Chapter 11 EMERGENCY EQUIPMENT

LIST OF CONTENTS

DESCRIPTION AND OPERATION

Introduction

1. This chapter covers the miscellaneous emergency equipment and fittings which are included in Sect.1, Chap.3, and not described elsewhere in this Volume. Those covered elsewhere are as follows:-

(1) Emergency hydraulic services Sect.3, Chap.6

(2) Jettison systems Sect.5, Chap.1

(3) Automatic fire extinguisher systems Sect.4, Chap.5.

EMERGENCY EXITS AND HATCHES (Fig.1 to 6)

2. Two hatches are provided in the

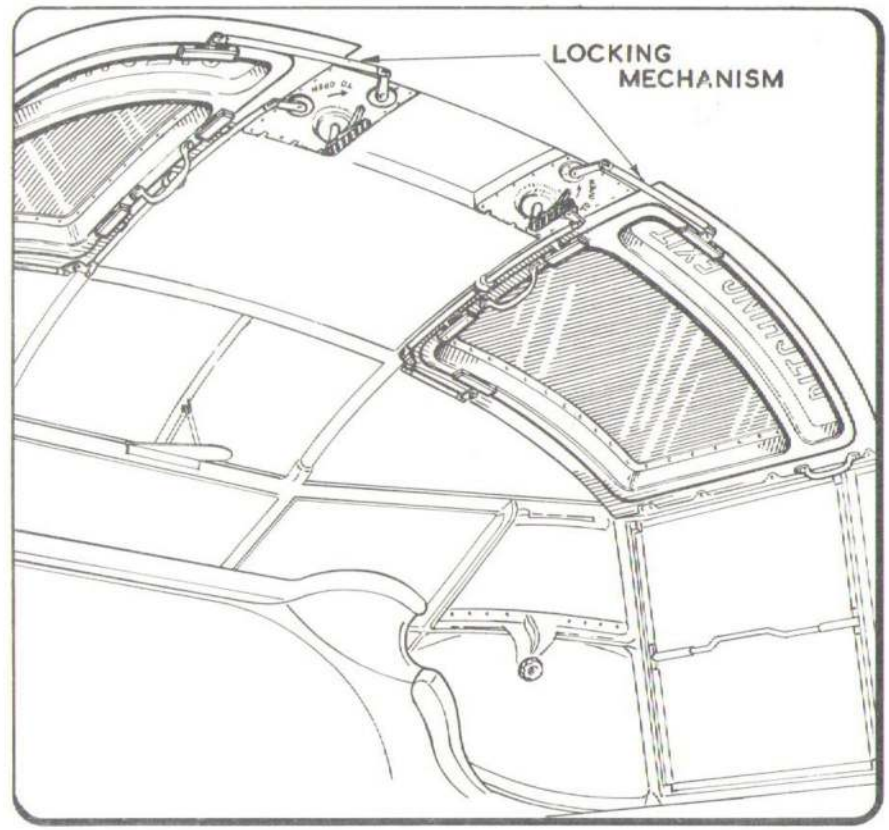

Fig.1. Escape hatches in canopy

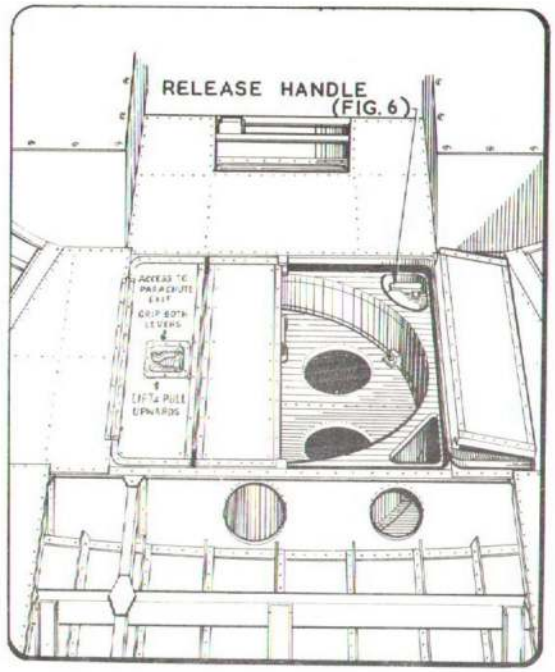

Fig.2. Access to parachute exit

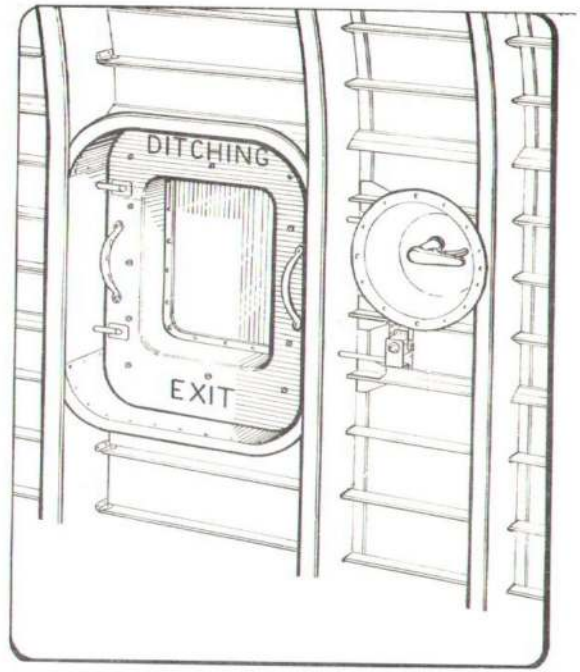

Fig.3. Centre section hatch - starboard

pilot's canopy, two more in the fuselage intermediate centre section (one at each side for access to the wings) and one in the roof of the rear centre section. When the turret is removed and the replacement fairing fitted, a sixth escape hatch is provided in the fairing. In addition, there is a circular parachute exit in the floor of the nose, and the aircraft entrance door at the starboard side of the rear centre section can be removed from its hinges in an emergency, and jettisoned.

Escape hatches/ditching exits (fig.1, 3, 4 and 6)

3. Operating handles are provided for opening these exits. They are all of the same pattern, and can be opened both from inside and outside the aircraft. In aircraft not incorporating Mod.344 it is necessary to press in a push-button adjacent to both the inside and outside handles before they can be turned. Mod. 344 introduces a new type of lock in which the inner handle incorporates a lever which is actuated when gripping the handle to free it for turning. Provision is made on the outside part of the lock to enable the flush handle to be pulled out prior to turning it, in which position it is freed for turning. Each handle operates bolts securing the associated hatch or exit through a system of push-pull rods and levers.

Aircraft entrance door (fig.5)

4. Quick-release pins are used as hinge pins in the door hinges. They are attached to two short cables between which is a handgrip. Above and below this handgrip are two fairleads which cause the cables to withdraw the quick-release pins when the handgrip is pulled away from its normal position.

Parachute exit (fig.2 and 6)

5. This is located under two folding doors beneath the rear body cushions at the air bomber's station. Outboard, on each side of the body cushions, are two grip handles which, when pulled together and lifted, allow the outer part of each door to turn up and outwards; the inner associated part, hinged to the outer part, is pulled outboard and folds against the

outer part. This exposes the circular escape hatch which is held in its opening by one locating pin at the rear of the opening and a bolt at each side of the forward part. These bolts are controlled by a handle in a recess at the forward, starboard corner of the frame for the folding doors.

TYPE M.S.9 DINGHIES

6. Two Type M.S.9 dinghies, housed in pre-packing pans, are stowed in compartments, one in the centre section trailing edge of each wing. A manual release cord runs through lengths of tubing from each dinghy stowage compartment to two pull-off positions, one on the starboard wall of the fuselage between formers 13 and 14, near the mid-upper turret, and the other at formers 24 and 25 at the observer's station. When a cord is pulled the corresponding dinghy container lid is released and the dinghy inflated. Each lid is secured by two locating lugs and two locking pins, the latter making contact with two release catches on the dinghy housing. The dinghy inflation bottle is fitted with a modified operating head Ref.No.26FP/2256. This component differs from operating head Ref.No.6D/911, the pulley cover having been removed, a pointer embodied, and the electric plug connector blanked off. The original short operating cord and connector have also been removed. The two operating cables each terminate in a ball-shaped ferrule, and this is connected to the pulley of the associated head in the same manner as its original cable connector. This operation is described in para.17 and A.P.1182C, Vol.1, which also describes the Type M.S.9 dinghy and its associated equipment.

7. On aircraft incorporating Mod.397 (S.O.O.) due to service requirements calling for the transport of additional personnel, provision is made for the stowage of an extra M.S.9 dinghy and an emergency pack. The additional dinghy is housed in a valise which is secured to the floor with straps (Mod.396) on the immediate right hand side of the aircraft main entrance door when viewed from inside the aircraft, and the operating cord is secured to an eye-bolt which is attached to former 29, 12 in. above floor level. The emergency pack is also strapped to the floor (Mod.396) on the port side of the

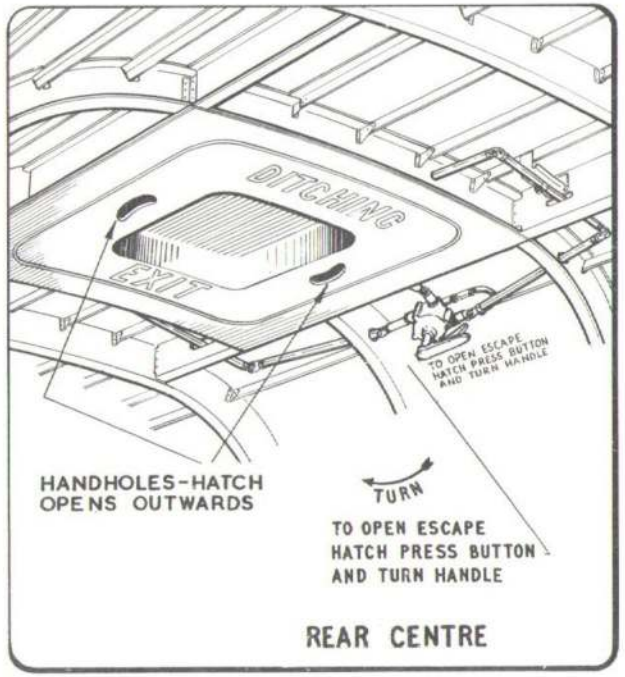

Fig.4. Escape hatch - rear centre section

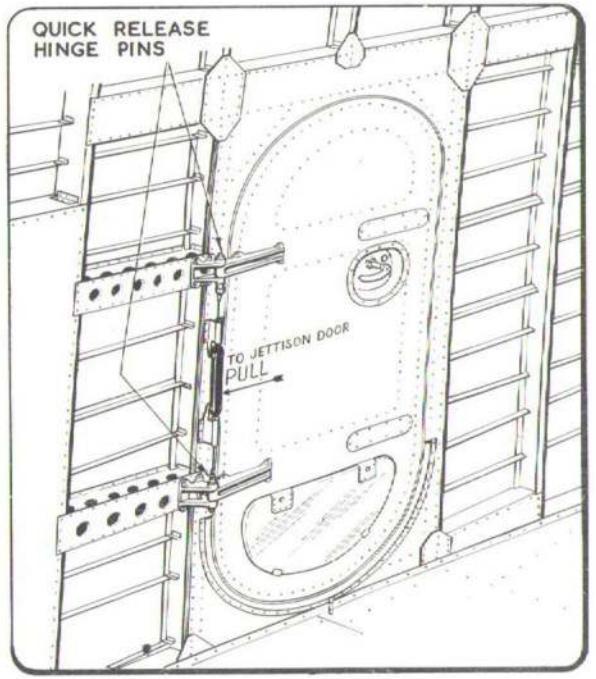

Fig.5. Entrance door

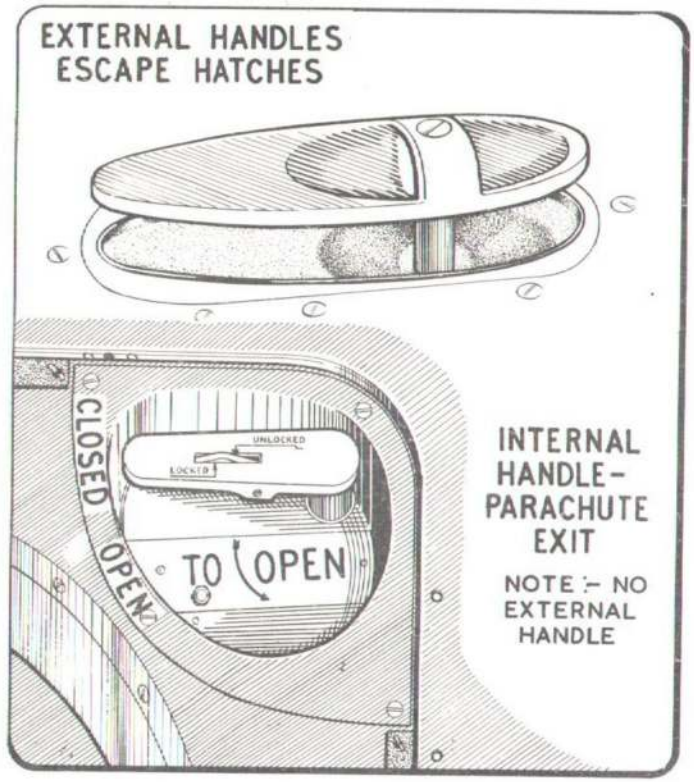

Fig.6. External handles - escape hatches and internal handle-parachute exit

aircraft, and directly opposite the entrance door.

Dinghy operation (fig.8)

8. Details of the operating system are shown in the illustration. Each dinghy compartment lid is secured by two locating lugs and two locking pins, the latter making contact with two release catches on the rear wall of the dinghy compartment. Two adjusting screws on the top surface of the lid are provided to ensure full engagement of the locking pins into the release catches. Operation of a lever in the bottle operating head rotates a cam assembly and actuates a plunger to pierce the bottle sealing disc. The C.O.2 gas in the bottle inflates the dinghy and simultaneously operates a piston connected to the release mechanism for the lid of the compartment. The lever in the bottle operating head is operated by the associated dinghy release cable.

9. Direct operation of the systems is accomplished by breaking the transparent panel over the manual release handle, visible through the panel, and pulling the handle against the spring secured to it. This releases the compartment lid. A sharp pull on the operating cable will then operate the bottle assembly and the dinghy will be inflated.

Dinghies and associated equipment

10. These are described in A.P.1182C.

DESERT EQUIPMENT TRUNKS

11. Three desert equipment trunks (S.O.O. only) are available for stowing desert and forced landing equipment and are fitted in the rear part of the fuselage. They are located on the floor by pegs which engage with socket plates and are secured by quick-release fasteners which engage with hook plates. The plates are fastened to the floor.

No.1 trunk

12. This is secured to the floor immediately aft of the flap jack cover and mid-upper turret pedestal in the fuselage rear centre section. It has a 15-gallon water tank secured to its lid, and provides stowage for the following:-

Description	Quantity	Ref.No.
Ground signalling strip	1	4B/597
Heliograph	1	27H/2107
Magnetic marching compass	1	6E/374
Tins of condensed milk	10	27P/29
Emergency flying ration containers	5	23/106
Ordinary flying ration containers	5	21C/1408
Water bottles	5	23/9438737
Water bottle carriers	5	23/80
Emergency flying rations	10	27P/25

No.2 trunk

13. This is secured to the floor between formers 26 and 28 and has a water tank,

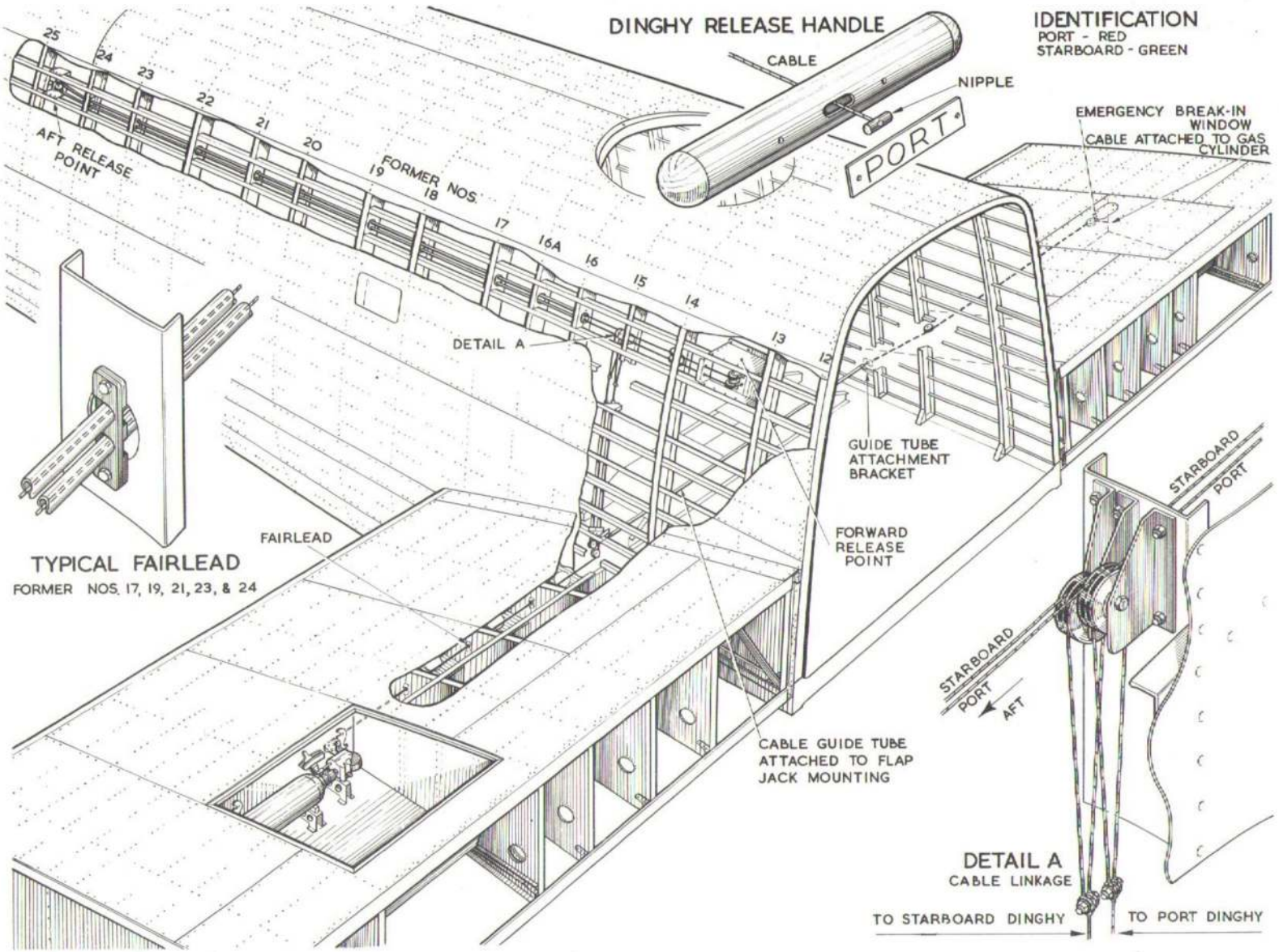

Fig.7. Type M.S.9. dinghy installation

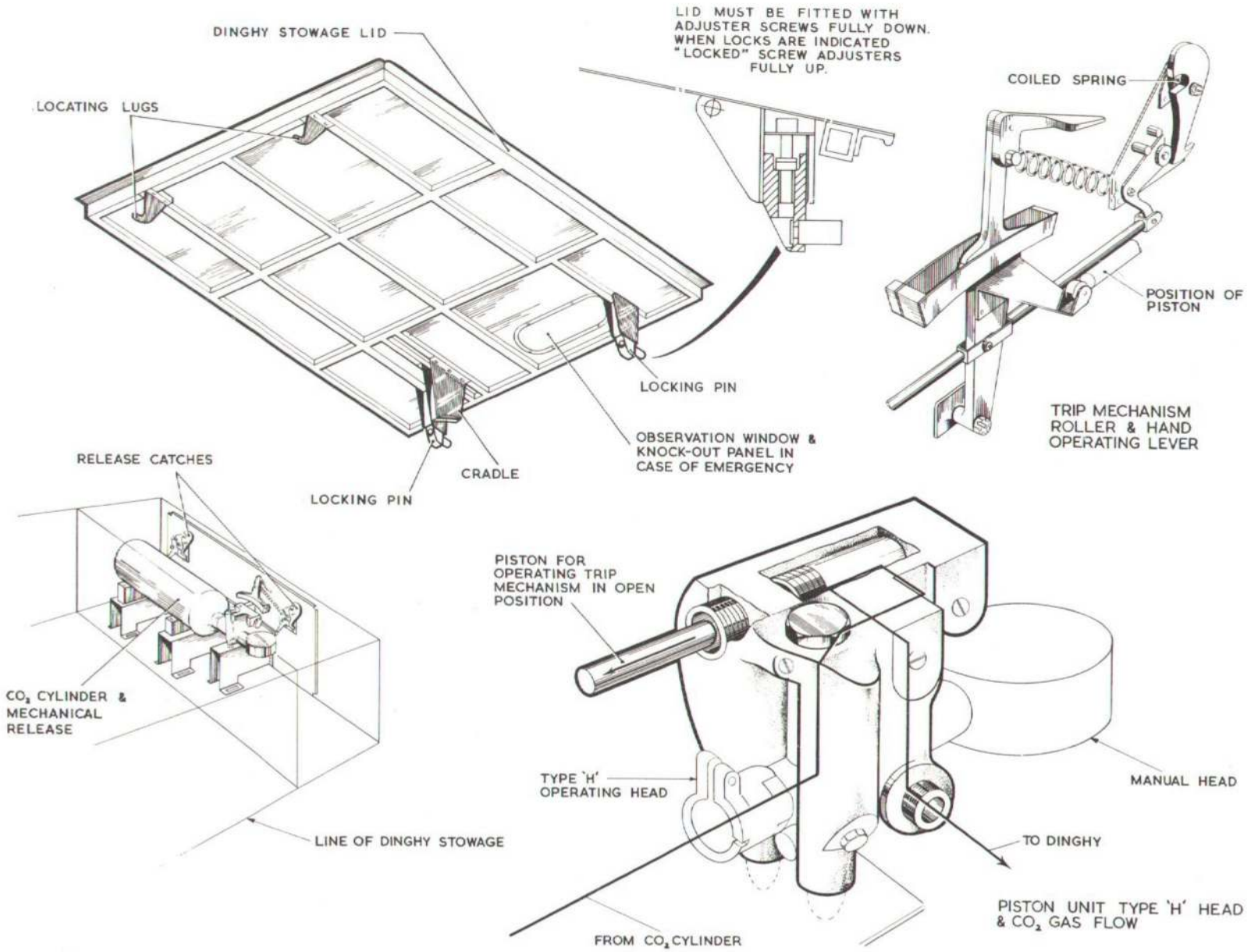

Fig. 8. Dinghy operation
(Setting information added)

RESTRICTED

identical with that on No.1 trunk, secured to its lid. It provides stowages for the same quantities of ration equipment as the No.1 trunk and, instead of signalling strip, heliograph and compass holds a Combined Signal Panel Code (A.P.3031A).

No.3 trunk

14. Securing points for this trunk are provided between formers 19 and 22, under the lower rest-bunk. No water tank is fitted and it provides stowage for picketing equipment as follows:-

Description	Quantity	Ref.No.
Spike pickets	12	4GB/1309
Cross pieces (double)	3	4GB/1495
Cordage (sisal, 1½ in.)	100 ft.	32A/50
Tool Kit - Type C	1	1B/4346
Chocks	2	4GB/520

SERVICING

EMERGENCY EXITS AND HATCHES

Lubrication

15. The release mechanisms require periodic lubrication with oil OM-150 or oil OX-14 which must be used sparingly on all joints and bearings in the mechanisms. The parachute exit locking mechanism is along the forward edge of the square recess for the folding top doors and below the holed pressing forming the circular opening. Access for lubrication can be gained through the holes in the pressing. Refer to fig.1 to 6.

Renewal of glazing

16. Careful note of the materials used for sealing the edges of Perspex panels in the exits should be made at the time of removal. The same materials must be used to seal the replacement panels. Refer to the text and illustration in this Section, Chapter 1, which deals with glazing and sealing.

TYPE M.S.9 DINGHIES

17. To remove the dinghy stowage compartment lids, remove the weather-proofing fabric strips and the screws securing the transparent break-in access panel and operate the trip mechanism hand lever. This frees the aft edge which can then be lifted clear to allow the forward edge to be drawn back to disengage the locking lugs. To fit the lids, first ensure that the hand trip lever and the release catches are in the "unlocked" position and that the adjusting screws are screwed fully down. Insert the forward edge locating lugs into the holes on the forward wall, then press down on the rear edge of the panel until the hand trip lever springs into the "locked" position. Visually check that the hand trip lever is in the "locked" position and that the release catches are fully engaged over the locking pins, then screw the adjusting screws fully up. Refit the access panels and weather-proofing strips as detailed in Sect.2, Chap.4. It should be noted that the operating cables embody no connectors, the remotely operated cable for each dinghy being in one piece due to the pulley being close to the operating head (fig.7). When connecting the cable, the assembled bottle, operating head and piston unit must be in the stowage position in the wing compartment. Before a cable is fitted to the head, the green mark on the inflation head pulley must coincide with the pointer and be kept so whilst the cable is being fitted. The pulley cover is dispensed with to enable the cable to be threaded through the guide tube integral with the head assembly and fitted to the pulley. The cable is secured by the retaining clip, the ball-end being fitted between the clips provided on the pulley in the same manner as that for the standard cable usually fitted, (A.P. 1182C, Vol.1, Sect.4, Chap.5). If sufficient slack is available for this purpose the port and starboard cable runs should be released at the joints below the twin pulleys at former 15 on the starboard side of the fuselage indicated in fig.7. Should it be necessary to release the cable runs, care should be taken when rejoining the cables to prevent any jerking of the cable which will release the dinghy. The piston rod of the piston unit which operates the stowage lid release trip mechanism is shown in fig.8 in the operated position. Until the release is operated the piston rod remains inside the cylinder and a lead foil seal, Part No. 12/Z3375, is used to protect the rod and cylinder against the entry of moisture. To prepare the piston unit for operation, remove the retaining screw at the top of the unit, the threaded piston rod guide and the lead foil seal. Push the piston rod in as far as it will go, fit a new seal and refit the threaded guide and retaining screw. Full instructions on folding and stowing the dinghy and its associated equipment are contained in A.P.1182C, Vol.1, Sect.8, Chap.2.

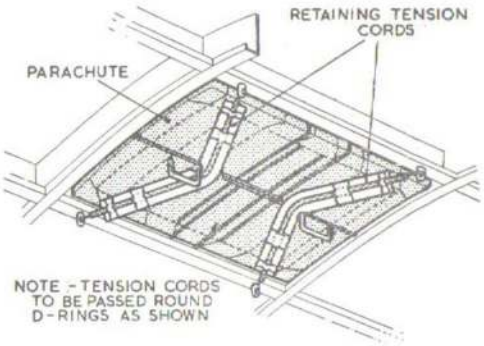

Fig.9. Nose parachute stowage

Turret escape hatch (fig.10)

18. Assembly of the mid-upper turret cover and escape hatch after removal of the turret and fairings is shown in the illustration. Mushroom-head 2 B.A. screws, Ref.No.28D/8432, are used to secure the cover in position.

Parachute packs - nose stowages (fig.9)

19. In order to obviate any possibility of any parachute pack falling from the inverted stages in the nose, the bungee retaining straps should be disposed as indicated in fig.9.

REMOVAL AND ASSEMBLY

General

20. No specific removal and assembly instructions are necessary in relation to the components described in this Chapter.

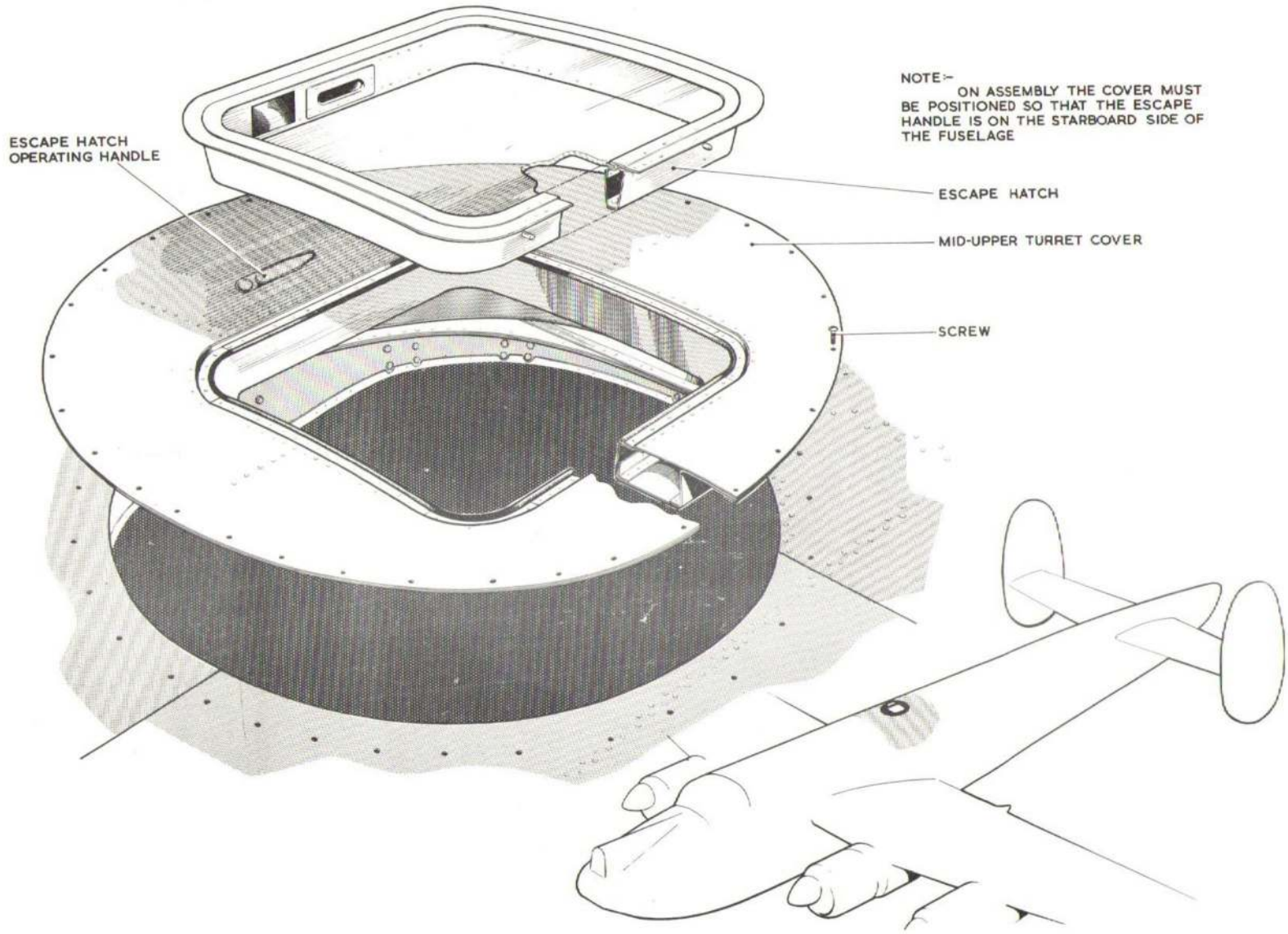

Fig. 10. Assembly of mid-upper turret cover