



This manual has been scanned by the
Vickers MG Collection & Research
Association

www.vickersmachinegun.org.uk

If it is of use, please make a donation at:

https://www.paypal.com/cgi-bin/webscr?cmd=s-xclick&hosted_button_id=NKSHEDAMHTJ3G

NOT TO BE PUBLISHED

The information given in this document is not to be communicated, either directly or indirectly, to the Press or to any person not holding an official position in His Majesty's Service.

28
G.S. Publications
110



*Notified in
J.C. Co. for the
week ending
20th August,
1939*

Field Service Pocket Book

Pamphlet No. 7

1939

**MOVEMENT BY SEA, RAIL
AND AIR**

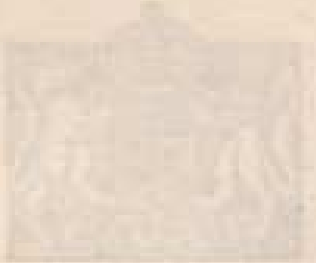
Crown Copyright Reserved

LONDON:

Printed under the Authority of HIS MAJESTY'S STATIONERY OFFICE
by William Clowes & Sons, Ltd., London and Beccles.

2

THE WAR OFFICE
 30th August, 1939.



By Command of the Army Council,

H. G. G. G.

THE WAR OFFICE,
 30th August, 1939.

MOVEMENT BY SEA, RAIL
 AND AIR

3

CONTENTS

Sec.	Page
1. Control of movement	5
2. Movement by sea	6
Responsibility for the provision, etc., of shipping ..	6
Types of ships	6
Embarcation	6
Disembarkation	7
Loading of guns and vehicles	8
Loading of horses	10
3. Movement by transportation services	11
Movement by rail	11
Movement of troops	11
Rolling stock	12
Make-up of trains	12
Rules for entraining	13
Rules for detraining	15
Capacity of rolling stock	16
Capacity of trains	17
Movement through docks	17
4. Movement by air	17
Carriage of troops	17
Carriage of supplies	21

FIELD SERVICE POCKET BOOK PAMPHLET No. 7, 1939

MOVEMENT BY SEA, RAIL AND AIR

NOTE:—

Full details concerning all types of movement, etc., are to be found in Instructions for Movement Control, 1938, and in Mechanical Vehicles—Preparation for Transport by land and sea and subsequent movement—1938.

Tables showing—

- (i) *dimensions of vehicles and weapons;*
 - (ii) *comparison of the tonnage of vessels in relation to their size; and*
 - (iii) *measurement tonnage of various stores;*
- will be found in Pamphlet No. 12.*

1. Control of Movement

1. Movement includes sea, air, rail, inland water and road transport, i.e. transport of every nature from the home country to the front line.

All arrangements for movements are co-ordinated by the Q.M.G.'s branch, through the heads of the services concerned.

2. Responsibility for the control of all movement over the L. of C. rests with the Movement Control, which is a joint organization composed of officers of the Q.M.G.'s branch of the staff and the transportation directorate; it is the intermediary between the carrying agencies and the troops and holding services. All demands for transportation are placed on the Movement Control and not on the carrying agencies direct.

Some of its more important duties are:—

- i. To ensure that the best possible use is made of the resources of the transport systems by which the L. of C. is operated, and to deal with questions of priority in despatches.
- ii. To make arrangements in connection with the moves of troops and stores.

- iii. To control embarkations and landings, when not the responsibility of the general staff as a matter of actual military operations.
- iv. To make arrangements to ensure the best possible conditions for the health and comfort of personnel and animals during long-distance movements.
- v. To control the military forwarding organization.

2. Movements by Sea

Responsibility for the provision, etc., of shipping

1. The responsibility for the sea transport of the personnel, animals and material of the Army, and for the provision and maintenance of the necessary shipping rests with the Board of Trade. In respect of loading or unloading this responsibility begins or ceases at the ship's side.

Types of ships

2. *Troop transports*.—Passenger ships of between 8,000 and 12,000 tons gross are the most suitable for carrying personnel. The approximate number of men that can be carried is one man to every 5 tons gross for long voyages, and one man to every 3½ tons for passages up to 48 hours. For very short passages cross-channel steamers or similar vessels would be employed without special fitting and would carry a considerably greater number of men for their size than transports fitted with sleeping accommodation.

3. *Horse transports*.—Horse transports will normally be fitted for carrying about 450 horses, accompanied by an equal number of troops. Cargo ships of between 6,000 and 10,000 tons gross with some passenger accommodation and, if possible, two 'tween decks are the most suitable types.

4. *M.T. ships*.—For the carriage of M.T. vehicles, guns, tanks and aeroplanes, cargo vessels of 5,000 tons gross and over with one 'tween deck of good height, hatchways at least 24 feet long and good derricks, one of which should be capable of lifting 20 tons, are the most suitable. A ship of 7,000 tons gross may be able to carry about 150 M.T. vehicles, etc., of various sizes. It might be as much as 450 feet long and draw up to 24 feet of water.

5. Embarkation

i. Procedure before embarkation.

- (a) Obtain from the Q.M.G.'s branch of the staff details of troops to be embarked.
- (b) Obtain from the sea transport authorities details of the ships allotted for the movement of troops. A plan of

the ship giving full details of cabin and mess-deck accommodation will be required for a Long Sea Voyage.

- * (c) Arrange for imprest, wireless and sports money.
- * (d) Apply for courts-martial warrant.
- (e) Despatch to the port of disembarkation a list of passengers expected to embark.
- (f) Prepare form ("Q" form) showing the composition of each party arriving and the time of arrival.
- * (g) Allot accommodation (sleeping and messing) and make out berthing cards, mess rolls and berthing lists for 1st and 2nd class passengers.

ii. Procedure for embarkation.

* (a) Hand over instructions, courts-martial warrant, cash, etc., to the O.C. troops.

(b) Meet trains and issue embarkation orders. Hand the trains over to the railway authorities. If arriving by march route, units should receive their orders before arrival at the docks.

(c) Take over the Embarkation Return (A.F. W 5169) and embarkation cards (A.F. W 3060). Deal with these forms in accordance with instructions printed on the form.

* (d) Stow arms in the armoury and web equipment in the equipment room.

* (e) Parade the unit by messes with sea kit bags.

* (f) The unit embarks and is led to its mess by guides. On arrival at messes, sea kit bags are stowed over mess tables.

* (g) Carry out final inspection in conjunction with the sea transport authorities.

iii. After the ship has sailed.

(a) Report the fact by wire to the Q.M.G.'s branch of the staff.

(b) Dispose of returns, etc.

(c) Wire corrections to i. (f). If this has NOT been sent, wire full particulars.

6. Disembarkation

i. Procedure before the arrival of the ship.

(a) Collect information regarding personnel to be disembarked from the list of passengers to embark, as amended by sailing cables.

(b) Obtain information regarding the disposal of personnel to disembark.

(c) Reconnoitre suitable forming up places for units disembarking.

(d) Prepare disembarkation orders.

* Long Sea Voyages only.

ii. *Procedure on arrival of the ship before disembarkation takes place.*

Issue disembarkation orders. These will include—Parade stations on board—time table showing order of disembarkation. Forming up places on shore—guards, fatigues and working parties—train timings and arrangements—sanitary and ration arrangements—any local orders that troops should know on disembarking. Any other headings that may be necessary.

iii. *Procedure during disembarkation.*

(a) Disembark personnel in the order in which they are required for despatch.

(b) Detail guides to units and drafts.

(c) Supervise the unloading and disposal of baggage, equipment, stores, etc.

(d) Ensure that the shed is cleared according to the time table and that disembarkation is not delayed.

(e) Supervise entraining if this is being carried out at the docks.

(f) After disembarkation is completed, dispose of all documents, returns, monies, etc.

The above points apply generally to all types of ships, whatever they may be carrying. In embarking animals, vehicles or stores, it must be remembered that whatever is wanted first on arrival must be embarked or loaded last. In the case of vehicles which do not move under their own power, they must be loaded with due consideration to the whereabouts of the tractors, or animals, that draw them. Failure to consider this may considerably delay disembarkation.

Slings, including the provision of slings, and stowage on board are the responsibility of the Board of Trade. The responsibility of the unit or depot personnel accompanying the vehicle ends at the ship's side. In an emergency shipment when tracked vehicles are being loaded, army personnel will manoeuvre them into position on the vessel under Board of Trade instructions. In such cases fire precautions will be taken by the command in which the port is situated.

Particular points requiring attention in the handling of vehicles and animals are given below.

Loading guns and horse-drawn vehicles

7. For slinging guns and limbers the following method has been found to work well:—

Two slings are used, one round each axle-tree, and a hook-rope hooked into the trail-eye. The bights of the sling are placed on the tackle hook, to which the end of the hook-rope is also made fast.

Limbers have their poles removed and are slung in the same way as guns, the hook-rope in this case being made fast to the tackle hook from the trail hook.

G.S. wagons and pontoon wagons can be slung by four chain slings connected to a common link at one end and provided with hooks at the other; these four hooks are then secured to all four wheels of the vehicle.

Horse-drawn vehicles will as a rule be embarked loaded on their wheels, all loose articles being stowed within the wagons, the poles and shafts being removed before slinging. If the wheels are removed, special care must be taken that the lynch-pins are put safely away.

Loading of M.T. vehicles

8.—i. *Fire.*—At all stages particular arrangements must be made to deal with an outbreak of fire.

ii. *Preparation for shipment.*—Before motor vehicles are embarked, all petrol must be emptied from the tanks and spare cans, and any subsequent movement in the ship's hold must be done by man-handling. Sufficient petrol will be left in the tanks of tracked vehicles to enable them to be manoeuvred in the holds after loading. This petrol will be run off when vehicles are finally in position. All lamps, horns, mirrors and any projecting fitment should be either removed from the vehicle or their brackets reversed or otherwise protected, as any projections are liable to become damaged.

iii. *Slings.*—Where fully tracked vehicles are fitted with lifting eyes, these will normally be used for slinging the vehicles. The lifting eyes are indicated by the words "SLING HERE" and in no circumstances will eyes or shackles not so marked be used for slinging purposes. If lifting eyes are not provided, the vehicles may be slung by passing two wires longitudinally under the belly, each sling being applied as closely as possible to the side plate.

iv. *Stowage.*—Motor vehicles with pneumatic tyres should not be stowed or moved about in the ship's hold with tyres deflated. Vehicles loaded in the ship's hold and not lashed down should be put into low gear (low gear low ratio where applicable) and the hand brake applied to prevent them moving when the ship rolls.

v. *Disembarkation.*—Vehicles will usually be landed at a fully equipped and organized port where no difficulties are likely to arise as regards unloading. In this case the necessary organization will be in existence to enable the vehicles to be moved away from the ship's side under their own power.

In no circumstances must congestion be allowed on the quays, and arrangement must be made to tow off any vehicles unable to move under their own power.

Slinging horses on to a ship

9. Horses should be unsaddled and unharnessed; ship's halter under head-collar, bridle reins loose but knotted.

Do not let the horse's head loose; fasten with double girth, one end being held on shore or in the boat and one on the ship. Horses may fall backwards out of slings, but will never fall forward.

Five men required, one at head, one at each side, one at the breast and one behind.

Pass one end of sling under belly, both ends being brought up to meet over back; one man passes his loop through the other loop, and it is received by the man on the other side, who hauls it through, hooking the tackle to it, both men holding the ends of the sling till taut. Men at the breast and behind then bring their ropes round and make them fast to grummets, and the man who holds the horse's head makes fast the guys to the head collar.

Fasten the breech band and the breast girth securely.

Blindfold timid and restive horses.

Two or three men must be at the hatchway and between the decks to guide the horse when being lowered.

Provide a mat or straw for the horse to alight on, and select a reliable man to hold the head firmly to prevent straggling.

If a ship is alongside a quay, horses should always be embarked by walking them on board by means of bows.

Horses on board ship—points for attention

10.—I. Feeding. Average ration, half and half; at first few oats and much bran, gradually increase oats. Full ration of hay all through.

ii. Clean ship frequently. Exercise on deck in fine weather. Cinders spread will give horses foothold.

iii. Weather permitting, move horses daily to spare stalls or into gangways and have platforms on which they have been standing raised and the pens thoroughly cleaned.

iv. Put horses next to each other who are accustomed to each other.

v. Hand rub horses' legs regularly.

vi. In rough weather sacks filled with anything soft will often preserve horses from injury.

vii. Horses should be shod up to date before embarkation, and inspected for fitness.

3. Movements by Transportation Services

Movement by rail

(See F.S.R., Vol. I, 1930, Sec. 78, and Instructions for Movement Control (Overseas in War), 1938.)

General

1.—i. Railway traffic officers are the local representatives of the Movement Control. As mentioned in Sec. 1, para. 2, these officers are the intermediaries between the troops and the technical railway authorities.

ii. The following are some of the points which have to be observed by the troops:—

- (a) Railway arrangements must not be interfered with, except for essential tactical reasons.
- (b) All rolling stock must be unloaded with as little delay as possible.
- (c) Troops must not occupy railway buildings or use the railway water-supply without the authority of the Movement Control.
- (d) Troops must not take tarpaulins, coal, wood or other railway property.
- (e) Staff officers and advance parties should be sent ahead of formations to make arrangements for the troops in the area to which they are moving.

Movement of troops

2. From the point of view of railway working all troop moves (other than ambulance movements) fall into two main categories:—

i. Moves in which units or formations have to be moved complete. M.T. will normally proceed by road unless the distance to be moved exceeds:—

Army tanks, medium dragons or heavier tracked vehicles—50 miles.

Other tracked vehicles—100 miles.

Wheeled vehicles—350-400 miles.

Owing to the time needed to collect rolling stock and to entrain and detrain troops, there will seldom be any saving of time by a rail move if the distance is less than 30 miles. In undeveloped countries where rolling stock is scarce, it may be quicker to move troops by road for a considerably greater distance.

ii. Purely passenger moves. Such moves provide for reinforcements, small parties, individuals and leave personnel.

Rolling stock

3. In Great Britain, coaches are normally used for personnel, cattle trucks for animals, and flat wagons, or goods wagons with drop sides or ends, for guns and vehicles.

On the Continent, covered vans are normally used for the conveyance of either men or animals.

4. The following is a guide to carrying capacity, taking British rolling stock for the purpose of illustration:—

i. *Bogie coaches*.—There are usually six or seven 1st or eight or nine 3rd class compartments to each coach.

Officers.—6 to a compartment, 4 if corridor stock; 4 to a compartment if to be used for sleeping.

Men.—8 to a compartment, 6 if corridor stock; 4 to a compartment if to be used for sleeping.

Note.—For journeys of over eight hours' duration, or when rolling stock is not scarce, only 75 per cent. of the personnel given above should be allotted to each compartment.

ii. *Cattle trucks*.—8 horses or mules or 6 heavy draught horses.

iii. *Horse-boxes*.—3 officers' chargers.

iv. *Short flats, or goods wagons with drop sides or ends*.—1 four-wheeled vehicle (M.T. or H.D.); 3 two-wheeled vehicles; 1 gun and limber (1 60-pr. gun and limber requires two wagons).

v. *Special wagons*.—These include long flats and well wagons and are necessary for the carrying of tanks, dragons and armoured cars.

vi. *Covered vans*.—When covered vans are used for personnel, for short journeys allow 5½ square feet of floor for each man; for journeys over eight hours allow 7 square feet of floor for each man. For each animal allow 7 feet 2 inches length; width: saddled, 2 feet 6 inches, unsaddled or unharnessed, 2 feet 3 inches.

Make-up of trains

5. In Great Britain, trains will normally be made up to suit the individual requirements of one or more complete units or their sub-divisions. The average size of such trains is limited to about 75 axles behind the engine and tender.

In the theatre of operations, it will normally be advantageous to use one or more standard types of trains

of fixed composition for the strategic moves of all units (except units possessing vehicles and guns requiring special types of wagons). This method is not so economical in rolling stock, but enables moves to be carried out at much shorter notice, as type trains can be kept in readiness.

General rules for entraining

6.—1. Send an officer ahead to ascertain facilities for entraining and to receive instructions from the R.T.O.

ii. Tell off parties to entrain horses, guns and vehicles.

iii. Entrain baggage, horses, guns and vehicles simultaneously, before troops arrive, if possible.

iv. Detail men in charge of wagons containing horses or vehicles.

v. Pack guns and vehicles fully equipped, and fasten securely to wagons. Occupy spare space with gear, kits, etc.

vi. Tractors or draft animals should be loaded on the same trains as their vehicles.

vii. Inflammable stores should be at the rear of a train and risk of fire should be guarded against if in open wagons.

viii. Water-trailers should be filled before entraining.

Entrainment of horses or mules

7. Under active service conditions, horses will be entrained saddled or harnessed, pack saddles only being removed, unless orders to the contrary are issued.

i. On long journeys under peace conditions, saddlery and harness may be removed at the discretion of the officer under whose authority the orders for the movement are issued. The risk of animals being separated from their equipment or of causing delay in the service of trains must be taken into account.

ii. The closer horses are packed, the quieter they travel. If there are not sufficient horses to fill a truck, they should be closed up to one end and a sliding bar used to secure them.

iii. Horses' heads should all face in the same direction and be fastened by head-ropes to the rings or bars, leaving about 9 inches of slack, whether the horses are harnessed or not. If watering or feeding is to be carried out on the journey, the animals should be entrained so as to face the platform at which they are to be watered or fed. It is immaterial whether the horses' heads face the second line of rail.

iv. To prevent delay at places where horses are to be fed, nosebags should be filled before starting. Hay or straw should be loaded up separately, and covered for fear of fire.

Entrainment of vehicles

8. Vehicles to be entrained should have all projecting points removed and stored, and precautions must be taken for the care of all articles such as lamps, horns, tools, etc., likely to be pilfered. The clearance of large vehicles should be checked with the railway authorities.

A maximum of two gallons of petrol will be allowed in tanks. Carburettors will always be run dry.

If frost precautions are necessary, "NO WATER" notices must be hung on radiators and provision made for a supply of water at the detraining station.

Vehicles can be either side-loaded or end-loaded. The method used will depend on the facilities which exist or can be provided at an entraining station.

9. *Side-loading*.—If there is a long and wide platform allowing all the railway wagons for loading to be dealt with simultaneously side loading is quickest for all vehicles that can be man-handled (e.g. field guns, limbers, H.D. vehicles) and for light M.T. vehicles and light tracked vehicles.

Requirements.—A platform, the level of which is approximately that of the floor of the rolling stock (about 4 feet on an average), with a minimum width of 30 feet and, if possible, 60 feet. Wagons must be either flat or low-sided with drop sides. Guns and vehicles are man-handled singly on to each wagon. The drop side may be used to form a ramp from the platform to the wagon floor, sleeper packing being used as required if the platform is low.

Where platforms are short, and if all the wagons are flat or have drop ends, vehicles may be side-loaded on to one wagon and then man-handled along the train, the gaps between the ends of wagons being bridged either by the loading plates with which some wagons are provided or by means of wooden sleepers laid across the buffers.

10. *End-loading*.—The entrainment of medium and heavy guns and heavy vehicles and tanks will normally be carried out from end-loading ramps.

Requirements.—An end-loading dock of the requisite height or a ramp. These are sometimes provided with loading plates. The wagons used must be flat or low-sided with drop ends. For loading, place the wagon hard up against the ends of the dock or ramp. Apply the brakes and place wood chocks or wooden sleepers lashed to the rails against the wheels.

Drive the vehicle on to the wagon slowly in low gear.

As it approaches the wagon over the end-loading ramp, line it up as accurately as possible with the sides of the wagon. A responsible person should be detailed to guide the driver on to the wagon. Position the vehicle centrally on the wagon, both end-ways and side-ways. Scotch the wheels or tracks, leave in gear and with brakes hard on. Chain or lash the vehicle securely to the wagon.

When a number of vehicles are being entrained, the rake of wagons to be loaded will normally be drawn up to the ramp complete, and the vehicles will drive over the line of wagons until they reach their final position. The spaces between wagons must be bridged with sleepers, or other suitable material, resting on the buffers.

Times for the entrainment of units

11. Under favourable conditions, i.e. high-level platforms and other facilities, the time required to entrain half a battalion of infantry with regimental transport, or a squadron of cavalry, or troop of artillery, is about 45 minutes.

In the absence of high-level platforms, portable or improvised ramps will have to be used for the entrainment of animals and vehicles, and the above times will have to be at least doubled in the case of portable ramps and trebled for improvised ramps.

If trains have to be broken up for loading and then reformed before despatch, at least half an hour must be allowed between the time of completion of entrainment and the time of despatch.

As a general rule, if a number of units is to be entrained successively from the same entraining point, allow two to three hours minimum between the departure times of successive trains; the same interval will be required at the detraining point.

Rules for detraining

12.—i. Before troops leave the carriages ascertain from the R.T.O. the arrangements for detraining and clearing the railway station.

ii. Detail unloading parties for animals, vehicles and baggage.

iii. Detrain animals, guns, vehicles and stores simultaneously when possible.

iv. All personnel, animals and vehicles will be moved clear of the station and immediate approaches as soon as possible to the place of assembly outside.

Movement of stores by rail

13. There are two kinds of trains for movement of stores:—

- i. *Bulk trains*.—These contain one or more commodities in bulk, e.g. ammunition, engineer or transportation stores, road stone, petrol, etc. Separate railheads may be provided for particular commodities.
- ii. *Pack trains*.—These contain a mixed consignment of supplies, ordnance stores, etc., to meet the demand, normally its daily requirements, from a particular formation. Trains are made up at the base marshalling yard; their composition may be adjusted at the regulating station, where they are also given their railhead destination, according to the movements of the formation to which they are consigned.

Capacity of rolling stock

14. Tare weight is the weight of a wagon empty. Capacity, or load, is the weight that a wagon is rated to carry. Gross weight is the tare, plus load.

Loading to rated capacity is rarely attained, owing to the bulk of many commodities, but every effort must be made to utilize all available space in wagons. The load must always be evenly distributed over all wheels.

The following table gives the details of the average loading capacity, inclusive of containers, of various military commodities:—

Commodity	AVERAGE LOAD IN	
	10-TON	WAGON
	TONS	
Ammunition, coal, road stone, ballast, sand, cement, scrap iron, lead	10	
Railway material (excluding ballast)	9	
Ordnance stores (general)	5	
Engineer stores (general)	7	
Clothing	5	
Medical stores	8	
Supplies	7	
Forage	5	
Petrol, in tins, cased	8	
Timber (scantling), hut sections	6	
Coke	6	
Mails, M.F.O., stores, canteen stores, etc.	5	

Capacity of trains

15. The limiting factor is either of the following:—

- i. Total weight (i.e. tare plus load). This is governed by the engine capacity and the ruling grade of line.
- ii. Length, governed by the length of the sidings, and on single lines by the length of the crossing loops. For various technical reasons very long trains (much over 1,200 feet) are impracticable. As a general rule, military trains will not exceed 50 four-wheeled wagons or their equivalent in bogie stock.

Movement through docks

(See Instructions for Movement Control (Overseas in War), 1938, Chapters V and VI.)

16. *General*.—Ships can almost always be discharged more quickly than their contents can be passed through the docks. Successful dock operation therefore depends on the avoidance by all concerned of any unnecessary delay to the rapid transit of personnel, vehicles or stores through the docks area.

The rate of transit depends on the facilities for clearance by rail, road or barge, as the case may be; and, in the case of stores and unaccompanied vehicles, on reserving adequate sheds and space for exclusive use by the docks service for transit purposes.

The transit responsibility of the Movement Control is limited to personnel, animals, equipment and accompanied vehicles; it is only concerned with stores and unaccompanied vehicles in matters of priority, so long as there is a British Dock organization.

4. Movement by Air*Carriage of troops*

1. *General*.—The use of aircraft is only justified for the transport of small bodies of troops in an emergency. Not only is it at present impracticable, but it is likely to remain uneconomical to attempt the transport of larger forces by air, since the air effort involved could normally be devoted with greater effect to other tasks. Moreover, troops moved by air arrive without their transport, and it may not be possible at the destination to do more than improvise the essential minimum of local transport for such items as machine guns, ammunition and water.

A further difficulty is that troops may suffer considerably from air sickness during a long journey and their fighting value may be impaired for some time after arrival.

Preliminary arrangements

2.—i. As soon as a decision is taken to move troops by air, an air force officer will be appointed as officer in charge of emplaning. The duties of this officer will be as follows:

- (a) On receipt of the order for the air move, he will report to the officer commanding the army unit emplaning, to advise him as to the preliminary arrangements to be made.
- (b) He will allot the aircraft for each party.
- (c) He will be responsible to his own commanding officer that the weights and loads allotted to aircraft do not exceed the authorized amounts. In the event of a load being in excess of the authorized capacity of the aircraft, he will refuse it and if necessary report the matter to higher authority.

ii. It must be impressed on all ranks that no smoking or naked light is permitted in an aircraft, or within 20 yards of an aircraft on the ground, and that the following articles must not be taken into the air:—

- (a) Matches other than safety matches.
- (b) Petrol or tinder automatic lighters.
- (c) Potassium chlorate throat lozenges (which are highly inflammable).
- (d) Fireworks of any description, other than those authorized as ammunition and carried as such.

Magazines may be charged, but rifles will not be loaded.

Responsibility as between the Army and the R.A.F.

3.—i. *Command.*

- (a) The senior air force officer, or, in the event of a forced landing, the first pilot of the aircraft, will make all decisions regarding the aircraft, except its protection on the ground.
- (b) The senior army officer or N.C.O. will be responsible for the protection of the aircraft and personnel on the ground at any stage of the journey. He will issue such orders and make such dispositions as he considers necessary. He will not make any demands on air force personnel without the assent of the senior air force officer or, in the event of a forced landing, the senior first pilot present.
- (c) With regard to all other matters affecting the two Services, including the safeguarding and issue of rations and water, the senior army or air force officer or N.C.O. will be responsible. He will, however, consult the responsible representative of the other Service before issuing his orders.

ii. *Provision of rations and water.*

- (a) *Rations.*—The army is responsible for the provision of rations for army personnel.
- (b) *Water.*—Each bomber-transport aircraft is fitted with water tanks.

The air force is responsible that these tanks are full before taking off at each aerodrome.

The army is responsible for the water bottles of the men being full and for their replenishment from authorized sources during the journey.

4. *Medical arrangements.*

i. The air force is entirely responsible for the medical arrangements from the point of departure until the arrival of the troops at the aerodrome of their destination.

ii. The army is responsible that the troops carry with them field service medical equipment and stores.

iii. The air force is responsible for the provision in each aircraft of a first-aid outfit which is designed for the maximum number of passengers carried. It is also responsible for the provision of medical assistance at the site of a forced landing and for the evacuation of casualties if necessary.

Drill for emplaning

5.—i. When space permits, aircraft will be drawn up line abreast. Troops will form up in single file facing the door of the aircraft allotted to them. Packs will be worn on the back secured only by supporting straps. Rifles will be inspected to ensure that there are no rounds in the breech. The actual order to emplane will be given by the captain of each aircraft to the officer or N.C.O. commanding the aircraft party.

ii. On receiving the order to emplane, the senior N.C.O. or soldier will enter the aircraft and stow his rifle in the rack on the side farthest from the door. The first three men, on arrival at the door, will, in turn, hand their rifles, muzzle first, to the senior N.C.O. or soldier, who will stow them in the next vacant place in the rifle rack, starting from the side opposite the door. They will then enter the aircraft.

iii. As soon as the first three men have stowed their kit bags, the remainder of the party will file past the door, put their kit bags inside and pass on. The three men already in the aircraft will stow the kit bags under the seats, starting from the front and working backwards. When all kit bags* have been stowed, the remainder of

* Kit bags must be packed so that they are not more than 15 inches long.

the party will emplane. On their entering the aircraft, their rifles will be handed to the senior N.C.O. or soldier, who will stow them in the rifle rack, starting from the side opposite the door.

iv. As he enters the aircraft, each man will advance up the hull as far as possible and occupy the next vacant seat. Light machine guns or machine guns will be emplaned after the riflemen. They will be stowed evenly in each corner of the bulkhead. The officer or N.C.O. in charge of the party will then enter the aircraft; he is responsible for reporting all correct to the captain of the aircraft including the fact that the door is shut.

Note.—It is estimated that 15 minutes is the maximum time that a company should take to emplane.

Discipline during flight

6.—i. Five minutes after the aircraft has left the ground, packs may be removed and stowed in the racks.

All troops will be warned that any instructions given by the crew of the aircraft during flight must be instantly obeyed.

During the flight the senior army officer or N.C.O. in each aircraft will take up a position near the door and will allow no interference with the door fastenings.

ii. Unless ordered by members of the crew on behalf of the captain of the aircraft, no concerted move will be made by the passenger troops. Passenger troops will not move about in the aircraft once they have taken their seats. Passenger troops will remain in their seats until they receive a direct order to deplane from the officer or N.C.O. in charge of the party.

Drill for deplaning

7.—i. No move to deplane will be made until permission is given by the captain of the aircraft. The officer or N.C.O. in charge of the party will then open the door. All ranks will stand up and put on their packs.

ii. The officer or N.C.O. in charge of the party will deplane, followed by the light machine gun or machine gun personnel who will be prepared to come into action to cover the deplaning, if necessary. The remainder of the party will then deplane. A N.C.O. will be posted at the door. As each man reaches the door, he will be handed his rifle by this N.C.O. The last three men to deplane will remain in the aircraft and off-load kit bags, which will be handed to the men on the ground who have already

deplaned. The last three men will then deplane, followed by the N.C.O. who will close and latch the door, and will then salute the pilot, as an indication that the door is closed and that the aircraft is free to move away.

Carriage of supplies

8. Aircraft may be used—

- i. to land and deliver supplies;
- ii. to drop supplies.

As a general guide, it may be accepted that one bomber-transport aircraft can carry 4,000 lb. of supplies when the round trip is 700 miles, and one army co-operation aircraft 500 lb. for a round trip of 300 miles.

Supplies may be dropped either free, limited to tinned goods, flour, etc. (damage 5 to 20 per cent. according to nature) or by parachute. Apart from special containers for limited quantities of fragile articles, supplies may be dropped in ordinary packing attached to parachutes. There is likely to be a loss of 20 per cent. in the case of petrol and oils, etc.

After dropping, parachutes must be collected and returned to the R.A.F. as soon as possible. The R.A.F. must be consulted regarding the size of packages. Good ground organization will reduce the "idle time" of aircraft loading and unloading to a minimum.

Selection of the dropping site

9. An area of 200 yards' radius which is clear of river beds, deep cuttings, trees or other obstructions, etc. in the immediate vicinity is desirable. When this is impossible, the largest possible strip of ground in the direction of the prevailing wind, and at least 30 yards wide, will be selected. A danger area of 200 yards' radius from the centre of the site will be observed. Aircraft coming into the wind need an approach of one mile clear of obstacles over 200 feet high.

Signals for dropping

10. Where possible, the Ground Signal Code will be used. Ground strips will be put out in the centre of the dropping site displaying the formation call sign and denoting the direction of the prevailing wind.

The pilot should indicate that he is about to drop supplies by firing a white signal light. When the danger area is clear, this signal will be answered by displaying the appropriate code group for "Drop rations, etc., here" in the centre of the site. This is the permissive signal for

dropping to begin and will remain out until dropping is completed.

On conclusion of the dropping, a red signal light will be fired from the aircraft.

To stop dropping in the case of emergency, remove the permissive signal; this will be acknowledged by the pilot firing a red signal light. The aircraft will then circle for 15 minutes, at the end of which time, unless the permissive signal is again exposed, it will return to its landing ground.