War Game—X

The Trenches—Use of Pick and Spade in Modern Warfare

By Lieut. Guido von Horvath

TRENCH warfare is the outcome of extended battle lines. It aims at disposing of the possibility of enveloping movements. It is evident that the methods of trench fighting must be different from the battle fought in the open field and its requirements are of quite primitive nature.

The spade and the pick-axe become more important than the cavalry sabre; the defense depends more on good obstacles than on the possibility of skillful maneuvering. The fighting lines approach each other in trench warfare more closely than could have been imagined in any style of fighting since the invention of gunpowder.

In place of the free movements of the battle lines in the open and the quick decisions, comes the prolonged struggle of men-worms. The field of operations might seem to the eye an empty, desolate ground. The rattle of the smokeless rifle and the whistle of the bullets would seem to be a strange show, were it not for the thunder of guns of all calibres. The exploding shells, the bursting of shrapnel over a seemingly waste field, are the characteristics of the gigantic fights of this type.

Such a fight on a small scale can only develop in a case where, on both flanks, the natural obstacles against an enveloping attack are unsurmountable. We have seen such a case in the Ninth War Game, where the Red forces, through the inundation of a large territory, secured their right flank, while the left is protected by Red forces across the Nehaminy River.

War Game IX pictured the making of the trenches, the hasty preparation of the defensive lines to hold back superior forces. Now we assume that the Red forces have successfully withstood the attack of the Blues, but they have not been in a position to undertake a sufficiently strong counter attack to turn their passive gain into an active one.

The result of this action must be that the Blues will be forced to entrench on the ground where they find themselves, probably under the fire of the enemy. Nevertheless, they must do this, unless they are willing to accept the inability to break through the Red line as a defeat. Very likely the cover of the night will aid the Blue forces in their work of entrenching. But whatever happens, the entrenchments must follow, once an engagement has proven that the direct attack against an entrenched position did not have the force, the "punch," behind it sufficient to crush the enemy.

The character of the entrenchments depends upon the ground on which the troops may make their stand. But, even on difficult ground, the night following the first attempt will give ample time to build trenches of satisfactory strength to give protection to the forces in the firing line.

We observed, in War Game IX, these trenches in the making. Now the Blue forces will have to do a very similar work. The main difference between the construction of the two lines of trenches will be that the Reds enjoyed a time of peaceful preparation, while the Blues must work under fire. It is easy to realize that this last task is quite a difficult one.

Trench warfare has grown in importance since the Russo-Japanese war, and to-day is far more important than ever before. Therefore, it is necessary that we become acquainted with its nature.

Construction of Trenches Under Fire

To have a concrete case before us, we shall use the situation of the Blue and Red forces on June 14th, 19—, in the engagement south of Pottstown.

Some time around 1:00 P.M., the advance guard of the Blue detachment deployed on the western edge of Pauly Forest and opened fire on the Reds. The targets offered by the well sheltered Reds are

Various types of trenches

A. Hastily built trench ready in twenty-five minutes. B. Regular firing trench built in an hour and a half. C. Improved regular firing trench built in three hours.

Theory of trench warfare

A. Red trenches. B. Blue trenches. C. Barbed wire entanglements. D. Tunnel leading to enemy trench. E. Explosive in mine. F. Chamber whence sapping was started.

Answer to questions 1 and 2 of War Game IX

rather small and unsatisfactory, promising little damage at the distance. Therefore, the best means to improve the fire effect would be a rapid advance on the part of the Blues. Now, while time is being gained for the main body of the Blue detachment to reach the deploying point and to make ready to assist the advance, the Red artillery will make it hot for the leading elements of the Blues, unless the Blue artillery is able to attract all the attention for the time.

In other words, while the infantry is getting into position and preparing for the advance, there will be an artillery duel fought, provided the artillery of the entrenched defenders is discovered early enough in the game to offer a target. Otherwise, the attacking party must turn its artillery on the firing and the reserve trenches.

We shall assume that, at 2:00 P.M., the Blues are in a position to undertake the advance against the Red position. Blues, being stronger, will very likely advance on an extended line, with the intention of producing a converging fire effect on the point where the general assault might be expected to penetrate the enemy's lines. The Blues will also occupy such flanking positions as will enable them to assist the attacking center portion of the line, by fire of position until the very last moment.

The Blue line commences to advance, and has scarcely covered the first few yards of the effective zone of Red fire when the losses begin to grow appalling. Let us assume that the Blues are at a distance of 1,000 yards from the Red position, when the first local commander orders his company to use the entrenching tools after the next rush. Then the following things are going to happen:

The skirmish line makes a quick rush of about 100 yards forward; the portions of the line to the right and to the left increase the rate of their fire, while the leading company take to their spades, and, lying flat on the ground, each man constructs a shelter for himself as quickly as possible. The process is simple; each man throws the dirt forward as he digs himself in. In thirty minutes or less there should be a series of satisfactory trenches to shelter individuals lying prone.

One firing unit after another will thus dig itself in, and after this is done the progress of the fight will assume an altogether different aspect. In the place of rapid action a new sort of conflict, resembling siege operations, will develop, until both forces have gathered new strength and energy to undertake a new offensive.

We have assumed that the Reds have remained inactive and have been contented with simply holding off the Blues. Otherwise a counter attack might have produced an entirely different situation. Therefore, the first energetic advance of the Blues came to a standstill. While the opposing artillery are working against the most exposed trenches, and very likely against the enemy artillery, the infantry fire will slacken, and will consist chiefly of firing upon single targets when available.

The night will be a busy one for the Blues, for unless they feel sufficiently strong to make a new attempt to rush the Red trenches, they must strengthen their own positions and prepare obstacles against a possible advance on the part of the Reds. But even in case of an expected second Blue advance, it will be found advisable to prepare the trenches, as in case of a reverse they will be of great value as a rallying point, and will give an opportunity to reform and reorganize.

The more and the better obstacles are placed before the trenches, the easier will it be to defend them. The most effective obstacles are those which cannot be seen at a hundred yards' distance. A thin hedge, for instance, which permits the

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The electrical equipment of the vessel is elaborate. Current is supplied by an electric generator driven by a silent chain from one of the engines. When the boat is not in motion a clutch on the propeller shaft is thrown out and the engine continues to drive the generator without turning the propeller. Aside from furnishing current for the lights and the three powerful searchlights—one at the bow, one at the pilot house and one at the stern, each controlled from the pilot house and representing a combined candlepower of 18,000, the generator supplies power for the dozen or more motors that are used for different purposes on board. Current is also used for all the heating and cooking on the barge, since no fire is allowed on board.

A Pen that Permits of Writing with the Mouth

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one half of the crowns of the lower teeth, whereas the upper ones only rest on it with their lingual surfaces, thus leaving the edges and labial surfaces disengaged. In fact, the mouth-piece remains fixed to the lower teeth, even when the mouth is open.

A straight and rigid penholder obviously would have been inconvenient, besides straining the muscles of the neck and jaws. Mr. Grünberg therefore designed a penholder comprising three joints, one of which—the central one—was fitted with a spring endowing it with sufficient elasticity. The penholder is made up of two tubes sliding inside one another, their total length being adjusted by means of a set-screw. The nib is preferably one with rounded or ball point and can be replaced by a pencil at a moment's notice. The paper is kept in position by a rectangular brass ruler covering its left-hand and upper edges.

Systematic training was, of course, required to acquaint the man with the use of this arrangement: beginning by simple dashes, he proceeded to the tracing of separate letters and words. After getting through about half a dozen copy books as used in schools, he was able to write with the utmost ease and as readably as few of his class with their right hands.

War Game—X

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fullest fire effect and still hides the barbed wire from the eyes of the approaching enemy, is a very effective arrangement. The entanglements are placed at a distance which permits the fullest use of the rapid fire rifle. Entanglements with mechanical devices enabling the defenders to pull them up into shape just in time have proven of great value in defensive warfare.

Once the belligerents have settled down to trench war, the simple trenches are improved and many other means are employed to strengthen the defensive lines in addition to the barbed wire entanglements. These means vary a great deal, but in principle they are similar to those used in the preparation of regular fortifications. They include ditches, abattis—built up of trees with the branches left on and sharpened, wood or iron "fraises," "trous-de-loup" holes with spikes in them and every imaginable device which will create an effective obstacle. But of them

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