sees that the orders of the colonel are carried out, superintends the instruction of the companies of his battalion, and is generally responsible for the tactical efficiency of his command.

The infantry company has three commissioned officers; a captain in command, assisted by one first lieutenant and one second lieutenant. Its enlisted personnel consists of one hundred men, which number may, in time of war or other necessity, be increased, by order of the President of the United States, by fifty men.

A regiment of cavalry has practically the same organization as a regiment of infantry, except that the companies are called troops and the battalions squadrons. The enlisted personnel of a troop consists of seventy men, which number may, in time of war or other necessity, be increased by order of the President by thirty-five men.

The field artillery of the regular army includes mountain artillery, light artillery, horse artillery, and heavy artillery (field and siege types); and consists of one hundred and twenty-six gun or howitzer batteries organized into twenty-one regiments.

A regiment of field artillery is commanded by a colonel, with a lieutenant colonel as second in command. It has a headquarters and supply company, organized for the fulfillment of the same functions as the corresponding companies of an infantry regiment. It consists of such number of battalions as may be prescribed by the President; generally two or three. The battalion consists of two or three batteries as may be prescribed by the War Department, depending upon the kind of guns and nature and requirements of the service. The battery of field artillery corresponds to the company of infantry. Each gun or howitzer battery has five commissioned officers; a captain in command, assisted by two first lieutenants and two second lieutenants. Its enlisted personnel consists normally of one hundred and twenty-six enlisted men. This number may be varied somewhat to obtain necessary packers in the mountain artillery, and is increased by sixty-four in time of war or other necessity, when so directed by the President. Each battery has four guns. The light and horse batteries have guns of three-inch calibre. The cannoneers of light batteries are mounted on the carriages. The cannoneers of horse batteries are mounted on horses. Horse batteries, on account of their greater mobility, are designed especially to accompany cavalry commands. Mountain batteries have lighter guns that can readily be taken apart. They are carried on pack mules. The cannoneers usually march on foot. Mountain artillery is for use in rough country, where the lack of roads prevents the use of other artillery. The heavy artillery consists of guns of a larger calibre, and which throw a heavier projectile. They are, on account of their weight and size more dependent upon good roads and good means of transportation, and consequently lack the mobility of the other types mentioned.

The regiment of engineers consists of two battalions of three companies each. Otherwise its organization with that of the battalions and companies is quite similar to that of the corresponding units of infantry. There are also in our regular army two mounted battalions of engineers, consisting of three companies each.

Those functions of a commander that relate to the instruction of his command, and to its control in maneuver and in

battle, are termed tactical. An administrative unit, as distinguished from a tactical unit, is one that contains among its members, officers authorized to perform all necessary governmental acts—one that is, under the authority of the next higher administrative commander, self-supporting and self-governing.

The Field Service Regulations (1914) for the United States Army provide that "the company and regiment are both administrative and tactical units; the battalion and brigade are, as a rule, tactical only. The division is the great administrative and tactical unit, and forms the basis for army organization."

An infantry brigade normally consists of its headquarters and three regiments of infantry.

A cavalry brigade normally consists of its headquarters and three regiments of cavalry. A field artilley brigade normally consists of its headquarters and three regiments of field artillery. A brigade is the appropriate command of a brigadier general.

An infantry division normally consists of its headquarters, three infantry brigades, one regiment of cavalry, one field artillery brigade, one regiment of engineers, certain signal troops including an areo squadron, and its trains. A cavalry division normally consists of its headquarters, three cavalry brigades, one regiment of field artillery (horse), one battalion of mounted engineers, certain signal troops including an areo squadron, and its trains. A division is the appropriate command of a major general.

A still larger unit is the army corps, which normally consists of its headquarters, two or more infantry divisions, one or more cavalry brigades or a cavalry division, one field artillery brigade, certain signal troops, and its trains.

When army corps and separate divisions and brigades not organized into army corps are grouped together under one command such a unit is called a field army or an army. The President may, in his discretion, increase or decrease the num-

ber of organizations for the typical brigades, divisions, and army corps.

An infantry division, consisting in round numbers of twenty to twenty-five thousand men, marching on a single road, without allowing for elongation due to imperfect marching, and including its combat trains,* occupies in road space over ten miles. With its field trains† added, it will occupy about twelve miles.

---

* Combat trains are composed of those wagons, or other vehicles, used for carrying the extra ammunition and entrenching tools that would be needed at once, in the event of battle. They are usually assigned to battalions, or squadrons, and at all times march as near the organizations to which they are assigned as circumstances will permit.

† The field train includes the wagons, etc., that carry the rest of the stores and material necessary for the well being of the command. The field train is assembled, usually as a unit, and marches where it will be best protected and, at the same time, where it will be available when the command goes into camp or bivouac. The stores it carries are not, usually, needed in battle.

CHAPTER III.

MAP READING.

"Map reading is the ability to grasp by careful study not only the general features of the map, but to form a clear conception or mental picture of the appearance of the ground represented."—Sherrill, Military Topography, Page 2.

From the time an army enters the scene of active operations, part of its strength must be devoted to getting information of the enemy, and of the country in which operations are expected to take place. Beginning at the same time, and inseparably connected with this work, is that of preventing the enemy, as far as possible, from getting similar information, and of guarding against surprise by his forces. These objects are accomplished by the use of spies, scouts, patrols, and covering detachments of various kinds: advance, rear, and flank guards, and outposts, the special duties and functions of which are to be hereinafter explained.

Reconnoissance by areoplane and dirigible balloon has practically replaced distant terrestrial reconnoissance. It cannot replace close reconnaissance. Since there are many occasions when aerial reconnoissance cannot be made—at night, in fog, and during storms—men must still be trained for distant reconnoissance, to supplement or replace aero scouts, The subject of aerial reconnoissance will not be considered in this book.

The commander of an army should have in his possession, before beginning an active campaign, a mass of information in regard to the enemy, and the territory the army proposes to invade. The greater part of this information will be in the form of maps, showing in a general way the geography and topography of the country, where the routes of travel are located, where natural difficulties will assist the enemy, and where they can be used to his disadvantage. Information is also secured and tabulated showing the natural resources, climate, etc., of the country. The maps will necessarily be on a compartively small scale, and, while sufficient to be used as

guides for the movements of large forces, will fail utterly to show the smaller topographical features that are necessary to be known for the proper placing troops in battle formation.

This latter information, and that concerning the strength, dispositions, and movements of the enemy in the field, must be obtained on the spot.

To secure this information, and at the same time to provide for the security of the army from day to day, the greatest use is made of the maps already on hand. These, made by expert surveyors with accurate instruments, form the basis for special maps, useful only for immediate military use. The men who make these special maps are the scouts, or members of the patrols and guards referred to above—officers, non-commissioned officers, and, in some cases, privates, of the army itself. It is therefore necessary that all men liable to be selected for such duties should understand what maps are, and how they are to be used.

In general, a map is a proportionally correct representation of some part of the earth's surface. Maps are of many kinds, and show varying features, depending upon the purposes for which each was made. A map for military purposes shows features of military importance: roads, mountains, hills, valleys, streams and other bodies of water, woods, houses, bridges, etc. Nearly all maps have some military value, but those that are the most useful in the field are military topographical maps, maps that are specially made to show things of military importance.

The civil maps that we ordinarily find lack much of the information necessary to a good military map. It will be found, however, that they frequently indicate roads, villages, woods, important streams, etc., and in the field may be used to obtain a general idea of the country, thus making an invaluable aid in the construction of purely military maps.

In the pocket on the back cover of this book will be found four maps. These maps are named, respectively, Guide Map, Strategic Map, Topographical Map, and War Game Map.

Refer now to the Guide Map. It is known to be thirty miles, on the ground, in a straight line, from Middletown to Hanover (near the center of the map). The line connecting these towns on the map is three inches long, and, since all the places on a correctly made map are shown in their relative positions, we know that a line three inches long, drawn anywhere on the map, will represent thirty miles on the ground, and from this, that one inch on the map represents ten miles on the ground. **This definite relation between distances on the ground and corresponding distances on the map is called the scale of the map.**

At the bottom of the map we are discussing you will see: 1 inch=10 miles. That is one way of expressing the scale. Another way is shown directly below it, where a line is divided into equal subdivisions in both directions from a point marked 0. This scale shows **graphically** map distances in miles, and is called a **graphic** scale. Its use is apparent.

A third scale, called the **fractional** scale, is sometimes used. We find one on the Strategic Map: $^1/_{62500}$. This scale means that any distance on the ground is 62500 times as long as the corresponding ditsance on the map. The fractional scale is of use only in reading maps of foreign countries where the measures of length, that the person reading the map is accustomed to, are not used. It bears the same relation to the graphic scale that the Latin name of a plant or animal bears to its name in the vernacular of the place where it is found. In the case of the Strategic Map, an American or an Englishman reading it would say: "One inch on this map is equal to 62500 inches on the ground; that is (since there are 63360 inches in a mile) one inch is nearly equal to one mile. It will do to call the scale one inch is equal to one mile for my purposes." A Frenchman would say: "One centimeter on this map is equal to 62500 centimers on the ground," and, unless he were accustomed to thinking of distances in miles, he would probably have to construct a graphic scale reading meters and kilometers, bearing this relation, before he could use the map readily. It is only for such purposes that the fractional scale,

or representative fraction—abbreviated usually to R. F.—is put on a map. The graphic scale is the useful one.*

Another essential to the proper understanding of a map is a line of known direction with reference to which other directions may be detemined. This is often provided for, in the construction of a map, by drawing a north-and-south line on it, the north end of its being indicated by an arrowhead and the letter N.

Frequently, especially on the maps of the Geological Survey, a diagram will be drawn, near the scale, as in the Strategic and Topographical Maps, showing difference between the true, or astronomical, north-and-south line, and the line marked by the magnetic needle. This has a wide divergence in the United States. In the vicinity of Boston the needle points about 12½ degrees west of the true meridian, while at Portland, Oregon, the variation is about 19½ degrees east. It is important, for military purposes, that this variation (known as the declination of the magnetic needle) be known for the locality where operations are being conducted.

It is a recognized convention that the top of the map is north, unless otherwise specified, and in maps intended for purely non-military purposes the north point is seldom indicated. The sides of the map, in such cases, are recognized north-and-south lines, and, if the magnetic north is not shown, the variation is so slight as to be negligible.

Certain signs are ordered used on maps, by the War Department, to represent, arbitrarily, natural and artificial features of the landscape. As a rule these signs are the same as those used by the map makers of all civilized countries. They are known as **conventional signs.**

---

* This is all the student needs to know of scales to work the problems on the maps that accompany this book. If he wishes to investigate this important subject farther, he should consult Sherrill's Military Topography, pages 3 to 20, inclusive, or any other standard text book on the subject.

Instructors should require students to measure distances on the various maps herewith until certain that they understand the use of the graphic scale thoroughly.

The Guide Map, herewith, should be very easily read by everyone. It resembles in all respects the ordinary black and white maps with which all are familiar.

The Strategic Map shows a few departures. Roads, that on the Guide Map were represented by single, smoothly drawn lines, are here represented by parallel lines. Two classes of roads are recognized in this map: the better class of public roads by solid lines, and the poorer public roads and private roads by broken lines. Streams are colored blue.

Going next to the Topographical Map we find a number of new signs. Here the character of the crops grown on cultivated areas is shown, but only enough to tell the reader whether or not the crop will furnish cover for troops. Small grains—oats, barley, wheat, and the like—that give no cover for horses or men standing, are shown by rows or double dots. Corn, that in certain seasons does give cover, is represented by the convention surrounding the words BERLIN JUNC. in the southeast corner of the Topographical Map. Grass, or pasture land, is shown in white. Orchards are shown by drawing the tree convention regularly spaced, as shown just east of Brush Run, near the center of the south edges of the Topographical Map. Roads are colored yellow and streams blue.

Woods that have been cleared of their underbrush are shown by the convention just west of the words BERLIN JUNC. If the woods have not been so cleared it is indicated as shown 1½ inches north of the word BERLIN.

Land forms are shown by the smoothly curved lines that cover the entire map. Here we touch upon the most important feature of a military map, and the only one that presents any difficulty to the student.

An observer, looking at an unfamiliar stretch of country, is limited in his knowledge of it to what he can see. His field of view is interrupted by hills, woods, buildings. He can judge the distances separating any two spots on the landscape only very approximately. He can, if no enemy is there to prevent and he has the time, ride or walk over the country,

and so learn its configuration, and correct his estimate of the distances. In time of war, however, the part of the country he is most anxious to know about is the part occupied by the enemy, and to learn anything about this by inspection is attended by difficulty and danger.

The observer without a map is limited to the small area he can see, or to his memory of places where he has been, while by the use of the map, if by study and practice he has become proficient in an understanding of what is represented by it, he can comprehend a much larger territory than he can see, and where he has never been. If the map has been properly made for military purposes he can know absolutely the relative positions of objects of importance too far apart to be comprehended by a personal inspection; he can get an idea of the means of communication; he can determine elevations and depressions, and can select, mentally, possible positions of military value. In general, he is able to learn much of the country he is working in from the map, while in a secure place. He can get a mental picture of the roads and trails, the hills and valleys, the inaccessible places, where to post his own troops, where to prevent the enemy from posting his. He can select those spots, on the map, that are probably the best to observe the working out of his plans, or to verify the estimate he has made of their military value, and then, with the map as a guide, he can go to those places, unerringly, although he may never have seen them.

It is not on level plains that the battles of the future will be fought, but in rough places, where, under cover of the woods and hills and folds in the ground, bodies of troops and individuals may move, out of sight of the enemy, protected both from his view and from his fire. Advantage may be taken of commanding positions to deliver an effective fire against the enemy, and at the same time, to enjoy protection from his fire. The steepness and length of the hills, as well as the general direction of the slopes on the roads, have an important bearing on the rate of progress that an army can make in maching, and they may prevent altogether the passage

over them of gun carriages and heavily loaded wagons. Hence the paramount importance of representing clearly all irregularities of the ground in military maps.

This is accomplished by the use of contours, the series of smoothly curving lines covering the Strategic and Topographical Maps that accompany this book.

To appreciate the contour idea of representing variations in the surface of the ground, conceive an island thirty-five feet high, rising from the ocean. The surface of the ocean is the level from which all land heights are measured, because the sea level, except for tidal variations that are thoroughly understood, is invariable. The contours indicate those points that are at equal heights above the ocean.

Our island, as it appears at the average sea level, might be drawn as follows:

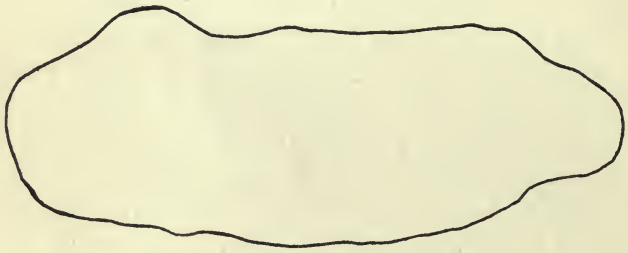


Fig 1.

It has been said that this line represents an island, but there is nothing yet to show it in the map itself. Since it is assumed that the line represents the outline of an island, it simply indicates the division between land and water at the average sea level; it does not indicate any height at all. Inside the line is land; outside is water. Nothing more is expressed by this line.

If all points on the island that are exactly ten feet above the water were connected by a line, its representation on the map would be as shown in Fig. 2.

The shape of the island now begins to show. At A it is a very short distance, relatively, between the mean water

mark and the ten-foot line; the land rises abruptly, while at B it is much farther between the lines, there the rise is much more gentle.

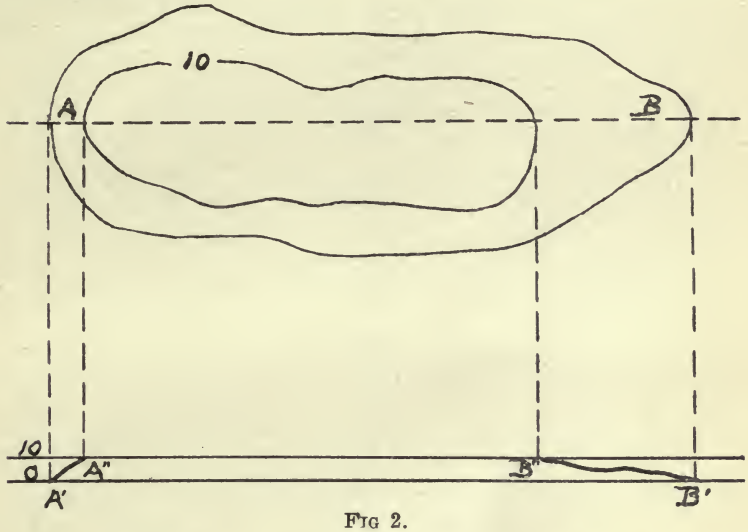


FIG 2.

To show this graphically, draw a horizontal line, 0, to represent the water level. Above it a parallel line, 10, represents the ten-foot level. Dropping dotted lines perpendicularly from each contour near A and B, and stopping the dotted line from the 10-foot contour at the upper horizontal line, and the one from the sea level contour at the lower one, and connecting the points where they intersect by the lines A' A" and B' B", these last lines will show the relative slope of the ground at A and B.

All that is known of the shape of the island is that everything within the line marked 10 is more than ten feet above the sea, because all points that were just ten feet above it were connected by that line. It is also known that everything between the two lines is land, at the mean tide, and is less than ten feet above the water.

A third contour, marking all points twenty feet above the water shows still more about the shape of the island. Treating

the added contour as we did the first one, we see that the gentle slope is still maintained at B, and the abrupt slope at A.

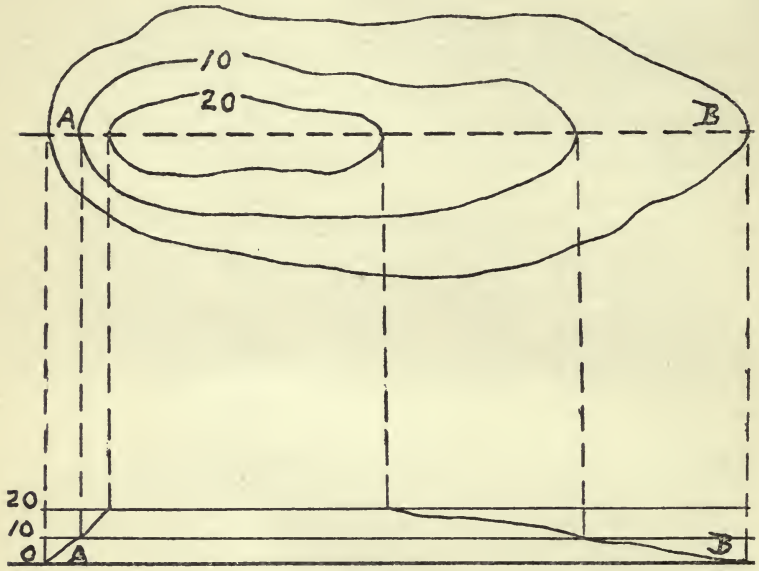


Fig 3.

A fourth contour shows the points that are thirty feet above the water, and, if there are no more contours, locates the highest part of the island within that contour, and limits it to between thirty and forty feet above the water.

Continuing the processes begun in Figs. 2 and 3, we have Fig. 4.

The heavy line, uniting the intersections of the horizontal and vertical lines is called a profile. The vertical height assumed to separate the contours is called the vertical, or contour, interval.

At the bottom of the Strategic Map we find, under the graphic scale of miles: "Contour interval 20 feet." That means that for that map the contours represents levels separated vertically by twenty feet. Beneath, again, is found: "Datum is mean sea level," meaning that the elevations marked on the map show vertical heights, in feet, above the sea. Not all the contours are numbered. The hundred-foot contours, on this map, are drawn

with heavier lines than the others, and their elevations are given in figures, in gaps in the contours.

In the Topographic Map the contour interval is 5 feet, and every fourth contour is drawn heavier than the others, and is numbered. At most of the road intersections numbers will also

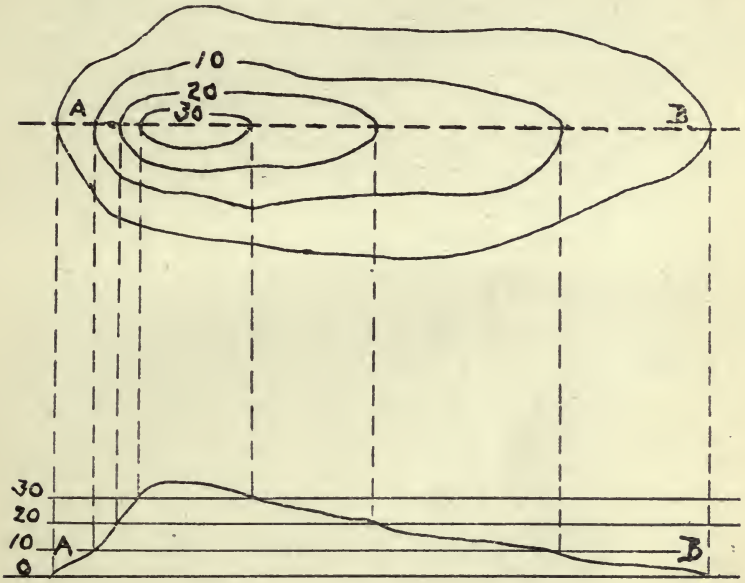


FIG 4.

be found. These serve a double purpose; they not only give the student the elevation of the marked spot, but they serve to identify it on the map. For instance, the road from New Oxford to Newchester (3½ miles northwest from New Oxford), would be described as the road New Oxford—491—494—520—480—Newchester.

To determine in a general way what points are visible from any point on a contoured map, it is necessary to get the elevation of the point in question and then to search for higher points that will cut out all view in any direction, or for less elevated points that will hide places still lower. In order to do that easily, the student must practice reading contours, at first by making pro-

files. Soon he will become sufficiently familiar with them to render the making of profiles unnecessary.

In the appendix to this book you will find a number of sheets of paper ruled in squares. The heavier lined squares are one inch on a side; the lighter ones, one-eighth of an inch on a side. This paper is called profile paper.

Its use is as follows: You wish to draw a profile along the line AB in the little map, Fig. 5.

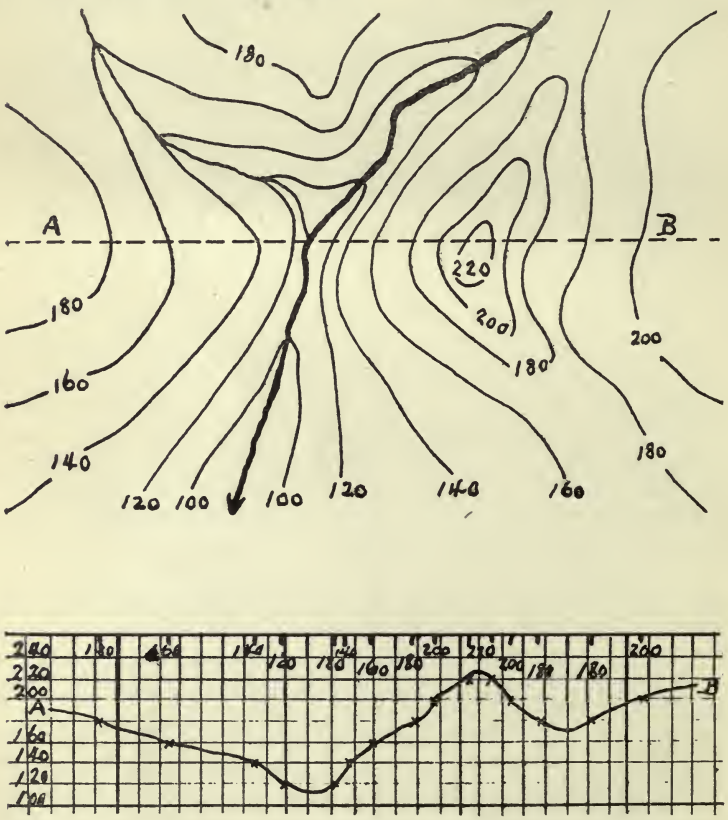


Fig 5.

Tear out a sheet of profile paper, and then lay its edge along the line AB, and check off the places, on the profile paper, where the contour lines intersect its edge. Write the number of each

contour crossed below the check mark. By inspection it is seen that the highest contour is 220, the lowest 120. Now mark your vertical scale to the left, on the profile paper, as indicated.

Beginning at the right of the profile paper it is seen that the first contour—200—is checked off between the fourth and fifth vertical lines from the right edge of the paper. Directly under this check mark, and on the line marked 200 in the vertical scale to the left, make a cross.

In the second space to the left is the check indicating where the 180 contour was cut by the edge of the profile paper. Make a cross directly under this check mark on the 180 line. This line is not marked on the vertical scale, in Figure 5, because the letter A happened to fall in the spot where it normally would be placed. So it was omitted to avoid confusion.

The next check is also marked 180. Its cross is on the same horizontal line as the last one. Crosses made on the proper horizontal lines, directly under all the other check marks, will indicate the intersections of the horizontal planes of the contours, with the vertical plane of the profile. By connecting these crosses with the smoothly curving line, A B, the general slope of the surface along the line A B is approximated. This line is called a profile.

In making profiles it is customary to regard the ground as sloping uniformly between the contours—a condition that rarely exists. When, as happens between the second and third contours from the right, and again when the fifth—220—contour from the right is twice crossed by the line A B, the depth or height of the slope between the contours can only be estimated.

The top of the little hill between B and the river is more than 220 and less than 240, and is the highest point on the profile. The intersection with the river is the lowest point, and it is more than 100, because that contour crosses the stream lower down in its course.

To distinguish between a hill and a valley, when the valley is not marked by a water course, it should be remembered that both are marked by a concavity in the contours, but that the contours of a watercourse are generally the more pointed. The apex

of a contour that points towards a lower contour, points down hill. One pointing towards a higher contour, points up hill. For example:

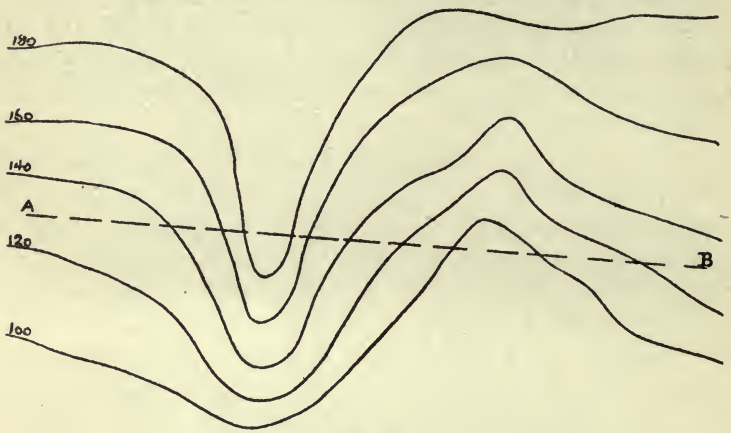


Fig 6.

The sharper curves to the left point down hill; those to the right, up hill. The formation to the left is called a nose.

If the contour numbers were omitted the contours would be meaningless.

A profile on AB would show:

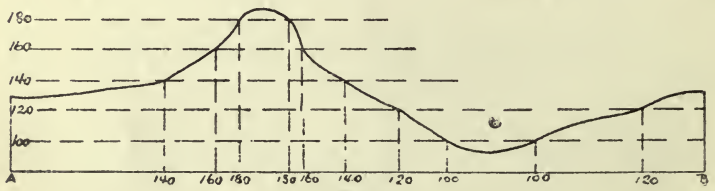


Fig 7.

A level plain is marked by an absence of contours, or by wide spaces between them.

Open your topographical map. You will find the village of Hampton straggling along a slanting crossroad in the northeast corner of the map. I am going to describe the country visible

from the road between Hampton and Newchester, nearly three miles to the southwest.

The village is near the crest of a little ridge that falls away, gradually, towards the south. To the north, a hundred yards or so, is a small cemetery, and beyond it, an orchard. West of these the ground slopes to the westward, cultivated fields, small grain first, then corn. As you leave the village you see, 250 yards to the right, a little grove, and, beyond it, 500 yards away, a much larger one; both are clear of underbrush. To the left the land is cultivated: first, small grain, as far as Stevens' private road, then corn to the bend in the road. A little valley is in front of you, with a brook in it. The road drops 25 feet from the last houses in the village to the brook. A road leads off to the right, in front of Stevens' house. A farm house, with a little orchard by it, is a hundred yards from the corner, on the west side of this road, between it and the brook. As you stand at the corner you can see the road sloping gradually down, four or five feet, to the brook, then, rising abruptly thirty feet, it bends to the right around the corner of the woods and disappears from view.

You go on, cross the brook, and go up a slight rise, between corn fields enclosed in wire fences, to the bend of the road, where you stop. A little grove, with underbrush, is up the little valley to your right, four hundred yards away. If the trees in the extreme right edge of this grove, as you face it, are less than thirty feet high you will see the little nose the road leading northwest from Stevens' is on, see the road between the pasture and the woods, see the two barns, and the farm house beyond them, and, if you can see between the buildings, two miles to the north you can see about forty feet of the top of Round Hill. Four hundred yards to the southeast is a large pasture, or meadow, with a stream bordered with trees running through it. Eight hundred yards to the south is a long strip of timber that hides everything to the south for several miles. To the right front is a little valley, trees along a stream at the bottom of it. Looking up the ridge, to the northwest, is a clear vista for about 1200 yards. The barn across the road just north of the 580 contour stands out on the sky line, and, a little to the west of it, the tops of the

farm buildings and the trees of the orchard may be seen above the horizon.

Going on, there is a slight drop, to the little brook, across that there is a pasture to the left, small grain to the right. In the pasture is a little thicket—trees with underbrush—and beyond the grain field is an open grove, then a barn, behind it an orchard, and a farm house further on, by another little brook. Then a corn field to the right, small grain to the left as the road climbs a steep little hill, thirty feet high, with a cut at the top.

Note that the sign for a cut is made by drawing teeth projecting towards the road from a line drawn parallel to it, while a fill (see along the railroad northwest of Berlin Junction, in the southeast corner of the map) is made by drawing the teeth projecting away from the road.* From the cut the road drops down a side hill to the crossroad at Oakwood School House, and from there, for nearly 900 yards, it runs along a ridge, nearly level. Note the contours, numbered alike (520-525) that are nearly parellel to the road, marking the ridge.

At the western end of this level stretch the road turns half right, and goes down a hill, dropping 65 feet in 350 yards—a slope of about one to sixteen, not a very steep slope. The road crosses the river on a bridge with a single span. The river runs between steep, bluffy banks. A dam is just around the bend, to the north, and a sluice carries the water to a mill (probably) near the western end of the bridge. The road rises twenty feet abruptly (on the scale this map is drawn it is difficult to estimate how steep, when contours are as close together as shown at this spot), and then runs along the eastern slope of the little ridge around which the river bends, and, reaching the top, bends along the crest of the ridge to the village of Newchester.

Under the graphic scale of yards on this map is a scale of slopes for 20-foot contours. This is used as follows: Cut out the scale, and paste it on a card, with the horizontal line

---

*** Notice an error in the map. The railroad crosses Brush Run, near the south edge of the map, west of the center, on a fill and bridge. It is carried on grade from the 515 to the 525 contours, west of Brush Run, and then is shown crossing the ridge west of that point to the 535 contour on a fill — a plain absurdity. There must be a cut there, fifteen or twenty feet deep.**

at the edge of the card. Place the scale at right angles to the 20-foot contours—the heavy ones—and slide it along until two adjacent vertical lines of the scale prolong the contour lines. The reading between the lines will tell you the degree of slope at that spot, and, by reference to a table of natural sines, the actual rise per horizontal foot can be got directly.

Consider now the War Game Map, the fourth map in the pocket in the back cover of this book. Its scale is 12 inches to the mile. It is recommended that students make a scale of yards, at the bottom of the map. For your purposes it will be near enough to make your scale 1 inch equals 150 yards. The scale really is 1 inch equals $146^2/_3$ yards.

The vertical interval is 5 feet, and the 20-foot contours are drawn heavier than the others, as in the Topographical Map.

The highest point—620—is at the southeast corner; the lowest—495—is at the southwest. A ridge runs from the southeast corner to New Oxford.

There is nothing about this map that you should not know from your study of the other maps.

For problems, and for suggestions to instructors, see the Appendix to this book.

CHAPTER IV.

ORIENTATION.

DO NOT GET LOST!

Orientation is the process of determining, in the field, direction or relative position. In a strict sense the word means the determination of the east point, but, used in a military sense, it means the process of keeping track of one's movements so as to keep from getting lost. Technically, orientation means holding a map so that a point thereon is over the corresponding point on the ground, and the lines of the map are parellel to the corresponding lines on the gound.

The fundamental pinciple of the art of scouting is: do not get lost. A scout, a patrol, a raiding party, any body of troops, large or small, sent out with instructions to go to a certain place; or to do a certain thing, must keep constantly oriented with respect to two places: the starting place and the objective. This orientation must be preserved at all times, in daylight or dark, in fair weather or foul, when in the presence of the enemy and when far from him.

The simplest and surest way to keep oriented is by means of a compass and a map. Every officer should invariably have a pocket compass in his possession when campaigning, in peace or in war. He should guard it as carefully as he does his revolver and its ammunition or his watch. Every non-commissioned officer sent on patrol duty, not under an officer, and every scout and the leader of every scouting party should be issued a reliable compass before starting on their duty.

If the leader possesses a good map and compass, he can preserve his orientation perfectly and without any question, provided he uses his map constantly. He should have it folded to convenient size, and should carry it in an outside pocket. When he reaches a point where his knowledge of the country ceases to be of use to him, he looks at his compass, establishes the direction of the magnetic north, opens his map

and refolds it so that the part of it he is to use is in sight, stands so that he is facing the road he proposes first to travel on, and then turns his map, holding it directly in front of the center of his body, so that the magnetic north of the map is towards the north as indicated by his compass.

He then locates his position on the map, looks ahead along the direction his road points, on the map, to see that this direction, prolonged, follows the direction of the real road, looks to the right and left to see if natural or artificial features noted on the map, and within his horizon, are as represented on the map. These points verified, he knows that he is oriented. He goes ahead, sure of himself, holding the map so he can constantly see it, and turned so that the lines indicating the road on the map point towards the road ahead of him. He notes the distances he travels, either by a time scale, by counting telephone poles—about 40 to the mile—or by estimating with the eye. He finally comes to a turn in the road, a crossroad, a bridge, a railway track—anything of importance enough to be noted on his map—where he re-orients himself and resumes his march, sure that he knows where he is, and where he has come from.

To illustrate: A mile and a half due west from New Oxford, on the Topographical Map, in a slanting crossroad, marked 557. A patrol leader is there, with his patrol. The country is strange to him. He is directed to take his patrol, by the road to the northeast, to 491, and thence to Newchester, returning by the School House (S.H.)—530—568. He is given a copy of the map you are looking at. We will leave aside all consideration of his mission, and his method of leading his patrol, and discuss simply the question of his orientation.

He stands in the center of the crossroad, looking up the northeast road. He opens his map, folds it once, backwards, across the middle, from east to west, then, bellows fashion, into four north and south folds. He opens the middle fold, holds it flat in front of him, the top of the map to the north. The road, as marked on the map, towards the northeast, points

along a road down a gentle slope to a bend four or five hundred yards away, where, directly in front of the road, he sees a grove of trees, without any underbrush. A barn is in the angle of the road in front of him, and to his left; a house to his right front. A road leads off to the left, up a slight incline, with a hedge on its left side. Cultivated fields, small grain growing in them, are on both sides of the road in front of him; a wood, with underbrush (note the dotted lines in the tree convention there—that means underbrush; without the dots, you read an open grove), is beyond the fields, to the right, and cuts off his view in that direction. Everything in the landscape tallies with the map. He is oriented.

He goes to the bend of the road, turns the map in his hands to the left as his road turns to the right. A hundred yards or so farther on, the road bends back to the left again, and he turns his map to the right, so that the roads in front of him, on the map and on the ground, both point in the same direction. A little farther on and he is out of the woods. He has a new horizon. He stops, sees the fields of small grain to the right and left; the road bordered with smooth wire fences. (If they had been barbed wire they would have been drawn: —x—x—, whereas they are drawn: —o—o—.) The road goes down a gentle slope. Half way to the railroad the small grain on the right gives way to a pasture; to the left, to a cornfield. Then comes a railroad crossing, where the road, still down hill, bends to the left and is lost behind a little open grove. The railroad is carried for two to three hundred yards on a fill to his left front, and through a cut just to the right of the road in front.

He resumes his march and reaches the T in the road near the foot of the hill. Here, exactly as drawn in the map, he sees a road, little used, leading to the left into the woods. A stream, fringed with trees and underbrush, is in front of him. His own road goes to the right, down a side hill, and he follows it, passing two barns to the right, a house to the left, a canal, a house to the left, across the canal, and then he crosses

the creek on a steel truss bridge, with a single span. He goes on, up a steep little hill, twenty-five feet up, to 491.

This is the process. He may have studied his map very carefully before starting, at 557, memorizing the turns he must take, and then, having returned it to his pocket, he may have trusted to his memory. The latter method is all right, until a mistake is made. Then the magnitude of the consequences of the mistake will depend upon the importance of the mission. Remember this: the scout or patrol leader who gets lost, destroys at once the confidence of his companions and of his superiors. It is the unforgivable offense.

The scout is not always, nor, indeed, often, so fortunate as to have a reliable map to travel by, so, while the use of the map and compass is the best way to keep oriented, they are not always available, and other ways must be learned.

If the scout has no compass, but has a watch (he is very negligent if he does not have both, and in good order), he can find the north point, when the sun is shining, by pointing the hour hand towards the sun, so that its shadow lies directly under itself. A line drawn, bisecting the angle made by the hour hand with a line drawn through twelve and the center of the watch, will be the north-and-south line. Midway between the end of the hour hand and the numeral twelve is towards the south.

At night, if it is clear, the north star gives a sure indication in the northern hemisphere. This star is found midway between the Great Dipper and Cassiopeia's Chair, and ought to be perfectly familiar to everyone.

The Pointers help to fix the position of the star as indicated in Figure 8.

The Great Dipper and Cassiopeia's Chair should be well learned, for, in southern latitudes, where the North Star is near the horizon and hard to distinguish, one or the other of these constellations is always visible, on clear nights.

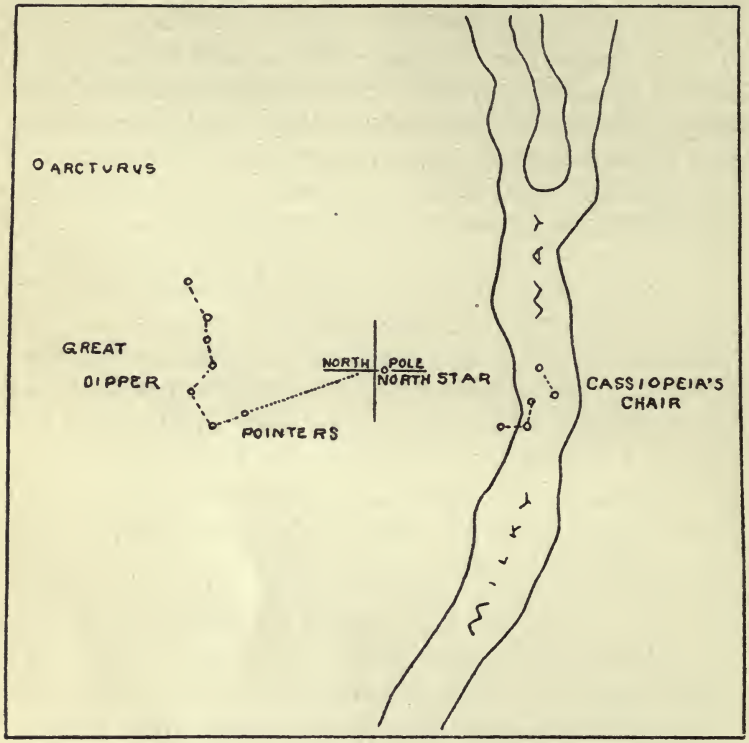


FIG 8.—THE NORTHERN SKY.

The Southern Cross is nearly as far from the south pole as the Dipper and Cassiopeia's Chair are from the north; it is not as easily found, and is visible, on clear nights, only half the time, in the tropics north of the equator. The two stars, the Compasses, are as bright as the brightest star in the Southern Cross, and help to locate it. It will be noticed that the stars form an oblique cross.

In every climate the keen observer will find indications that serve to orient him, when other means are not at hand. For example, in dry countries the vegetation is usually more luxuriant on northern slopes than on southern ones. In cold climates shelters for stock usually open towards the south. A greenhouse is

usually placed with its axis east and west. Moss will grow better in places protected from the sun, as on the north side of stones exposed to the sunlight.

Weather vanes usually have the points of the compass marked on them. They should be used with caution, however, as they are very apt to be bent, or blown out of adjustment, by the wind.

See Appendix, page 184-A, for instructions to instructors teaching orientation.

FIG 9.—THE SOUTHERN SKY.

CHAPTER V.

THE DUTIES OF PATROLS

A General Discussion

"Give me news of the enemy, to relieve my anxiety!" — Louis Napoleon.

In order to learn of the wherabouts, movements, and probable intentions of an enemy, small groups of men, or more rarely, single soldiers, are often sent out from an army, as far as it is prudent, or possible, who endeavor to hide their own movements, all the while keeping a sharp lookout for the enemy, and keenly observing every indication of his movements.

These men are called spies if they discard their own uniform and put on a disguise, endeavoring thereby to gain their ends by deceiving the enemy as to their identity. A spy, by the law of war, if captured by the enemy within the zone of their operations, while on such expeditions, is liable to suffer death by hanging. This extreme penalty is not imposed because the offense of the spy is in any way shameful, but in order to discourage the obtaining of information in that way. The necessity of concealing the condition and disposition of an army, and the more vulnerable avenues of approach to its position is so great, that it is generally recognized by all the leading nations of the world that this extreme penalty is justifiable. Nevertheless, the use of spies is constant and universal. The methods employed by spies to accomplish their purposes are so varied that it is impossible to attempt to even outline them. The duties of the spy cannot be taught; they must be instinctive in the individual.

Scouts are individual officers or soldiers who seek information of the enemy by approaching his position while in proper uniform, who conceal themselves from observation as much as is consistent with the end they have in view, and who should be carefully trained in peace time so that they not only can rightly interpret what they see, but so they can report on it rapidly, clearly, and intelligently.

In order for a man to make a good scout he must, first of all, be a man of high courage, strong self-reliance and common sense. He should possess excellent sight and hearing. He should be a fine marksman, both with rifle and revolver. He must possess strength and endurance of a high order. He should be equally at home on foot or horseback. He should be a strong swimmer.

Possessing these mental and physical requisites, the scout must first learn how to traverse unknown country by day or night, without getting lost. In a strange country one never knows what is ahead, beyond the horizon. The way back to the starting point should always be known. The faculty of being able to return to a starting point by a sure sense of direction, is sometimes called the "homing instinct." Some of the lower animals possess this to a surprising degree, but men accustomed from childhood to the conveniences of civilized travel rely more on the guidance of time-tables and sign-posts to reach their destination than to this sense of direction; they have, therefore, to learn it by practice. It is the most essential thing in the training of a scout.

The next most important step is to train the scout to use his eyes and ears to good purpose; to observe everything within sight and hearing, to interpret what he observes, and to remember it correctly. The eye and ear should, for any military man, be in constant training. A mental photograph should be quickly taken of everything seen. A good practice is to take a thirty seconds' scrutiny of the contents of a room, then leave it and make a list of the things seen. After this list is made, go back and see how many of the prominent objects in the room have been omitted. Similar practice should be indulged in whenever practicable. Another good practice is for two men who are out walking or riding together. On reaching the crest of a hill, each should take an observation of as much of the country as he can see clearly, independently of the other. After a limit of time agreed upon, they withdraw behind the crest, and each makes a list of the things seen, noting what might be termed military features—roads, rivers, houses, hills, valleys, forests, pastures, cultivated fields, and the like. It is amazing how many important

details will be overlooked at first, and how rapidly this faculty can be cultivated.

An officer or soldier should, whenever he is in the open, be constantly glancing about, noting the features of the landscape, and especially noting every moving thing in order to cultivate quickness of eye. It is not enough to look ahead and to the right and left; the scout must frequently glance to the rear, in order that he may recognize the landscape when he retraces his steps. It must be remembered that every landscape looks entirely different when viewed from different directions.

Practice in observing things by day is of little value after dark. Darkness changes almost every condition. Quickness of ear is now of first importance. During the day the eye is relied upon almost exclusively. Sounds multiply so that it is difficult to locate the origin of any particular sound. At night there is a general stillness; noises that would be indistinguishable by day, sound loud and clear over considerable distances. Efforts have been made to formulate scales for estimating distances at night, but never satisfactorily to many persons other than the one making the estimate. Each scout should make his own scale; verifying his estimate whenever possible, and never missing a chance to practice the art. The most valuable work of good scouts is done at night, and if we remember that, other things being equal, victory lies with the best-informed general, the importance of night training can be seen.

There is no sport that develops quickness of ear, and the sense of position and direction better than hunting coons or 'possums. This is always done at night, in the timber; and since the quarry sets the pace and lays the course, it requires much skill to keep from losing one's way. The baying of the dogs is often difficult to locate, and excellent practice in estimating distance and direction in the forest is the result. In the excitement of the chase, especially if it ends in a kill, one need not be surprised to find one's self in a strange spot, with all idea of direction gone. Then comes the skill of the woodsman to find some object to orient on, and to get home by the least fatiguing route. After a few long, roundabout walks home the coon-hunter learns to keep oriented,

and to study the scheme of nature as it appears at night. This also is something that cannot be taught from books, but must be worked out by each individual for himself.

In the training of the scout there should be at least as much work done at night as in the daylight. For the enthusiastic soldier this practice is no hardship; it entails no special preparation; it is so easy to find opportunities, and it seems so simple that most men neglect it altogether.

Having learned not to get lost, and how to observe everything by day or night, the next thing for the scout to learn is to do this without being observed by others. We must remember that, if seen, the enemy will do all in his power to prevent him from making his observations, to capture or to kill him.

To this end, all the scout's movements must be under cover whenever it does not interfere with his mission. The most direct way is no longer the best way. The scout, when he has reached a good position for observation, as soon as he has comprehended the landscape and its features, must select the next observation point and how to get there. Between the two points his progress should be as rapid as possible, consistent with his remaining hidden. If between these two points, he finds a place well adapted for observation, he should go to it, repeat his scrutiny of the landscape, note carefully his surroundings, see if a better place than the one selected before is available, and in general, use every safe means to obtain complete knowledge of the country he is scouting over. If he discovers the enemy, and believes himself not discovered, he should redouble his precautions, carefully plan his own line of retreat, and take every advantage of their ignorance of his being there, remembering that they will exhibit real conditions much more perfectly if they believe they are not watched. If he is satisfied that they have discovered his position, he should act as if he did not think himself seen and so increase his chance of getting away altogether, or of gaining a new position without being seen, where he can go on wth his observations.

Scouting in the presence of the enemy is a hazardous undertaking; it should not be hurried or ill-considered. It

must be constantly borne in mind that the scout is of no value unless he returns to his commander, and although he should not return without making every effort to accomplish his mission, extra-hazardous risks should be taken only when information can be obtained in no other way.

Intelligent hunting, of big game preferably, is the best peace-time training to develop the faculty of keeping out of sight. The greatest patience and self-possession and absolutely steady nerves are necessary. It was their development of the art of scouting that enabled a few thousand Boer farmers to tax to their utmost the military resources of the British Empire for three years.

The scout does not play to the gallery; his work is done under cover, alone, in the midst of danger. No one is near him to help him out of difficulties, no one to know the heroism he has displayed. After his work is done, he comes in with his report, quietly, without parade of any sort; after his rest is taken he disappears to again take up his dangerous trade. To make a first-class scout, courage, pluck, and enthusiasm of the highest order must be combined with resourcefulness, self-reliance, and steady nerve.

So far, the scout has been trained to travel by night, or day, without getting lost, and hidden from observation. He is to observe narrowly the country and its occupants as he passes over it. In order to be fully able to inform his superiors concerning this country, he should learn to interpret the signs of travel, and here he undertakes a task that will require long practice and the use of all the faculties he possesses. Trailing is the highest application of the art of scouting, and includes not merely the connecting of the trail made by any moving thing with the thing itself, but the deducing therefrom the reasons why the thing moved, its rate of motion, how long since the trail was made, and where next to look for it.

Trailing is much more easily accomplished in less frequented places than in populous districts. In a city, or along a public highway during the working hours, tracks multiply so that it is out of the question to follow anything by the

tracks left by it in the dust or on the pavements. In less frequented districts, in the forest, and in the fields, and especially in the regions near the operations of great armies hostile to each other, tracks mean much more, and quite accurate deductions can be made from them by those who have learned to read them.

If a scout, well out in front of his own forces, finds roads devoid of fresh foot-prints, or wagon-tracks, or the like, he at once knows that no one has recently preceded him, and if he is wise, he will avoid going where his own tracks will tell of his having been there. If he comes to a road crossing the direction of his march, and finds many tracks of men and horses, mules, wagons, and the like, all pointing in the same direction, he reasons that a body of troops has passed in that direction, and that his own path, in his search for information, should be in their wake. If the marks are fresh, and point towards both directions, he must search farther to see what sort of tracks predominate, and what made them, and so determine whether they were made by troops, or by their trains, going to or returning from some temporary base of supplies, or simply by the people of the country.

Once a scout has discovered a trail that seems to indicate the passage of an enemy, he should try to follow it, and to learn from it as much as possible about the person or persons making it.

The reading of trails, and the following of them, is an education in itself that requires long practice. Everywhere are opportunities to practice it, and officers and non-commissioned officers should take advantage of them frequently. It is a study that admits of easy practice. One does not need to go out of one's way to find signs of travel. It is only by the constant cultivation of the faculties of observation and deduction that it is possible to become a good scout.

Scouts often work in pairs, and with good results. Two men, however, can keep concealed less easily than one.

The scout, if mounted, should have a good horse, better than the average, and trained to stand without being tied.

He should carry a set of shoes for him, the tools and nails necessary to replace them, and he should know how to put them on, to be perfectly independent and of maximum value. He should also carry a revolver with plenty of ammunition, a watch, a compass, a pair of good field-glasses, a pair of wire-nippers, and the best map of the country that is available.*

He should have a poncho, or raincoat, and his clothing should be strong and serviceable. He should carry concentrated rations of some sort, and, if possible, ten or fifteen pounds of grain for his horse.

While scouting he should give his horse every opportunity to feed, if only two or three nibbles at a time. This is mandatory. His horse should be watered whenever he will drink, if cool. The scout should fill his canteen whenever he can. He can never tell how far it may be to the next good water, nor how badly it may be needed.

All officers and soldiers should study the capabilities of horses, and how to care for them, so that they can get the best results, when needed, from their horses, without disabling them.

These remarks concerning scouts apply equally to cavalry or infantry scouts. The horse is of value, in scouting, merely on account of the mobility gained by his use and because the scout's eyes are about three feet higher than when on foot.

PATROLS

A patrol is a small group of soldiers sent on any special purpose connected with the service of security or information. While the patrol should, and usually does, accomplish its purpose without resorting to offensive tactics, still it should be strong enough, in numbers and equipment, to do so if necessary to carry out its mission. In addition, it pos-

---

* Nearly all parts of the civilized world are now mapped fairly well, and the best roads indicated plainly, for the use of automobilists and bicylists; these maps are everywhere available.

sesses the ability of examining the ground it passes over more thoroughly than a single scout could do, and its formation should be such that, if surprised, at least one member of it is able to get away.

A single scout moves rapidly, keeping hidden, or not, depending on his surroundings, and his mission, preserving always his orientation and a line of retreat. A small patrol moves less rapidly, and its mobility decreases as the patrol increases in size.

Cavalry and infantry are the arms used for patrolling; cavalry preferably in open country, or on roads, where greater mobility is demanded, infantry in close country or when resistance is to be more stubborn. The commander of a small patrol should be where he can best control the movements of his men. In small patrols with a narrow front, this would be at the head, and here he should be when the patrol has four men, or less; and when it is moving with its flanks protected by natural obstacles only, or with one flank so protected.

In very open country a large patrol may open out very extensively, preserving contact and communication as explained, and so cover a wide front, with little danger of all being cut off. As the country becomes rougher, or more timbered, and provides more hiding places for hostile detachments, the necessity for diminishing the front and increasing the depth of the formation increases, until, in very close situations indeed, the formation becomes very nearly that of a column of files, strengthened by a central group.

Whether cavalry or infantry is to be used depends entirely upon the extent of the country to be patrolled, and its character. In open country, cavalry can, on account of its greater mobility, and its increased field of vision, investigate very much more ground than infantry could in the same time, and they can take chances, when having a good line of retreat, that would be suicidal for infantry to assume. In close country, timbered, or rocky, or marshy, the horses, from being a help, become a hindrance, and infantry is much to be preferred. The cavalryman's advantage lies only in his horse's speed, and

the fact that his eyes are higher above the ground than the infantryman's.

The function of a patrol is, usually, to get information. When this is the case, the commander should always bear in mind that at least one man of the patrol must get back with the information secured, and he must so dispose his men as to make this possible.

Distances between members of a patrol cannot be laid down, except that, in the case of infantry patrols, they should not often exceed one hundred yards. (Paragraph 611, Infantry Drill Regulations.) Cavalry patrols can separate much farther, the limit being that of easy communication by prearranged signals.

Since the chief duty of small patrols is to get information concerning the enemy, and to transmit it to their commander, they habitually seek safety in concealment or flight, fighting only when their mission demands it. The most skillful reconnoissance patrolling is where the patrols accomplish their mission without being discovered by the enemy.

Reconnoitering patrols are, habitually, small. Small patrols have greater mobility than larger ones, and are more easily concealed. In hostile territory, small patrols, whose mission requires them to go several miles from the main body, are usually supported by larger bodies, nearer to them than the main body. These supports give confidence to the patrols, and add to the probability that information about the enemy, secured by the patrols, will be transmitted to the main body, where only, in the general case, is it of value.

When a commander decides to send a patrol for any purpose, he first decides on its strength. This should be large enough to insure that its mission will be accomplished, and no larger. The rule is: "Detach for a patrol as few men as can be made to serve its purpose." He then selects its leader. This, in certain cases, is of much importance.

When a patrol is given a mission that requires it to go quite a distance from the body that sent it out, it is sometimes called a distant, or strategic patrol. A strategic patrol

is usually a mounted patrol that is sent out to gain information of the hostile main body. Its commander, always an officer, is given as much information as is known of the enemy, and the plans of the commander sending him out. The members of such a patrol are specially selected as to men and horses. The patrol will avoid all conflict not essential to its own safety. It is charged with one mission—that of obtaining important information of the enemy, and of transmitting it at the earliest moment to the commander who sent it out. It neglects all other considerations.

The aeroplane, or dirigible balloon, is now used to do most all of this distant reconnoissance.

Other patrols, whose missions do not carry them so far afield, are given many names, each descriptive of the mission demanded of the patrol. They are called visiting, connecting, combat, exploring, reconnoitering, flanking, harassing, pursuing patrols, etc., but their mission, in any case, is either protective, or is to seek information. Patrols that seek information, by far the greatest number of all patrols do this, are called, generally, reconnoitering patrols.

Reconnoitering patrols, while seeking information of the main body, in a general way, also seek all information that may be of value to the larger bodies in their rear. A strategic patrol, sent out by the supreme commander, sends its reports rapidly and directly to him. It is seldom possible for such a patrol to send more than one or two reports a day, while an ordinary reconnoitering patrol sends its information to the particlar officer who sent it out, and who, being generally not far from the patrol, may receive frequent messages. Such a commander, if of no more rank than captain, often has out several patrols. He tabulates the reports received by him, from all his patrols, and sends the consolidated report to his immediate commander.

The information sent in by a strategic patrol is usually not received by the commander early enough to be used by him the day it is collected. Several strategic patrols usually precede an army that seeks an engagement with its enemy. The

commander bases his plans for each day, as a rule, on the information received by him from all sources up to ten or eleven o'clock the night before, when he issues his order for the following day's movements.

The information sent in by ordinary reconnoitering patrols is, on the other hand, often used immediately by the commander getting it.

The leader of a strategic patrol is always an officer; the leader of a reconnoitering patrol may be an officer, a non-commissioned officer, or, in many cases, a private soldier. Efficient reconnoisance can only be secured by skillful patrolling, hence the leader and members of each patrol should be selected with care, consideration always being taken of the mission of the particular patrol. The qualifications described for the scout are necessary for the members of all important patrols—good health, strong physique, keen eyesight, good judgment, presence of mind and courage, combined with military experience and training, are the essential qualities. Patrol leaders, especially, must be able to read maps accurately and rapidly, and to prepare clear and concise reports and messages.

The leader of the patrol should be equipped with a map, watch, field glass, compass, message blanks, and pencils.

The officer sending out a patrol should be very clear and explicit in his instructions, and should be certain that the leader of the patrol understands them fully. These instructions should state, first, what is known of the whereabouts of the enemy, and of neighboring friendly troops. This information is necessary for the patrol leader to possess in order to allow him to work with intelligence and confidence. The leader must know his own mission—that is, what it is expected he will do, what information is desired, what duty performed, the general direction to be followed, when he is to return to his command, and where he will find it. He is also told unmistakably where he is to send his messages.

His instructions should be general, not, except in special cases, limiting his conduct too much. **He is, in general, told what he is expected to do, not how to do it.**

In general, a patrol should be sent out for one definite purpose only.

Having thoroughly understood his mission—and it is always wise to require a patrol leader to repeat his mission to the officer who sends him out—the leader then should thoroughly inspect the members of his patrol, to see that they are fully equipped for the duty required of them, and that, in the case of mounted patrols, each horse is in fit condition for the work expected of it.

The patrol leader, satisfied with the personnel and equipment of his patrol, next should orient his map, assemble his men around it, and go over the situation and his orders, so that each man may go about his task intelligently.

No rules can be laid down as to how the march of a patrol should be conducted. Each situation must be solved as it arises, but, whatever formation adopted, it should favor the escape of at least one man in case of surprise.

No normal formation can be prescribed, nor should an attempt be made to prescribe one. Every patrol should march so as to guard against surprise, however, and to insure this a certain amount of dispersion must be obtained. Men marching in front of a deployed patrol are termed the point. Men, or groups, marching to the right or left, are called flankers. Those following in rear constitute the rear point.

As stated before, the distances separating the parts of a dismounted patrol should ordinarily not exceed fifty yards—seldom a hundred. If it is necessary to investigate a place more distant than this it is best to send at least two men for the duty.

In small patrols the commander usually leads, the men following at such distances as he prescribes.

Small patrols usually avoid cities and the larger villages. They enter small villages and even farm enclosures with great caution. To reconnoiter such places, the patrol usually halts outside the village, or enclosure, at a commanding point, and a man or two is sent to investigate the place. If it is occupied the whole patrol is not involved; if empty of hostile troops,

the reconnoissance of the place can be completed by the smaller patrol, and, afterwards, the entire patrol can, by a detour, completely avoid the possibility of an ambuscade.

When it becomes necessary for a patrol to be scattered, the leader should designate a place of assembly, or, in certain cases a second rendezvous, when the first is found impossible to be reached. The members should be instructed that, in case the patrol becomes badly scattered, they should attempt to rejoin their command as best they can; AT LEAST ONE MAN SHOULD GET BACK WITH THE INFORMATION OBTAINED.

While advancing, the patrol halts on commanding points, and scans the country closely in all directions. The map should be oriented, and important landmarks located. It is especially important to look frequently to the rear, so that the way back may be found without difficulty. A mounted patrol, having greater mobility than a dismounted one, often finds it advisable, in making rapid reconnoissance, to gallop from one high point to another, approaching each crest with caution, and examining each succeeding valley carefully, with the field glasses, before crossing it. Such a patrol will usually find it safer to return by a different route. This route should be determined on during the forward movement.

It frequently becomes necessary, when approaching the hostile troops more nearly, for the leader of the patrol to conceal the bulk of his patrol, and continue the reconnoissance alone, or with one or two companions. A new leader for the men concealed is then designated, and general instructions are given him what to do in case the leader does not come back by a specified time; whether to continue the reconnoissance, to return to his command, or to go to an appointed rendezvous. These instructions must be given liberally, and the new leader must be allowed to use his judgment freely. Any instructions given in such cases must always be given subject to interference by the enemy.

If a patrol finds it necessary to remain out over night, it should select the place of bivouac before dark, but should go to it after dark.

A mounted patrol must never neglect opportunities for watering and feeding the horses. During a campaign, under the best conditions, a horse remains serviceable but a short time. His well-being should be his rider's greatest concern. So, at each halt, allow the horse to graze. Water him frequently. One never knows how far it may be to the next watering place. Hay or grain taken is always receipted for to the owner, so that, if loyal, he may recover its value later on.

In questioning civilians, in hostile country, members of a patrol must be careful to give no correct information concerning their own forces. In friendly territory care must be taken to disclose nothing that it would be of advantage to the enemy to learn.

All military persons are authorized to make arrest of persons, during actual hostilities, whenever necessary, reporting the facts at the earliest opportunity. Mail matter and telegrams may be seized, examined, and even destroyed, if it is believed that such a course will be of benefit to the State or will injure the enemy.

When returning to their own command, and if there is no immediate reason for haste, patrols march quietly, not only to avoid causing alarm to their own forces, but on the general principle that the strength of men and horses should never be needlessly wasted.

"INDICATIONS OF THE ENEMY.—Nothing should escape the observation of the patrol. The slightest indication of the enemy should be reported to the leader at once. On roads and in abandoned camps, signs are often found which indicate the number, character, and condition of the enemy, and the direction in which he is marching. Abandoned clothing or equipage may bear marks indicating organizations.

"A thick and low cloud of dust indicates infantry; a high and thin cloud, cavalry; a broken cloud, artillery or wagon trains. The size of the command and direction of march may be roughly estimated by the dust, but the effect of wind must be considered.

"The strength of a body of troops may be estimated from the length of time it takes to pass a given point. Assuming that infantry in column of squads occupies half a yard per man, cavalry 1 yard per trooper, and artillery in single column 20 yards per gun or caisson, a given point would be passed in one minute by about—

"175 infantry.
"110 cavalry, at walk.
"200 cavalry, at trot.
" 5 guns or caissons.

"For troops in column of twos, take one-half of the above estimates."*

The number of camp fires and the area over which they are spread affords an estimate of the strength and position of the enemy. An increase in the number or area of fires indicates new arrivals. Much smoke at unusual hours indicates movement. Such signs, however, are accepted with caution.

Tracks in the road indicate the number and kind of troops and the direction of march. Broad trails parallel to the roads or across country indicate a concentrated march.

The following rule is emphasized in our Field Service Regulations: "When it is certain that the enemy has been discovered, that fact is promptly reported." This does not mean that at the first sight of a hostile soldier a messenger is at once dispatched with the information that an enemy has been seen. On the contrary. When such a discovery is made, it is the duty of the patrol leader to determine the strength of the immediate party to which the man, or men, belongs—whether a single scout, a reconnoitering patrol, a foraging party, a patrol of an advance, rear, or flank guard; a patrol from an outpost, etc. The patrol leader should exhaust every effort to learn all he can about the other forces that may be in the vicinity. The time consumed in making this investigation is well spent, if he can inform his commander with certainty on the points mentioned. Information about the main body of the enemy is what is especially desired.

* Paragraph 27, Field Service Regulations, U. S. Army, 1914.

When a hostile party is discovered approaching a patrol, it is necessary to withdraw to a flank of his line of advance, to be able to observe what is following him. To gain this information it is necessary to remain concealed. If the patrol leader is convinced that part of his patrol has been seen, but not all of it, it may be good tactics to withdraw the part he feels sure has been seen, and to try, with the remainder of the patrol, to continue the reconnoissance unseen. It is on such occasions that the ingenuity and skill of the leader is especially tested.

The following signals are prescribed in Paragraph 29, F. S. R., 1914.

"In addition to the usual signals prescribed in drill regulations, the following should be clearly understood by members of a patrol:

"Enemy in sight in small numbers, hold the rifle above the head horizontally; enemy in force, same as preceding, raising and lowering the rifle several times; take cover, a downward motion of the hand.

"Other signals may be agreed upon before starting, but they must be familiar to the men; complicated signals are avoided." Signals must be used cautiously, so as not to convey information to the enemy.

A wood, if open enough, is reconnoitered by passing through in line of skirmishers, with as wide intervals as possible. If the underbrush is very dense, the patrol will go through the woods by a path, or a road, in column of files: If a cross-road is met in the wood, the patrol is halted, and the lateral branches are examined before proceeding.

In approaching the crest of a hill, one man only, usually the leader, creeps up to the crest, and looks over it, while the others remain concealed. He decides on his line of action, and then signals his instructions to the rest of the patrol.

Enclosures surrounded with high walls should be very cautiously reconnoitered by a small part of the patrol, the rest coming up when the reconnoissance is completed. Houses

should be reconnoitered by surrounding them, and approaching them from opposite directions. Only one man should enter.

The terrain in the vicinity of an army should be constantly and thoroughly patrolled, whether the enemy is at hand or not. Vigilance should be redoubled when contact with the enemy is lost.

Patrolling by night should be undertaken, as a rule, only with special objects in view. Information is secured with difficulty in the dark, and is apt to be distorted and unreliable. While the danger of discovery is less than by day, the results secured are also less.

Night work, in the service of information, is usually confined to traversing country where discovery by day would be certain, in order to obtain information when daylight comes.

Night patrolling over ground that has been patrolled by day, should be done by the same men that patrolled it in the daytime. In general, the men should be selected for patrolling who are most familiar with the ground to be patrolled.

If a patrol has gone as far as its orders contemplate, and discovers nothing of the enemy, it should return, and the leader should report fully the result of his reconnoissance. Patrol leaders must remember that this is expected of them by their commanders, who might infer, if a patrol stayed out too long, due to the anxiety of its leader not to return without definite news of the enemy, that he had met the enemy and been captured, or otherwise prevented from returning. There are many patrols out exploring at the same time, and it is often of more importance to a commander to know that the enemy is not in a certain place, than to get no report because the patrol leader was hunting for the enemy farther out than he was expected to go.

Patrols should exercise the same caution in returning as in going out.

Members of small reconnoitering patrols must remember that their function is to get information for their commander, not to fight; that a few men killed by them will not affect the issue of

the war, one way or the other, and unless ordered to the contrary, they should avoid engagements. Their duty is best performed when information is secured without letting the enemy know of their existence.

The information secured by members of a patrol must be put in shape so that it can be used by other persons. This is their report, and, if possible, it should be in writing, and accompanied by a map.

A patrol leader, during the course of his reconnoissance, may have occasion to send several messages to his commander, keeping him informed of his movements, and of the results of his observations. After he has returned from his reconnnoissance, he should, in the general case, make his report at once, describing in detail everything of importance that he has learned.

An excellent and comprehensive memorandum for the use of cavalry scouts and vedettes (outpost sentinels) is printed on waterproof faced linen, "to be carried inside the head-dress" of the British soldier. It reads as follows:

MEMORANDA FOR

CAVALRY SCOUTS AND VEDETTES

BY

MAJOR-GENERAL R. S. S. BADEN-POWELL, F. R. G. S.

SCOUTS

When scouting alone, or as one of the patrol, always (1) notice the direction in which you are to work (by compass, watch, sun, stars, wind, or landmarks); (2) see that a proper lookout is kept for enemy near and far, footprints or dustclouds and (3) remember your way back by noticing landmarks, making marks, etc.

When ordered to report on any point, give the information about it as stated below. Make your report, 1st, as short as if it were a telegram; 2nd, full information as for an officer who has never seen the object you are reporting on.

AMBUSH—Place for ambush should be near road, well hidden, with line of escape. BIVOUAC—Ditto, ditto, ditto.

BRIDGE—State material, length, breadth, height, parapet, number of arches, repairing materials.

BUILDING—State situation, height, size, material, roof, enclosures.

COUNTRY—State open, close, or wooded; flat, undulating, or hilly; fences, cultivation.

ENEMY—State number, arm, what doing, whereabouts.

FERRY, FORD—State width, depth, bottom, banks, boats.

LAKE OR POND—State width and length, depth, boats.

LOOK-OUT—Note look-out places, good signalling stations, etc.

HILLS OR MOUNTAINS—State height, steepness, surface.

POSITIONS for defense, open ground to front, cover for defenders' line of retreat.

RAILWAY—State single or double, width, embanked or sunk, sleepers, etc.

RIVER OR STREAM—State width, depth, bottom, banks, current, bridges, boats.

ROAD—State whether metalled, fenced, condition, width, surrounding country.

STATIONS—State length and number of platforms, coal, water, rolling stock, stores, telegraphs.

SUPPLIES—State amount of food, forage, cattle, crops, ovens, carts, and horses.

TELEGRAPH—State number of wires, height and material of posts.

TOWN OR VILLAGE—State size, situation, defensibility, large buildings, supplies.

WATER—State how obtained, how much in dry weather, size of watering places.

WOODS—State size, density, undergrowth, height of trees, roads through.

These memoranda are very much condensed, and are to be used to remind the scout of what is expected in his report. He has, of course, been thoroughly taught, in school, and on the drill ground, what these abbreviated suggestions mean.

All reports should be clearly stated, "as short as if it were a telegram," but, like a telegram, with no necessary word left out.

The art of scouting can be outlined only, in books. It cannot be learned from them, but must be learned in the open air, each man for himself. The principles are few, and can be quickly stated; their application will show their elasticity, and the impossibility of confining them to definite terms.

A lecture on Patrolling, delivered several years ago, by General J. F. Morrison, U. S. Army, concludes as follows:

"Bear in mind that, as a general rule, patrols are sent out to gain information—not to fight. Little combats between individuals, or patrols, can have no real effect on the greater issue; so as a rule you should avoid fighting. But don't apply this rule too generally; it has numerous exceptions.

"Patrols, sent out to gain some specific and important information, should, as a rule, avoid fighting. The enemy's patrols, however, cannot be allowed to roam without danger, but even so it will generally be better to entrust their intimidation to others than the special patrols sent out after information.

"A patrol, seeking some special and important information, comes near to a point where, from a certain position, it can see and gain the information desired, but the position is found to be occupied by the enemy. Careful reconnoissance leads the patrol leader to believe he is at least equal to the enemy in this locality. A vigorous attack is justified in order to gain the view.

"A great number of situations can be drawn but it is not necessary. For, after you have had them all presented, it is probable that the first one coming up in the field would be different. But if you have grasped the principles, you can solve it. Practice is the only sure help. Make problems for yourself and reason out what you should do and why, and soon you will acquire facility. Practice on the ground with men is still more valuable.

"One important point I want to impress upon you. Get information back to headquarters if you get any. At many maneuvers, I have known patrols to go out, see the enemy and never report the fact until long after. There is no good in a patrol gaining information if it is not sent in or is sent in after the enemy attacks.

"The necessity and importance of efficient patrolling and reconnoissance are taught by the history of war. In the Civil War it was neglected in many cases at heavy cost.

"Such was the case, not alone in this war, but in many others. We have not been the only offenders.

"The problems presented are varied and require for their solution men varying in capacity, from the average private to the best trained staff officer.

"For the higher class of patrol leading the requirements cannot be learned entirely from books. The leader must be cool, determined, and persistent. He must grasp the situation, understand the significance of what he sees and hears, must be possessed of good judgment and not afraid to take responsibility.

"For the greater part of the many patrols required, only physical strength and good average intelligence are necessary."

CHAPTER VI.

THE SOLUTION OF TACTICAL PROBLEMS

Before you commit your troops to any definite action, make up your mind what is to be done, what obstacles there are to its fulfillment, and the best way to overcome these obstacles. Then push it for all you are worth. The Japanese Field Service Regulations say: "To act resolutely even in an erroneous manner is better than to remain inactive and irresolute."

In war every commander, from the leader of a patrol to the general commanding an army is compelled to go through certain mental processes as he advances from step to step in the solution of his problems.

These mental processes may be concisely stated to be three in number—first comes the estimate of the situation, sizing up the situation you are in, viewed from all its angles. This process is like that of the physician who visits a patient for the first time. He wishes to know all that can be learned about the condition of the patient before he attempts to prescribe for him. This preliminary survey the physician calls his diagnosis; the soldier, his estimate of the situation.

The next mental process is the commander's decision—what he decides to do to overcome the forces opposed to him by the enemy in the situation in which he finds himself.

The final step is the issuing of an order carrying this decision into effect.

This seems to be a formidable process, but it is not, except to the beginner. At first it will require time and what would seem to be considerable laborious thought to work out a solution along these lines. It is good practice for the student, inexperienced in solving problems, to actually write out his estimate, his decision, and finally his order to put the decision into effect. This of course will require much more time than will ordinarily be at a commander's disposal in solving a problem presented by actual war conditions. But the value is in the training it gives in thinking along the right lines, and toward the correct objectives. What at first seems to be difficult and to consume a prohibitive amount of time comes with practice to be an action quickly and effectively

consummated, and an estimate of the situation, instead of being a long drawn out written process, becomes a rapid turning over in the mind, trained to do that very thing, of the proper considerations in the proper order. After solving a few simple problems following this sequence, it becomes evident to the student that this is the logical and natural way to go about it. This sequence is that laid down for its students by the Department of Military Art, at the U. S. Service Schools, Fort Leavenworth, Kansas, and applies, as said above, with equal force to the single scout, the leader of a patrol, or the commander of army.

In this mental process consider:

1. Your Mission—What special thing are you to do? What does your superior expect of you? You must have a mission, and it must be kept clearly in your mind.

2. Forces—The strength and location of your own and the enemy's forces, and all that you can learn of the latter.

3. Conditions—Consider all the conditions surrounding your problem. The weather and condition of the roads; the morale, activity and aggressiveness of the enemy; the state of efficiency of your own command; in short, everything that will affect your problem either favorably or unfavorably.

4.—What Will the Enemy Probably Do?—What would you do if you were in his place, under existing circumstances?

5. The Terrain—How does the terrain you must work over affect your problem?

6. Courses Open—In how many and what different ways may you accomplish your mission? Go over them all, considering the advantages and disadvantages of each.

Then Come to Your Decision—Decide which of the courses considered is best calculated to enable you to successfully execute your mission, and having come to a decision, do not change it; forget all the other courses open to you, and concentrate all your energies on the one adopted.

And then issue your orders to carry out the plan you have adopted.

The art of war may be studied in several ways. By the careful study of military history you can learn how wars in the past

have been lost and won; what tactical combinations have been successful and what have failed. But no student will ever arrive at a correct knowledge of tactics by this sort of study alone. It must be supplemented by practical applications of the principles of tactics to concrete cases.

These practical applications may be in the form (a) of map problems, where certain situations are imposed, as to the strength and location of troops, the weather, and so forth. The student, with these data in mind, is given a mission, and, with the help of a map, he writes his solution of the problem.

(b) The application may take the form of a war game, where the solutions are made directly on the map, using bits of colored paper to represent the troops involved in the problem, moving them under the supervision of a director, who acts also as an umpire.

(c) Another application takes the form of a tactical walk or ride, where the terrain for the problem is real, but the troops are all imaginary.

(d) The field maneuver is the completest practicable form of applying tactical principles to concrete cases. Here not only the terrain, but the troops employed as well, are real.

In all these applicatory methods of studying tactics, certain situations are imagined. These are called **general** and **special situations.**

General situations contain only such information as would naturally be in the possession of both sides in a war, while **special situations** give out such information as, in war, would ordinarily be possessed by only one side.

To illustrate this method of estimating a situation, consider the following problem:

GENERAL SITUATION:

Guide Map.

The Susquehanna River separates two warring States. Blue, Eastern, forces have invaded Red, Western, territory. Blue main forces are in the vicinity of Carlisle. The main Red advance is

from Chambersburg on Carlisle, but the country is intensely hostile; partisan and guerrilla bands are hanging on the flanks of the Blue army.

Special Situation

Guide, Strategic, and Topographical Maps.

You command a Blue officer's patrol (strategic) of eight men. Your mission is to locate the main body of the enemy's cavalry, reported to be in the vicinity of Hanover, to inform your commander at York Springs (Guide Map) when you have located him, and to keep in touch with him until relieved. You sent two identical messages to York Springs last night, by two pairs of messengers, that you had located a large cavalry command that camped last night near McSherrytown, on the south branch of the Conewago river (Strategic Map).

From a hidden spot on the ridge southwest of Centennial you saw them break camp this morning, and march north towards Irishtown. You started to follow along their flank, in an effort to keep in touch with them. Their flanking groups were very active, and kept pushing your patrol to the west. A large Red patrol has pursued you to 593, one mile southeast of Cedar Ridge, where you shake off pursuit, and, by the roads to the north, you reach 584, one-half mile east of Brush Run on the York Turnpike, where all trace of the enemy is lost. It is 8:00 a. m., July 11th.

Now to estimate the situation:

1. Mission—You have accomplished the first part of your mission—you have located the hostile cavalry, and have notified your commander. There is left of your original mission to regain touch and to keep it until you are relieved.

2. Forces—You are ten miles south of your own command; you have eight men, and can count on no help nearer than York Springs. The enemy is in force near you, and is well screened (witness how his patrols forced you away from his flank this morning), the country is bitterly hostile, and overrun with partisan and guerrilla bands. It is a fair presumption that they are

nearer the main Blue forces than your vicinity, but it is possible that you may meet hostile forces anywhere. You know of no other Red forces anywhere near.

3.—Conditions—Few conditions favorable to your mission exist. Assume the day to be bright, the roads not very dusty, and that you have a copy of the Strategic Map. The enemy is aggressive and apparently in good morale. Your own patrol has been out all night, and men and horses are not as fresh and vigorous as they should be. The country is open and unfavorable for concealment; this works more in your favor than in the enemy's, because there is so much more of him to be seen.

4. What Will the Enemy Probably Do?—He knows all about the Blue forces and movements because the people of the country will tell him; he is looking for a fight, and your main body is at York Springs. So he is probably headed for that place, and probably by the New Oxford—Newchester road, or by the Carlisle and Baltimore Pike.

5. Terrain—The country is generally rolling, with two stream valleys—the Conewago and Little Conewago—cutting it at right angles to each other. There are small patches of timber here and there, and the roads generally run along the higher ground.

6. Courses Open—(a) You may go back towards Irishtown, by the road to the southeast. Just east of 532 is an open nose, between 540 and 560 elevation. Here you would get a view of the roads leading towards New Oxford from the south. You could cross the Little Conewago, but your line of retreat would then lie back over the road you came, or else through New Oxford. Considering the temper of the people, would it be wise to enter New Oxford with so small a patrol?

(b) You may go to 546, six hundred yards to the east of your present position, on the military crest. Here you would get a view of the valley of the Little Conewago, and of the roads leading from the south into New Oxford, and of the roads from New Oxford to Newchester and to the Carlisle—Baltimore Pike. Your line of retreat is open. But here you would have to wait for the Red column to appear. This would be a passive reconnoissance. Suppose the Red cavalry did not come to New Oxford

at all, but swung off to the northeast from Irishtown, by the Red Hill School, and thence paralleling the East Berlin Railway?

(c) You might go, by 568—520, to the north, cross the Conewago at the ford at the mouth of the Little Conewago, and take a position of observation on the high ground near by—a place with a good view to the south and southeast. If the Reds go by Newchester you can observe them easily—if by the Baltimore Pike you can follow by the roads to the north. But, suppose they did not go north of Irishtown at all, but swung northwest by Cedar Ridge towards Hunterstown, or to the northeast along the East Berlin Railway? You would miss them altogether in that case.

PROBLEM—What would be your decision?

NOTE: Before proceeding, the student should come to a decision as to what plan he would pursue, under the conditions existing at this moment.

At 8:10 a. m., just as the patrol leader had made the decision that he would go southeast to 532, and, if he saw nothing of the enemy from there, would go to Kohler School and then to the shelter of some woods near 596, a Blue patrol of a lieutenant and six men was seen coming from Brush Run. The lieutenant made this report: "Your message of last night reached the General at about 11 o'clock. He ordered me to assist in the reconnoissance of the Blue cavalry. He will move with his entire command to the vicinity of Round Hill, where he should be now. I came by Guernsey and crossed the Conewago at the Bridge School, avoiding Hunterstown to the north, and saw no Red troops."

The commander of the first patrol was the senior of the two officers. He now had a command large enough to split, and so should be able to decide on a sure plan to regain touch with the Red cavalry. This plan he would express to the other officer in the form of an order.

We are expressly warned by all authoritative military writers to avoid adherence to fixed forms in issuing orders. General von Schellendorf, German Army, on pages 566 and 567 of his book, *The Duties of the General Staff*, says:

"Though in peace the adherance to 'approved models' does not lead to any very serious or irreparable mistakes, there is always

the danger of acquiring habits which are unsuitable on active service, and of discouraging originality of thought. For this reason the 'normal orders,' 'normal formations' and 'normal forms of attack' which are to be found in many textbooks and pocketbooks for every possible case which may arise, should be expressly discouraged, for the right form to meet any particular case will only be lighted on by chance.

"A commander will only issue satisfactory orders when he sees clearly the objective required by the situation, and when he has made up his mind how the objective can be attained in the simplest and best way. But the duties to be carried out in war are often full of responsibility, usually the most difficult which fall to the lot of mortal man. For it is not the weal or woe of the individual which is at stake, but the lives of hundreds of thousands of men, and the fate of the nation. The man who attempts to remember the model which he has so often tested in peace will surely fail in the hour of trial.

"The ceaseless progress of the Art of War in all its aspects is continually rendering it necessary to discard as obsolete and impracticable many methods which but a short time before seemed to guarantee success. Every fresh campaign brings with it astonishing phenomena not previously dreamt of, in face of which a commander who is not accustomed to think for himself in peace stands confounded. But the man who has learnt by ceaseless toil in time of peace to rely upon his own judgment, and has altogether abstained from the use of 'normal formations' and 'models,' will be able to deal effectively in war with unexpected and unprecedented incidents."

To the campaigns of the great war which began in August of 1914 does this last paragraph particularly apply. Commanders have met new weapons, new methods of fighting, new conditions of warfare, and, in times of greatest stress and danger, have had to devise the means to contend with them or go down to defeat. There has been no place for those who have been trained to rule of thumb.

However, it has been agreed that certain things are essential to an intelligent comprehension of an order, and it has become a common practice to establish the sequence of these things in a

certain way, so that none of the essentials shall be left out of the order, and, as you shall see, this sequence of expression in no way violates General von Schellendorf's rule. All orders can be expressed in five paragraphs.

Paragraph 1 should give what information is in the possession of the officer issuing the order about the enemy and his own supporting troops.

Paragraph 2 gives the plan of the commander.

Paragraph 3 indicates what troops are to execute this plan, and the mission of each unit.

Paragraph 4 concerns the baggage trains and such other auxiliaries as do not accompany the combatant troops.

Paragraph 5 contains directions where to send messages or to ask for farther orders or instructions—usually where the commander can be found.

Fixing this sequence in mind it soon becomes automatic, and correctly worded orders follow naturally, once a decision is reached.

Now to go back to our situation: The senior lieutenant said to the other one, in the hearing of the whole patrol—*paragraph* 1 of his order—"A large Red cavalry command camped list night near McSherrystown." (Indicating on the map the spot where he saw them.) "They moved north towards Irishtown this morning. I lost track of them an hour ago—was chased from here" (pointing) "to here, where I escaped through these woods. You say our main body is near Round Hill now.

"I shall" (*paragraph* 2 of the order) "seek to regain touch with the Red cavalry at once.

"Go" (*paragraph* 3) "south along this ridge" (pointing along the ridge towards Square Corner) "keeping a sharp lookout for traces of the enemy. I shall swing around to the northeast with the same object in view. Do not attempt to rejoin me."

There are no impedimenta, so no *paragraph* 4 concerning them.

"Send messages" (*paragraph* 5) "to the main body near Round Hill."

It is necessary to learn the sequence of this order thoroughly. It is a device to insure that all the essentials of an order are included in it. It has been seen that the form is appropriate for use in directing the movements of a patrol; it is equally appropriate to direct a field army. *Learn it well.*

See Applied Minor Tactics, p. 184-C, and Estimating the Situation, page 189, Appendix, for a continuation of this subject.

SEQUENCE OF ORDERS

Paragraph 1

Give what information you wish your subordinate to have concerning the enemy and your own supporting troops.

Usually you will give him all the information you have.

Paragraph 2

Give your plan of operations.

Paragraph 3

Indicate what troops are to carry out this plan, and the mission of each unit.

Paragraph 4

Tell what is to be done with the baggage trains and non-combatant troops.

Paragraph 5

Tell where to send messages or to ask for future orders or instructions. This is usually done by indicating where the commander may be found.

CHAPTER VII.

MESSAGES.

"The first contact with the hostile infantry must always be reported."—Von Bernhardi, Cavalry in War and Peace, page 60.

Not only must a scout or patrol leader collect information desired by the officer who sends him out, but he must get that information to that officer in time for him to use it in the development of his plans.

Information is transmitted in the form of a message, either verbal or written, sent by messenger, by visual signals, by telephone or telegraph.

The message itself must be brief and clear. The source of the information contained in it must always be stated, and the sender must carefully separate what he has actually seen from that he has received second hand.

"Written messages must be clear and definite. Expressions depending upon the viewpoint of the observer, such as right, left, in front of, behind, on this side, beyond, etc., are avoided, reference being made to points of the compass instead. The terms right and left, however, may be applied to individuals or bodies of men, or to the banks of a stream; in the latter case the observer is supposed to be facing down stream. The terms right flank and left flank are fixed designations. They apply primarily to the right and left of a command when facing the enemy and do not change when the command is retreating. The head of a column is its leading element, no matter in what direction the column is facing; the other extremity is the tail.

"To minimize the possibility of error, geographical names are written or printed in ROMAN CAPITALS; when the spelling does not conform to the pronunciation, the latter is shown phonetically in parentheses, thus: BICESTER (Bister), GILA (Hee-la).

"When two or more places or features on the map have the same name they are distinguished by referene to other points.

"A road is designated by connecting two or more names or places on the road with dashes, thus: LEAVENWORTH—LOWEMONT—ATCHISON road.

"Write all messages in a clear, round hand, so distinct as to be clearly legible even in a bad light.

"When a message is to be sent by telegraph it should be written and handed to the operator, not dictated to him. When a telephone is used, the person to whom the message is addressed should, if possible, be called to the receiving end of the wire. The telephone is less reliable than the telegraph, and, on a busy wire, the receiving operator is apt to distort the message.

"Messages carried by messenger are usually enclosed in envelopes, properly addressed. When the message is regarded as confidential it is sealed, marked confidential, and hastened directly to its destination. If not a confidential message, it should be unsealed, the messenger should know its contents, verbatim, and it is proper that commanders along the line should know its contents.,

"Upon the envelope is written the name of the messenger, his time of departure and rate of speed. The latter is indicated as follows: Ordinary, rapid, urgent. Ordinary means about five miles an hour for a mounted man; rapid, about seven or eight miles an hour; and urgent, the highest speed consistent with certainty of arrival at destination.

"Important information is sent by two or more messengers, depending on the dangers of the road. A single messenger is not so confident, and something may happen to him, or to his horse. It may also be advisable to send duplicate messages by different routes. Messengers are informed, before starting, of the purport of the message, and where they are to report after it is delivered. A messenger need not alter his pace when passing superiors."

The above quotations are taken from the Field Service Regulations, and are, like everything else in that manual, much condensed. Certain very important matters are not touched on at all. The patrol leader who has to send a message should answer these two questions before he writes it: "What is it that my chief wants to know? How can I write the knowledge that I possess briefly and yet make it unmistakably clear?"

Return now to the situation discussed in the last Chapter. Consider the message sent the night before the problem opens, when the camp of the Red cavalry near McSherrystown had been discovered.

To simplify the discussion, the student will now consider himself the leader of this patrol.

You have discovered a "large cavalry command" in camp. You want to tell your chief, at York Springs, about it. He is a busy man, and does not want to waste time over your message. So, in the first place, you must write your message in a clear, round hand. He may be awakened from a profound sleep by your messenger, and may have only a match or a candle to read it by, so use large characters, making each letter distinct and ALWAYS WRITE GEOGRAPHICAL NAMES, IN MESSAGES OR ORDERS, IN ROMAN CAPITALS. If two places near by have the same or similar names, identify the one you mean by some other neighboring place.

Give the location where the message was written unmistakably, and the date and hour the messenger started with it. Put nothing in the message that will not be of value to your chief.

Certain of the details of the things you have seen may be of tremendous interest to you—you may have had a fight; perhaps some of your men and horses were killed; you, yourself, may have been wounded—but unless these incidents have a direct bearing on your mission, do not recount them in your message. Limit that to such facts as will be of value to your chief in the development of his plans.

What is it, in this instance that your chief wants you to find out? It is this: "Where is the Red cavalry? How strong are they? Where are they going?" You have found them. Then went into camp this afternoon at McSherrystown.

"Where did they come from?" That is not material.

"How many of them are there?" That is most material. How are you going to find it out? Their outposts prevent you from getting any nearer. You must, since you cannot count them, find out how large their camp is, tell him, and let your chief estimate their numbers. Assume that they are camping in the fields on both sides of the McSherrystown-Centennial road, along the South Conewago, and that their camps stretch along the river for a mile. You can see and be sure of that much. Their wagons were coming in at dark; you counted some of them, but they were still coming when it became too dark to see more, so your count is worth little. **In the last sentence of your message tell your chief your own plans.**

Your message would then read:

From Lieut. A.....'s patrol.
At hill 1 mile southwest of CENTENNIAL.
Date: 14 Nov., 1912. 5:15 P. M. No. 1

To: C. O. Blue Detachment.
YORK SPRINGS, PA.

There is a Red cavalry camp on the right bank of the SOUTH CONEWAGO River, one mile northwest of McSHERRYSTOWN. Camp extends along the stream for about one mile. I remain in observation

(Signed) A.....,
Lieutenant.

This is enclosed in an envelope, addressed to the Commanding Officer, Blue Detachment, York Springs, and the name of the messenger, the hour he left, and the authorized rate of speed—ordinary, rapid, or urgent—are noted on the envelope.

In order that this very important message may surely reach your chief, you send it in duplicate, by two pairs of messengers. You direct one pair to use the Carlisle and Baltimore Pike; the other to take the roads to the west of New

Oxford and Newchester. All the messengers are told what the message contains.

Here is another problem.

General Situation.

The boundary between Pennsylvania and Maryland (Guide Map) is the frontier between two nations at war. Blue forces coming from the south are approaching this frontier. Red forces of considerable strength are advancing on Gettysburg from the north.

Special Situation. Blue.

Desiring to locate the main Red forces, and to determine their strength, the Blue commander sends out a number of strategic patrols. One such patrol is ordered to go by Littlestown (the northern edge of Littlestown, is cut by ths southern edge of the Strategic Map, four miles from its southeast corner) towards Round Hill (on the northern edge of the Topographical Map) with instructions 'to seek for information of movements of Red troops in that vicinity."

To support these strategic patrols, the Blue commander followed them up with a squadron of cavalry that was ordered to go to Littlestown. The patrol leaders were directed to send all messages to the commander of this squadron.

The patrol consists of eight men. The leader is an officer. The patrol has reached 584, Topographical Map, on the York Turnpike, without incident. The weather is fine, clear, and warm. It is ten o'clock in the morning of a summer day. The York Turnpike is the main road between York and Gettysburg. In approaching it the patrol has been led from 532, and the ridge running a little west of south from 584 was the western horizon until just before the crossroad was reached. Here the orchards obstruct the view to the west, except along the road itself. The road to the east is in plain view, except that a part of the valley of the Little Conewago is hidden by the military crest, which should be found (by profiling, see page 35) about the 540 contour. New Oxford is entirely in view.

The leader dismounts his patrol, except three men, one of when he takes to the western edge of the orchard, a quarter of a mile away, for an inspection of the country to the west. After a careful survey in that direction he leaves the man there to give warning of the approach of hostile parties, directs him to rejoin the patrol at the walk in ten minutes, and then returns to 584. The other two men had trotted to the northeastern corner of the northern orchard, when the patrol halted. They inspected the country to the north, then dismounted, removed their horses' bridles to permit them to graze, loosened the cinchas, and remained in observation, one man holding the horses, the other standing at the end of the hedge, where he had a good view to the north.

The leader, at 584, studies his Strategic Map, sees that the next important east and west road is the one through Hampton, Newchester, and Hunterstown, and decides to go next to 568, on the long ridge to the north, across the railroad and about a mile away.

After a rest of fifteen or twenty minutes, during which time the horses had been unbridled, cinchas loosened, watered at a trough in the farmyard near by, and then allowed to graze, the patrol prepared to go ahead with its mission. The man posted to the west came in. The patrol was mounted, and, as soon as they appeared on the road to the northeast, the two men in observation there bridled their horses, tightened the cinchas, mounted, and remained in observation. As the patrol came up they joined it. The patrol leader took out his glasses, swept the country in his front with them, oriented himself, and then gave the following instructions:

"We will proceed, at the trot, to the knoll over there." (Pointing to the knoll 573, to the north.) "I will take the lead with Trooper Burns. As long as we ride boot to boot, follow us at about a hundred yards distance. When we separate, halt. One of us will ride forward at each halt. When the other one rides forward, you will advance without other instructions. If I wave my hat, come up at top speed. If I

spread my arms, take cover." These signals are improvised ones—any agreed upon would do as well.

In this manner they advanced; when a hundred yards from the crossroad 557, the pair in front separated. The man on the right halted, the other trotted forward to the crossroad, inspected it, saw nothing suspicious, and waved his right hand, low down—a signal to his partner to come up. This he did; the rest of the patrol followed.

The man on the right halted, when near 557, because the cover was better on the left side of the road, and the other man advanced near the left side of the road. This is a good rule: Advance under cover, but observe from where the best view can be had. With the arrangement described, the patrol advances without signals. The point does not need to look back at all, but can concentrate on its particular duty.*

Arrived at the farmyard near 568 the patrol was led into shelter of the buildings, and, from an upper window of the house, the leader had an excellent view to the west, northwest, north, and east. His view to the northeast was stopped at the grove, half a mile away. The valley of Swift Run was hidden.

A movement in the road just west of the orchard near 594, two miles to the northwest, attracted the leader's attention. Observing closely with his glasses, he saw that a column of infantry was marching towards the west. He did not see the head of it, but it passed while he watched it, for eight minutes. Then came an artillery column that took fifteen minutes to pass, and it was followed by infantry for twenty-two minutes. Then a column of wagons. Their tops were easily seen; there were 89 of them, and they were eighteen minutes in passing. They were followed by a short infantry column—about a company.

---

* I saw a patrol of a corporal and three troopers of the Tenth Cavalry work in this way during the Danbury maneuvers of 1912. I watched their work for several miles, and it was perfect—rapid, silent, without a hitch. I questioned the officers of the regiment afterwards, but could not learn that this method had been a matter of instruction. It seemed to have been worked out by the corporal and the members of the patrol.—F. C. M.

The patrol leader then wrote this message:

From Lieut. N.....'s patrol.
AT SWIFT RUN, S. H., 2 miles northwest of NEW OXFORD.
July 17, 1912. 10:27 A. M. No. 1.

To: The C. O., 1st Sq., 1st Blue Cavalry,
LITTLESTOWN, PA.

Just saw column Red troops on road NEWCHESTER—HUNTERSTOWN, at crosscroad 594 about 1½ miles west of NEWCHESTER, marching west. Did not see the head of it, but saw about one infantry regiment followed by a battalion of field artillery, two regiments of infantry, and 89 field wagons. I shall keep in touch with them.

(Signed) N.....,
Lieutenant.

This was enclosed in an envelope addressed to C. O., 1st Sq., 1st Blue Cav., Littlestown, Pa. Sent at 10:30 a. m., 17 July, 1912. Rate of speed: rapid. Names of messengers: Burns and Stephens.

It was read to the two messengers, repeated back by them, and they were directed to proceed to Littlestown at once, by the most direct road, and not to attempt to rejoin the patrol unless ordered by the commanding officer there.

The patrol leader then assembled his patrol, told them what he had seen, and said that his plan was to follow the Red command, keeping on its left flank, until relieved. He decided to go across Swift Run at 466 W, then around the hill 571 to 506 and 606 and thence west, guided by circumstances. He used the same formation as before. The horses had been fed well rested by the hour's wait on the hill and could be relied on for fast work until contact with the Red troops was obtained. They went rapidly into Swift Run Valley. At the bend in the cut just across the bridge the point halted suddenly and dropped back under the crest; the leader waved his hat and the patrol came up rapidly. The leader cried: "The enemy! Draw saber! Charge!" and they dashed around the turn, surprising a Red mounted patrol of four troopers, charged through them, killing or wounding two and capturing the others. They were quickly disarmed, the wounded men cared for by one of the Blue troopers, while the two cap-

tured men were separated at once, and questioned one by one, each out of hearing of the other, by the lieutenant. One man rode to the north, beyond the edge of the woods to guard against surprise.

The lieutenant learned that this patrol was sent, from the infantry command they had seen, to go to New Oxford, but could not learn their mission there. They (the patrol) had stopped at the farmhouse near by to get some food. They said that the command was a brigade of infantry, a battalion of field artillery, and a squadron of cavalry that was acting as advance guard for a division of infantry that should be passing through Newchester now. This last information was given by only one member of the Red patrol. The other denied all knowledge of any other Red troops in the vicinity.

It should be observed here that had the Red patrol been properly led, it would not have been possible for the Blue men to have captured and put out of action the entire patrol. One man at least should have been on watch to prevent just exactly what happened, and the Red patrol should have been so disposed that, in case of attack at this place, at least one man would stand some chance of getting away. Unless Lieutenant N—— discovered the Red patrol without his own men being seen, and he was quite sure that he could get away with the whole patrol, his action in this case would have been of doubtful advisability. In the fight to occur, shots were likely to be fired, and if the Red patrol were properly handled, one or more of its members were likely to escape; either of which contingncy might give warning to other hostile t roops in the vicinity, of the proximity of the Blue patrol, resulting in a hampering of its efforts to fulfill its mission, i. e., to obtain information. The only advantages to be obtained by this action were the destruction of the Red patrol, thus preventing it from obtaining information of the Blues—which was not the mission of the Blue patrol, and the obtaining of such information of the Reds as might be disclosed by the questioning of the prisoners and by the indications as to the organizations to which they belonged. The information to be obtained from the prisoners

if they are trained men, will be of doubtful value, as they may give false information or refuse to give any at all. However, the situation here given is not impossible nor improbable. The enemy's patrols will not always be properly conducted—and a patrol leader must always be on the alert to take advantage of his adversary's errors. By skillful handling of the prisoners, he may be able to obtain valuable information from them; and if it is his judgment that the possible results of attacking the enemy's patrol are worth the risks, he should not hesitate to do so vigorously.

The thing to be done by Lieutenant N—— immediately upon the completion of the questioning of his prisoners was to write a message.

This might be done as follows:

From Lieut. N.....'s patrol.
At SWIFT RUN, 1½ miles southwest of NEWCHESTER.
17 July. 10:50 A. M. No. 2.

To: The C. O., 1st Sq., 1st Blue Cavalry,
LITTLETOWN, PA.

The body of troops reported to be on the NEWCHESTER—HUNTERSTOWN road by me in my message No. 1* is said by some prisoners just captured to be a reinforced brigade acting as advance guard to a Red division. Prisoners belong to Troop H, 6th Red Cavalry.** I remain in observation.

(Signed) N.....,
Lieutenant.

This message was given to two well-mounted troopers, with these instructions: "You know what has occurred. It is twelve miles to Littlestown, and you should reach there in an hour. Spare your horses on the steep hills, but make good time on the level places. Unless directed to do so, do not attempt to rejoin me."

---

* It is always a good plan to repeat the contents of previous messages in later ones. This helps to an understanding of the ones received if others, sent before, are intercepted.

** This information is valuable to your commander, who, from his information of the Red organizations, can find out what division the 6th Red Cavalry is attached to, its strength, who is its commander, and much other data of great value.

What would be the patrol's next move? It would be folly to attempt to get nearer to the Newchester-Hunterstown road. In fact it would be well for it to get out of its present position as quickly as possible. It appears that the best thing to do is to go back to Hill 573, and for these reasons: The patrol that was captured was undoubtedly either a flank patrol, that attempted to mislead its captors by claiming a mission towards New Oxford, or a connecting patrol, sent with verbal instructions (since no writing was found an any of them), or information for a second column marching west, possibly on the York Turnpike.

This would be natural, because a division would never execute a flank march across a hostile front without a flank guard, and a strong one. Hill 573 affords a good position to watch the roads leading west and south from Newchester, and an extra line of retreat could be made by cutting gaps in the fences west of 568 to the brook. From there hiding places might be found in the dense fringe of trees bordering Swift Run. This line of retreat would be used only in case retreat by any of the roads leading from 568 became impossible.

How to get there? By the road? Hardly. It would be better to take a little longer and follow the cover to Swift Run and Brush Run, thence up the little wooded valley to Swift Run School House.

What shall be done with the prisoners? Make the wounded as comfortable as possible in the very few minutes you can spare for such a duty. Turn their horses loose. Take the other two prisoners, and their horses along. Humanitarian impulses must be controlled at certain times in warfare. It is hard to leave wounded men suffering for lack of attention, along the road side, but, if the success of your mission depends on it, you must do it.

After the reconnoissance from Hill 573 is completed the prisoners might be got rid of by dismounting them, and directing them to go in the opposite direction to that the patrol intends taking. If their horses are better than those of the patrol, they should be exchanged. The extra horses should be led for a distance, far enough to be sure that the prisoners will not get them again, and then turned loose. They may be shot.

When this patrol reached 568 the leader dismounted it in the farmyard, as much out of sight as possible. He took one man and climbed to the cupola of the barn, a sort of ventilator with openings on all sides. From there he saw a column of Red cavalry entering New Oxford from the north, some Red infantry on the road near 520, to the northeast, and about a platoon of Red infantry approaching the bridge at 466W, coming from the north.

As will be shown later on, an advance guard consists of advance cavalry, a support and a reserve. The advance cavalry precedes the column by enough distance to protect it from artillery fire—about two miles in advance of the support. That body, in turn, is in the neighborhood of a mile in front of the leading elements of the main body.

Only fragments of the Newchester—New Oxford road can be seen from the cupola of the barn near 568, but the leader of the patrol there can see enough to convince him that a body of cavalry, marching south into New Oxford, is followed at a distance of about two miles by infantry. Also that an infantry column—at least a platoon—is marching towards him at a rate of about 88 yards a minute, and that it is not much more than a thousand yards away. In twelve or thirteen minutes they will be where he is now, but he can afford to wait at his post of observation, provided he has the other members of his patrol mounted and ready to start, until the approaching infantry reaches the orchard 400 yards away. So he tells the man with him to go down and have everything ready for a sudden start, while he remains watching New Oxford, the bit of road he can see near 520, to the northeast, and the approaching infantry.

Looking across Swift Run he now sees masses of infantry filling the road from 530 to Snyder's, and beyond to the horizon. The head of another column of infantry is nearing 520, to the northeast. The cavalry is raising a cloud of dust south of New Oxford; his nearer danger—the infantry platoon—has reached the orchard. He hurries down from his post of observation, mounts, and, galloping at top speed, leads his patrol by 557 and 584 to the farmhouse just west of the word YORK, on the York

Turnpike, from which place he has a good view of the roads leading to New Oxford, and can watch the Red cavalry.

It keeps on marching towards the south. He infers from that that the infantry following it is going on, and he resumes his march south, paralleling their march, to search for some point where he can afford to wait to see if the Red infantry is really following. Such a place might be found near the Kohler School (Strategic Map). When he has verified the fact that the infantry is really marching south of New Oxford is the time to send another message. He has not enough men left to send any incomplete mssages.

Two messages have been sent, one when the first large body of Red troops was seen, the second when information had been discovered concerning their identity, and the larger Red forces near by. If a message were sent from 568 it could add but little to the information already sent in. By waiting until it is positively known where the bodies of approaching troops are going, the patrol leader will have more important news to send, and he cannot afford to deplete his patrol entirely of messengers.

Before the subject of messages is carried any farther, it is necessary to consider the duties of those protective groups—outposts, advance, rear, and flank guards—that all bodies of troops throw out, to keep off hostile patrols, and to prevent surprise. See Messages, p. 198, Appendix.

MESSAGES

A MESSAGE CONTAINS FOUR PARTS:

1. The Heading

This should indicate, clearly and unmistakably:

a. From whom it is sent.
b. The place from which it is sent.
c. The date and hour of starting.
d. Its number in the sequence of messages for that day.

2. The Address

This should include:

a. The title of the commander for whom the message is intended.
b. The place where he will probably be found.

3. The Body

This should be framed in answer to these two questions:

a. What is it that my chief wants to know?
b. How can I write any desired knowledge that I possess briefly, and yet make it unmistakably clear?

After writing the message, it should be submitted to these tests:

a. Does it contain all the information that I have collected that is of use to my commander?
b. Does it contain anything that will not be of use to him?
c. Is it limited to facts that I have verified? If any unverified reports are included, does it clearly show the source of such reports and the fact that they have not been verified?
d. Is it legibly written, and without ambiguities, so that it may be quickly read and instantly and accurately comprehended?

4. The Signature

This should be legible and in some sure way indicate the authenticity of the message.

CHAPTER VIII.

OUTPOSTS

"The outpost is a covering detachment detailed to secure the camp or bivouac against surprise, and to prevent an attack upon it before the troops can prepare to resist."—Paragraph 678, *Infantry Drill Regulations.*

Troops marching are protected by advance, rear, and flank guards, but when a halt is made, in addition to these groups, the commanding points near the column are at once occupied by other groups, sent out from each unit, to add to its protection while it rests. These groups are called march outposts.

An example of a march outpost for a patrol was given on page 82, ante. In that case the patrol had come from the south, on the east side of a ridge that, on that side, was open to the patrol's view. The leader decided to rest on the top of this ridge for a few minutes, to water his horses and to let them graze. It would not be safe to do this without first inspecting the country he had not been over, so the leader, and one man with him, went to the west, while two men went to the north, in which latter direction the leader planned to go on resuming his march.

He selected for his halt a ridge with a wide view on every side and roads available for retreat leading in all directions. The orchards limited his view to the west and north; if they had not been there there would have been no need of march outposts at all, as these groups are only sent to places threateningly near the command that hide routes by which an enemy might come up unobserved.

When he halts at 568 he will need no march outposts at all; at 594 he will need them on all the roads, in case he decides to stop there, for, although on top of a ridge, the cross-road happens to be in a small depression screened by trees or higher ground in every direction except the northwest.

So with a larger body having out advance, flank and rear guards. For all those units that happen to halt where hiding places are near by, and not occupied by any of the groups of the

protective bodies, march outposts should be at once sent out to occupy them during the halt.

In the French system of tactics it is provided that certain units of every marching body shall be designated to provide march outposts for that body at each halt. The commander, when ordering a halt, to rest during the march, commands: *"Halt! March Outposts!"* Then the officers commanding the designated march outpost units at once become responsible for the protection of the portion of the command his unit is selected from. Field Service Regulations and Drill Regulations are silent on this point.

When a halt for the night is made, or a camp is pitched for a longer period than a single night, the command is surrounded by protective groups also called outposts, that remain on the alert in order that the bulk of the command may get its necessary rest.

The size of the outposts and the extent of country they cover should depend entirely on the proximity and character of the enemy. When the enemy is known to be a full day's march away or more, and the people of the country are friendly, a few sentinels, more for police purposes than for any other reason, usually can give sufficient protection.

If the enemy is retreating, or is in bad morale, an outpost is needed, to be sure, but not necessarily a strong one. But when the forces opposing each other are nearly equal in strength, and are getting within striking distance of each other, then the outposts must be strong, well posted, and ably commanded. With the modern arms of precision and rapidity of fire, after opposing forces come together, and before the superiority of one over the other has been determined, they cannot, in many cases, advance over open ground in the day time, but must do so at night. Then it is that the outpost reaches almost its greatest value.

But each separate body of troops in war time must have its outposts. Three men, on patrol duty, when overtaken by night away from their command and compelled to bivouac, should have one man on watch while the others sleep, and this man is an outpost. A company of infantry guarding a bridge or a railway station on the line of communications must have its outposts, to warn it of threatened raids, standing off the hostile body while

the rest of the company prepares to defend its charge. Day and night and week after week, during the conduct of hostilities, every military group in the theater of operations must be protected by outposts. No duty is more important, no duty requires greater fidelity, greater courage, better judgment.

The principles governing the posting of outposts are the same as those that govern the formation of all protective bodies. "There is (1) the *cavalry covering the front;* next (2) a *group* or *line of groups in observation;* then (3) the *support* or *line of supports,* whose duty is to furnish the observation groups, and check the enemy pending the arrival of reinforcements; still farther in the rear is (4) the *reserve.*" (Paragraph 37 Field Service Regulations.)

The advance cavalry of the outpost is in front, reconnoitering towards the enemy. Its patrols cover the front, and, in fact, all directions from which the enemy might come, far enough to protect the camp from possibility of surprise by artillery fire.

But it is not only to protect its main body from artillery fire that the advance cavalry goes out, but to give ample warning of the approach of all dangerously large hostile bodies. Artillery must not be allowed to come within its extreme range—about three miles—but even if there were no artillery to be reckoned with, the advance cavalry would still be sent out to watch, from commanding points, all the directions from which the enemy might possibly come.

The advance cavalry can not be expected to exclude all reconnoitering patrols of the enemy, especially in country that is at all rough or where cover for those small groups is abundant. It can, and must, be so posted as to give warning of the approach of all considerable bodies of the enemy. Incidentally it drives away all small patrols that are seen, provided that, in so doing it is not drawn entirely away from the commanding points it is set to watch.

The outpost consists essentially of two parts: the advance cavalry, just described, which protects the larger units behind it from surprise by artillery fire, and warns them of the dangerous nearness of large hostile bodies, and the infantry of the outpost, the reserve, supports, and outguards, that protects the large units

of the army from surprise by infantry fire, and which must hold, at all cost to itself, the ground selected for the defensive position to be occupied in the event of a serious attack. This line is called the line of resistance.

"The reserve constitutes the main body of the outpost and is held at some central point from which it can readily support the troops in front or hold a rallying position on which they may retire. The reserve may be omitted when the outpost consists of less than two companies.

"The reserve may comprise one-fourth to two-thirds of the strength of the outpost.

"The supports constitute a line of supporting and resisting detachments, varying in size from a half company to a battalion. They furnish the line of outguards.

"The supports are numbered consecutively from right to left. They are placed at the more important points on the outpost line, usually in the line on which resistance is to be made in case of attack.

"As a general rule, roads exercise the greatest influence on the location of supports, and a support will generally be placed on or near a road. The section which it is to cover should be clearly defined by means of tangible lines on the ground and should be such that the support is centrally located therein.

"The outguards constitute the line of small detachments farthest to the front and nearest to the enemy. For convenience they are classified as pickets, sentry squads, and cossack posts. They are numbered consecutively from right to left in each support.

"A picket is a group consisting of two or more squads, ordinarily not exceeding half a company, posted in the line of outguards to cover a given sector . It furnishes patrols, and one or more sentinels, double sentinels, sentry squads, or cossack posts, for observation.

"Pickets are placed at the more important points in the line of outguards, such as road forks. The strength of each depends upon the number of small groups required to observe properly its sector.

"A sentry squad is a squad posted in observation at an indicated point. It posts a double sentinel in observation, the remaining men resting near by and furnishing the reliefs of sentinels. In some cases it may be required to furnish a patrol.

"A cossack post consists of four men. It is an observation group similar to a sentry squad, but employs a single sentinel. At night it will sometimes be advisable to place some of the outguards or their sentinels in a position different from that which they occupy in the daytime. In such case the ground should be carefully studied before dark and the change made at dusk. However, a change in the position of the outguard will be exceptional.

"Sentinels are generally used singly in daytime, but at night double sentinels will be required in most cases. Sentinels furnished by cossack posts or sentry squads are kept near their group. Those furnished by pickets may be as far as one hundred yards away.

"Every sentinel should be able to communicate readily with the body to which he belongs.

"Sentinel posts are numbered consecutively from right to left in each outguard. Sentry squads and cossack posts furnished by pickets are counted as sentinel posts."

The paragraphs quoted from the Field Service Regulations, above, describe in general terms the duties of these bodies, and the general aspect of the outpost fabric.

The line of outguards occupies what is called **the line of observation.** They are the real antennae of the outpost. Sentinels from the outguards are posted to observe every avenue of approach, covering the front and flanks of the main body, giving warning of the approach of hostile forces, and resisting their advance to the limit of their ability. When resistance ceases to avail farther, these observing groups, called outguards, fall back on larger groups in their rear, the supports. These supports usually supply two or more outguards. Numerically they are usually twice as large as all the outguards that are detached form them, and they are posted in good defensive positions.

These support positions are, when possible, the strongest, tactically, to be found near the camp of the main body, and as a rule

are selected as the place where the main body expects to make its greatest resistance. The line of supports is therefore frequently called the **line of resistance.**

For small commands these two lines usually give sufficient protection, but larger commands may add a third group, or line of groups, posted between the support and the main body, called **the reserve.**

In the case of a marching body that halts for the night, the advance guard of the day becomes the outpost for that night. It, as will be seen, is more familiar with the situation than any other part of the command. It is already in position, or nearly so. On the day following, the outposts remain at their posts until the new advance guard passes them, when the march is resumed. Then they usually fall in with the main body, as it comes up.

The advance cavalry of the outpost remains out, a mile or more, beyond the outguards, in observation of the country until dark, when it comes in and goes into camp between the supports and the main body. If there is a reserve to the outposts, the advance cavalry may spend the night near it.

Cavalry is less useful at night than in the daytime. Horses must have rest, and they rest better at night than in the daytime. The outpost of a cavalry command is usually dismounted at night, and the horses sent to the rear as soon as darkness closes in.

A few mounted men, when available, are, however, frequently attached to the supports for night patrolling beyond the outguards, when such patrolling is thought to be necessary or effective.

The cossack post, consisting of three men and a non-commissioned officer, is the smallest outguard. This group, placed in concealment, posts a sentinel near it—ten to twenty yards away. He watches for a while, not longer than two hours, and then is relieved by one of the others, who watches for the same period in his turn, when he is relieved by the third. The sentinel gets moral support from the proximity of the others of the group.

The sentry squad is the next in size. It consists of an infantry squad, eight men, one of whom is a corporal. The sentry squad

usually furnishes one double sentinel post, with its two reliefs. These sentinels should be posted near the rest of the squad, which is concealed. They too are relieved every two hours, in the usual case; six of the seven privates being used in this way, the seventh being available for use as a messenger, or to replace any man who is incapacitated for any reason.

The picket may post its sentinels as far away from it as one hundred yards; its cossack posts and sentry squads may be even farther away.

Whether a picket, a sentry squad, or a cossack post shall be used to observe any sector of the line of observation will always depend on the answer to this question: What is the smallest number of men that can be safely depended on to watch this sector efficiently?

The reserve, on outpost duty, may stack its arms; the men may remove their equipments and fall out of ranks. Cooking is usually done at the reserve for the rest of the outpost. Communication from the reserve to the supports is usually maintained by visiting patrols and by messengers. When allowed at the support meals are prepared there for the outguards. Except when the camp is attacked, duty with the reserve consists simply in being ready and available to reinforce the supports.

The support also stacks arms; the men fall out of ranks and remove their equipments, except the belts. Sentinels are then posted to warn the supports of any unusual happenings in the direction of the outguards. Cooking may or may not be allowed at the supports. This is determined by the outpost commander, not by the support commander.

Outguard duty is either sentinel duty or combat. Until the enemy has actually attacked them, the sentinels remain at their posts, alert, keenly observant of the ground assigned them to watch. They, and the outguards that sent them out, remain constantly on the alert, fully equipped and ready for instant action.

It must be understood that mobility counts for little with an outpost. **Observation and resistance are the functions of outposts.** The greater part of every outpost consists of infantry. Even the outposts of cavalry commands perform most of their night duties dismounted. (Paragraph 72, Field Service

Regulations.) By day cavalry patrols can go to prominent points well in advance of the line of infantry outguards, where a good view may be had of the surrounding country, and so can be of great assistance to the infantry. The Field Service Regulations say (Paragraph 72): "With efficient cavalry in front, the work of the infantry on the line of observation is reduced to a minimum." But the cavalry must be efficient here as elsewhere to be of value.

At night mounted men are of very little value to an outpost. It is impossible for them to move without making noise. Their bulk makes them easily seen, and it is comparatively easy to waylay them and destroy them. More than that, cavalry that is properly used is of great value. Horses are creatures of habit, and are without that patriotic sentiment that keeps men going, in spite of weariness and lack of food. Horses rest best between midnight and morning, and nothing but the gravest emergency should deprive them of their rest. So, at dark, the cavalry of the outpost should come in. It is quite proper to use the men, dismounted, on night outpost duty when the occasion demands it, but the horses should not be so used.

The orders for outpost sentinels discussed below have received the approval of the Secretary of War. Every military person who is liable to be called on to act either as a sentinel of the outpost, or in any capacity to instruct or inspect such sentinels, should learn them **verbatim,** and know how to apply them.

FIRST: ABOUT MYSELF AND FRIENDLY NEIGHBORS.

My post is number ....., outguard number ..... The outguard is There. The post on my right is number ....., outguard number ....., and is There. The post on my left is number ....., outguard number ....., and is There. The support is There. Other detachments are There and There. Such and Such patrols are operating in my front. This road leads to .....

No outguard sentinel should permit himself to be posted

without receiving the necessary information to enable him to fill the gaps in this paragraph of his orders.

He cannot be expected, in these days of neutral-colored, non-distinctive uniforms, to be able to tell friend from foe unless he knows exactly where every friendly group is posted, where every friendly patrol may be looked for in his sector.

SECOND: ABOUT THE ENEMY.

The enemy is reported to be There. I have seen Him, (describing exactly what hostile bodies I have seen) There; or, I have not seen him. I am to watch for him between There and There. If I see any unusual movement I am to report it at once to my outguard commander, who is There. If suddenly attacked and forced to retire or threatened with capture, I shall rejoin my outguard by going around That Way so as not to disclose the position of my outguard to the enemy, or to mask its fire.

The first paragraph shows that the sentinel knows where his friends are; the second shows that he knows everything he should know about the enemy, and what to do if he observes new conditions in his front, or is suddenly attacked.

THIRD: HOW TO CONDUCT MYSELF ON MY POST.

By day I shall make the best use possible of such cover as is available, standing, crouching or lying down, and remaining stationary or moving about as will enable me to observe the sector assigned me to watch in the most efficient manner.

I shall carry my piece at will, loaded and locked.

I shall inform friendly patrols of what I have seen.

At night I shall remain standing, habitually stationary, moving about only for the purposes of observation. I will not sit or lie down unless authorized to do so.

This paragraph, properly recited, proves to the inspector that the sentinel knows how to conduct himself while on post. He should be required to explain how he applies the first paragraph to his particular problem. He is required to remain standing at night because he will keep awake if he stands up.

He should not be authorized to sit, or lie down, unless it be necessary to do so in order to remain concealed.

FOURTH: WHEN TO FIRE ON THE ENEMY.

Unless specially ordered to fire on the enemy whenever seen I shall fire only under the following circumstances: (a) when suddenly attacked and there is no time to call the outguard commander, I shall fire rapidly, but with careful aim. (b) When a person approaching my post is ordered to halt and fails to do so, or otherwise disobeys me, I shall fire deliberately, taking careful aim, so as to be sure and stop him.

Training in the matter of when to fire on the enemy is especially important. It is always noticed that green troops are unnecessarily alarmed by their outposts. Sentinels are permitted, or ordered, to fire at every moving thing in their front. Innumerable instances occur where the supports, or reserves, or even the main body itself, are rushed to the line of resistance by the nervousness or apprehension of the outguard sentinels, when there was no occasion for alarm. The provisions of the above paragraph should be rigidly enforced.

FIFTH: TREATMENT OF INDIVIDUALS APPROACHING MY POST.

By day I shall allow only officers, non-commissioned officers, and detachments recognized as part of the outpost and officers known to have authority to do so, to pass my post either in or out. I shall detain all others and notify my outguard commander.

At night, when any persons approach my post, I shall come to a ready, halt them, and notify the outguard commander.

Persons claiming to be deserters from the enemy are required to lay down their arms. If they are pursued by the enemy I shall order them to drop their arms, and I shall give the alarm. If they fail to obey me at once I shall fire on them.

I shall halt bearers of flags of truce and their escorts, require them to face outwards, and at once notify the commander of the outguard.

This paragraph, if properly put in execution, will prevent unnecessary firing by sentinels. It tells who are permitted to pass the sentinels, in or out. It should be rigidly followed. The sentinel must be sure that he recognizes every person or group that approaches his post before he allows them to proceed, even in the day time. If he has the least doubt as to their identity, he must call his outguard commander, keeping the suspected person or group at a safe distance from him until the outguard commander comes up and relieves him of his responsibility.

In the ordinary case there is only one group on the outpost line that is authorized to pass strangers. This group is called an examining post. Its commander is usually an officer. Strangers positively identified as not part of the outpost, should be passed along the front of the line of observation to the examining post, and never allowed to go in rear of it. It is no part of the duty of outguard commanders to permit strangers to visit the support, unless the support commander should authorize it in person.

At night the sentinel must pass no one, except his own outguard commander. The latter is called in every case, and on him rests the responsibility of identification.

Sentinels, when possible, are posted (a) so as to have a good, clear view to the front; (b) so as to be able to communicate easily with the group that sent them out; (c) so as to be concealed from observation to the front; (d) so as to see the sentinels of adjoining outguards. If any of these conditions are impossible to realize, they should be sacrified in inverse order, the last first.

It is absolutely essential that the sentinel should have a good clear view to the front, because otherwise the enemy would be able to move about in his sector without his seeing him. He must be able to communicate easily and at all times with the group that sent him out. This communication must never be broken. It is imperative that every signal of the sentinel be instantly observed and repeated to the outguard commander.

If the sentinel, in order to see unobstructedly to the front of his post, has to show himself, he must do so. It is his paramount duty to observe. He should use his ingenuity to screen himself as much as possible from hostile observation, but he must not abandon or neglect his mission as an observer to do this.

When it is possible, with the men available, to post the sentinels so that each one can see those to the right and left of his post, it should be done. It is often not possible. In such cases connection is kept up by means of visiting patrols. In every case, whether or not the sentinel can see his immediate neighbors on the line of observation, he must know where they are.

Whether a cossack post, a sentry squad, or a picket is to be used at any particular spot will depend on its importance in the scheme of security. A prominent spot—the top of a bald hill or the crest of an open ridge—that is off a road and not likely to be used as an avenue of hostile approach, could, perhaps, be effectully covered by a cossack post, while an important road, a road fork or crossroad, a bridge, a ford—any place where the enemy is liable to come in force—would be an appropriate place for a picket.

The decision as to the strength, composition and location of the outpost rests with the Commanding Officer of the forces, no matter the size of the command, up to and including the division.

NOTE.—The Field Service Regulations, Paragraphs 60 to 83, and the Infantry Drill Regulations, Paragraph 678 to 707, prescribe the general rules for the formation and duties of outposts. The student is advised to study these paragraphs closely. Instructors should include them in assigning lessons to students.

The duties of the outguards can scarcely be taught from maps of as small scale as those accompanying this txet. They should be taught from the War Game Map, or, far better and easier, on the ground.

The problem below is to show the relation of an outpost to its main body, in the case of a small isolated command, in unfriendly country:

General Situation.

Guide Map.

War exists between two States separated by the Susquehanna River. Eastern, Blue, forces have crossed the frontier, and, on July 20th, were massed at Gettysburg, using the Western Maryland Railway as a line of communication and supply.

Western, Red, forces are concentrating to the west of Gettysburg.

The Blue cavalry is to the south, towards Libertytown. The people are hostile to the Blues.

Special Situation Blue.

Topographical Map.

The 1st Battalion, 1st Blue Infantry, to which 14 mounted scouts and a machine gun are attached, is posted at New Oxford, guarding the railroad from the bridge at Brush Run to Berlin Junction, both inclusive, and a lot of supplies that have been collected at New Oxford, which will be forwarded to Gettysburg as opportunity offers.

The 2nd Battalion, 1st Infantry, is at Guldens, and the Headquarters and 3d Battalion are at Hanover (Guide Map).

Early on the morning of July 20th spies report that a regiment of Red cavalry camped at York Springs the night before.

Major A....., commanding the battalion at New Oxford, estimates the situation as follows:

Mission: To guard the railroad, the stores at New Oxford, and to prevent the surprise of his command by any Red force.

Force: Blue. A large force is at Gettysburg, 10 miles to the west; one battalion of his regiment is at Guldens, 4½ miles to the west; the rest of the regiment is at Hanover, 6 miles to the southeast.

Red. The only Red force known to be in the vicinity is at York Springs, 10 miles to the north.

Conditions: The weather is fine, and the country open. The only obstacles to the free movement of troops in the vi-

cinity are the Conewago and Little Conewago Creeks, small streams that are crossed by numerous bridges and fords. The railway to be defended is vulnerable only at the bridges at Brush Run, and across the Little Conewago below Diehl's Mill. A train of flat cars, the engine with steam kept up, is on the siding at New Oxford, available for instant use. The battalion is camped in the pasture in the northwest quarter of the village.

WHAT WILL THE ENEMY PROBABLY DO? If he attacks the battalion at all it will probably be merely a feint to divert attention from the bridges, which are vital to the continued operation of the railroad. He may attempt to draw the garrison at New Oxford away from there by an attack with part of his force on the bridge at Brush Run, while the rest makes an attempt to destroy the stores there. This contingency must be met by ample information concerning his movements.

TERRAIN: New Oxford is on the western crest of a ridge sloping from Berlin Junction towards the northwest. Another ridge to the west separates the valley of the Little Conewago from those of Brush Run and Swift Run. To the northeast is a little valley, and beyond it the ground rises gradually, with two partially wooded little knolls crowning the horizon in that direction. The Conewago flows through a narrow, irregular valley. To the north of this valley is fairly undulating country, with a few broken patches of woods.*

The railway bridge across the Little Conewago is fifteen hundred yards from the camp. The military crest hides the bridge itself from the camp, but the approaches to it from the north and west are in plain view. The bridge at Brush Run, and its approaches, are completely hidden from view from the camp.

COURSES OPEN: Major A..... has but fourteen men available for mounted reconnoissance. The cavalry reported at York Springs is the only Red force known to be in the vicinity.

The roads by which this enemy might advance are: (1) the

---

* All consideration of the phases of the problem concerning the country to the east and south is omitted on account of the limitations of the map.

Carlisle and Baltimore Turnpike; (2) from the north, passing through Oakwood School House and Waldheim; (3) through Newchester; (4) from the northwest through 594, and passing Swift Run School House.

The mounted scouts may be used either as moving or as stationary patrols. In the former case they would cover a greater extent of country, but would necessarily, at times, leave portions of the front unobserved. In the latter case the whole front could be kept under constant observation.

From the camp itself a sentinel could, with a good pair of glasses, keep under his own observation the roads at 568, two miles west-northwest; 520, nearly as far north-northwest, and 502, on the hill in the bend of the Conewago, opposite the mouth of the Little Conewago.

There is a farm house about 800 yards west of 548 (on the Baltimore Pike, south of Greenridge School House) that commands a view of the roads leading south towards the Conewago at 423, and at Waldheim.

568, near Swift Run School House, commands a good view to the west and north, but is cut off from a view to the northeast by the woods 600 yards away in that direction. The nose northwest of 520 affords a limited view, not quite a mile, towards Newchester, while from the ridge just east of 594 (1½ miles southwest of Newchester) an extended view is had of the roads leading into Newchester from the north.

It would hardly be prudent for a small patrol to enter Newchester, considering the temper of the inhabitants, unless it were absolutely necessary.

During the daytime it would scarcely be necessary to have any infantry outposts around the main camp, in consideration of the excellent view to be had from the camp itself, and in view of the fact that all available approaches from the north can be watched so easily and so completely from two or three observation points within four miles of the camp.

The western edge of the orchard 600 yards east of Brush Run affords an excellent place to watch the railway bridge there, and, at the same time an excellent field of fire on the approach to the

bridge. A few men posted near there would make any attempt on that bridge futile until they had been driven away.

DECISION: Major A..... decides to send a platoon of infantry—32 men, commanded by a lieutenant—with a machine gun, to the vicinity of Brush Run, and three mounted patrols to station themselves, one near 548, to observe the Baltimore Pike and the road leading to Waldheim from the north; a second near 520, to watch the road from Newchester, and the third to 594, to observe the roads leading to the Conewago from the north. Sentinels at the camp, or on the roofs of the higher buildings in New Oxford could supplement these patrols.

ORDERS: Major A..... sends for the officer commanding the mounted scouts, and the captain and first lieutenant of Company B, and says:

1. "As you know, the 2d battalion of our regiment is at Guldens; the headquarters and the 3d battalion are at Hanover. I have just received information that a regiment of Red cavalry was at York Springs last night.

2. "To anticipate any possible attack on our position, I shall have the country to the north kept under constant observation, and shall send a detached post to Brush Run.

3. "Captain B....., send a platoon of your company, with one machine gun, under Lieutenant C....., to take a position east of the station" (pointing to it on the map) "to hold the railway bridge at Brush Run. Lieut. N....., send three patrols of four mounted scouts each, one to the vicinity of 548, one to the vicinity of 520 and one to the vicinity of 594, instructing their leaders to station them where they can best observe the roads leading south across the Conewago.

5. "Send all reports to me here in New Oxford."

During the day these precautions were all that were necessary, under the conditions imposed. The arrangements for the night would depend entirely on the information received by the Commanding Officer during the day. Towards evening he again estimates the situation, and issues his outpost order for the night so that it will fully protect his camp, and with a minimum of men.

The above illustration is given to show that the real problem for the outpost, its strength, composition, and the positions to be occupied, is for the commander himself to solve. After he assigns the troops, and directs them to their stations, their work is determined by the local commanders, within the scope of the limits prescribed for them.

For instance: Lieut. C..... was directed to hold the railway bridge at Brush Run with his platoon, assisted by a machine gun. His only limitation was that his position was to be selected east of Brush Run Station. Major A....., in estimating the situation from the map concluded that the best position to defend the bridge from would be found at the western edge of the orchard, six hundred yards east of it, but he wisely refrained from directing Lieutenant C..... to take that exact position, because, when the latter got there, he might find that it was not so well suited to his mission as some other position might be. In doing this Major A——— followed the rule laid down in Paragraph 89 of the Field Service Regulations: **"An order should not trespass upon the province of a subordinate.** It should contain everything beyond the independent authority of the subordinate, but nothing more."

So in his orders to the mounted scouts, Major A..... laid down the approximate posts he wished them to occupy—but their mission was to observe the roads to the front, and he did not and should not restrict them by prescribing the exact spots where they were to post themselves.

Later on Major A..... should go to Brush Run and inspect Lieutenant C.....'s position. Then, and not until then, if he found it not well selected, he would be justified in changing it. So, too, Lieutenant N..... should visit the posts of his patrols, and personally verify that they had selected the best points to observe the roads to the front that could be found in the places they were directed to go.

When an enemy approaches a defensive position, with the intention of attacking it, the advance cavalry of the outpost meets the first attack. Its delaying strength is small, and it retires slowly, gradually withdrawing to a flank as it gets nearer to the outguards. These, deploying, delay the hostile advance as long as they can, when they retire on the supports. Their withdrawal

should be deliberate, and never directly on the supports, but in such a direction as not to disclose the position of the supports, nor to mask their fire.

The outguards should not retire until it is absolutely certain that they can delay the hostile advance no longer.

The supports, in the event that a stubborn defense is planned, should occupy an intrenched position, and the reserve, when needed, is moved up to that line. If the supports are expected merely to delay the enemy, while the main body withdraws, they fight a delaying action, compelling the enemy to deploy and attack deliberately, then, while it is still possible, they retire on the reserve, and a rear guard action commences. The outposts, become now a rear guard, strengthened if necessary, continues its series of delaying actions, retiring from position to position as it is driven back.

In any case, the advance cavalry and the outguards on the flanks of the line of observation, do not join the line of resistance at all, but remain on the flanks, as far advanced as possible, and act as combat patrols.

It is a psychological fact that troops once engaged can see only the hostile forces they are firing at. These individuals absorb their entire attention. Their nerves are tense, strained to the utmost with the excitement of the moment. The sudden appearance of an enemy on their flank or rear will throw the best seasoned troops into a momentary panic, and it is the duty of combat patrols to prevent this. A panic once started is desperately hard to control.

A combat patrol is an outpost to a line of battle. In modern warfare—other than trench warfare—when hostile forces meet one another they at once deploy into line of battle. Each commander seeks to discover the weak spot in the other's line, and, massing his troops there, attacks in the hope that he may pierce the line. A skillful commander will post his supports and reserves so as to quickly reinforce any part of his line. He leaves no weak spots. However, there are always flanks to every line, and it is the flank that the skillful general seeks to attack.

If he is successful in this, and can reach his enemy's flank with a powerful attack, the enemy must retire, or be overwhelmed,

unless he has been warned of the impending attack and is prepared to meet it with sufficient troops to beat it off.

Combat patrols are groups of men, mounted whenever possible, stationed on the flanks of a battle line to give warning of the approach of hostile forces that threaten the flank or rear. They should be posted so as to have an extended view to the front and flanks, and to be in quick communication with the commander of the forces. They should not allow themselves to be drawn into the action, nor away from their post by small hostile groups. They should be constantly observed by men detailed for this purpose from the flank units, so that in the event of disaster to the patrol it may be quickly replaced, and so that their signals may be seen at once and quickly transmitted to the commander.

"When cavalry attacks infantry, material effect is nothing—moral effect everything. In the case of infantry directly engaged with infantry of the other side, this moral effect may be produced by the smallest units, especially if they attack it, with surprise, in the flank or rear."

Combat patrols are posted to prevent these surprise attacks by cavalry as well as the more deliberate turning movements made by infantry. Every commander must, without fail, remember to post his combat patrols in every action, whether he is acting offensively or defensively. The annals of warfare are full of the records of disasters that small combat patrols, intelligently conducted, might have averted.

See OUTPOSTS, page 200, Appendix, for a continuation of this subject.

CHAPTER IX.

ADVANCE GUARDS.

"The primary duty of an advance guard is to insure the safe and uninterrupted advance of the main body."—Paragraph 97, *Field Service Regulations*, 1913.

Modern field artillery, using shrapnel, is effective up to ranges of about 2½ miles. Colonel Balck (German Army), in his recent book on Tactics, says: "Field guns may be effectively employed up to a range of 4,000 metres; under 3,000 metres their fire is so annihilating that decisive results are produced in a short time."*

The modern infantry rifle is effective, if the range is accurately known, up to 2,000 yards; if the range is estimated, its fire is of comparatively little effect beyond 1500 yards. At 1200 yards its bullet will penetrate two men, one behind the other.

For effective work with field artillery it is necessary for only one man to see the target. He can supply the data needed for the men working the pieces so that they need not see the target at all. Each individual using the infantry rifle must see his target.

The shrapnel used in the modern field gun, having a calibre ranging from 3″ to 3.4″ and containing upwards of 250 round bullets, bursts over a beaten zone 25 yards in width, and from 200 to 300 yards in depth.

The shrapnel bullet has a much less penetrating effect than the rifle bullet, within their effective ranges, but "in comparison, artillery projectiles produce a greater number of fatal wounds than infantry projectiles."—(Balck.)

---

* This sentence, written only a few years ago, is still true for the smaller field guns. Field ordnance has increased enormously in calibre and range during the short time that has elapsed since it was written, but the general principles involved are still true. For ranges beyond 4000 metres the target must be accurately located, and immobile, for artillery to be effectively used against it, no matter what the calibre or range of the gun may be.

In order to advance under artillery fire, infantry must be deployed as skirmishers, advancing with thin lines; succeeding lines following each other at distances of at least 300 yards. If the distances are less than that, two lines may come under the "burst" of a single shrapnel, thus doubling its effectiveness.

Large bodies of infantry march best on the roads, in column of squads. To expose such a column to the sudden fire of either infantry or artillery, within their effective ranges, would result in an enormous number of casualties, and it would require the sternest discipline to prevent a panic.

"Under modern conditions the haphazard throwing of troops into action has every chance of resulting in a disaster. If you expect to win in a battle you must have an understanding of the situation and must so put in your troops as to best meet conditions; remembering that troops once engaged can only go forward, stay where they are, or retreat. This requires that enough troops be told off for the advance guard to enable it to be the first to strike the enemy and then be strong enough to hold him until the commander can size up the situation, form his plan, and properly deploy his main body to best meet the situation. On the other hand, it should be no larger than necessary, following the rule that all detachments from the main body should be as small as practicable.

"The march of the main body must not be delayed by small bodies of the enemy; these must be brushed aside."—(Morrison.)

For these reasons, columns of troops are protected, when on the march, by advance, rear, and flank guards, who precede or follow the main body, to give warning of the nearness of the enemy, to prevent him from firing on the main body, to allow the commander time to mature his plans, and to prevent the delay of the march of the main body by skilfully handled hostile patrols.

"The formation of the advance guard must be such that the enemy will be met first by a patrol, then in turn by one or more larger detachments, each capable of holding the enemy until the next in rear has time to deploy before coming under effective fire."—(Paragraph 642, Infantry Drill Regulations.)

The complete advance guard consists of a **reserve** and a **support.** The reserve is nearer the main body. The support sends forward an advance party that, in turn, sends forward a small patrol, called the **point,** still farther to the front.

These bodies arrange their march so that they shall protect the main column from attack by infantry fire before it shall have deployed to meet it.

In advance of the infantry point is the **advance cavalry,** also preceded by a point, and, if necessary, by an advance party. It reconnoiters far enough to the front and flanks to protect the main body, before it is deployed, from artillery fire.

As can be seen by the study of the Field Service Regulations, the matter of the composition and size of the advance guards of large columns are matters to be determined by the supreme commander. He studies the situation with care, and determines on the size and composition of the advance guard, selects its commander, and then issues his orders for the march. This order, either written or dictated, is usually issued the night before the contemplated movement takes place. Copies of this order (in the case of dictated orders, officers are sent to headquarters from each of the larger units to write the order from dictation) reach the subordinate commanding officers. They then issue orders to their subordinate commanders concerning their share in the movement, and so on down, each commander receiving general instructions from above, and issuing more and more closely defined orders as the commands affected become smaller and smaller, but, if properly worded, **never trespassing upon the province of a subordinate.**

General Situation.

Pennsylvania, Red, and Maryland and the Virginias, Blue, are at war. A Blue field army has crossed the frontier; one division is encamped at Barlow (Strategic Map), five miles south of Gettysburg. Red forces are advancing on Gettysburg.

SPECIAL SITUATION. BLUE.

At 9:00 P. M., Sept. 10, 1913, General F....., commanding the 1st Blue Division, receives this letter from his commander, Lieut. General H....., at Taneytown:

Headquarters 1st Field Army.
Taneytown, Md., Sept. 10, 1913. 8:00 P. M.

From: Lt. Gen. H....., Taneytown, Md.
To: Maj. Gen. F....., Barlow, Pa.
Subject: Orders for tomorrow.

1. The Red situation remains unchanged.

2. Move your division by GETTYSBURG on PLAINVIEW tomorrow.

3. The Second Division will march from LITTLESTOWN on NEWCHESTER and the Third Division will march on GETTYSBURG tomorrow.

4. I will be with the Third Division.

H.....

The first Division consists of the 1st, 2d, and 3d Brigades of Infantry, the 4th Cavalry, the 5th Brigade of Field Artillery, the 1st Battalion of Engineers, the 1st Battalion Signal Corps, Sanitary troops, and trains.

General F..... estimates the situation, comes to a decision, and issues the following order:

Field Orders, No.	1st Blue Division, Barlow, Pa., 10 Sept., '13. 10:00 P. M.
(a) Ind. Cav., Col. H. 4th Cav. (less Troop M). 1 Sec. Sig. Corps.	1. Red cavalry detachments are observing the advance of the Blue divisions. The Red main body is reported on the line DILLSBURG —Mt. HOLLY (Guide Map,) an advance detachment, about a brigade, is at YORK SPRINGS. Our Second Division is at LITTLESTOWN, and
(b) Adv. Guard. Brig. Gen. I..... Troop M, 4th Cav. (less 1 plat.) 1st Brigade. 1st Bn. 3rd F. A. Co. A, Engn'rs.	will march tomorrow on NEWCHESTER. Our Third Division is at TANEYTOWN, and will advance on GETTYSBURG tomorrow. 2. This division is ordered to advance on the CONEWAGO, at PLAINVIEW, and will begin the march tomorrow, July 11.

1st Amb. Co.
1 Sec. Sig. Corps.

3. (a) The independent cavalry will start at 5:30 A. M., and cover the movement, towards CENTER MILLS, HEIDLERSBURG, and BOWLDER.

(c) Main Body
1 plat. Tp. M., 4th Cav.
1 Sec. Sig. Corps.
1st Bn. 4th Inf.
Field. Art. Bgd. (less 1 Bn. and combat train.)
2nd Brigade, (less 1 Bn.)
3d Brigade.
1st Bn. Engn'rs. (less 1 Co.)
1st Bn. Sig. Corps, (less detachments.)
Artillery combat trains.
3 Amb. Cos.

(b) The advance guard will march on the TANEYTOWN ROAD, clearing 450 (1½ miles north of BARLOW) at 7:00 A. M.

(c) The head of the main body will start from WILLOW GROVE SCHOOL at 6:45 A. M., and will follow the advance guard at about 1½ miles.

Each brigade will protect its own left flank.

4. The field trains will assemble at the north end of the present camp of the 1st Brigade as soon as all the troops have left camp.

5. The division commander will be at the head of the main body.

(Signed) F....,
Major General.

Copies to brigade and independent commanders (cavalry, field artillery, engineers, signal corps, etc.)

This order is delivered to General I....., commanding the advance guard, by the staff officer he sent to receive it, at, say, 10:20 P. M. He at once began his estimate of the situation, came to his decision, and issued this order:

Field Orders, No. 1.

Advance Guard, 1st Blue Division.
Near Barlow, Pa.

10 Sept., '13. 11:00 P. M.

(a) Adv. Cav. Capt. M.....
Tp. M,4th Cav. (less 1 plat.)

1. The main Red forces are reported, etc. (Copying Par. 1 of the above order.)

2. This advance guard will march on PLAINVIEW via the TANEYTOWN ROAD and GETTYSBURG.

(b) Support.
Col. N.....

3. (a) The advance cavalry will start at 5:40 A. M.

1st Bn., 1st Inf.
Co. A, Eng.
1st Inf. (less 1 Bn.)

(b) The point of the support will march on the TANEYTOWN ROAD, leaving WILLOW GROVE SCHOOL at 5:50 A. M.

(c) The reserve will follow the support at 800 yards.

(c) Reserve.
1st Bn. 2 Inf.
1st Bn. 3d F. A.
2nd Inf. (less 1 Bn.)
3d Inf.

4. The combat trains will march in rear of the reserve.

5. I shall be at the head of the reserve.

I.....,
Brigadier General.

This order was issued verbally to the assembled officers who had been designated to receive orders by their respective commanders, and was written down by them.

It is now with the cavalry commander, Captain M....., that we are especially interested. He gets this order at, say, 11:20 P. M., and at once gets his map and goes over the situation, making his plans for the next day. Hs is to march at 5:40, ten minutes after the rest of his regiment leaves on its independent mission. The cavalry and field artillery will be camped below the infantry, along the stream, perhaps near the crossroad 386.

He can have his men aroused at the same time the rest of the regiment is aroused, so the orders already given for getting breakfast, watering, feeding, and saddling need not be changed. There is no necessity for further preparation until the morning.

In the morning Captain M..... directed his 1st Sergeant: "The troop will march at 5:40. Have it formed at 5:35." At breakfast, with his lieutenants, he went over the situation carefully. The troop broke camp, assembled as ordered, and started on its day's march. Going by the road, walking and trotting so as to reach 450 a little before six o'clock, Captain M..... estimates the situation as follows:

His Mission is "to reconnoiter far enough to the front and flanks to guard the column against surprise by artillery fire, and to enable timely information to be sent to the advance guard commander." (Par. 45, F. S. R.) His troop is pre-

ceded by independent cavalry—the rest of his regiment—and therefore he must "maintain connection therewith." (Ibid.)

FORCES. To accomplish this mission, Captain M..... has three platoons of his own troop—say 60 men. He is followed by a very strong support. He is preceded by the independent cavalry, that must cover a wide sector—six miles of front at its outer limit—and to the right should be the advance guard groups of the 2d Division. He must look out for his own left flank, which is unprotected by other troops.

The Red forces are reported to be 25 miles to the north, but Red cavalry detachments of unknown strength are said to be in observation of the Blue forces.

CONDITIONS. It is the fall of the year, and roads are usually dusty at this season. The trees are in full leaf. The crops, except corn, are all gathered. Streams are rarely in flood at this season. The enemy is on the defensive. His cavalry should be aggressive. and resort to obstructive tactics.

WHAT WILL THE ENEMY DO? It would seem most natural that the Red forces would contest the line of Conewago Creek, which offers good defensive positions on the north side, with still better ones in the rear, at the passes in the hills. The Blue independent cavalry should not be allowed by them to cross the creek without a fight.

THE TERRAIN. With the advantages of proximity in the Blue favor, there should be no difficulty in passing the hills to the east and south of Gettysburg, but the ridges to the north of that town, slanting across the front of the line of march, offer a series of excellent defensive positions for delaying actions

COURSES OPEN. There is really no course open but to actively patrol the front of the division, two or three miles to its front, and for two or three miles to the right and left of the Taneytown and Harrisburg Roads. This can be done better by sending out large, independent patrols to right and left, than by small patrols that, fanning out from the main body of the troop, attempt to keep in constant connection with it. These must cover parallel roads, advance rapidly over

valleys, and, stationing themselves at good observation points, remain there until the infantry patrols come up to relieve them.

How is connection to be maintained with the independent cavalry? By a series of connecting files? Not at all. It is not meant that constant, uninterrupted communication be maintained, but that, at reasonable intervals, connecting patrols be sent for enough to the front to observe the march of the main body of the independent cavalry. If it is marching along without interference it is not necessary to get any other evidence that all is well in front. These patrols need only to observe the cavalry from a distance, watching its dust cloud, listening for sounds of firing. The flank patrols, too, should not be constantly sending in reports to the effect that they see nothing. It is enough for them to watch, now and then for indications that the march of the advance guard is progressing normally, reserving their messengers for use when there is something to report, **remembering always to so conduct their march that, in case of surprise, at least one man can escape to bear news of it to the rest of the advance guard.**

So Captain M....., on reaching 450, calls his lieutenants and one sergeant to him, and orders, verbally:

"Red cavalry detachments are reported in the vicinity, in observation of our movements. The main Red forces are 25 miles to the north.

"The division will march on Plainview today, via the Taneytown Road and Gettysburg. The regiment, less my troop, will act as independent cavalry for the division in its advance. Troop M is to act as advance cavalry to the advance guard.

"Lieut. R....., take the 3d platoon by the road west of the Round Tops, and along these ridges" (indicating, on the map, McPherson Ridge, Oak Ridge, and the ridges east of Goldenville and Table Rock) "towards Bridge School. I shall march on the Taneytown-Harrisburg Roads on Plainview, averaging 2½ miles per hour. Send messages to me, or in emergencies, to the support commander."

To Sergeant S....., who heard the orders just given: "Take the 1st squad of the 1st platoon, and go by Wolf Hill, Granite Hill and Hunterstown, on Belmont School. Reports will be sent to me, or in emergencies, to the support commander."

To Lieut. T....., who heard the previous instructions, he said: "Take command of the point—the leading eight troopers and the right principle guide. I will follow with the remainder of the troop at about 200 yards."

Consider next the duties of the support commander. Colonel N..... has his own regiment, and one company of engineer troops. The duties of the advance guard are (Paragraph 40, Field Service Regulations):

"An advance guard is a detachment of the main body which precedes and covers it on the march.

"Its duties are:

"1. To guard against surprise and furnish information by reconnoitering to the front and flanks.

"2. To push back small parties of the enemy and prevent their observing, firing upon, or delaying the main body.

"3. To check the enemy's advance in force long enough to permit the main body to prepare for action.

"4. When the enemy is encountered on the defensive, to seize a good position and locate his lines, care being taken not to bring on a general engagement unless the advance guard commander is empowered to do so.

"5. To remove obstacles, repair the road, and favor in every way possible the steady march of the column."

Colonel N..... got his order about 11:20 P. M. He estimated the situation as follows:

Mission. To insure the safe and uninterrupted march of the division in its march from its present camp towards Plainview.

Forces. Colonel N..... has his own regiment, to which a company of engineers is attached, to make such repairs in the road as are found to be necessary. He is preceded, (1)

by the independent cavalry—a regiment, less one troop—and (2) by the advance cavalry—one troop.

The support is followed by the rest of the 1st Brigade as a reserve, at 800 yards, and it, in turn, by the main body of the 1st Division.

There are no Red forces, except cavalry detachments, within 25 miles.

CONDITIONS. Colonel N..... estimated the conditions as Captain M..... has done above.

WHAT WILL THE ENEMY PROBABLY DO? Cavalry detachments will hardly seriously attack an infantry division on the march. They will undoubtedly make every effort to observe its march. If they are allowed to come within rifle range without discovery, they could delay the march considerably. These possibilities must be prevented. A stubborn effort should be made by the Reds to prevent us from crossing the Conewago. No serious attack should be expected south of Gettysburg.

TERRAIN. As estimated by Captain M.....

COURSES OPEN. The first problem for Colonel N..... is the size of his advance party. Under the rule already laid down it must be strong enough to hold the enemy until the next body in rear—the support proper—can deploy. It will take the support about ten minutes to deploy. A company of infantry cannot be brushed aside in that time by any force that could sift through the independent and advance cavalry that precede the support. In fact, a platoon could probably hold any such force in check long enough for the support to form to defeat it, but it is always best not to break tactical units when it is not necessary.

One squad is sufifcient as a point, and it should precede the advance party by 200 or 300 yards. The advance party, if 600 to 800 yards in advance of the support, should be far enough ahead of it to insure it from being fired into.

Six of the mounted orderlies of the regiment might be assigned for scout duty to the advance party for flank reconnoissance within, say, a radius of 1200 yards to right and left of the column.

The engineer company is to assist in the duty of making repairs to the bridges and generally to aid in any material way possible to expedite the march. It should march near the head of the support, where, indeed, its place has been designated by the advance guard order.

The rest of the support will march as a unit. The support sets the pace for the column, since the advance guard commander directs the reserve to follow it at 800 yards, and the division commander directs the main body to follow the advance guard at 1½ miles. The rate of march for a column of this size is 2 to 2½ miles per hour (paragraph 633, Infantry Drill Regulations). Captain M..... prescribed 2½ miles per hour as the rate of march for the advance cavalry. That rate could be easily maintained by the support, and, if the advance guard commander found it too fast for the reserve, he could easily send forward and order an extra halt for the support of ten or fifteen minutes to allow the reserve to close up.

Distances in a column of this sort are only approximate. No effort should be made to make them exact.

With six mounted scouts attached to his company, Captain G....., commanding the advance party, could spare the members of his company all concern for the flank reconnoissance.

In spite of the fact that the independent cavalry and the advance cavalry both precede his support, Colonel N..... cannot neglect local reconnoissance. These two cavalry bodies should comb the country to the right and left so effectively that no body of troops of threatening size could sift through unobserved, and so practically eliminate all danger of surprise. Still, (Paragraph 649, Infantry Drill Regulations) "this does not relieve the advance guard commander from the duty of local reconnoissance." His would be the burden of blame if a hostile body should get within rifle shot of the main body undiscovered.

This local reconnoissance can best be done (Paragraph 48, Field Service Regulations) by sending patrols of 2 to 4 men "to high places along the line of march to overlook the coun-

try and examine the danger points." One company of the support might well be assigned this duty throughout the day. The mounted scouts attached to the advance party would first occupy these high spots. As the support comes up, a patrol could be detached from the designated company to relieve the mounted scouts, who could then trot forward to a more advanced position. The infantry patrol that relieved them might then be left in observation during the entire time the division is marching by, when it could join the rear guard, and, at the end of the day's march, all these patrols could be united and marched to the camp of the regiment. In this way a maximum of safety would be secured with a minimum of effort.

It is often possible to have these flanking patrols march parallel to the column, but generally such marching would be off the roads and be difficult and wearying. Often such marching patrols would find it impossible to keep up abreast of their own units. Even mounted patrols will find that their work is easier and better done by remaining stationary on good observation points, than by attempting to perform the duty by marching.

Decision. Colonel N..... decides to detach one company as advance party; to attach six mounted scouts to the advance party; to follow the advance party at 600 yards with the support, and to designate the leading company of the support as the one to furnish the flanking patrols.

Orders. Colonel N..... assembles his field and staff officers and the captains when he reaches Willow Grove School House at 5:40 A. M., and, after repeating the information concerning the enemy and supporting troops, and the plans of the commander, as found in paragraphs 1 and 2 of the advance guard order, says: "Company A is assigned as advance party. Sergt. H....," (who commands the mounted scouts) "take five men and report to Captain A..... I will follow with the rest of the support, 600 yards behind the advance party. Company B is designated to furnish flank patrols throughout the day."

Captain A..... at once rejoined his company, sent one squad, under his 1st lieutenant, as point. He directed the rest of

the company to follow at 200 yards' distance, and, joining the 1st lieutenant, at the point, gave him what information he possessed, and his instructions, as the point marched along the road.

When the division is all on the march it is twenty miles from the point of the infantry advance guard to the rear of the main body, assuming that the field trains follow closely on one road in rear of the 3 ambulance companies. This road space is occupied as follows:

Infantry point to advance party		300 yards
Advance party, including 20% for elongation		48 "
Total for advance party	348	"
Advance party to support	800	"
Support: 1 battal'n infantry, less 1 company		140 "
Co. A, Engineers		100 "
1st Inf., less 1 battalion		600 "
Elongation, 20%		328 "
Total for support	1968	"
Support to reserve	800	"
Reserve: 1 battalion infantry		180 "
1 battalion field artillery		620 "
2d Inf., less 1 battalion		600 "
3d Infantry		780 "
Combat trains, infantry 300 yards		"
Engineers 100 "		"
F. A. 410 "		810 "
Elongation, 20%		598 "
Total for support	3588	"
Total for advance guard	7504	"

*The figures used in the following illustration are based on the Field Service Regulations of 1914, which are based on the organization of the army as provided in law existing prior to the army bill of 1916. The new law increases somewhat the number of men in the organization, but the approximation in the illustration is close enough to fulfill its object, which is to enable the student to get a mental picture of a large force on the march.

This is practically 4.3 miles. Adding 1.5 miles for the distance from the reserve to the main body, laid down in the march order of the division, it is, from the infantry point to the head of the main body 5.8 miles.

The road space of a division is, (page 172, Field Service Regulations, 1914), 10.3 miles. 1688 yards of this distance, approximately one mile, should be deducted for the troops in the advance guard, leaving 9.3 miles for the length of the division; adding 20 per cent for elongation—lengthening of the column due to imperfect marching—would make the road space for the main body 11.2 miles.

The field trains for combatant troops cover 2.5 miles, and for the division sanitary troops, ammunition, supply and pack trains, 3.6 miles more, making the total length of the column:

Point of advance guard to main body	5.8 miles
Main body	11.2 miles
Trains	6.1 miles
Total	23.1 miles

It is 13 miles from Barlow to Plainview. This is a good day's march for a body of this size: "In extensive operations, involving large bodies of troops, the average (march) is about 12 miles a day." (Paragraph 101, Field Service Regulations.) "For a complete division the distance (marched) can seldom exceed 12½ miles per day * * * ." (Paragraph 634, Infantry Drill Regulations.)

Assuming a rate of march at 2.5 miles per hour—which means an absolutely uninterrupted march for well-disciplined troops—it will be nine hours after the advance guard started before the last wagons start to leave the camp at Barlow. That will be 4:00 P. M. The trains march at the same rate as the troops, and it will be five hours and twelve minutes later, or 9:12 P. M., before the last wagons reach Plainview, assuming still that nothing prevents them from marching steadily, and that only one road is used.*

*Of course if all was found to be safe, one or more of the parallel roads to the east of that used by the troops would be used by the trains, so that they would actually get to camp soon after the troops did. For the purposes of illustration it is supposed that all use the same road.

All this time this slender column of marching troops and wagons must be protected throughout its length, from the aggressiveness of the enemy. The wagon trains are especially vulnerable, and absolutely vital to the success of the campaign. They are helpless. An attack on the troops can be met by a counter attack, but the wagons must be defended. They cannot deploy, nor, on the roads, can they close up much to shorten the column.

It is the hostile cavalry that is especially dreaded along the line of communications of an army. The enemy's cavalry must be located, and neutralized or destroyed, before the line of supply can be made secure.

It was a maxim of Napoleon's that "an army whose communications are threatened will almost invariably devote its whole attention to protecting them."

The foregoing illustration is given to enable the student to get a mental picture of a large army on the march. The 1st Field Army, above, consisted of three infantry divisions. To them, in the armies of the military nations, a division of cavalry would be attached. If such a division had been attached to this field army, it would have been operating in search of the hostile cavalry, on one flank or the other of the infantry divisions, or out in front. Once it has met and overcome the hostile cavalry, it is free to operate against the hostile communications, or against his weaker flank.

Without such a cavalry force, and assuming that the Red army had a considerable force of cavalry, much greater precautions would have to be taken to protect the left flank of the 1st Blue Division that has been outlined.

See ADVANCE REAR AND FLANK GUARDS, page 204, Appendix.

CHAPTER X.

THE ADVANCE GUARD (Continued)

"The rate of march of infantry is so slow that in reconnoissance it can only by great exertions attain results which a small force of cavalry would obtain without appreciable effort. Infantry acting alone therefore unquestionably requires the assignment of mounted men for reconnoissance and messenger duty. As regards reconnoissance, infantry is like a man walking in the dark, who can guard against collisions only by stretching out his hand and feeling his way." —Balck, *Infantry Tactics*, page 20.

General Situation.

Guide Map.

The boundary between Pennsylvania and Maryland may be taken as the frontier between two nations at war. Blue, Southern, forces have crossed the frontier at Littlestown. Red, Northern, forces are advancing to meet them from the north.

First Special Situation. Blue.

Topographical Map.

A regiment of infantry and a detachment of 21 mounted men, without trains, has reached New Oxford at 10:00 A. M., August 26th. Its mission is to secure the crossings of the Conewago at Newchester, and to reconnoiter to the north of that stream. The country is hostile. No information of the enemy can be obtained from the inhabitants. Information from Blue sources sources indicates the probability of meeting hostile forces at any moment. The weather is warm and clear.

The formation of the column, as the main body leaves New Oxford, is: The head of the main body is leaving the last houses in the village, 700 yards north of the town. The support, two companies, is at 494. The advance party, one platoon, is 500 yards ahead, at the little private road leading to the right towards hill 536. The point, one squad, is at the bridge. The main body is marching at 3 miles per hour.

You are in command of the point. Just as you get to the farther end of the bridge a group of Red soldiers fire at you from the direction of the church, 325 yards ahead to the right of the road. You cannot see how many there are. (1) What do you do (2) What would you do if you were in command of the advance party?

Before proceeding intelligently with problems of this sort, we must consider the sort of an enemy that is confronting us. Are the men good shots? Are they fearless, resourceful? Or are they poor shots, and of the sort that fire a volley or two, and then retreat? Are they liable to be closely supported, or may they be simply the members of a reconnoitering patrol seeking only to cause a deployment, and so to discover something of the strength and morale of our forces?

The first three questions can be answered only after war has been declared, and we know who our enemy is. Then we shall know the sort of fighters we have to deal with. Until that time, in our studies, we must assume an ideal enemy, brave, well instructed, good marksmen, intelligent, and generally formidable. If we know how to deal with such an enemy, knowledge of the tactics to use against a lesser one will readily follow. However, the mere fact that our enemy is not disciplined and instructed in the art of war according to the standards of the armies of the principal nations of the world, or that he will not stand before well disciplined troops and a well directed fire, does not necessarily mean that he is not a resourceful enemy. He may, in spite of his lack of tactical training, be possessed of natural abilities and special cunning in certain kinds of minor warfare, as were our American Indians, and as are some of the partly civilized and barbarous peoples with which we are often thrown in contact. And, if such be our enemy, we must consider those conditions and learn how to best meet them.

The last question deals only with this particular problem. If this hostile group has come from the north they may not have seen the command behind our point. The advance party, at the moment under discussion, has not come in sight of them, and they have, perhaps, seen nothing of the rest of the column. Of course they know much about it, from the fleeing inhabi-

tants. But reports from such a source are sure to be misleading.

The head of the main body is 1400 yards from the place where, if the Red troops remain near the church, it will be under their fire. It is marching at such a rate that it will be about sixteen minutes, roughly, before it reaches the danger zone. In that time the advance guard, to properly fulfill its mission, must drive them away, if weak; must develop their strength, if strong.

It is 800 yards from the church to the crest of the ridge northwest of 520. From the church to this ridge the road will be in full view of the advance party when it reaches the next rise in the road. The northwestern horizon for the advance party will then be at this ridge's crest. It hides everything beyond.

Nothing is known of the strength of the Red force at the church. The point, at the bridge, although much nearer than the advance party, has not as good a view. There is no cover, except the creek bank, to protect the point in case it should attempt to advance. The range is very close, and the Red soldiers, under cover, in full knowledge of the Blue point's strength, have every advantage.

Besides, there is no need for hurry. The advance party is there to support the point, and a few minutes' delay, more or less, will not work any harm. Of course, the point should fire on the group at the church, if they can see any Red soldiers to aim at. The point should *not* advance to attack yet. Men should not be sacrificed uselessly in prematurely attacking a force whose strength is entirely unknown.

There are 21 mounted scouts with the regiment. 15 of these are acting as a flank patrol on the road next west, running past Swift Run School House. The other 6 have just joined the advance party, coming in from Hill 587, where they have been stationed in observation of the country to the east and north. If they should trot down the hill to the west, cross the creek at the ford, and then, under cover of the woods to the north, threaten the Red group at the church, they will, if the latter is weak, cause it to retreat while it can get away; if it be strong, or is strongly supported, that fact will also be developed, and disclosed to the rest of the advance party, waiting in observation where we first

placed it. In the meantime the point, which took cover at once when fired on, can afford to await developments.

Why did the Red group at the church wait so long before disclosing its presence there by firing on the point? Because they hoped to discover, perhaps, by waiting, whether the point was really the point of an advance guard, or merely a patrol, but they could not afford to wait any longer; 325 yards is not far, and the point was coming right along, in a very open formation. The Red group has not seen any other Blue groups. If it wishes to remain there any longer in observation it must delay the point. So it fires on it, and the point, very properly, scuttles to cover.

Very soon afterwards the advance party comes in sight. Six mounted men, a moment later, are seen by the Red lookouts to leave the advance party. They trot down the hill towards the ford. The rest of the advance party halts and takes cover. Now is the moment for the Red group, if a patrol, as is the case, to escape. This they do by galloping, as foragers well spread out, towards the north, across the fields. They disappear in the woods north of the church.

Now, you ask, why did they go to the church at all? They could get a better view of the country towards New Oxford from the crest northwest of 520 than from the church, unless the latter is more than 60 feet high—an unlikely assumption.

Is it a ruse, to lead the advance guard into a trap on top of the hill? Or had the Red patrol missed the Blue groups to the south, in their advance from 520 to the church, and only discovered their presence when they saw the Blue point coming down the hill towards the bridge? That can only be conjectured.

The advance party commander, when he saw the Red patrol gallop off to the north, went down the hill to the point, and advanced with it to the church. Here he signalled to the mounted scouts at the northern edge of the woods to the left to advance.

You should be cautious about the matter of signals when you are where you suspect the enemy may be watching you. If you were in action with a hostile group, and saw one member of it moving about, swinging his arms wildly, you would at once mark

him as a leader, and your fire would concentrate on him. No order to do so would be necessary. Instinctively your men would select him as a target. It is a psychological fact that as long as a group of men is under fire, and no one of them makes himself conspicuous in any way, men will fire *at the group, and not at an individual.* The result is that casualities will be few. But let one man become prominent in any way, and he attracts all the attention. Not only is the one making signals very likely to be hit, but the shooting at the group becomes more accurate, because the men have a definite target to fix their attention on.

The British learned this lesson from the Boers: "If you do not wish to be singled out as the patrol commander, refrain from making signals; you can shout any orders you like as loud as you like; but as soon as you make any movement with your arm you are pretty sure to be spotted. The casualities among officers, compared with those among the men, have become far greater in modern warfare than formerly.

"The reason for this appears to be that improvements in modern rifles and in field glasses have made it far more easy to pick out individuals at distant ranges; and with the present weapons of precision it has become a far easier matter to hit a solitary individual, even when he is a long way off, than it was formerly." (Capt. Vander Byl, *Patrolling in South Africa,* 1902.)

So, in this case, do not give conspicuous signals. Your usefulness will be greatly prolonged thereby.

It is 500 yards from the church to the northwest corner of the woods where the group from the advance party should now be. How would you signal them to go forward, over this distance, and not make a conspicuous signal? It should have been prearranged. The advance party commander, in sending out this group of mounted scouts, should have called the leader to him, and instructed him in somewhat this way: "There is a Red group at that church. Take your men, by this road, across the ford, and then, under cover of those woods over there, make a feint on the church. If the Reds retire, do not follow them, but as I advance with the point, from the church, skirmish up to the ridge, through that cornfield."

Having these instructions in mind, when the leader of the flanking group, from the cover of the woods, at the 495 contour, saw the point advance from the church, he commanded: *"As foragers, at twenty yards,* MARCH." (Paragraph 348, Cavalry Service Regulations, and Paragraph 621, Infantry Drill Regulations.) The leader of the patrol trotted up towards the cornfield.

Now let us consider another assumption: The leader of the advance party, on first seeing the group at the church, mused thus: "What are those Reds doing way down there? They must have seen us as we came down the hill out of New Oxford. Is it a trick to coax the support into an ambush set for it up there in that cornfield? I'll investigate." So he calls a sergeant to him, and says: "I am going to take a few men across this ford here, and go up behind those woods, to run those Reds out of there. If they pull out, go ahead with the rest of the advance party and the point. Halt the point at the church. I shall go on and investigate that ridge over there. That cornfield looks like a pretty good place for a Red position."

The Red group at the church retires as before on seeing this group detach itself from the advance party. The mounted scouts were directed, when they were detached, to halt at the northwest corner of the woods across the Conewago, instead of skirmishing up to the cornfield, as in the other case, and to wait there for the group from the advance party to come up. When the leader of the advance party reached the corner of the woods, with his group, he found the mounted scouts there. They had seen nothing. The officer selects three mounted scouts, and says to them: "There may be Reds hidden in that cornfield, and I want you to investigate it. It is dangerous duty, but I have confidence in you. Keep your wits about you, and do this: Trot, in open order, directly towards that cornfield. When you have nearly reached the fence, halt, and then suddenly turn about and gallop back . If there are Reds there, one or more of the nervous ones will surely fire at you. Don't gallop straight back—zigzag a little."

Such tactics sound dangerous, but they really are not. The men who cannot resist the impulse to shoot without orders at

a retreating enemy will invariably be the younger, less steady soldiers; inexperienced and undisciplined, their aim will certainly be bad. It is notable that when one or two men of a firing line fire, through nervousness and without command, they will be followed by a ragged volley, each shot pulled off without aiming, often without the rifle at the shoulder, and in the resulting confusion, a very fair estimate of the length of the firing line can be got. Another thing that will add to the chances of not being hit is that our three troopers are galloping down hill, and men firing down hill almost invariably fire high .

Suppose, in this instance, that the three men do develop the fact that there is a Red firing line in the edge of the cornfield. What should the commander of the advance party do? Should he attack? By no means. It is not the function of the advance party commander to bring on a general engagement, or that of the support commander, nor of the advance guard commander even. It is the commander of the main body who must decide whether or not he wishes to give battle. The advance guard commander who commits his command to an engagement, unless specifically ordered "to attack the enemy wherever found," or, after having reported the enemy in a certain place in force, to his commander, is ordered to engage him, is an unsafe man for such duty. His duty is *protective;* his duty is to ward off attacks of the enemy, or to warn his commander of his presence, not to bring on a battle. He must resist, of course, if attacked. He must determine the strength of the enemy, when he is discovered, and not allow the march of the main body to be delayed by small hostile bodies, but he must not commit his superior to a general engagement without specific instructions to do so.

Should the commander of the advance party then simply wait for orders? Again by no means. He should now try to determine the extent of the hostile line, by seeking to discover its flanks. The cornfield is a small one; to the west is the stubble of a grain field, and beyond that some woods. Beyond these woods is another stubble field. It is beyond the woods that the mounted patrol southwest of the church should go, after locating the hostile line in the cornfield. If that stubble, which affords no cover at all, is clear, it should next

examine the woods. And, in doing this it should not halt two or three hundred yards from the woods. Here it must take a chance: trot right up to them and into them, in open order, over a wide front. It should go to the eastern edge of the woods, if they are clear, leaving a man or two at the western edge, to watch in that direction. In this position it can afford to await developments. It is beyond the right flank of the Red line. Its leader can quickly give warning if the Red line is strengthened on that flank, or of any movement of troops in that vicinity.

Second Special Situation. Blue.

The Red group at the church has disappeared. The support is at the bridge. The advance party is at 520. You still command the point, and you are at the farm house at the right of the road 400 yards ahead. How would you reconnoiter the valley of Swift Run?

The Red group at the church disappeared in the woods to the east of your present position. It has not been seen since. Where did it go? You do not see it on the hill to the north, across the Conewago. The valley of Swift Run is hidden behind the military crest; the trees and the little knoll north of the bridge 448W hide the road, to the north of the bend in it, across the Run. You can see but little of the country beyond, where you must go. How are you going to advance? There is nothing to do but *to advance*. You must either take a chance, and go ahead rapidly to the crest of the little knoll across the Run, or you may send two or three mounted scouts ahead, at the trot, while you watch them as they go. If they get to the bend a hundred yards beyond the cut in the road without incident they should halt, signal "all clear," (and the fact that they do halt, and remain steadily in observation should be sufficient signal to you that all is clear) and wait for the rest of the point to come up, and then go ahead to the crest of the knoll. Nothing would be gained by their going ahead before the dismounted point reached their own present position. When the point has come up, and is in a position to watch them, the scouts could trot to the top of the little

knoll ahead, wait there for the point again, and then trot across the little valley to the next rise in the road, always keeping on the horizon ahead, effectually preventing any surprise of the point.

This is nerve-racking work. You know that the enemy is near; you have seen him disappear, and in the direction you must go, and you must follow him. For such duties it takes men of steady nerve, full of courage, resourceful. Men who are sent on it should be warned of its danger, and assured of its necessity.

THIRD SPECIAL SITUATION. BLUE.

You are now in command of the fifteen mounted scouts that are acting as a left flanking patrol on the road paralleling the one the main body is on, 1¼ miles to the west. As the head of the main body leaves New Oxford you have nearly reached the crossroad 557, 1½ miles west of New Oxford.

How do you conduct the march of your patrol? What advance guard do you have out? Where do you make your halts between 557 and the Conewago crossing four miles to the northwest.

From the head of the support to the rear of the main body the column whose left flank you are protecting from surprise is about a mile long. In view of its mission and the length of the column, it should march at the rate of three miles per hour; it should pass a given point in about twenty minutes. You must dispose your fifteen men so that they will cover this length of column from an unexpected attack. The colonel, you are told, is to march through New Oxford on Newchester and across the Conewago, to secure the crossings of that stream. You are to protect the regiment from surprise from the west. Whence might come that surprise? Manifestly it must come from the direction of the roads, unless an ambush has been laid, in anticipation that the regiment would march by that special road.

You crossed the York Turnpike without seeing the trail of a hostile body, or any indications of his presence. The roads by which an enemy might reach the regiment run northeast from

557, 568, 530, and 594. These are the roads you must watch. If you send a patrol to 568, and remain, yourself, at 557, with a couple of men watching from the nose 200 yards to the southeast, through the gap in the trees to the east, until the head of the column leaves New Oxford, you will know that it is safe from an attack coming east from 557. You may then ride forward to 568, where you wait for the head of the main body to reach the ridge 400 yards northwest of 520, when you trot, with your patrol, less the group ahead, towards 594.

You do not leave anyone at 530. This crossroad can be as well watched from the crest 300 yards to the northwest, so you leave two men there and two at Snyder's, while you go on with the rest to 594.

Let us now go back to the patrol that went ahead from 557. It was composed of a sergeant and six men. It went forward as described on page 83. The same precautions taken by the point of the advance guard, described above, must be taken by this patrol, which will act as advance guard for the partol in rear. The sergeant, riding in advance with one of the troopers, has the other five men follow at 200 yards. When he reaches Swift Run School House, he and the man with him separate. He rides forward to the edge of the woods ahead, keeping on the right side of the road. As he reaches it he halts, looks north along the road northeast from 568, finds all clear, and then, keeping on the left side of the road, rides up to the farm house just beyond. From the shelter of the trees and shrubbery at the northern edge of the farmyard he sees that the horizon is just beyond 568, in that direction.

His view is the same to the northeast it was from the corner of the woods, but to the northwest he can now see the hills across Swift Run valley, and here and there to the west he gets glimpses of the road 506—606 up to 632, where it drops over the ridge and out of sight. There is no sign of movement anywhere. He signals, with his hand low down, to the trooper to join him. As he does so they ride, boot to boot, straight up the road to the farm house at 568. The rest of the patrol follows, and closes up at the farm buildings. A man dismounts and walks forward, keeping close to the fence, to the crest a hundred yards

beyond, where the best view in this part of the terrain can be had. He signals "all clear" by leaning against a fence post, or by using any other prearranged and inconspicuous signal. The men all dismount, drop out their horses' bits, water them at the trough, and then let them graze.

As the rest of the patrol comes up, a little later, bridles are adjusted, the men mount and await instructions. The sergeant's patrol is ordered to go ahead to 530, and the ridge at Snyder's, while the patrol will wait here for the main body to pass the ridge just beyond 520, to the northeast. The advance patrol goes ahead, using the same formation as before; one man is dropped off at 530, one more at the private road leading to the farmhouse to the left, 350 yards beyond; the rest ride on and halt, one at Snyder's, the others at the edge of the woods beyond.

This disperses the patrol over nearly a half mile of road, but it is necessary. Here is a broad ridge, with roads on both sides of it, leading across the one the main body must take. Both these roads must be watched, and the patrol must not be broken—*i. e.,* each group of it must be able to see at least one group towards the leader. When the rest of the flank patrol comes up, the group near 530 trots up and is joined by the next group; together they pick up the man at Snyder's, and advance. Then the sergeant, at the northern edge of the woods, knows it is time to go on, and he rides up to 594, where he halts, sending one man west of the orchard to watch the road towards Rupp's and beyond, leaves one man on the ridge 100 yards southeast of the crossroad, and halts with the rest of the patrol, at the crossroad. The commander of the flank patrol now rides up and joins him.

Until the main body reaches Newchester the roads at 530 and 594 must both be watched. The patrol is not strong enough to keep in touch with the main body, using connecting files, in this rough country. How, then, is the patrol commander to know when to move ahead? There is a stretch of road about 700 yards long, leading southeast from Oak Grove School House, that is visible from the top of the ridge near 594. If this road

is watched, the advance guard, after crossing the Conewago, will be seen moving on it, and until the advance guard does appear there, the flank patrol should remain where it is, unless something should occur to give it duties elsewhere.

Fourth Special Situation. Blue.

Soon after you reach 594 you hear heavy firing to the east (you are still commanding the left flank patrol); the woods hide everything in that direction. What do you do now, and why?

Let us look at the terrain for a moment. At Newchester the Conewago makes an abrupt bend, and is crossed by two bridges, one to the north, one to the east. To the south of the village is a semi-circular ridge that commands all the roads leading to the village from the south. This ridge begins at the nose east of the cut in the road leading to New Oxford, runs across that cut, and bending at hill 572, ends at hill 573. The ridge is about a mile long, and is so placed that reserves sent from behind its center could quickly reinforce any part of a line occupying it.

The left flank patrol has seen no indications of the passage of hostile troops from the west or southwest into Newchester, so they might have come from the north. You have sent no messages to the advance guard commander. The latter, and the colonel of the regiment, must now be most anxious to know the strength of the Red force occupying Newchester. The need of watching crossroad 530 has now disappeared, but 594 must still be watched. You are there now. You say to the sergeant: "Hear that firing! Remain here, with your patrol, for the present in observation. I will take the rest of the patrol and try and locate the right of the Red line that must be in front of Newchester, and get in touch with the left of our line. I will leave a small patrol on the road here" (pointing, on the map, to the Y in the road 650 yards east of Snyder's, where a private road leads from the main road to a farm house) "and will instruct the leader of that patrol as to my farther movements. Send messages through that patrol."

You then return to 530 at the gallop, picking up the members of your patrol as you go; you reach 530, turn there to the north, and halt at the farm road, where you leave three men. This leaves you five men; seven are at 594, three are here. To the leader of this group you say: "Stay here for the present. Watch well in all directions. I am going to reconnoiter from the farther edge of those woods, towards Newchester. Send messages to our main body, which must be to the east."

So far you have seen no Red troops. You lead your patrol into the woods, bend northeast through them, and the woods to the northeast of them, to the edge of the pasture on the southern edge of hill 573. Here you halt. You see a few Red mounted men on the road at the northeast corner of the pasture. Looking through the trees to the east you see a column of infantry filling the road leading south from the school house. They are halted. The firing is heavy to the east. You cannot see your own troops. You divide your patrol quickly, leaving three men and a corporal here in the edge of the woods, with these instructions: "Watch that infantry. If they advance to the south, follow them. Keep on their flank, and warn the regiment if they attempt to flank it by slipping down any of these ravines to the south. You are now on your own resources. I shall join the regiment and report what I have seen."

Taking the remaining men you ride through the woods as rapidly as you can to the valley of the little stream to the southwest, then down that stream, and up its eastern branch to the private road leading to 480. Here you find the colonel, and you report what you have seen to him.

CHAPTER XI.

FLANK GUARDS.

"The flanks of a column are protected in part by the advance guard, which carefully examines the ground on both sides of the line of march. It may be necessary, however, to provide additional security for flank threatened by an enemy. This is done by sending a detachment, called a *FLANK GUARD*, to cover the exposed flank."—Paragraph 53, *Field Service Regulations.*

General Situation.

Guide Map.

The boundary between Pennsylvania and Maryland separates two States that are at war. Blue, Southern, forces have crossed the frontier, and are in the vicinity of Littlestown. Red, Northern, forces are advancing from the North. Gettysburg is fortified, and held by a small garrison.

Special Situation. Blue.

Topographical Map.

A reinforced brigade (a brigade of infantry to which detachments of cavalry and field artillery are attached) is sent from Littlestown to the north, through New Oxford and Newchester, on a special mission.

At noon, July 26th, the formation of the column is as follows: The advance cavalry, one troop, has crossed the South Conewago; the infantry point, one squad, is at the center of New Oxford; the advance party, one company, less one squad, is at the railroad crossing, near the southern edge of the town; the support, one battalion, less one company, marches 800 yards in rear of the advance party; the reserve, one regiment, less two battalions *, 800 yards in rear of the support. The main

* This expression, one regiment, less two battalions, indicates that the headquarters of the regiment is here; only one battalion is with the headquarters.

body, 800 yards in rear of the reserve, is 5,740 yards long, composed as follows: Each regiment of infantry, with its combat trains, covers 1500 yards of road space; the field artillery battalion covers 1030 yards; the field trains, 1710 yards. The combat train of the regiment in advance marches in rear of the reserve of the advance guard. The field and combat train of the cavalry squadron are with the field train of the brigade.

The squadron, less one troop, is acting as a flank guard on the right flank, and the 3d battalion of the advance guard regiment is acting as left flank guard.

The main body that is covered by these two flank guards is 5740 yards long—3½ miles. It takes it, marching at 2½ miles per hour, an hour and twenty minutes to pass a given point.

The latest information that the Blue commanding officer has, concerning the Red forces, is to the effect that heavy infantry reinforcements are being rushed, by train, into Gettysburg, and that a brigade of Red cavalry was at York, 16 miles east of New Oxford, last night.

Major B....., commanding the left flank guard, had brought his battalion by the roads on the ridge west of Brush Run from Bonneauville as far as Cedar Ridge (Strategic Map), where he crossed to the east side, and, at noon, his most advanced group was at 584, ½ mile east of Brush Run Station, on the York Turnpike.

He estimates the situation as follows:

Mission: To protect the brigade he is covering from surprise from the west.

Forces: The brigade he is covering is the most advanced Blue force in the vicinity. The rest of its division is at Littlestown, 9 miles to the south. A strong Red infantry force is intrenched at Gettysburg. Other Red forces are advancing from the north, but none of them are reported as being within striking distance *from this side.* A Red cavalry brigade was reported to be at York, 16 miles to the east, last night.

Conditions: The country is hostile. The Blue brigade is wedging itself between two hostile forces, which, combined, are

stronger than the Blue brigade. Its mission is independent, and it can hope for no assistance from Littlestown before tomorrow.

WHAT WILL THE ENEMY PROBABLY DO? From the Strategic Map it is evident that if a force comes from Gettysburg to intercept the Blue brigade it will probably use the York Turnpike, the road through Hunterstown, or the Harrisburg Road. It is with the two former roads that his problem now concerns. The Red cavalry *may* ride around the head of the Blue column, and attack from the left flank. If the attack comes by way of the York Turnpike it will probably be delivered at the crossing of the Little Conewago or at Brush Run. It may be delivered in the direction of Irishtown, (Strategic Map) as the main body is now marching northeast from Square Corner by 551, 489, and 521 towards New Oxford.

If the road towards Irishtown, from 584, York Turnpike, where the leading group of the flank guard now is, is not used, the Reds may advance northeast from 584, or, turning northeast from 552, a little more than a mile west of Brush Run Station, marching on Newchester. They may advance on the York Turnpike to the shelter of the ridge between Brush Run and Swift Run, thence across the fields, sheltered from view by that ridge, and the ridge next east, to a position across the New Oxford-Newchester road, south of Swift Run.

If they use the road through Hunterstown, they may seek a position across the Blue line of advance at Newchester.

THE TERRAIN: The general trend of the ridges, south of the Conewago, is north and south. The stream valleys are from 100 to 200 feet below the ridge levels, and good defensive positions, with easy lines of retreat, can be found on the crests of the ridges on both sides of each little valley.

COURSES OPEN: The battalion has a column 3⅓ miles long to protect from surprise. It must be strong enough at any point of that long line to delay the advance groups of a Red attacking force to enable the Blue main body to select a defensive position, and to deploy on that position. If the threatening body is not too strong, it must hold it in check while the Blue main body passes, and not allow the latter's march to be

delayed by it. It cannot hope to stop small hostile reconnoitering patrols from sifting through here and there to observe the main body, nor, indeed, should that be attempted. The Red military authorities should know, from the friendly inhabitants of the country, all about the Blue strength and direction of march.

The flank guard's field of action is limited to a lateral distance of a mile and a half from the main body. (Paragraph 658, Infantry Drill Regulations.) Patrols of the advance cavalry should cover the front of the line of march over a front of about three miles. There should be such a patrol now at 568, just beyond Swift Run School House.

(a) Major B..... may secure his flank of the main body by marching his battalion as an attenuated column of small groups, marching on the road, paralleling the whole length of the main body. This arrangement could effectively warn the main body of a hostile approach, but would entirely destroy the offensive value of the flank guard.

(b) He might divide his battalion into two groups of two companies each. One of these groups might start at the same time as the advance guard of the main body, and keep abreast of the support, preceded by an advance party and point. The other group, starting at the same time the main body starts, might keep abreast of its head during the march.

Applying the principles of Paragraph 48, Field Service Regulations, patrols could be detached from the leading group, to station themselves on points having a commanding view to the west. There they could remain until the rear of the wagon train had passed, when they could resume the march, picking up succeeding patrols as they advance, and joining their proper command at the end of the day's march. This method preserves the offensive strength of the flank guard where it is most needed, maintains a constant watch over the country to the west, and all with a minimum of marching on the part of the men employed.

DECISION: Major B..... decides to use the latter method, and issues instructions accordingly.

The plan works out as follows: The patrol of the advance cavalry reported above as at 568, remains there until relieved by the flank guard. At the moment the problem opens, the point of the advance party of the leading group has reached 584, and marches on toward 557; the advance party, 150 yards in rear, reaches 584 about two minutes later, and stations two men at this crossroad to wait for its main body that is 600 yards in its rear. When this group comes up, it detaches a patrol of a corporal and four men, who go to the western edge of the orchard, 450 yards to the west. Two men are left at 584. There they are instructed to wait until the rear of the wagon train enters New Oxford, when they are to join the rearmost group of the flank guard.

The next important observation point is 568. The point of the flank guard reaches there, and finds there the patrol of the advance cavalry referred to above. This patrol gives them all the information it has concerning the enemy, and it then trots ahead, observing the usual precautions, to Hill 571, just across Swift Run, where it resumes its observation duties.

A second stationary patrol is posted at 568, where it waits until the rearmost group of the flank guard comes up, which it joins.

Succeeding stationary patrols are left on Hill 571; on the nose 300 yards northwest of 530; at the edge of the woods beyond Snyder's; and at 594, at each of which places the point of the advance guard relieves the patrol of the advance cavalry, which, in turn, trots forward to the next place, where it again waits in observation until relieved.

Paragraph 568, Infantry Drill Regulations, provides that "practicable communication must exist between it (the flank guard) and the main body." This does not mean that constant visual communication must be kept up. That would be often impossible, without a great expenditure of men, and it is not necessary. What is necessary is that each patrol should be so posted that it can see at least one other patrol towards the nucleus, whatever that nucleus may be. The paragraph quoted also insists that physical communication between the two bodies

must be always possible; that is, the flank guard must not allow any obstacle between it and the main body that could make it impossible for the flank guard to join the main body, if it became necessary.

In this case the patrol west of the orchard can see the two men at 584, who can see the main body across the Little Conewago. The patrol at 568 can see the one west of the orchard; that at 571, the one at 568; that northwest of 530, the one on 571; the one beyond Snyder's should, by connecting files, or otherwise, as the terrain permits, see the one south of Snyder's, and the one at 594, the one northwest of Snyder's.

The right flank guard, a squadron of cavalry, less the troop in the advance guards, has marched, (Strategic Map) through Germantown, Whitehall, Mount Rock School, Irishtown, to the Baltimore Pike.

A series of patrols strung along the line of march, as described in the case of the infantry flank guard above, would give the same measure of protection against surprise, but it would be impossible to give the same amount of physical protection, because of the inferior strength of the cavalry—258 sabres to 432 rifles. The cavalry is farther weakened by the necessity of subtracting one-fourth of its number to hold the horses of the others when they dismount to take the defensive. That reduces the effective dismounted strength of this flank guard to 192 rifles. To make up for this weakness in numbers, the cavalry reconnoissance must be over a wider area.

Due to the limitations of the map, we can only conjecture what the terrain to the east is like. It is safe to assume that Pigeon Hills gave a very extensive view to the east. The Red cavalry at York was almost as near to Pigeon Hills, when at its camp there, as the Blue cavalry was in its camp at Littlestown. So, if Major C..... expects to occupy those heights in advance of the Red cavalry, he must send a detachment there early, and at a rapid gait. It is nine miles from the cavalry camp at Littlestown to Pigeon Hills, and Major C..... detached one of his troops early in the morning, directing its commander to go rapidly there. A smaller force might be sent,

but it might not be able to hold the position there. That reduces Major C.....'s flank guard proper to two troops.

When he arrived, at noon, at 581, 1½ miles east of New Oxford on the York Turnpike (Strategic Map) he learned from a messenger from the troop on Pigeon Hills that atmospheric conditions were such that the view from the hill was limited to about three miles, and that there were no signs of hostile troops within that radius.

Major C..... then estimated the situation as follows:

MISSION: To protect the right flank of the brigade from surprise.

FORCES: The Red cavalry brigade, and the Blue brigade he is screening, are the only known forces to be considered. However, the information received may be deceptive, and he must take no chances.

CONDITIONS: He is so weak that the most he can hope to be able to do is to warn the main body of the approach of the hostile cavalry, and, having discovered it, to keep in contact with it, holding his small force between it and the main body, during the latter's deployment. The thick atmosphere limits him in his work in a measure.

WHAT WILL THE ENEMY PROBABLY DO? The enemy will undoubtedly advance until near New Oxford by the York Turnpike. He may turn off to the northwest, when within a few miles of that village, and seek to ride around the head of the Blue column, attacking it in front or near its head, while the troops from Gettysburg attack it in flank. He may turn southwest, east of Pigeon Hills, and seek to attack the trains, while the troops from Gettysburg attack in flank.

TERRAIN: The terrain may be assumed to be similar, east of the map we have, to that the Blue troops are working on. It is favorable for rapid marching, and the number of parallel roads available will permit the Red brigade to advance with a number of short columns, thus increasing considerably the rate of march. He is probably unhampered by his trains.

COURSES OPEN: Major C..... *must* give the brigade commander ample time to prepare for a cavalry attack, since he is

not strong enough to delay the hostile command materially. His plan is stated above.

At noon the right flank guard was in this position: One troop in observation on Pigeon Hills; two troops at the intersection of the York and Baltimore Turnpike, 1½ miles east of New Oxford. Patrols are scattered along parallel to the Blue line of march, and two to three miles distant from it. A patrol is on Hill 586 (Topographical Map), two miles northeast of New Oxford; and a patrol is on the ridge crossed by the Baltimore Pike, two-thirds of a mile south of the bridge where the Baltimore Pike crosses the Conewago. This patrol could see the patrol of the advance cavalry that was stationed near the cut, 400 yards northeast of Oakwood School House.

Instead of having his patrols remain in position until the rear of the wagon train had passed, Major C..... has them move up progressively. Thus: when the rearmost patrol saw the rear of the wagon train had come opposite his position, it walked and trotted leisurely up to the next patrol ahead, which it relieved. The patrol so relieved, relieved the one ahead, and so on throughout the column. In this way each patrol marched the same distance that every other one did, and every patrol was constantly in observation, except one. This one was always the one that was not at the moment needed.

The patrols could relieve each other at very moderate gaits indeed, since the main column was marching at only 2½ miles per hour.

The patrol of the advance cavalry was the only one whose duty was particularly hazardous.

Flank protection for this column might have been secured by requiring each regiment to provide its own flank guards. In that case each flank guard would march with flanking groups thrown out to the side away from the column, at the same rate as the column itself did.

CHAPTER XII.

REAR GUARDS.

"The rear guard is charged with the important duty of covering the retreat."—Paragraph 55, *Field Service Regulations.*

Students are advised to study Paragraphs 55 to 58, Field Service Regulations, which describe the duties of the rear guard, and need but little comment in explanation.

The formation and nomenclature of the rear guard is very similar to that of the advance guard, but its mission is very different. The advance guard is seeking the enemy, so that the main body may attack him to advantage; the rear guard is delaying the enemy so that he may not attack the main body.

It often happens that a detachment of troops finds itself in a situation where it would be folly to give battle. The enemy, superior in numbers, or in the advantage of position, should not be met. The detachment must retreat until it is reinforced, or until it reaches a position where the advantage would be on its side. In such cases the work of the rear guard is very important. The force it protects must not be hurried, or it may, instead of retiring in good order, under the control of its officers, suddenly be stampeded.

The patrols from the rear guard cavalry cover the country over a broad sector in rear of the column they are protecting. They must be vigilant and tenacious, hanging on to good points of observation to the last moment, always with a good line of retreat selected, and with a clear idea of where their next halt is to be made. They send their information in to the rear guard by visual signals, with flags, or by verbal messages. As the enemy presses the rear guard closer, these patrols become combat patrols, hanging on to the hostile flanks and watching and promptly reporting every hostile move.

Defeated troops may easily become demoralized, and their orderly retreat easily turned into a rout. It is this calamity that the rear guard seeks to prevent. The march of the main

body must not be hurried. The victor should do all in his power to gather the full fruits of his victory by destroying his defeated enemy utterly, by spreading panic among his troops, by creating in their minds the idea that he cannot be stopped. This effect can be easiest produced at the beginning of the retreat. When an army has been driven out of its position by a superior enemy its morale is very low, and the troops that have suffered most in the battle need the longer time to recover their confidence, to have their tactical units reorganized. Confusion reigns at first, but, after a time, this condition is improved, and the army may again become a formidable body.

When a large army has been driven from a position that it has stubbornly defended up to the point where it has been overwhelmed by the enemy, the resulting confusion in the defeated troops is usually complete. The wise general has saved strong reserves that are placed in commanding positions to check the enemy while this confusion is reduced to order.

These reserves, to which are added the least demoralized of the defeated troops, fight delaying actions, retreating from one defensive position to another, holding east just long enough to force the enemy to a wide deployment, but not long enough to become so involved as not to be able to retreat to the next selected position.

The enemy will attempt to hold the rear guard in its position as long as possible, in order to make a detour with his cavalry and horse artillery, clear around the flank of the rear guard, to reach and strike the confused mass of fugitives it is protecting, and whose officers are straining every nerve to reorganize into efficient fighting units.

For instance, suppose a Blue army has been defeated at Gettysburg, (Strategic Map) and the disorganized units that bore the brunt of the fighting are retreating towards the pass in South Mountain west of Cashtown. A rear guard has been organized, that successfully holds the Red pursuing force in check along the Chambersburg Pike. A force of Red cavalry and horse artillery makes a detour by Arendtsville and

the roads running south and southwest from there. A portion, dismounted, supporting the guns, suddenly appears on Rock Top just as the roads in the pass are choked with wagons, ambulances, troops without officers or organization, discouraged, disheartened. The panic heightens and spreads.

Other portions of the Red cavalry attack the column, reaching it by the roads from the north, and, striking the disorganized column in flank in several places, complete the demoralization. It is not difficult to predict what might happen to the Blue command under such a condition of affairs. Already beaten, threatened in front and flank and rear by superior troops, already flushed by victory, it would require a strong hand indeed to save anything from the wreck.

Such a catastrophe must be prevented by covering the country that could possibly be used by the enemy, with a mass of patrols so that such an unexpected attack as that described could not be given. It is the suddenness of the attack, its entirely unexpected quality, that makes such an attack successful. If the fugitive troops had an hour's warning even, that a cavalry attack from the north was impending, they could have partially organized, at least, to meet it; the element of surprise would be wanting. It is the moral, and not the physical effect of cavalry attacking infantry that is to be feared.

"The individual infantryman whose rifle is loaded and who knows how to use his bayonet is more than a match for the individual mounted man even on open ground; and, if he remains cool, retains his presence of mind, and uses his rifle properly while keeping the opponent constantly in view, he is even superior to several mounted men. Infantry which retains its steadiness has nothing to fear, ever when outnumbered by cavalry. Its main strength lies in steadily delivered fire, while cavalry relies on the possibility of making an unexpected rapid charge, on quickly covering great distances, and on the moral effect which its irresistible onslaught undoutedly produces upon infantry. So long as there is a possibility of surprise and misunderstanding, of infantry allowing itself to

become discouraged, and of the individual soldier becoming exposed to hunger and hardships, so long will cavalry that is energetically led be able to gain brilliant victories." (Page 301, Infantry Tactics, Balck.)

Rear guard problems are essentially combat problems, and are studies for officers of higher training than it is expected will use this book, but the duties of the patrols of the rear guard are most important. It is necessary for young students in the Art of War to know their importance.

CHAPTER XIII.

PATROLING, REVIEWED.

"From the standpoint of training, scouting detachments give young infantry officers, who are tied to a command, an opportunity to develop self-confidence, decision and tactical judgment; to cope with hardships and difficulties on their own responsibility. In this manner characteristics may be developed in the young officers which will be of benefit to them in a large battle."—Balck, *Infantry Tactics*, page 28.

General Situation.

Guide Map.

The Susquehanna River separates two States that are at war. Blue, Western, forces are defending Gettysburg. Red, Eastern, forces have crossed the frontier, and are advancing on Gettysburg.

Special Situation. Blue.

Strategic and Topographical Maps.

You are the leader of a Blue officer's strategic patrol, mounted, that has come this morning from Gettysburg by way of Hunterstown, whose mission is to search the country from Round Hill to New Oxford for hostile troops. The people of the country are in rebellion against their own government, and are friendly to the Reds.

Your patrol has reached crossroad 594, about 1½ miles southwest of Newchester. You halt it there, and send one man to the top of the ridge on the road a hundred yards to the southeast, to see what may be on the southern slope of the ridge, and in the valley beyond.

While waiting for a report from this man a Red cavalry patrol comes suddenly out from the shelter of the farm buildings northeast of the crossroad, charges your patrol and captures it.

What was defective in the way you handled your patrol? How could it have escaped the disaster that overtook it?

The patrol had come from the southwest, along the northern slope of a long ridge. Your southern and eastern horizon, up to the moment you were jumped, had been along the crest of that ridge, except for the moment you were passing the high spot in the road to the west of the orchard. When the patrol reached Rupp's house, the road could be seen (by observation, and with the help of the map) to cross the northern end of that ridge, and to drop down a long, gentle slope towards the east. 594 is at the crossing of two quite important roads, and a patch of timber, with underbrush, is in the northern angle of the crossroad. Just west of the crossroad, as just mentioned, near 594, the road reaches the top of the ridge, where the view to the south suddenly becomes more extended. Here is where the patrol should have halted, while two men went forward to the bend in the road, 100 yards east of 594.

Now let us consider the different ways the patrol should have been handled, depending on whether it was a strategic patrol, the point of an advance guard, the point of a flank guard, or the rear point of a rear guard.

Of all these patrols, the strategic patrol needs to act with greatest caution. It is alone, far from support, on a most important mission. The country is hostile, and the people will use every means at their disposal to warn your enemy of your approach. If the Red forces are near, you may be sure that they will know you are in the neighborhood, and they will certainly seek to destroy or capture you.

You must constantly bear this in mind, and must make your halts only in places where you cannot be surprised. You must, too, have you lines of retreat constantly worked out. Move rapidly over suspicious places, never giving a possible enemy time to *plan* your capture.

With this idea in mind, should you have taken your patrol to 594 at all? Hardly. The woods west of Rupp's would be an unlikely place for an ambush. You might stumble on

a Red group marching on the road there, but 594 would be a much more likely place for a Red group to wait for you.

A strategic patrol should avoid important crossroads, unless the country is very open around them in all directions, and the view better there than can be obtained elsewhere.

This patrol might have trotted up to Rupp's — his house is in the open and is a most unlikely place for an ambush. A pair of men then would probably have ridden up to the crest of the ridge, in the cornfield, for a look around to the south; if that is clear, the whole patrol might take the private road to the north, thence across the fields to the northeast, where you have an excellent view in the direction you are to go, then by Cashman's to 513, thence by the little used road across the ford to the northeast to 527 and the open country beyond.

Suppose you were the point of an advance guard. The body you are protecting is marching from Hunterstown on Newchester and Hampton. You are followed at 200 yards by an advance party, and, it at 700 yards, by a support. In such a case, do you imagine the Reds would lay an ambush at 594 to pick you off? By no means. That would be a bad place for a large force to put up a fight, and a small one would stand a small chance of getting away from the rest of the advance guard. Besides, nothing is gained by picking off the point of an advance guard. It is quite the reverse with a strategic patrol. In the former case, the point would simply be replaced by another one. In the latter, the entire purpose of the patrol would be defeated. The commander who sent it out would get no benefit from it at all.

The point of an advance guard would have no reason to look for trouble at 594. Where, then, would he look for trouble? At 573, a little farther on, if anywhere on the south side of the Conewago. Here is a commanding position; good cover and good lines of retreat are also here, protected by excellent covering positions in rear. So the point of an advance guard could go right on through 594, without any hesitation.

Suppose the Blue force marching from Hunterstown on Newchester were a flank guard for a larger force marching on the York Turnpike. How would its march be conducted? What would it look for? In many respects its methods of advancing would be the same as those of the advance guard just considered. It must protect itself from surprise. But its mission, in addition to the ever-present one of self-protection, is now to protect another body, marching on a parallel road. How might that body be reached from the north? Only by the roads. Small groups, easily brushed aside, if seen, might break through the flank guard to observe the main body. The flank guard can hardly hope to prevent that altogether. Such Red groups would never waylay the point of the flank guard. Their only salvation is secrecy. Their reconnoissance must be a stealthy one. So 594 in this case, as well as in that of the advance guard, could hardly conceal an ambush.

The patrol we are considering, after a glance up the road 594—513—529, to see that it was clear, after a glance at the dust in the road at 594, to see if any tracks indicated the recent passage of troops on the roads meeting there, would go on through 594, pausing at the cemetery 500 yards farther on to look towards Oak Grove School House to see if that road, too, were clear, and then on to the hill 573.

Suppose our patrol were the rear point of a rear guard. How would its problem differ from the ones we have been considering? As the main body, in its retreat, passed along over the road, the rear guard halted, from time to time, wherever it found a good position to put up a delaying action. The last such position was at 575, 2,000 yards southwest of 594, and here and at 632, to the south, the rear party and its rear points would remain in observation, watching the roads to the west and the country to the north and south, until the larger units of the rear guard had reached the fine covering position at the hills 573 and 572, on the edge of Newchester. This they would seek to hold until the retreating forces had all crossed the Conewago safely. As soon as the rear party

was convinced that the rear guard had reached this position, they would follow to 594 and the hill near Snyder's, to the southeast, taking no precautions whatever in regard to 594, but watching keenly to the rear and to the flanks for indications of the enemy.

So, it is seen, in the methods used in the reconnoissance of a crossroad depend entirely on the mission of the patrol making it. The same is true of all other forms of tactical duties. When the time comes to apply the tactical principles learned from theoretical studies, to maneuvers, or, in that unhappy event, to war, this thought should be kept foremost in mind: "Nothing that I have studied hitherto will apply exactly to the situation that I may meet over the next hill, but if I keep my mission clearly in mind, and keep my head, I ought to be able to apply the correct principle to the changed conditions."

Above all, it must be remembered that the function of mounted patrols, whether of cavalry or mounted scouts, is to help its infantry; that it is the infantry that must bear the brunt of the battle, and that the success of the infantry, in great measure, will depend on the constant stream of information that it should get from its mounted auxiliaries.

To go back to the situation on page 145: Consider, now, that you are the one man sent southeast to observe the valley to the south. When you saw your patrol had been surprised and captured, you galloped towards Snyder's across the pasture to the east of his house and into the woods beyond. Two men pursue you; you shoot one of them and the other turns back, evidently to join his patrol. What is your mission now? How do you go about it?

Should you obey the impulse to go back to Gettysburg, and report that your patrol had been overwhelmed. The manuals say: *"When it is certain that the enemy has been discovered, that fact is promptly reported."*—Paragraph 28, Field Service Regulations. "Whether the information gained is of sufficient importance to be reported at once * * * is a question which must be decided in each case."—Paragraph 619, Infantry Drill Regulations.

Is the information now possessed by you — that a Red patrol had captured all of your patrol except yourself, at the crossroad 1½ miles southwest of Newchester — important enough to be reported at once? It is of tremendous importance to you, and still more to your recent companions, but does it possess more than human interest to your commander? Decidedly not. He wants to know more about the situation. Was that patrol you saw a strategic patrol, a reconnoitering patrol, the point of an advance guard, an outpost patrol? Was it followed by other troops, or was it alone? You are under cover; you can go, still under cover, to where you can observe the road leading eastward from where the Red patrol was seen, and it is your duty to try and get some information that will be of real value to your commander. If you were to go back now he would learn nothing of real value to him. He already knows that the Reds are advancing from the east; the fact that a Red cavalry patrol was at the crossroad 594 at the hour that disaster overtook your leader, of itself means nothing to him, but if you can discover what larger bodies this patrol is screening, and you can give him definite information as to where they are, the risk you run will be well compensated for.

So you ride through the open woods, west of the brook, and into the thicker, brushy woods beyond. From its southern edge you see a column of Red infantry march down the road leading southwest from the Newchester School House. It takes them three minutes to pass. They are preceded by about half a company, and it by a patrol. You watch this road for ten or fifteen minutes, and no more troops pass. You work your way cautiously to the southern angle of the thick woods you are in, and you see that the infantry has halted near the farmhouse in the little valley beyond, directly in your front. They have stacked arms, taken off their equipments, and are cooking food at many little fires. Men are lounging about; evidently they are not intending to move on. You slip back into the woods, work through them to the northern edge of them, and along the western edge of the pasture to the north.

screened from view by a little ridge to the east, and by a fringe of trees to the west. You reach the northwest corner of the pasture, where there is a gate. You pass through this gate, and, from the road, you see a group of fifteen or twenty infantry at the farmhouse about 400 yards to the west. They see you, but you gallop down the little private road to the north, and through the fields to Cashman's. You have escaped. Is it now appropriate for you to start for Gettysburg? By all means. You have located a battalion of infantry that is probably a support of an outpost line supplying a line of outguards to the south and southwest. A second, smaller group has also been seen, probably a picket of the same outpost. This is information of value, and it would be decidedly wrong for you to jeopardize your own safety by trying to get more definite information, alone and unsupported, especially as you seem to be clear of the Reds, and escape seems possible.

When you get back would you tell your commander that you had seen a support and a picket of an outpost line? No. Show him, on the map, where you have been and what you have seen. Let him draw his own inferences. Perhaps other Blue patrols have also secured information of this same Red command, and what you tell him, added to what he learns from them, may be just the bit of information he needs to complete his knowledge of the situation in that quarter.

The above discussion should prove the correctness of General von Bernhardi's assertion: "The first contact with the hostile infantry should always be reported." Aggressive and well led cavalry will send patrols all over the country in the neighborhood of its own army and that of its enemy. Infantry patrols, however, are seldom sent far from their own command, (paragraph 620, Infantry Drill Regulations) and the fact that even a patrol of infantry is seen, if it is the first infantry group to be seen, is usually important enough to be reported.

Strategic patrols should not attempt too close reconnoissance of a hostile force. Distant reconnoissance made through glasses, when possible, is best. A nearer view will undoubt-

edly give the patrol leader more accurate information, but the chance of getting messages through to supporting bodies is greatly lessened when the reconnoissance is made by breaking through the hostile protective groups. Especially is it mandatory that a patrol "back out" when the leader discovers that he is between hostile columns. Reconnoissance is usually best made from a flank, and the surest results are apt to follow if the reconnoissance is made from the flank that is nearest the supporting group.

Von Bernhardi says: (pp. 52 and 53, Cavalry in War and Peace) "We must lay down here, once and for all, that the distant observation with the glass is by far the most important; it affords the best survey over the general conditions, and a better possibility of sending back a report safely and quickly. It is just in this method of observation that, in consequence of our peace conditions, patrols are generally so badly trained. Again and again they fall into the error of approaching too close to the enemy, and, in order to see as much of him as possible, let him march past them. They are then compelled to send in their reports from places which lie behind the belt of the hostile service of security. The despatch riders have then to ride from the rear through the hostile advance guard, outposts, and patrol system.

"In peace, where there are no bullets, and prisoners may not be made, these methods lead to the best results, and to their being employed again and again, particularly if the superior commanders are inclined to praise such too complete information instead of condemning it. In truth, it is the worst system that could be conceived."

The leaders of patrols must be familiar with the tactics of all the arms. Not only should they report on the presence of the enemy, his position, strength, the direction of his march and his tactical dispositions, but they should also be able to report on the character of the country they explore, artillery positions found there, important localities or points to be held or avoided. This latter information is especially valuable as the forces approach nearer to each other, and battle seems near.

The local reconnoissance of the infantry during or preceding an engagement is described by Balck (Infantry Tactics, pp. 248 et seq.) as follows:

"It is a strange fact that, while splendid work was done in strategic reconnoissance in the large maneuvers of recent years, not only in Germany but also in France, the local, tactical reconnoissance was less good and often deficient, so that in consequence thereof surprises were not rare. Frequently a gap occurred in the reconnoitering line when the cavalry in front of the various parts of the army was brushed aside and the stronger cavalry force deprived the weaker of the freedom of choosing its line of retreat. Occasionally, when this happened, cavalry patrols were sent out with orders to report directly to the infantry, or, at any rate, to find the hostile route column, but this expedient was only partially successful. It must be remembered that troopers cannot ride close enough to the enemy to see anything of importance, and that they frequently are in ignorance of the very things that are of value to the infantry. In addition, the divisional cavalry is entirely too weak to perform all the tasks assigned to it. Therefore infantry and artillery should not rely on cavalry reconnoissance. **The mere fact that infantry has sent out cavalry patrols in a certain direction does not relieve it from the duty of providing for its own reconnoissance.**

"The greatest obstacle to infantry reconnoissance lies in the fact that its cyclists" (cyclists are attached to infantry regiments in the German army, for messenger duties) "are confined to good roads; that its mounted officers cannot be withdrawn from their appropriate duties except for short periods; that, as a rule, orderlies are not available for carrying messages; and that, if officers carry messages in person, the reconnoissance is interrupted. Infantry patrols, on account of the slowness of their movements, cannot transmit messages quickly, and, as a result, such messages frequently arrive too late to be of value. On the other hand, infantry patrols possess an advantage in that, by utilizing cover, they can get close to the enemy without being observed. The need of local

reconnoissance is greater now than it was in the past, because troops can no longer change front when deployed and because those which come under hostile fire while in close order formations may, in a short time, suffer well-nigh annihilating losses.

"The Japanese attached much importance to local reconnoissance, whereas the Russian leaders considered it as something unusual, so that Kuropatkin was finally obliged to prescribe it in orders. 'Local reconnoissance was performed by 20 to 30 infantrymen. These carefully approached our positions in small groups. One man of each group laid his rifle aside and crawled close up to our trenches, raised his head and observed, while three or four of his companions, whom he had left farther in rear, opened fire on the trenches. Occasionally all of these men threw themselves flat on the ground for protection. This method of procedure continued for seven hours.' "

"The thoroughness of the reconnoissance generally made a timely deployment possible, even when the enemy was well concealed, but that neglects occurred nevertheless is borne out by the advance of the Japanese 2d Division at Fuchau and Kapukai on March 10th, 1905. The division advanced without reconnoitering, struck the fortified Russian position, was unable to move forward or to the rear, and had to fight under unfavorable conditions, and while suffering heavy losses, from early morning until 4 P. M., when the general situation compelled the enemy to evacuate the position. The advance of the Russian 54th Division during the battle of Liao Yang (2d Sept.) is a similar example of disproportionately greater importance, and with a tragic ending. The noise of the battle at Sykwantun caused the commander of the 54th Division to leave the position assigned to him and to march towards the sound of the cannonading. The division, advancing over covered terrain without adequate reconnoissance, was taken in flank and rear by the Japanese 12th Brigade and thrown back in utter rout on its former position, carrying with it the troops which had been left there. Thus the Yentai heights fell into the possession of the Japanese.

"The primary object of local reconnoissance is to protect a force from surprise. This may be accomplished by sending out combat patrols, and by company commanders" (mounted in the German army) "riding ahead in time. The latter are likewise charged with picking out avenues of approach to selected fire positions, and the sooner they begin the reconnoissance the better, for the accidents of the ground can then be utilized to the best advantage.

"The difficulties of the reconnoissance are increased when we have to reckon with the measures taken by the enemy to screen his force.

"Weak infantry patrols can neither break down this resistance nor create the necessary openings through which the leaders can reconnoiter in person. * * *

"If the cavalry reconnoissance has determined that the enemy intends to accept battle within a particular area, the details of his intentions must be obtained by local reconnoissance. Then the commander will wish to know whether or not an immediate attack is feasible, or whether it is advisable to wait until nightfall for bringing up his infantry. The local reconnoissance determines where the flanks of the enemy are located; whether the position in front is the hostile main position or only an advanced post; whether the enemy has made preparations for defense; and where the hostile artillery is posted. As a rule it will be impossible, until after the engagement has begun, to recognize a skillfully located fortified position, to distinguish between the real and the dummy trenches, determine the position of obstacles and estimate whether they can be surmounted with or without adequate apparatus. Then it likewise becomes necessary to find and mark covered avenues of approach. In moving to new firing positions it is important that advanced positions, masks, and dummy trenches be recognized in time. The commander of a unit on the flank should make dispositions for observation on his flank, and for permanent communication with neighboring units, even though no specific orders have been received by him to that effect. Strange as it may seem, the troops

deployed on the road Gorze-Rezonville (battle of Vionville), by their failure to get into early communication with the troops which had been on the ground for some time, neglected to take advantage of the information gained by those troops.

"The enumeration of these tasks shows that local reconnoissance should not be restricted to the preparatory stage of the combat alone, but that it must be kept up during the whole course of the action. To the duties enumerated, we may add occasional tasks, such as picking off staffs and signal men; sneaking up on artillery that has been incautiously pushed forward; and annoying the enemy by flanking fire. For such tasks so-called 'scouting detachments,' after the Russian pattern, have frequently been recommended. Their usefulness in difficult country and in operations against the enemy's flank and rear cannot be denied. In minor operations, if provided with ample ammunition and advancing on side roads, they can hamper the reconnoissance of the enemy, secure the flanks of their own force, ascertain the probable extent of the prospective battlefield, and, finally, having made a skillful lodgement, they can become very annoying to the hostile artillery. In a large battle the necessary elbow room for such employment is lacking."

CHAPTER XIV.

MEASURES OF SECURITY FOR SMALL COMMANDS

General Situation.

Guide Map.

The Susquehanna River separates two States that are at war. Blue, Eastern, forces have invaded Red, Western, territory. Blue main forces are in the vicinity of Carlisle. The main Red forces are advancing on Carlisle from the direction of Chambersburg. The country is bitterly hostile to the Blues.

Special Situation. Blue.

Topographical Map.

A squadron of Blue cavalry reached New Oxford on the afternoon of September 19th, and went into bivouac near the village. Cattle and grain are being collected from the farmers in the vicinity. The grain is collected in wagons; the cattle, as they are brought in, are assembled in the pastures 1,200 yards northeast of New Oxford.

At daylight, September 20th, Lieut. N....., who has been detailed by his captain to report, with a platoon of 24 men, to Major B....., commanding the squadron, for detached service, so reports, and received this order:

"Our regiment is expected to reach York Springs today. A battalion of infantry will be here during the day, coming by rail from the east, to take charge of the supplies we are collecting. Red infantry garrisons are known to be at Fairfield (8 miles southwest of Gettysburg, Strategic Map) and Arendtsville (7 miles northwest of Gettysburg). Cavalry detachments of undetermined strength are reported in the vicinity. No other troops of either side are near.

"I shall continue to use the squadron today collecting supplies. You, with your platoon, are assigned to watch the sector Hampton, inclusive, to Plainview, (Strategic Map) inclusive. Lieut. A..... will have the sector Plainview, exclusive, to Gettysburg, inclusive.

"Report all movements of Red troops larger than patrols in your sector to me at the earliest moment.

"I shall remain at the postoffice in Hampton all day."

Lieut. N..... estimates the situation, and acts as follows:

MISSION: To so cover the approaches to New Oxford within my sector with a platoon of 24 men that I can surely discover the approach of any hostile force in that sector in time to warn my commander at New Oxford before he can be attacked.

FORCES: The only help our squadron can expect is the battalion of infantry that is due to arrive today, by rail from the east. I know of no hostile troops near except the Red infantry garrisons at Fairfield and Arendtsville, which are evidently kept there to guard the eastern approaches to the passes leading west and south, respectively, through South Mountain, and cavalry detachments of unknown strength and location that are reported to be near here. The other two squadrons of our regiment are marching on York Springs today. (York Springs is about a mile north of the northwest corner of the Topographical Map.)

CONDITION:: The Red military authorities must know of our presence and mission at New Oxford. It is a mile, by the road, from where messages must be sent, to the bivouac of the squadron in the pasture, one mile northeast of New Oxford. The squadron outposts are as follows: In the northeast edge of the woods on hill 587; at the forks 490, near Klinger's; at the northeast exit of New Oxford. A detached post is on hill 536. With only 24 troopers at my disposal I cannot send more than three patrols.

WHAT WILL THE ENEMY PROBABLY DO? He will, if he attacks at all, use cavalry, or cavalry and infantry combined. If he attacks over my sector, coming from the northwest, where his forces would naturally be, he will probably advance by

Waldheim, since in that way he would have but one stream to cross, and he will be between our squadron and its supporting bodies to the north. A very small force could delay him seriously if he attempted to use the Newchester-New Oxford road, at the crossings of the Conewago, Swift Run, and the Little Conewago. The road next west, passing Swift Run School House, might be used, but he can get nearer to our camp by the Oakwood School House-Walheim route, under cover, than by any other road. He might use the Baltimore Turnpike. The least likely route is by Newchester.

TERRAIN: The country is rolling, lightly forested. The general level is broken by Conewago Creek and its branches.

COURSES OPENS (a) The terrain may be covered by a system of marching patrols. These may cover the road past Swift Run School House, the one through Newchester, and the Baltimore Pike. Marching patrols can cover a greater extent of country than stationary patrols, but the question of how much time will be needed to prepare the squadron for action will determine the distance the patrols should go. The action should be fought at the crossings of the Conewago or Little Conewago. Selection of positions to meet hostile forces coming from any direction should already have been made. The troops should be ready for instant action. If the patrols go out too far, the spaces between them will be increased beyond the range of inter-communication, and a hostile body might get between them unobserved.

(b) Places for stationary patrols should be found that will cover the sector completely, that are visible from a common point nearer camp, and that afford lines of retreat towards that central point.

Such places are: For the central group, the roof of a two-story building at the crossroad at Newchester. The ground elevation there is 530; the building is 30 feet high, giving the observer an altitude of 560 — sufficient for him to see over the tops of the trees to the north of the village. For the patrols, the hill 602, north of Hampton, and 584,, west of Belmont School, are well located, are visible from the roofs of Newchester, and, indeed, with glasses, from each other.

Both have good fields of view to the front, and lines of quick retreat out of sight from the front can be easily prepared by making gaps in the fences.

DECISION: Lieut. N..... decides to take his platoon, less two patrols of six men, to Newchester at the trot. To send one of the detached patrols by the mst direct road to the hill 602. This patrol will accompany the lieutenant (the squadron is camped in the pasture along the stream west of the hill 587, northeast of New Oxford) as far as the northern end of the private road leading north through the pasture. He will also detach a second patrol, of equal size, to go to Belmont School House.

ORDERS: "Sergeant F....., you know the situation. Take your patrol by the Baltimore Pike towards Hampton and the hill 602. If not prevented, occupy this hill and keep an active lookout for troops approaching from the front. I shall be at the crossroad in Newchester. Send messages there at top speed. Make a smoke ball * if the enemy is advancing rapidly in force."

To the other patrol leader, Corporal G....., who rode along with the lieutenant, he said: "You know the situation. Go rapidly, with your patrol of six men, towards the hill 584, near Belmont School House. If not prevented, occupy this hill, and watch for hostile movements from the north and west. Send messages to me at the crossroad in Newchester."

Sergeant F....., as soon as he left Lieut. N....., trotted to the outpost near Klinger's, who reported nothing unusual. He then trotted to the farmhouse on the eastern slope of hill 586. This much of his road was under the observation of the outguard on hill 587. Here he turned to the left on the private road leading over the hill to the north, halting a mo-

*To make a smoke ball, have a small, clear fire burning, with a pile of damp grass, weeds, ferns, or the like, near it. When the signal is to be made, drive a green stake in the center of the fire and throw a dampened blanket over it, supported by the stake. Throw the smoke-producing material on the fire and then hold the edges of the blanket low down until the smoke begins to leak out around them; then jerk the blanket off quickly, and if the wind is not too strong, a ball of smoke will rise that will be visible for miles on a clear day. The fire should be put out or smothered at once.

ment there, when he got to where he could see over the crest towards the north. Seeing nothing unusual, he led his patrol, riding with a trooper by his side, the rest of the patrol 100 yards in rear, by the private road north and east to 5481; a little to the north of here is another crest, near the farmhouses on the left. Halting here, he could see ahead to the next crest in the road, (at the letter T in BALTIMORE) 1200 yards ahead. The woods crowning this ridge, east of the Pike, prevented him from seeing any farther on the road he must take, and the ridge paralleling the road, to the west, 300 yards away, cut off his view in that direction.

He trotted to the next horizon, and here the valley of the Conewago, and the opposite slopes, spread out to his view. There is practically no cover for him the rest of the way to his station on hill 602, so there can be no more effort at concealment.

He assembles his patrol, directs two of the five men who have been with the second group, to follow the other three at 200 yards, and directs the second group to increase the distance between them and him, when they advance again, to 200 yards. He explains his mission to the patrol, and tells them that the thing of greatest importance to them on this occasion is to get information of the approach of any large body of hostile troops to the commanding officer at the earliest moment. He then proceeds, at the trot and gallop, to his station on hill 602.

He left Lieut. N..... at 5:50 A. M.; he reached hill 602 at 6:20. He went at once to the crest of the hill, crawling to the top, to make himself as little conspicuous as possible. He looked through his glasses in all directions, saw no signs of movements of troops, and then stationed two men, hiding them as best he could, to act as sentinels. He had a small fire built on the southern slope of the hill; he sent a man to get some green grass and ferns to make a smudge of; he sent another to cut gaps in the fences to the south, in case it should become necessary to retreat suddenly in that direction; he had the horses put out of sight from the west and north, on the south-

ern slope of the hill, and then he joined the sentinels, where he remained in observation.

Corporal G....., adopting much the same tactics, proceeded more slowly until he neared Newchester. He could get no such view of this village as Sergeant F..... could of Hampton, because of the woods and hills that screen it from the south. But he had to get through it, so, assembling his patrol at the bend in the road on the southern outskirts of the village, and after he had looked up the main street and seen that it was practically deserted, he took the gallop, and, with pistols raised, he and his men dashed in one group through the village, looking to right and left for signs of hostile occupation as they passed. At the northern exit of the town he got a momentary glimpse of the road across the creek, near Oak Grove School House, but here his view stopped, on account of the woods and orchards there. He slackened his pace going down the hill, had five members of the patrol drop back to 100 yards' distance, and continued to his post, observing the usual precautions.

Arriving there he found that at hill 584 his view to the northeast was cut off by the woods a half mile away in that direction, so he was forced to send two men to the farmhouse east of Belmont School House, directing them to find a place where they could observe the roads to the east, particularly the one leading southeast from Bowlder.

He made similar preparations on hill 584 to those described as made by Sergeant F..... He was in position on the hill at 6:35 A. M.

Lieut. N..... used Corporal G.....'s patrol as an advance guard for his own party, now reduced to ten troopers. On reaching Newchester he sent two troopers at once, at a trot, to station themselves on Hill 573, to observe the country to the west; had the horses of the rest held, kept saddled and bridled, in the center of the town, and, with two men, went to the top of the building referred to above. Here he had one man watch the country to the north and east, the other to the north and west, while he, from time to time swept with his glasses the whole terrain in his sector.

RED. Meanwhile a squadron of Red cavalry had camped the night of September 19th and 20th at Bendersville (Strategic Map), 13 miles northwest of New Oxford. Its commander learned of the Blue cavalry at the latter place, and its mission there. He determined to attack this Blue squadron, hoping to find it so dispersed in its search for military supplies that he might destroy it. From his knowledge of the terrain, and from the map, he estimated that he should be able to reach Oakwood School House, one mile northwest of Waldheim, marching by way of Center Mills, Heidlersburg, and Bowlder, without being discovered by the Blue outposts, and that he could then make a dash across the Conewago before the Blue cavalry could be informed of his approach.

After reaching Waldheim he would be guided by circumstances. He determined to march with only a point; to go at a walk until he saw he was discovered, and then to take the trot.

He reached crossroad 601, in the woods 1½ miles north of Belmont School House, at 7:00 A. M. Here he was met by a farmer boy riding a barebacked horse, who said that he lived in the bend of the road a mile below, and that "some Blue soldiers, on horses, were on the hill near the school house." When asked what they were doing there, he said he didn't know; he was frightened and ran away.

The Red commander, Major R....., then led his squadron through the fields north of the ridge the road to Bowlder is carried on, reaching Bowlder at 7:20.

There is a store at Bowlder, with a telephone. Here Major R..... got into communication with the information division (paragraph 9, Field Service Regulations) of the Red army, at Chambersburg, and learned of the advance of the rest of the Blue cavalry regiment towards York Springs, and also that several car loads—probably a battalion—of Blue infantry had left York that morning, by train, for the west. He telephoned the commanding officer at Arendtsville, asking that some infantry be started at once for Hampton, that he thought with their help he could bag the Blue command. The commanding officer at Arendtsville could spare only a battalion, but he would

send it at once. He also learned that the Blue cavalry was employed to the west and south of New Oxford, and that no part of it had been seen to cross the Conewago that morning.

At 7:40, Major R..... started again with his command, preceded by only a point, and, marching at the trot, soon came into view of the Blue patrol on hill 602. It is four miles from Bowlder to Waldheim, and the point of Major R.....'s command reached the latter place at 8:20 A. M. The Major sent his leading troop across the ford first, directing its captain to gallop up to Seven-hundred School House, and, from there to throw out several patrols to the south to locate the Blue outposts. The other three troops were to follow closely, and halt at 542, 600 yards north of the school house.

Major R....., accompanying the leading troop, went to the school house, climbed to its belfry, from which place he could see over the tops of the trees to the south. It was now 8:40 A. M., and he could see, coming from the northern edge of the village, a column of infantry that turned and marched northeast toward the camp of the Blue cavalry.

The Red position, at this moment, was as follows: The head of the main body, three troops, was at 542; the support of the advance guard, one troop, less detachments, was at Seven-hundred School House; one platoon was 600 yards south of the school house, stopped there by the fire from a Blue outpost at 552; a patrol of eight men was at the farmhouse north of Klinger's, where they were held by the fire of the Blue outpost at 490; one patrol of eight men was approaching hill 586 from the north.

Blue. The patrol at hill 584, near Belmont School House, missed Major R.....'s squadron, but the two men on the ridge to the east of the school house saw him as he came trotting out of the woods south of Bowlder. One of the two men, waiting only long enough to be sure that the command was larger than one troop, galloped down the farm road towards the school house. Corporal G....., with one man, galloped to meet him. The man reported: "The head of a Red cavalry column larger than one troop just came out of the woods south

of Bowlder, about two miles from here. It is going at a trot towards New Oxford."

The corporal saw a smoke ball rising from hill 602, and knew from that that Sergeant F..... had seen the Red column too, so he said to the man who made the report: "Go rapidly to Newchester and report what you have seen." It was now 7:52 A. M. It is three miles from Belmont School House to Newchester, and riding at the trot and gallop, it took the messenger 15 minutes to reach Newchester.

Lieut. N..... ordered a fresh horse for the messenger, and, while saddles were being shifted, he got the report of the messenger. It was 8:10 when he started again, and 8:28 when he reached the Y in the road just north of New Oxford. A trooper there directed him to go to camp with his message; he went there, reporting to the Major at 8:35 A. M.

Corporal G....., after dispatching his messenger, went at once to the place whence the Red column had been discovered. When he got there it was crossing the ridge 1,000 yards northwest of Chromis' house. Nothing was following it. The corporal withdrew his sentinel here, went rapidly back towards the school house, signalling to his patrol on the hill to come in; when it joined him, he trotted back to Newchester.

He found that Lieut. N..... had taken his patrol to the ridge 600 yards southeast of Newchester, and learned that the dust of the Red squadron had just been seen near Oakwood School House. The lieutenant, estimating the situation, decided that he could now be of more service closer in, so he withdrew to the nose 400 yards northwest of 520, sending Corporal G....., with his patrol, to 568, 1⅓ miles to the southwest.

Sergeant F..... also saw the Red cavalry at 7:43 A. M. He waited long enough to see the rest of the column. At 7:48 he sent up a smoke ball. He saw he could accomplish no more by staying at 602 than by crossing to the south side of the creek. Here was an enemy large enough to be formidable, and his place was on its flank. So he assembled his patrol, and led it, at the trot and gallop, to the nose on the Baltimore Pike 1200 yards south of the Conewago. He reached there at 8:10. He

saw the Red cavalry just coming out of the woods southeast of Oakwood School House, and sent the best mounted trooper of his patrol in to camp with these instructions: "You know the situation. Go in at your best speed, and tell the senior officer in camp about it. Tell him where you left me, and that I will remain on this flank of the enemy."

The outpost on hill 536 also, at 8:10 A. M., saw the Red cavalry as it came out of the woods southeast of the Oakwood School House, and it signalled to camp: "Enemy in sight," and, as soon as the rear of the squadron came in sight, sent a messenger at the gallop to camp, to give them the direction of the enemy, and his estimated strength.

The smoke ball sent up from hill 602 was seen at camp at 7:48. Only two troops were in camp. They assembled as rapidly as they could. The senior officer in camp called Major B..... to the telephone and told him that a smoke signal had been seen from hill 602, and that he was assembling the troops in camp.

Major B..... sent out messengers to call in the foraging parties and left a small patrol, under a sergeant, to meet the Blue infantry battalion that was momentarily expected, and, then, with the rest of the troopers in New Oxford, he galloped to camp. He left a trooper at the northern exit of the village to direct messengers where to find him.

The troops at camp were assembled at the northern edge of the pasture where they had been camped, in readiness for a move. At 8:10 the signal from the outpost on hill 536 was seen, and, about the same time, the whistle of an engine was heard.

Major B....., realizing that the Red squadron would be across the Conewago before he could oppose it, estimated that it would be better tactics for him to allow the Red squadron to get nearer to New Oxford, to wait for the Blue infantry to come up, then to attack the Red squadron on its left flank and rear, holding it south of the Conewago while the Blue infantry, attacking it in front, might destroy it. So he moved his troops up to hill 586, massed them on the south side of that hill, left

his outposts as they were, adding one group of ten men at 552, and awaited developments.

The Blue infantry reached the station at 8:20, and, unloading rapidly, was soon on the march. The head of the column left the northern exit of the village at 8:40 A. M.

RED. The patrol of eight men sent to occupy hill 586 was fired on from that hill and forced to take cover in the woods to the northwest. Major R....., realizing that his chance to attack the Blue squadron successfully had passed, gave orders to retire at once. He directed the captain of the leading troop to retire slowly, joined his squadron at 542, and led it, at the trot, to the northwest, across the bridge at 434W, and then, by hill 526, he retreated to Oakwood School House. His fourth troop retired a few minutes later, joined him, and the Red squadron was then massed behind the screen of woods a half mile east of Oakwood School House.

Major R..... estimated now that the Blue forces would attempt to reach York Springs with their convoy, using the Baltimore Pike, and he decided to dismount his squadron, and move the dismounted men to the southern margin of the woods, to contest the crossing of the Conewago.

BLUE. The Blue infantry commander, who was the senior officer present, decided to start at once, with the supplies already collected, for York Springs. Estimating the situation, he decided to advance immediately with three companies, directly towards the bridge 423, on the Baltimore Pike, and to send so much of Major B.....'s squadron as was already assembled, by Greenridge School House, thence around the bend in the Conewago, where the road is completely screened, by the fringe of trees along the river, from view to the north, thence across the ford north of hill 466, to attack the Red left flank, in case he contested the crossing of the bridge.

Major B..... delayed crossing the ford until he heard the firing of the infantry, when he led his squadron across the fields, towards the little patch of woods east of Miller's. While doing so he was discovered by Major R.....'s combat patrol, posted at the farmhouse 600 yards southeast of Miller's, who

at once gave warning. The Red line withdrew, mounted up, and retired slowly to the southern edge of Round Hill. Major B..... followed, and, at noon, both forces were posted as follows: The Red squadron on Round Hill. The Blue squadron, now completely assembled, on the Baltimore Pike, with march outposts on 602, at the orchard on the Pike 1200 yards northwest of 564, and at 548, nearly a mile to the east of 564.

Lieut. N.....'s patrol, which had kept on the Red right flank all the morning, was at the orchard nearly a mile northwest of Chromis', towards Bowlder.

The Blue infantry had three companies at Miller's, while the other one was in rear of the convoy, which stretched along for about a mile, its head in rear of the leading three companies.

At about noon an infantry column was seen by the outpost on 602, coming down the hill east of Bowlder. His appearance was signaled, and Major B..... rode up to the hilltop. He saw what appeared to be a battalion of Red infantry, marching east, and at the same time, the Red cavalry squadron marched down the slope of Round Hill to meet it.

A little later Lieut. N.....'s patrol was seen to leave the orchard where it had been stationed to take a position in the cut 800 yards southeast of there, and open fire, its target evidently to the north.

Major B..... sent his adjutant to Major I....., commanding the Blue infantry, directing him to point out to the Major the advantages of the ridge that hill 602 is on as a defensive position, to inform him that he, Major B....., would hold the ridge with a dismounted line until he could be relieved, and that he believed that the Red Cavalry was working around on his left flank.

Major B..... dismounted Troop A at once, holding the horses in the little ravine just east of 602, and led his other three troops, with no other advance protection than ground scouts, at the gallop across the fields to the orchards, half a mile southwest of 602, keeping out of sight behind the ridge. There they dismounted, and deployed on the crest. Gaps were

cut in the fences. The outpost at the orchard was brought in a little nearer, and left there as a combat patrol. Lieut. N..... took his patrol, which had been firing on the advancing Red squadron, to the rectangle of woods southeast of Chromis' house, where he remained as a combat patrol. The march outpost at 548 was left in observation there.

The Blue infantry came up and deployed in about twenty minutes. Troop A, when relieved, mounted, and remained in the little valley where the horses had been held. The other three troops, when relieved, mounted and went to the eastern edge of the woods where Lieut. N.....'s patrol was, to await the appearance of the Red squadron, and to assist in the defense of the convoy.

The convoy, meanwhile, has been brought up to Hampton, and is held in the pasture east of the village. The Blue company guarding it is held in the center of the village, with march outposts at the northern and western exits of the town.

With the positions and forces as indicated, the Red chance of success, everything else being equal, in attacking the Blues, is entirely hopeless. At the same time, it would be a hazardous undertaking for the Blues to attempt to move the convoy in the face of Red forces of equal strength. It could only be done by sending the convoy ahead, using the troops as a rear guard.

In the situations just described, many problems confronted the Blue commander. He had to conduct foraging operations in a hostile country, where all local sources of information, open to his enemy, were closed to him. His first concern was to get information of the hostile advance in time to prepare for it. His camp outposts could not do this for him. He must have more distant patrols. Then, having learned of the hostile advance, he must be kept advised of the probable direction of the Red attack. This was given him by the reconnoitering patrols, assisted by the camp outposts. Having secured the advantage, by the arrival of the Blue battalion, he must keep contact with the Red cavalry, so as to guard against possible surprise. This was done by means of contact patrols, backed up by the whole squadron. When the Red battalion arrived

on the scene, it, too, must be kept in check, and under observation. This was done by deploying the cavalry, dismounted, in a good position, and by the use of combat patrols. The cavalry line was not strong enough to hold the position selected, so the infantry relieved it, and, by so doing, enabled three of the cavalry troops to mass themselves on the left of the infantry, and prevent any flank attack by the Red cavalry, which had moved so as to threaten this flank, while the fourth troop, assembled under cover of the right flank, could quickly move to the flank or rear of any part of the Red infantry that threatened an attack on that flank.

This troop, too, in case the Red infantry should be successful, might, at the critical moment, charge the Red infantry lines in flank, in column of platoons, creating such a condition of momentary panic in their ranks that the Blue line, pouring rapid fire into their disordered lines, might easily turn defeat into victory. This would be an excellent application of the principle: "When cavalry attacks infantry, material effect is nothing, moral effect everything. In the case of infantry directly engaged with infantry of the other side, this moral effect may be produced with the smallest units, especially if they attack it in flank or in rear."

Infantry is the backbone of all armies. All the other arms are auxiliary — subsidiary to the infantry, and all their energies, all their talents, should be devoted to futher the success of the infantry programme.

When cavalry attacks hostile cavalry to destroy it, its commander hopes thereby to secure two ends: first, to relieve his own infantry of the necessity of dissipating its strength in closely guarding its line of communications, and, second, to be himself free to attack the hostile line of communications, and so to reduce the number of infantry rifles opposed to those of the infantry of his own side.

So with artillery; in its action with the hostile artillery it seeks to destroy it, not so that it, the artillery, may win the battle that decides the war. It purposes also are two-fold: First, to put the hostile artillery out of action, so that it may no longer hinder the movements of the attacking infantry;

and, second, that it may turn its guns on the hostile infantry, so assisting its own infantry in gaining that superiority of fire that is essential to the winning of every victory.

It is the infantry, the men on foot, carrying their weapons in their hands, that must do the decisive fighting in every battle, but the infantry cannot gain decisive victories unassisted. All officers, of whatever arm and grade, should study the uses and tactics of the other mobile arms, and should "divorce themselves from the surroundings and prejudices of their particullar arm, whatever it may be, and to enter wholeheartedly and unreservedly into the spirit of the Napoleonic maxim: 'Infantry, cavalry, and artillery are nothing without each other.'" (General Rimington, British Army.)

To return to our problem: Darkness found the Blue troops as follows: Three companies of infantry were deployed on the ridge 602. Outguards were posted, without supports, directly from this line; No. 1, a picket of 16 men, in the orchard 600 yards northwest of crossroad 564; No. 2, a picket of 16 men, at the western end of the fringe of trees on the road running west from 564; No. 3, a sentry squad in the orchard west from hill 602; No. 4, a sentry squad, at the farm buildings at the northern end of the private road 800 yards southwest of Outguard No. 3; No. 5, a picket of 16 men, 350 yards south of No. 4.

Troop A furnished four mounted men for patrol duty to Outguards Nos. 1 and 2, and then moved to crossroad 548, three-fourths of a mile northeast of Hampton. The rest of the Blue squadron withdrew to the farm 700 yards northeast of Oakwood School House, furnishing 6 mounted men for Outguard No. 5, and establishing pickets of 24 men each at Oakwood School House and at Miller's.

The Red infantry withdrew to the woods south of 532, near Plum Run, leaving one company in the eastern edge of the woods to the east as a support for a line of sentry squads paralleling the Blue outpost line, and about 600 yards distant from them.

One troop of the Red cavalry was at Waldheim, with detached posts on the bridges at 434W and 423. The rest of

the Red squadron was at the crossroad 452, 1¼ miles southeast of Hampton, with a platoon at Hafer's Mill and a squad at the ford to the west. The Blue cavalry, using its patrols, kept in touch with the Red cavalry until it crossed the bridge at 434W. Here contact was lost, as the patrols were stopped from crossing the Conewago by detachments from the Red cavalry at all the bridges and fords.

The captain of Troop A, Blue cavalry, posted a detached post on the hill north of Hafer's Mill. This detachment found the Red outguard on the bridge, but could not determine the strength of the body behind it. Similarly the pickets at Miller's and Oakwood School House sent patrols to the crossings of the Conewago south of their positions, and found them both occupied.

CHAPTER XV.

FIELD SANITATION. INDIVIDUAL COOKING.

To keep well, to preserve your strength, is your first duty.

Sick men not only reduce the effective strength of an army; they divert the resources of the State from useful channels, and so weaken it doubly.

Nearly all camp diseases are preventible, but all men must co-operate to prevent them.

On going into camp tents should *always* be ditched and drains dug so that the water will be carried away from the tents rapidly. This should be done at the same time the tents are pitched, unless the camp is for only one night, and the weather signs point unmistakably to fair weather. To do this will take only a very few minutes, and will insure dry bedding and tent floors. The dirt from the ditches should be scattered, and the pins for the skirts of the tents should be driven in the bottom of the ditches.

When a camp is made that will be occupied for some time, and the soil is at all light or sandy, great care should be taken to distribute the sod and leaves or dried grass already on the ground as little as possible. Dust is one of the greatest nuisances in a permanent camp, and anything that will hold the soil in place should remain undisturbed.

The following rules concerning Field Sanitation are taken from *Notes on Sanitation in the Field,* by Major James S. Wilson, Medical Corps, U. S. Army.

Personal Hygiene. *a.* The body must be kept clean in order that boils, lice, and various skin diseases may be prevented. It is important, particularly with mounted troops, that the inside and back of the thighs and buttocks be clean, to prevent chafing.

b. The hair of the head should be trimmed close to prevent diseases of the scalp.

c. The tooth brush should be used daily to prevent decay of the teeth.

d. The hands must be washed before each meal, and after returning from the sink. Disregard of this custom resulted in many cases of typhoid fever in our recent war with Spain.

e. The feet of dismounted troops should be cleaned daily on arrival in camp, and clean socks should replace the ones used on the march. If the feet are tender, apply to the surgeon for the foot powder provided for such a condition. Ingrowing toe nails are prevented by keeping the nails constantly trimmed squarely across. If the feet become blistered they must be given the most careful attention. Observe the following rules: Use only a needle to open a blister. Never open it at the top, but as follows: first heat the needle in the flame of a match to kill the germs on it; then run the needle through the base of the blister and gently express the water. Another method not generally known or practiced is to place over the blister thus treated a small piece of ordinary surgeon's adhesive, or, as it is generally called, "sticking" plaster; this prevents the blister from refilling and permits it to heal.

f. Do not drink or eat food prepared or sold from an unauthorized source. One of the most serious contributing causes of intestinal ills and kindred diseases in camps of concentration, is the unauthorized sale of alleged "ripe fruit," "digestible pastry" and "pure beverages," which are usually the reverse.

g. The necessity of the daily bath, when practicable, can not be overestimated, not only for the purpose of cleanliness, but because such a bath greatly refreshes one after a long and tiresome march.

Care of the Tent. *a.* Air the ground covered by the tent daily, also raise the walls so that as much sunlight as possible will enter it. Do this not only to dry the tent floor, but also to obtain the disinfectant action of the sun.

b. Air the bed sacks and blankets on the tent guys—not on the ground, on account of its dampness. Do this daily, if possible, as the bed clothes absorb the odors of the body very much more rapidly than when sheets are used.

c. Do not close the tent door entirely at night, as it is not generally appreciated that the fibres of the canvas swell at night after the dew falls, to a degree that makes the tent almost airtight, and vitiation of the air in the tent results.

Diseases of the Intestines. One of the most common diseases of the young soldier is some disorder of the bowels, and the most frequent is constipation and its attendant ills. A daily stool is necessary for health. A most important point in this connection is to designate a place immediately on arrival in camp for the men who wish to relieve themselves at once, and to construct at least a shallow pit. Nothing is more demoralizing to troops on going into camp, than to permit the men of the command to relieve themselves in the nearest place available regardless of the purpose for which the ground may be used later.

Mosquitoes. The use of the mosquito bar is not always enforced as strictly as it should be. If not used in countries where malaria-carrying mosquitoes are found, the result is malarial fever. A report should be promptly made if, in a permanent camp, a place is found where mosquitoes are breeding. The breeding place should be immediately destroyed. Mosquitoes will breed in old tin cans, bottles or anything that will hold a little stagnant water.

Washing Woolen Clothing. Inasmuch as the ordinary woolen underclothing can be easily rendered almost unserviceable by improper washing, it is suggested that they be laundered as follows:

1. Put the clothes in warm soapsuds and move them about freely.
2. Next, place in clean cold water.
3. Hang them out to dry, and on no account dring them.

Many times in the field it will be found impossible to wash underclothes, and have them dry in time for the next day's march. In this event they can be freshened materially by thorough brushing, shaking, and sunning.

Buttons. A point that is often overlooked because of its apparent unimportance, is to see that the buttons on the cloth-

ing are replaced when lost, for if this is not done, particularly with underclothing, chafing or blistering may result from an improperly fitting garment.

Cholera Belt. For many years it has been recommended that in the field the "Cholera belt" be worn around the waist. This belt consists usually of a band of woolen material. It frequently rolls up into a rope-like mass, and ceases to exercise the function for which it is intended, viz: to protect the delicate organs of the abdomen. A much better, simpler, more economical and satisfactory appliance is the "Cholera apron," which covers the front of the lower part of the abdomen, fastening around the waist by two pieces of tape. This accomplishes all the cholera belt does, and has none of its disadvantages.

Fit of Clothing. Clothing, especially for the field, should be loose and comfortable. No construction of the chest is permissible, in order that the movement of the body, and particularly those of respiration, may be free from restraint.

Waist Belt. Many men use a belt to hold up the trousers. suspenders are better, as the belt places too much pressure on the abdomen.

Shoes. The importance of correctly fitting shoes is frequently overlooked or disregarded by the inexperienced soldier. The result is always readily seen in commands where this important feature is disregarded. As an example of the importance of the proper care of the feet, it might be noted that in the early part of the Franco-Prussian War, the German Army, during a given period lost from killed and wounded, 60,000 men, and during the same period 30,000 men were incapacitated for duty by injuries to their feet. It is recommended that two pairs of properly fitting shoes be obtained and well broken in before leaving for a campaign, and that they be given a thorough coating of neatsfoot oil several days before taking the field. On the march when shoes become wet, fill them with dry hay or straw, and do not place them too near a fire to dry. When dry, give them a good coating of oil, or of any available form of grease.

Selection of Shoes. *a.* Avoid selecting a shoe with too

low an instep, or too loose an instep; the former defect is frequently noticed in the "issue" shoe.

b. Remember that the feet swell after a long march; therefore have the shoes roomy.

c. Remember that when the weight of the body is thrown on the foot in walking, there is a considerable widening of the foot, and also a slight lengthening. A marching shoe, therefore, must be comfortable when the entire weight of the body is thrown on either foot.

d. In getting a shoe for use on foreign service, select one a quarter to a half size larger than usual, as the feet of an individual either enlarge, or seem to, in the tropics. In cold countries a heavier sock is usually worn.

e. Be careful, however, not to choose a shoe too large, as it is likely to produce a blister from rubbing.

f. Recently the French adopted a method of treating feet blistered while on the march. It is as follows: Take a strap half an inch broad, (the ordinary coat strap from the regulation saddle answers very well) and spread it on the ground. Place the instep of the foot over its center; bring up each end of the strap over the top of the instep, cross and bring around the ankle and buckle.

So satisfactory is this method that it is claimed that men who were suffering with blistered feet were cured by wearing this appliance, even though marching fifteen to twenty miles a day.

Socks. Under ordinary circumstances the light woolen sock, that is now issued in our Army, owing to its elasticity and absorbent qualities, furnishes a most excellent foot covering. It is, however, imperative, particularly for foot troops, that a clean, or at least, a fresh pair of socks be put on each day. It may sometimes happen that it is impossible to wash or to change the socks. In this event it is recommended that they be aired and sunned, turned inside out, and replaced on the feet.

Care of the Canteen. *a.* Scald a new canteen inside and out before using it. This is important in all cases; it re-

moves the sizing on the cloth on the outside, making the covering more absorbent, and sterilizes the interior.

b. Fill the canteen only from authorized sources.

c. In order to cool the contents of the canteen for the next day fill it at night, wet the outside covering, and hang in the breeze until morning.

d. Avoid the bad habit frequently seen among the untrained of drinking too much water on the march. This type of man empties his canteen early in the day, and is likely to drink water from an unauthorized source on the march or in camp, before a suitable supply can be obtained for him.

e. Make it a rule to scald the inside of the canteen at least once a week while in the field.

INDIVIDUAL COOKING.

The soldier's mess kit — meat can, with its top, tin cup, knife, fork and spoon — furnishes him with every needed utensil for cooking the raw materials he is liable to get for his ration in the field.

Three times a day a man must eat to sustain his physical forces so he is capable of a maximum of effort, and no calling that men engage in requires such strength to withstand fatigue as does the life of a soldier in a campaign. Without proper food, properly cooked, his strength dwindles and his efficiency is reduced. No part of his training is so necessary as is the knowledge of how to prepare his food so as to receive from it the greatest amount of benefit. Food and sleep are the great restorers of exhausted physical strength. To sleep needs no training; the proper preparation of suitable food does need and should receive most careful attention in the training of a soldier.

The Fire. Do not have too big a fire, but have it burning well, with a good bed of coals before beginning to cook. Do not cool the fire by adding fuel while cooking is actually in progress.

Make the fire in a little trench, or between two stones or bricks or pieces of wood. Supports should be made for the

frying pan — the deeper part of the meat can — and the tin cup, so that it will not be necessary to hold them over the fire by hand.

Coffee. Fill the tin cup two-thirds full of clean water; bring it to a boil, then add a heaping spoonful of roasted and ground coffee, stirring gently while adding it. Let it boil slowly for five minutes, then add sugar to taste. Stir the sugar in, and add a dash of cold water to settle. Let it now rest without moving until it is cool enough to drink; it will then be clear.

Bacon. Cut a side of bacon in half lengthwise. Then cut slices about five to the inch; three of these should be enough for one man for one meal. Place them in the frying pan with about half an inch of cold water. Let it come to a boil, and then pour the water off. Fry over a brisk fire, turning the bacon once and quickly browning it. Remove the bacon to the lid of the meat can, leaving the bacon grease for frying other parts of the meal.

Fresh Meat. *To Fry*: A small amount of grease (one to two spoonfuls) is necessary. Put this in the frying pan and heat it until it smokes, then drop the meat in it. If the meat is about half an inch thick, let it fry for about a minute, more or less, depending on whether it is wished rare, medium, or well done. If the grease is smoking hot, and the fire is kept up, the meat will be not at all greasy. Salt and pepper to taste, after it is cooked.

Potatoes or Onions. *To Fry*: Peel and cut into slices about a quarter of an inch thick, and scatter well in the frying pan in which the grease remains after cooking the bacon or meat. Add enough water to half cover the potatoes or onions, cover with the lid to keep the moisture in, and let come to a boil from fifteen to twenty minutes. Remove the cover and dry as desired. Salt and pepper to taste. During the cooking the bacon may be kept on the cover, which is most conveniently placed bottom side up, over the cooking vegetables.

(The above receipts are adapted from the Manual for Army Cooks. Other receipts are found on pages 167 to 173 of that Manual.)

From the chapters that precede it should be plain to the young student of the Art of War that an army is a very large aggregation of men, commanded by one man on whom, in battle, devolves the fate of the nation his army is defending. He must, with the advice and assistance of a few men, plan his campaigns, and he must keep his plans secret. To tell everyone in his army what he proposes to do would surely result in putting his enemy in possession of his plans, and so lead to the defeat of them. To each of his principal subordinates he assigns a task, confiding so much of his plans as is necessary to a proper performance of the task assigned. The success of the campaign depends upon the zeal and willingness of these principal subordinates.

In turn they assign to their immediate subordinates the share each is to take in the undertaking, and so the orders are transmitted from superior to subordinate, until finally they reach the colonels of regiments, the majors of battalions, the captains of companies, the individual soldiers who are to do the work. In a general engagement these men can know but little of the reasons why they are moved from position to position, why they are ordered to the attack, often where it seems to them a hopeless effort; why they are sacrified, to them apparently to no purpose, or why they are sometimes withdrawn when they seem to be victorious. It is the business of each to do this thing he is told to do,when told to do it, and only by so doing can victory be secured.

These are some of the reasons for a military education, for exacting obedience in every detail of daily life, until obedience becomes instinctive.

APPENDIX

The elementary training of all soldiers may be said to extend in three directions; first, towards a condition of perfect discipline, so that they may be controlled by their officers, automatically controlled, by instinct rather than by an effort of the will.

The second direction in which a soldier's training should extend is towards excellence in marksmanship, so that the machine of which he is a member may be a greater menace to the enemies of his country, and, in exact ratio, a better guarantee of his country's peace. The third direction is towards a knowledge of field sanitation, that the efficiency of the machine may not be impaired by the ignorant violation of the laws governing his own and his comrade's health.

Given thorough training in these three directions the soldier is a powerful member of the machine; give all its members this training, and to the officers a thorough knowledge of tactics, and the machine becomes well-nigh invincible; its size is its only limiting factor.

Discipline is taught by drill, by the constant insistance that certain things be done in a certain way, and in no other way; by the constant repetition of familiar acts in response to familiar orders, until the soldier's obedience is inevitable, subconscious; so that "under whatever stress of circumstances, danger, and death, he hears that word of command, even if his mind be too confused and astounded to understand, yet his muscles will obey."

After being disciplined, trained to shoot well, and familiar with the laws of health and the necessity of their observance, soldiers need further and explicit training in the art of scouting. Nowhere can young officers and enlisted men of all grades get that independence of action, that sense of personal responsibility so necessary to good soldiers, as in the conduct of patrols. Here is a chance for all to excel, and here is a study that will compel your interest.

The first three departments of a soldier's training can be taught exactly, on a limited field of operations. The last can only be learned by applying its laws to a multitude of different fields of operations, as has already been sufficiently shown

The problems discussed are typical of thousands of others that the progressive student should work out for himself. Map problems are poor substitutes for properly conducted field maneuvers. The latter are equally poor substitutes for the school of actual war, but the problems of war can be better solved by students well schooled in maneuver duties, and good preparation for the latter can be gained from a careful study of maps and map problems. For these reasons every military student should perfect himself in map reading until a map is as easily read as a printed page.

SUGGESTIONS FOR PROBLEMS

MAP READING.

In all map problems, unless otherwise stated, neglect all consideration of trees, houses and standing crops. Consider only the bare surface of the ground. Assume the observer's eyes to be five feet above the ground on the Topographical Map — one contour interval — and neglect the height of the observer's eyes when using the Strategic Map.

1. If you were standing at the Y in the road at Oak Grove School House, Topographical Map:

REQUIRED: a. Could you see crossroad 529, to the west?

b. Could you see Belmont School House?

c. Could you see Chromis' house, to the northeast?

d. Could you see Oakwood School House, to the east?

e. Could you see Crossroad 594, to the southwest?

f. Could you see Husbach's house, in the bend of the Conewago, to the east?

Note. Require proof of these and all similar problems by drawing profiles.

2. Draw lines to the north, east, south, and west from Oak Grove School House, and then erase all parts of them that are invisible from the school house.

3. You are a patrol leader; you are at Bowlder, near the central part of the northern part of the Topographical Map. You plan to lead your patrol by 574, southwest, to Newchester, thence to Oakwood School House and back to Bowlder.

Consider in this problem that the trees are in full leaf, and not more than 25 feet high.

REQUIRED: a. How far can you see in the direction you are to go?

b. Describe the road from Bowlder to 565.

c. When you get to the western edge of the woods between 565 and 574 you see that there is a hostile patrol on hill 584. How do you lead your patrol, following your originally planned route as closely as possible, so that this hostile patrol can not see it?

d. Describe the country for half a mile to the right of the road as you go from Oak Grove School House to Newchester.

e. What parts of the road from Oakwood School House to Bowlder are visible to a sentinel on hill 602, northwest of Hampton?

f. What is the lowest point on the road this patrol planned to take? The highest?

g. Where, within a half mile of the road this patrol planned to take would the leader get the most comprehensive view of the valley of the Conewago?

h. Where, from the road, does the leader get the most extended view to the northeast? The southeast? The southwest? The northwest?

4. How far up each of the four roads radiating from Oakwood School House would a man walking away from the corners be seen by a man standing there? Assume for this problem that there are no trees to obstruct the view.

NOTE TO INSTRUCTORS: The above are suggestions of classes of questions that can be multiplied indefinitely.

Students should be provided with contoured maps of their own neighborhood, where such maps are available, and learn from them how a familiar landscape looks on a map.

By application to the *Director, U. S. Geological Survey, Washington, D. C.*, information can be secured as to whether or not any particular portion of the United States has been mapped by the Survey.

ORIENTATION.

Instruction in this most important part of the soldier's training can only be given in the field. Students can be taught to read maps in the class room. This instruction must be thorough and constant; until students can read maps readily and accurately, all tactical instruction involving the use of maps will be nearly usless. Map reading is to the study of tactics what reading is to the study of a language or any of the arts and sciences. Having learned the meaning of the conventional signs of maps, and how to vizualize the terrain represented on them, the student should be given a local map, taken out into the country represented on it, and taught to "find himself" on the map.

Another method is to put the open map on the ground.

Better results can be made if an automobile is available, because so much more country can be covered by it, in a given time, than in any other way.

In the chapter on Orientation, pages 41 and 42, *ante*, one method to be followed is described in detail.

Onother method is to put the open map on the ground. Place a compass on the map, and slowly turn the map until the needle of the compass lies parallel to the north and south lines of the map the north point of the needle pointing to the north end of the map.

No matter how unfamiliar the student may be with the terrain shown on the map he is working with, there will always be one or two points on it whose location is known.

For instance: a party of students has been taken, by rail, to Gettysburg, where none of them have ever been before. They are provided with a copy of the Strategic Map. An automobile is provided for the party. They set out on the Harrisburg Road, and, after a while, the car is stopped and they get out. Except the instructor, no one had paid any attention whatever to the direction they have come.

The map is spread, and oriented as described above. The position of Gettysburg is indicated to the students, on the map. They are assembled on the north side of the map (beyond Gettysburg, so that they may look towards it). The instructor

points to Gettysburg on the map, and then towards its actual direction on the ground. The students, following the direction opposite to that in which he is pointing, run out from Gettysburg, on the map. This fixes one line on their map for them: the line from Gettysburg to their present position.

Looking about them, the see that the most prominent physical features of the ground near them are these: they are standing on a slanting crossroad, one road runs from southwest to northeast, the other from southeast to northwest. Three or four miles away, to the east, is a little round-topped hill, and towards the west, a couple of miles away, is another hill, that seems much larger and higher.

The problem now is: where, on the map line they have located through Gettysburg and their present position is a spot where a slanting crossroad lies between two prominent hills, one to the east, the other, nearer, larger and higher, to the west? It must be the point 617; no other point on the map fits all of these conditions. To verify this still closer, they remember that, about a mile back on the road they went through a little village — there it is, Heidlersburg, on the map, about an inch southwest of 617.

It is essential, in order to orient oneself on the map to know definitely two lines. The compass gives the north and south line; one other line must be known. The intersection of these two lines, on the map, fixes the position of the observer. There remains only to verify this intersection by comparing the topographical features shown on the map in the vicinity of the intersection with the actual physical features of the ground in the vicinity of the observer. If they agree, the orientation is complete; the observer knows to a certainty exactly where he is, on the map.

APPLIED MINOR TACTICS.

The following suggestions for the preparation of problems in applied minor tactics, whether map problems, war game problems, or problems for field maneuvers, are issued by the Department of Military Art, at the Service Schools, Fort Leavenworth:

1. Give them a semblance of reality.
2. Make them simple and as brief as possible.
3. Make them illustrate some tactical idea or principle.
4. Make them as instructive as possible.
5. Adapt the problem to the number and quality of troops involved.
6. Have them contain only such information as in war the commander might be supposed to have, and require, where practicable, the gaining of necessary information by military means, as reconnoissance.
7. Make the desired contact certain to result and on ground where it is permissible.
8. Introduce as few unnatural conditions as possible.
9. Give the necessary instructions for placing the troops to solve the problem.

To apply these suggestions, let us assume that you are going to prepare a one-side war game problem for your non-commissioned officers, or class of students.

How are you going to give your problem the semblance of reality? You must assume a state of war, two belligerents, a frontier, one side invading, one defending. You must give your students a mental picture of the location of the larger masses. You should assume the state of the weather, the condition of the roads, the attitude of the inhabitants.

The second suggestion — simplicity and brevity — is necessary in order not to introduce so many preliminaries for the student to remember that he will not have his own mission stand out clearly in his mind.

The third suggestion hardly needs comment. Decide on the tactical principle you wish to illustrate, and keep that foremost in your mind — let everything lead up to that principle.

In carrying out the fourth suggestion, have your problem illustrate as many different phases of the tactical principle you are teaching as possible. This will tax your ingenuity more than any other part of the problem.

If, in considering the fifth suggestion, you are dealing with a problem in reconnoissance, do not give your students enough troops to lead to combats. If an advance guard problem, give

them enough troops, and make the enemy weak enough so that they may advance — really may overcome, if they properly handle the troops given them, any opposition offered them. In an outpost problem, give them enough men to cover the front assigned them, but not enough to permit that they solve the problem by posting a cordon of sentinels. If you wish to illustrate a combat, make them strong enough so that they do not attempt a rear guard action — in other words, lead them so that the thing you wish to illustrate is manifestly the only thing to do.

Once, at maneuvers, a problem was anounced as a rear-guard problem, and its situations were so worded that each commander thought he commanded the rear guard. That would not have happened if one side had been told his mission was to advance, the other to cover a retreat.

The sixth suggestion is excellent, and self-explanatory.

The seventh suggestion is met by working backwards. Decide where your contact is to take place, and then work back from that, in your preparatory work, to the point where you are going to begin the problem.

The eighth suggestion is inserted to prevent your students from being led away from the principle you wish to teach by arguments on manifest absurdities.

The ninth suggestion is a very important one. Place the troops in logical positions, and tell your students how to open the problem. Then, after starting their particular units on their mission, try to keep their minds away from the fabric you have woven in complying with previous suggestions, particularly the first, fifth, and sixth, and concentrate on their own mission. Of course they must keep the idea of team work constantly in mind.

To illustrate: You wish to show, in a one-side war game problem, the methods of reconnoissance to be employed in observing the march of a hostile column, using several small patrols.

You have the Guide Map, Strategic Map, and Topographical Map to use in the preparation of the problem. It is a good plan to mark a rectangle on the Guide Map to show the terrain cov-

ered by the other two, and on the Strategic Map to show that covered by the Topographical Map. On the margin of the Strategic Map it is well to draw arrows indicating the direction to the towns named on the Guide Map, and the distances to them.

Then take two lines that might be assumed as frontiers — the Susquehanna River and the line between Pennsylvania and Maryland. If you wish your movement to be east and west, choose the former; if north and south, the latter. Take the latter as our assumption. Troops from both sides are hastening to the frontier. Blue cavalry has preceded its infantry masses, and is searching for information of movements of the Red troops. If you have the body sending out the patrols located at Hanover (Guide Map; Midway, Strategic Map) it would be natural for one of the secondary groups to have assigned to it the sector between the Baltimore Pike (Strategic Map) and the road from McSherrystown and Hunterstown. To make the patrols small enough, make the group at Hanover a squadron and the secondary group a platoon. Now you must arrange for the contact near the center of your Topographical Map — so have a Red force march past the Belmont School, through Newchester, thence southwest to Moritz School. Decide on its composition, rate of march, and protective groups.

Give the Blue side enough information so that they may be cautious in all their movements, not enough to cause them to make a break for the strategical points, ignoring the precautions that should always be taken when in the proximity of the enemy. Remember that the "fog of war" always makes it uncertain as to what is beyond the immediate horizon.

The problem might then take this form:

General Situation: War exists between Pennsylvania, Red, and Maryland, Blue. Red forces have been concentrating at Carlisle, and are reporting as advancing towards the frontier. Blue troops are advancing from Frederick and Baltimore towards Gettysburg. Advanced Blue forces are reported at Westminster.

Special Situation Blue: On the evening of June 20th

a squadron of the 1st Blue Cavalry reached Midway, and went into camp on Plum Creek, near Edgegrove.

At 5:00 A. M., Major A....., commanding, sent for Lieutenants B..... and C....., and ordered: "Spies report a mixed Red command as advancing from the north towards York Springs and Gettysburg. Reports conflict, but indicate about a division (20,000 men). The rest of our regiment is at Littlestown, 6 miles southwest of here.

"I have directed Captain D..... to have 25 of his men reported to each of you. Lieut. B....., you will have the sector: road through Cedar Ridge and Hunterstown, inclusive — Baltimore Pike, inclusive. Patrols from Littlestown will be responsible for the territory to the west of your sector. Lieut. C....., your sector is from Baltimore Pike, inclusive, etc. Start at six o'clock.

"The regiment will march on Gettysburg today. I shall march on Berlin Junction, with the intention of remaining there throughout the day. Send reports, after eight o'clock, to me there."

The weather is warm and clear. The people are hostile to the Blues.

There is the data for the student. In order to have them familiar with its conditions and the terrain, and to be sure that they work out a plan beforehand, it is a good plan to have the problem first worked out in writing, as a map problem. So you might add this to the problem:

REQUIRED: *a.* How many patrols would Lieut. B..... use?

b. How would he divide his sector for the various patrols, and why?

It is not enough that you anounce the Blue situation and indicate the problems to be solved. You must work out a Red plan, and determine how you will employ the Red forces.

In this problem it might be well to assume that the Red force marching on Gettysburg is a division, and that the one marching on York Springs is a flank guard for it. It, the latter, is composed of a brigade of infantry, with a troop of cavalry, a battery, and a company of engineers attached.

You decide on the size of its advance guard, the way the advance guard cavalry is conducted, the rate of march, where halts shall be made, and the hour the head of the advance guard reaches Belmont School.

It is always well to draw, to the scale of the war game map — 12 inches to the mile — a diagram showing the road spaces and relative positions of the advance cavalry, the infantry support and reserve, and the main body. Tables of road space will be found on pages 172 and 173, Field Service Regulations. This diagram may be laid on the map, and the positions of all the various elements shown graphicaly for any given moment with practically no delay.

In drawing up your problems, always give the Blues — the student's side — a little the best of the bargain. Make loop holes so they can get through the Red protective groups if they are active and thorough, and so give them an occasional glimpse of the Red masses. Nothing will so soon destroy interest in war games as subjecting your students to continual defeat. Don't make it *too* easy, but give them a chance.

ESTIMATING THE SITUATION.

Problems exercising the student in this subject can be readily improvised from the discussions of the various situations in the preceding text. Thus:

On page 126 a situation is described. This point of an advance guard is fired on, just as it has crossed the bridge. An instructor might say to a student: "Take the conditions given in this situation. You are in command of the point. How do you estimate the situation?"

The student should be required to go formally through each step, writing it out as described in Chapter VI. He should be required to do this even if he should object on the ground that such an estimate is an absurdity; that, long before the leader of this point could have estimated the situation with so much elaboration his point would be shot to pieces.

This is apparently very true, provided the leader had not been trained to think quickly and to estimate situations auto-

matically. Actually, when the situation described arose, the commander of the point knew (1) his mission; he knew (2) that the enemy was in his front and liable to be met at any moment, and he knew where supporting troops were. He knew (3) that he was approaching the crest of a hill that hid everything beyond it from his view; that every step took him nearer his enemy; that he had just crossed a stream, and he had a defile — the bridge — at his back; he knew all the attendant conditions. He knew (4) that if the enemy *were* met with he would probably fire at his command, the point; that he would conceal his own strength and seek to appear as formidable as possible. He knew (5) the nature of the terrain, where he must go, where his line of retreat was. He had been attacked, and now all the commander of the point really has to do is to consider the question: "What courses are open to me? What shall I do now?" and to decide on his course.

The student has not been in possession of the data that has been gradually accumulated by the leader of this point all the morning, and the days preceding. He is not actuated by the need of being ready for whatever may come that was the strongest motive in that leader's life at that particular moment, so, what in the commander of the point would be sound judgment, anticipated by mature study of the tactical possibilities of the ever-changing landscape in his front, in the case of the student who did not consider all the phases of the problem in arriving at his estimate, would be snap judgment, mere guesswork.

The leader of the advance party, too, when he comes where he can see what is going on at the bridge, must estimate the situation before he decides on a line of action to be followed. He is an officer of more rank and experience than the commander of the point. He has a larger command, and proportionally larger responsibilities.

He has been studying his map, and he realized, before reaching the vicinity of the stream, that the crossing of the Little Conewago might be contested. He had solved the various steps in making his estimate before the first shot had been fired. But it was only by study in peace time, by estimating many situations,

that he was able to do this. So it is with all students. No divine spark of genius can replace study in any art; it will reward study with success, but it will never replace it.

The commander of the support has also planned just what he would do, in case the Red forces should oppose his crossing of the Little Conewago, and so has the commander of the main body, and each is now waiting for information from the patrols of the advance guard in order to know which plan of several already conceived shall be adopted, what plans shall be rejected.

It is, therefore, recommended that all instructors place the highest value on thorough training in the estimation of every situation with which the student may be confronted.

ESTIMATING THE SITUATION

1. Your Mission.

What special thing are you going to do? What does your superior expect of you?

You must have a mission and it must be kept clearly in mind.

2. The Forces.

What is the strength and what the location of your own forces?

What of the enemy's forces? Consider all you can learn of them?

3. Conditions.

Consider all the conditions surrounding your problem. What of the weather? What is the condition of the roads? What of the morale, activity and aggressiveness of the enemy? What is the state of efficiency of your own command? In short consider everthing that will affect your problem either favorably or unfavorably.

4. What will the Enemy probably do?

What would you do if you were in his place, under existing conditions?

5. What of the Terrain?

How does the terrain you are to work over affect your problem?

6. What Courses are Open?

In how many and what different ways may you accomplish your mission? Go over them all, considering the advantages and disadvantages of each.

7. Decision.

Decide which of the courses considered is best calculated to enable you to successfully execute your mission, and having come to a decision do not change it. Forget all the other

courses open to you, and concentrate all your energies on the one adopted.

8. Orders.

After you have taken all the steps indicated in the foregoing, and not until then, issue your orders to carry out the plan you have adopted.

MESSAGES.

Exercises in writing messages are very important, and instructors should give their students as complete data as is logical on which to base them.

It is necessary to distinguish between the carefully written, detailed message of the leader of a strategic patrol, who can at best send in but two or three messages a day, and the frequent messages sent in by leaders of combat patrols, of advance, flank, and rear guards, and by commanders of outguards. The strategic patrol leader's message cannot be quickly verified; the others admit of immediate verification. The information sent by the various strategic patrols, tabulated and digested by the supreme commander, forms the basis of his plans for the following day; that sent in by the protective patrols is for immediate tactical use.

PROBLEM.

General Situation.

The Susquehanna River divides two States at war. Blue, Eastern, forces have invaded Pennsylvania and Maryland, and are advancing from Havre de Grace, on Gettysburg. A regiment of Blue cavalry is at Manchester (Guide Map), whose mission is to back up strategic reconnoissance in the sector: Manchester-Chambersburg-Carlisle.

Red forces are reported to be concentrating on Gettysburg. The people are bitterly hostile to the Blues.

First Special Situation.

You command a patrol of two non-commissioned officers and six men. Yesterday morning you received this verbal order from the Adjutant of your regiment:

"Red troops are reported concentrating on Gettysburg. This regiment will remain here today and tomorrow. One troop will be sent to Sell's Station today. Day after tomorrow the regiment will advance to Abbottstown. Our main forces are advancing on Gettysburg, but will not reach this place until tomorrow.

"You will take your patrol and reconnoiter towards Round Hill. Lieut. B..... will reconnoiter towards Chestnut Hill.

"Take three days' haversack rations for your patrol.

"Messages will be relayed through Sell's Station (southeast corner, Strategic Map) after this afternoon; before then send them directly here."

Last night you hid for the night on Pigeon Hill (east of Berlin Junction).

Required: You reach 561, 1⅔ miles northeast of New Oxford (Topographical Map) at 6:00 A. M., and you wish to reconnoiter the vicinity of Newchester. How do you go about it?

Second Special Situation.

It is early the following morning. You spent the night on Round Hill, hidden in the woods. You are in the southwest edge of the woods, on the 740 contour, with a pair of good glasses.

You see a troop of Red cavalry march southeast through Bowlder, from the north. As you are watching them one of the men you left in observation in a tree on top of the hill comes to you and says: "A platoon of Red cavalry is marching south on the Carlisle-Baltimore Pike. It is followed by a mass of infantry. The road is full of them as far as we can see."

Required: What do you do?

Third Special Situation.

The Red troops referred to above took three hours to pass a given point. The Red cavalry disappeared to the south. The infantry turned southwest when it reached Hampton.

Required: How did you continue your reconnoissance, and what message did you send?

Here is an example of the two classes of messages. The leader of the first mentioned patrol got a verbal message in the second situation, from one of his *protective* patrols. On the information contained in that message he took immediate steps (1) to secure the safety of his patrol, and (2) to enable him to observe the enemy. Later, his observations safely made, he wrote a message, detailing to his chief what had been seen. The latter had no interest in the first message. He is not interested in *how* the information was obtained; what he wants is *news of the enemy.*

Instructors should submit every message written by their students to these tests: (1) Does it contain all the information collected by the patrol that is of value to the commander? (2) Does it contain anything that will not be of use to him? (3) Is it limited to facts that have been verified by the patrol leader? (4) Is it legibly written, and without ambiguities, so that it may be quickly read and instantly and accurately comprehended?

OUTPOSTS.

Continuing the situations of the above problem.

Fourth Special Situation.

The Red troops referred to marched towards Gettysburg. It is the following day. Your regiment is camped in the fields northwest of New Oxford, in the bend of the river (Topographical Map). An outpost support of one troop is at 557. You command a picket of 18 men sent from this support to 584.

No Blue troops are within twenty miles of Gettysburg except your regiment. The only Red troops known to be nearer

than Gettysburg are cavalry patrols. These have been very active, and have prevented your own patrols from making a close reconnoissance to the west.

REQUIRED: *a.* Where do you post your sentinels, and what orders do you give them?

b. What patrols do you use in the daytime? In the night?

Instructors would do well, in prescribing requirements for their problems to vary the conditions that surround each of them. In this case, the student is required to post the sentinels of an outguard in the outpost line of a regiment of cavalry operating in enemy country, near a greatly superior hostile infantry force. He is also required to indicate his patrol system for this outguard.

Take the same situation except that the country is friendly to the Blues, and the command in camp near New Oxford is a regiment of Blue infantry. What changes would be made in the solutions

Cavalry, in camp at night, is nearly immobile. If surprised at night it must lose its horses, if the surprising force is equal in size, or greater. If warned of the menace of attack at night it must have ample time to prepare either for retreat or defense. Infantry in camp needs much less time to prepare for similar emergencies, but, by the very nature of the two arms, cavalry can spread its outpost and patrol systems much farther from its camp.

It is inconceivable that the United States should ever engage in a war of invasion against a first-class military power. Its wars must be fought, if at all, defensively on its own soil. For this reason, more problems should be proposed where the students' troops, the Blues, operate in friendly territory, than where they operate in hostile territory. However, both aspects of the problem must be studied, for the students may become instructors themselves later on, and they should know how to handle troops under both conditions.

The last problem is introduced here to give instructors a hint as to how outguard problems might be worded. Very few outguard problems should be solved on the map. They are distinctly field problems, and, since every private soldier, every

non-commissioned officer, every subaltern officer will be frequently called on, in campaign, to do outpost duty, under conditions that place a heavy individual responsibility on them, they cannot be too thoroughly grounded in the duties of outguard commanders, of leaders of outpost patrols, or outguard sentinels.

No soldier should allow himself to be posted as an outguard sentinel without receiving full data as to the situation in front of and behind him. He must know what friendly groups are on his right and left, where his outguard is, where his support is. He must know what friendly patrols are working in his sector. He must know where all friendly detachments within his horizon are located. He must know everything that is known about the enemy in his immediate front, as far as he can see.

These things must be told him, and he must not be satisfied until he *knows* that his information is complete in these regards. His own safety depends on this information, and his duty cannot be satisfactorily performed without it.

Having this information in his possession, he should be required to tell how he proposes to conduct himself on his post, under what circumstances he is to use his arms, what he is to do with all persons who come near his post.

In the years that have passed much stress has been laid on the *verbatim* knowldge of the General Orders for Sentinels, none on the knowledge of the orders for outpost sentinels. The former, prescribed in the Manual of Guard Duty, do not fit outpost duty in any spot. The latter sentinel does not walk his post in a military manner—he does not walk it at all, and his manner is such that he may see without being seen. He carries his piece at will, loaded and locked; he salutes no one, et cetera, et cetera. The General Orders for Sentinels bear the same relation to the orders for outpost sentinels, as far as their application in war is concerned, that full dress parade does to the evolutions necessary to adopt under an enemy's fire.

Instructors are urged to train their men thoroughly in outguard duty. It will be the first duty required of them in war, and the last. Nothing is more important; nothing is equally

so, for the infantry or cavalry soldier, except the principles of infantry combat.

ORDERS FOR OUTPOST SENTINELS.

FIRST: **About myself and friendly neighbors.**

My post is number, ..., outguard number ..... The outguard is **there**.....The post on my right is number ....., outguard number ....., and is **there.** The post on my **left** is number ....., outguard number ....., and is **there.** The support is **there.** Other detachments are **there** and **there. Such** and **such** patrols are operating in my front. **This** road leads to.....

SECOND: **About the enemy.**

The enemy is reported to be **there.** I have seen him (describing exactly what hostile bodies I have seen) **there**; or, I have not seen him. I am to watch for him between **there** and **there.** If I see any unusual movement I am to report it at once to my outguard commander who is **there.** If suddenly attacked and forced to retire or threatened with capture, I shall rejoin my outguard by going around **that way** so as not to disclose the position of my outguard to the enemy or to mask its fire.

THIRD: **How to conduct myself on my post.**

By day I shall make the best use possible of such natural or artificial cover as is available, standing, crouching or lying down, and remaining stationary or moving about as will enable me to observe the sector assigned me to watch in the most efficient manner. I shall carry my piece at will, loaded and locked. I shall inform passing friendly patrols of what I have seen.

At night I shall remain standing, habitually stationary, moving about only for the purposes of observation. I shall not sit or lie down unless authorized to do so.

FOURTH **When to open fire on the enemy.**

Unless specially ordered to fire on the enemy whenever seen I shall fire only under the following circumstances: (a)

when suddenly attacked and there is no time to call the outguard commander, I shall fire rapidly, but with careful aim. (b) When a person approaching my post is ordered to halt and fails to do so, or otherwise disobeys me, I shall fire deliberately, taking careful aim, so as to be sure to stop him.

FIFTH: **Treatment of individuals approaching my post.**

By day I shall allow only officers, non-commissioned officers, and detachments recognized as part of the outpost, and officers known to have authority to do so, to pass my post either in or out. I shall detain all others and notify my outguard commander.

At night when any persons approach my post, I shall come to a ready, halt them, and notify the outguard commander. Persons claiming to be deserters from the enemy are required to lay down their arms. If they are pursued by the enemy, I shall order them to drop their arms and I shall give the alarm. If they fail to obey me at once I shall fire on them. I shall halt bearers of flags of truce and their escorts, require them to face outwards, and at once notify the commander of the outguard.

ADVANCE, FLANK AND REAR GUARDS

In teaching applied minor tactics to any class of students, it is a good plan to adopt one general situation for a series of problems, covering several days of the course. As explained on page 201 of this book, the student should be given, usually, the Blue side, and the theatre of operations should be laid in Blue territory.

The problem propounded for any one session should, as stated in rule 3, Suggestions for the Preparation of Problems, be planned to especially illustrate one tactical principle, and but one. So, if it is proposed to begin the course with an application of the rules governing the conduct of distant patrols, place the forces far enough apart to make patrolling the most evident thing to be done.

The data for starting the series of problems would then be contained in the first special situation. The instructor, as explained before, must adhere to the plan he has decided on as to

how the Red troops are to be moved, and he must take care to leave open certain routes to the Blue patrols, so that they may actually observe the Red columns as they are moved. Often it will be necessary for the instructor to guide the patrols (as tactfully as possible, so as not to seem to be helping the students) so that they may make the necessary discoveries.

Successive special situations should be constructed from the data these patrols obtain. At this first session much valuable instruction can be given both in the conduct of patrols and in the preparation of messages.

Having satisfactorily led the student to a clear idea of the location of the hostile groups and the direction of their advance, they may next be brought to the discussion of the duties of the advance guard. This might take one or more sessions of the class. All the time they should be made to grasp — exactly as happens in war — a picture of what is happening in their front; in this way successive estimates of the situation are easier and more quickly made.

Having got the advance guard fabric well in hand, a new Red force now might threaten a flank, and at least one session of the school devoted to this important study.

The students now might see the two main bodies brought so close together that combat is inevitable. For this phase of the instruction, more than any other, the instructor should proceed slowly. He should compel careful reconnoissance, and require explicit orders concerning the deployment into line of battle. Here would come the instruction in estimating ranges, in assigning targets and sectors, in sight setting, and in fire control. A constant watch should be kept of the way the students cover their flanks and dispose of their supports and reserves.

Having started the fire fight, it is generally useless to continue the phases of the combat. Map problems, and, indeed, field maneuvers, are very difficult to manage in the final stages of combat, and more often than not lead to absurdities. It is thought best to break the continuity of the problem here, and jump to the next phase — the retreat and the pursuit.

If it is thought best to discuss rear guard actions, it is believed to be more satisfactory to have the student take the

beaten side, provided the instructor will fully and clearly explain the formations he adopts in the pursuit and the reasons for each.

If instructors attempt to illustrate each tactical principle by an entirely new problem much time will be lost by the students in vizualizing the situations that is saved where each situation follows naturally the ones that have preceded.

Instructors should be careful, in map problems as in field exercises, not to violate the principle contained in the last paragraph of Paragraph 357, Infantry Drill Regulations: "The same exercise should not be repeated over the same ground and under the same situation. Such repetitions lead to the adoption of a fixed mode of attack or defense and develop mere drill masters. Fixed or prearranged systems are prohibited."

In all these problems instructors should require students to give all their orders accurately, and formally correct. Do not permit them to slur their orders, for it is vital to the training of an officer that he should be thoroughly grounded in the art of estimating situations and in giving orders. No amount of inspiration will enable an officer to give orders that express his will definitely, clearly, and simply. He must learn it by tireless practice.

Remembering that it is the officer's function to interpret the orders of his superiors, and apply them by issuing orders to his own officers and men, the importance of knowing how is quickly seen.

In preparing problems for war games, it is well to use other maps than those of this text. Students' interest will be better maintained if they are not required to work all their problems on the same ground.

General situations should be described on small scale maps; special situations from maps of larger scales. Sections of the three-inch maps (three inches to the mile) of the entire Gettysburg-Antietam region and also of a large area in the vicinity of Fort Leavenworth can be bought from the *Officer in Charge, Book Department, Army Service Schools, Fort Levenworth, Kansas,* Guide (ten miles to the inch) and Strategic (one mile to the inch) maps of this region can also be obtained.

It is recommended that problems be first solved as map problems, and then played as war games. Major Farrand Sayre's book, *Map Maneuvers and Tactical Rides,* is the best text-book available for giving instruction in the war game. It too can be bought very cheaply from the Book Department.