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The tactical handling of the Armoured Division and its components

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Part 2



The Armoured Regiment

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CHAPTER I

INTRODUCTION

1. The object of this pamphlet

1. The object of this pamphlet is to state the principles which govern the employment of an armoured regiment. It must be realized that a Military Training Pamphlet of this kind can only deal with a subject in broad outline, both because it must be applicable to armoured regiments operating in different theatres of war, and because any attempt to include detail may result in it being out of date before it has been issued.

2. It should be studied in conjunction with Military Training Pamphlet No. 41, Part I (shortly to be issued), "The Tactical Handling of Armoured Divisions," which deals with the employment of the formation of which an armoured regiment forms a part.

2. The organization and use of an armoured regiment

1. The armoured regiment's precise constitution will be found in the current War Establishment. This constitution may vary in detail from time to time and in different theatres of war.

For practical purposes it may be accepted that it consists of the following :—

- (a) The regimental headquarters, which contains the necessary personnel and vehicles for the execution of command and for its own protection. Regimental headquarters also contains eight anti-aircraft tanks which may be detached to squadrons.
- (b) The headquarter squadron consisting of a squadron headquarters, a reconnaissance troop of carriers and an intercommunication troop of scout cars, as well as of an administrative troop which enables administration to be carried out in the field.
- (c) Three armoured squadrons, each of which normally contains a headquarters equipped with four tanks and five troops each of three tanks. Each squadron includes close support tanks as well as the necessary unarmoured vehicles to enable it to carry out forward administration in the field.

2. The armoured fighting vehicles with which armoured regiments are equipped may vary and may consist of a combination of various marks of tanks. Generally speaking, however, the tanks of an armoured regiment are cruisers and are, therefore, dependent on their speed, manoeuvrability and firepower for their protection, rather than on the heaviness of their armour.

3. The armoured regiment forms part of the armoured brigade, which is the main striking portion of the armoured division. The armoured brigade not only contains a number of armoured regiments but a motor battalion. The interdependence of infantry, artillery and tanks has been repeatedly proved in action. The main tasks of the infantry brigade and of the remaining fighting units of the armoured division are, however, subsidiary to the attack of the armoured brigade and may be summarized as follows:—

- (a) To enable the armoured regiments to be launched into battle under favourable circumstances and on favourable ground.
- (b) To support the attack of the armoured brigade with all the resources of the division.
- (c) To clear the battlefield of the enemy and to secure it against counter-attack preliminary to the exploitation of the success gained, and to the continuance of the operations.

4. It is an accepted principle in armoured warfare that there should be concentration of all armoured forces at the decisive place and at the decisive time.

It will, therefore, generally be the case that the armoured regiment will be employed complete and on a narrow front, in conjunction with the rest of the armoured brigade, against an objective, the gaining of which is likely to produce decisive results.

The whole of the armoured brigade may be launched on a regimental, or even a squadron frontage, against an important objective. On such occasions the armoured regiment will act in accordance with a pre-arranged plan. Should circumstances arise during the battle which necessitate a departure from this plan it will normally operate in accordance with orders issued to its commanding officer by the brigade commander. In such circumstances, therefore, the brigadier will normally exercise general control regarding the employment of his units, leaving the actual tactical handling of each individual unit to its commanding officer.

5. Occasions will, however, occur when a single armoured regiment, and even a sub-unit of it—a squadron or a troop—

may be required to work either alone or in conjunction with troops of other arms. In such circumstances the sub-unit commander will possess much greater freedom of initiative and is likely to be operating over far wider areas.

6. It is obvious, therefore, that flexibility is essential for the successful operation of an armoured regiment and its sub-units. The term flexibility includes the ability to adjust rapidly the grouping of units and methods to meet changes in the situation.

7. Experience has shown that the development and employment of a simple battle drill proves invaluable in action, as it enables an unexpected situation to be met by almost instinctive action whereby each sub-unit and tank is operating as part of a team which understand the methods being employed by its other members.

3. Information

1. If success is to be achieved, the passing of information to every member of the unit, so that he is conversant with the situation and intention of his commander, is of vital importance.

2. Though speed of action is necessary in armoured warfare if results are to be achieved, this must not be secured at the expense of such a lack of knowledge as to what is going on as will handicap the action of junior commanders. Every one must be "in the outline picture," and every one must possess sufficient intelligence to fill in detail for himself.

3. Passing of information is a matter which requires systematic training. The development of initiative, which enables a junior commander to fill in the picture from his actual observation, can be obtained only by practice. No armoured regiment can be considered efficient for war unless the personnel are automatically kept in the outline picture, and equally automatically use their own powers of observation and their wits to operate without specific orders in an emergency as members of a well-trained team. Similarly it is of vital importance that information should come back with the greatest possible speed. No commander can control his unit unless he has the latest "stop press" information, and it is impossible to stress too strongly the responsibility of every commander, from a crew commander upwards, for ensuring that information reaches his superior. In particular "first" contact must invariably be reported.

4. Co-operation with other arms

All ranks of an armoured regiment must realize that personnel of other arms are equally members of their team. If this fact is fully realized and acted upon, genuine co-operation will be obtained, the results of which will become apparent in the success of any action, large or small. Inquisitiveness is not a vice, it is a duty. The British character is naturally not inquisitive enough and individual officers and soldiers tend to shirk inquiring into matters which they consider the business of other people. It is the business of everybody to win the war, and in particular to win the action in which they are engaged, and this can only be done by the close co-operation of all concerned. Officers, especially of the junior ranks, and men, must not shut themselves up in watertight compartments, as this forms a serious handicap which militates against the achievement of our object, the final and complete destruction of the enemy.

CHAPTER II

REGIMENTAL, SQUADRON AND TROOP FORMATIONS

5. General

1. It will be seen from the previous chapter that an armoured regiment and its component sub-units must be prepared to take part in two very different types of warfare :—

- (a) A mass attack on a narrow frontage. On such occasions the attack will have been pre-arranged down to the last possible detail, the whole armoured brigade is likely to be engaged and each armoured regiment will be required to carry out a role which has been precisely specified as regards its execution and method. Such an attack will be supported by all available resources, and should circumstances necessitate modifications during the battle itself, these will, to a great extent, be ordered by the brigade commander, who will throughout retain the maximum control of his units.
- (b) The other type of warfare in which armoured regiments or their sub-units are likely to be engaged is very different. Instead of a narrow frontage there will be comparatively little limit to the area which can be

utilized for manoeuvre. Squadrons or troops, though usually co-operating with other arms, will generally have a free hand as to the methods which they adopt to carry out their particular tasks.

2. Occasions may, however, occur when, after a mass attack has been launched on a narrow frontage, the progress of the battle will render centralized control only partially possible. In such circumstances opportunities will occur for the manoeuvre and tactical handling of armoured regiments or their sub-units which will conform to the type of warfare mentioned in para. 1 (b) above.

It is, therefore, necessary to standardize the types of formation which meet most satisfactorily general tactical requirements, and to use such formations as the basis of any battle drill.

6. Drill formations

1. Within the regiment the position of squadrons in relation to each other, and similarly in the squadron the position of troops in relation to each other, must be standardized if manoeuvre is to be carried out, as it must be, upon short RT orders.

2. In order that an armoured regiment may become handy and be capable of conforming rapidly to the orders of its commander, it is necessary that standard formations should be practised under peace conditions and thoroughly understood by all ranks. The practice of these formations is in reality a drill, which necessitates in its elementary stages exactitude as regards distances and intervals which may be likened to the old close order drill of horsed cavalry. In fact, the preliminary stage of practising the movement of an armoured regiment necessitates geometrical regularity. This regularity, however, will never be preserved in war, except during an attack at night, or under conditions of artificial night, when simplicity of formation is essential to avoid confusion and to maintain direction. Under such conditions the regularity of the formation will not prove of advantage to the enemy owing to the fact that his vision is obscured by actual or artificial darkness.

3. The most important drill formations for an armoured regiment are :—

- (a) Line ahead.
- (b) Line.
- (c) Column.
- (d) One up.
- (e) Two up.
- (f) Line of squadron columns.

7. Battle formations

1. Battle formations are based on drill formations but differ from them in that the "pattern" is invariably irregular, except when, as stated above, an attack is being delivered under conditions of night or artificial night.

This difference is necessary, as regularity would simplify the task of the enemy's anti-tank weapons.

2. In battle formations the regimental headquarters will normally be placed centrally in order to exercise control. It will not be in the position shown in the diagrams of drill formations in Appendix A. For example, a troop in the drill formation of "line" entails tanks being dressed and equidistant from each other. In battle, however, if a troop were to be in "line" this would not be the case, as each tank would be making the best use of the ground available, and endeavouring to render the task of the enemy's anti-tank guns as difficult as possible while bringing its own fire to bear to their front. In other words, "line" in battle will be a crooked and not a straight line, but will permit of all the tanks concerned bringing their fire to bear to their front.

8. Distances and intervals

1. Drill

(a) In drill distances and intervals will be as ordered by the commander, and will be reckoned in tank lengths (which will vary according to the type of tank). A normal tank length may be taken as being six yards. Distances and intervals between tanks will be measured in the clear between the tanks or other vehicles of the armoured regiment and will be as follows:—

Close	1 length	6 yards
Quarter	2 lengths	12 yards
Half	4 lengths	25 yards
Full	8 lengths	50 yards
Double	16 lengths	100 yards

The extent of ground available will be considered by the commander in deciding upon distances and intervals.

(b) In the case of troops distances and intervals will never be less than double those between tanks. In the case of squadrons an equivalent increase will be made.

(c) Diagrams illustrating various regimental, squadron and troop formations will be found in Appendix A.

2. Manœuvre

(a) In manœuvre or battle the commander will normally control the distances and intervals between sub-units. Distances and intervals within those sub-units will be the responsibility of the sub-unit commander. It is essential that the commander should give his subordinates ample space in which to manœuvre.

(b) As a very rough guide it may be assumed that in battle individual tanks are usually not less than 50 or more than 100 yards from their neighbour in the same sub-unit, that troops are generally approximately double these distances from the troops next to them, and that squadrons are approximately from 200 to 400 yards from each other.

9. Regimental formations

The chief regimental formations are as follows:—

(a) **LINE AHEAD.**—Line ahead, i.e. each tank or vehicle following one behind the other, is the simplest of all formations, and is normally used for road movement. In the case of the regiment it will seldom be used on other occasions, owing to the fact that it necessitates the regiment being on a minimum frontage and in the maximum depth. It may, however, be utilized purely for drill purposes in open country, but it is extremely improbable that it will ever be used by the regiment in battle.

(b) **LINE.**—Line, i.e. each vehicle facing to its front, is similarly a drill rather than a battle formation as far as the whole regiment is concerned as it presents the maximum frontage and the minimum depth.

Both "Line ahead" and "Line" may, however, be used effectively in battle by sub-units and especially by troops.

(c) **COLUMN.**—When a regiment is in column each squadron follows the other, regimental headquarters usually being in the lead when this formation is being used during drill, and behind the leading squadron when this formation is employed in action.

It is necessary here to point out that during manœuvre or battle the formation of each individual squadron will be in accordance with the orders issued by the squadron commander and that a similar principle applies to the troop. In action squadron and troop commanders will, within their own commands, adopt the formation most suitable both for making use of the character of the country and for engaging the enemy effectively.

(d) **ONE UP.**—This formation consists in having one squadron in advance and the remaining two approximately abreast in rear of it. It is normally used in battle for the penetration of an enemy position, since its arrow-head shape is peculiarly suitable for this purpose. Its employment permits of a narrow wedge being driven into the enemy's front, of this wedge being widened by the increased frontage of the rear squadrons, of the production of great fire power in every direction, and of control by the commander of his rear squadrons, the position of which he can re-adjust, if necessary, to meet any unforeseen contingency.

(e) **TWO UP.**—When this formation is used two squadrons lead and are followed by the third moving centrally. It is employed in battle when the frontage to be attacked is too wide for one squadron, and is in fact an inverted arrow-head.

When this formation is employed the majority of the fire will normally be directed to the front, although it permits of the enemy also being engaged by fire on both flanks. It is less handy than the "One up" formation, but can be effectively employed, especially when it is anticipated that the enemy opposition will not be very great.

During manœuvre the normal position of regimental headquarters in both "One up" and "Two up" will be behind the leading squadron or squadrons.

The exact location of the regimental commander will depend on circumstances. It is, however, absolutely essential that he should be well forward in a position from which he can obtain the best possible view of the situation and from which he can exercise his personal influence on the battle. This principle is invariably applicable in battle, or when battle is imminent, in every type of formation.

(f) **LINE OF SQUADRON COLUMNS.**—This formation is usually employed when forming up for inspection or for drill purposes, the intervals between squadrons being laid down by the regimental commander.

Occasions may, however, arise when it can be effectively employed in battle, since it possesses the advantage in that either the right or the left column (or, if necessary, both), can be diverted quickly to their respective flanks and can deploy without delay while the centre squadron continues on its original line of advance.

10. Squadron formations

1. Squadron formations are precisely similar in character to regimental formations. For example, squadron column consists of the squadron with each troop following behind the other.

The only difference worthy of note is that since the squadron may have five troops, it may frequently have "Three up," i.e. three troops moving ahead in line followed by two troops in reserve moving centrally. A "Four up" formation is similarly theoretically possible, though in fact it would be extremely unlikely to be used in battle.

2. The principle already stated, that the formation of each troop within the squadron is the responsibility of the troop commander under battle conditions, and is dependent upon the nature of the country and the dispositions of the enemy, remains unchanged. Unless specially ordered to adopt a specific formation, it is the duty of the commander to dispose his tanks in the most effective manner.

3. The position of squadron headquarters and of the squadron commander in battle are governed by the same principles as are stated in Sec. 9 (e) of this chapter with reference to the position of regimental headquarters and the regimental commander.

11. Troop formations

1. A troop of three tanks is the largest sub-unit that can conveniently be directly controlled by one commander. Even in the case of a troop it is essential that the whole troop should work as a "team," and that the two subordinate tanks should, in action, operate with the minimum orders. Much will depend in battle upon the initiative of the individual tank commander and on his acting in accordance with the intention of his troop leader without waiting for specific detailed orders.

2. Owing to the small number of tanks, troop formations, though similar in principle to those of the squadron and the regiment, are simpler. It is impossible to overstress the necessity for the highest standard of troop training and of tactical manœuvre, as the attainment of such a standard is absolutely vital if success is to be achieved.

3. The four troop formations are :—

Line ahead.

Line.

One up.

Two up.

(a) **LINE AHEAD.**—Although "Line ahead" will seldom be used during battle by a regiment, or even by a squadron, it will frequently be used by a troop. Not only does this formation enable a troop to make full use of ground and cover, and to pass through defiles, but it can also be most effectively used in action when moving on the enemy's flank or parallel to his line of advance. "Line ahead" then enables a troop to bring the full fire power of all its guns against the enemy, whether he is unarmoured and static, or armoured and mobile.

The small size of the troop also enables it to change very quickly from one formation to another when this may be necessary.

When a troop is moving in "Line ahead," this does not imply either that the line is straight, or that the tanks are equidistant from each other. In fact, it will frequently be the case, especially when passing through defiles, that the leading tank will be considerably in advance of the remaining two. It is impossible to lay down distances and intervals precisely. These are dependent on a variety of factors, amongst which the tactical situation and the nature of the country are the most important. Generally, when working tactically, tanks will not be more than 100 yards, or less than 50 yards, from their neighbour in the same troop.

Exceptions will, however, arise, especially in troop "Line ahead." One example of this is when a troop is moving through a defile. The leading tank is then really acting as a troop advanced guard, and may be considerably more than 100 yards in front of the tank following. The object to be borne in mind is the prevention of more than one tank being engaged by anti-tank weapons covering the defile, while at the same time ensuring that the second and third tanks are within supporting distance. When halted it may be advisable, if suitable cover is available, to close up the tanks of the troop to less than 50 yards.

The standard intervals and distances given, however, form a good practical guide during tactical operations, and variation from them will be due to exceptional circumstances, such as those mentioned above.

(b) **LINE.**—A troop in "Line" is able to direct all its fire to the front and, therefore, this troop formation possesses tactical significance. Its use, however, will be confined to occasions when there is reasonable security on both flanks so that tanks may not mask each other's fire if a flank attack is made against them, and so be destroyed in detail.

"Line" is a particularly valuable formation for a troop when its tanks are lying up in a hull down position concealed

from the enemy and awaiting his attack. In such circumstances other troops, armoured or unarmoured, will almost invariably afford protection on the flanks, and even if this is not so, the employment of a dismounted observer will always enable dispositions to be re-adjusted in time to meet any enemy attack.

(c) **ONE UP AND TWO UP.**—Both these formations represent a rough triangle and are generally the most practical methods of moving troops when little information is available regarding the enemy. Either formation permits of two out of the three tanks utilizing their fire power while the third tank retains its power of manoeuvre with a view to assisting the remainder of its troop. These formations also permit of a troop immediately changing its direction while still remaining a rough triangle.

The decision as to whether to move "One up" or "Two up" will usually depend upon the degree of likelihood of encountering the enemy and upon the frontage it is necessary to cover.

4. The position of the troop leader will vary in accordance with the circumstances. He himself must decide where he will most effectively be placed.

For example, in enclosed country it is obviously undesirable for him to lead and a "point" tank should always be ahead to cover him. In such a case, therefore, the troop leader will usually be in the second tank.

On the other hand there will be many occasions when it will be all important that the troop leader should be at the head of his troop in order that he may see the situation and, therefore, be able to issue, without delay, any orders which may be required to deal with it.

12. Conclusion

1. The types of regimental, squadron, and troop formations which are most likely to be used have been stated in this chapter. It only remains again to emphasize that the standardization of formations is necessary in order that manoeuvre may be quickly carried out and equally to stress that rigidity is fatal.

2. The order by a superior to adopt a formation ensures that the subordinate commander conforms to his superior's plan, but the "pattern" which the subordinate adopts within his own sub-unit will almost invariably be his direct responsibility. This "pattern" will almost invariably be irregular and will be dependent upon the tactical conditions prevailing and upon the character of the ground.

CHAPTER III

PRINCIPLES GOVERNING THE EMPLOYMENT OF
AN ARMoured REGIMENT AND OF ITS COM-
PONENT SUB-UNITS

13. General

1. The principles of armoured warfare are stated in Military Training Pamphlet No. 41, Part I, The Tactical Handling of Armoured Divisions, which should be studied regarding this subject.

2. The infinite diversity of conditions which may occur during armoured warfare, coupled with the fact that on any occasion more than one course of action is likely to be sound, renders any attempt to dogmatize regarding the methods to be employed undesirable. The handling of his unit or sub-unit by a commander will be successful in proportion to the standard of training which the unit or sub-unit has reached, to the correctness of the appreciation made by the commander, and to the speed and decision with which he carries his plan into effect.

3. Several of the basic principles of war are particularly applicable to armoured warfare. A study of these forms a guide regarding the employment of an armoured regiment, or of its sub-units. These principles are applicable to the handling of armoured troops, either in a set piece attack, when considerable control will be exercised by the brigade commander, or in the more open types of warfare in which squadrons and troops, as well as regiments, will be independently engaged, either as a result of an advanced guard action, of an encounter battle, or during the later stages of a set piece attack.

14. Co-operation

1. Reference has already been made to the vital necessity for co-operation with other troops. An armoured regiment is part of an armoured brigade which contains a motor battalion, and is itself part of an armoured division in which all arms are represented. Although occasions may occur when armoured units or sub-units are operating independently, and when the action will in some respects resemble a naval battle, it will far more frequently be the case that armour will be engaged in an action in which other arms, both British and enemy, are participating.

2. The necessity for co-operating fully with all arms during a battle must be appreciated. During fluid operations there may not be the opportunity for consulting with the commander of another arm, although this should be done whenever possible. Both tanks and other arms must realize the potentialities of their opposite numbers, and must be quick in observing the action which is being taken by the commander or commanders of adjacent troops and in adapting their own action to fit in with that being taken by the troops already engaged with the enemy.

Mutual understanding—without the necessity for discussion and consequent delay—is essential for the successful prosecution of fluid armoured warfare.

15. Concentration

1. The necessity for concentration is closely linked with the need for co-operation. In armoured warfare the final object will usually be the defeat of the enemy's armour, and even after this has been accomplished, sufficient armoured forces must remain available to exploit a tactical success into a strategic victory.

2. It is, therefore, a matter of the greatest importance that our armoured troops, whether operating against a static, or a mobile armoured enemy, should possess sufficient superiority in fire power to enable them to concentrate a heavier and more accurate volume of fire than their opponents. The concentration of such a superior volume of fire, in the production of which artillery and the Royal Air Force can often lend invaluable support, is likely to have a decisive effect, since the ability of the enemy to return fire rapidly diminishes as each of his tanks successively is knocked out. Concentration of fire is largely dependent upon the skilful tactical handling of the unit or sub-unit, whereby all available guns are brought to bear, and upon the standard of training in gunnery that enables the enemy armoured fighting vehicle to be hit immediately fire has been opened.

16. Surprise

1. Of the principles of war surprise is the most likely to achieve decisive results. Surprise itself is a major factor in enabling a concentration of fire—to which reference has already been made—to be produced effectively.

Every commander must keep in the forefront of his mind that his object is to surprise the enemy whilst preventing his own forces being surprised.

2. The ability of aircraft to carry out long-distance reconnaissance has rendered the achievement of surprise by any considerable force far more difficult than in previous wars. This fact emphasizes the necessity for a high standard of training in night movement, as approach marches, and even attacks, may often have to be carried out under cover of darkness or semi-darkness. Thorough training in concealment by day is essential. Tactical surprise can seldom be completely attained by any major force as the enemy's means of obtaining information will usually be sufficient to prevent the approach of any considerable number of tanks being unobserved.

3. Although, however, complete tactical surprise can seldom be achieved, careful planning, combined with flexibility, can result in the enemy being uncertain as to where the real blow will fall, and the mobility of armoured forces renders practicable the use of feints calculated to deceive the enemy, and the rapid concentration of armoured units for the decisive blow. It may be taken almost as an axiom that the enemy's attention must always be deflected towards an area other than that where the actual attack is to be developed.

4. Surprise is, of course, dependent upon the information received regarding the enemy. Much information is obtained from sources external to the armoured regiment, and its own reconnaissance will normally be more or less local. It is, therefore, necessary to build up within the regiment a system whereby all information is co-ordinated, and also whereby all vital information is passed immediately down to subordinate commanders. The ideal is that every member of the unit should be kept in the picture. This may not in practice be possible, but a thoroughly organized intelligence system within the regiment will produce most valuable results. It is of primary importance that initial contact should be immediately reported.

5. The use of ground is of the greatest importance in achieving surprise. The appearance of a single tank on a sky line will almost invariably indicate to the enemy not only that our own armoured forces are in the vicinity, but also the direction in which they are moving. Carelessness in this respect by a single tank commander is certain to cause the loss of surprise by our own armoured force, and is likely to permit the enemy so to manoeuvre his own troops that he is able to ambush our tanks, or at least to force them into an engagement at a disadvantage.

6. General practical rules that affect the use of ground are as follows:—

- (a) Whenever possible keep well below a crest line on the other side of which enemy troops may be.
- (b) When a crest line must be crossed the leading tanks on the whole of the frontage will be in line, so that, if hostile fire is encountered, the maximum number of the guns of our own tanks will be available for engaging the enemy.

7. The use of the reconnaissance troop of carriers, or a part of it, for reconnoitring the far side of the crest requires emphasis. Carriers are in themselves inconspicuous vehicles, and since they form part of infantry and other units as well as of an armoured regiment, do not, even if observed, give away the fact that our tanks are in the vicinity.

8. The reconnaissance troop of ten carriers must be highly trained to operate in the primary role of close reconnaissance on the regimental front or flanks, before contact with the enemy. It is normally directly under control of the regimental commander. Its organization is fluid and permits of a maximum of four patrols each equipped with wireless. When contact is imminent it is essential that the ground, over which the advance is to take place, be closely searched by the reconnaissance troop, to avoid the tanks coming within effective gun fire from concealed enemy positions, and to prevent them from running on to obstacles that they cannot cross. As a general rule the reconnaissance troop will move from feature to feature in advance of, or on the flanks of, the regiment it is protecting, and will operate from the main columns of the regiment at such a distance as will prevent their coming within range of effective enemy anti-tank fire.

17. Protection

1. Protection is the antithesis of surprise and is equally vital, since failure to observe this principle gives the enemy the opportunity of effecting surprise and thereby securing all its attendant advantages.

2. The protection of the armoured regiment, or of any part of it, is normally secured, in part, during an approach march or at rest, by the use of other arms. It must, however, be realized that any such protection by other arms is partial only and that basically every unit and sub-unit is responsible for its own local protection against attack, whether this be delivered from the ground or from the air.

This subject should receive the greatest attention during training. Any part of an armoured regiment must be prepared at all times to cope with any unexpected assault by enemy forces.

3. At halts on the line of march guard tanks must not only be detailed but suitably positioned to protect their comrades. Personnel of other tanks and unarmoured vehicles, even when on other duties such as maintenance, must be prepared to come into action at the shortest notice if the enemy should attack.

4. On the ground armoured attacks are not the sole form of offensive action against which precautions must be taken. Small bodies of enemy infantry can crawl along ditches or hedges, and can effect serious damage on unwary armoured troops.

5. An air attack may be made without warning. It is essential that when attacked from the air every weapon should be employed against the enemy. Experience has shown that when this is done, especially against low flying aircraft, casualties are likely to be inflicted upon the enemy which greatly minimize the effect and success of his attack. The attitude of mind when attacked from the air must be offensive, i.e. the determination at all cost to bring down the enemy aircraft and not the intention to seek cover and personal safety.

6. The procedure adopted for harbouring will be found in Chapter VI. The principle of carefully organized local protection and alertness remains unaltered. The contents of this section hitherto primarily apply to the approach to battle, or to occasions when the armoured regiment, or its component parts, are not in actual contact with the enemy.

7. During the battle itself protection is afforded by supporting arms, by skilful use of ground, and by the fire of the tanks themselves.

8. In particular, attention must be paid to the use of smoke. The infantry, as well as the artillery, of the armoured division possess the means of putting down a smoke screen which may afford valuable assistance to the tanks.

9. In addition, every regiment possesses its close support tanks in each squadron, which, during an attack, will usually be positioned ready to obscure the vision of any enemy anti-tank weapons, especially on an exposed flank. Close support

tanks, though operating under the orders of their squadron commander, must not hesitate in an emergency to use their own initiative as to when to come into action, and as to where to lay their smoke.

10. In addition every tank possesses means of firing smoke projectiles at short range. As a general rule reliance will be placed either on other arms, or on the close support tanks, for the production of a smoke screen which is required to obscure the vision of anticipated enemy anti-tank weapons, the projectiles of the remaining tanks being reserved for emergency and for self-protection.

11. Smoke will usually be required on one or both flanks, though a certain degree of smoke may be needed in front of the advance to cover the leading tanks. A distinction must be drawn between the thick smoke screen that completely obscures the vision of the enemy gunners, and the fog of smoke that produces an artificial twilight sufficient to hinder the effectiveness of the enemy anti-tank weapon, while permitting of the control and orderly movement of the attacking tanks operating against their objective.

CHAPTER IV

OPERATION ORDERS AND INSTRUCTIONS

18. General

1. It is necessary to ensure that all orders issued for any operation are issued in sufficient time to reach their recipients and to enable action to be taken, and also that they shall be so clearly expressed that there can be no doubt as to their meaning.

2. Since speed will almost always be a factor, orders will be as brief as is consistent with clarity.

(a) In some circumstances, especially when the situation is fluid, it may be advisable to issue operation instructions instead of orders.

Operation instructions will be used when the commander desires not to fetter his subordinates by precise orders, but to put them into a position in which they will be able to act on their own judgment, but in accordance with his intention. Such instructions will normally follow the same lines as operation orders though they may be couched in less formal terms.

(b) Operation orders on the other hand must contain everything which a recipient requires to know in order to carry out his task. The actual method of attaining the object will be given in sufficient detail to ensure co-ordination of effort, but will avoid interference with the initiative of subordinate commanders in all matters, which they with fuller knowledge of the local situation should arrange for themselves.

(c) It is absolutely essential that a system of issuing orders should be adopted which will ensure that every individual soldier knows the intention of the commander and such detail as to the method of attaining the object as may be necessary for him to carry out his own particular task. Time spent in ensuring that lower ranks understand their orders is never wasted.

The development of such a system within an armoured regiment (and in fact within the whole armoured division) is an essential part of training since unless a high standard is achieved, delays and misunderstandings will occur and will be prejudicial to success.

(d) General instructions regarding orders are contained in the Field Service Pocket Book.

The object of this chapter is to elaborate the matter on this subject contained in the Field Service Pocket Book, especially as regards the methods to be employed within an armoured regiment.

19. Methods of issuing orders and instructions

1. The following methods may be utilized in an armoured unit to issue orders or instructions:—

- (a) A written order.
- (b) A verbal order given to the actual subordinates concerned.
- (c) A verbal order sent by a liaison officer.
- (d) An order given by wireless, normally by RT.

2. The method of issuing orders and instructions will vary according to the circumstances. If an unexpected situation arises, and during the actual course of a battle when the unit is engaging the enemy, the normal way of issuing orders will be by RT, as this method is the speediest, and since, when contact has been made with the enemy, it is unlikely to provide him with any information which he can use advantageously.

3. Whenever time is available, the regimental commander will issue his orders verbally to an "order group" which

consists of his own staff, his squadron commanders and the commanders of any other troops which are either in support or under command, including the commander of the light aid detachment. The regimental medical officer will invariably attend the issue of such verbal orders.

4. When any individual who should attend the issue of orders is unable to be present a liaison officer will be despatched in order to inform the officer concerned of the orders issued, or, if more convenient, a copy of the written operation order may be sent. This may frequently be necessary for the purpose of communicating orders to the commanders of "A" and "B" echelons.

5. In principle, operation orders issued verbally should, whenever possible, be confirmed in writing, but this is not always practicable in the field. Written copies must invariably be prepared and kept for war diaries and reference.

20. Warning orders

Warning orders will be issued wherever possible in order to give troops time for rest, maintenance and organization. They also serve the purpose of keeping subordinates in the general picture and aware of the general intention of their commander. It is of the greatest importance that unnecessary "hanging about," which not only serves no useful purpose but is definitely deleterious, should be prevented, and the issue of a warning order is the best method of avoiding this and of keeping the whole regiment keen and ready for action.

21. Form and sequence

1. Orders, whether verbal or written, will be issued in the standard form and sequence as laid down in the Field Service Pocket Book. This is applicable to orders issued by any commander, including tank commanders.

The use of a recognized form and sequence is of the greatest importance because it not only makes the omission of any important point unlikely, but also enables the recipients to grasp its meaning more easily since they are familiar with the procedure.

Preceding and during operations commanders of all grades will be exposed to considerable mental and physical strain, and tired men will more easily grasp the contents of an order if the proper sequence with which they are well acquainted is invariably followed.

2. The following notes regarding the sequence of an operation order are included for convenience and in elaboration of the instructions contained in the Field Service Pocket Book :—

(a) **Information**

Regarding enemy.—Where are they ?

What are their strength and composition ?

What are they doing ?

What are they likely to do ?

NOTE.—it is important that information regarding our own troops is kept at the appropriate level. For example, the tank commander is not directly interested in what corps is on his flank, but it is vital that he should know what troop, squadron, platoon, or company is operating on his immediate right and left.

Regarding own troops

What are neighbouring troops, other than those under my command, doing to help directly in this operation, or how are they operating themselves on either flank ? What additional troops, if any, are under my command or in support of me ?

(b) **Intention**

Exactly what I intend to achieve.

(c) **Method**

A statement of the manner in which each part of my command will operate.

(The points to be included in the "Method" paragraph depend upon the operation, but reference will usually be made to the following :—

- i. Centre line.
- ii. Route or routes.
- iii. Flanks and boundaries.
- iv. Objective or objectives.
- v. Report lines.
- vi. Bounds.
- vii. Time of zero.
- viii. Tasks for sub-units under command.
- ix. Tasks allotted to units, etc., in support, including artillery (field and anti-tank), R.E. and R.A.F.

(d) **Administration**

Any orders regarding fuel, ammunition, food, etc., which affect the operation.

Location of regimental aid post.

(e) **Intercommunication**

Position and route of my headquarters.

Any special signals.

A written order will end with "acknowledge," the signature, rank and appointment of the officer signing the order, the method of issue, the time of issue and the distribution.

It is essential that any written order (or message) be legibly written. This rule applies not only to the main body of the order, but also to the signature.

22. Composition of order groups

1. **The regimental commander's order group.**—Reference has already been made to this subject, but in view of the importance of all the necessary officers being present at the verbal issue of orders, the following list of normal attendants may be useful :—

The regimental second-in-command.

The adjutant.

The intelligence officer.

The rear link officer.

The regimental medical officer.

The commander of each squadron of the regiment.

The commanders of "A" and "B" echelons (if available). Liaison officers.

The commander of any R.A. or R.H.A. detachment under command or in support.

The commander of any R.A. anti-tank detachment under command or in support.

The commander of any R.E. detachment under command or in support.

The commander of any infantry under command.

An R.A.F. representative (if available).

The regimental sergeant major will also normally attend the verbal issue of the regimental commander's orders.

2. **The squadron commander's order group.**—If it be possible, it is advisable that every officer and man in the fighting echelon of the squadron should attend the squadron commander's verbal issue of orders. In general this procedure is perfectly practicable, and it ensures that every individual of the squadron about to be engaged in the battle hears from the squadron commander himself exactly what he intends to do, and how he intends to do it. It also saves delay.

When only a limited number of individuals are available to attend the verbal issue of orders of the squadron commander, the following must invariably be present :—

- Second-in-command of the squadron.
- Squadron rear link officer.
- Each troop commander.
- The squadron serjeant major.

23. Use of talc-covered maps

1. The use of talc-covered maps, which can be marked by chinagraph pencils, greatly facilitates the speedy issue of orders. It will often be found advisable for the regimental commander's staff to mark the maps of members of the order group prior to the issue of orders by the regimental commander. If this system is practised considerable time will be saved, and some errors may be avoided.

2. It is the duty of every officer and N.C.O. attending a verbal issue of orders to ensure that he has the necessary maps correctly folded, the necessary pencils, and a notebook. Every effort will be made when orders are issued at night to find a building where lights can be safely used. Since, however, occasions will occur when it will be impracticable, it is essential that all individuals attending should be in possession of an electric torch.

24. Time of issue of orders

1. Orders must be issued in sufficient time to enable all the necessary preparations to be made for the execution of the operation.

2. On the other hand, care must be taken to avoid rousing individuals unnecessarily from sleep if the order can be issued at a later hour without prejudice to the success of the operation. For example, if a regimental commander receives his orders from his brigadier at midnight for a dawn attack, and the requisite preparations can be put into effect in one hour, it is incorrect for him to collect his order group immediately on his return to his unit as the sleep of the individuals concerned will be unnecessarily disturbed. In such circumstances he should only inform his adjutant of the time for reveille, of the hour at which he will issue his orders, and of the individuals who will be warned to attend. This procedure minimizes loss of sleep, which is essential during prolonged operations if efficiency is to be maintained.

CHAPTER V

THE TACTICAL HANDLING OF AN ARMoured REGIMENT AND ITS COMPONENTS

25. General

1. The main principles which govern the tactical handling of an armoured regiment were described in Chapter III. The object of this chapter is to consider the various conditions under which an armoured unit or sub-unit may be employed, and to provide a guide as to methods which may be suitably used.

2. Certain diagrams illustrating those methods are provided in Appendix B. For the sake of simplicity these diagrams for the most part deal with armoured troops only. It must, however, always be remembered that armoured troops in an armoured division form part of a team, and that the function of the remaining troops is equally important, and closely interlinked with the use of the tanks themselves. Any tendency which may arise to work in watertight compartments must be eliminated, and, in many cases, tasks shown as being performed by tanks in these diagrams can equally well, or even better, be performed by other troops in the division in co-operation with armoured action.

26. Types of action

1. Although the types of action in which an armoured regiment may be employed are very diverse, they may for the sake of convenience be classified as follows :—

- (a) The fluid action of tanks against tanks, when conditions to some extent resemble those of naval warfare, except in that the land, unlike the sea, is seldom an open flat surface.
- (b) The action of tanks against a static enemy.
- (c) The action of tanks against a combination of the above. This is likely to be the most usual type of action.
- (d) The action of tanks against enemy unarmoured columns on the move.
- (e) Defensive action, usually in conjunction with other arms.

2. The conditions in each type of action will vary greatly, and particularly in accordance with whether the fight is the result of encounter, or whether it is part of a set-piece attack. Encounter actions may be the result of finding parties of the enemy and of endeavouring to destroy them. In this case decision and the ability to appreciate rapidly an unexpected situation are primary essentials for success. Encounter actions may also follow a set-piece attack, which after its initial stages tends partially to disintegrate, mainly owing to the existence of unforeseen obstacles or opposition, and to the action of the enemy reserves.

3. The essential difference is that in the former case the appreciation, plan and its execution will mainly rest with the subordinate commander actually engaged, whereas in the latter case the brigade and regimental commanders will endeavour to regain control as early as possible, though phases will constantly occur even under such conditions when subordinate commanders must act on their own initiative without orders.

27. Hull down positions

1. The advantage of being stationary while the enemy is moving is obvious. It enables much more accurate fire to be developed, since fire from a stationary gun is always more accurate than from one on a moving platform.

It will, therefore, always be a commander's aim to force or entice the enemy to advance so that he can be engaged by guns of tanks which are wholly or partially concealed.

2. Since enemy tank sub-units usually avoid places such as small woods, which obviously provide opportunities for concealment, or at least carefully reconnoitre such areas before approaching within range, it will generally be necessary to make use of folds in the ground to obtain hull down positions.

This expression means that the main body of the tank and particularly the tracks and suspensions, which are its most vulnerable parts, are concealed from the enemy by the configuration of the ground, but that the top of the turret and the main armament are sufficiently high to permit of direct view, and of bringing fire to bear upon the enemy.

3. Tanks properly sited in hull down positions are difficult to spot and offer extremely difficult targets, which, even if hit, are protected by the armour of the turret.

4. The occupation of hull down positions so as to give the maximum protection while retaining the maximum view,

requires great practice. Frequently almost imperceptible folds in the ground provide excellent hull down positions. Too much attention cannot be paid to the training of all tank crews in this art, the mastery of which is likely to produce effective results.

28. Fluid action of tanks against tanks

1. When tanks are operating against tanks in country which is free of abnormal obstacles, there is a certain resemblance to the game of "Hide and seek," the prize being the overwhelming advantage of surprise.

2. Besides full use being made of ground and cover steps must invariably be taken to gain all available information regarding the enemy's movements. A considerable amount of such information will usually be available from higher sources as a result of air and armoured car reconnaissance, but such information must of necessity be somewhat vague and not completely up-to-date. It is seldom likely to be sufficient to provide by itself adequate guidance for action. The responsibility, therefore, for local reconnaissance rests with the sub-unit commander concerned. Frequently part of the reconnaissance troop, which forms a component of the armoured regiment, will be available for this purpose, and will be able to supplement such information as has been received from higher sources. Skilful co-operation between the squadrons of the armoured regiment and the reconnaissance troop will result in both gaining surprise and avoiding being surprised.

3. Every commander requires to develop his ability to read a map skilfully and to study the ground within sight. If when doing so he puts himself into the enemy's shoes, and considers what action he himself would have taken if he had been in his opponent's place, he is likely to avoid being surprised on many occasions.

Nevertheless whatever precautions are taken, and however skilful the handling of a sub-unit, occasions will occur when the enemy is encountered unexpectedly, and when the initial advantage will lie with him.

Means of countering any such initial advantage as well as of ensuring that if possible it is not gained must, therefore, be studied.

4. The following simple rules have been proved to be of value:—

(a) A troop, etc., will normally move in "Line ahead" formation when running parallel to and covered by a crest, and when there is a clear view on the opposite flank.

(b) When forced to cross a crest line a quick dismounted reconnaissance should be made if possible. If time or circumstances do not permit of this, the crest should be crossed in "Line" so that all guns can be brought to bear without delay against any enemy who may open fire.

(c) The positioning of any close support tanks which may be available so that they can give immediate and effective cover should be a constant pre-occupation of the commander. The position of such tanks in relation to the remainder of the armoured detachment will, of course, vary constantly in accordance with the configuration of the ground which renders one or other flank more dangerous.

The value of the means provided in each tank for producing smoke must be borne in mind by every commander. Though the amount of smoke which can be produced by tanks, other than close support tanks, is not great, it is sufficient to prove a valuable asset if it should be necessary to turn and make a temporary "get-away" before renewing the fight.

(d) If there is danger of an unexpected attack on either flank, the troop formations of "One up" or "Two up" should be adopted as these rough triangular formations permit of the fire of two-thirds of the troop always being brought to bear and of rapid manoeuvre in any direction.

5. The object during any tank *versus* tank attack remains constant. It is the production of the maximum concentration of fire on the enemy's tanks, while, if possible, remaining stationary and in hull down positions. The vital importance of hitting the target with the first shot fired cannot be overstressed, and every means of ensuring this result from the careful individual training of the gunner to the skilful handling of the tank sub-unit is a matter of the first importance. A sudden short halt will often enable the tank gunner to score a certain hit.

Constant reconnaissance, constant anticipation of the enemy's probable course of action, and constant adjustment of formation to meet any possible hostile attack, combined

with the ability to appreciate the situation quickly and to act accordingly, are the means by which success in fluid armoured warfare will be obtained.

29. The attack of tanks against a static enemy

1. When it has been anticipated that the enemy will be met in position, tanks will usually be operating in conjunction with other arms. Before discussing the method adopted in a set-piece attack, it is advisable to consider the occasions, which will frequently arise, when a detachment of an armoured regiment encounters a small body of the enemy in prepared or hastily extemporized positions.

The basis of all tank tactics against a stationary enemy lies in the principle of using one part of the force to pin the enemy with fire from covered or hull down positions, so that he is unable to move or change his dispositions, and to manoeuvre the remainder of the force round one or both flanks making use of ground and cover, in order to engage and destroy the enemy from an unexpected direction.

2. In order to simplify the issue of orders and control in action the following are to be considered the standard attack manoeuvres for an armoured force which unexpectedly encounters stationary enemy troops:—

The single (right or left) flank attack.

The double flank attack.

The frontal attack.

3. Diagrams illustrating the single and double flank attacks will be found in Appendix B.

(a) THE SINGLE FLANK ATTACK.—When the reconnaissance element attached to a squadron, or when the leading tank (or tanks) of the squadron, locate the enemy in position, one or more troops of the squadron immediately take up hull down positions from which they can engage the enemy by fire and so pin him to the ground and prevent his movement.

Meanwhile the squadron commander, having made a rapid reconnaissance and appreciation, orders a right or a left flank attack, the flank chosen being dependent on the position of any other located enemy post, and of the extent of cover afforded by the ground.

The major portion of the squadron then moves round on the selected flank while the close support tanks keep themselves in positions from which they can develop smoke cover to protect the flanking force if necessary. On reaching a suitable area on the enemy's flank or rear the flanking detachment engage the hostile post by fire and destroy it. The hostile

post silenced by fire from two directions can then be occupied by a detachment from the flanking tanks, the duty of this detachment being to mop up any personnel of the enemy who remain alive and to destroy their material. The remainder of the flanking detachment will take up positions where they can either deal with a hostile counter-attack, or cut off any enemy trying to escape from the post which has been assaulted.

Meanwhile the tanks, originally used to pin the enemy, being relieved from their task are ordered to move forward and to take up positions in order to cover the armoured troops engaged in the flanking movement and in mopping up the post. The squadron then reorganizes and continues its advance.

Control throughout the action is easily exercised by the squadron commander by means of RT and he will position himself where he can best control the situation. As a general rule he will move with the flanking detachment, as this is responsible for the actual destruction of the hostile post, and as unforeseen contingencies may arise during the flanking manoeuvre, which may necessitate his adjusting his plan and making new dispositions. In settling his own position he must reconcile the desirability of exercising direct control over his close support tanks and of personally controlling the actual attack. Diagrams of a single flank attack carried out by a squadron are given in Appendix B, Diagrams No. 1 (a), (b), etc.

The example given above is that of a single flank attack carried out by a squadron, but the principle remains the same whatever the size of the armoured force used.

(b) THE DOUBLE FLANK ATTACK.—This form of attack is similar in principle to the single flank attack in that part of the armoured force is used to pin the enemy while the remainder make outflanking movements using both flanks, and thereby ensuring that the enemy is engaged from three directions.

A double flank attack involves dispersion and consequent greater difficulty of control, as well as the possibility that either horn of the enveloping armoured force may encounter opposition, to deal with which they have insufficient reserves. A double flank attack is, therefore, most likely to be used when the country on both flanks is open, and when a quick pincer movement is likely to achieve rapid and decisive results.

A diagram of a double flank attack carried out by a squadron is given in Appendix B, Diagrams No. 2, (a), (b), etc.

(c) THE FRONTAL ATTACK.—Except as part of a set-piece operation such as described in sub-paragraph (d) below, the frontal attack will only be used in an emergency when an unexpected situation arises which can only be effectively dealt with by means of a "charge." It is unlikely to be used by any sub-unit larger than a troop in an encounter action. Even then its use is to be deprecated as it is likely to result in heavy casualties.

The fact must, however, be faced that occasions may occur, when the enemy is for some reason or other unexpectedly encountered at short range, and when successful results are more likely to be achieved by immediate fire and shock action in a frontal attack than by any attempted manoeuvre which involves a delay enabling the opposing troops to use their fire power with devastating effect.

(d) THE SET-PIECE ATTACK.—Generally when a set-piece attack is launched by an armoured division, all troops in the division will be engaged in one co-ordinated plan, the execution of which will be directly controlled by the divisional commander.

The general principles which cover the carrying out of a divisional set-piece attack will be found in Military Training Pamphlet No. 41, Part I, The Tactical Handling of Armoured Divisions. It remains, therefore, to consider the part played by an individual armoured regiment in such an attack, as well as the general methods which would be adopted if, as may sometimes happen, an armoured regiment is called upon to carry out a set-piece attack independently of the remainder of the armoured brigade, but supported by other arms from within the division.

(i) *The handling of an armoured regiment in the divisional set-piece attack.*

The armoured division may attack with one or two armoured regiments up or more probably in column. The general intention will be to ensure that effective penetration of the enemy position is attained, and this will usually necessitate operating on a comparatively narrow frontage, which will later be widened by the action of the infantry of the division, or by subsequent operations by the armoured regiments.

In any case an attack of this nature will be supported by the maximum fire from artillery, air and small arms. By day smoke will be extensively used, especially on the flanks of the attack, and every device will be employed to deceive the enemy as to the precise area against which the assault is to be launched.

An armoured regiment engaged will almost invariably be in depth, and probably the regimental formation will be that

of "Column," "One up" or "Two up." The regimental commander will be well forward and probably near the leading squadron commander so that he can observe the course of events, and exercise his personal influence on the battle by the employment of his remaining squadrons.

The frontage will obviously vary in accordance with the circumstances, but it may be accepted that the frontage for each individual regiment will not exceed 1,000 yards.

The leading squadron will probably be in "Three up" or "Two up" formation and will certainly be in two waves. A similar formation is also likely to prove suitable for the succeeding squadrons.

No hard and fast rule can, however, be laid down, as much depends on the anticipated strength of the resistance, on the nature of the country, and upon whether the regiment is the leading, the second or the third unit of the armoured brigade's attack in depth. The third unit of the armoured brigade will usually be in reserve. Squadron column may often be a suitable formation for the movement of the reserve regiment.

Similarly troop formations will vary and will frequently alter during the course of the action. The rough triangular formation of "One up" or "Two up" will usually be found the most effective troop formation.

The distances and intervals between tanks of the same troop are unlikely to exceed 50 yards in a set-piece attack, the distances between troops and squadrons being increased proportionately.

There will almost always be one, and often two, exposed flanks in an attack of this nature, and although artillery will be laying smoke to cover such exposed flanks, the close support tanks of the unit will move in suitable positions so that they can thicken this smoke screen, fill any gaps in it, and mask any unexpected enemy fire.

(ii) *The independent set-piece attack of an armoured regimental group*

If an armoured regiment is given an independent task which involves a set-piece attack, it will almost invariably be supported by other arms from the division. These arms may be in support of, or under the command of, the regimental commander and will include artillery (25-pdr.), anti-tank guns, infantry and engineers.

The method of carrying out such an attack is identical in principle with the set-piece attack of the armoured division.

All possible fire support, including smoke, must be provided both from the ground and, if possible, from the air. All commanders must realize the vital importance of air support and must ask for it whenever it is required. Infantry must

follow the attacking tanks as closely as possible both to mop up and to extend the width of the belt of penetration. Mutually supporting strong points must be organized to secure the captured ground and the armoured regiment must rally as quickly as possible and make ready for renewed action, whether this should take the form of assisting the consolidating infantry in dealing with any enemy counter attack, or of engaging in fresh operations to exploit the success already gained.

The vital necessity for the fullest co-operation of all arms must always be borne in mind, and the initial tank attack must not be launched until adequate time has been allotted to the supporting arms to make the essential preparations. Diversions and ruses must be employed in order that the enemy may be left in doubt as to the nature, strength and direction of the thrust, until the main attack has actually begun.

Diagram 3 of Appendix B gives possible dispositions for an armoured regiment in a set-piece attack. It must be fully recognized that numerous variations of these dispositions are practicable, and may be more suited to the actual situation.

30. Action of tanks against a combination of enemy armour and of unarmoured positions

1. As already stated, armoured troops will almost invariably be required to operate against a combination of enemy tanks and enemy unarmoured troops during the course of any considerable action.

2. The object of a commander of a mixed force as described above will almost invariably be to entice the attacking tanks into a position where they will become exposed to the fire of his ground anti-tank weapons, and then, once they have suffered casualties, to utilize his own armour to complete the victory.

The Germans are particularly skilful in this type of action, and are equally wary of exposing their armour to the effective fire of our concentrated anti-tank weapons in ground positions.

It follows that any withdrawal of enemy tanks which cannot be accounted for by any obvious cause such as heavy casualties, or the fact that they have been outmanoeuvred, must be regarded with extreme suspicion, as it is probable that the enemy is endeavouring to lure our own armoured forces into a position where they will come under effective anti-tank fire from the ground.

3. The answer to the problem lies in the first place in being extremely wary before committing our armour, in the

second place in ensuring careful close reconnaissance, for which purpose the reconnaissance troop of the armoured regiment is provided, and in the third place in avoiding an advance in the direction in which the enemy tanks are retiring.

The enemy ground positions cannot be moved without disclosing the fact, and during movement their unarmoured troops are vulnerable. A manoeuvre wide to the flank of the enemy armour, which should, of course, be covered by reconnaissance, is likely to prove successful in turning the tables and forcing the enemy to fight at a disadvantage.

It is hardly necessary to stress further the fact that close co-operation similar to that employed between the German armoured and unarmoured troops is part of the battle technique of any armoured formation.

4. The main strength of the tanks of an armoured division lies in their great mobility. Except on the occasions when a set piece attack is necessary, full scope must be given for tanks to employ their power of manoeuvre without being exposed to effective fire from ground anti-tank weapons.

Both sides will, of course, endeavour to employ the armoured and unarmoured troops of their armoured divisions in co-operation, and the overwhelming necessity for such co-operation being complete and for the whole force to work as a team, cannot be overstressed.

31. The action of tanks against enemy unarmoured columns on the move

Opportunities may occur when tanks are able to engage enemy unarmoured columns on the move. Such occasions may be of two types:—

When the enemy has not been defeated.

When the enemy has been defeated.

(a) *When the enemy has not been defeated.*—When an armoured detachment encounters an enemy column on the move the advantage definitely rests with the tanks, and full use must be made of the opportunity offered.

While it is impossible to dogmatize regarding the methods to be adopted, it is obvious that the enemy, who will probably have some anti-tank protection ready for immediate action, must either halt and take up defensive positions, or continue the advance endeavouring to picket his flank with anti-tank weapons as he goes. This latter operation is a difficult task to carry out, especially in enclosed country. In either case the opportunity for harrying the enemy with fire from suitable positions must be seized, and every endeavour be made both

to bring him to a standstill and to summon reinforcements so that his destruction may be accomplished.

The large proportion of "soft" transport which is essential to an armoured division forms an ideal target for opposing armour, especially as the tanks themselves are dependent for supplies, as well as for support, upon units carried in unarmoured or partly armoured vehicles. A blow struck against enemy "soft" columns on the move is, therefore, likely to have considerable effect on the course of operations, whether these be minor or major.

(b) *When the enemy has been defeated.*—When the enemy has been defeated, the main object of the armoured forces of his opponent will be to get behind the retreating troops and to cut their line of retirement, while unarmoured forces following up the withdrawing enemy complete their destruction.

It follows, therefore, that in the case of an enemy withdrawal armoured regiments will usually be directed towards the enemy's rear and they must avoid being diverted from their main object, namely, blocking the paths of withdrawal of the enemy. Local resistance should be by-passed when possible, and the destruction of enemy transport and disorganized troops must be left to our pursuing infantry. If the enemy's line of withdrawal is to be severed, time must not be expended on destroying enemy troops who have ceased to resist, or material, however tempting a bait this may offer.

The object of an enemy commander, when withdrawing, will be to conserve his armour, and the object of the commander of the pursuing force will be to ensure that the hostile armour is cut off and finally entirely eliminated. This task of cutting off the enemy can only be effectively achieved by tanks, and to its accomplishment their whole efforts must be directed. The greatest difficulty in carrying out any operation of this kind is the speed of withdrawal of the enemy armour, which is facilitated by the fact that they are falling back over country in which adequate supplies of ammunition, fuel and food are available.

When the enemy withdraws after being defeated in the field, he will, unless completely demoralized, have destroyed his dumps and will cover his retirement by the use of anti-tank weapons. Adequate fuel, ammunition and food must move forward with the tanks ordered to cut the enemy's line of retirement, and every use must be made of any captured supplies which facilitate our own advance.

The necessity for pressing on unceasingly and relentlessly to carry out the task of cutting the enemy's lines of retreat must be constantly in the forefront of the mind of every

commander of an armoured unit, as by the accomplishment of this task the enemy forces, cut off from their base, will be utterly destroyed.

32. Defensive action

1. The object of defence will always be linked with the intention of ultimately reassuming the offensive. Armoured units, the role of which is fundamentally offensive, will, therefore, normally be held in reserve during defensive action.

Generally, divisions and not armoured divisions will be used for defensive purposes, and any local tank counter-attacks made against the enemy who have penetrated our positions will be made by tank battalions and not by armoured regiments.

2. Armoured regiments will almost invariably be used as complete units from which detachments will not be made.

Armoured divisions will normally be held in reserve and not employed in the occupation of defended areas, but will be used to counter any attempt by the enemy armoured units at envelopment.

Under such circumstances action will be taken in accordance with the principles laid down in Military Training Pamphlet No. 41, Part I, The Tactical Handling of Armoured Divisions, and as indicated in the preceding sections in this present chapter.

3. Occasions may, however, arise when circumstances necessitate the employment of armoured regiments for the defence of an area.

On such occasions the normal principles applicable to defence will be followed, namely, that mutually supporting defended areas, of which the framework consists of artillery and anti-tank guns, will form the basis of the defensive system which will be covered by reconnaissance troops and outposts.

The role of the armoured regiments will then be :—

- (a) To occupy hull down positions in rear of and between the defended areas prepared to deal with any enemy penetration, primarily by fire, or, if occasion should demand, by counter-attack.
- (b) To be prepared, either from such hull down positions or from other locations in rear, to operate against any enemy forces endeavouring to carry out an enveloping movement.

In either case the armoured troops engaged will make full use of the pivots of manœuvre afforded by the defended areas,

and will, therefore, secure the advantage of close co-operation with other arms of the division.

Before any defensive action, opportunities will almost invariably occur when reconnaissance of the country on which it is expected that the armoured regiments will operate, can be carried out. Such reconnaissance is of the greatest importance and, as far as possible, every subordinate commander should be so well acquainted with the lie of the land that he can use it to the best advantage during any battle which may develop.

4. A higher commander is unlikely to use an armoured division, and still less an armoured regiment, for counter-attack, unless the time has arrived when he has decided to pass from the defensive to the offensive.

If such a counter-attack should be ordered, a direct frontal attack will not be delivered, since such an attack will then be subject to the disadvantages of operating in the direction expected by and on the ground chosen by the enemy.

Our armoured regiments should in such circumstances be employed in a surprise assault against some weak point in the enemy's defences, especially against his flanks and rear, in order to halt the enemy and disorganize him before a withdrawal is made to pre-selected and suitable ground as a preliminary to the renewal of the operations. It is essential that in such circumstances the regiment or regiments concerned should completely disengage and avoid becoming involved in a running fight.

5. Armoured regiments should not be employed to counter-attack in order to enable a withdrawal to be effected by other formations, not only because such a counter-attack is certain to be costly, but also because armour remains the core of offensive power, and must be retained intact for decisive use at the appropriate time.

6. The onus of covering a withdrawal, therefore, falls primarily on other divisions, and on other arms, and especially upon the anti-tank guns of the artillery. If, however, sheer necessity compels a commander to use an armoured regiment to cover a withdrawal it will be employed for counter-attack against the enemy's flank or rear in the manner indicated in para. 4, above.

7. The armoured division, and in particular the armoured brigade with its component units, should be withdrawn early to the area which has been selected by the higher commander for re-engaging the enemy and renewing the battle.

CHAPTER VI

PROTECTION

33. General

1. Although the armoured regiment during an approach march will usually be partially protected by an advanced guard, and by other forward and flanking troops, and although when it is at rest, the responsibility for the general protection of the area will usually devolve on other arms, it is responsible for its own local protection under all conditions.

2. Self protection must be against both ground and air attack, and imposes considerable strain upon the personnel involved.

3. Reference has already been made to this subject in Sec. 17, and the contents of this chapter are designed to enlarge upon the points previously stressed.

34. Local protection during the approach march

1. An armoured regiment, whether advancing in roaded or unroaded country, will usually have one, if not two, flanks exposed. This fact necessitates the utmost state of readiness on the part of the personnel of the regiment. Guns of tanks must be trained on any wood or area likely to afford opportunities for the enemy to effect an ambush. Crews of unarmoured vehicles must be prepared to come immediately into action if attacked, and every available weapon must be ready and must be used should hostile aircraft endeavour to engage the column.

2. An armoured regiment is provided with a reconnaissance troop of carriers, and the skilful employment of this troop will do much to prevent the enemy effecting a surprise ground attack. It is not possible to lay down any hard and fast rules regarding the method of employing this troop, but it may be accepted in principle that as a general rule one or more patrols will be moving at the head of the regiment and will examine any suspicious localities which the enemy might use for an ambush, while the remaining patrols will operate on the exposed flank or flanks utilizing in roaded country parallel by-ways, and in open country working at such a distance from the main columns as will prevent their being engaged by enemy anti-tank weapons.

It will be obvious that the reconnaissance troop will require not only to be active, but to have reached a very high standard of training, especially as regards the carrying out of protective patrols.

If this standard has been attained, and the necessary precautions are taken by both the armoured and unarmoured troops moving in the main columns, there should be little fear of an enemy surprise attack being successful against an armoured regiment on the move.

35. Local protection during temporary halts

Reference has already been made to this subject in Sec. 17, and it is not necessary here to do more than to add a few points to those already mentioned. Amongst these is the importance of everyone in the column being informed as quickly as possible as to the duration of the halt, since the dispositions which will be taken up, and the organization of maintenance, will depend largely upon the time during which the column will remain stationary.

Before contact has been made with the enemy, halts of twenty minutes at regular two-hourly intervals are normal, but an infinity of circumstances, ranging from enemy opposition to a mechanical breakdown, may cause unexpected delays.

2. While it is the duty of the regimental commander to notify to all the troops under his command the duration of any halt and the circumstances causing it, this may not always be practicable, and it therefore devolves upon every individual in charge of a vehicle, and especially upon officers and N.C.Os., to discover the facts for themselves and to take action accordingly without further instructions.

3. An everlasting inquisitiveness should form part of the mental "make-up" of all ranks of the Royal Armoured Corps—and indeed of all troops—and this inquisitiveness should be applied just as much to finding out the cause of any particular delay as to gaining information regarding the tactical situation and the general progress of events.

4. During a temporary halt not only will the necessary precautions such as guard tanks, sentries, traffic control and concealment from air, be observed, but the commanders of detachments of the reconnaissance troop must be informed as to the reason for, and the length of, the halt, and must take up positions from which they can observe and, if necessary, prevent—or at least give warning of—any enemy attempt at an attack from the flanks.

36. Local protection during prolonged halts

1. During a prolonged halt, either by day or by night, the regiment will usually "harbour." By this term is meant the siting of vehicles suitably disposed both to ensure protection and to permit of the maximum number of personnel obtaining the maximum rest.

2. Troops in harbour are responsible not only for their own protection, but also for being able to deploy rapidly should enemy action render such action necessary.

3. It will seldom be the case that ideal harbours are available for an armoured regiment, and still less for a whole armoured brigade. The ideal harbour affords concealment from the air, makes use of natural features for partial protection, admits of economy in the use of guard tanks, and allows of free and quick deployment in any direction. Though a picture might be drawn showing such a harbour, it will seldom, if ever, be available in actual fact.

4. An armoured regiment will often be required to move into harbour after dark, and separate squadron harbours may have to be formed, as no suitable area large enough to accommodate the whole regiment will exist. Every endeavour, however, will be made to allocate one area to each armoured regiment to facilitate administration and issue of orders.

Similarly it will frequently be the case that no cover exists, and resort will have to be made to a close harbour or series of harbours in open country.

37. Harboursing procedure

1. **General.**—Harboursing quickly and efficiently is entirely a matter of practice, and a well-trained regiment will, even under the most adverse conditions, quickly make adequate dispositions for defence, arrangements for maintenance, food and sanitation, and get down to rest. This is largely effected by means of a drill.

Towards the end of the day the divisional commander will allot harbour areas for the various components of the division, utilizing as far as possible his unarmoured troops for the protection of the divisional harbour area. Similarly the commander of the armoured brigade will allot to each regiment its own harbour area.

The staff captain will normally act as brigade harbour-master and will deal with any queries or difficulties regarding regimental harbour areas which may be referred to him by regimental harbour-masters.

On occasions the fighting echelon will be first to enter

harbour areas and "A" echelon will move forward to join it. This will usually be the case during an approach march when no contact has been made with the enemy.

On other occasions, especially after the fighting echelon has been in action, it will be usual for "A" echelon to arrive at the harbour first and the fighting echelon to withdraw into it later.

"B" echelon will join the remainder in the harbour area only when ordered to do so. This echelon will normally be under brigade or divisional control, and will be some considerable distance farther back.

2. **Preliminary procedure.**—The regimental commander on being informed of his harbour will:—

- (a) Fix a point, usually three to five miles from the entrance to the harbour area, where squadrons will rendezvous, and from which they will be guided into harbour in the right order.
- (b) Detail the regimental harbour-master. The regimental harbour-master may be the commander or second-in-command of headquarter squadron, or the regimental second-in-command, according to their availability.
- (c) Order each squadron and "A" echelon to detail its own harbour party.
- (d) Despatch the regimental harbour-master to reconnoitre the harbour area, and give a rendezvous where squadron harbour parties will join. This will probably be near the anticipated entrance to the harbour.

When available the squadron serjeant-major of headquarter squadron will accompany the harbour-master, and will act as assistant harbour-master for his own squadron, as well as render general assistance during the initial stages of reconnaissance. (Each squadron will supply a squadron harbour-master, who will usually be the squadron second-in-command, and be assisted by the squadron serjeant-major. Both the regimental and the squadron harbour-masters will be accompanied by a small party of other ranks, the whole forming the "harbour party.")

3. **Reconnaissance of harbour.**—The regimental harbour-master, immediately on arriving at the harbour area, will make a rapid reconnaissance of it and will detail its area to each squadron taking into account the spaces required by squadron "A" echelon vehicles which preferably should be

located within their respective squadron areas. He will ensure that the officer commanding "A" echelon is informed of the rendezvous where he will be met and guided to the harbour.

When he has finished organizing the harbour area he will at once order his assistant harbour-masters to send guides to the rendezvous to bring in the squadrons and "A" echelon on their arrival.

The regimental headquarters should, wherever possible, be in the centre of the harbour area, and if a building is available where lights can be used and a black-out extemporized, this will considerably facilitate the issue of orders.

Central arteries forming roads through the harbour must be arranged in either a regimental or a squadron harbour, except when the harbours are in very open country. It will also be advisable to organize a "stragglers point" to avoid vehicles endeavouring to enter the harbour after it has been fully organized, and so giving rise to confusion and possible firing by guard tanks.

The regimental harbour-master will inform squadron harbour-masters of their areas of responsibility for protection. These may be subsequently adjusted if necessary.

4. Routine in harbour

(a) It is essential in harbour that both officers and other ranks sleep in the place which has been allotted to them so that they can always be found instantly. The regimental commander and his staff will normally sleep at their regimental headquarters. A similar procedure will be followed in the case of squadron commanders. Troop commanders and vehicle crews will normally sleep alongside their tanks or vehicles.

If squadrons are in separate harbours squadron commanders will sleep at their own squadron headquarters.

(b) Vehicles will be led into harbour by the squadron guides and will maintain the highest standard of track discipline.

(c) Once any sub-unit of the regiment is in harbour, the first duty of its commander is to find out which is the frontage for which he is responsible, and to post the necessary guard tanks. This may be done by detailing one whole troop to act as guard troop for the night, or by detailing individual tanks for specific duties. Camouflage must be carried out and anti-aircraft defence organized. The responsibility for the co-ordination of all defensive measures rests on the regimental commander in the case of a regimental harbour, and upon the squadron commander in the case of the squadron harbour, or in the absence of these officers upon their senior subordinates.

(d) The next duty is to ensure that expended ammunition is replaced and that refuelling and maintenance are immediately carried out. This will be followed by food and rest. The rapid and orderly execution of harbour procedure will enable the maximum amount of rest to be afforded to crews.

(e) Decontamination both of personnel and vehicles will, when necessary, be carried out in accordance with the instructions contained in the manuals on this subject.

(f) Care must be taken to leave a small armed party throughout the period of harbouring at the stragglers' post, and special arrangements must be made for the refuelling and the delivery of supplies to this post.

(g) The use of regimental luminous signs greatly assists rapid and efficient harbouring. In particular the location and marking of regimental headquarters are of vital importance. D.Rs. or other individuals must be able to find their way immediately even in complete darkness, to the C.O.'s headquarters.

(h) Every harbour will be patrolled by one or more duty officers throughout the night, whose location, in case of alarm, will be the harbour headquarters.

(i) In the event of an alarm, tank crews will man their vehicles, and the crews of other vehicles will stand to at the alert by the side of their vehicles. As a general rule the reconnaissance and intercommunication troops will form a central reserve near the regimental commander. No breaking harbour will occur, even if attacked, except by orders of the regimental commander.

5. Alternative harbours.—Alternative harbours will always be reconnoitred in case of necessity. Normally, if harbouring is carried out by day, a move will be made to the alternative harbour under cover of darkness. Similarly, when harbouring in the open, a move may be made before daylight to an alternative harbour where cover from air is available.

6. Conclusion.—Exactly the same principles apply whether the harbour is in open or close country. In close country use will be made of natural cover, which will provide concealment both from air and ground, and of natural obstacles which will interfere with any attempt by the enemy to attack. In open country, where cover and obstacles are practically non-existent, a perimeter, usually of a triangular or square shape, will be formed, each face being allotted to a sub-unit for the purpose of defence. An area selected for such a close harbour

must not be commanded from outside, or afford easy access to the enemy. Adequate exits, as well as a good field of fire on to any approach, are essential for any harbour. In addition to guard tanks or guard troops, patrolling must be carried out by day, and listening posts provided at night. Economy of personnel must be observed in order to ensure rest for the maximum number without loss of security. In view of the small number of personnel available this can only be accomplished by efficient use of available resources and by careful training.

As will be seen from the above sub-paragraphs, harbouring is a difficult and complicated procedure, and can only be carried out efficiently as a result of constant practice.

It must never be forgotten that armoured troops are exposed to great physical strain, and require all the rest they can possibly get. It is equally important to remember that when harboured at night they are particularly vulnerable to attacks by small parties composed of bold and enterprising enemy. The importance of the most careful study and practice of this subject is therefore obvious.

CHAPTER VII

ADMINISTRATION

38. General

1. The successful conduct of operations is as much dependent upon sound administration as on tactical skill or upon the fighting qualities of the troops. This is particularly the case in armoured warfare. Napoleon's dictum that a "soldier marches on his stomach" is not in fact precisely true. Time and again the courage and endurance of troops have enabled them to continue the battle in spite of extreme hunger and thirst. A tank or other mechanical vehicle on the other hand is an inanimate thing which will not move one single inch when its fuel has been exhausted, nor can a tank fight when its ammunition has been expended.

2. The maintenance of any armoured force is a difficult matter, and in an armoured regiment necessitates the provision of unarmoured vehicles far exceeding in numbers those of fighting vehicles. Speed of movement and wide radius of action also impose a great strain on administration, especially as the unarmoured vehicles, which must be utilized to keep the fighting vehicles supplied, will usually have to travel

unescorted over long distances, and during such journeys are very vulnerable to enemy attack, either from the air or from the ground.

3. The difficulties of administration are accentuated in desert warfare, where no local resources exist, where the going is often difficult and where water, as well as other supplies, must usually be brought up from the rear. The vital importance of the system of administration within an armoured regiment being on a sound basis is therefore apparent.

39. Organization

The precise organization of the administrative portion of an armoured regiment will vary, not only in accordance with the individual opinion of the commanding officer, but also in accordance with the circumstances.

For example, on one occasion it may be desirable for ammunition, fuel and fitters' lorries to move with the tank squadrons themselves, while on another such a course might be extremely unwise, and all such vehicles should move under the commander of "A" echelon.

40. Echelons

1. An armoured regiment will normally contain three echelons :—

"F" echelon.—Fundamentally composed of the armoured fighting vehicles of the regiment.

"A" echelon.—Composed of non-fighting transport carrying personnel, ammunition and other supplies which are likely to be required at short notice by the fighting echelon.

"B" echelon.—Composed of non-fighting vehicles carrying personnel and stores which are unlikely to be required at short notice by the fighting portion of the unit.

"F" echelon comes directly under the command of the regimental commander. An officer is appointed to command "A" echelon. He will often be either the commander or the second-in-command of the headquarter squadron. Similarly an officer is appointed to command "B" echelon, who may be the quartermaster.

The "A" echelon of the armoured regiments of an armoured brigade may move either under regimental or under brigade control according to the circumstances.

"B" echelons of armoured regiments of an armoured brigade will seldom move under regimental control, but under

the control of the armoured brigade, or even of the armoured division.

2. A considerable quantity of fuel and ammunition will always be carried in "A" echelon, and often a proportion of the vehicles carrying these stores will move with the fighting echelon.

The regimental fitters will be well forward, some probably travelling with the fighting echelon and the remainder with "A" echelon.

A proportion of the transport vehicles of the regimental signal troop will be required to travel well forward with the fighting or the "A" echelon.

3. In every regiment the normal sub-divisions into echelons and the order of march should form part of the regimental standing orders. Variations necessitated by circumstances can then easily be made with the minimum delay.

Standing orders of the regiment should also contain details of exactly which individuals travel in each vehicle, and every man should be well acquainted not only with the vehicle in which he is travelling, but also with its normal place in the column.

41. Refuelling

1. Since the ideal is that every vehicle should always be full of fuel, every suitable opportunity will be taken for refuelling, especially when contact with the enemy is anticipated.

Similarly after any considerable action one of the first duties of the regimental commander is to arrange for the replenishment of fuel as well as of ammunition.

2. In order that replacement of ammunition and refuelling can be carried out in the minimum time, this must be practised as a drill.

As a rough guide it can be laid down that the amount of fuel and ammunition that should be carried in "A" echelon vehicles should be sufficient for one day's fighting.

42. Maintenance

1. No armoured unit can operate for any length of time unless its vehicles are subject to methodical daily maintenance. Pamphlets regarding the system of maintenance for each type of tank have been issued, or are in preparation for

distribution, to all concerned under the heading of the name of the tank followed by "crew maintenance".

The parade maintenance system for all armoured fighting vehicles has been accepted, and is now in operation throughout the Royal Armoured Corps.

2. Under normal operational conditions a period of at least 45 minutes is required to complete first maintenance parade, i.e. at the beginning of the day, and two hours for last maintenance parade, i.e. before rest. In addition to this, if the tactical situation permits, one day each week will be set aside for carrying out weekly maintenance tasks laid down for each type of vehicle. Although circumstances may occur which necessitate breaking the principles given above, it is the duty of every commander to adhere to the practice of regular and methodical maintenance, unless the conditions of battle render this impossible.

3. It is therefore essential that every commander, when making his plan, shall make adequate provision for the time required for essential maintenance without interfering with the proper rest of the crews.

4. Due consideration is not always paid to the fact that the majority of maintenance tasks can only be carried out in daylight. Armoured regiments will not be kept at short notice unless this is absolutely necessary. If a regiment is given adequate notice of a move (one or two hours) the task of carrying out maintenance duties will be greatly facilitated.

43. Protection

1. Reference has already been made to the difficulty of protecting unarmoured transport on the move, and it will seldom be possible to provide any escort from the fighting echelon for this purpose.

2. During long halts, especially at night, "A" echelon will normally be in the harbour area, except when its vehicles are engaged in refilling from the R.A.S.C. Personnel of "A" echelon will probably have had opportunities of resting during the day. They must therefore be prepared, when not engaged in administrative duties, to undertake such tasks as manning listening posts, etc.

3. "B" echelon will usually be under divisional or brigade

control and will be farther from the scene of action and so less exposed to attack. The personnel of "B" echelon, who will also usually be less exposed to physical strain, are responsible for ensuring that their own local protection is adequate at all times.

4. Every man in both "A" and "B" echelons is armed and is just as much a fighting soldier as a member of a tank crew, and must be fully trained for war. Occasions will occur when troops transported in the unarmoured vehicles of an armoured regiment will not only have to fight, but to engage the enemy under disadvantageous circumstances. Much, therefore, depends upon the standard of training, upon the determination and upon the initiative of these members of the regiment.

44. Supply procedure

The normal procedure for supply to and from "F" and "A" echelons is as follows :—

- (a) During the day, or at the earliest possible moment after the conclusion of the day's operations, as much of the fuel and ammunition carried by "A" echelon as is required by "F" echelon must be delivered to it. This will be done on the orders of the regimental commander if the "A" echelon is under regimental control or by the brigade commander if the echelon is brigaded.
- (b) Before nightfall the armoured brigade company of the R.A.S.C. will receive information from brigade, collected from returns supplied by each armoured regiment, as to the amount of supplies of various kinds required by each unit. This information will normally be supplied to brigade on returns outlined in Sec. 48 and made at specified hours. The tactical situation will govern the time by which such returns must be rendered.

The general principle is that they should be completed as early in the latter half of the day as is possible. This may necessitate the regimental commander making an intelligent anticipation of his requirements, but the need for reasonable accuracy must be stressed. A breakdown of supply arrangements may occur if the returns bear little or no relation to actual requirements.

- (c) It is the responsibility of the armoured brigade to notify regiments of the location of the appropriate fuel, ammunition and supply points. The regimental "A" echelon vehicles will proceed to these points usually during the night and at specified times. There they will meet the R.A.S.C. lorries which will have brought forward the necessary replacements of supplies.
- (d) "A" echelon vehicles will then return to their regimental harbour ready filled for the next day's operations.

45. Cooking

1. Since facilities do not exist in an armoured regiment for centralized cooking in the field, it is necessary that very careful arrangements should be made to ensure both that every man of the unit receives his ration, and is capable of preparing his food.

2. Food for armoured regiments is usually made up in packs of various sizes, and generally each tank crew forms its own little group for messing. The distribution and preparation of rations to the crews of unarmoured vehicles, etc., is somewhat more complicated and requires considerable organization to ensure that every man is fed, and that the crews of adjacent vehicles cook and feed together. All ranks must be able to use the tank cooker.

3. Generally arrangements can be made previous to an operation for the issue of three days' rations to all personnel. It must, however, be accepted as a fact that difficulties in rationing an armoured regiment during action are considerable. All ranks must therefore learn to "live hard" and to fend for themselves.

4. Details of field service rations and in particular the A.F.V. ration pack will be found in Appendix I of Royal Army Service Corps Training, Pamphlet No. 7, Part I, 1942.

46. Repair and recovery

1. It is obviously of vital importance that vehicles which suffer from mechanical breakdown should be repaired with the minimum of delay. The primary responsibility, not only for maintenance, but also for minor repairs, rests on the vehicle crews.

2. It is the normal practice for the squadron fitters' lorries to accompany "F" echelon during an approach march and to revert to "A" echelon when the tactical situation necessitates this, or when "F" echelon is obliged to move across country impassable for heavy wheeled vehicles.

3. Repairs beyond the capacity of the crews or unit fitters will be dealt with by the regimental light aid detachment of the R.E.M.E., which will usually travel well forward in "A" echelon. Repairs beyond the capacity of the light aid detachment will be reported to the armoured brigade in order that the necessary action may be taken by the R.E.M.E.

4. Vehicle casualties will be classified as follows:—

"X."—A casualty which is due to a temporary stoppage only, and which can be repaired by the crew of the vehicle with its equipment without outside assistance; for example, a vehicle out of action due to a puncture or a tank with a broken track pin.

"Y."—A casualty which requires assistance from technical personnel but is likely to be repairable in first echelon (by unit or L.A.D.), or in second echelon (by R.E.M.E. units), provided the general situation does not alter between the time of reporting and the time of recovery of the casualty.

"Z."—A casualty which is beyond the capacity of first or second echelons because it requires more repair than can be carried out in those echelons or because the necessary repair cannot be carried out on account of difficulty in reaching the casualty, lack of time or other causes.

This classification simplifies the task of reporting, both by the sub-units concerned and by the regimental commander, whose duty it is to ensure that the brigade is constantly informed of the situation as regards vehicle casualties.

5. The crew of a broken down vehicle will remain with it. If the repair is beyond their capacity they will as far as possible prepare the vehicle for attention by unit fitters or the light aid detachment.

6. The crew will be responsible for defensive action if attacked. A broken down tank is capable of offering prolonged and often successful resistance to the enemy if boldly manned. Such resistance will always hamper the enemy and

sometimes prove of vital importance. A tank crew will continue to fight from within the tank as long as possible and when this is impossible from the ground.

47. Medical

1. The medical officer of an armoured regiment will, during the approach march and the opening stages of battle, normally travel at regimental headquarters in an armoured vehicle. Regimental transport is available for the use of the medical officer and may, in action, be supplemented from field ambulance resources.

2. There is no difference in principle regarding the collection and treatment of wounded between an armoured and an unarmoured unit.

It is particularly important that the medical officer of an armoured regiment should be kept fully informed regarding the situation and the intentions of the regimental commander so that he may be able to make the best possible medical arrangements.

3. The ultimate responsibility for the collection of casualties, etc., of course, rests on the regimental commander. The regimental medical officer will act as an adviser to the commanding officer of the regiment and, bearing in mind the fact that during action the regimental commander will be more than fully occupied, will not hesitate to use his own initiative regarding medical arrangements. He will, however, take steps to ensure that such arrangements as he has thus made are communicated to his commanding officer as quickly as possible.

48. Returns

A list of returns which are required from squadrons and regiments in the field must form part of armoured brigade and regimental standing orders. These will include:—

- A daily strength state.
- Personnel casualty returns.
- Vehicle casualty returns.
- Fuel and ration returns.
- Ammunition returns.

CHAPTER VIII

INTERCOMMUNICATION

49. General

1. No operation can be effectively controlled by a commander, unless he receives the necessary information both regarding the enemy and his own troops, and unless he is able to pass such information rapidly to his subordinates, together with his orders and instructions.

A statement of such an obvious fact may seem unworthy of mention, but experience has repeatedly shown that commanders in the field have been seriously hampered by the lack of information which was known to their subordinates, who, however, had failed to transmit it owing to the multifarious duties and the excitements which arise when the enemy is encountered.

2. Various methods of communicating information exist, of which the chief is wireless.

It would, in fact, not be an exaggeration to say that modern fast-moving warfare could not be effectively carried out without the use of wireless.

Detailed instructions regarding the use of wireless in armoured formations and units are contained in the appropriate signal training manuals. For this reason only general and non-technical instructions on this subject are included in this chapter.

3. While realizing the vital importance of wireless, it is essential that its limitations should be recognized, and that other methods of communication must be continuously practised.

The limitations of wireless may be classified as follows:—

- (a) The use of wireless discloses to the enemy, who will be employing listening sets, the presence of our own troops.
- (b) Though every precaution may be ordered to ensure that the use of codes, etc., wireless messages or RT conversations are incomprehensible to the enemy, such codes can be completely compromised by the indiscretion of a single individual.

- (c) The use of codes, etc., also imposes a certain delay in conversion to clear, and such delay often occurs at a time when the regimental and other headquarters are more than fully occupied.

While wireless is extremely reliable and the skill of operators high, inevitable breakdowns or distortions will occur through circumstances which are not under control.

It will, therefore, be obvious that overdependence on wireless communications must be avoided and other methods practised, especially as wireless silence will usually be ordered during an approach march until contact has been made with the enemy.

4. Code signs will always be used in referring to units and formations. They will *not* be employed in conjunction with clear addresses.

5. Map references concerning our own troops must be disguised.

6. Coded map references must not be related to geographical positions, to the position of enemy troops, or to clear names.

7. Conversations should be so worded that they are understood by those conversing who have a previous knowledge of the situation and mutual understanding, and so that they are not intelligible to the enemy.

50. Means of communication other than wireless

1. Apart from wireless the most common means of communication used by a regimental commander, or by the commanders of higher formations, will be by a messenger who may be a D.R. or more likely a liaison officer. Messengers may be used to confirm or elaborate information and instructions already given on the wireless.

The message thus forwarded may be written or verbal. If sent by an other rank it will probably be written, if sent by an officer it is likely to be verbal. It is obvious that, especially during action, messengers, whether officers or other ranks, may become casualties or captured. It follows that written messages should not be of a nature which will give immediate help to the enemy. Marked maps should not be used unless absolutely necessary, and if used a means of immediate obliteration should be prepared.

Liaison officers must not only be highly trained in carrying a verbal message, but must be acquainted with the situation which has necessitated the sending of the message. In other

words, they must be authorized representatives of the commander and must understand what is in his mind and be capable of interpreting it to his subordinates.

2. Message forms when used must be :—

- (a) clearly written ;
- (b) properly completed ;
- (c) timed ;
- (d) signed legibly in the proper place.

51. Clarity of messages

Occasions occur when a message, whether it is sent on the wireless, in writing, or verbally, is not clear. It is absolutely essential that every officer should be capable of giving orders and messages in a clear and unmistakable manner. This requires considerable practice. An officer before he speaks on the wireless should have made his mind up as to exactly what he is going to say, and how he is going to say it. His code signs should be known to him and his map references encoded, when necessary, before he begins to speak. Nothing is more confusing on the wireless than long pauses or corrections, both of which can be avoided by practice.

Similarly, an ambiguous message, or one which is untimed, is a hindrance rather than a help when sent in writing, while clarity, combined with brevity, is essential in a verbal message which must, however, contain all relevant matter.

52. Security

1. The basic principle regarding security is not to send any message which can be of use to the enemy. Care must therefore be taken regarding any message which affects future events. On the other hand, far greater latitude is permissible, particularly within a regiment, when actually in action with the enemy, since any intercepted message is unlikely to prove of any practical value to him.

The distinction is one which can only be solved in each individual circumstance by the use of common sense. Normal codes, etc., should be employed when reference is made to our own units and dispositions, but in battle occasions do arise when it is not only advisable, but necessary, to send messages in clear. This, however, should never be done without a full realization of the responsibility assumed by the officer who despatches a message in clear.

2. It must be realized that, especially in the case of messages which affect future events, the enemy will obtain his information mainly by the gradual piecing together of a small number

of details each of which may seem in itself unimportant. Amongst common lapses which occur in wireless messages are the following :—

- (a) Disclosing location or identity. This frequently is the result of including in the same message references in code regarding ourselves and references in clear regarding the enemy with whom we are in contact.
- (b) The use of nick-names of individuals, instead of the use of code signs.
- (c) Reference to ranks or arms of the service. For example, a message which includes the words " the C.O." or " the squadron commander " is a gross breach of security. The authorized code names will always be used.
- (d) Administrative messages are particularly likely to break security. Not only may they give away the strength of a unit, or the shortness or otherwise of fuel and ammunition, but they may give a clue to the intention of the commander and to the dispositions of his unit.
- (e) Impending operations usually result in a great increase in wireless traffic, and such an increase is in itself an indication to the enemy that developments are taking place.
- (f) Errors in procedure and mannerisms are a definite clue to the individual sending the message, and enemy intercepting sets can often pick up the mannerisms of a particular officer.

3. Wireless traffic must be reduced to the minimum. Unnecessary sending of messages greatly assists the enemy, not only in discovering the direction of our movement, but also is an indication of our activity. In particular, tuning calls and " operators' chat " must be reduced to the minimum. The tank commander is responsible for ensuring that wireless and RT messages sent are confined to essentials. Officer to officer or tank commander to tank commander conversations must be the rule, and all officers must know how to work their sets.

53. Regimental signal officer

This officer is the adviser to his commanding officer on all matters connected with intercommunication within his unit. He will travel in an armoured vehicle at regimental headquarters, except when temporarily absent for a specific purpose such as investigating a breakdown of communications.

54. Administrative traffic

The amount of operational traffic passing on the brigade net may be so great as to necessitate the extemporization of a separate brigade net for administrative messages. This administrative net would include brigade headquarters, each regimental headquarters, and usually the commander of the regimental "A" echelon, when brigaded.

55. The regimental net

The regimental commander must consider the relative advantages of netting the whole regiment on one frequency or of employing separate squadron nets. In the close order attack the former will enable the commander to manoeuvre his regiment as a team with the minimum of delay, but a high standard of wireless discipline is required if this method is to be successful. It is recommended that when the single net system is in use squadron sets should have their allotted squadron frequency already set up on the flick device to permit of quick change to individual squadron nets if required.

56. Conclusion

The success or failure of an operation will largely depend upon the degree of efficiency of intercommunication within the regiment. Carelessness on the part of one individual, or failure to observe the simple rules enumerated in this chapter, may result, not only in loss of life, but in tactical disaster.

APPENDIX A

DIAGRAMS ILLUSTRATING VARIOUS REGIMENTAL, SQUADRON, AND TROOP FORMATIONS

FOREWORD

The diagrams in this appendix illustrate the various regimental drill formations normally used, as well as the normal manoeuvre formations of a squadron and of a troop. It will be realized that the battle formations of a regiment differ from the drill formations illustrated.

As stated in Sec. 8, para. 1, distances and intervals in drill will be ordered by the commander.

The diagrams in Appendix A are as follows :—

Diagram 1.—The regiment in "Line."

„ 2.—The regiment in "Column."

„ 3.—The regiment in "One up."

„ 4.—The regiment in "Two up."

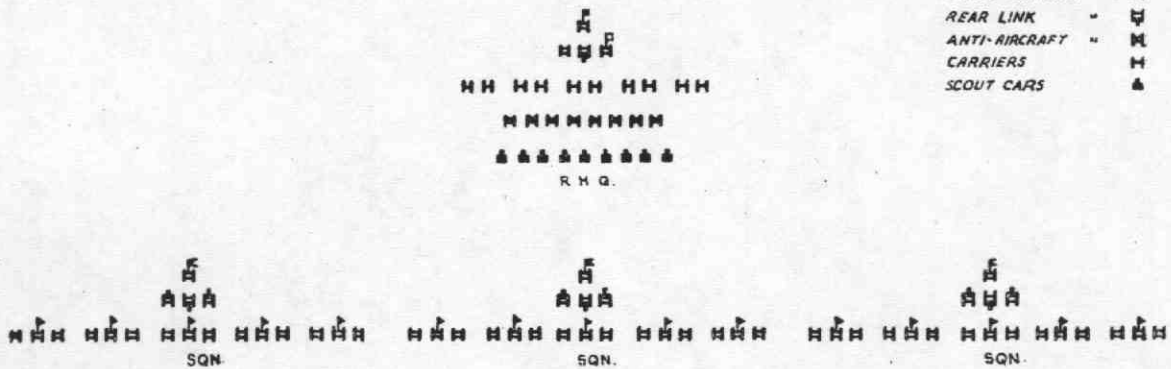
„ 5.—The regiment in "Line of squadron columns."

„ 6.—Squadron "Two up" (manoeuvre).
Squadron "Three up" (manoeuvre).

„ 7.—Troop formations (manoeuvre).

APPENDIX "A". DIAGRAM 1.

LINE.

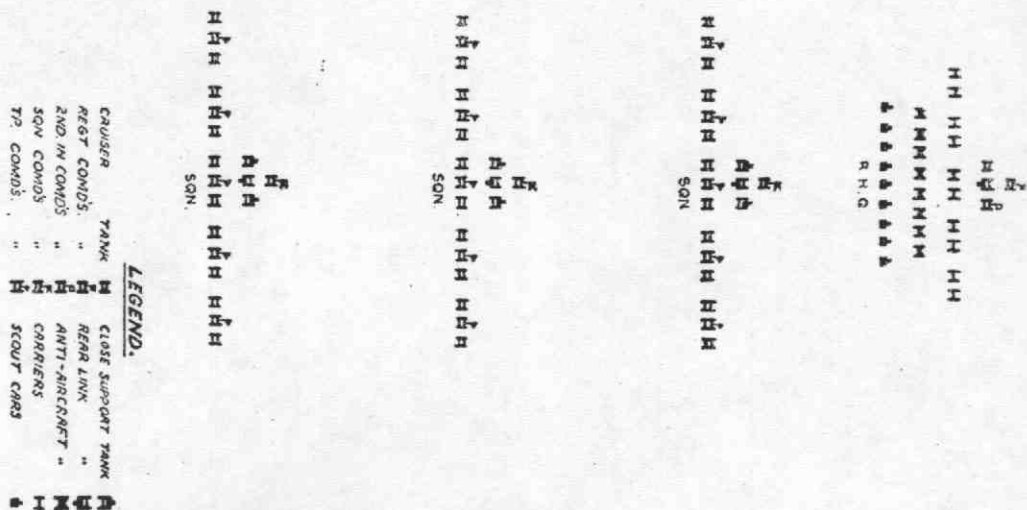


LEGEND.

CRUISER TANK
REGT. COMD'S. "
2ND. IN COMD'S. "
SQN. COMD'S. "
TP. COMD'S. "
CLOSE SUPPORT "
REAR LINK "
ANTI-AIRCRAFT "
CARRIERS
SCOUT CARS

56

APPENDIX A. DIAGRAM 2.
COLUMN.



LEGEND.

CRUISER TANK
REGT. COMD'S. "
2ND. IN COMD'S. "
SQN. COMD'S. "
TP. COMD'S. "
CLOSE SUPPORT TANK
REAR LINK "
ANTI-AIRCRAFT "
CARRIERS
SCOUT CARS

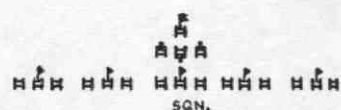
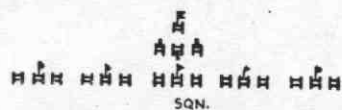
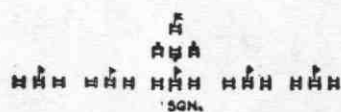
APPENDIX "A". DIAGRAM "3".

ONE UP.



LEGEND.

CRUISER	TANK	H
REGT. COMD'S.	"	H
2ND. IN COMD'S.	"	H
SGN. COMD'S.	"	H
TP. COMD'S.	"	H
CLOSE SUPPORT	"	H
REAR LINK	"	H
ANTI-AIRCRAFT	"	H
CARRIERS	"	H
SCOUT CARS	"	H



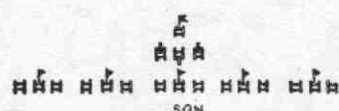
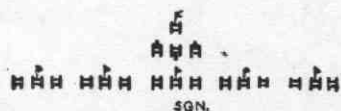
APPENDIX "A". DIAGRAM "4".

TWO UP.

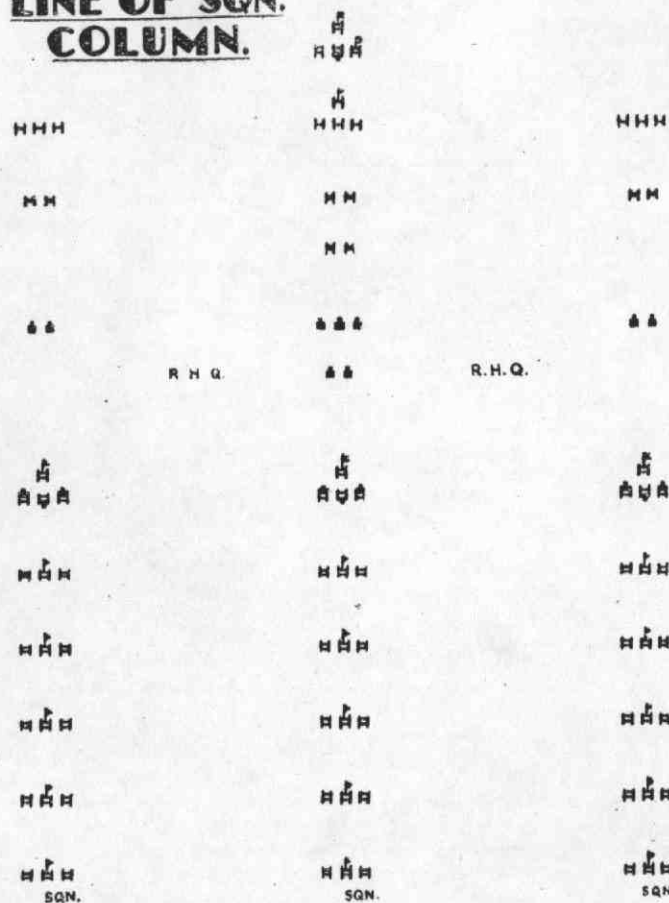


LEGEND.

CRUISER	TANK	H
REGT. COMD'S.	"	H
2ND. IN COMD'S.	"	H
SGN. COMD'S.	"	H
TP. COMD'S.	"	H
CLOSE SUPPORT	"	H
REAR LINK	"	H
ANTI-AIRCRAFT	"	H
CARRIERS	"	H
SCOUT CARS	"	H

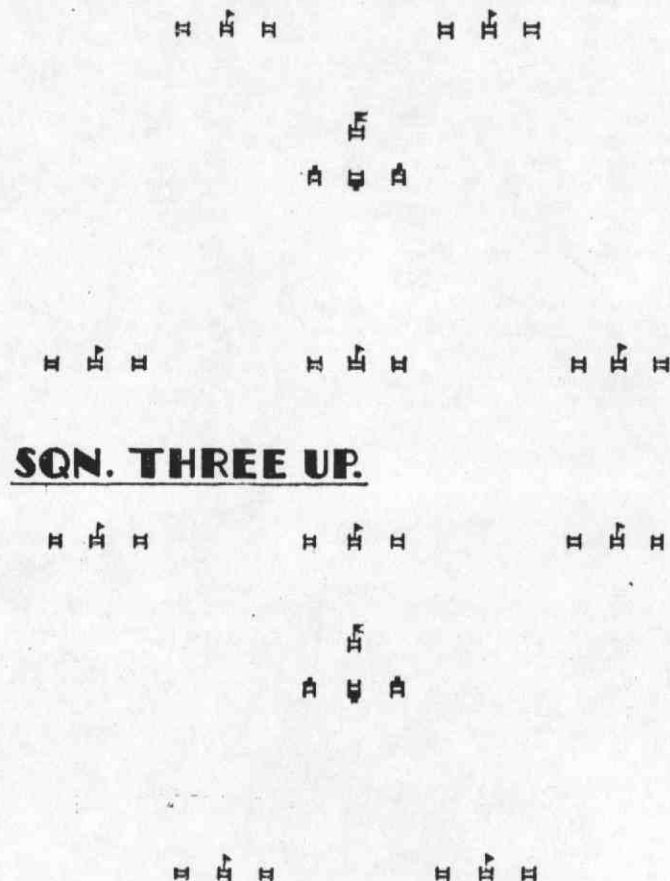
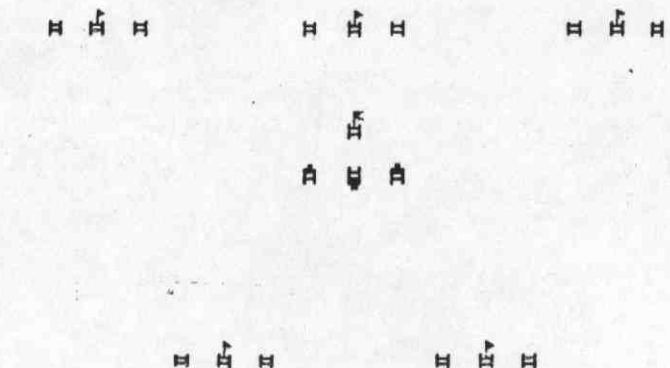


APPENDIX 'A'. DIAGRAM '5'.

**LINE OF SQN.
COLUMN.****LEGEND.**

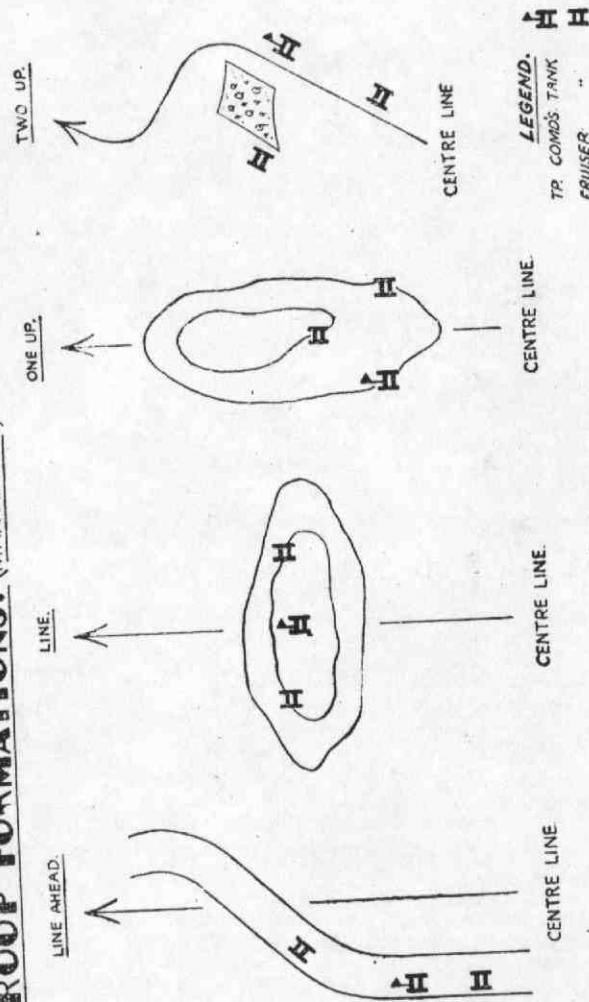
CRUISER	TANK	■	CLOSE SUPPORT TANK	■
REGT. COMDS.	"	■	REAR LINK	"
2ND. IN COMDS.	"	■	ANTI-AIRCRAFT	"
SQN. COMDS.	"	■	CARRIERS	■
TP. COMDS.	"	■	SCOUT CARS	■

APPENDIX 'A'. DIAGRAM '6'.

SQN. TWO UP.**SQN. THREE UP.****LEGEND.**

CRUISER	TANK	■
SQN. COMDS.	"	■
TP. COMDS.	"	■
CLOSE SUPPORT	"	■
REAR LINK	"	■

APPENDIX 'A'. DIAGRAM 'Z'.
TROOP FORMATIONS. (MANOEUVRE.)



APPENDIX B

DIAGRAMS ILLUSTRATING THE TACTICAL
 HANDLING OF AN ARMOURD REGIMENT AND
 ITS COMPONENTS

FOREWORD

Experience has shown the necessity of a battle technique which is understood by every man in the regiment, and which enables him to play his part in achieving the common aim.

This battle technique provides a standardized solution to problems which will occur during action, and since it needs application and practice similar to that required in drill, it has been termed "battle drill."

The diagrams in this appendix with their explanatory comments indicate the battle drill applicable to an armoured regiment and its sub-units. Although this battle drill provides a standardized method of carrying out a tactical operation, it should not be rigidly observed either under battle or training conditions. Since an infinity of situations may occur in action, variations must be used to deal with the circumstances which actually exist, and commanders will position themselves so that they are able to control the situation and to vary their dispositions as may be necessary.

The diagrams in this appendix, however, illustrate the principles which govern the action of armoured units or their sub-units in battle, principles which once grasped will enable those who have studied them thoroughly, to vary their methods without delay and to deal with the prevalent situation, while maintaining that mutual understanding within the unit and sub-unit which is the secret of team work and the prelude to success.

(NOTE.—When necessary in these diagrams squadrons and troops have been referred to by letters or numbers for the sake of clarity.)

The narratives facing the diagrams describe the situation and the gist of the orders issued. They do not give the actual orders or messages which will be passed by RT by the various sub-unit commanders during the action.

None of the diagrams is drawn to scale.)

1. A squadron single flank attack

The series of Diagrams 1 (a), (b), (c), (d) and (e), represent the various phases of a squadron single flank attack. They are not drawn to scale, references to distances being made when necessary in the explanatory comments facing each diagram.

DIAGRAM 1 (a)

1. General situation

An armoured division is moving northwards with its armoured brigade leading. Information has been received that enemy rear guard posts have been located on the general east and west line, indicated by the swastika symbols in this diagram. The strength of these posts is not believed to be great.

2. Detail

(a) The armoured squadron, the action of which is illustrated, is the right-hand forward squadron of the brigade and is advancing "Two up" with a reconnaissance patrol of carriers moving ahead of it.

(b) The reconnaissance patrol on reaching the crest of hill "W" is fired on by the German post "B" about 800 yards to its front on the squadron centre line of advance. The patrol making use of available cover informs the squadron commander by RT of the location of the enemy and engages him.

(c) The squadron commander rapidly moves forward in his tank, with his rear link tank following him, to a point where he can see. He then makes a quick reconnaissance and appreciation.

(d) He determines to make a single (right) flank attack and informs his regimental commander by RT of the situation.

APPENDIX "B" DIAGRAM "1A"

SQN. SINGLE FLANK ATTACK.

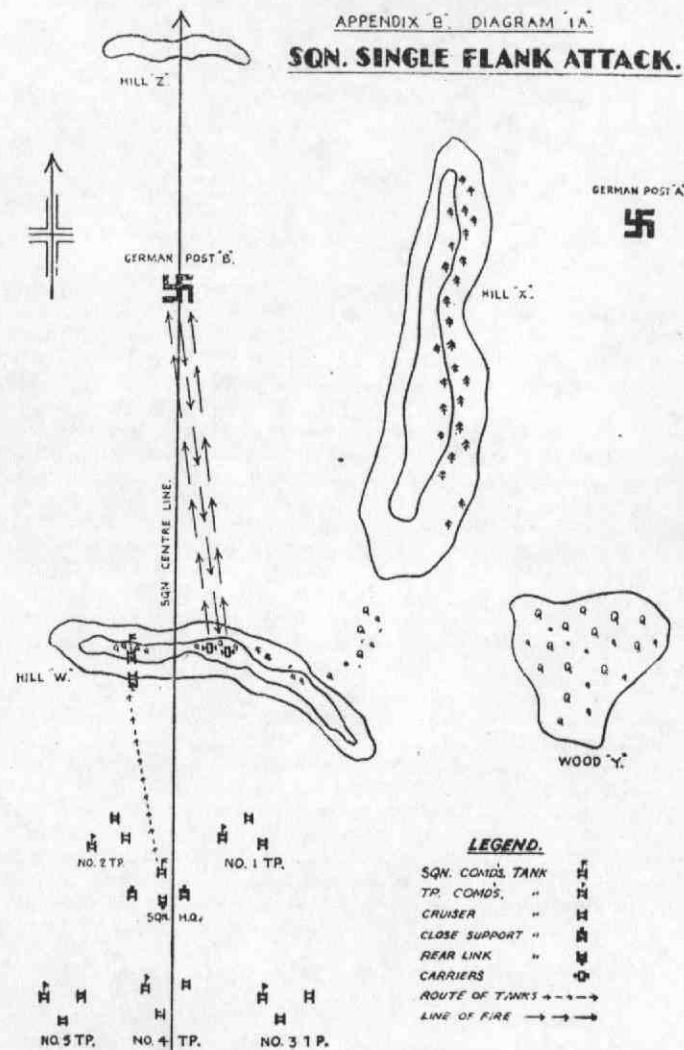


DIAGRAM 1 (b)

3. (a) The squadron commander having made his plan orders Nos. 1 and 2 troops to take up hull down positions on hill "W" and to provide covering fire against German post "B," while he with the remainder of the squadron moves round on the right flank, making use of all available cover. He orders the patrol of the reconnaissance troop to move in advance of the flanking force, to reconnoitre for the enemy, and particularly to watch the right flank.

(b) The flanking force moves with No. 3 troop leading followed by the squadron commander and his headquarters, including his close support tanks. Nos. 4 and 5 troops move in turn behind squadron headquarters. All these troops are in either "One up" or "Two up" formation.

(c) As the leading tank of No. 3 troop begins to emerge from the north end of wood "Y" it is fired on by the German post "A."

At the same time the carrier patrol of the reconnaissance troop which has cut across to the southern end of hill "X" from hill "W" also observes the German post "A," reports its location to the squadron commander, and engages it with fire.

(d) The squadron commander orders the troops of the flanking force to remain under cover of wood "Y," while the close support tanks take up suitable positions at the edge of the wood from which they can smoke the German post "A" until all the flanking force has reached the cover of the belt of trees on the eastern slopes of hill "X."

The squadron commander informs the regimental commander by RT of the location of German post "A."

(e) The close support tanks take up positions as ordered and smoke the German post "A."

APPENDIX 'B'. DIAGRAM '1B'.

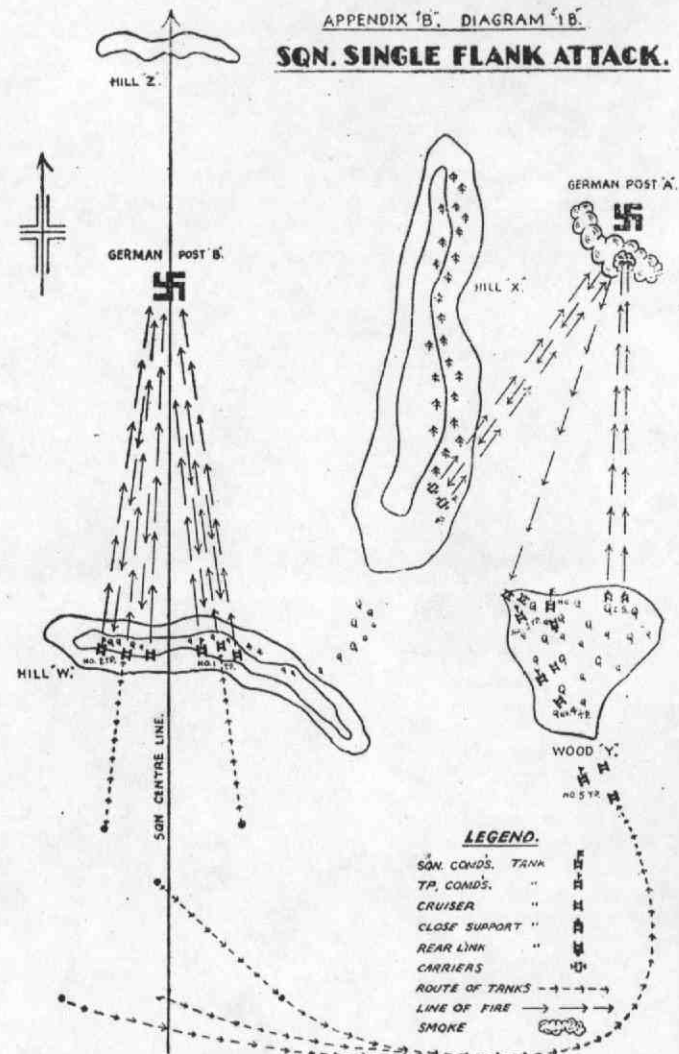
SQN. SINGLE FLANK ATTACK.

DIAGRAM I (c)

4. (a) Under cover of the smoke put down on German post "A" by the close support tanks, the flanking force moves across the exposed gap and takes up hull down positions on hill "X" covered from German post "A" by the belt of trees.

They open fire on German post "B" which is now being engaged both by the covering force on hill "W" and by the flanking force on hill "X."

(b) The patrol of the reconnaissance troop has taken up position near the north end of the belt of trees on hill "X" from which it can observe German post "A" which it is engaging with its L.M.Gs.

(c) The squadron commander is centrally placed with his close support tanks in position ready to fire on the German post "B" if required.

APPENDIX "B", DIAGRAM "I C".
SQN. SINGLE FLANK ATTACK.

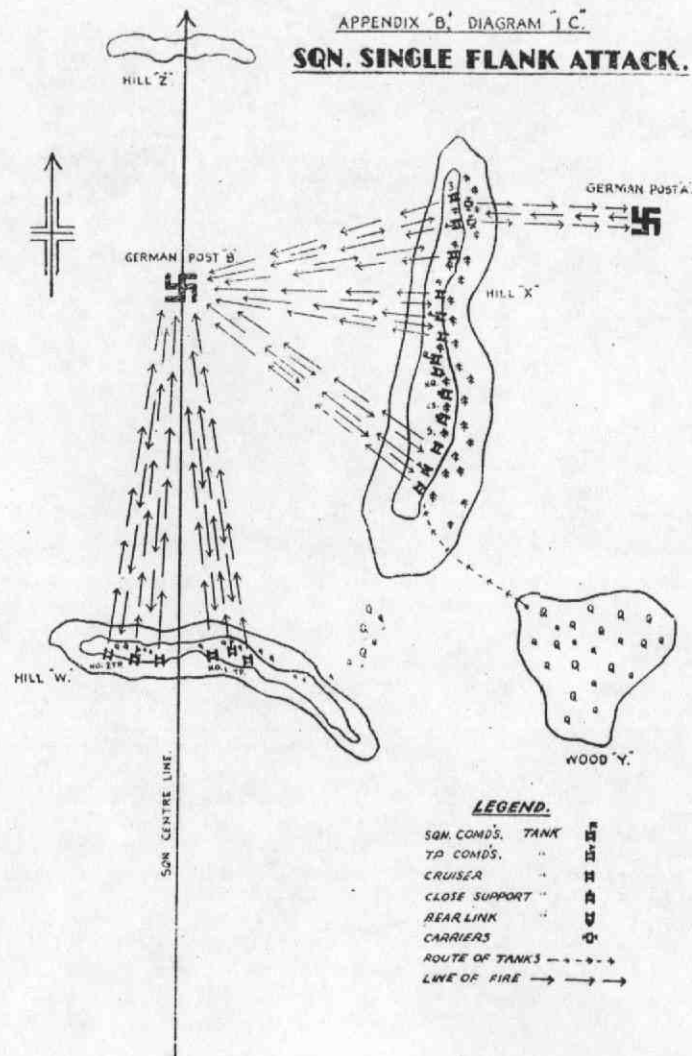


DIAGRAM 1 (d)

5. (a) The fire of the German post "B" has been silenced by the combined fire coming from two directions, i.e. from the two covering troops on hill "W" and the three flanking troops on hill "X."

(b) As all resistance of the German post "B" seems to have ceased, the squadron commander orders No. 5 troop to move on to the enemy position, to mop up any surviving personnel, and to destroy any material, while the close support tanks put down smoke limited to the amount required to cover the advance of this troop until it has reached its objective.

(c) The squadron commander orders Nos. 3 and 4 troops to move round north of German post "B" in order to block any enemy attempt at withdrawal, to give protection against any possible enemy counter-attack from the north and to get in position preparatory to renewing the advance. He, with his headquarters, remains temporarily on hill "X," where he has the best viewpoint and where he is centrally placed to control his command.

(d) The patrol of the reconnaissance troop continues to watch and to engage the German post "A."

APPENDIX "B," DIAGRAM "1 D."

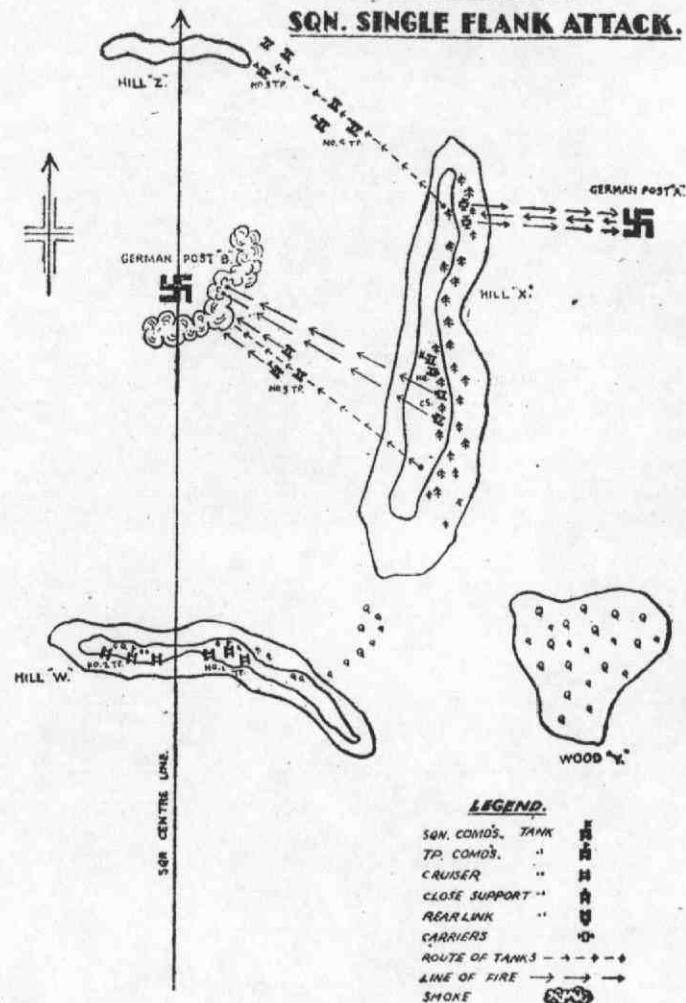
SQN. SINGLE FLANK ATTACK.

DIAGRAM 1 (e)

6. (a) The German post "B" is mopped up.

The squadron is ordered to reform "Two up" and to resume its advance on its original centre line. Nos. 3 and 4 troops, which have taken up hull down positions on hill "Z," are now the two forward troops of the two-up formation.

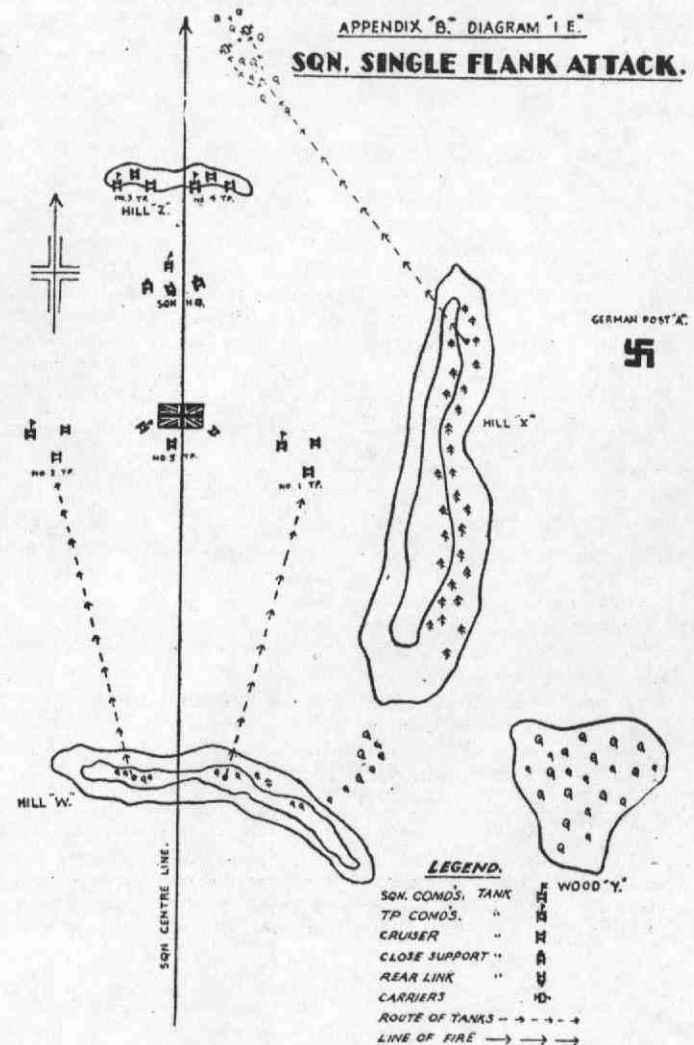
(b) The patrol of the reconnaissance troop starts to move forward making use of cover to its place in front of the squadron in order to continue its task of close reconnaissance while the squadron is in process of being reformed.

(c) Nos. 1 and 2 troops move up from hill "W" to the vicinity of German post "B," and with No. 5 troop, which mopped up the position, form the rear echelon of the two-up formation.

(d) The squadron commander with his headquarters places himself in position between his leading and rear echelon and informs the regimental commander by RT that German post "B" has been destroyed and that the squadron is now about to continue its advance on its original centre line.

(NOTE.—German post "A" is not the responsibility of the squadron commander whose duty is to continue on his own centre line, unless otherwise ordered. The problem as to whether it is attacked or by-passed is one which must be solved by the regimental or, if necessary, the brigade commander in view of prevailing circumstances. Generally speaking, the temptation towards lateral dispersion must be resisted whenever possible.)

APPENDIX "B." DIAGRAM "1 E."

SQN. SINGLE FLANK ATTACK.

2. A squadron double flank attack

The series of Diagrams 2 (a), (b), (c) and (d) represent the various phases of a double flank attack. They are not drawn to scale, references to distances being made when necessary in the explanatory comments facing each diagram.

DIAGRAM 2 (a)

1. *General situation.*—The enemy having sustained a defeat is withdrawing northwards over open country. Information from air and armoured cars indicates that his withdrawal is covered by weak rear and flank guards.

A British armoured division has been ordered to move round the enemy's eastern flank in order to cut his line of retreat. This division is moving with its armoured brigade leading.

2. *Detail.*—(a) The armoured squadron of which the action is illustrated is the left forward squadron of the armoured brigade, i.e. the squadron nearest to the main axis of the enemy's withdrawal.

It is advancing "Three up" covered by a reconnaissance patrol of carriers, which is moving ahead of it somewhat to the left of the squadron centre line.

(b) On reaching the line of the dried-up watercourse, this carrier patrol is fired on by a German post, indicated on the diagram by a swastika, which is about 900 yards north on the squadron centre line.

The carrier patrol takes cover in the bed of the stream and engages the enemy.

(c) The squadron commander observes the position of the enemy through his binoculars but can see no sign of any other supporting enemy posts on the flanks. The country, except where broken by the stream, is flat good going with practically no cover.

(d) The apparent weakness of the enemy, the lack of cover, and the fact that time is of vital importance, cause the squadron commander to decide to make a double flank attack. He informs his regimental commander by RT of the location of the enemy post and of the fact that he is attacking it.

APPENDIX 'B'. DIAGRAM 2A.

SQN. DOUBLE FLANK ATTACK.

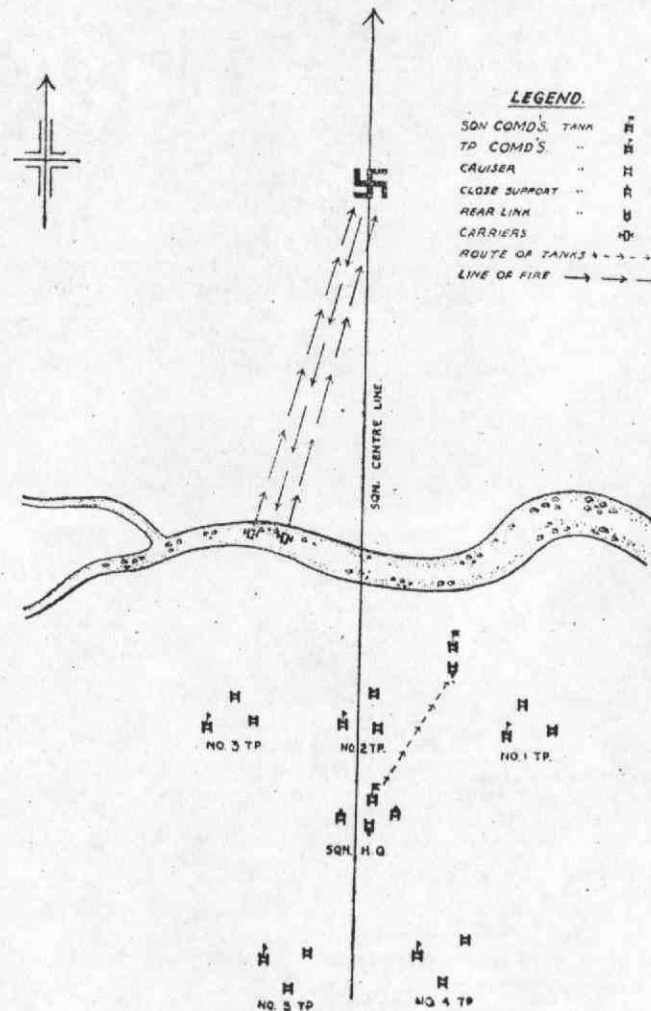


DIAGRAM 2 (b)

3. The squadron act on their commander's orders, which were to the following effect :—

- (a) Close support tanks with the remainder of squadron headquarters will at once move to a suitable position in the bed of the stream and will take up covered positions. Close support tanks will engage the enemy with smoke.
- (b) Double flank attack. Nos. 1 and 4 troops, right flank, Nos. 3 and 5 troops, left flank. No. 2 troop, reserve, will move to a suitable position in the bed of the stream and will engage the enemy post.
- (c) Carrier patrol will move westwards down stream and will then advance west of left flanking party reconnoitring for any enemy post in that vicinity.

APPENDIX 'D' DIAGRAM '28.

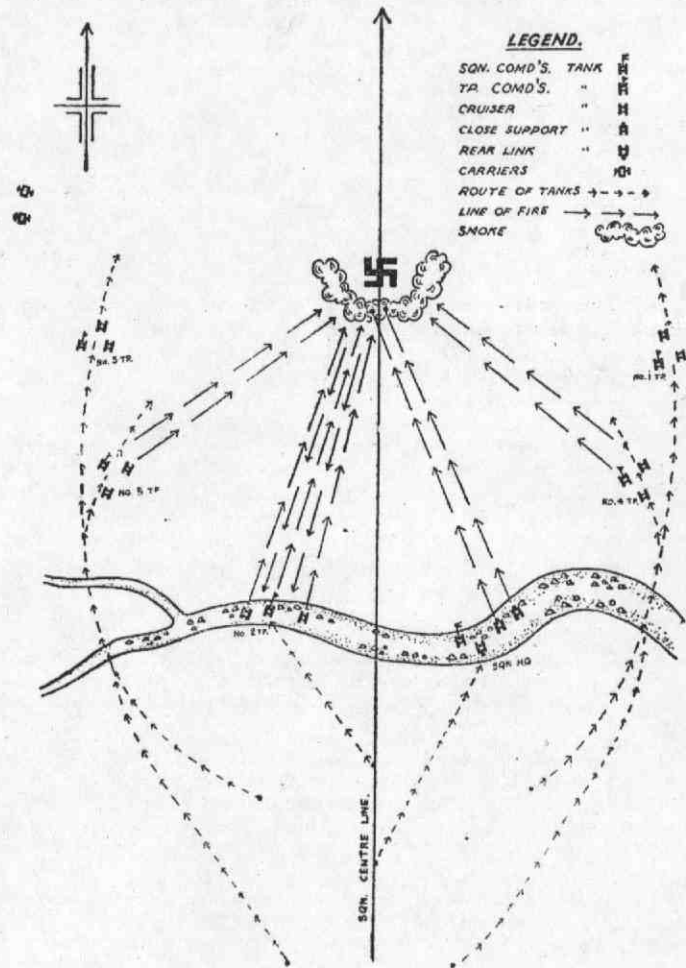
SQN. DOUBLE FLANK ATTACK.

DIAGRAM 2 (c)

4. (a) These moves take place under cover of the smoke of the close support tanks.

The leading troop of each flanking party, Nos. 1 and 3, proceed past the enemy post and take up positions astride the centre line to prevent any enemy withdrawal, to protect the remainder of the squadron, and to observe for any other enemy to the front or flanks.

(b) Nos. 4 and 5 troops (i.e. the rear troop from each flanking party), when nearly opposite the enemy post close on it under cover of the smoke screen which is thinned to allow of their being able to see sufficiently to operate, while obscuring the enemy's view by a light mist of smoke.

No. 2 troop ceases to engage the enemy as Nos. 4 and 5 near their objective.

(c) The carrier patrol move well out in advance on the left flank, but fail to find any enemy.

APPENDIX "B." DIAGRAM "2C."

SQN. DOUBLE FLANK ATTACK.

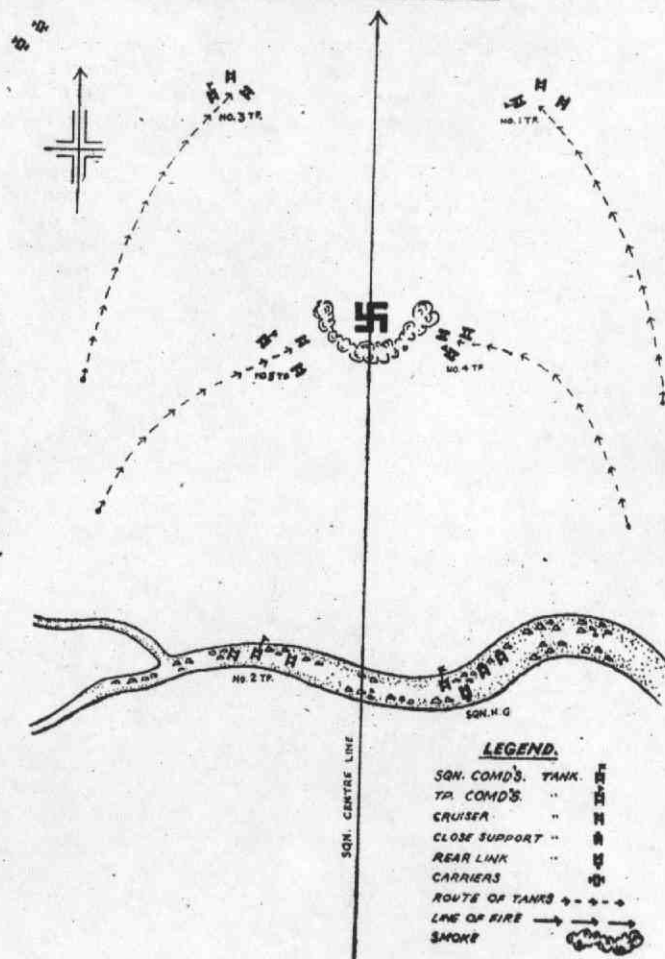


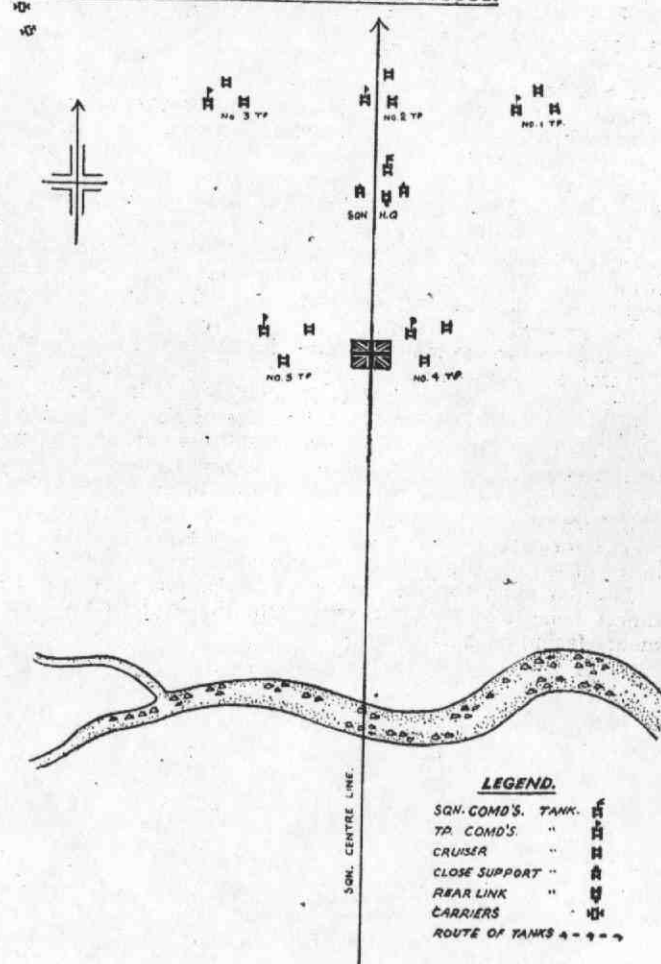
DIAGRAM 2 (a)

5. (a) The enemy post is destroyed. The squadron commander orders No. 2 troop to move forward to take up its original position between Nos. 1 and 3 troops, thus again forming "Three up."

Squadron headquarters takes up its position in the centre of the formation. Nos. 4 and 5 troops having destroyed the enemy and his material are already in position to form the rear echelon of the squadron. The carrier patrol is similarly in position to continue the advance.

(b) The squadron recommences to advance on its original centre line. The squadron commander informs the regimental commander that the post has been destroyed, of any identification gained, and states that the advance has now recommenced.

APPENDIX "B" DIAGRAM "2D."

SQN. DOUBLE FLANK ATTACK.

3. A deliberate attack by an armoured regiment

The series of Diagrams 3 (a), (b), and (c) represent one of the possible methods of carrying out a deliberate attack on an enemy position with an armoured regiment, which has under its command one company of the motor battalion and one troop of anti-tank guns.

It will be recognized that the regularity of the regimental formation would not in fact exist in actual battle on account of casualties, of the character of the ground, and of the nature of the enemy action.

This series of diagrams is only intended to indicate a formation which might be adopted and in order to achieve this purpose it has been necessary to illustrate the operation with sub-units moving in a regular formation, whereas in fact the formation will undoubtedly be somewhat irregular at the beginning and will become much more broken up as the action proceeds.

It is necessary to make it quite clear that this is only one of numerous methods which might be employed. In this case the regimental commander has decided to attack "One up" with his leading squadron on a frontage of about 500 yards, while his two rear squadrons cover a frontage of rather more than 1,000 yards. Under different circumstances he might have decided to attack either "Two up" or in "Column."

In any case each squadron would be in two echelons, the precise formation of squadrons and troops being the responsibility of squadron and troop commanders respectively.

The diagrams are not drawn to scale, references to distances being made when necessary in the explanatory comments facing each diagram.

DIAGRAM 3 (a)

1. General situation

The enemy has been encountered by the advanced guard of the armoured division in some strength on the general line east and west through the swastika symbol which represents an enemy defended locality. The advance guard has been unable to continue its forward movement beyond the line of the positions shown from which it has been engaging the enemy. Small enemy posts with light machine guns are in occupation of the ground south of the swastika and north of the ridge "W."

The divisional commander has determined to penetrate the enemy's position, moving on the line shown in the diagram as the regimental centre line.

The first phase of the operation is to be carried out by the regiment, the formation of which is illustrated. Their task is to secure the whole of the area shown in Diagram 3 (a). The intention of the divisional commander, when this area has been secured, is to pass the remaining regiments of the armoured brigade through the leading regiment so as to ensure a complete penetration of the German defensive system, and to consolidate all the ground gained by the remainder of the division, including the infantry brigade.

The enemy have not had time to lay extensive minefields, or to prepare strongly fortified positions. The attack will be supported by the full resources of the divisional artillery, and by air support which is available. The British possess considerable air superiority.

2. Detail

This diagram illustrates the dispositions of the armoured regiment five minutes before they commence to attack. The distance on the regimental centre line from the top of ridge "W" to the swastika is approximately 1,000 yards.

The close support tanks are moving near the flanks so that they can supplement the smoke screen put down by the R.A. who are supporting the attack. The anti-aircraft tanks are positioned so that they can engage any enemy aircraft attacking the regiment during its advance. The carriers are moving close to regimental headquarters on each flank and in rear of it so that they can reconnoitre and assist in clearing any enemy post on the immediate flanks. The scout cars have been allocated to regimental headquarters and to each squadron headquarters and are moving in rear of their commanders.

The R.A., which has been detailed to cover both flanks of the attack with smoke, has not yet opened fire, but a concentrated bombing attack is in process of being made by our aircraft on the German defended area.

The elements of the advance guard on the east of hill "W" and north of wood "X" have been ordered to remain in their present positions and to support the advance of the armoured regiment to the best of their ability, and especially to watch each flank.

APPENDIX "B" DIAGRAM "3A"

DELIBERATE ATTACK BY AN ARMOURD REGIMENT.

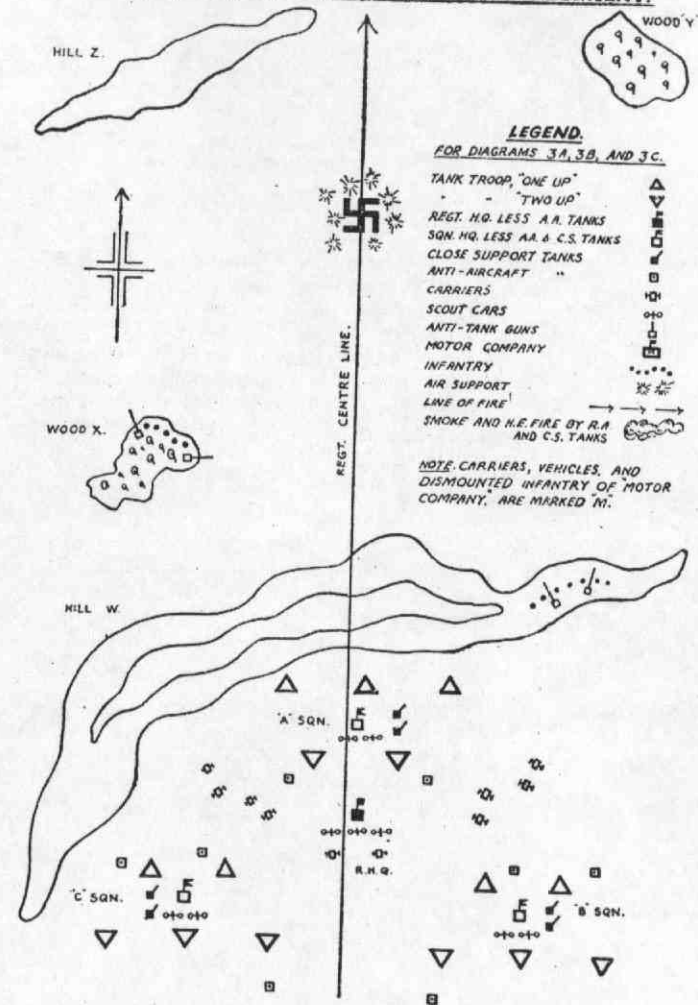


DIAGRAM 3 (b)

3. This diagram illustrates the general formation of the armoured regiment as it is about to close with the defended area marked by a swastika. The bombing on the swastika area has just stopped, and air support is being given by bombing wood "Y" and hill "Z".

The flanks of the attack have been covered by a smoke screen put down by the divisional R.A. The close support tanks of the regiment have moved into position from which they will be able to smoke hill "Y" and wood "Z." The two rear squadrons of the armoured regiment, on orders from the regimental commander, have just commenced to turn slightly outwards in order to deal with wood "Y" and hill "Z" from which a certain amount of enemy fire is being directed on the attacking regiment.

Quite close in rear of the armoured regiment comes the scout platoon of the motor company under command which is zig-zagging to and fro and dealing with small enemy posts which have survived the armoured attack. The remainder of the motor company, followed by a troop of anti-tank guns, is moving up in its vehicles. It is about to dismount just under cover of the ridge of the hill.

APPENDIX "B" DIAGRAM "3B"

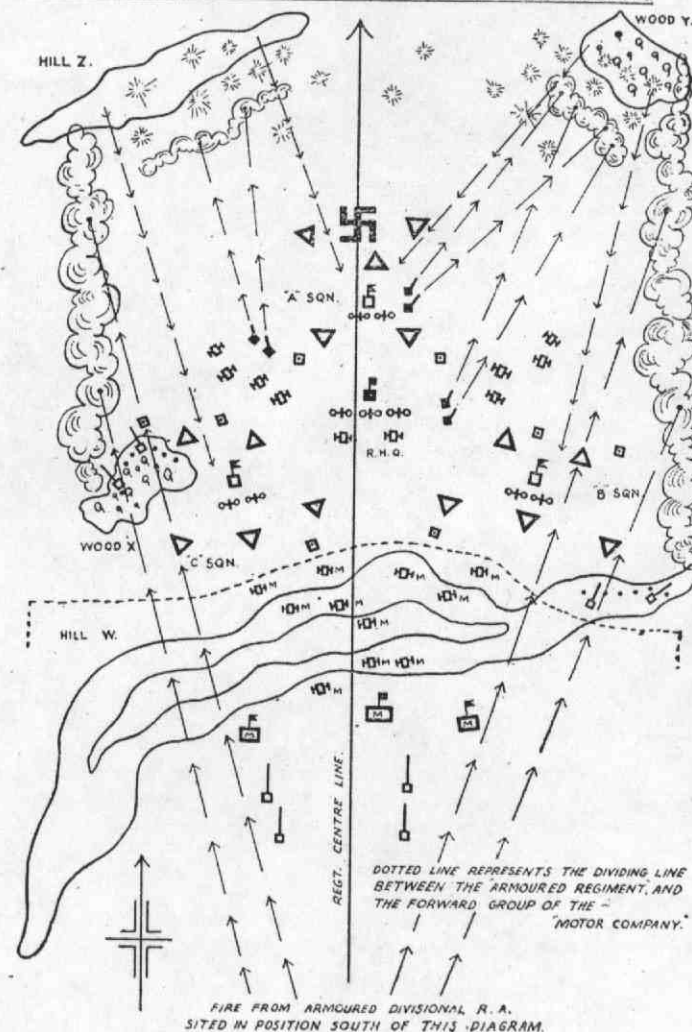
DELIBERATE ATTACK BY AN ARMoured REGIMENT.

DIAGRAM 3 (c)

4. This diagram represents the closing stages of the armoured regiment's attack. "B" and "C" squadrons, having subdued opposition in wood "Y" and hill "Z," are in process of taking up covered positions to guard against any enemy attack either from the flanks or from the front. The carriers of the armoured regiment are engaging in the final stage of mopping up between wood "Y" and hill "Z," and of reconnoitring to the front. "A" squadron, having dealt with the defended area, are on the point of reforming. The close support tanks are located so that in the event of necessity they can put down smoke to cover the reforming troops. The smoke from the artillery is thinning. Regimental headquarters has moved to hill "Z" from which the best view is obtainable. The anti-aircraft tanks are dispersed ready to deal with any enemy air attack, while the scout cars remain adjacent to the headquarters to which they are attached. The carriers of the motor company and its infantry, working dismounted, are engaged in final mopping up, the vehicles of the motor company still remaining halted under cover of hill "W." The leading squadron of the second regiment of the brigade has just reached the southern edge of the diagram preparatory to forming up to pass through the leading regiment in order to carry out the second phase of the attack, i.e. deeper penetration on the same frontage.

APPENDIX B. DIAGRAM 3 C.

DELIBERATE ATTACK BY AN ARMoured REGIMENT.