



DEFENSE AND LOW VISIBILITY

The Third Battle of Ypres lasted approximately three and a half months, and each square mile of mud gained cost the British army 8,222 casualties. (Article on Tactics, Encyclopedia Britannica.)

*The large-scale daylight attack by infantry is as dead as the men who tried to repeat this traditional process in 1914-1918. (Captain B. H. Liddell Hart in *The Training of a Modern Army*.)*

If the second of the foregoing quotations is justified by the first, there remain nevertheless two forms of attack that seem to offer a chance of success in land warfare.* The first of these is the advance against modern fire defenses with the aid of speed and armor—tanks. And failing such protected high-mobility combat vehicles, infantry has only the alternative of attacking under the cover of some form of obscurity—night, fog, smoke, or woods. Obscurity so greatly hampers the defense that it nearly equalizes the odds against the attacker and permits the foot soldier to make advances that would be quite impossible in plain daylight.

In any future war, then, large-scale attacks against defensive positions during periods of limited vision, especially at night, will probably occur more often than during the World War. Ways and means to meet such attacks—including changes in defensive dispositions to counter the effects of limited vision or obscurity—should therefore receive careful consideration before a future war becomes a present one.

During daylight, we organize our defenses so as to break up and stop the attack in front of the battle position by the combined fires of all weapons. These fires begin as soon as the attack comes within observation and range. If the attack succeeds in reaching the battle position, the defense endeavors to repulse it by close combat. If the attacker succeeds in entering the position at one or more points, the defense first attempts to eject him by fire, and, failing this, tries to eject him by counterattack. And during all of these several phases of defensive combat, the defender depends to a great extent on observation for tactical information on the enemy and the effectiveness of his fire.

When observation is denied to the defense, the tactical

situation becomes obscure, and aimed fires are more or less eliminated from the coordinated defensive fires. The extent of this elimination of aimed fires depends on how greatly vision is limited, and on the efficiency of the artificial means of illumination. During periods of total blindness, the defense must depend solely on the pre-arranged fires of fixed weapons. On the other hand, partial visibility, and at night the use of artificial illumination, generally permits aimed fire at close ranges. But in either case the effectiveness of the defensive organization is materially reduced. What changes, then, can the defense make in the disposition of its units and weapons, and what additional security measures should it take during periods of limited vision that will tend to lessen the disadvantages of denied observation? Are these changes and measures the same when observation is denied the defense by any one of the causes of limited vision—night, fog, or smoke?

NIGHT

Just as the darkness of night imposes limitations on the defense, so does it handicap the attacker. One who attacks at night must overcome the difficulties of maintenance of direction, of control and lack of observation, by thorough and detailed preparations and faultless execution. This preparation for the night attack is generally marked by unusual activities within the attacker's line such as increased reconnaissance, troop movements, movements of artillery into position, and artillery registration fires. The attacker nevertheless makes every effort to insure the secrecy of these preparations so as not to warn the defense of impending attack. Hence, the defense should counteract the "secrecy" precautions of the enemy by alert and vigilant observation, aerial reconnaissance, and thorough intelligence measures. By such means the defense may detect an imminent night attack, and to be forewarned is to be forearmed.

The obscurity of night requires the defense to reach out well to the front of its main position, continuously feeling into the darkness for approaching hostile forces.

Generally, however, the outpost forces of the defender

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are driven in during daylight hours prior to the night attack so that the defensive positions may be definitely determined. Nevertheless, the defense must keep some security groups to the front during hours of darkness. During daylight, when visibility is good, a few groups on commanding ground provide security. At night the defense may well find it necessary to increase the density along the line of security and change the positions of the daylight groups. A reverse slope with a good view of the skyline is often a better position at night than the crest of a hill that is ideal in daytime.

The density along the line of security is determined for each particular situation, depending on the degree of visibility, the terrain, and the availability of troops. A line of security with sufficient density is almost bound to disclose a hostile advance that patrols may have failed to detect. Moreover, delaying action by the security groups along this line tends to disrupt the advance and give time for troops on the position to prepare to meet the assault. On the other hand, the number of troops on the line of security should not be increased at night to the extent of materially weakening the main defensive position.

DETAILED PREPARATIONS

It appears thus far that the defense against this first phase of a night attack—preparation and approach to the defensive position—does not differ from the defense against day attacks, except to call for greater alertness, more active patrolling, and increased density on the line of security. No material changes in the disposition of units on the position itself are indicated. However, many detailed preparations are necessary for defense at night—such as pre-arranged fires by machineguns and howitzers, preparations for illuminating the foreground to increase the effectiveness of defensive fires, and special night signals. The location of some weapons should be changed at dark to cover probable routes of approach more effectively. For example, a covered route of approach leading up to the defensive position might be denied to the enemy during daylight by keeping machinegun fire placed on its entrance. But after it becomes too dark for observation, such an approach might be covered only by blocking the exit at the defender's end with fire, and this would require a relocation of weapons. Sometimes, also, machineguns should be moved farther forward to provide additional firepower in front of the position.

If the attack succeeds in reaching the battle position, a second phase—the period of close combat—begins. During this phase, the attack may succeed in entering the position at some points although repulsed at others. By day or night, of course, attacking units will find it difficult to take by assault strong combat groups that are capable of all-around defense. On the other hand, the intervals or gaps between such groups ordinarily offer easier access into the defensive position, particularly at night, when limited visi-

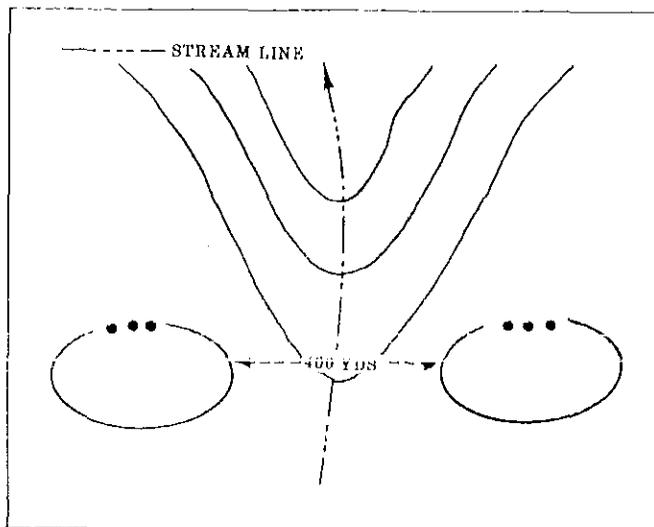


Figure 1

bility reduces the effectiveness of the defenders' fire. In the daytime, for example, an interval between two frontline combat groups might be closed to the enemy by fire from a combat group on the support line or battalion reserve line, whereas at night, because of limited vision and covered routes of approach, the same interval might become an excellent and easy route of access to the defensive sector.

The question now arises whether additional combat groups or small detached posts should be placed in these intervals at night to block entrance more effectively. If this is done, the troops must be taken either from frontline combat groups or from combat groups on the reserve line, thus reducing the defensive strength of these groups. When an interval between frontline combat groups is a wide, open ravine ineffectively covered by defensive fire and permitting easy access at night by large numbers of the enemy, it may be advisable to take troops from other parts of the position to form an additional group for the interval (see Figure 1).

If, however, the interval is covered by defensive fires from one or more combat groups—preferably from those on the support or battalion reserve line—and is narrow enough to limit a possible penetration to small hostile groups only, it may be better not to reduce other combat groups to provide protection for the interval, but rather to risk a minor penetration by the enemy (see Figure 2). For if the combat groups on either side and in rear of such a penetration hold their positions, the hostile units are likely to find, when visibility improves, that the ground they have taken during darkness is untenable because of the effectiveness of infantry fire by day. And if this fire fails to drive them from the position, the defense still has the advantage of counterattack.

Careful consideration must always be given to the strength and composition of night combat groups or detached posts and the source of the troops that are to compose them. The nature of the terrain will influence strength and composition. In wooded terrain with poor fields of fire,

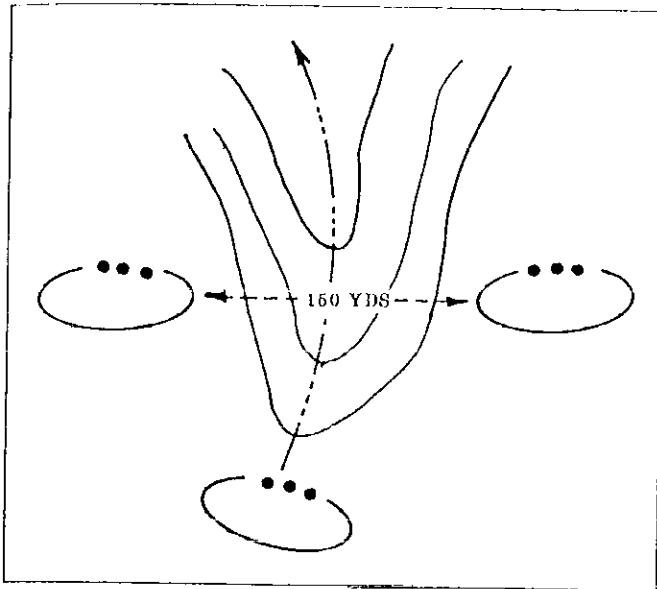


Figure 2

more and smaller combat groups are needed than in open terrain. Thus, Figure 3 shows a fairly wide, wooded ravine between two frontline combat groups, with a support group some distance to the rear covering the interval. Such dispositions may be wholly satisfactory during daylight, particularly with machineguns covering the forward edge of the woods by observed fire as indicated. But at night hostile troops may be able to reach the shelter of the woods unobserved.

Therefore, at night, it may be advisable to place a small group in the ravine in the woods between the two frontline groups. In very wide intervals, especially when supporting fire from adjacent combat groups is limited, more strength may be needed than in a comparatively narrow interval that has good supporting fire from adjacent units. It is particularly important that any change made in the defense at night does not disarrange the system of defensive fires to the front and flanks of the position to such extent as to weaken the defense of the position as a whole. Machineguns should not be moved unless it is clearly evident that the defensive fire of these guns is thus improved.

In determining the source of units for night combat groups or detached posts, care should be taken not to weaken the combat groups covering the most probable routes of enemy approach by night. It is also important to maintain depth in the defense and to have a reserve unit—especially the battalion reserve—on hand to occupy their prepared combat positions as soon as information of the enemy attack is received. The withdrawal of any part of the battalion reserve for use in frontline combat groups during periods of limited visibility may not only weaken the defensive fires of the position materially, but may find the defender at a disadvantage when visibility improves because of his failure to maintain depth in the defense. Accordingly, changes made in the defense to meet a possible night attack

should not reduce the effectiveness of the defense at dawn.

FOG

Although night is usually certain as to its time and duration, fog is very uncertain. It may cover a wide or small area depending on the terrain, and it may be heavy or light, or of short or long duration. Periods of fog have, in some degree, the same advantages and limitations as night, both for the defense and the attack. Illumination by artificial means is not as effective in dense fog as it is at night, which is an added limitation in the defense.

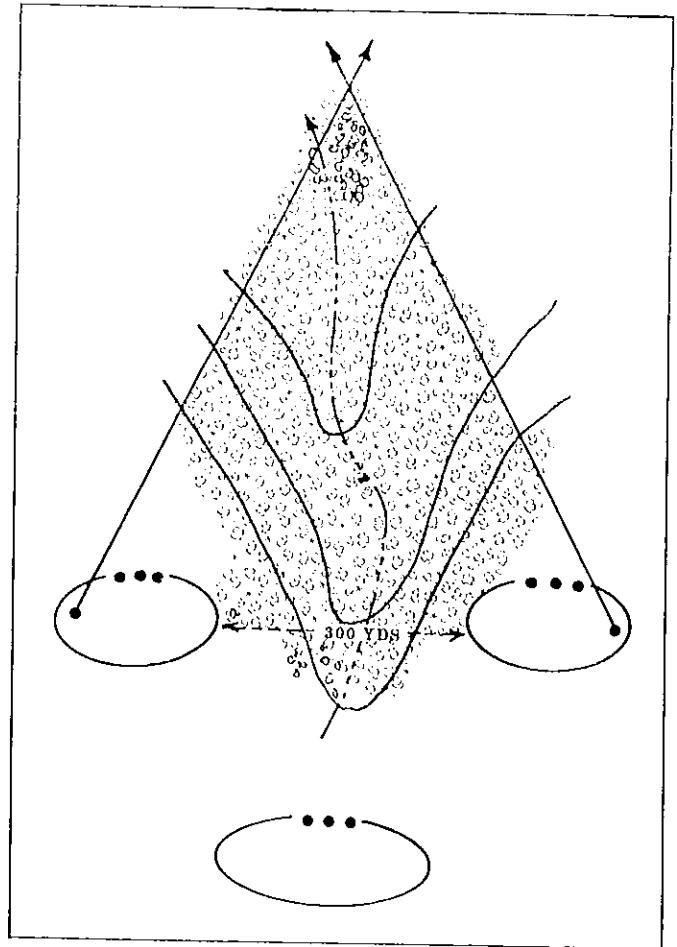


Figure 3

Any changes made in defense dispositions because of fog are similar to those for night. The defense must determine in each case when and to what extent night dispositions should be taken. The usual duration of fog in the locality, its time of occurrence during the day, enemy activities and probable intentions, and the degree of density of the fog are factors that influence this decision.

SMOKE

Smoke screens can be controlled as to time and duration

and, in a large degree, as to extent. An attacker can therefore impose the disadvantages of darkness upon the defense by the use of smoke while largely retaining for himself the advantages of good vision.

Tests made at the Chemical Warfare School show that when smoke is placed on or immediately in front of a position, the effectiveness of rifle and automatic rifle fire from that position is about eight percent of that obtained without smoke. Although smoke does not affect machinegun fire when these guns are laid and clamped on predetermined lines, it has about the same effect on observed machinegun fire as it has on the rifle and the automatic rifle. Fire from the infantry mortar is not affected when predetermined firing data is used, except for the corrections obtained by observation. But smoke often denies information as to when this pre-arranged fire should be executed.

Smoke, therefore, insofar as aimed fire is concerned, imposes upon the defense much the same limitations as night. The attacker, by screening observation posts with smoke, may also deny to the defense important information on the tactical situation. Consequently, the particular advantages that the attacker can hope to gain by smoke are the denial of observed fire to the defense (thus permitting a more rapid advance with fewer casualties) and doubt on the part of the defense as to the direction of attack.

The correct use of smoke, however, is not simple. Its use calls for well-trained units. If not correctly used it may help the defense more than the attack. For example, a change in wind direction may shift the cloud upon the attack, seriously interfering with the control and movement of the attacking units. A smoke screen also attracts the attention of the defense and places it on the alert.

Generally the attacker does not have enough weapons or ammunition to cover the entire defensive position with smoke. He therefore places it where he thinks it is of greatest benefit to him, as for example, in front of a battalion or company area, the fire from which he desires to neutralize or from which he desires to conceal his direction of attack. The enemy situation in this particular sector then becomes obscure, and aimed fire from the position is denied.

Now, since conditions similar to night exist, should the defense take up night disposition? Here, the defender is uncertain whether an attack is being directed against him

and, if so, how long the attack will maintain the smoke screen. Will it be maintained until attacking units reach the defensive position; or will it be cleared before the hostile assault? In the latter event, the defense can meet the assault with restored vision and without a change in disposition.

We find, therefore, that an effective smoke screen laid in front of a defensive position gives the attacker the advantage of a night attack without its limitations, because the attacker controls the duration of the screen. On the other hand, we find the limitations imposed upon the defense are similar to those imposed by night, with the added limitation that smoke cannot be illuminated by artificial means. As with fog, therefore, the defense must decide from an estimate of the situation to what extent night dispositions should be taken up to meet the threat of the attack. This decision is influenced by the extent and effectiveness of the smoke screen, its probable duration in view of atmospheric conditions, and the probable intentions of the enemy.

CONCLUSION

As few changes as practicable should be made in defensive dispositions to meet the altered conditions imposed by reduced visibility. It must be recognized, however, that some changes are usually necessary, especially at night.

Night demands increased patrolling and a rearrangement of, and even an increased density along, the line of security. A means of illuminating the area in front of the defensive position should be provided.

The establishment of additional and temporary combat groups or detached posts may be essential to prevent the penetration of an area which, although effectively covered by fire during daylight, cannot be so covered at night. The tendency, however, to increase the number of such combat groups unduly must be guarded against. The personnel for such combat groups usually come from nearby combat groups. The reserves of higher units should not be used for this purpose.

Occasionally it is desirable to relocate some of the fixed infantry weapons at night.

The depth of the position should not be reduced by whatever changes are made at night.

