The Use of the Signal Corps as an Aid to Maneuvers

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"Whatever arguments may be drawn from particular examples, superficially viewed, a thorough examination of the subject will evince that the art of war is both comprehensive and complicated; that it demands much previous study, and that the possession of it in its most approved and perfect state is always of great moment to the security of a nation."

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Staff College Press.

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In order that our maneuvers may afford the best instruction to our officers and men, it is essential that the field operations of the troops conform as nearly as possible to war conditions. Upon the maneuver field there must of necessity stand out to the trained observer many glaring examples of impossible dispositions. The mounted messenger delivering his message on the firing line; excited troops advancing without cover in the face of a frontal fire delivered by a superior adversary from strongly intrenched positions; organizations remaining in the open under the withering fire of machine guns from concealed positions; or the galling shrapnel fire of artillery from distant positions, are some of the conditions met with which the lead and steel missiles in time of war make impossible.

The projectile in time of war which so accurately decides the operations between the opposing forces must be replaced in our maneuvers by the umpire. It should be the object of the Signal Corps therefore to transmit the decisions of the umpire as rapidly as possible to those parts of the field affected by them.

The Signal Corps must also furnish lines of information between the troops themselves, and these should conform to those that will be furnished to them in actual operations. They will be considered

after the communication between umpires has been disposed of.

In the field there are four general means of communication:

1. Mounted orderlies
2. Visual Signaling
3. Wireless telegraph
4. Wire lines.

Any means of communication between umpires in maneuvers will be consistent as the umpire is entirely peculiar to the maneuver, and whatever means are established ought to be clearly indicated as umpire lines, so as to avoid their destruction by the troops. It should be clearly understood that umpire lines are not to be destroyed by the troops in an effort to cripple the communications of their opponents.

Of the four general means mentioned above, mounted orderlies might be used to some extent, but where time is so important—operations transpiring in a few moments which might require days under fire—their use would be the exception rather than the rule. Visual signaling would hardly be resorted to, except, perhaps, in the use of bombs by day or rockets by night to start and stop the operations. Wireless telegraphy is in its infancy and is not sufficiently developed to consider as a means of communication between umpires where the stations would necessarily be so close together as to make the tuning of the instruments, to avoid interference with each other, most difficult if not impossible.

The umpires being peculiar to the maneuver and a record of the transmission of information between them being of minor importance, every consideration should be subordinated to rapidity of transmission. There is hardly any doubt, therefore, that the fourth means mentioned above (wire lines) should be resorted to as the best means of maintaining rapid

transmission of information between the umpires.

There are three means of wire lines which might answer the requirement:

1st, the Morse telegraph
2d, the buzzer
3d, the telephone

For hasty lines of this nature, the buzzer is without doubt superior to the telegraph. But is the buzzer to be preferred to the telephone? For the use of umpires the telephone appears to be more suitable. As an illustration assume yourself assigned as an umpire to a battalion of field artillery (Red force), also assume the leading troops of a brigade of infantry (Blue force) advancing to the attack to have reached a point 3,000 yards distant. You are able to clearly observe the three echelons of the first line. Major A, who commands the Red artillery, has observed the Blue brigade's movements and now informs you, "I estimate the force in my front as follows: At 2,000 yards, two battalions of infantry are deploying; the support, in close order, follows at 2,500 yards distance; and the reserves, one regiment in same formation, are 3,000 yards distant. I will open at once with indirect fire assigning a battery to each echelon with orders to fire shrapnel." It will also be assumed that the brigade commander and the two colonels commanding the leading regiments hear the batteries open from their concealed positions for indirect fire, but of course are unable to determine if the fire is directed at their commands or some other part of the battle front. In the absence, therefore of positive information that the Red artillery fire is directed upon them they continue the advance.

It is not difficult to understand the importance of promptly informing the Blue force that it is the objective of the Red artillery fire. If it continues the advance it is most important for the commanders

to know under what losses they do so. If the chief umpire considers the fire to be of such a nature that the advance cannot be continued it is important to stop the force at once in order to avoid further developments on either side under circumstances which would be impossible in time of war. In other words, the object of the maneuver is lost if the commander under fire is not promptly informed, for it is upon his cool judgment and prompt action under such circumstances that the generals reporting upon the maneuvers must base their recommendations.

Let us suppose the umpire sends this information to the chief umpire by buzzer. What is necessary? The information might be conveyed in a message similar to this:

1st Battn. 5th F. A., Near 40,
April 21, 1908.

Chief Umpire:

This battalion opened at 10 a. m. with the indirect shrapnel fire on troops advancing in its immediate front as follows: a battery has been assigned to each of the firing lines deploying at 2000 yards; supports, close order 2500, and reserves, close order 3000 yards.

A,
Capt. Umpire.

This message must be handed to the operator who must first check it and then wait for its turn to be sent. After its receipt at the chief umpire's headquarters it must be delivered to him, and if it contains any ambiguous language it must be explained back and forth through the same channels. When it is properly understood, the chief umpire refers to his map, locates the positions of the batteries, and the troops in their front, decides upon what information must go to the umpire with the Blues for his guidance, and what must go to him for delivery to the commanders of the Blues. This must then be embodied

in message form and delivered to the operator where it must go through the same form of transmission and receipt.

How much more satisfactory would it be for the umpire to go to the 'phone and say, "Central, give me the chief umpire", and then speak to him the same information in less than half the time required for its actual transmission by the operator, with the additional advantage that the chief umpire could at once clear up in his own mind any doubtful points, as if the two were speaking face to face. He could at the same time be locating the troops under discussion upon the map, measure the ranges indicated, and, in no longer time than it would take central to make the connection, commence communicating such information as he desired to the umpire with the Blue infantry.

When made use of by officers or umpires in person, the telephone is unquestionably the most rapid means of transmitting information. It is therefore the best means of communication between umpires and the only one which will permit of the large number of communications so necessary between them and still avoid a congestion of messages at some of the stations. One has only to observe a sea coast battery in action to realize the promptness and accuracy of telephone service. Of course it is understood that a sea coast telephone sytem has a metallic circuit and is as near perfect as it is possible for one to be, but it is believed that a ground return system would meet the requirements of the umpire system for maneuvers.

A chief umpire who is provided with a good map of the maneuver grounds and is well connected with the umpires by an efficient telephone system should direct the maneuver as easily as his assistants move the symbols representing the troops upon the map

from information telephoned to his headquarters. In other words, the telephone system is the chief umpire's eyes. He may select his headquarters at any convenient point and the telephone, with the aid of a good map, enables him to direct the movements as intelligently as if he were on a high point which would permit of a comprehensive view of the entire field, and at the same time allow him to converse with the different umpires in person. No other system will place the entire movement so completely under his control. Each umpire charged with the observation of an infantry regiment, cavalry or the artillery, should be provided with a telephone connection to the chief umpire's headquarters.

The chief umpire is assisted at his headquarters by a recorder and two assistants. The recorder and chief umpire sit opposite to each other and between the two assistants at the map. The two assistants remain in constant connection with the senior umpire of their respective sides by head telephone receivers. The senior umpire of each side is in communication with the umpires assigned to his side by the lines radiating from the switchboard at his headquarters. This system will give the chief umpire complete control of the maneuvers.

The assistants first place the symbols representing the troops upon the map in accordance with the initial orders furnished to the chief umpire by the opposing commanders. It is then their duty to move the symbols on the map to conform to the movements of the troops upon the maneuver field from the information telephoned to the chief umpire's headquarters by the umpires on duty with the troops.

The umpires on duty with the troops must understand the necessity for promptly reporting the changes of position of their troops, as well as the time at which they open fire and the objective of

their fire. This information is absolutely necessary at the chief umpire's headquarters.

The assistants announce the time, report the messages received and see that the recorder takes down sufficient data for a full discussion of the maneuver at the conclusion of the operations. It will also be the duty of the recorder to take a copy of the orders and instructions issued by the chief umpire and make a record of the time they are transmitted.

Let us now consider the troops. The four general means for field communication mentioned above should all be used, because in time of war there will arise occasions when all must be used. The troops, especially the Signal Corps, should therefore be drilled in their use in time of peace.

The mounted orderly will play an important part in field communication especially in battle where the organizations will occupy so small a front. Under the regulations each infantry regiment is allowed twenty mounted orderlies and this should be sufficient for all purposes. Visual signaling should be used where practicable, for in time of war, when an advance of only a short distance will consume days, communication by visual methods, will often be resorted to. Wireless telegraphy is still in an experimental stage, at least this is true with regard to its use for field communication; if sufficiently developed, it will prove a powerful adjunct in field communications, but until it can be more certainly depended upon, it will prove an annoyance if it should form a part of the communication between the umpires or troops in our maneuvers.

The important means of communication between troops in time of war will be wire lines. There are two important considerations however which will govern both the number and nature of such lines in peace maneuvers.

During war, except in case of the field artillery positions and the timing of the main and secondary attacks, it will be the exception when smaller units than brigades are connected by wire. Owing to our small army we will rarely have a greater force than a division in a maneuver camp at one time; consequently we cannot expect to have more than a full brigade on each side. If the artillery and brigades were the only units to be connected, the Signal Corps would have very little drill in this important duty. As a matter of instruction to the Signal Corps therefore, it is thought the wire lines might be extended down to as small units as the regiments. This would in fact approach the number of lines necessary for the troops on the battle front, as it would be occupied in time of war, for as a general rule you will find during maneuvers that a regiment is assigned to a front equal to that usually assigned to a brigade in time of war.

It is necessary to retain a record of orders and information transmitted between different organizations during actual operations. This consideration and the fact that operations in the maneuver which transpire in a few hours will often require days in time of war, makes the buzzer a more desirable instrument for use with the advanced lines. (It is intended that the buzzer be used in both the umpire and troop systems; the umpires using the phone and the troops the buzzer part of the instrument.) It should therefore be used with the troops in the maneuvers in order that they may become accustomed to it.

If we expect to obtain the best results, it is necessary as a first consideration to give the umpires an efficient telephone system. Then, if the strength of the Signal Corps troops will permit of it, the troops might be connected by buzzer down to and including

as small a unit as the regiment. Any necessary reduction in the number of lines should be taken from the troops.

Before passing to a consideration of the actual laying and operation of these lines, a few of the most serious faults in those not accustomed to or familiar with the use of Signal Corps lines will be mentioned with a view to assist in explaining some of the many unjust criticisms made against the Signal Corps. The Signal Corps lines should be freely used for the success of the maneuvers, but it should be constantly borne in mind that they are only for strictly necessary business communications; any frivolous use of the lines or the transmission of unnecessary messages not only delays the maneuver but often brings unjust criticism upon the Signal Corps for a failure to get through important communications necessarily delayed by such conduct.

Operators are often crowded with messages which, owing to the short distances involved, could be delivered much sooner by mounted orderly. Nothing but the exercise of common sense and good judgment can dictate to one when the lines should be used. Where the distance does not exceed one mile a message containing fifty words would certainly reach its destination sooner by mounted orderly than by telegraph or buzzer.

Instances have occurred where messages have been handed to an operator and the officer sending the message would beat it to its destination, and then losing patience with the Signal Corps, would say, "The Signal Corps is no good when they fail to deliver a message by wire sooner than I can ride the distance." If only he would pause for a rational consideration, he would realize how ridiculous his statement was, and how well it argued his own ignor-

ance and lack of knowledge so necessary for the proper use of Signal Corps lines.

While the telephone can be used to advantage over any distance ranging between the limits of its power to transmit signals, and a distance so short that the parties could as well communicate by speaking with each other, it must be clearly understood that it should only be used as a means of communication between responsible parties; that is between umpires or officers. It may happen that the chief umpire could not promptly answer the phone. It would be a mistake in such a case for the umpire to say to an enlisted man, "When the chief umpire returns tell him that I say so and so." Such messages are almost in every case forgotten, added to, detracted from, or distorted to such a degree as to convey an entirely different meaning from that which was intended. The operator with his many duties, and his lack of understanding of the general plans and intentions, cannot, and should not, be expected to deliver accurately such messages. If he is to transmit a message it should be written out, addressed to the party for whom it is intended and handed to the operator, whose duty it is to send exactly what is written. Any departure from such form should be promptly dealt with by those in authority.

The chief umpire should select his headquarters at some convenient point the day before operations are to commence; lines can then be constructed out in each direction toward the probable location of the two switchboards. This will enable prompt connection between the chief umpire and the senior umpires in charge of each side immediately after the signal for operations to commence. A line for each infantry regiment, the cavalry and artillery is then connected to the switchboard and follows up the organization to which it has been assigned, un-

der direction of the umpire for that organization.

The troop system could be laid in much the same manner from each commanding general's headquarters. There would of course be no necessity for a connecting line between the two sides in this system, and instead of a switchboard there should be a separate instrument and operator at headquarters for each line.

Any effort to use the same line for both the umpires and troops is certain to result in inefficient service for both. The operators cannot dispatch the business of their stations if they are to be annoyed by umpires asking for use of the 'phone. Neither can the umpire perform his duty in a satisfactory manner if he must stand by and wait for the transmission of messages before he can use the 'phone. In exceptional cases one line may serve both purposes, but two lines in every case will give the only efficient service.

It is realized that the system proposed is open to criticism as an expensive one, but if our maneuvers are of sufficient importance to justify an annual appropriation of a million dollars, they should be of sufficient importance to warrant the establishment of a system of field communications necessary to carry them to a successful conclusion.

The Signal Corps is entitled to fair trial, and it should be given this trial. It has never been assigned to duty of this nature with the proper force for the work required of it. The use of lines of information provided with modern instruments is not understood by our high ranking officers, for the reason that they have never had an opportunity to observe a complete system fully supplied with the necessary force under operation. It is just as important for our officers to know how to make use of a good system of communications as it is for the Signal Corps to be able to pro-

vide it, one is absolutely dependent upon the other. The necessary force and materials for a good system with an army in the field is worse than useless if the commanding general does not understand how to use it.

It will be a mistake to attempt to conduct maneuvers with an inadequate force of signal troops. False economy of this nature results in unjust criticisms of the Signal Corps, but what is still worse, it prevents our officers from becoming familiar with the proper use of our signal troops, and will send our army forth to its next great war without the knowledg of its power in this important corps.

Give it a fair trial and the Signal Corps will prove its ability to hold an army together, and demonstrate the fact that if all other things are equal the army best supplied with a highly trained signal force is sure to win.