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# COMBINED OPERATIONS

PAMPHLET No. 37

## INFANTRY

1942

(This pamphlet supersedes Combined Operations Pamphlet No. 7, 1941)

This pamphlet is PROVISIONAL only and is based on the old War Establishment of an infantry battalion. It is proposed to issue a new edition as soon as sufficient information and experience regarding the new infantry battalion is available.

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The Chief of the Imperial General Staff*

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## INFANTRY IN OPPOSED LANDINGS

### 1. General

1. Assaulting battalions will normally be carried either in specially fitted landing ships, infantry (LSI), which can take, in addition to personnel, bicycles, motor-cycles, a limited number of Bren carriers, battalion weapons and 3.7-in. howitzers, or in ordinary personnel ships certain of which can carry a very limited number of vehicles.

These ships will carry a number of landing craft, which may be :—

- (a) Landing craft, support (LCS), manned by naval personnel—role, protecting and guiding in flights and capable of affording close support.
- (b) Landing craft, assault (LCA) capable of carrying approximately 35 military personnel.
- (c) Landing craft mechanized (LCM) capable of carrying two 15-cwt trucks or Bren carriers, and 40 military personnel, or one 3-ton lorry or tank up to 16 tons weight or 100 military personnel.

Carrying capacity of other "marks," when produced, may vary these figures.

Landing craft, tank (LCT), will usually accompany or follow closely behind assault battalions. They carry 3 to 10 tanks according to the type and mark of the craft; under certain conditions they may accommodate in addition up to 150 personnel including vehicle crews.

With other arms accompanying the initial assault, as shown in Appendices C2 and D, the ideal number of LCAs for an infantry battalion is 16, but at present no LSI can carry these in addition to the two LCSs which are required. Therefore, either part of the battalion will have to be embarked in another ship, or additional LCAs will have to come from another ship or be towed to the assembly point. LCMs may be carried in MT ships and the remainder in special LCM carrier ships which take time to unload.

Reserve battalions of leading brigades will be carried in the above types of ships, in ordinary passenger troopships, or LCI as these become available.

Vehicles and guns are carried in LCTs, LSTs or MT ships. They will invariably be accompanied by one driver per vehicle and one limber gunner per gun; wherever possible these will be increased to complete crews.

In any event the space for MT and guns accompanying the assault force will be limited and units will have to operate with a reduced scale of transport, e.g. one truck per infantry coy, until the remaining vehicles and guns are landed later in the operation.

2. In addition to the battalions, the following troops, or some of them accompanying the battalion in the assault, are likely to be carried in the same ship :—

- (a) Personnel of light batteries (3.7-inch howitzers).
- (b) Personnel of light AA batteries.
- (c) RE detachments assisting in the assault.
- (d) FOO parties.
- (e) Reconnaissance parties of tanks, artillery, AA artillery and RE.
- (f) Personnel of beach group, including beach signals.

Personnel of supporting arms landing in the early stages of the assault will often travel with their equipment in LCTs. Their reconnaissance parties will be carried with the assaulting battalion which they are supporting.

3. It may be possible for final details of a landing to be worked out during the course of the voyage, if this is of some duration. It should be realized, however, that personnel of other arms co-operating with the battalion may have to be carried in separate ships or craft and therefore the plan as it affects them must be completed and all detailed arrangements made prior to sailing.

Since landing ships, infantry and landing ships, personnel are not normally capable of carrying MT, battalions must expect to find that they are separated from their vehicles some time before embarkation.

Certain assault ships carry two LCMs, which can be used to land carriers transported on deck, in the hold or already loaded in the LCMs; all LSIs can normally carry motor-cycles.

## 2. Embarkation in ships

The procedure detailed in (a) Voyage Regulations, and (b) Instructions for OCs units ordered overseas, will be followed generally, but these publications should be taken as a guide and may require special modification to fit the tactical situation. On a long sea voyage a representative of the sea transport service will accompany a troopship to assist OC troops and the master.

### 3. Organization for a landing

#### 1. Composition of assault force

Experience during training has shown that an infantry brigade group of all arms, with certain administrative units to provide for its maintenance and that of succeeding formations, represents the most suitable formation for initial landing.

The number of such groups employed will depend upon the scale of the operations and the extent of the covering position which the assault force will be called upon to secure.

#### 2. Time of landing

The approach to the enemy coast will be made under cover of darkness and, since surprise is of paramount importance, the initial landing will often be effected before daylight.

The distance which the assaulting ships and craft have to cover at night to avoid detection from air reconnaissance will, of course, affect the period of darkness left available for landing.

#### 3. Selection of beaches

It may be preferable to accept the disadvantages of landing initially on a beach with physical difficulties to overcome in order to obtain surprise, rather than to attack a strongly defended beach which is otherwise more suitable for the landing of vehicles.

The beach which is ultimately required may then be "pinched out" or secured by manœuvre and flank attack.

The penetration value of estuaries should be borne in mind when deciding where the landing is to be made.

#### 4. Landing of armoured fighting vehicles

If, as a result of a study of air photographs or other intelligence data it is clear that substantial obstacles or minefields exist, infantry will almost certainly have to lead the assault, accompanied by engineers.

These will probably require certain equipment which may later include tractors fitted with bulldozer blades; one or more LCMs will therefore have to be allotted for this purpose.

The leading troops will have to be ashore in sufficient time to clear the obstacles and mark the gaps and landing places if tanks are required to operate by first light.

In general it can be taken as exceptional to find a beach sufficiently clear of obstacles to allow tanks to carry out the initial assault unaided.

## 5. RE

(a) *Divisional units.*—The initial role of the divisional engineers is to assist the assaulting infantry with their carriers to penetrate inland through the beach defences.

This may involve :—

- Clearing passages through obstacles and minefields.
- Minor improvements to beach exits.
- Destruction of enemy strong points.
- Neutralization of enemy prepared demolitions.

One platoon of a divisional field company will usually be placed under command of each assaulting battalion and will land in two waves. The first wave (e.g. one section) will provide mine clearing parties to assist the leading infantry companies. The second wave will reconnoitre and clear lanes for the passage of carriers and tanks. This platoon will almost certainly have to be split into small parties, each party travelling in separate landing craft.

During the advance inland, the divisional engineers will be employed in their normal role in support of the division.

(b) *Non-divisional units.*—These can be divided into two types :—

- i. Units required for developing beaches and maintenance areas. The allotment to each divisional front will vary with the engineer tasks involved, but the following might be expected in average conditions :—

- One or two army field companies.
- Detachment field park company.
- One mechanical equipment section.
- One army troops company.
- Two pioneer companies.

- ii. Units required for special purposes. These include airfield construction groups, chemical warfare companies, bomb disposal sections, quarrying units, etc. They will only be included when specially required.

(c) *Transportation units.*—These are normally responsible for the landing of all stores, vehicles and equipment other than that actually carried by the troops. In order, however, to conserve skilled transportation labour, much of this work ashore will be done by beach groups under the beach commander, transportation units being responsible for specialist work such as the building of piers, or later the development of facilities at captured ports.

## 6. Anti-aircraft artillery

It is essential, if enemy air opposition is expected, that the beaches be protected by AA guns as early as possible.

AA artillery should therefore be landed and come into action as soon as the beaches are secured.

HAA artillery for defence of the area of the beaches and dumps will be landed later.

## 7. Field artillery

Field artillery will not normally be landed in the first flight. It will probably be landed after the assaulting battalions have secured the beaches, and will have the role of supporting the advance of the assault force to the covering position.

## 8. Light artillery

The 3.7-inch howitzer if available is a further valuable artillery support weapon in an assault landing. When moved by MT, it is mobile, but it can also be manhandled in "man pack" without great difficulty. It has a range of 6,000 yards, fires a shell of 20 lb., and has a good crest clearance.

One section is suitable for allotment to a battalion, the section of two guns with one tractor and 70 rounds per gun can be carried in one LCM; alternatively one gun only, dismantled with its detachment and 100 rounds in boxes can be carried in an LCA.

## 9. Flights

"Flight" is a term denoting a naval formation of landing craft, and it includes troops travelling in these craft. The landing craft will be organized in one or more flights, depending on the numbers available. A flight will generally contain a complete unit with any attached troops, and may be organized into waves to ensure that the unit lands in the correct tactical formation.

If, in the planning stage, it has been considered safe for the convoy to remain off the enemy coast, the ships may contain troops additional to those carried in the initial flight, but once the craft comprising a flight have beached, they will not be re-organized into further flights. To meet this further need, craft which have already beached will be formed into a ferry service under the direction of the Senior Naval Officer Landing (SNOL) and his staff.

## 10. Frontages

The assault should be made on as broad a front as possible in order to give room for manoeuvre and to take advantage of successful landings, when others may have become involved

in difficulties. In the approach to the beach, however, the craft comprising the flights must not be widely separated and on a dark night they should not be more than visibility distance apart.

The battalion at night must therefore expect to be landed with platoons (of companies) not more than 50 yards apart, if carried in small craft; the wider frontage will be obtained by intervals between companies. LCTs will beach between 50 and 100 yards apart.

The probable allotment of naval officers to craft is given in the introduction to Combined Operations, Pamphlet No. 1; there will, however, be one officer who may be a Royal Marine, in each LCS(M) and LCS(L).

## 11. Objectives

The accepted principles and methods of night operations, particularly with regard to limitations as to the distance of advance, and the necessity for clearly marked and recognizable objectives apply. The selection of objectives is made more difficult by the impossibility of guaranteeing the exact point of landing and of carrying out any previous reconnaissance. The objectives of the leading units must be far enough inland to prevent the enemy's direct small arms fire from engaging the troops on the beaches.

In darkness, units may find they have not been landed at the right place; but once landed they must press forward at all costs and not be re-embarked.

In consequence, companies should be prepared to act to the commander's "intention" rather than to given boundaries outside which they have no responsibility. Generally speaking it will be advisable for leading companies to press forward to the alignment of their objectives and for succeeding companies to mop up, moving to a flank where necessary to effect this on beaches where landings have not, by error or design, taken place.

It is important that, in order to maintain direction, compass bearings should be taken whenever possible.

The distance inland to which leading troops will be able to penetrate in order to establish a covering position will be governed by various factors, but particularly by the nature of the ground and by the number of troops available for the purpose. The latter factor is important as assault landings may often be on a broad front whereas the final establishment of the covering position will demand a certain degree of concentration. Whether the assault is made in darkness or daylight will also affect the depth of initial penetration.

## 12. Handling of reserves

A floating reserve will be retained by commanders of assaulting battalions as well as by the brigade commander.

These will be utilized to reinforce success already achieved and will therefore probably land on a beach at which other units have landed previously.

The battalion reserve may consist of one or two companies in LCAs or LCIs, together with carriers and other supporting arms in LCMs or LCTs. These may be led in by the battalion commander or be ordered in by signal to a different beach in accordance with a pre-arranged alternative plan.

Similarly the brigade commander may have a floating reserve consisting of his third battalion and one or more squadrons of tanks. It must be realized that it will be difficult to get a clear picture of the situation on shore by observation from a landing craft lying off the beaches.

## 13. Dress and equipment

The nature of the operation will usually require the troops to be "self-contained" for 48 hours. Special mess tin rations for this period have been produced and will be carried on the man in addition to the emergency ration. It is important that the men carrying out the initial assault be lightly equipped. There is little room to spare in a crowded LCA carrying a rifle platoon and men must have their hands as free as possible if they are to clear the craft quickly and get across the beaches. LCAs are only able to carry a platoon at an establishment of 30 plus 5 other personnel.

The remainder of the company will come ashore later, possibly with such transport as can be landed during the early stages of the assault.

Climatic conditions will dictate whether greatcoats can be dispensed with for two or three days until the bulk of the unit transport arrives. If required they will have to be taken ashore in bundles during the ferry service and be dumped in the assembly area for forwarding when transport can be made available.

In certain circumstances it has been found preferable for each man to land with one blanket rolled in bandolier or strapped on the haversack or small pack; alternatively, the men may wear leather jerkins which allow free movement.

## 4. Beach organization

### 1. Staff of the landing organization

(a) *Assistant Beachmaster, RN (ABMr) and Unit Landing Officer* (military) (ULO). These land with the initial wave. The ABMr is responsible for signalling out to seaward to

direct in subsequent craft ; the ULO, who will have an assistant, for getting personnel and vehicles of his own unit clear of the beach and into an assembly area which he will have selected. Further details as to the responsibility of the ULO are given in section 8, para 4.

(b) *Beachmaster, RN (BMr) and Assistant Military Landing Officer (AMLO)*. They will land shortly after the first wave, preferably with battalion headquarters, and will be concerned with the development of the beach for the landing of tracked and wheeled vehicles. While the BMr is making a reconnaissance of the beach for beaching of craft, the AMLO will be reconnoitring the exits from it. They will then meet at a prearranged rendezvous, come to an agreement, and then take over the working of the beach from the ABMr and ULO. The BMr, ABMr and AMLO will all belong to one beach group and will have small parties from it working under them.

Further details of the duties of the Beach Organization are given in Pamphlet No. 2, Section II.

On taking over control, the BMr will mark the beach and will be responsible for the beaching and rapid turn-round of all craft arriving. The AMLO will take command of the military personnel in the beach group and will organize the clearance of personnel, vehicles, equipment and MT across the beach.

(c) *Principal Beachmaster, RN (PBMr) and Military Landing Officer (MLO)* will land probably with brigade HQ. The PBMr will co-ordinate the work of the BMr's in his sector ; the MLO will be responsible for movement of vehicles, personnel and stores in the beach maintenance area. He will carry out a joint reconnaissance with the senior Q staff officer ashore, during which they will site the dumps in the beach maintenance area from which the assault force will be maintained.

(d) *RAF Landing Officers (RAFLO)* will often land with the MLO and will advise on the landing of RAF fuel and ammunition and their subsequent distribution. All RAF supplies and dumps should be kept separate and clearly marked.

## 2. Signals

Notes on the handling and disposition of battalion, brigade and beach signals are contained in Combined Operations Pamphlet No. 6.

The communication system is composed of many small physically isolated links, several of which are in charge of junior ratings and ranks. All commanders must give their personal attention to the working of the communication system and also give every assistance to the many small detachments and signal personnel.

### 3. Beach commander

The beach maintenance area will be under control of a beach commander. This officer will normally be a lieutenant-colonel; he will receive special training and should be well known to the brigade commander and his units; he will command all units remaining in the beach maintenance area. To ensure that units concerned are able to carry out their allotted tasks, he must at all times be kept fully informed of the divisional maintenance plan. To assist him he will have a small staff which will include the MLO and DAQMG. The MLO is a technical officer, responsible for all movement through the beach area, the DAQMG for the layout and running of the dumps. These two officers are found from GHQ or the HQ of other formations, and will during the planning stage be attached to the brigade staff to give advice and to assist in co-ordinating G and Q plans. If later a Base Area Commandant is appointed, Beach Commanders will continue to work under him so long as maintenance takes place through the beaches.

## 5. Orders for a landing

### 1. General

The preparation of the plan and issue of orders to the units of the force are matters of the utmost importance; it is essential for the correct personnel, equipment and MT to be embarked in the ships and in the correct order to enable them to be disembarked in the order required by the operational situation on arrival. Since surprise is a paramount necessity for a landing, the minimum number of persons must be informed of the object and destination of the expedition prior to sailing. On the other hand, insufficient information given to those responsible for preparing the troops and organizing their stores and transport will make the plan completely ineffective, and lead to certain failure.

Consideration of the matter contained in Appendices A1 and A2 will make it clear that some adjustment is necessary in each unit; it must be subdivided some days in advance into the detachments which may embark at different ports and certainly at different times.

This means that the brigade commander's plan requires completing in good time in all details including:—

- |   |   |
|---|---|
| (a) Scale of transport.                                     | } These are invariably laid down by higher authority. |
| (b) Equipment to be taken with the assault force.           |   |
| (c) Allotment of troops and vehicles to shipping and craft. |   |
| (d) Order of landing.                                       |   |

Much of the foregoing can be incorporated in standing instructions, though these will often have to be regarded as a guide depending on the availability of shipping.

## 2. Battalion commander's orders

The assault battalion commander, when receiving orders for the landing, will be given all available intelligence regarding the beaches or landing places and the enemy's dispositions in the area in which the unit is to land; he will also require time of high and low water, sun and moon rise and set, and degree of moonlight to be expected. The troops placed under his command will normally travel in the same ship as the battalion. Attached to the brigade commander's orders, will be a landing table; a specimen of each is attached at Appendices C1 and C2. These provide the material from which the battalion landing table is compiled. If included, the timings of landing after zero are intended merely as a guide in the planning stage. They will seldom be retained in the landing table as finally published.

It is essential that battalions use the same serial numbers as those allotted in the brigade table in order that confusion may be avoided and the contents of landing craft be referred to by quoting the serial number.

The brigade order will state the serial or group of serials within which the personnel, for which brigade HQ will ultimately be responsible, are to travel. Special points for inclusion in an infantry battalion operation order are given at Appendix D1; to this order is attached a battalion landing table which includes a complete allotment of personnel to craft, time of embarking, position of each boat, and where each party is to "fall in."

It will be noted that platoons are allowed for at a strength of 30 each; this is dependent on the dimensions of the landing craft. The five additional places in the craft are required for personnel of other arms who have to land at the same time as the assaulting platoon. The allotment of these personnel to craft can only be made after deciding the immediate requirements on shore. Specimen loadings of an LCA and LCM are given at Appendices E1 and E2. Equipment taking up man-space must be noted, e.g. 1 bicycle = 1 man.

## 3. Issue of orders

Although in principle operation orders should not be issued until embarkation, any subordinate commander who has to exercise a choice in the method of loading his unit, or subdividing it between two or more ships or craft, should be given sufficient operational details in time to allow him to make the best decision

On the other hand, as surprise is a paramount necessity, only the minimum number of persons essential for success must be informed of the object and destination until the expedition is about to sail. It is probable that the battalion will have been trained for the actual operation planned and perhaps exercised on ground similar to that in the projected theatre, but officers, NCOs and men are not likely to know more at this stage. After sailing, all ranks should be told the details of the operation and individuals' duties explained as fully as possible. The central authority must always lay down in unmistakable terms the times at which briefing can take place and the regulations regarding security.

4. Certain points arise from the above :—

- (a) Since the communications between ships during the voyage will be most limited (perhaps only by VS during daylight hours), the battalion commanders and naval officers must know their orders exactly and must have made the most complete arrangements for their units before sailing.
- (b) Plans and orders, once made, cannot easily be changed after sailing. It must be realized that on arrival at the destination, once the landing craft have left the ship to proceed inshore, no further orders can be issued, and that little or no control of the sub-units (except the reserve companies if held well back during the landing) can be exercised by the battalion commander until some time after the landing troops are ashore. Battalion orders must, therefore, be given in the greatest detail and no pains should be spared to see that all ranks know their roles and have been given all possible information.
- (c) Orders down to individuals may have to be given out in a very short space of time, particularly if the sea journey is short. It will probably have been possible to issue many details in advance without giving away vital information, but maps and place names will have been kept secret.  
Every use should be made of any means by which rapid instruction of the officers and men can be assisted. Thus, the study of air photos, through stereoscopes, the showing of maps by epidiascopes, and the study of scale models, may prove invaluable.
- (d) Communications, once ashore, are likely to be difficult. Good wireless drill and an ability to get messages through quickly by any means (such as VS) will be of the utmost importance.

It will be found advantageous to have in battalion office equipment a portable typewriter (for making out landing tables, etc.) and a specially fitted box for battalion and intelligence section stationery, files, etc.

## 6. Preparations for landing

### 1. Embarking in landing craft

As soon as troops are settled in the ships, the manning of landing craft will be practised both by day and by night. Absolute silence must be maintained and the practices should cover the complete manning operation from the time the troops fall in fully equipped on the mess decks.

In order to reach the required standard in the confined space available, a considerable amount of time must be spent on this drill.

Landing tables for the first flight will show sub-units and officers or men allocated to definite craft.

2. Subsequent to the first flight two alternatives occur. Either the craft available initially will have been able to empty the assault ships of all troops on board, or the craft will have to form a ferry service under the direction of the SNOL for clearing the balance of troops to be landed.

The latter case will only be possible where it is considered safe for shipping to lie off the coast for a few hours (*see* Sec. 3, para 9).

3. In this case personnel who are not included in the first flights will be shown in the landing table by serials in order of priority for landing; they will not here be allotted to specific craft. Once the first flight is away, the balance will be assembled by serials in the mess decks ready to move to their correct stations for embarking as soon as the craft return.

This will be organized by an AMLO who will normally travel in each ship. He will need four or five orderlies specially trained for the work. The orderlies should know their way about the ship in the dark; they should know where to find any sub-unit; they should know the principal naval officers concerned in the embarkation, and where to find them. If an AMLO is not detailed, an officer of the battalion, the 2IC or OC HQ company would be suitable for this duty.

4. Accurate timing for the operation in question is essential. Commanders should know exactly how long it takes their units to embark in craft and be ready to leave the ship. Overtiming of this operation leads to considerable exposure

of troops to weather, and entails their waiting in cramped positions.

In order to accustom the troops' eyes to the dark it will be advisable to switch off all lights, except blue police lights, in the mess decks for a short while before they come up from below.

Since the mess decks may be in darkness, it is important that men be so placed that there will be no cross traffic when once they are ordered to move up on deck, or to the ports in the sides of the ship.

5. No lights whatever must be shown on deck, or on the landing craft by any officer or man of the unit. It may, however, at times be necessary to use a light when loading vehicles. In such cases only an officer or responsible senior NCO should use the torch. Torches must be dimmed and bulbs blued.

On vehicles, light fuses should be removed and horns disconnected.

## 7. Preparation of equipment and stores

1. The difficulties of handling equipment and stores on crowded mess decks and in the narrow alleyways and passages of ships in the dark, also the difficulties encountered by heavily laden men in negotiating gangways and ladders make it essential that the men should be given practice in their duties.

All equipment should be assembled early in places previously arranged, and men should be dressed in good time.

Men's equipment should be so arranged that it will not project and catch in things when they move to their stations. Every man should have one hand free when he moves about. He will need both hands free if he is to climb down a ladder over the ship's side.

2. Loose stores should be bundled into one-man loads which can be lowered into boats; heaving lines will be required for lowering.

## 8. Landing

### 1. Running inshore

(a) One Bren gun should be held ready in the centre of the craft for AA fire if air attack may be expected.

(b) One Bren gun should be placed on either side forward of the craft, ready to fire on the beaches.

## 2. Smoke

(a) The general smoke plan will be formulated on a high level, for smoke, once released, cannot be controlled; an indiscriminate local use of smoke, though achieving its local object, may cause considerable dislocation of troop and craft movements downwind. Furthermore, the passage of a smoke cloud astern of a craft approaching a beach will present a favourable silhouette target to the enemy defences. The use of smoke on a *large* scale will therefore, in a co-ordinated assault, never be left to the discretion of a local subordinate commander.

(b) Under favourable wind and weather conditions the skilful use of smoke from 2-inch mortars firing on to the beaches will do much to reduce casualties during the approach of landing craft to the beach.

(c) It has been found possible to mount 2-inch and 3-inch mortars upon specially constructed platforms in landing craft, but it is advisable to fire these weapons on a low trajectory otherwise there is a risk of craft running in under their own bombs. Considerable previous training is essential.

## 3. Beaching

(a) It is most important that assault craft shall be cleared quickly. However, if there is wire on the beaches, it may in certain circumstances be preferable for men to remain in the craft while individuals, who must be detailed in advance, go forward to breach the wire.

(b) As soon as troops have landed from craft they must get forward inland as quickly as possible; on no account must they remain on or near the beaches. If troops or carriers are landed on the wrong beach where a unit other than their own has landed, they should at once place themselves under the orders of the latter unit and work inland with it until the situation allows of their rejoining their own unit.

## 4. Unit landing officer (ULO)

A senior officer detailed as unit landing officer will come ashore with the initial wave. He will station himself on that part of the beach which it is intended to develop for the balance of the assaulting troops. He will be responsible for organizing the rapid passage of personnel across the beaches prior to the arrival of the AMLO and will work in close liaison with the ABMr.

At this stage reconnaissance will largely be confined to the seaward approach at the beach; if, however, tanks and carriers are to land with the initial assault, reconnaissance for suitable exits will immediately be necessary; otherwise the

reconnaissance for vehicle exits will be left until the AMLO arrives.

Where the beach is wired, he will see that the gaps made by the leading troops are marked by tapes or flags for the benefit of succeeding waves. He will be assisted by two or more regimental pioneers and possibly also police and personnel of the intelligence section; their duty will be to reconnoitre a battalion assembly area and guide personnel to it.

Whereas the passage of obstacles in the initial assault is the responsibility of the infantry, the RE and/or infantry pioneer platoons are responsible for clearing lanes for vehicles through obstacles and minefields. The ULO will ensure that such lanes are adequately marked.

He will meet the AMLO on his arrival, indicate briefly the situation ashore and point out the battalion assembly area. As soon as the AMLO has confirmed by reconnaissance the beach exits which are to be developed, the ULO will hand over to him and go to the assembly area for which he will then be responsible. He will send back an orderly to the AMLO to act as guide or messenger.

#### 5. Battalion headquarters

(a) As it is essential to maintain close touch between battalion headquarters and the beach organization, it will often be convenient for the BMr, AMLO and advanced detachment of the beach signal section to land from the same craft as the battalion commander.

(b) After landing, battalion will keep the beach informed of the location of its HQ. Battalion HQ should not, unless this is unavoidable, establish itself on, or very near to, the beach. It should move inland, clear of the beach, and quickly establish communication with the beach signal station.

### 9. Points for training

#### Preliminary training

1. Before embarking in ships, or as soon after as possible, officers and men should receive short lectures on ship life, naval organization and naval customs. This is particularly important where troops are embarking in HM ships.

2. There are various phases in landing operations which require careful rehearsal and training which can all be rehearsed on the barrack square or normal training area.

These are as follows:—

- (a) Getting into and out of an LCA as rapidly as possible.
- (b) Vehicles and infantry getting into and out of an LCM.

- (c) Forming up on the deck (imaginary) of a ship, preparatory to getting into craft.
- (d) Descending a rope ladder.
- (e) Crossing wire in the dark; communication between the men making the gap and the rest of the platoon.
- (f) Troops coming out of craft under fire and operating inland; providing covering fire from the craft and from positions on the beach.
- (g) Firing 2-inch or 3-inch mortars on low trajectory.
- (h) A tactical exercise using a road to represent high water mark and taped areas representing landing craft grounding. To include working with a few carriers and tanks and a section of 3.7-inch howitzers.

All these exercises should be carried out in the dark as well as daylight.

3. It may be that troops will have to embark in craft by ladders in the dark. They should have practice in descending rope ladders in the dark. Ladders can be hung in quarries, from roof-tops, or in a gymnasium. The bottom end should be held and swayed slightly from side to side to represent the motion of a ship.

4. Training on normal tactical lines can be carried out for troops assumed to have landed.

The following points should be stressed :—

- (a) Leading infantry, once out of the assault craft, and across the wire must not line the beach or bunch under cover near the beach. They must disperse by sections and get well inland where the platoon commander and subsequently the company commander can assemble his unit and resume the advance in the normal manner.
- (b) Speed, initiative and drive are needed at this stage and troops must make the maximum use of the cover which surprise and darkness have afforded them, to get well inland towards their objectives.
- (c) Troops landing and dispersing by small sub-units must be given a rendezvous. Otherwise commanders will not be able to regain control, which is vital at this stage of the assault. These rendezvous may be selected in advance from maps, air photographs, intelligence reports, etc., or from previous knowledge of the ground.

5. Further consideration of training at home stations is given in Pamphlet No. 42.

## SUGGESTED ALLOCATION OF BATTALION TRANSPORT IN AN ASSAULT LANDING

Serial No.	Sub-unit (a)	Tpt to accompany bn in the assault				Loads carried with the bn in the assault (f)	Balance of tpt in later convoy				Loads carried with balance of tpt (m)	Remarks
		Carriers (b)	MC (c)	Cars 5-cwt. (d)	15-cwt. (e)		MC (g)	2 str (h)	4 str (i)	15-cwt. (j)		
1	Bn HQ ... ..	1	5	—	—	(f)	—	2	1	3	—	(b) For bn comd. (f) For medical equipment. One 15-cwt. shared with No. 1 pl. See Serial 5.
2	Each rifle coy ... ..	—	—	—	1		—	—	—	4	—	
3	Total for rifle coys ... ..	—	—	—	4		—	—	—	16	—	
4	HQ Coy HQ	—	3	—	1	See Appendix A.2	—	—	—	1	—	(c) One 15-cwt shared with bn HQ. See serial 1.
5	No 1 pl (sigs) ... ..	—	—	—	1		—	4	—	1	—	(e) One 15-cwt shared with No 5 pl. See serial 9.
6	No 2 pl (AA) ... ..	—	1	—	—		—	—	—	—	—	
7	No 3 pl (mortar)	7	3	—	—		—	—	—	3	—	
8	No 4 pl (carrier)	13	8	4	—		—	—	—	1	—	
9	No 5 pl (pioneer)	—	1	—	—		—	—	—	—	1	
10	No 6 pl (adm)	—	—	—	—		2	1	—	4	12	One 15-cwt shared with No 2 pl. See serial 6. (f) Includes water truck.
	Total ... ..	21	21	4	6		2	7	1	30	13	

NOTES.— i. Bicycles carried as required.

ii. Space for passengers in trucks reserved for amm, etc.

iii. Two coils Dannert wire carried on radiator of each truck—total 20 coils per bn.

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**SUGGESTED CARRIAGE OF INF BN G.1098 EQUIPMENT**  
**To be read in conjunction with Appendix A1**

Serial	Sub-unit (a)	Ref Col (f) appx A1 Carried on men or in carriers in first flight (b)	Ref Col (f) appx A1 Carried in 15-cwt tpt with bn ferry service (Total 10 trucks) (c)	Ref Col (m) in appx A1 balance carried in tpt in later convoy (d)	Remarks (e)
1	Bn HQ office clerks Regt Police and int sec Medical	Personal equipment and arms. Portable typewriter and stationery. 12 stretchers, Medical panniers	Typewriter, duplicator, stationery, hurricane lanterns. 3 picks, 3 shovels, 1 pr wire-cutters.	Packs, kit, balance of equipment.	
2	Rifle coy, each	Personal equipment, arms, Bren guns (less tripods), A tk rifle, 2-in mortars and amm, wire-cutters, Verrey pistols. Personnel of first flight not landing in initial assault carry additional tools. Personnel in ferry service may manhandle box amm for bn res, tools and greatcoats to bn assembly areas.	Tools—Shovels 20, picks 16, axes 8, matchets 10, camouflage nets 9, stretchers 2, tape, gloves, wiring 8, sand-bags 2,000, lamps 5, rifle oil $\frac{3}{4}$ gal, rum jars 2, etc. Cooking kit—Container 6-gal water 4, burner sets with petrol 2, fryer and utensils 2 Amm (see Col (e)).	Packs, kit, etc. Balance of equipment.	(e) Amn. . . . . 12,000 .303 SAA . . . . . 300 A tk .55 . . . . . 300 Sten Machine Carbines 2,000 Crenades . . . . . 50 Mortar 2-in. . . . . 9 Smoke . . . . . 22 HE . . . . . 12 A tk mines . . . . . 3 Tripods, Bren . . . . . 3
3	HQ coy, Coy HQ	Personal equipment and arms		Packs, kits, etc. balance of equipment.	
4	No 1 pl (Sigs).	Personal equipment and arms 5 x 18 sets, 12 spare btys, 6 lamps, 6 pr flags, 4 telephones, A tk rifle, 1 switchbox, 2 miles of D 3 cable.	160 rds A tk rifle amm, 6 miles D.3 cable, 2 telephones, 12 btys, electric, 2 lamps, 4 pr flags, 1 axe, 3 shovels, 2 picks, 2 pr wire-cutters, 2 matchets, 1 saw folding.	Packs, kits, 9 helios, 22 pr flags, 4 lamps, 2 telephones, 2 full-erphones, 2 axes, 1 pickaxe, 2 pr cutters.	

5	No 2 pl (AA)	Personal equipment and arms, 4 20 mm, 4 A tk rifles.	4,000 rds SAA, 320 rds A tk.	Packs, kits, 2 axes, 4 picks, 1 crowbar, 4 pr wire-cutters, 4 matchets, 1 saw, 4 shovels.	
6	No 3 pl (mortar).	Personal equipment, mortars, and amm. A tk rifles, range- finder tools.		Packs, kits, 6 picks, 1 crowbar, 4 shovels.	
7	No 4 pl (carrier).	Personal equipment, weapons and amm, spare parts, tools.		Packs, kits, tools, etc.	
8	No 5 pl (pioneer).	Personal equipment and arms. one tool per man.	4 cwt pioneer stores, 16 A tk mines, 200 sandbags, wiring stores.	Packs, kits, balance tools and stores.	(c) Anti-gas stores if necessary.
9	No 6 pl (adm).	Personal equipment and arms.	3 6-gal water containers with water, 2 burner sets with petrol, cooking utensils, 6 lamps, 2 rum jars.	Balance of cooking kit, all stores, clothing, balance of amm.	(d) Less that carried in coy trucks.

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## APPENDIX B

## METHODS OF CROSSING WIRE OBSTACLES

1. The following drill for disembarking and for crossing wire obstacles has been found satisfactory in practice. The netting used is  $\frac{1}{2}$ -in. mesh woven wire, 4 ft wide, in rolls  $12\frac{1}{2}$  yds long. Rabbit netting is not suitable, and has not the same property of retaining its shape.

The roll is carried with or without a central axle.

2. Two men carry the roll and raise it over the wire obstacle ; the wire is unrolled by pushing the roll forward and treading on the netting as it unrolls. Over a high obstacle the roll should be pushed over and allowed to fall the other side before attempting to tread it down. Following files can carry another roll if the first is not sufficiently long.

This method will successfully overcome three rows of triple concertina wire, two rows of double apron fence, and twenty coils of concertina wire laid side by side.

The crossing of a double apron fence is assisted by the following files cutting the taut wires as they pass.

A signal from the men breaching the wire to the men waiting in the assault craft must be made as soon as the path is clear. The position of the gap must be marked by tapes or by luminous discs.

Whatever method is used to get over the wire in the assault, the first opportunity should be taken to improve and widen the gap by wire-cutters.

3. An alternative method which has proved successful, consists of a special equipment for fitting to a proportion of the carriers or tanks available in the assault.

This is still on the secret list.

4. Experiments are now being made with equipment designed for attachment to tanks, with the object of destroying mines.

## APPENDIX C1

POINTS FOR INCLUSION IN AN ASSAULT BRIGADE  
OPERATION ORDER

SECRET

Copy No.

Date

911 Bde 00 No. 1

Ref. Maps.....

## INFORMATION

1. **Enemy.**—See att intelligence summary (to incl strength, morale, dispositions and defences). Ref to an appendix to

show. issue of photographs, models, maps, silhouettes and any other similar aids.

**2. Own tps**

- (a) Role of units NOT under comd, with particular ref to tps landing on flank, the beaches allotted to them, their tasks.
- (b) Units under comd.
- (c) Naval sp
- (d) Air sp
- (e) Airtps

**3. Shipping and craft**

**4. Topographical and tidal data, etc.**

**INTENTION**

- 5. Bde and att tps will.....

**METHOD**

- 6. (a) Right.....bn with under comd.....will..... objectives or axis of adv.
- (b) Left.....bn with under comd.....will..... objectives or axis of adv.
- (c) Floating res.....bn with under comd.....will probably..... (No definite landing place to be allotted.)

**7. Beaches, bndys, bounds**

See trace.....att. Main beach to be nominated after landing is effected.

**8. Beach protection**

Beach comd.....

Tps.

**9. Naval sp**

Allotment of FOOs and bombarding ships.

**10. RAC**

**11. RA**

- (a) Fd
- (b) A tk
- (c) LAA
- (d) HAA

**12. RE**

Allotment of units.

Tasks and priority.

**13. Landing table**

See Appx.....att

14. **Smoke**15. **Zero**

ADM (NOTE paras 16 to 27 may preferably be included in an adm appx or separate order.)

16. **Beach maintenance area** (*see* Pamphlet No. 2)17. **Amn**18. **Sups**

.....48-hour mess tin ration (*see* Appx D, Pamphlet No. 1).

19. **Tpt**

.....scale and loading.....

Remainder of adm paras either in order or appx, follows normal practice.

**INTERCOMN**28. **Bde HQ**29. **Beach Sig stas**30. **Channels of communication**31. **Wireless silence**

.....will be maintained until zero, but may be broken if surprise is lost.

32. **Frequencies**33. **Code words**34. **Codes and ciphers**35. **Pyrotechnic sigs**36. **Message dropping sta**37. **Ground/air recognition**38. **Time****ACK**

Time of signature .....hrs

Maj

BM

Issued to sigs ..... hrs

-INF BDE

**DISTRIBUTION**

Normal bde distribution and DAQMG

SNOL (for redistribution to RN as necessary)

PBMr

FOOs and bombarding ships

MLO

Beach comd

OCs ships (as necessary)

LANDING TABLE FOR  
ASSAULT BRIGADE

OPERATION "....."  
911 Inf Bde Landing Table  
Issued in conjunction with 911 Inf Bde  
OO No. 1 dated

APPENDIX C 2

Most secret  
Copy No.  
Date

LANDING D DAY

Land- ing table serial No. (a)	Time of landing (b)	Unit (c)	Per- son- nel (d)	Vehicles (e)	Port of embark- ation (f)	Ship or craft			Beach (m)	Remarks (n)	
						Ship (g)	LCM (h)	LCA (j)			LCP (k)
1-3	Zero	1 LOAMSHIRE ABMr and party	98 3	(e)	Totten- ham	Quebec		3		Beer Green	(n)
4-7		1 LOAMSHIRE ABMr and party ULO and party (1 LOAM- SHIRE)	106 3 4			Quebec		4		Beer Green	LCA probably in fleetillas of 4/6 depending on ship in which they are borne.
8-10		Sec 1237 Fd Coy FOO and party	12 5			Quebec		3		Beer Green	Where it is necessary, as here, for an ABMr to land, with each of three assaulting coys, he will be found from the third beach group allotted to the bde.
11-13		1 LOAMSHIRE ABMr and party	98 3			Quebec		3		Beer White	
14-17		2 FIRTHSHIRE ABMr and party	98 3			Monck		3		Beer White	
		2 FIRTHSHIRE ABMr and party ULO and party (2 FIRTH- SHIRE)	106 3 4			Monck		4		Beer White	
		Sec 1237 Fd Coy FOO and party	12 5								
18-20		2 FIRTHSHIRE ABMr and party	98 3			Monck		3		Beer White	

Land- ing table serial No. (a)	Time of landing (b)	Unit (c)	Per- son- nel (d)	Vehicles (e)	Port of embark- ation (f)	Ship or craft					Remarks	
						Ship (g)	LCM (h)	LCA (i)	LCP (k)	LCT (l)		Beach
21-26	At bn comd's discre- tion about Z+15	1. LOAMSHIRE Three secs 1237 Fd Coy 1586 A Fd Coy EMr and party AMLO and party RN sigs B66 Sig Sec 911 Inf Bde Sig Sec Rece parties 112 R Tks BC's party 666 Fd Bty	107 46 9 16 6 4 4 2 2 2 4	2 carriers 3 MCs 3 bicycles 2 handcarts		Quebec	6				Beer Green	Incl Bn HQ (*)
27-32		2 FIRTHSHIRE Three secs 1237 Fd Coy 1586 A Fd Coy EMr and party AMLO and party RN sigs B66 Sig Sec 911 Inf Bde Sig Sec Rece parties 112 R Tks BC's party 567 Fd Bty	107 46 9 15 6 4 4 2 2 2 4	2 carriers 3 MCs 3 bicycles 2 handcarts		Monck	6				Beer White	Incl Bn HQ
33	About Z+30	1. LOAMSHIRE 104 Beach Gp	22 4	2 carriers 3 MCs 3 bicycles 2 handcarts		Ararat	1				Beer Green	LCM probably in flotilla of 6 depending on whether they are sea- or ship-borne.
34		1. LOAMSHIRE 104 Beach Gp	22 4	2 carriers 3 MCs 3 bicycles 2 handcarts		Ararat	1				Beer Green	Kapok landing bridge in LCM for MCs.
35		1. LOAMSHIRE 531/111 LAA Bty comd party	22 4	2 carriers 3 MCs 3 bicycles 2 MCs		Ararat	1				Beer Green	

36-49	Et seq.												
50	About Z+30 (cont'd)	1 FIRTHSHIRES 531/111 LAA C tp comd party	22	2 carriers 3 MCs 3 bicycles 1 MC	CHEL- SEA	Seagoing	1				Beer White		
51		Det 137 ME Sec 105 Beach Gp	3 19	1 D4 tractor 2 sledges 2 handcarts 2 bicycles		Seagoing	1				Beer White		
52		911 Inf Bde Sig Sec BC's party 567 Fd Bty Lt sec 911 Fd Amb	4 3 19	1 15-cwt. WT 1 armd OP 2 MCs		Seagoing	1				Beer White		
53-100		Et seq.											
101	About Z+60	A Tp 666 Fd Bty*	85	1 armd OP 2 15-cwt. 4 gun sets 4 MCs 2 3-ton 1 Car 5-cwt 8 MCs 7 bicycles	BRIXTON				A.1	Beer Green			
102		Pro Sec	16										
		B Tp 566 Fd Bty*	85	1 armd OP 2 15-cwt 4 gun sets 8 MCs 2 3-ton 1 Car 5-cwt 8 MCs 7 bicycles					A.2	Beer Green			
		Pro Sec	76										

Beginning of LCT  
serials.  
LCT flotillas=9/12 craft

Note—Vehs in order in  
which they are to  
drive out, i.e. reverse  
order of stowage.

To include 21C 271  
Fd Regt RA with  
flotilla offr who has  
WT on landing wave.

Intervening serials include a proportion of Bde HQ vehicles.

Some LCMs are ship-borne, others are sea-going.

Intervening serials include balance Army Tk Bn and further vehs for units already landed.

Land- ing table serial No. (a)	Time of landing (b)	Unit (c)	Per- son- nel (d)	Vehicles (e)	Port of embark- ation (f)	Ship or craft					Remarks
						Ship (g)	LCM (h)	LCA (j)	LCP (k)	LCT (l)	
103	About Z+60 (cont'd)	112 R Tks  1239 Gen Tpt Coy	24  7	3 tks 3 carriers 3 MCs 2 3-ton 1 MC					A.3	Beer Green	(n)
104-133		Et seq.									
134		B and D tps P/164 A tk Bty* 1586 A Fd Coy	65  32	8 2-pr gun portees 2 15-cwt 7 MCs 2 30-cwt 2 MCs 2 handcars 1 bicycle 2 3-ton					C.10	Beer White	Incl Bty HQ
135		1239 Gen Tpt Coy  C Tp 531 511 LAA Bty*	4  64	4 gun sets 1 15-cwt 2 3-ton 1 MC 1 3-ton					C.11	Beer White	
136		B Tp 1250 HAA Bty  B Tp 1250 HAA Bty*	4  80	4 gun sets 2 3-ton 5 MCs					C.12	Beer White	Incl BC's party
137		.....	...	etc						.....	
138		..... etc .....	...								

Notes.—1. The unit or detachment finding the OC troops in each LCT must be detailed for each serial. Here shown by asterisk \*  
2. Vehicles are shown in the order in which they are to drive out of LCT.

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## APPENDIX D1

**SPECIAL POINTS FOR INCLUSION IN AN  
INFANTRY BATTALION OPERATION ORDER**

## INFORMATION

**Own tps**

Naval sp incl LCS(M) and bombardment.

Air sp.

**Topographical and tidal data****Allotment of craft**

## METHOD

## FOOs

RE (a) Assist assault coys fwd.

(b) Assist carriers through minefds, marking gaps and laying guide tapes.

(c) .....

**Smoke.** Object aimed at by the use of smoke.

Method.....aircraft, naval craft or floats, grenades, etc.

Timings.....

**Zero.** Time first craft hits the beaches.

## ADM

ULO Officer detailed.

Unit assembly area.

**Eqpt**

Tps will normally land as lightly equipped as possible during initial assault.

**Rations**

48-hour mess tin rations, or two emergency rations.

**Tpt** Scale and loading.

## INTERCOMN

**Success signal**

.....beach secured.

.....captured, etc.

**Wireless silence**

.....will be maintained until zero, but may be broken if.....

## DISTRIBUTION LIST

Normal distribution list.

AMLO

FOO

ABMr

Captain of ship (if White Ensign ship).

SNO (if Red Ensign ship).

Special care will be required to ensure that adequate orders are issued previously to dets carried in other ships and craft, e.g. carrier crews, etc.

APPENDIX D2  
**1 LOAMSHIRE—LANDING TABLE FOR H.M.S. "QUEBEC"** Secret  
 Appendix B to 1 LOAMSHIRE Copy No.  
 OO No. 1, dated 24 Jun, 42 24 Jun, 42

Ede Serial No. (a)	Craft (b)	Position of craft (c)	Position to fall in (d)	Time to start embark-ing (e)	Troops carried (f)	No. (g)	Equipment etc. (h)	Beach (i)	Time of landing (k)	Remarks (l)
1	LCA 1	Stbd fore	No. 4 main deck then abreast embarkation posts	0200	HQ A coy Sigs One pl A coy	6 2 27	Bicycle No 18 set	Beer Green	Zero	1. All rifle pls carry rabbit wire (i.e. serials 1/3, 5/7, 8/10, 24/26). 2. HMS. Quebec carries:— 6 LCA No LCS
2	LCA 2	Stbd midships	No. 4 main deck then abreast embarkation posts	0200	ABMr and party One pl A coy	3 32				
3	LCA 3	Stbd aft	No. 4 main deck then abreast embarkation posts	0200	One pl A coy Stretcher-bearers HQ A coy	28 2 2	Handcart			
4	LCA 4	Port fore	No. 1 main deck then abreast embarkation posts	0200	HQ B coy Stretcher-bearers Sigs ABMr and party ULO and party Sec 1237 Fd Coy	9 2 2 3 2 4 12	Handcart Bicycle No 18 set			
5	LCA 5	Port midships	No. 1 main deck then abreast embarkation posts	0200	One pl B coy Det mortar pl	27 5	Handcart			
6	LCA 6	Port aft	No. 1 main deck then abreast embarkation posts	0200	One pl B coy FOO party	30 5				
7	LCA 7	—	Port gangway	0200	One pl B coy Det mortar pl	27 5	Handcart	Beer Green	Zero	
8	LCA 8	—	Stbd gangway	0200	HQ C coy Sigs One pl C coy	6 2 27	Bicycle No 18 set			Wait for craft to come alongside.

9	LCA 9	—	Stbd gangway	0200	ABMr and party One pl C coy	3 32				Wait for craft to come alongside.
10	LCA 10	—	Stbd gangway	0200	One pl C coy Stretcher-bearers HQ C coy	28 2 2	Handcart			
21	LCA 11	—	Port gangway	0215	Bn HQ Sigs Bde sigs Kecece party 112 R Trks BC's party P/566 Fd Bty RN beach party Sec 1237 Fd Coy	4 4 4 2 2 4 4 6 12	Bicycle 2 No 18 sets No 11 set		At Bn comd's discre- tion about Z+15	Bn comd, adjt, 2 orderlies.
22	LCA 12	—	Port gangway	0215	RN beach party RN sigs B66 Sig Sec Bal sec 1237 Fd Coy	3 4 4 4 21	Beach sigs Sets as ordered Handcart			With bn HQ.
23	LCA 13	—	Port gangway	0215	Sec. 1237 Fd Coy 1586 A Fd Coy AMLO and party BMR and party	12 10 3 7	Handcart			With bn HQ.
24	LCA 14	—	Stbd gangway	0230	HQ D coy Sigs One pl D coy	6 2 27	Bicycle	Beer Green		Fall in after serials 8/10 are embarked.
25	LCA 15	—	Stbd gangway	0230	One pl D coy Det mortar pl	27 5	Handcart		At Bn comd's discre- tion	
26	LCA 16	—	Stbd gangway	0230	One pl D coy Stretcher-bearers HQ D coy	28 2 2	Handcart			

N.B.—It is assumed that the 2-pr A.Tk. pl will be travelling in other craft, either MT ships or LCT

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## APPENDIX E1

**SUGGESTED DISTRIBUTION OF PERSONNEL IN  
A LANDING CRAFT, ASSAULT****Notes**

1. Personnel are seated on three planks which run fore and aft throughout the well of the craft.

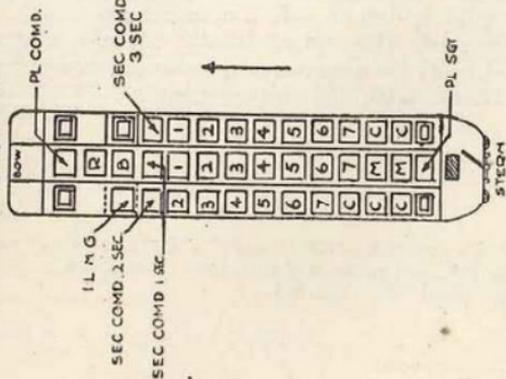
Each man sits between the legs of the man astern of him, all men facing forward.

2. On the craft beaching, the platoon lands in the following order:—

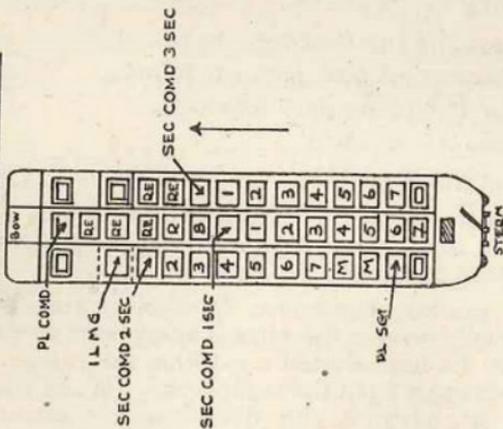
- (a) Platoon commander.
- (b) Personnel of RE detachment (4 or 5) if included.
- (c) Orderly.
- (d) Batman.
- (e) 1 section
- (f) 2 section and 3 section together.
- (g) Mortar numbers and platoon serjeant.
- (h) HQ details if personnel of serial 2 are not included.

3. The actual arrangement of troops in the LCAs will depend on the individual commander's plan. Two alternatives, which have been found in practice to be satisfactory, are given. One of these agrees with serials 1-3 of the specimen landing table given in Appendix D. The other includes an RE detachment, personnel of coy HQ and HQ coy being omitted. In the event of the commander wishing to retain both these and the RE detachment, the numbers included for the platoon will have to be reduced accordingly.

## APPENDIX E2

ARRANGEMENT OF LOADING - LCA & LCMLCA(A) AS IN SERIALS 1-3 APPX.  
C.-D.F. DET NOT INCLUDED

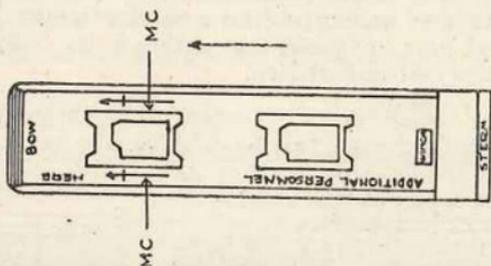
LENGTH - 40'0"  
BEAM - 9'6"  
DRAUGHT - 1'9"  
OPENING - 4'5"  
SPEED - 10 KNOTS.

(B) D.F. DET INCLUDED, DECK  
OF H.Q. COY. & COY H.Q. OMITTED

ARMOURD AGAINST SMALL ARMS FIRE  
WEIGHT - 10 1/2 TONS  
UNLADEN - 7 1/2 TONS  
ENDURANCE - 70 MILES. HAS A LOW  
SILHOUETTE & ENGINE IS SILENT

LCM

WITH TWO BORN CARBIDES

TYPE 20

LENGTH 40'0"  
BEAM 13'6"  
SPEED 7 KNOTS  
DRAUGHT 2'3" W.D. - 3'6" AFT.  
ARMOURD AGAINST SMALL ARMS FIRE WEIGHT - 18 BONS

## APPENDIX F

## THE 3-INCH MORTAR IN COMBINED OPERATIONS

1. The role of the 3-inch mortar in combined operations is no different from its normal infantry role. Owing, however, to the difficulties of supporting an assault it plays an even more important part, its speed into action in its close support role being of the first importance.

2. It will be usual for the mortars to be brought ashore in their own carriers from LCMs or LCTs, the vehicles being suitably waterproofed, or possibly fitted with kapok floats if the depth of water is too great.

3. The mortar may have to be manhandled ashore so as to economize in transport. In such cases limitations of speed into action and range of follow up must be accepted. Methods of manhandling ashore are :—

- (a) On foot (up to about 3 ft depth only).
- (b) Rubber assault boat (three required).
- (c) Canvas recce boat (two required).
- (d) Rafting (improvised).

#### 4. Tactical handling

(a) The ideal mortar position will normally be under the lee of a cliff or sand dune. Digging a mortar position in sand takes six men half an hour.

(b) When the target is known in advance the detachment commander will travel in the same landing craft as the detachment. When he has selected a position his runner will lead the detachment to it from the rendezvous. When the target is not known in advance the detachment commander will travel with the commander of the unit under which the detachment is working. Having received his fire tasks, the detachment commander will then select a mortar position and send his runner to fetch the detachment. Should a withdrawal to the landing craft be necessary, the detachment commander will always travel with his detachment.

## APPENDICES

- A1 Suggested allocation of battalion transport in an assault landing
- A2 Suggested carriage of infantry battalion G.1098 equipment
- B. Methods of crossing wire obstacles
- C1. Specimen orders in outline for an infantry assault brigade
- C2. Specimen landing table for an infantry brigade
- D1. Specimen orders in outline for an infantry battalion
- D2 Specimen landing table for an infantry battalion
- E1. Suggested distribution of personnel in a landing craft, assault
- E2. Diagram to illustrate E1
- F. The 3-inch mortar in combined operations

## DISTRIBUTION

All arms	...	...	...	...	...	...	Scale A
CCO (for CTCs.)	...	...	...	...	...	...	500
* Arm concerned when detailed for training at CTCs							Scale C

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\* On indent.

