

*This pamphlet was given me by P. H. Le Baron Montgomery at Washington School a month or two ago 29 Dec 1945*

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**21 ARMY GROUP**

# **THE ARMOUR'D DIVISION IN BATTLE**

This pamphlet must NOT fall into enemy hands. Officers in possession of a copy will be responsible for its safe custody.

**HOLLAND,  
DECEMBER, 1944.**

# Introduction

1. This is the third pamphlet in the series I have issued, and it will be the last for the present.

The first one was entitled :

Some Notes on the Conduct of War  
and  
The Infantry Division in Battle.

The second one was entitled :

Some Notes on  
The Use of Air Power  
In Support of Land Operations  
and  
Direct Air Support.

This one is entitled :

The Armoured Division in Battle.

2. These three pamphlets together provide a very useful foundation on which to base our fighting and our training. I suggest that they should be read in the order in which they have been issued.

## A Few Notes on Tanks

3. A tank is an armoured vehicle designed to carry about fire-power; this definition, once understood, simplifies the problem of the employment of armour on the battlefield.
4. The tank must have a really good gun (dual purpose), and mechanical reliability is a necessity.

5. In 21 Army Group it is the policy to have only two types of tanks :—

- (a) the capital tank (to fight)
- (b) the light tank (to reconnoitre)

The term "capital tank" means a dual purpose tank, suitable for working with infantry and also for operating in an armoured division. So long as the A.F.V. can carry out both these roles effectively it constitutes a capital tank, whether it weighs 25 or 45 tons.

6. The aim is that all armoured brigades, whether in an armoured division or independent, should be equipped with the capital tank; they can then operate efficiently in support of infantry and also lead the pursuit and operate to the maximum advantage in the mobile and fluid battle.

This ubiquitous employment of armour is a battle-winning factor; it allows flexibility when planning the battle and does not force a commander to keep a percentage of his armour unemployed at important phases.

7. The weight of any tank should not exceed about 45 tons.

Having selected the best possible gun as a primary weapon, and designed an engine with sufficient horsepower to give the required speed, then armour should be fitted : up to the maximum weight allowed.

8. The positioning of the armour on a tank is important. Experience in the field has proved that the percentage of hits is higher on the sides than on the front of a tank; also there are on the average more hits on the hull than on the turret. The reason for this is that it is usually the enemy anti-tank gun or S.P. gun, dug-in and lying in wait, which does the damage and not the enemy tank.

Therefore it is a mistake to add armour unduly to one portion of a tank, in an attempt to make a little of it immune to A.P. shot, to the detriment of the other portions. It is important to study the slope of the plates, as well as the thickness of the armour, in order to obtain the maximum basic protection over all the vulnerable places which have become disclosed as a result of practical experience in battle.

### A Few Notes on the Armoured Division

9. All commanders must be well versed in the employment of armour.

10. The armoured division is particularly suited for employment in the fast moving and fluid battle. When planning operations the aim should be to create opportunities for using armoured divisions in this role; if suitable opportunities can be created, then the action of the armoured divisions is likely to be decisive.

An armoured division can also carry out many of the tasks that are normally given to an infantry division; but it is a different kind of weapon and the job has therefore to be tackled in a different way.

11. The main characteristics of an armoured division are :

- (a) its armour
- (b) its fire power
- (c) its mobility

No plan for the employment of the division will be sound which does not exploit these characteristics to the full.

12. The armour is most effective when employed concentrated; a mass of armour, particularly in the enemy's rear, has great moral effect.

13. The armoured brigade possesses tremendous fire power. The general technique within the brigade when operating alone is the application of the principle of "fire and movement" at all levels from troop to brigade.

**IT IS VITAL THAT THIS SHOULD NOT DEVELOP INTO FIRE AND NO MOVEMENT.**

Tanks must not be used as artillery. Once this practice is allowed to develop, the brigade will lose the offensive spirit and the will to get forward: which are so vital to success.

14. Although possessing great mobility in suitable country, the armoured division is generally sensitive to ground. The ground over which the division is to operate must be carefully studied to ensure that it is not unexpectedly prevented from exploiting its main characteristics.

15. The armoured division can be grouped in a variety of different ways. The grouping adopted in any particular case must depend on the problem; there is no normal grouping, and any rigidity in this respect is to be deprecated.

The Divisional Commander must be prepared to re-group constantly to meet changing circumstances and varying types of terrain; he must therefore look well ahead at all times.

The division must be so flexible as to permit of constant re-grouping; the machinery for carrying this out quickly must exist.

16. To get good results with an armoured division the principle of co-operation must be thoroughly understood and acted upon. Tanks alone are never the answer to any problem. *Success will be obtained only by the most intimate co-operation of all arms in the division.*

17. Intimate air support is of great importance in offensive operations by an armoured division. The object in all cases is to provide early information of enemy resistance on the immediate front of an advancing column, and a quick air strike where resistance calls for some treatment. For this purpose a small reconnaissance/striking force should be maintained over the advancing columns, being controlled from a suitable vehicle allotted to the leading headquarters on an axis of advance, say to an armoured regiment; the value of this form of column cover has been fully borne out during recent operations.

18. The successful employment of an armoured division depends ultimately on good wireless communications. It is by this means that the commander will control his division and will be able to grasp quickly a fleeting opportunity.

19. The above paragraphs outline the main features to be borne in mind when considering the employment of an armoured division in battle.

The following pages deal with the subject in greater detail.

*B. L. Montgomery*

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Holland.  
December, 1944.

**THE ARMoured  
DIVISION IN  
BATTLE**

## THE DIVISIONAL COMMANDER

1. An Armoured Divisional Commander must possess all the qualities necessary in an Infantry Divisional Commander, with the addition of others.
2. Situations change rapidly in armoured and mobile warfare; the Divisional Commander must, therefore, have a clear tactical picture in his head at all times in order that he may grasp quickly a fleeting opportunity. He should not himself attempt to fight the battle with head phones on; instead he must be accompanied by a good staff officer who is constantly on the air and who will keep him informed of the situation. If the Divisional Commander is not entirely clear about any situation, he must be prepared to come up on the air himself; he must therefore be highly skilled in speaking on R/T.
3. Personal command, and a tight grip on the tactical battle, are essential. The Divisional Commander must be able to control the battle either by giving his orders on R/T, personally or through a staff officer, or by visiting his Brigade Commanders and issuing verbal orders. There will seldom be time for written orders during the mobile battle. The Divisional Commander must be well forward where he can keep in touch with the tactical battle, leaving his GSO 1 to move forward, and run, the divisional headquarters. Whenever possible the commander should return to his headquarters at night.
4. An armoured division must be so flexible as to permit of constant re-grouping. In order to be prepared for varying circumstances and varying types of terrain, the Divisional Commander must at all times look well ahead. He will then be able and ready to group, and re-group, as demanded by the changing tactical situation. As has been stated already, there is no normal grouping; the yardstick in this problem must be effective results.

5. It will be exceptional to win a battle without taking certain risks. It requires a nice judgment to decide what risks are legitimate and justifiable, and what risks are definitely not so.

The Divisional Commander who is not prepared to take a chance, and who tries to play for safety on all occasions, will never reap the full fruits of victory. Throughout his division there must be a spirit of offensive eagerness, and when launched the general feeling must be a wish to "get on."

6. Armoured battles tend to develop into a medley of disconnected individual tank battles. The Divisional Commander must forestall this by taking a grip on the situation at the earliest moment. He must make a plan to maintain the momentum of the attack with artillery support.

7. In addition to the human factor, an Armoured Divisional Commander must keep a close watch on the mechanical factor and ensure that the mechanical efficiency of his division is kept at a high standard. The maintenance system must be sound, recovery of "creeks" rapid, and the repair and replacement organisation efficient; without this the division will lose its mobility and fire power.

8. Generally speaking, the Divisional Commander has two main points to carry out:

*First* To create the fighting machine, and forge the weapon to his liking.

*Second* To create the HQ organisation, or set up, that will enable the weapon to be wielded properly and to develop its full power rapidly.

9. The armoured division is an immensely powerful weapon which functions like a well tuned engine. If its organisation and training is not sound, or if it is handled incorrectly, it will become out of adjustment and incapable of producing its full power.

## ORGANISATION OF THE DIVISION

10. The present basic organisation of an armoured division is sound; it has withstood the test of every type of operation in varying types of country.

11. The present organisation is sufficiently flexible to allow the division to perform any role which it may be allotted, but for particular operations an additional armoured or infantry brigade may be given to it with advantage.

12. The Armoured Recce Regt is a fourth armoured regiment, both in organisation and function. It is interchangeable with any armoured regiment in the division, but it is a divisional unit and not an integral part of the armoured brigade. It should receive special training in a reconnaissance role and should be practised in co-operation with the infantry brigade.

13. The Motor Battalion is an integral part of the armoured brigade and cannot be removed from it without affecting the working of the brigade. Likewise, the infantry brigade is an integral part of the division and is composed of units which have been specially trained to work with armour; if it is committed to battle apart from the armoured division, then the division will be handicapped in carrying out its role when required.

14. When an armoured division is operating beyond the range of the Corps Artillery it must be allotted a Medium Regt RA.

## TACTICAL HANDLING

15. In addition to the three main characteristics of an armoured division enumerated in the Introduction, the following points have a direct effect on its tactical handling.

## 16. CONCENTRATION OF FIRE POWER

### (a) WITHIN THE BRIGADE

The armoured brigade possesses tremendous fire power, since every tank can fire an effective HE shell as well as AP shot. This must be exploited to the full by the application of FIRE AND MOVEMENT at all levels from troop to brigade.

### (b) ARTILLERY

Both in attack and defence, a great battle-winning factor is the concentrated fire of artillery correctly applied to the enemy. When the battle is static, artillery command must be centralised; immediate artillery support must be available in the fluid battle.

### (c) AIR

Air support must be considered in conjunction with artillery support. In order to maintain the momentum of attack, air support may be used to supply the fire power while the artillery is being moved forward.

## 17. COMMUNICATIONS

Good control is essential for any operation by any formation. Within an armoured division the situation changes so rapidly that the maintenance of good communications is vital. The highest possible standard of training in wireless is required.

## 18. CO-OPERATION

Co-operation between infantry and tanks must be absolute at all levels. Within the division any armoured regiment must be capable of co-operating with any infantry battalion to the extent of carrying the infantry on the tanks, dismounting them, and re-mounting them again. It may be found that certain regiments work better when co-operating with particular battalions; when this grouping can be arranged it will be more satisfactory.

## 19. TYPE OF TERRAIN

An armoured division is sensitive to ground. A careful study of the ground over which a division is about to operate must be made with the aid of maps, air photos, etc. Suitable grouping for the operation will depend on the result of this study.

## 20. FLEXIBILITY

The three main characteristics of an armoured division will be affected by every change in its equipment. Therefore its tactical handling must not be stereotyped and the technique must always be altered to keep pace with the improvement in its weapons.

Constant re-grouping calls for flexibility in all units. This is the great difference between the handling of an armoured and an infantry division.

## 21. GROUPING

It must be understood that the armoured division is a team which must not be broken up for any particular operation or phase of the battle. It does, however, consist of a number of armoured and unarmoured units, and these can be grouped together in a variety of ways depending on the problem. When the particular problem has been dealt with, the armoured regiments and infantry battalions must revert to their own brigades; this will ensure adequate supervision of equipment, training and minor tactics by the commanders and staffs who understand their problems.

The main factors affecting the grouping are :—

Role
Ground
Enemy Opposition
Strength of units within the Division

Some types of grouping, which have proved suitable under certain conditions, are given below :



- A. *Armoured Brigade* leading.  
*Infantry Brigade* following up to take over ground won by the armour or to restore mobility by attacking.  
*Armoured Recce Regt* acting as divisional reserve and flank protection.

This grouping achieves the greatest speed of advance, but it requires very open country suitable for armour, and a motor battalion strong enough to provide infantry to work with the three armoured regiments.

- B. The Armoured Recce Regiment allotted to the armoured brigade.

This grouping enables a maximum concentration of armour to be effected and is also suitable if the armoured brigade has received heavy casualties.

- C. The Armoured Recce Regiment allotted to the infantry brigade.

This grouping provides tank support for the infantry brigade if it has to operate independently and at the same time as the armoured brigade. If the country is very close, and only a few tanks can operate, either the armoured recce regiment or one of the armoured regiments may provide the tank support for the infantry.

- D. The Armoured Brigade HQ commanding :—  
 Two Armoured Regiments  
 One Motor Battalion  
 One Infantry Battalion

The Infantry Brigade HQ commanding :—  
 Two Armoured Regiments (one of which is the Armoured Recce Regiment)  
 Two Infantry Battalions

This grouping is often very useful. It has a great advantage when the division is advancing on two

centre lines widely separated, or when operating in country which is a mixture of woodlands and open fields. It should also be adopted when it is necessary to clear villages in order to open an axis.

## BASIC POINTS OF ANY OPERATION

- 2.2. (a) PERSONAL COMMAND, CONTROL, AND GOOD INTERCOMMUNICATION.
- (b) KEEP YOUR FIRE POWER CONCENTRATED UNDER CENTRALISED CONTROL WHENEVER POSSIBLE.
- (c) IN ALL OFFENSIVE OPERATIONS ENDEAVOUR TO HIT HARD ON A NARROW FRONT AND KEEP ON HITTING, PENETRATE DEEPLY, AND THEN TURN OUTWARDS, i.e. THE SCHWERPUNKT AND THE AUFROLLEN. THE MOMENTUM OF THE ATTACK MUST BE KEPT UP AT ALL COSTS.
- (d) FIGHT YOUR BRIGADES AS BRIGADES, WITH DEFINITE TASKS AND CLEAR CUT OBJECTIVES.
- (e) ROADS AND CENTRES OF COMMUNICATIONS ARE VITAL. OPEN THEM UP FOR YOURSELF: DENY THEM TO THE ENEMY.
- (f) THE TACTICAL IMPORTANCE OF HIGH GROUND IS USUALLY VERY GREAT.
- (g) GOOD MEDICAL ARRANGEMENTS.
- (h) TRAFFIC CONTROL AND CAREFUL ORGANISATION OF ECHELONS.

## RECONNAISSANCE

23. A number of troops of different types are available for reconnaissance within an armoured division and, unless they are all viewed in their true perspective, a considerable duplication of effort, waste of time and road congestion will result.
24. The means of mobile, as opposed to purely infantry reconnaissance, are :—
- (a) Armoured Car Regiment
  - (b) Armoured Reconnaissance Regiment
  - (c) The Armoured Regiments
25. The following three points should be understood :—
- (a) Armoured cars cannot fight their way forward against an anti-tank screen, though at times they must be prepared to fight for their information.
  - (b) If the armoured reconnaissance regiment is used on a wide front it cannot also do detailed reconnaissance.
  - (c) Troops who are going to fight a battle must do their own reconnaissance.
26. From the above three points it is possible to arrive at certain conclusions :—
- (a) Armoured cars should not be used in front of the forward troops unless contact has been lost or the enemy completely disorganised. To do so will only block the roads with armoured cars unable to get forward.
  - (b) The armoured reconnaissance regiment should rarely be used in front of the armoured brigade who can more adequately carry out their own reconnaissance.
27. The armoured car regiment should be used to watch the flanks or to lead the advance when contact with

the enemy is lost, or in the pursuit when the enemy is completely disorganised. In the latter case they must thrust well out with practically no restriction as to distance. They must be prepared to fight for their information, but having obtained it they must not block the roads.

28. The armoured reconnaissance regiment, as already stated, should be regarded as a fourth armoured regiment. Its usual task will be the protection of a flank or as a mobile reserve. But it is essential that it should be trained in a reconnaissance role, as by virtue of the fact that it is frequently in divisional reserve it is available for fighting reconnaissance to a flank or in front of the division when the armoured brigade is not in the lead. It can also be used to back up the armoured car regiment.

## ROLES IN BATTLE

29. An armoured division must be able to carry out any role, but in order to achieve the best results from its employment it is necessary to create a situation in which its main characteristics can be exploited.
- If allotted a role usually performed by an infantry division, an armoured division will use its fire power to hold ground to make up for lack of infantry.
30. THE PRINCIPAL ROLES OF AN ARMoured DIVISION ARE :—
- (a) THE MAINTENANCE OF THE MOMENTUM OF THE ATTACK ON A MAIN ENEMY DEFENSIVE AREA WHICH HAS BEEN PARTIALLY OR WHOLLY BROKEN INTO BY OTHER ARMS.
  - (b) THE FOLLOW UP OF AN ENEMY FORCE COVERED BY REARGUARDS, AND THE BREAK THROUGH.

- (c) TEMPORARY DEFENCE.
- (d) THE SETPIECE ATTACK—(AS FAR AS IS APPLICABLE TO AN ARMoured DIVISION).
- (e) THE SEIZING AND EXPLOITATION OF A BRIDGEHEAD OVER A WATER OBSTACLE.

### THE MAINTENANCE OF THE MOMENTUM OF THE ATTACK

31. An armoured division is not suitable for the initial phases of a break-in attack against strong enemy resistance. A setpiece attack of this nature is normally carried out by infantry divisions. It will be more usual for armoured divisions to be held in reserve for the purpose of maintaining the momentum of the attack once a break-in has been achieved.

The object of the infantry division will be to create a gap through which an armoured division can be passed, but such a gap may not be made and it will often happen that an armoured division will, at the best, have to clean up the jagged edges and, at the worst, fight its way out.

32. There are three situations which may confront the commander of the armoured division :—

- (a) The assaulting formation may have broken through, allowing a clear run for the armoured division.
- (b) The break-in attack may have penetrated the enemy position, leaving jagged edges.
- (c) The enemy position may be unbroken, and the armoured division must fight its way out.

Whichever the situation may be, the first objective of the armoured division must be the capture of some piece of high ground, the loss of which will make

further resistance by the enemy impossible in his present position.

If the situation is such that the armoured division has a clear run, the advance can continue without a check on this objective.

If clearing up is required, then it may prove necessary for the infantry brigade to take over the objective before the armoured brigade advances.

If it is necessary for the armoured division to fight its way out, the procedure will be as described in the setpiece attack.

No matter what success the assaulting formation may achieve, the armoured division must follow closely on its heels ready to exploit any opening which is offered. There will never be a clear cut line between the break-in and the break-out, and it will seldom be possible to achieve a tidy picture.

### The Basic Points

- 33. (a) A FLEXIBLE PLAN FOR PASSING THROUGH THE ASSAULTING DIVISIONS IN FRONT.
- (b) CLOSE LIAISON WITH THOSE DIVISIONS.
- (c) SELECTION, PREPARATION AND MARKING OF SUITABLE ROUTES, INCLUDING THE CLEARING OF MINES.
- (d) GOOD TRAFFIC CONTROL.
- (e) A FIRE PLAN FOR THE BREAK-IN BATTLE WHICH ENSURES THAT THE MAXIMUM NUMBER OF GUNS ARE DEPLOYED IN SUCH A WAY THAT THEY CAN SUPPORT THE ARMoured DIVISION WHENEVER IT IS CALLED UPON TO BREAK THROUGH. AIR SUPPORT MUST ALSO BE ARRANGED FOR THIS PHASE.

34. The plan for the armoured division must be flexible because the action of the division will be dependent on the extent of the success achieved by the assaulting divisions, and the reactions of the enemy.

35. The closest liaison must be maintained between the armoured division and the assaulting formations in front, so that commanders and staffs of the armoured division are fully in the picture during the break-in battle before the armoured division passes through.

To achieve this, liaison officers from divisional and brigade headquarters of the armoured division must be sent to the corresponding headquarters in the infantry division. The leading regiment of the armoured division must have reconnaissance parties up with the leading brigade of the infantry division; all traffic control points established by the assaulting division must have provost representatives from the armoured division, and the respective CREs must exchange liaison officers. The CRA of the armoured division must keep the closest touch with his opposite number either by liaison officer or by establishing his HQ initially at the HQ RA of the infantry division.

All liaison officers must of course be in R/T communication with their units or headquarters.

36. In order to maintain the momentum of the attack, it is essential that the armour, infantry, and guns move forward without any delay. Immediately the armoured division is ordered to advance, the assaulting formations must clear all routes to allow the armoured division an uninterrupted passage. It is essential that routes should be prepared, marked and known by everyone before the armoured division advances.

The number of routes which the division uses will depend on the type of country, and whether tracks and wheels can deploy off the roads. It is important that the routes on which the division intends to pass through the assaulting formations are extended to the

rear, so that the leading troops can form up in the required order of march before they enter the battle. This will entail work by the sappers and provost.

Divisional HQ must issue traces, so that every sub-unit commander knows exactly what his route will be. If there is any possibility of the routes being used in the dark, they must be lit.

37. A smooth advance requires a good and flexible system of traffic control, as it may be necessary to change the order of march during the operation. The division must never be so completely committed to its forward routes that, if the leading troops are held up, there is no flexibility of movement in rear of them. To avoid this, units must be called forward only when they are required and when the road space is available.

The bulk of the brigade transport will be deployed off the road. This transport must not move on to the road until it can go straight through to its next deployment area.

This movement control cannot be achieved by march tables. There must be a series of traffic control posts consisting of an officer, military policeman and wireless set, stationed on the routes from the start line of the assaulting formations back to the concentration areas of the armoured division. These Traffic Control Posts must be under the direct control of Divisional HQ so that each unit can be called forward when the road is clear. It is then possible to alter the order of march at any time.

38. The armoured division is closely affected by the fire plan of the assaulting formations. On the deployment of their guns will depend the amount of artillery support available to the armoured division when it passes through the assaulting formations. If the armoured brigade is in the lead, the SP 25-pdr regiment must move forward with it, and must not be embroiled in the initial fire plan for the break-out.

If the other artillery regiments of the armoured division are used in the fire plan for the break-out, they must be deployed close to the route and be able to join into their correct place in the order of march when required.

### THE FOLLOW UP AND BREAK THROUGH

39. The enemy has been driven from his defensive positions and the battle is now mobile. In order to conduct a successful withdrawal, the enemy will have to make use of roads and centres of communication, some of which may be defiles. These must be denied to the enemy or captured, thus turning his withdrawal into a rout.

40. It is likely that at this stage information of the enemy will be scanty and the general situation vague and indefinite. On such occasions the Divisional Commander would do well to act as follows:—

- (a) Reconnoitre widely for information
  - (b) Keep concentrated
  - (c) Direct the division on to an area which is vital to the enemy
- Bearing these in mind, the following are the basic points for the operation.

#### The Basic Points

- 41. (a) THREATEN THE ENEMY'S FLANKS AND PROBE HARD ON A WIDE FRONT. ALWAYS BE PREPARED TO BY-PASS WITH THE LEADING TROOPS.
- (b) SMASH THROUGH ON A NARROW FRONT.

- (c) ALL AVAILABLE ARTILLERY INCLUDING MEDIUM MUST BE WELL FORWARD.
- (d) DRIVE HARD THROUGH TO SEIZE IMPORTANT COMMUNICATION CENTRES AND THUS CAUSE THE ENEMY RESISTANCE TO DISINTEGRATE.
- (e) KEEP UP THE PRESSURE BY DAY AND IF POSSIBLE BY NIGHT.
- (f) WATCH THE ADMINISTRATIVE SITUATION.

42. A retreating enemy force is always nervous of its flanks. To threaten these it is necessary first of all to find them and then probe hard on a wide front and discover the weak spots.

The armoured car regiment should make contact along the whole front closely backed up by the leading armour. During this phase it is an advantage for the division to advance on three or four routes provided they are within supporting distance of each other. This enables the armour to give quick support to the armoured cars on a larger proportion of the front, and makes possible an early exploitation of any weak spot discovered.

43. Having decided on his main thrust, which should be on a narrow front, the method of smashing through will depend on the following factors:—

- (a) Type of country
- (b) Enemy layout and whether demolitions have been encountered

Artillery must be deployed and, if demolitions exist, sapper reconnaissance must be carried out. If the armoured brigade is leading and the infantry brigade has to carry out the attack, reconnaissance parties must be got forward at the earliest opportunity. Foresight and anticipation by the commander will reduce the time necessary for the mounting of the attack.

Armoured divisions must have a complete drill for gapping enemy minefields; they cannot expect passages to be cleared for them always by infantry divisions.

44. There must be one 25-pdr regiment under command of the leading brigade. If there are two brigades up, they must each have a regiment under command. This decentralisation is necessary for two reasons: *firstly*, because brigades must be responsible for moving their own artillery; *secondly*, if two brigades are up, two separate tactical operations may possibly take place simultaneously, and the CRA would be unable to control both regiments.

The artillery, less the regiments under command of brigades, must be centralised and moved well forward under the CRA ready to support operations on either axis.

This support can be accelerated by pistol guns from the regiments in rear being moved ahead with the leading regiments.

45. All ranks must be made to understand that this is the phase in which to take risks and go "flat out" for vital points. If one column is held up on one route, another one must push on.

46. Pressure must be ruthlessly maintained. The commander should state at the beginning of the operation what size of enemy pockets may be by-passed by the leading troops. It must be remembered however that one good road is required as the divisional centre line in order that the echelons may get forward.

Night advances by an armoured division require previous training and practice. All replenishment must be completed before the night march starts, and the column will move sufficiently closed up for each vehicle to see the one in front. The provost staff should move just behind the leading sub-unit on each

route and mark with lights all places where the column in rear may go astray. At first light all units must be prepared to look after their own defence until the situation is clear. Either the armoured car regiment or armoured reconnaissance regiment should be split up down each column to protect the echelons travelling in rear of the fighting troops. "Movement light" may be used to facilitate driving on nights when there is no moon.

47. During this phase the administration of the division will present a considerable problem. The administrative system must be flexible and the administrative staff must be prepared to improvise. A nice sense of judgment is required in order to balance the demands for petrol against ammunition requirements.

The closest touch must be maintained between the 'G' and the 'A' and 'Q' branches of the staff. The best means of ensuring this is for a responsible A/Q staff officer to be at the main divisional headquarters. It is only by means of close co-operation between 'G' and A/Q that the forward movement and protection of the large and vulnerable administrative tail of the division can be ensured.

## TEMPORARY DEFENCE

48. All defence is temporary, and is the prelude to offensive action from the ground defended or from elsewhere.

All defence must be aggressive, both to mislead the enemy and to retain the high morale of our own troops.

Vigorous offensive patrolling and sniping, coupled with the offensive use of supporting artillery, mortars and machine guns, will enable the commander to retain the initiative and keep the enemy at arm's length.

49. The extent of front that can be defended by any formation will depend on the type of country. If the country is close the front which an armoured division can hold is small since there are available only four battalions of infantry, one of which is a motor battalion. On the other hand, in open country an armoured division can hold temporarily, by day only, a wider front than can be held by an infantry division; the vital centres can be held by infantry and comparatively large areas can be dominated by the armour by day, but it is difficult to provide sufficient patrols to dominate a wide area by night.

#### The Basic Points

50. (a) LOCALITIES MUST BE CONCEALED: THIS IS THE FIRST CONSIDERATION.
- (b) A SCREEN OF FORWARD TROOPS MUST COVER THE MAIN AND VITAL CENTRES.
- (c) CONTROL OF ARTILLERY MUST BE CENTRALISED.
- (d) LOCALITIES MUST BE ORGANISED FOR ALL ROUND DEFENCE.
- (e) TROOPS INCLUDING ARMOUR MUST BE AVAILABLE FOR IMMEDIATE AND DELIBERATE COUNTER ATTACK.
- (f) OBSTACLES MUST BE COVERED FROM ENEMY RECONNAISSANCE.

51. These basic points are the same as those for an infantry division and are not expanded here. But an armoured division is a different weapon and must use different methods to carry out this role.

52. A light screen of reconnaissance troops, with artillery observation posts and a few tanks to hinder enemy reconnaissance, must be deployed and be prepared to pull back to the main position when ordered.

53. The main position must consist of a series of strongly defended localities occupied by infantry, machine guns, and anti-tank guns, with some tanks available in the immediate vicinity for counter attack.

54. Behind the main position will come the reserve position, consisting of the main strength of the armoured brigade with a large element of sappers. This reserve must be prepared to counter attack to retain certain vital localities in the main position.

55. To sum up, therefore, the armoured division must hold areas vital to defence with the infantry available, and dominate the rest of the area by means of the armour by day and by vigorous and active patrolling by night.

It will usually be necessary to allot tanks in immediate support of the infantry; a high degree of decentralisation is advisable for these tanks, squadrons or even troops being positioned right forward in the areas of the forward battalions.

## THE SETPIECE ATTACK

56. The setpiece attack against a main defensive area is not a role for which an armoured division is entirely suitable. It must be prepared to carry out an attack with a limited objective if the enemy are not in great strength.

#### The Basic Points

57. (a) THE ATTACK MUST BE ORGANISED IN DEPTH.
- (b) THE START LINE MUST BE SECURE.
- (c) THE ATTACK MUST BE SEEN IN BY FIRE.
- (d) ASSAULTING INFANTRY AND TANKS MUST KEEP CLOSE UP TO THE FIRE.

- (c) SUPPORTING WEAPONS MUST GET FORWARD QUICKLY.
- (f) THE IMPETUS OF THE ADVANCE MUST NOT BE ALLOWED TO DIE DOWN.
- (g) THE GROUPING MUST BE SUITABLE FOR THE COUNTRY AND THE TASK.

58. Depth in the attack is necessary for two main reasons:—

*First* To maintain the momentum of the attack; fresh troops must be ready to go through, even if the first attacking troops have not got all their objectives. An attack should always aim at deep penetration to over-run enemy mortar and gun positions.

*Second* To mop up in the wake of the assaulting infantry and tanks; this mopping up must follow very quickly, and be thorough.

59. If the start line is not secure the whole plan of attack will be in danger of complete failure; a "dog fight" may develop for the start line, and the fire plan will not be designed to cope with this; the deployment of the assaulting troops will probably be seriously delayed and interfered with.

60. The assaulting troops must be assisted forward by all available support from artillery, mortars, machine guns and the air. This fire will aim at covering all known or likely enemy localities, including those which can support the defenders by fire from flank and rear. The defence must be shaken and stunned by fire or bombing. The battlefield must be isolated. The importance of counter battery fire must never be overlooked.

61. Great fire power is useless unless the assaulting troops are able to take quick advantage of it. Infantry and tanks must be right up to their supporting fire

and ready to go in immediately it lifts, and so over-run the defence before the latter can get its "second wind."

62. The first aim of the attack is to capture ground, the second to hold it. Supporting weapons must be got up quickly to help in reorganisation. Initially the tank is the best supporting weapon as it has fire power and mobility. But anti-tank guns must be got forward quickly so as to free the tanks, and allow them to be rallied in not less than squadron packets. These are then available to deal with counter attacks, and for a further mobile and offensive role.

63. It is only by continuous pressure that a break through can be achieved. Once the attack has started, the enemy must be given no respite in which to reorganise and collect reserves.

Fresh formations should be constantly moving up ready to move through the leading troops so that the momentum of the attack may be maintained relentlessly by day and night.

64. Considerations of type of country and enemy layout will influence the choice of whether the initial assault should be carried out by:—

- (a) The Armoured Brigade
- (b) The Infantry Brigade
- (c) A Brigade composed of infantry and armour

If the country is open an initial assault by the armoured brigade will produce the greatest concentration of fire power and the speed of advance will be faster. The infantry brigade will then be available to mop up in the wake of the armoured brigade. Care must be taken that, owing to its speed, the armoured brigade does not out-run artillery support.

In close country or when anti-tank devices abound, the infantry brigade closely supported by tanks should lead. In order to achieve this close support, it will



probably be best to group the division so that there are two homogeneous brigades.

No matter which brigade assaults, it is essential that the whole division assisted by any available fire power from outside sources should be concentrated in one axis of advance. This does not, of course, preclude two routes being used; it is in fact essential to open two routes behind the assaulting troops so as to enable the large number of vehicles in an armoured division to be got forward.

65. In many attacks it will be necessary to breach mine-fields, anti-tank ditches and concrete defences. Obstacles of this sort can best be dealt with by means of small columns consisting of flails and AVREs, supported by tanks, with possibly some infantry in armoured troop carriers, to form the initial bridge-head while the AVREs construct a bridge over the obstacle to allow tanks to pass through. Previous practice and training is required, particularly from the point of view of command and control both of the column itself and within the column.

When attacking through built up areas or when concrete pillboxes exist, flame throwing tanks are of great value.

### THE SEIZING AND EXPLOITATION OF A WATER OBSTACLE

66. Rivers and canals form good delaying obstacles, and the enemy will attempt to make full use of them. The first aim of the Armoured Divisional Commander will be to seize a bridge intact, and so press and harry the enemy that he is unable to make an effective stand. If this fails a deliberate attack must be organised to cross the obstacle, form a bridgehead and build a bridge.

67. An armoured division cannot undertake a major operation of this type; this is basically an infantry operation. However, from the time that it approaches a water obstacle, it must do everything possible to achieve a crossing. Bold action on arrival at the water obstacle may well avoid the necessity for an assault operation. If a deliberate assault proves necessary, the armoured division must assist by carrying out wide reconnaissance, securing the flanks, and supporting the assault by fire from tanks in hull down positions on the near bank.

### The Basic Points

68. (a) EVERY EFFORT MUST BE MADE TO CAPTURE A BRIDGE INTACT BY A "COUP DE MAIN."
- (b) DETAILED RECONNAISSANCE OF THE OBSTACLE IS NECESSARY TO SELECT INFANTRY CROSSING PLACES AND BRIDGING SITES.
- (c) THE INFANTRY BRIDGEHEAD MUST BE DEEP ENOUGH TO COVER THE BRIDGING SITE FROM SMALL ARMS FIRE.
- (d) ANTI-TANK GUNS MUST BE GOT ACROSS EARLY.
- (e) THERE MUST BE CAREFUL ORGANISATION AND CONTROL OF ALL TROOPS AND STORES CROSSING THE RIVER.
- (f) THE BRIDGEHEAD MUST BE EXPANDED AS SOON AS POSSIBLE AFTER THE COMPLETION OF THE BRIDGE.

69. On arrival at a water obstacle the division must endeavour to seize and hold any bridges which the enemy has not destroyed. A success at one point must be reinforced immediately and a strong bridgehead established. Even if all the bridges are destroyed, every effort must be made to secure a small bridge-

head supported initially by fire from the near bank until supporting weapons can be rafted across.

70. The close defence of a water obstacle along its whole length requires so many troops that it will seldom be possible. Reconnaissance must be carried out by patrols of infantry, armoured cars and tanks to find suitable infantry crossing places which are not closely defended. Very early sapper reconnaissance of the bridging site is essential, to ensure that it is the most suitable available and to allow time for the bridging material to be got forward.

71. There are not sufficient infantry in an armoured division to achieve a crossing on a wide front. They must cross on a narrow front and go deep enough to prevent bridging operations being held up by aimed small arms fire. By day, the armour can cover them and neutralise a wide front. The armour may also be used to make a feint at some suitable crossing place other than the one selected.

72. As in every other form of attack, it is of vital importance to get supporting arms, and in particular anti-tank guns, across the obstacle as early as possible. Until this is done, tanks must support the infantry from the near bank during daylight.

73. Very careful control of the routes leading up to the bridge must be arranged. Until the bridge is built this control must be exercised by the assaulting brigade in close conjunction with the CRE. As soon as the bridge is open, control should pass to Divisional Headquarters who must allot priorities and ensure strict traffic control.

74. By reason of the shortage of infantry the initial bridge-head is bound to be small. A fire plan should be prepared so that as soon as the bridge is completed a really determined outward thrust can be made with armour and infantry.

B. L. M.

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