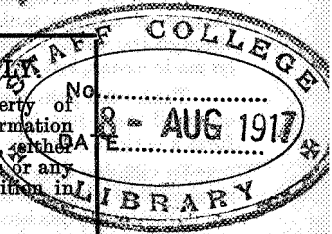


E431/26 O.B./83 T  
Issue down to Regiments,  
Batteries,  
Battalions.  
E412/1A/4

Not to be taken into action or into Front Line Trench.

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# Notes on the use of Tanks and on the general principles of their employment as an adjunct to the Infantry attack.

ISSUED BY THE GENERAL STAFF.

May 1917.

(ISSUED WITH SPECIAL REFERENCE TO THE "MARK IV.", 1917, PATTERN.)

1. With tanks, as with any other arm, satisfactory results can only be obtained by the close co-operation of all arms. Although the employment of tanks as an adjunct to offensive operations is still to a great extent in an experimental stage, it is necessary for all commanders and subordinate leaders of all arms to realise the limitations and capabilities of tanks, and to know the general principles of their employment, so far as these principles can be laid down at present. This is all the more necessary, as occasions will inevitably arise (as the number of tanks in this country increases) when troops will be required to operate with tanks without any previous experience or training.

2. (a) The radius of action of the Mark IV. Tank, and the limit of endurance of its crew, is not more than about 8 hours; this period being reckoned from the time of departure from, and return to, a position where the crew can rest and where the tank can be overhauled and refilled.

Its pace varies from  $\frac{1}{2}$  to 4 miles per hour, according to the nature and state of the ground. For purposes of calculation its average pace, when fighting under favourable conditions, may be taken at about 2 miles per hour.

(b) The Mark IV. Tank can cross trenches 9 ft. to 10 ft. wide; can surmount a perpendicular obstacle 4 ft. high, and move up or down a slope of 1 in 2.

So long as the bottom is hard, mud or water, to a depth of 2 ft. or so, is no bar to its progress; but, owing to its weight, ground that has been very heavily shelled, or is very sodden to a considerable depth, is unfavourable to its employment.

(c) Wire entanglements do not form any obstacle to tanks, but the passage of a single tank will only as a rule flatten two passages 2 ft. wide through the wire. The passage by infantry in single file may, therefore, be made easier, but the wire remains more or less an obstacle.

Tanks can pass easily through thick hedges or thick woods composed of small trees, but large stumps of broken trees are difficult to see, and form a serious obstacle to tanks.

In villages they can operate with success so long as the streets are recognisable; but when the village is reduced to heaps of rubble, tanks are liable to get ditched in the cellars.

(d) Although the Mark IV. Tank has an improved silencer, it can still be heard when in movement within 250 yards, unless the noise is covered by a certain amount of machine gun or artillery fire. The approach of a tank to its final position preparatory to attack should always, therefore, be covered by a certain amount of shooting.

3. Against infantry or machine guns tanks are almost invulnerable (the Mark IV. Tank is practically proof against the German armour-piercing bullet) and have great moral effect, as well as considerable fire power; but the effect that each tank exercises is purely local. On the other hand, when stationary, they form an easy target for the enemy's artillery, though hard to hit effectively when in motion. In addition, they are easily put out of action by a hostile anti-tank gun.

It follows, therefore, that—

(i.) It is essential that the action of the artillery and the employment of tanks should be carefully co-ordinated. Tanks always draw hostile artillery fire, and counter-battery work is, therefore, of particular importance.

(ii.) An artillery barrage will usually be necessary both to assist tanks in overcoming stationary anti-tank armament, and to cover the advance of the infantry in the usual way.

(iii.) Tanks should keep constantly in motion unless they are covered from hostile artillery fire, *e.g.*, by the configuration of the ground or being amongst the enemy's troops.

4. The power of tanks is considerably limited by poor vision, which makes it difficult to recognise objectives or to follow complicated routes. As a general rule, therefore, the most suitable objective for tanks is a clearly defined line of trenches. In any case, the objectives assigned should be visible and obvious, and the task simple, definite and limited.

In detailing tanks to objectives, it should be borne in mind that:—

(i.) As far as possible, the general direction of their advance should be parallel to that of the infantry. Movements of tanks diagonal to that of the infantry have been found to draw the latter off their objective or line of advance.

(ii.) The best moral effect is obtained, where conditions are suitable, from the employment of large numbers of tanks attacking several objectives simultaneously.

On the other hand, to provide for emergencies, and to replace tanks which from one cause or another have been unable to reach their objective, a proportion of tanks should be kept in reserve.

These conflicting requirements must be carefully balanced according to the circumstances of each case.

(iii.) As a general rule it is useless to give tanks the task of *finding* objectives; such as detailing a single tank to look for a machine gun which has not been located. If machine guns have been accurately located, tanks are most useful to overcome them.

(iv.) The fewer the tanks employed on a given front, the easier it will be for the enemy to concentrate his guns on the tanks, and the greater will be the proportion of tanks knocked out. Also, owing to accidents of ground, or mechanical trouble, it is not safe to rely on all tanks reaching their objectives. For these reasons it will seldom be advisable to detail less than a section of tanks for any one objective.

(v.) Tanks can force their way into almost any objective, but cannot halt to hold them in the open, where they are exposed to direct hits by hostile artillery. The position gained must be taken over by the infantry. When this has been done, tanks should move on to another objective or to the rallying point. If the infantry are not able to reach the tanks, it will seldom be any use for the tanks to continue their advance.

5. The frontage to be covered by tanks is governed by the particular situation of objectives and by the facilities of approach. They should not normally work less than 100 yards apart.

Very careful previous reconnaissance is essential in order that tanks should not be deliberately committed to an impracticable route. A plentiful supply of aeroplane photographs must be supplied to the tanks for this purpose.

In addition, the routes to the starting point require very detailed examination in order to ensure tanks arriving in time.

6. It should seldom be necessary to employ tanks at the commencement of an offensive to assist the infantry assault on a hostile front system of trenches, which can be adequately dealt with, and destroyed, by our own artillery bombardment.

As the appearance of tanks will immediately bring down a hostile artillery barrage, they should not usually precede, or even start, with infantry at the commencement of an attack.

Normally, tanks should wait concealed at first, and go out later:—

(i.) To deal with pockets of the enemy and strong points holding out in the objectives captured.

(ii.) To deal with defences beyond the hostile front system which are interfering with the progress of the battle by holding up the advance of the leading troops.

(iii.) When the infantry has reached the furthest objective and there is sufficient space beyond, to work with infantry patrols and advanced guards and help them to deal with machine guns.

They may also be employed for special tasks such as:—

(iv.) Covering the formation of a defensive flank by working outwards so as to provide more room for consolidation.

(v.) Flattening sunken or concealed wire which cannot be cut by artillery fire. The chances of success are not great, and their use for such an abnormal purpose should be rare.

The rôle of tanks stated above will usually entail their passing through the hostile barrage. This can be effected without undue loss, so long as the tanks keep moving.

7. From the foregoing, the general principles of the employment of tanks may be summarised as follows:—

(i.) Each tank formation should be disposed in depth so that if the leading tanks become casualties, others can move up to carry out the task.

(ii.) The tanks should follow the infantry immediately after the first assault, with a view to:—

(a) Assisting the infantry to mop up pockets of the enemy.

(b) To push on to special objectives, or carry out suitable tasks, which will usually be found in and beyond the second objective of the main infantry attack.

(iii.) The tasks and rôle of the tanks should be worked out by the commanders concerned in the same way, and in co-ordination with, the artillery programme, and each tank attack should be supported by mopping up parties and sufficient infantry to consolidate and hold the objectives when gained.

8. Both for the reason that a tank draws fire and on account of its liability to lose direction, infantry should not as a rule, immediately follow tanks (except for the purpose of passing through wire entanglements), and any tendency to bunch behind the tank should be checked.

From the limited experience available, it would appear at present that the most suitable formation for the infantry to adopt is to follow tanks in small groups, in the intervals between the tanks. The advance of the infantry to the objective being controlled in the ordinary manner, independent of any deviation of route taken by the tanks.

9. For purposes of administration, tanks are G.H.Q. Troops, and will be allotted in Brigades to Armies for certain operations.

The Army will allot tanks in Brigades or Battalions to the Corps, in accordance with the general plan. The tank units so allotted become, for purposes of the battle, Corps Troops, and their objectives will be decided by the Corps. The details of the movements of tanks to gain these objectives will be worked out in conjunction with the Division under whose orders they are placed for the specific operation.

10. The signal arrangements of the Heavy Branch, Machine Gun Corps are not yet completely organised, but are being framed with a view to providing communication between—

The O.C. Tank Brigade and the Army or Corps Commander.

The O.C. Tank Battalion and the Corps or Divisional Commander.

The O.C. Tank Company and the Divisional or Brigade Commander, under whose orders he is operating.

The O.C. Tank Section and the Infantry Commander on the spot.

The fighting tanks and the forward troops (and by pigeons to the commander of the operations).