~~804~~ 804

BOX NUMBER 16

DATE: [redacted] 1949
CLASSIFICATION CANCE[redacted]
AUTH: C-r 115-60
C M9

UNCLASSIFIED

Infantry and Tank Co-operation and Training

Reprint of document issued by the British General Staff

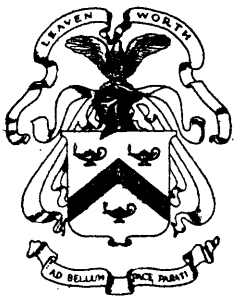
WAR PLANS DIVISION
May, 1918

WAR DEPARTMENT
Document No. 804
41949 Office of The Adjutant General

UNCLASSIFIED

THE GENERAL SERVICE SCHOOLS

LIBRARY



CLASS NUMBER M 9403-B15

ACCESSION NUMBER 41949

WAR DEPARTMENT.
DOCUMENT NO. 804.
Office of The Adjutant General.

WAR DEPARTMENT,
WASHINGTON, MAY 18, 1918.

The following pamphlet entitled "Infantry and Tank Co-operation and Training," is published for the information of all concerned.
(062.1 A. G. O.)

BY ORDER OF THE SECRETARY OF WAR:

PEYTON C. MARCH,
Major General, Acting Chief of Staff.

OFFICIAL:
H. P. McCAIN,
The Adjutant General.

TABLE OF CONTENTS

			PAGE
Introduction			5
Section	I.	Co-operation	5
"	II.	Characteristics and limitations of the Tank	6
"	III.	Fire Power	7
"	IV.	Infantry and Tank attack against Trenches	7
"	V.	Training for an Infantry and Tank attack against Trenches	11
"	VI.	Infantry and Tank operations against Strong Points	12
"	VII.	Infantry and Tank attacks on Woods and Villages	14
"	VIII.	Responsibility and chain of command	20
Diagram	1		22
"	2		23
"	3		24
"	4		25
"	5		26
"	6		27
"	7		28
"	8		29
"	9		30
"	10		31
"	11		32

INFANTRY AND TANK CO-OPERATION AND TRAINING.

The following publication is issued in continuation of the instructions laid down in S.S. 135, "The Training and Employment of Divisions, 1918," Section XVI., Action of Tanks, and S.S. 203, "Instructions for Anti-Tank Defence (Provisional)," which should be read in conjunction with it.

It is concerned only with the co-operation of Infantry and Tanks and the training necessary for that co-operation, and therefore the *role* of the artillery and artillery barrages are not considered. It is to be understood, however, that Tanks will frequently co-operate with Infantry preceded by supporting and barrage fire from the Artillery.

I.—CO-OPERATION.

1. "The full power of an army can be exerted only when all its parts act in close combination, and this is not possible unless the members of each arm understand the characteristics of the other arms" (F.S.R., Part 1, Section 2).

It is therefore necessary for the Infantry and the Tank Corps to obtain a full knowledge of each other's powers and limitations. Good fellowship and close comradeship are necessary to ensure this, no less than technical ability and knowledge.

2. Of all arms the most decisive is the Infantry, for on it falls the brunt of the battle, that is, the assault. All other arms must co-operate in breaking down the enemy's resistance, and thus rendering the assault possible.

3. The Tank crews must understand that the advance of the Infantry is limited by their physical endurance and the enemy's fire, and the Infantry must equally realize that the advance of the Tanks is chiefly limited by the condition of the ground.

4. Whatever arm is foremost, that is nearest the enemy must be co-operated with.

In mass, Tanks co-operate with Infantry, reduce the enemy's resistance and cover the approach and reorganization of our own troops.

When, however, the working of individual Tanks is considered, it is the Infantry which will frequently have to co-operate with them. On these occasions the chances created by Tanks are fleeting; consequently, unless Infantry are ready to co-operate at once these chances may be lost.

5. There is little time on the battlefield to work out methods of co-operation; these must have been thought out and assimilated beforehand, and the more carefully this has been done the closer will be the co-operation.

6. Not only must there be a common doctrine and a full understanding of each other's difficulties, but Tank and Infantry Commanders must get to know each other, reconnoitre the ground together and so plan success. Individual friendship, as well as collective efficiency, plays an important part in war.

It is important before any operation takes place that both Infantry and Tank Commanders should clearly understand the following:

(a) The objective.
(b) The direction to it.
(c) How to approach it.
(d) How to attack it.
(e) How to hold it.
(f) What neighbouring units are doing.
(g) To whom and where to send reports.

Not only must they understand these points as regards themselves, but as regards each other.

II.—CHARACTERISTICS AND LIMITATIONS OF THE TANK.

1. The fighting Tank is a mechanically-propelled armoured battery, its three main characteristics being:

(a) Mobility.
(b) Security.
(c) Offensive power.

2. *Mobility.*—A Tank can move over flat ground at 100 to 120 yards a minute; over ground intersected by trenches at 30 to 40 yards a minute; across a down country at 3 miles per hour; at night time at 15 yards a minute.

A Tank can cross all wire entanglements and crush down two paths through them which are passable by two single files of Infantry. It can span a trench 10 feet wide, surmount an obstacle five feet high, and climb slopes of 1 in 2.

3. *Security.*—A Tank is proof against all bullets, shrapnel and most splinters. A direct hit from any field gun usually knocks it out, but this is not always the case.

4. *Offensive Power.*—Tanks are divided into two types—Male and Female. The male carries two six-pounder guns and four machine guns, the female six machine guns. The crew carry revolvers.

5. *Limitations.*—The chief limitations of the Tank are connected with its mobility, and are as follows:

(a) Its circuit is about eight to ten miles, and the endurance of its crew eight to twelve hours.

(b) It cannot traverse swamps, thick woods, streams with marshy banks or deep sunken roads.

(c) It can generally cross heavily shelled dry ground at a slow pace; should the ground, however, be wet it will find great difficulty in doing so and will frequently become ditched.

III.—FIRE POWER.

1. Tanks possess the ability of developing fire power whilst on the move. Consequently, they can cover the advance of the Infantry by a continuous fire against the enemy's defences. Though at long range this fire is not so effective as at close, it has, nevertheless, a very detrimental moral effect on the enemy.

The fire power which a Tank can develop in no way absolves the Infantry from co-operating with the Tank by making use of their rifles and Lewis guns, and so supplementing the protection which the Tank affords them.

2. Tank 6-pdr. guns are particularly effective against an enemy located behind walls, ruins, in trenches and in open emplacements. They not only destroy the enemy's personnel, but frequently force him to seek shelter at the bottom of his trenches or to run from his position to others where better cover exists. In these circumstances the targets offered may be of a fleeting nature, and may be difficult to deal with by the Tanks. Consequently the Infantry must be prepared to open immediate rifle and Lewis gun fire when such targets present themselves.

Against concrete works and enclosed emplacements the effect of 6-pdr. fire is moral rather than material; even in this case if the fire is accurate the enemy will be forced to remain under cover or to retire. In the first case he will render himself liable to capture, in the second he will again offer a target to rifle fire.

3. Tank machine guns are particularly effective against an enemy moving in the open. Observation, however, from a Tank is often difficult, and many targets will be lost if the Infantry co-operating with the Tank is not immediately ready to engage them. When these targets are difficult for the Infantry to engage, they should be indicated by the Infantry to the Tanks so that fire may be opened on them.

4. It follows from paragraphs 2 and 3 that Infantry must always be quick to take advantage of, and exploit, the opportunities—moral and material—which Tanks create. Such opportunities will be lost unless Infantry leaders are trained to conceive a plan of action quickly, and unless their men possess the ability to carry it out at once.

No time must be given to an enemy, whose morale has been shaken, to pull himself together. The three essentials for Infantry co-operating with Tanks are:

(a) Constant observation.
(b) Quick initiative amongst leaders, especially Section Commanders.
(c) Rapidly executed movements.

IV.—INFANTRY AND TANK ATTACK AGAINST TRENCHES.

The object of an attack by Infantry and Tanks against trenches is to effect the penetration of an entrenched zone as rapidly as possible, wire cutting (crushing) and local fire protection (barrage) being carried out by Tanks.

1. *Tank Section Attack Areas* (Diagram 2).—Given the objective to

be attacked, it is first necessary to divide it into a series of Tank Section Attack Areas. These Areas should generally include a tactical point, for if this is captured, it should not be difficult to clear up the trenches between them. If the objective is part of a system of trenches, the area selected should, if possible, be free from communication trenches; if these are deep and broad the Tank may experience trouble in crossing them. Thus, in Diagram 2 the area A.B.C.D. would be more suitable than E.F.G.H. or B.F.G.H., because A.B.C.D. contains fewer communication trenches, that is, obstacles to the Tank's progress.

2. *Tank Echelons.*—The Tanks operating against each separate objective should constitute one Tank Echelon. This Echelon should be divided into two waves or lines—the Advanced Tanks and the Main Body Tanks. The strength of the Advanced Tanks will vary, but normally it may be taken at one-third of the total Tanks employed against any one objective. If possible, Tank Companies should be kept intact and not split up over two or more objectives.

3. *Duty of Advanced Tank.*—The duty of the Advanced Tank is to proceed ahead of the Main Body Tanks, threaten the enemy and keep down his fire whilst the Main Body Tanks, followed by the Infantry, advance on and across the enemy's wire and trenches. Once this duty is finished, the Advanced Tank will become a reserve to the Main Body, and render it, if required, immediate assistance.

4. *Duty of the Tank Main Body.*—The duty of the Main Body Tanks is to assist the Infantry to cross the wire, to protect them whilst capturing the objectives and subsequently to remain in close touch with them.

5. *Area of Operations of the Tank Main Body and Advanced Guard.*—The area of operations of the Main Body Tanks includes the ground as far as the objective, while that of the Advanced Tank includes any position the holding of which will protect the Infantry while they are employed in capturing their objective.

6. *Number of Tanks to Frontages.*—The proportion of Tanks to be employed on any one front will depend more on the number of tactical points this front contains than on its extent. As a rough rule the allotment of Tanks to any one objective may be calculated at one to every 100 to 200 yards of frontage.

7. *Tank Formation of Attack.*—The Tank unit of attack will generally be a Section of three Tanks which will work together, one acting as the Advanced Tank and two as the Main Body Tanks. If one of the Main Body Tanks breaks down, the Advanced Tank will replace it and lead the Infantry on.

The formation of attack should be one which will permit of Tanks, in Sections of threes, being launched at definite tactical points, rather than one in line equally distributed along the whole frontage; the object of the Tanks is to penetrate the objective at several points, place the Infantry through at these points, and then protect the Infantry as they clear the trenches.

Briefly, the object of the Tank is to break the enemy's line and then assist the Infantry to envelop the unbroken portions of it.

8. *Allotment of Infantry to Tanks.*—Normally Infantry will only follow the Main Body Tanks. The number allotted to operate with each Tank will depend on the strength of the objective to be attacked and the nature and situation of the lines of approach leading up to it. In most cases it will not be advisable to allot more than one platoon (36 to 40 men) to follow immediately each Tank; the two paths crushed down through the wire by the tracks of the Tank will only permit of men moving along each in single file, and any crowding at the point of penetration may result in unnecessary casualties.

This allotment of one Platoon per Tank does not prevent several other Platoons following on behind and making use of the paths created. If the enemy's fire is not heavy, it should generally be feasible to traverse one path by four platoons at intervals without undue delay.

9. *Formation of the Infantry* (*see* Diagram 1).—In order to facilitate the approach, Infantry should be organized in Section Single Files. These can be rapidly formed into line should it be necessary for them to use their rifles. This system enables command to be maintained during the approach, and is most suitable when working with Tanks, as eventually single files have to be formed to cross the enemy's wire.

The same principles of fire and movement, upon which the tactics of Infantry operating without Tanks are based, apply to the tactics of Infantry and Tanks in co-operation. The Infantry must be ready at any moment to cover their own movement by rifle and Lewis gun fire.

10. *Organization of the Infantry Formation* (*see* Diagram 3).—The Infantry for each Trench objective should be organized in three groups:

(a) Trench clearers.
(b) Trench stops.
(c) Supports.

Their duties will be as follows:

(a) To operate with the Tanks and clear the trenches.

(b) To form "stops" in the trenches at various points and to improve paths through the wire. To mark these paths by means of flags so that those following may see where gaps exist. To place ladders in the captured trench or prepare the parados for rapid exit.

(c) To support (a) and (b) and form an Infantry Advanced Guard on the further side of the trench to protect the advance of the next Echelon.

Diagram 3 gives (diagramatically) the formation suggested for a Company of Tanks and two Battalions of Infantry.

11. *Organization of a Trench Clearing Platoon.*—The Trench clearing Platoon should be organized on the lines laid down in S.S. 143, the bombers alone entering the trench, the remainder of the platoon working with the Tank along the trench in the open.

12. *Forming Up for Attack* (*see* Diagram 3).—Tanks and Infantry will usually have to form up during hours of darkness; consequently, if noise and confusion are to be prevented, the most complete preparation for their assembly must be undertaken, and all movements must be reduced to a simple drill and rehearsed in skeleton prior to an attack.

The preparation will consist in marking out the exact places where Tank and Infantry will stand and in taping and preparing routes to the places of assembly (Starting Points) and forward from them.

Diagram 3 shows a method of forming up a company of 12 Tanks for the attack. A.B.C.D. are the Advanced Tanks; E.F., G.H., I.J., and K.L. those of the Main Body. Immediately behind these are placed 8 Platoons each on a file frontage; that is, two Sections in single file side by side, and two in a similar formation behind them, these 8 Platoons form the Trench Clearers. At 50 yards distance behind the Trench Clearers come 8 more Platoons in similar formation. These are the Trench Stops. Behind those, at whatever distance is considered necessary, are drawn up the Supports in two lines, consisting of 8 Platoons each, as shown in Diagram 3.

13. *Movement Forward.*—The movement forward will usually take place at dawn, the whole Echelon moving off together, the Advanced Tanks ahead and the two Main Body Tanks one in advance of the other. Zero hour must be selected at a time which will permit of the Tank Drivers seeing their way.

14. *The Attack* (*see* Diagrams 4 and 5).—The Advanced Tanks will cross straight over the enemy's wire and swing to the *left* and move along the enemy's trench close to the parapet. They should not generally cross the fire trench until the first Main Body Tank and its Infantry are over.

The Main Body Tanks traverse the enemy's trench at the same spot. One will move down the fire trench and the other proceed forward to the support trench, where it will cross over; then turn and work down the support trench to the left.

Diagrams 4 and 5 illustrate the action of two Tanks clearing a trench.

Once a Tank Section area is cleared, the Advanced and Main Body Tanks should rally directly the next Echelon has passed through.

Once the Infantry have been placed in the enemy's trenches by the Tanks, they must depend on themselves to do all minor clearing up work, and release the Tanks. Should a Tank break down, the Infantry must press on by themselves; their security will depend on so doing.

15. *Precautions in Crossing Wire.*—Tanks working in threes should generally cross the wire at the same spot; or, if this is not feasible, at intervals of not less than 50 yards. The reason for this is that it has been found that if two Tanks cross the wire at a less interval, the second Tank crossing sometimes loosens the wire crushed down by the first, and partially closes the gap first made.

Infantry should not get nearer than 25 to 50 paces to a Tank as it enters the wire, so as not to get entangled in any trailing strands. Crowding round the Tank must be guarded against, as also hurried progress along the paths made, for otherwise loops of wire may be pulled up by the men's feet and the advance of those in rear delayed.

16. *Tank Local Reserves.*—When, in the attack on any objective—trench, village, wood, etc.—strong opposition is likely to be met, a local reserve of Tanks should be kept in hand, so that the Commander on the

spot may be enabled to meet and overcome unexpected difficulties. For Tanks this opposition comprises:

(a) Approaches over heavily shelled or difficult ground.
(b) Approaches through defiles likely to be protected by gun fire.
(c) Attacks against positions known to be occupied by artillery.

17. *Tank General Reserves.*—When, in an operation, continuity of attack is necessary, Tank Echelons must be organized in sufficient depth to enable the first Echelon to reorganize by the time the last Echelon enters the battle. This means that from the beginning of the battle a strong general reserve of Tanks must be kept in hand. The hasty improvisation of reserves on the battlefield itself leads not only to a general disorganization of the Tank units, but to the destruction and damage of telegraphic and railway communications by lateral movements of Tanks, and, in addition, to Tanks arriving late at the Infantry assembly places and so delaying the attack.

V.—TRAINING FOR AN INFANTRY AND TANK ATTACK AGAINST TRENCHES.

1. The tactics required in Section IV. may be acquired by practising four simple exercises:

(i.) Assembly of Infantry behind Tanks before advancing to the attack—a drill.

(ii.) Advancing to the attack behind Tanks—a fighting movement.

(iii.) Passing through wire entanglement crushed down by Tanks—a fighting movement.

(iv.) Clearing a sector of trenches under the protection of Tanks—a fighting movement.

2. These exercises may be carried out with or without Tanks. If no Tanks are available, a man carrying a flag should be used as a substitute.

3. *Exercise 1.—Forming Up Behind Tanks.*

This exercise should be carried out as a drill parade, both by day and by night.

4. *Exercise 2.—Advancing to the Attack.*

This is not a parade, but a fighting movement, consequently at any moment the Section Commanders may have to use their initiative to meet unexpected difficulties.

Sections should not advance behind the Tanks, as behind a creeping artillery barrage, that is to say, at a steady even pace, but by "bounds," making use of ground as far as possible for fire effect and cover.

The Infantry must be prepared to co-operate with the Tank by means of rifle fire, and, if necessary, to fight their way forward.

The Lewis Gun Section may have to cover the advance of the others, or one Section by rifle fire cover a neighbouring one. It does not matter

in what formation Sections move behind their Tanks, as long as they keep moving forward and do not lose touch with them, and as long as the Sections do not get mixed up. Their safety and success depends on their own fire as well as that of the Tank. Whenever possible, Light Mortars should be moved forward to assist in the attack.

5. *Exercise 3.—Passing through the wire.*

Passing through the wire crushed down by the Tanks is similar to passing through a defile. Sections should not crowd round the gap. Only one Section at a time should double towards it, and then traverse it in quick time. The remaining three Sections should be so disposed as to be able to protect its approach. Directly the first Section is through it should, in its turn, think how it can best protect the advance of the next Section. This, again, is simply a matter of mutual co-operation between Sections as well as between the Platoon itself and the Tank.

6. *Exercise 4.—Clearing Trenches.*

Clearing Trenches is part of the everyday training in Trench to Trench Warfare, and so needs little explanation. The one thing to remember is to keep as many men outside the trench as the situation permits.

A trench is a defile, and flankers in the open are absolutely necessary. Every advantage must be taken of the fear the Tank instils in the enemy, and this cannot be done unless the Infantry retain their organization and leadership. Whether in a trench or out, each Section must remain a distinct fighting unit. If the original leader becomes a casualty, the next man to him must take up the leadership.

7. *Machine Guns and Light Mortar Batteries.*

Machine Guns and Light Mortar Batteries should take part in this training. Covering fire may frequently be required, and it is important that they should realize what a Tank and Infantry Attack entails, so that they may modify their tactics accordingly.

VI.—INFANTRY AND TANK OPERATIONS AGAINST STRONG POINTS.

1. *Principle of Attack.*—When Tanks and Infantry are working together in an operation against a strong point, success depends on the closest co-operation between these two arms. This co-operation cannot easily be improvised during a battle unless all ranks understand it beforehand.

2. *Objects of Tanks and Infantry.*—The object of the Tank is:

(a) To force the enemy to seek shelter from its fire and so deny him the use of his weapons.

(b) To distract the enemy's attention from the Infantry attack.

(c) To hold the enemy in his shelters until the Infantry come up and capture him.

The object of the Infantry is:

(a) To capture the strong point and kill or capture the enemy.

(b) To hold the position once it has been captured.

In order that the Infantry may seize the opportunities created by the Tank, they must remember that any one of the three above conditions which the Tank may produce is fleeting in nature, and consequently their own safety depends as much on the rapidity with which they support the Tank as on the fear the Tank instils in the enemy.

3. *Requirements.*—The requirements in such an attack are:

For the Tank:—(a) Ground the Tank can negotiate. (b) Protection from hostile artillery or hostile observation.

For the Infantry:—(a) That the enemy's fire be kept down while they advance. (b) Protection from long range or flank machine gun fire.

4. *General Procedure.*—The route the Tank will take is governed, first, by the condition of the ground; secondly, by the nature of the objective. If the objective is a machine gun emplacement, the Tank will probably move direct on to it in order to draw its fire; if a concrete shelter, in rear of it to cut off the line of retreat of its garrison.

The procedure of the Infantry should be to start their attack almost simultaneously with that of the Tank. This does not mean that they all move forward together, but that they send out scouts in advance.

This movement forward of the scouts is the first step in co-operation. They form a link between the Tank and the Infantry, giving confidence to the latter.

Directly the scouts are well out, the infantry should follow in single file by sections.

5. *Example of a Minor Attack.*—Diagrams 6, 7, 8 and 9 illustrate an example of a minor attack carried out by two Tanks and Infantry in single files.

Stage 1.—One Company is holding roughly-made trenches and posts along the line B—C. Its advance has been held up by a fortified ruined farm at "A" protected by two machine guns and 30 to 40 riflemen. Two Tanks are to co-operate with the Infantry in the attack on the farm.

The Tanks D and E move forward along the ground best suited for their approach. Their orders are for "E" to proceed to the western side of the farm to silence the machine guns, and "D" to the eastern to drive the enemy into the concreted cellars.

Before this move takes place the garrisons of the sections of our line are organized into two small parties each. The White the attackers, the Black the consolidators. In the present case it is decided to advance with F, G, H, K, L and M only, keeping I and J back to cover F, G, H, K, L and M should the attack fail.

If the situation permits of their use, Machine Guns and Light Mortars in rear should cover the advance of the Tanks and Infantry. If the shortness of the range between BC and A does not permit of

covering fire being safely opened, the machine guns should be pushed forward in front of the line B and C to cover the initial advance of the Infantry. As soon as the Tanks move forward the machine guns open fire on the Farm, and each of the White attacking parties at once throw out Scouts "O."

Stage 2.—The Tanks "D" and "E" move on and the scouts, taking every advantage of the ground, move forward. Directly they have advanced about 150 yards from BC the attackers "F" move off in Section Single Files, and also taking every advantage of cover advance by short rushes. Between them move Lewis Gunners covering the advance of the single files, should this be necessary. The Lewis guns should not be with the single files, because waiting to fire will delay movement, and the one object of the Lewis Gunner is to accelerate the advance of the files.

Stage 3.—The Tanks are now right on their objective. The Machine Guns lift their fire, not because it will do much damage to the Tanks, but because our own Infantry are approaching, and by lifting and placing a barrage on the far side of the Farm they may inflict casualties on the enemy should he attempt to retire. As the Tanks approach the Farm the Light Mortars must lift or cease firing.

The Scouts push on, the White files pushing on behind them.

Once the White files are nearing the Farm, the consolidating files "R" (Black) start their advance, also in single file formations.

Stage 4.—The White files and scouts now close on the farm under the protection of the Tanks. A selected number of men immediately rush the Farm, bomb the cellars, and destroy the garrison; the remainder double out well beyond the farm and form an extemporized outpost line. They then rearrange themselves, according to the nature of the ground, so that they may best meet a counter-attack.

Once the garrison in the Farm is destroyed, the Tanks "D" and "E" move forward to protect the flanks of the outpost line. The White men, who bombed and bayonetted the garrison, move out with them to add extra security to their flanks.

A message is sent back to report that Farm "A" has been captured, and the Black files, coming up at once, start organizing its defence on the line ST under cover of the outposts.

The Machine Guns and Light Mortars may now be moved up if required.

Should it be considered necessary, the whole of the operation can be covered by a creeping barrage, or better, a standing barrage, as a creeping barrage may delay the movement of the Tanks and Infantry.

VII.—INFANTRY AND TANK ATTACKS ON WOODS AND VILLAGES.

1. A village or a wood may generally be considered as a group of strong points which form a small fortress, consequently the tactics to be employed in their attack are very similar to those described in Section VI.

2. *Reconnaissance.*—Before an attack on a village or wood takes place, a personal reconnaissance by the Tank and Infantry Commanders on the spot should be carried out in order that its features may be well studied. A rough enlargement of the village or wood should be provided, on which Sectors, Keeps, Outpost positions should be marked.

Personal reconnaissance is necessary in order that:

(a) Close co-operation may be arranged both before, during and after the attack.

(b) Both Tanks and Infantry may know what obstacles to their progress exist, *i.e.*, walls, wire, trenches, sunken roads, etc.

Steep banks and rows of houses may be impassable to Tanks, but passable to Infantry.

(c) That rapid organization of defence may be arranged for in advance.

3. The general principle underlying these attacks is envelopment by Tanks combined with a frontal attack carried out by Tanks and Infantry; that is, Tank flank attacks should be made whilst the frontal attack is taking place. If possible, these flank attacks should be linked up by a Tank rear attack, which, threatening the enemy's line of retirement, will have an adverse effect on his morale. The manœuvres should be covered by smoke projected either by artillery or from the Tanks themselves.

4. A concentric attack has the following advantages:

(a) The enemy will not know where to concentrate to meet the attack.

(b) The enemy is unlikely to bar all approaches by anti-Tank guns or obstacles.

(c) The attack being delivered from various directions, parts of the village or wood will gradually be cut off and the morale of the defenders shattered.

5. The danger of a concentric attack is that in villages and woods our own troops are liable to fire on each other. When Tanks and Infantry are operating together, the first step to take will be to threaten the village or wood from as many sides as possible; the second, to select the sector for the decisive attack.

6. When an attack on a wood or village is checked and a new plan of attack has to be formed, successful co-operation in this fresh attack will depend on the fullest understanding between the Infantry and Tank Commanders as to what each should do. Hastily arranged attacks on villages nearly always fail.

The senior Infantry and Tank Commanders engaged should confer and decide on their method of attack; once this has been decided on, all ranks must be informed of it.

As a rule, the Infantry and Tanks will not be under fire at this stage, but will be sheltering behind walls or dead ground. In these circumstances it is essential that the Tank Commanders and their gunners should come outside their Tanks and discuss the plan of attack with the Infantry.

It is practically impossible for an Infantryman to explain what is required by shouting through a loophole, or for the Tank Commander to explain his plan to his gunners while inside the Tank.

7. *Plan of Attack.*—The plan of attack should be worked out on a logical basis, such as the following:

(a) Divide the objective up into Attack Sectors, paying particular attention to the flanks of each Sector.

(b) Allot attacking troops to each Sector.

(c) Decide on the method of Approach, Deployment and Attack of the troops allotted to each Sector, and on the Machine Gun and Mortar fire required to cover their advance.

(d) Arrange for the defence of the objective and each Sector of it, so that, in the event of the attack succeeding, an enemy's counter-attack may be at once beaten off.

(e) Differentiate clearly between the following: Troops to carry out the attack. Troops to carry out the organization of the defence. Troops to form the outpost line round the village. Troops to be held in reserve.

(f) Settle on a central keep and a report centre, in the event of the objective being captured, and arrange for runners from the various attacking parties to report there.

(g) Decide what should be done should the attack fail.

(h) Notify neighbouring units and superior authority of the action decided on.

8. *Attack on Woods.*—The best methods of attack on woods by Tanks and Infantry depend greatly on the extent to which the wood is passable to Tanks.

The enemy is likely, during the initial stages of the attack, to develop most of his fire, both anti-Tank and otherwise, from the outskirts of a wood, and if the wood is passable to Tanks every effort should be made to penetrate into the wood and so get behind the enemy firing line.

If the wood is impassable to Tanks they can only assist by covering the advance of the Infantry with fire from the flanks, and by surrounding and picketing the wood.

Woods which are otherwise impassable can often be penetrated by Tanks moving down the rides. The Tanks can then greatly assist the Infantry with covering fire. These rides are, however, likely to be defended by Anti-Tank guns. In this case, bursts of 6-pdr. fire should be directed down the rides before the Tanks advance, and the Tanks should keep up a steady frontal fire with machine guns after they have done so.

If the wood is easily passable to Tanks, the action of the Tanks and Infantry should be very much the same as in the open.

9. Attacks on woods and villages may be divided into two classes:

(a) Tanks operating independently and in advance of the Infantry.

(b) Tanks and Infantry co-operating in the attack.

10. *Tanks Operating Independently in Advance of Infantry.*—Tanks operating thus will move forward well in advance and occupy the village or wood, and the Infantry will follow on behind and only relieve the Tanks when the occupation is completed. Tanks should then be held in support as a mobile counter-attacking force under cover from view. An attack of this type is only possible when the enemy is either demoralized, unprepared, or numerically very weak. It has, however, the great advantage of saving time. Tanks may be able to occupy a position before the enemy has time to organize the defence, whereas, if Infantry co-operation were waited for, this advantage would in many cases be lost.

The chief tactical features of the village or wood must be carefully considered beforehand, and Sections of Tanks allotted to picket definite positions. Section Commanders must be responsible for any detailed redistribution that may be found necessary on the spot.

It is the duty of these Tanks:

(a) To prevent the approach of the enemy's reinforcements.

(b) To engage and wear down the resistance of the enemy's troops already in the village or wood.

If sufficient Tanks are available, a second Echelon should advance with the troops which are detailed to occupy and hold the position. If this cannot be done, one Section of Tanks should be posted in such a position that it will be visible to approaching Infantry.

It is the duty of these Tanks to signal to the Infantry to advance and also to be ready to assist them should any fresh opposition spring up on the approach of the Infantry.

11. *Tanks and Infantry Co-operating in the Attack.*—Whenever the enemy is likely to be aware of an attack or to put up a determined resistance, close co-operation between Infantry and Tanks is essential.

Artillery bombardment and a barrage, with smoke screens covering the flanks of the attack and the approach and deployment of the Infantry are of great assistance. When these are not possible, Light Mortar Sections with a plentiful supply of ammunition should be moved forward by Tanks and placed in positions where they can open a destructive fire on the objective.

(*a*) *Formation of Attack.*—The Formation of the attacking Tanks should be one of a Main Body protected by Advanced Tanks and two Tank Flank Guards. Generally Infantry will follow only the Main Body Tanks.

(*b*) *Tank and Infantry Approach.*—The approach should be carried out as described in Section VII., the Infantry making every use of ground and fire to assist their advance.

(*c*) *The Deployment.*—If a deployment has to take place, means of covering it by machine gun and trench mortar fire must be arranged beforehand, otherwise the Infantry are liable to lose touch with their Tanks.

(*d*) *Action of Advanced Tanks.*—The Advanced Tanks, taking every advantage of ground, or covered by smoke, should move either

outward to avoid the village, and then inwards to attack it in rear, or should proceed straight through the village to positions in rear of it. Main entrances should be avoided, as they may be defended by pits and anti-Tank guns. The Tanks must break in through walls, outhouses and orchards, threatening the enemy, disorganizing him and drawing his fire.

The points against which these Tanks are to operate must be selected beforehand.

(*e*) *Action of the Flank Guard Tanks.*—The Flank Tanks should move well out on the flanks of the Main Body Tanks and Infantry and deal with hostile machine guns enfilading the attack. As the attackers approach the village they should remain well out on the flanks and protect the approach of the supports.

(*f*) *The Attack.*—Infantry must move with the utmost rapidity, timing their bounds when protection is afforded by the fire of the Tanks.

If the Infantry fail to reach the outskirts of the village or wood, it is useless to launch further Tanks without further Infantry. The Advanced Tanks already out must endeavour to maintain their position and isolate the enemy's garrison. The Infantry must engage the garrison whenever possible with Lewis gun and rifle fire in order to wear down the enemy and cause him to expend his ammunition.

A village or wood skillfully picketed with Tanks and engaged by Infantry fire will seldom hold up our own advances on its flanks, as the enemy's garrison will usually be too occupied in protecting themselves to carry out long range fire.

If a fresh attack by Tanks and Infantry is to be made, it should be well organzied and carried out, preferably at dusk.

(*g*) *Clearing the Village.*—This should be carried out by small bounds. Definite Sectors being allotted to definite bodies of Tanks and Infantry. These Sectors should possess simple and distinctive boundaries. Close co-operation on the spot must be arranged by Tank Section Commanders and Infantry Officers. In many cases all available Tanks will have to concentrate their fire, particularly that of their Mortars (if they carry any) on one group of buildings, the Infantry rushing this locality directly the fire ceases.

12. *Example of an Attack on a Village.*—Diagrams 10 and 11 illustrate an attack of one Company of Tanks and two Battalions of Infantry of which four Companies form the Attackers—Firing Line and Supports, and four Companies the Reserves.

The formation suggested is on the line already described. A an Advanced Guard of three Tanks, B, C and D a Main body of seven Tanks followed by four Companies of Infantry, one Company of which form a firing line, and three Companies Supports to it. Four Companies in Reserve include—Reserves, Consolidators and the Outposts. On each flank one Tank is detailed to act as a flank Guard.

The village is divided up into three Sectors, B, C, D, the capture and clearing up of which is to be carried out by the Main Body Tank and Infantry B, C, D.

(*a*) *Advanced Tanks.*—The duty of the Advanced Tanks is to clear the way for the Main Body, one Tank advancing right through the village, and the remaining two enveloping its Eastern and Western flanks. The positions they will eventually occupy are shown in Diagram 11.

(*b*) *Flank Guards.*—The duty of the Flank Guard Tanks is to move outwards and deal with any enfilade fire which may impede the advance of the Main Body, Supports and Reserves. It is not sufficient to protect any one of these, but all. When this work has been accomplished they should move forward on the flank of the village to such points from which they can gain observation of possible hostile counter attack. At these positions they will form advanced Tank vedettes to the outpost line.

(*c*) *Firing Line and Supports.*—The Firing Line should start thin and, when necessary, be reinforced to strength by the Supports. The Tanks will afford them considerable protection, but it must be remembered that they are liable to draw fire; consequently crowding of Infantry behind them is to be guarded against.

13. *Reasons for Past Failures.*—The chief difficulties which have been met with in the past have been:

(*a*) *Tanks.*—Direct fire from field guns and trench mortars from flanks.

The best defence against these weapons is:

Avoidance of main straight roads, passages being forced behind houses, through gardens and orchards. Mobility and the use of cover of houses, banks, walls, etc. Tank machine gun fire against gun detachments. Frontal and flanking smoke barrages.

(*b*) *Infantry.*—Machine gun fire from beyond the flanks of the attack. This required artillery action, if available, and the deployment of Advanced Tanks beyond the flanks of the Infantry front of attack.

Machine gun and rifle fire from the upper stories of buildings. This should be dealt with locally by mortar fire (H.E. and smoke).

Attacks launched in anticipation of light opposition meeting with determined resistance. Tanks should in these circumstances endeavour to gain and maintain positions which prevent the enemy from sending up reinforcements, and a well-organized attack should be launched later, preferably at dusk, with fresh Tanks and Infantry in close co-operation.

It is far better that the Tanks should maintain their picket positions than that they should be withdrawn during the day and the position bombarded, even if artillery is available.

Tanks and Infantry in these positions mask the village or wood and enable troops on the flanks to progress.

Tanks concealed in the outskirts of a village or wood inflict very great losses on enemy reinforcements.

The enemy is seldom clear as to the true situation, and sends up one party of reinforcements after another. These can be ambushed by Tanks.

The knowledge that Tanks are behind them has a very wearing effect on even the stoutest troops, whereas a withdrawal and a bombardment may give them an opportunity to reinforce and reorganize.

Tanks cannot, of course, remain in picket positions indefinitely, and if the organized attack at the end of the day fails, it will probably be necessary to withdraw them.

VIII.—RESPONSIBILITY AND CHAIN OF COMMAND.

1. For purposes of administration Tanks are G.H.Q. Troops. They will be allotted in groups or Brigades to Armies for certain operations.

2. The Army will allot Tanks in Brigades or Battalions to Corps in accordance with the general plan. The Tank Units so allotted becoming for purposes of the battle, Corps Troops, their objectives and the strength of the general reserve being decided by the Corps.

3. The detail of the movements of the Tanks, to gain these objectives, will be worked out by the Tank Unit Commanders in conjunction with the Divisions under whose orders the Tanks are placed for the specific operation.

4. Subordinate Tank Commanders will get into the closest touch with the Infantry units with whom they are working, so that the men of the two arms may *personally* get to know each other before the operation begins.

5. When a Tank Brigade is allotted to a Corps, normally the Tank Brigade Commander will remain at Corps H.Q., or be in close telephonic communication with it. Tank Battalion Commanders will be with their reserves, or, if no reserves exist, at such positions as will enable them to regain control of their Tanks at the earliest moment after these have rallied. Company and Section Commanders will accompany their units into battle.

DIAGRAMS.

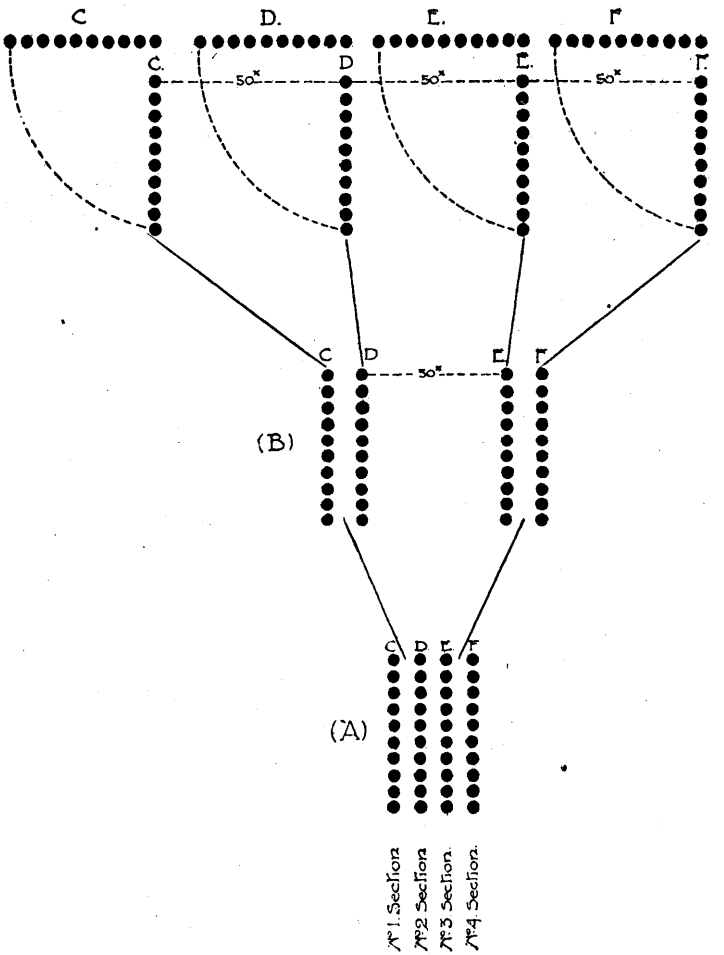
NOTE.

The following diagrams illustrate certain forms of attack, but they must not be regarded as fixed formations to be rigidly adhered to, since in practice, formations are governed by local conditions such as ground and hostile fire.

The main points to be borne in mind in deciding on the formation to be adopted are:

(*i.*) *Rapidity of advance to the objective.*
(*ii.*) *Tank protection to the Infantry.*
(*iii.*) *Reduction of vulnerability of the Infantry.*
(*iv.*) *Use of ground for fire effect and cover.*
(*v.*) *Security of the flanks.*
(*vi.*) *Close touch and co-operation between Infantry and Tanks, and neighboring units.*
(*vii.*) *Concentration of effort against tactical points.*
(*viii.*) *Suitability of ground to Tank movement.*
(*ix.*) *Surprise always to be aimed at.*

DIAGRAM 1.



The Formations shown are Diagrammatic only.

DIAGRAM 2.

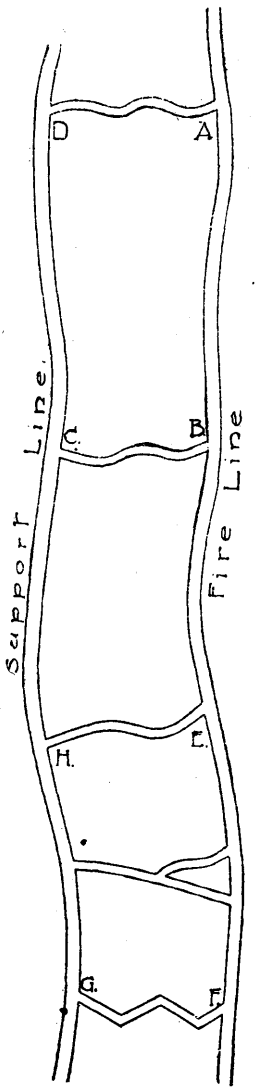
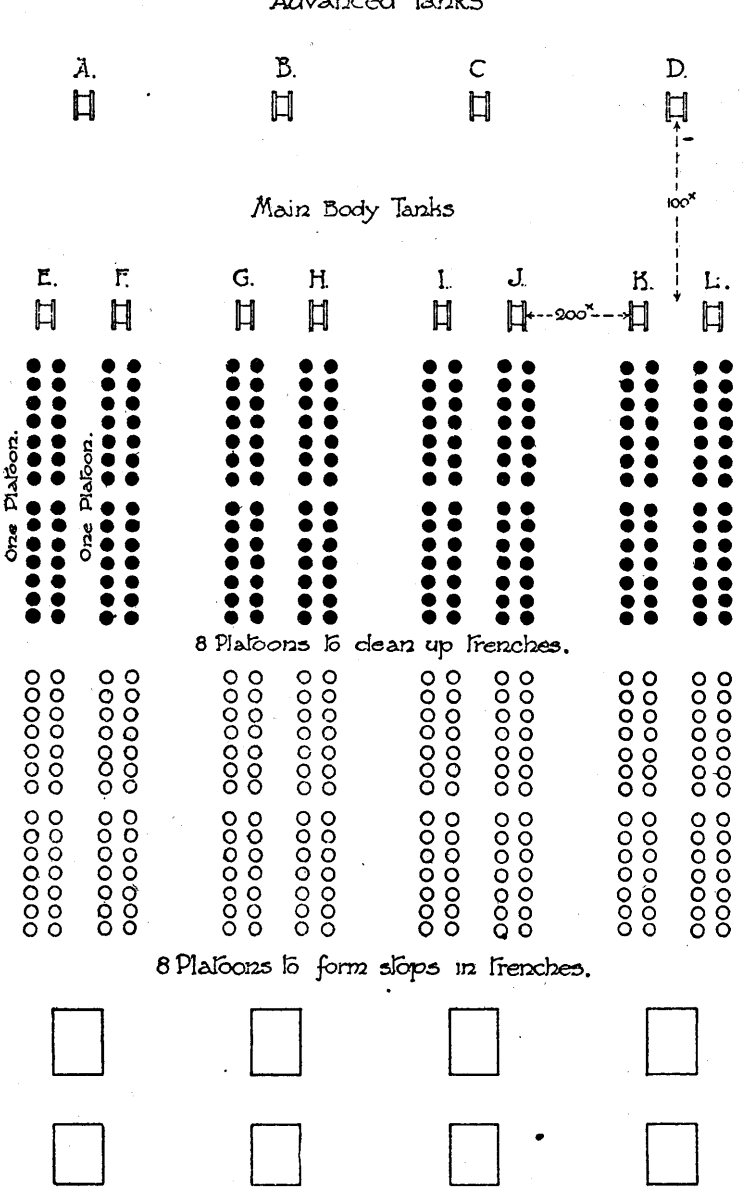
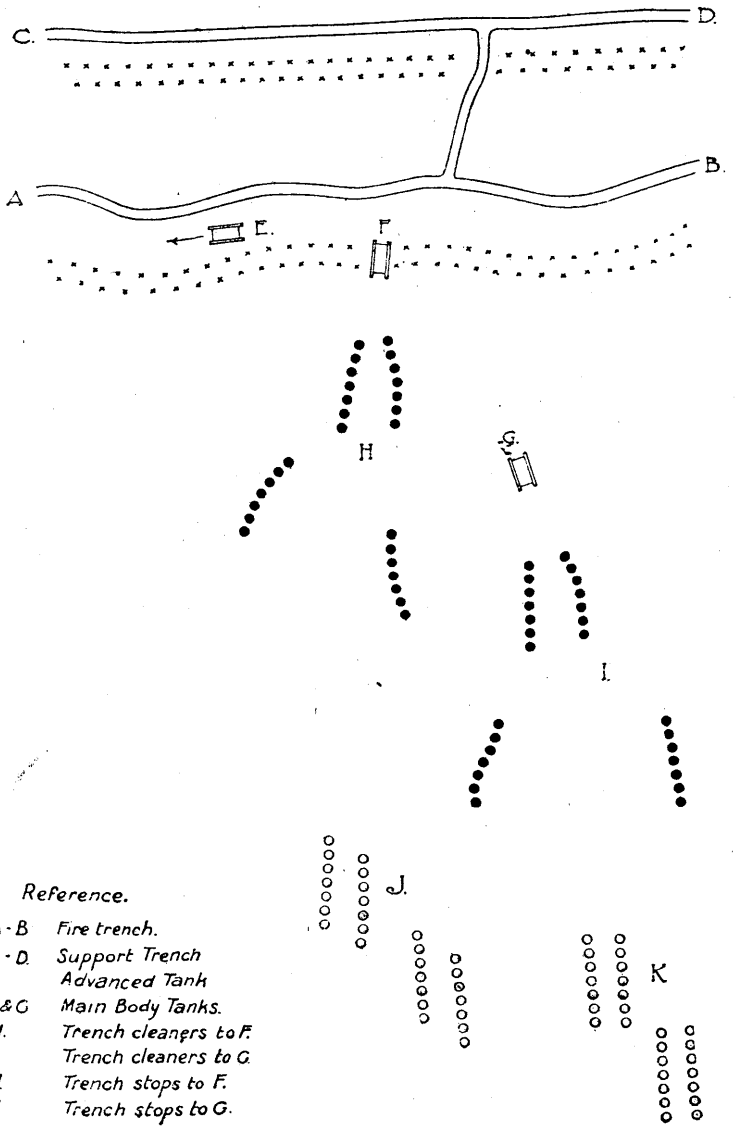


DIAGRAM 3.



The Formations shown are Diagrammatic only.

DIAGRAM 4.

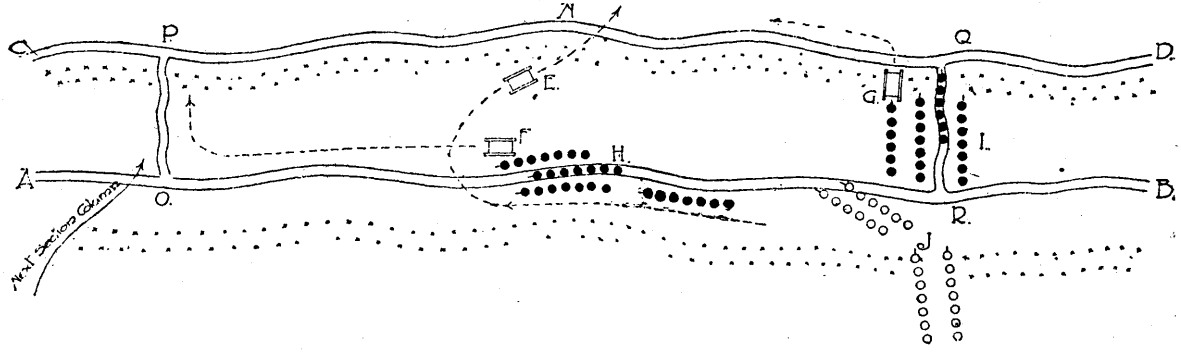


Reference.

A - B	*Fire trench.*
C - D	*Support Trench*
E	*Advanced Tank*
F & G	*Main Body Tanks.*
H.	*Trench cleaners to F.*
I	*Trench cleaners to G.*
J.	*Trench stops to F.*
K	*Trench stops to G.*

The Formations shown are Diagrammatic only.

DIAGRAM 5.



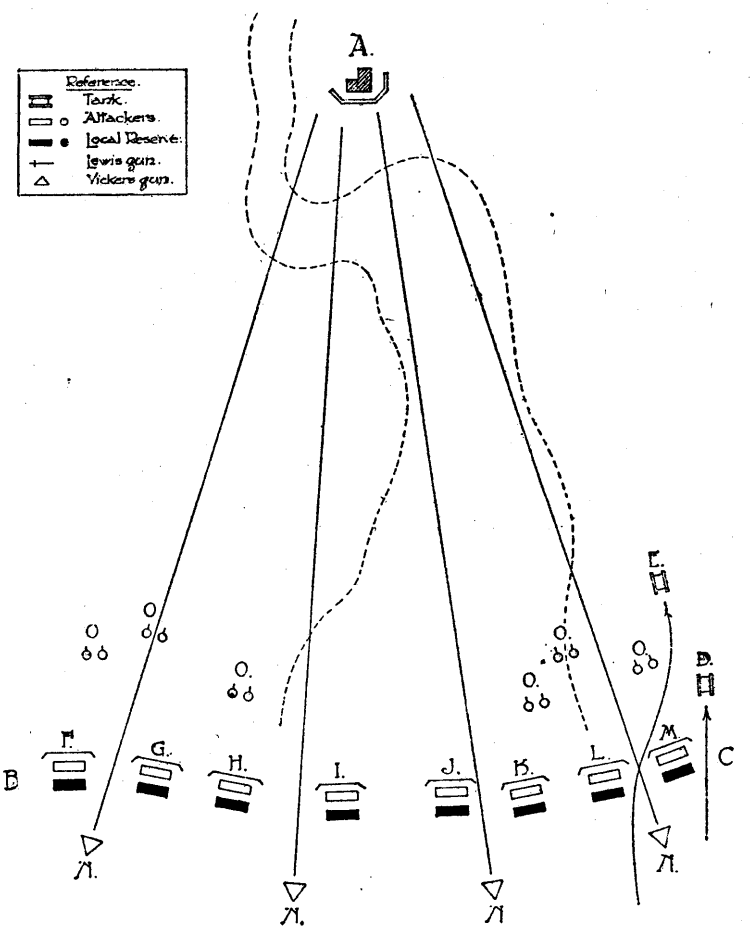
Reference.

A-B.	*Fire Trench.*
C-D.	*Support Trench.*
E.	*Advanced Tank having completed its work with F is moving forward to assist G.*
F.	*First Main Body Tank advancing along Fire trench will cross support trench when it meets C near N.*
G.	*Second Main Body Tank about to work down support trench to meet F near N.*
H.	*Trench cleaners following F. (bombers in Fire trench.)*
I.	*Trench cleaners following G. (bombers in Communication trench.*
J.	*Trench stops following F block trenches at O & P.*
K.	*Trench stops following G to block trenches at Q & R.*
L & M.	*Supports.*
N.	*Point near which E. F. & G. will meet.*
O.P.Q.R.	*Places where trenches will be blocked by J & K.*

The Formations shown are Diagrammatic only.

DIAGRAM 6

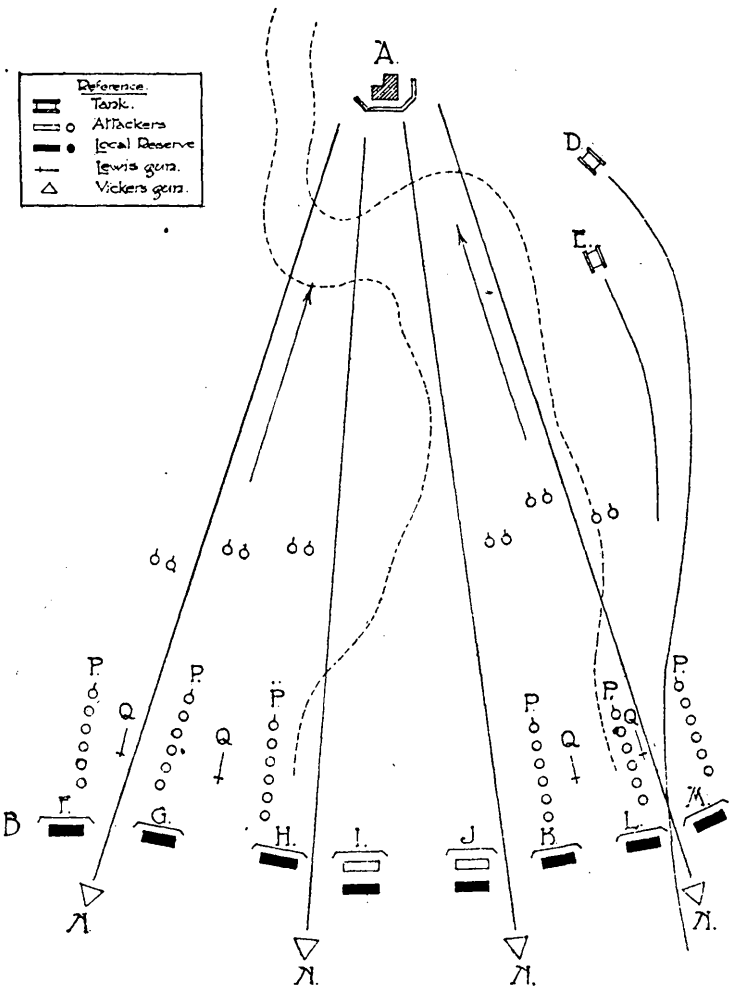
Stage 1.



The Formations shown are Diagrammatic only.

DIAGRAM 7.

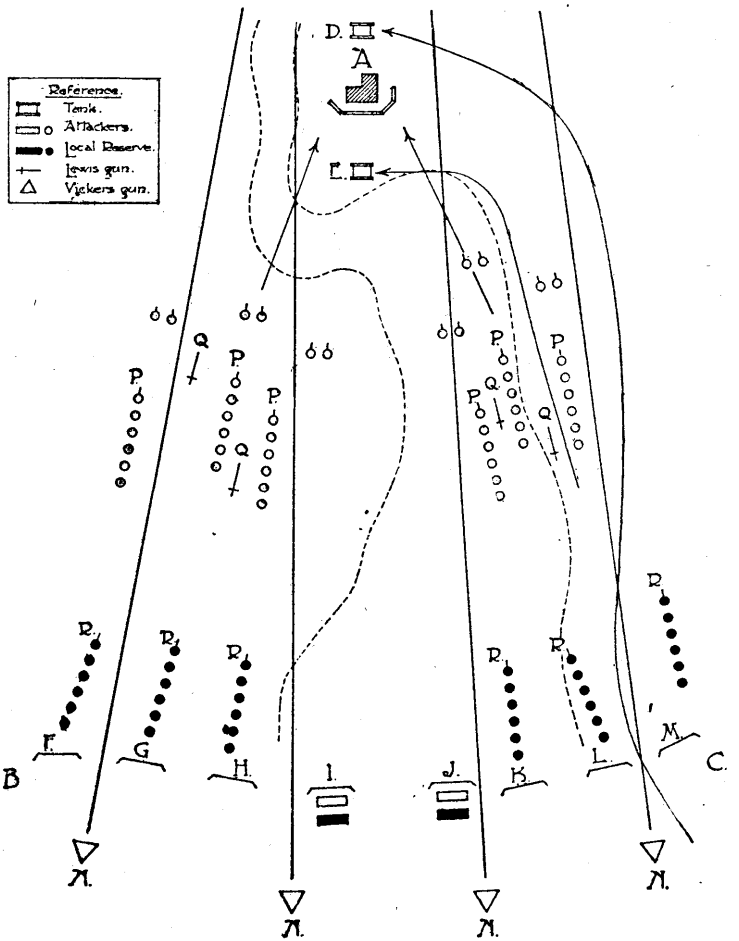
Stage 2.



The Formations shown are Diagrammatic only.

DIAGRAM 8.

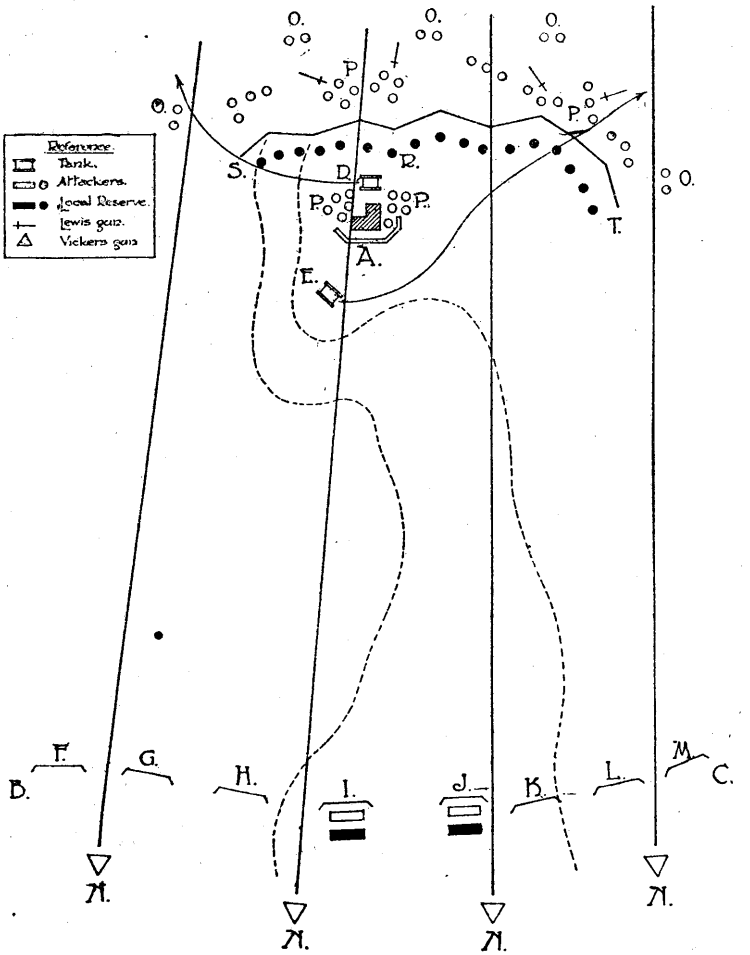
Stage 3.



The Formations shown are Diagrammatic only.

DIAGRAM 9.

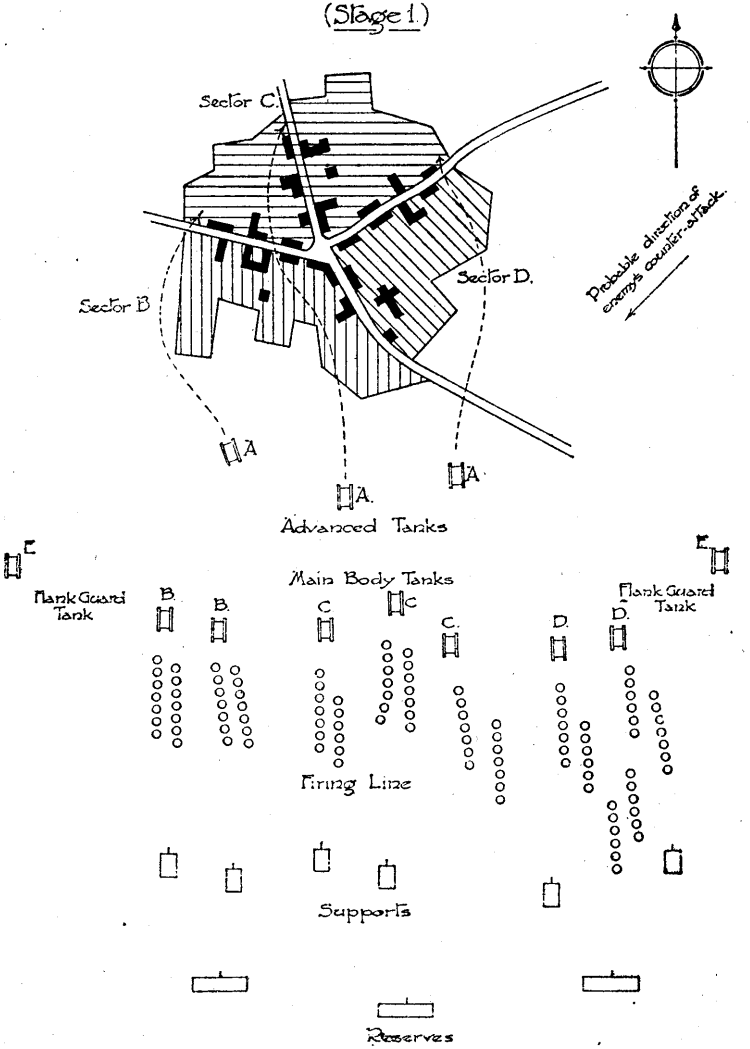
Stage 4.



The Formations shown are Diagrammatic only.

DIAGRAM 10.

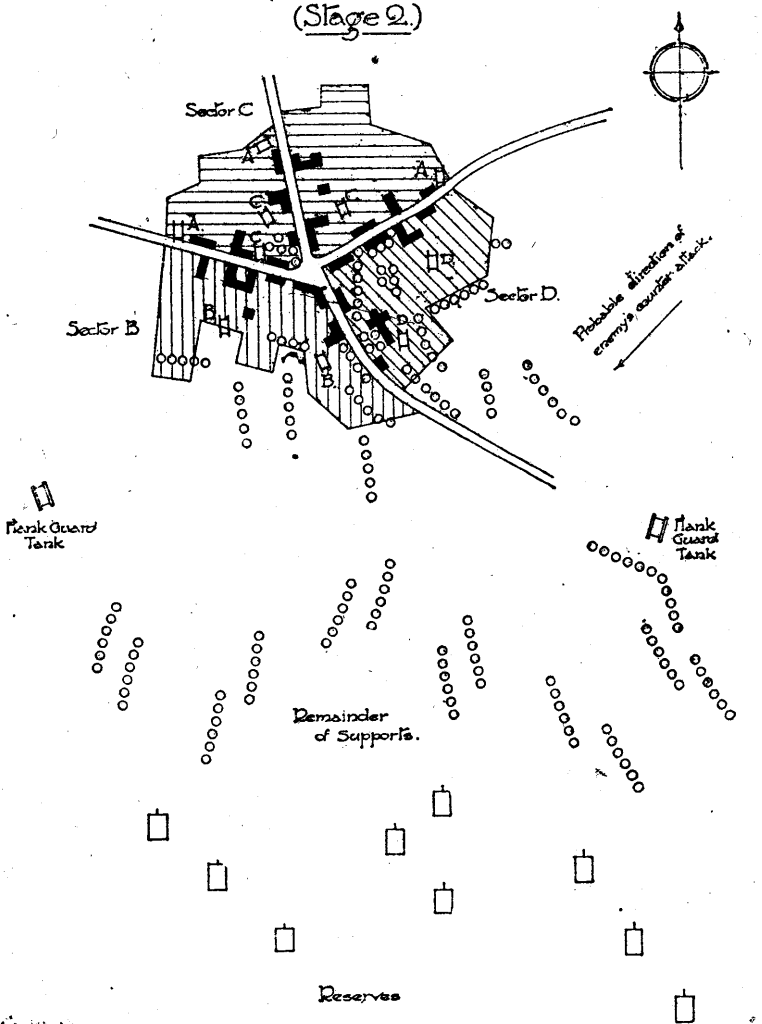
(Stage 1.)



The Formations shown are Diagrammatic only.

DIAGRAM 11.

(Stage 2.)



The formations shown are Diagrammatic only.