AP 108B-0131-1A

AIRCREW EQUIPMENT ASSEMBLIES

EJECTION SEATS TYPE 4HA

(MARTIN-BAKER)

(HUNTER T MK 7 AIRCRAFT)

GENERAL AND TECHNICAL INFORMATION

BY COMMAND OF THE DEFENCE COUNCIL

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LETHAL WARNING

1. The assisted escape system and associated explosive operated jettison mechanisms fitted to aircraft are a potential source of lethal injury to personnel and damage to Goverment property if inadvertently operated.

2. Safety devices in the form of safety pins, levers and switches are provided for use when the aircraft is on the ground to safeguard against this danger.

3. On entering the cockpit/cabin of the aircraft, it is the responsibility of the individual to be able to recognise the assisted escape system safety devices in that aircraft and to ensure that they are correctly applied at all times in accordance with para. 4 below.

4. Instructions for the correct positioning of the assisted escape system safety devices in each aircraft type and mark are detailed in the Servicing Schedules and Pilot's Notes related to that aircraft.

CONTENTS

MODIFICATION RECORD

The following record confirms that this publication incorporates all technical changes necessitated by the modifications listed below. Further information on modification titles, classification, categories and Mark applicabilities is given in the appropriate equipment publication Topic 2.

Mod No	Brief details	Class
ES 3890	To introduce an oxygen hose restraint sleeve, Part No MBEU 74285	C/3
ES 3990	To introduce a gas fired guillotine in lieu of static line fired guillotine	B/2
PA 688	To remove parachute static line cable Part No MBEU 3378PA	B/2
▶ PA 756	To introduce 'Aircraft Materials Ltd' Mod AML 60 to the quick-release fitting	RPO
PA 761	To introduce 'Aircraft Materials Ltd' Mod AML 71 to the quick-release fitting	RPO ◀

Chapter 1

AIRCREW EQUIPMENT ASSEMBLIES,

EJECTION SEATS, TYPE 4HA, Mk 1
(HUNTER T Mk 7 AIRCRAFT)

CONTENTS

ILLUSTRATIONS

INTRODUCTION

1 Type 4HA, Mk 1 ejection seats (fig 1 and 2) are fitted in Hunter T Mk 7 aircraft. Two seats, which are identical, are installed side by side.

2 This publication is primarily concerned with the installation of the aircrew equipment assembly (AEA) in the seat, the strapping-in procedure and the drill to be used when leaving the seat after landing. A brief description of the various components of, or concerned with, the AEA and their function is included.

COMPOSITION OF THE ASSEMBLY

3 The aircrew equipment assembly consists of the following items:

Equipment	AP No	Contractor
Ejection seat, Type 4HA Mk 1	AP 109B-0131-15F	Martin-Baker
Parachute assembly, B, Mk 41	AP 108C-0150-1	Martin-Baker
Personal survival pack, Type R, Mk 1	AP 108E-0503-12	Martin-Baker
Emergency oxygen set Mk 7B	AP 107D-1002-123A	L. Adams
▶ Aircrew List (flying clothing)	AP 108B-0001-1	ML Lifeguard ◀

DESCRIPTION

4 The aircrew equipment assembly is described in para 5 to 14. For further information, refer to publications listed in para 3.

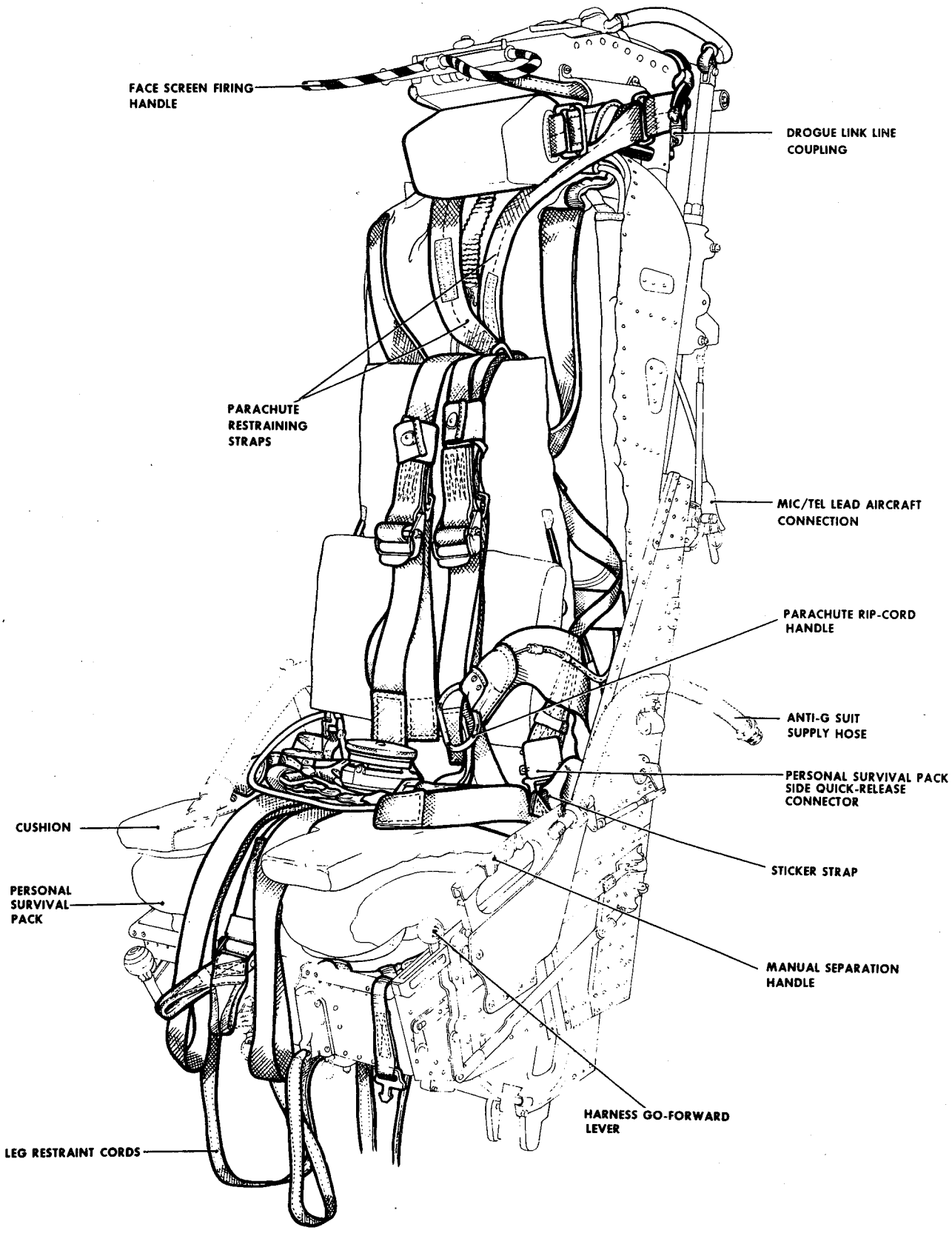

Fig 1 The Type 4HA, Mk 1 ejection seat (port view)

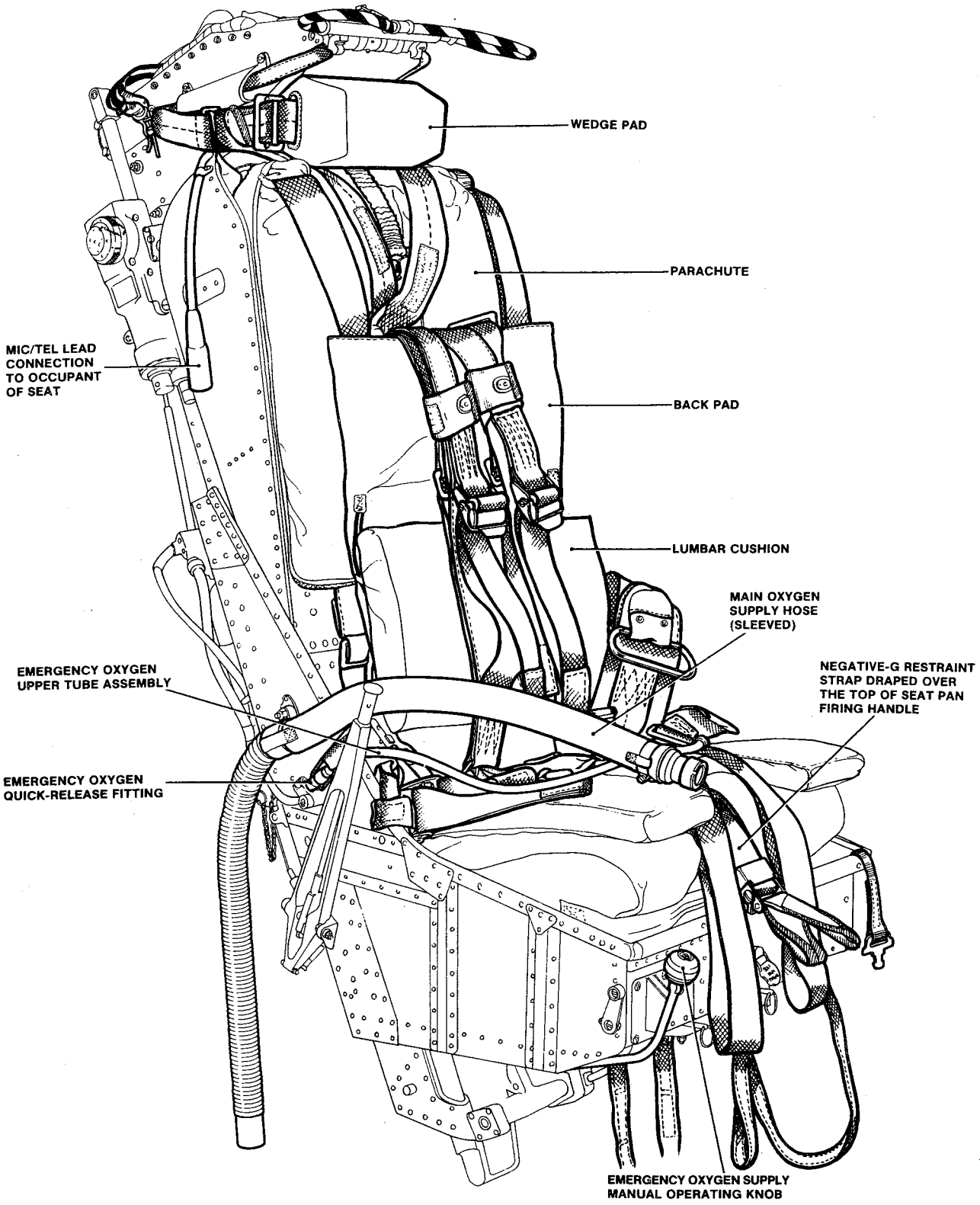

Fig 2 The Type 4HA, Mk 1 ejection seat (starboard view)
(Mod ES 3890 incorporated)

FIRING SYSTEM

5 Two firing handles are provided on the seat. One, which has an integral face screen, projects from the front of the drogue container: the other is positioned centrally on the front face of the seat pan. Each handle is provided with a safety pin to prevent inadvertent operation whilst the aircraft is on the ground. Both safety pins must be removed before flight and refitted after flight.

PARACHUTE ASSEMBLY

6 A horseshoe-shaped parachute assembly seats upon the support arch and is held in position in the parachute container by two restraining straps. The parachute is attached to a combined safety and parachute harness which is locked to the seat at three points; the 40-g webbing strap is passed through the harness yoke and its lug locked into the top harness lock below the support arch and the two lower lugs are inserted into the lower harness locks. A back pad and adjustable lumbar cushion are included in the harness for comfort and support. A rip-cord handle is provided on the waistbelt to deploy the parachute. A static line cable attached to the rear of the parachute pack is attached to the sear of a guillotine firing unit when the ▶ seat is equipped (Pre mod PA 688). Each end of the lower harness cross ◀ strap terminates in a lug and is referred to as a sticker strap. These lugs are fitted into spring clips on the inside faces of the seat pan to restrain the occupant in the seat after operation of the harness release mechanism. The developing parachute pulls the occupant from the ejection seat separating the sticker strap lugs from the clips. This slight check in separation precludes the possibility of man and seat collision during parachute deployment.

GO-FORWARD MECHANISM

7 An inertia go-forward mechanism is controlled by a three-position spring-loaded lever on the port side of the seat pan. If the lever is moved fully forward and then released to the centre position, the occupant can lean forwards and backwards at will. Movement of the lever to the rear position brings the snubbing unit in the top harness lock into position preventing further forward movement and automatically locking the harness in the rearward position as the occupant leans back. In the event of a crash landing or ejection occurring whilst the lever is in the central position, an automatic inertia device brings the snubber into action to prevent the occupant being thrown forward.

SPREADER ARM SYSTEM

8 The spreader arm system consists of two arms mounted to hinge forward of the top lock. The rings of the parachute restraining straps are passed one over each spreader arm; the arms are then hinged inward and retained there by the lug of the 40-g webbing strap when locked into the top harness lock.

GUILLOTINE SYSTEM

▶ 9 Pre mod ES 3990. A guillotine is bolted to the port side of the drogue container and consists of a firing unit and cutter assembly. When the seat is equipped the static line cable from the parachute pack is attached to the guillotine sear and the parachute withdrawal line is passed through an aperture in the cutter assembly and retained there by a spring-loaded yellow gate. Withdrawal of the sear fires the guillotine to cut the withdrawal line. This system reduces the vital actions required to effect manual separation. ◀

▶ 9A Post mod ES 3990. A guillotine is bolted to the port side of the drogue container and consists of a body, gas operated cutter and spring loaded yellow gate. The guillotine is connected via a gas pipe to a guillotine firing unit mounted on the left hand sear of the seat pan. ◀

LEG RESTRAINT SYSTEM

10 Leg restraint cords are provided to ensure that the legs are drawn back and held close to the seat pan during and after ejection. The cords pass through snubbing units below the front of the seat pan, through roller brackets, and are finally anchored to the aircraft floor by fittings incorporating shear rivets. The snubbing units allow the cords to pass freely downwards but prevent the cords passing upwards except when released by the spring-loaded toggle at the front of the unit. After being passed through the leg garter D-rings the taper plugs on the ends of the cords are inserted into the taper plug assemblies on the front of the seat pan. A lever situated forward on the starboard side of the seat pan provides the means to release the taper plugs on vacating the seat.

NEGATIVE-G RESTRAINT STRAP

11 A negative-g restraint strap is fitted to restrain the occupant against vertical movement when subjected to negative-g forces. The strap passes through brackets in the floor of the seat pan, the rear ends being attached to the lower harness lugs, before their insertion into the lower harness locks, and the forward ends to the harness lap strap lugs, which are retained in the harness quick-release fitting. Means are provided for tensioning the strap during the strapping-in procedure.

PERSONAL SURVIVAL PACK TYPE R, Mk 1

12 The Type R, Mk 1 personal survival pack (PSP) is of fabric construction complete with a cushion and is housed in the seat pan where it forms a seat for the occupant. It is attached to the lower harness straps by two quick-release connectors, one each side, and to the life preserver or jerkin by the lowering line stowed in a satchel on the port side of the pack. The harness connections are made when the survival pack is fitted in the seat and the lowering line by the occupant when strapping-in. The lowering line being attached to the clothing, enables the side connections to be released during a parachute descent so that the pack falls and hangs below the body. On alighting in water this enables the harness and parachute to be disconnected immediately without loss of the pack. A thin cushion, provided with the Type R pack to cover the under-leg straps of the harness both in normal use and during parachute deployment, is attached to the harness by press studs.

EMERGENCY OXYGEN SYSTEM (fig 3)

13 An emergency oxygen cylinder is mounted on the starboard rear of the seat pan. The supply tube is routed through a securing clip to a clamp bracket on the starboard side of the seat pan. An upper oxygen tube conveys the supply from the clamp bracket to the occupant's oxygen mask. A loop strap is fitted between the harness and the tube to disconnect the tube from the seat on man/seat separation. The cylinder operating cable is attached to the trip lever mechanism and as the seat ascends the guide rails the trip lever strikes the cross beam and the occupant is supplied with oxygen until he separates from the seat. Provision is made for the manual operation of the supply by means of an adjustable cable which leads from a control knob on the starboard end of the front face of the seat pan and is finally connected to the trip lever mechanism.

MANUAL SEPARATION

▶ 14 Pre-mod ES 3990. Fully automatic facilities are provided to withdraw ◀ the parachute and separate the occupant from the seat after ejection. In the event of failure of these automatic facilities a manual separation handle fitted on the port side of the seat pan will, when operated, free the occupant from the seat. The handle is provided with a thumb operated trigger which must be depressed before the handle can be pulled. When the occupant separates from the seat after operation of the manual separation handle, a static line, attached to the rear of the parachute pack, withdraws the sear from the guillotine. The guillotine fires and severs the parachute withdrawal line thus separating the parachute from the seat structure. The occupant is then to deploy his parachute by pulling the parachute ripcord handle on the harness waistbelt.

NOTE...
The guillotine will also fire during automatic separation but the parachute withdrawal line will be pulled from the yellow gate of the unit by the pull of the drogues as soon as the scissor shackle is released and before the occupant separates from the seat withdrawing the sear from the guillotine.

▶ 14A Post mod ES 3990. In the event of failure of the automatic release facilities a manual separation handle is provided on the port side of the seat pan. The handle is connected by a linkage, tube and shackle to the guillotine firing unit which is connected by a trombone assembly and pipe run to a guillotine mounted on the port side of the drogue container. When the seat is equipped the parachute withdrawal line is passed through the aperture of the guillotine and is retained in place by a spring-loaded yellow guard. Operation of the manual separation handle releases the harness and leg restraint lines and fires the guillotine firing unit. Gas pressure from the firing unit operates the guillotine to sever the parachute withdrawal line thus freeing the parachute from the seat. The parachute can then be deployed by pulling the parachute ripcord handle attached to the harness waistbelt. ◀

SEQUENCE OF EVENTS DURING EJECTION

▶ 15 When either firing handle is pulled the canopy is jettisoned, the sear is withdrawn from the time-delay firing unit and after the delay of 0.5 seconds the seat is ejected. As the seat ascends the guide rails the following sequence occurs:

15.1 The leg restraining cords tighten drawing the legs back to the front of the seat pan until the rivets shear in the aircraft attachments.

15.2 The time-delay mechanism of the drogue gun is actuated, the gun being fired after 0.5 seconds.

15.3 The time-delay mechanism for the barostatic time-release unit is tripped. The functioning of the mechanism is dependent upon aircraft height and speed at the time of ejection.

15.4 The main oxygen supply hose, the anti-g supply hose and the mic/tel lead are disconnected from the aircraft supplies.

15.5 The emergency oxygen supply is turned on.

15.6 After 0.5 seconds the drogue gun fires and the two drogues stabilize and retard the seat. If the seat ejection occurs at high altitude the seat will eventually fall in a near vertical attitude with the occupant restrained from falling forward by his combined harness. At low altitudes there may not be time for the seat to attain the near vertical position. During this phase the occupant will be breathing emergency oxygen from the emergency oxygen system fitted on the seat.

15.7 After an appropriate delay the occupant is released from the seat and his parachute canopy opens automatically. Deployment of the parachute pulls the occupant from the seat separating the sticker strap lugs from the clips on the seat pan. At the same time the mic/tel lead, main and emergency oxygen and anti-g supply hoses are disconnected, enabling ambient air to be inhaled. At low or moderate aircraft speeds and heights the delay is 1.25 seconds after ejection. At high altitude, the 1.25 seconds delay does not start until the seat has descended below 10,000 feet. At high speeds, at 10,000 ft or below the delay does not start until the seat has decelerated to a safe speed for the parachute to deploy.

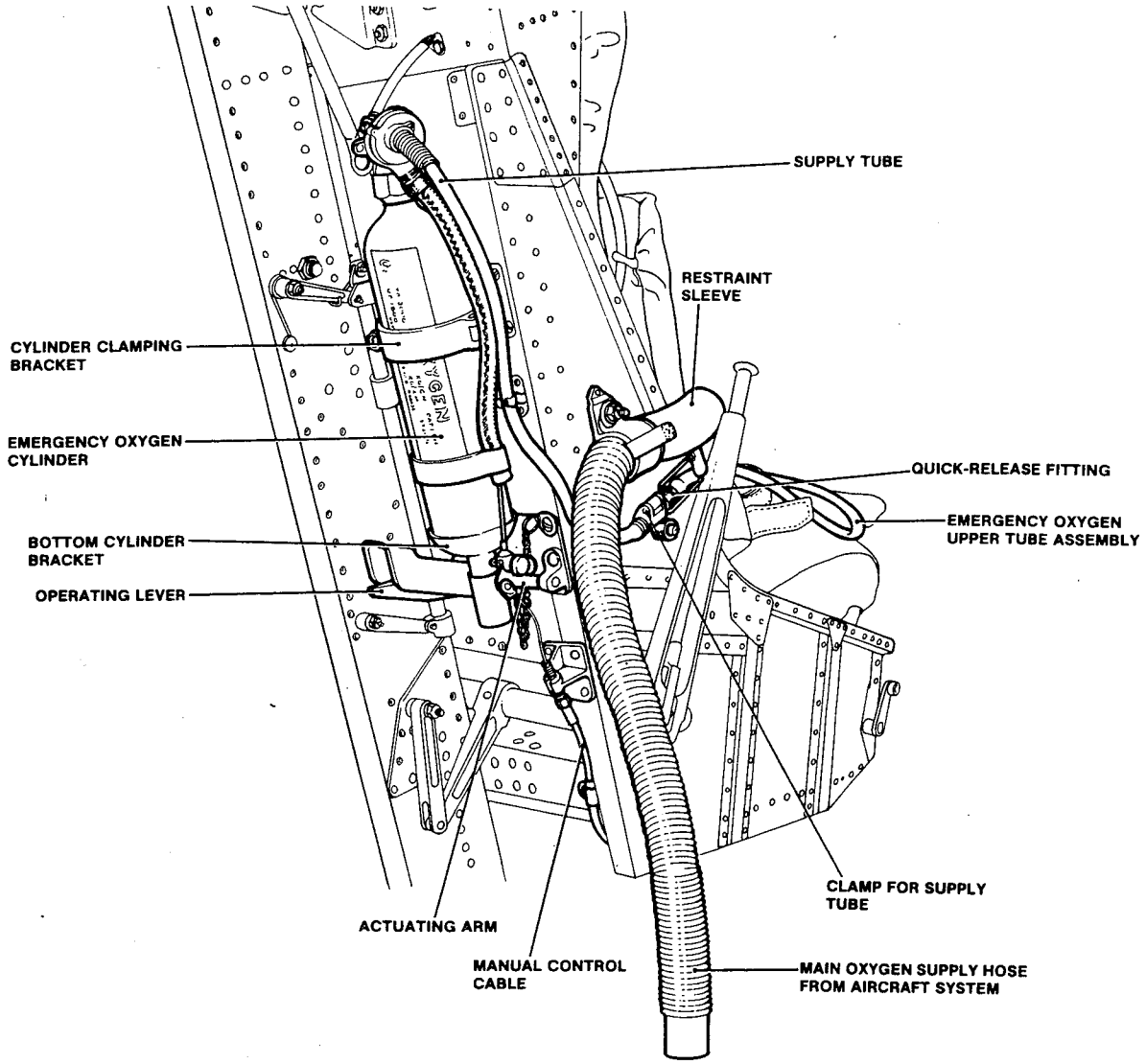

Fig 3 Arrangement of oxygen supplies on seat
▶ (Mod ES 3890 incorporated) ◀

CONNECTIONS TO THE AIRCRAFT

16 On an installed ejection seat the following items are connected to the airframe or fixed portion of the seat:

16.1 Port side of the seat:

16.1.1 Static rod from the drogue gun to the cross beam.

16.1.2 Mic/tel lead.

16.1.3 Anti-g suit air supply hose.

16.2 Starboard side of the seat:

16.2.1 Static rod from the barostatic time-release unit to the cross beam.

16.2.2 Main oxygen supply hose.

16.3 Underside of the seat:

16.3.1 Leg restraint cords.

16.4 Top of the seat:

16.4.1 Canopy jettison unit operating cable.

EQUIPPING THE SEAT

17 The following procedure is to be used when installing the equipment in the seat; refer to fig 1 to 10 for detail as necessary:

▶ 17.1 Ensure the seat has been made Safe for Maintenance in accordance with current instructions. ◀

CAUTION...
Ensure that all oxygen connections are kept free from oil and grease.

NOTE...
It is recommended that the emergency oxygen cylinder be fitted before seat installation.

17.2 Obtain the emergency oxygen cylinder; ensure the safety pin is fitted. Open the clamp on the rear of the seat pan and seat the cylinder in the lower cup bracket; close the clamp and tighten. Secure the supply tube end fitting in the clamp fitting on the starboard side of the seat pan and fit the tube into the spring clip on the rear of the seat pan, (fig 3).

17.3 Slacken the adjuster on the manual operating cable; ensure it is connected to the operating lever and that the manual control knob is pushed fully down into its housing. Connect the cylinder operating cable to the operating lever using the pip-pin attached to the seat. Adjust the manual control cable to eliminate all slack in the cable and keep the manual control knob firm in its housing.

17.4 Ensure that the seat pan is clean and that the leg restraining cords are clear of the pan.

17.5 Ensure that the manual separation handle is in the locked position, i.e., fully down and with the thumb trigger engaged.

17.6 Place the parachute and harness in the seat pan. Ensure that the scarlet locking thread safety tie, visible where it is routed through the Newey eye at the starboard end of the parachute pack top closure flap, is intact. Place the parachute restraining straps and wedge pad in a convenient position.

17.7 Open the spreader arms, situated in front of the top harness lock and pass the O-rings of the two parachute restraining straps over the spreader arms, one over each arm. Ensure that each O-ring is pushed well back towards the pivot end of its spreader arm and close the arms inwards towards each other as far as they will go, (fig 4).

▶ 17.8 Pre mod ES 3990. Route the guillotine static line under the touch-and-close retention flap on the rear of the parachute pack (fig 5). Place the parachute pack in the parachute container, guiding the static line for the guillotine through its aperture in the back of the parachute container. Push the pack well into the container so that it is supported on the support bracket. Restrain the spreader arms and bring the two parachute restraining straps forward through the arch of the pack, ensuring that they are not crossed. ◀

▶ 17.8A Post mod ES 3990. Place the parachute pack in the parachute container. Push the pack well into the container so that it is supported on the support bracket. Restrain the spreader arms and bring the two parachute restraining straps forward through the arch of the pack, ensuring that they are not crossed. ◀

17.9 Operate the go-forward control to the free position, pull out the webbing strap from under the parachute support bracket and hold it against the spring tension.

17.10 Pass the webbing strap DOWNWARDS through the D-shackle attached to the harness shoulder straps, ensure that the harness straps are not twisted, engage a tool (Ref 27L/2139) with the lug fitted to the end of the webbing strap and insert the lug between the inner extremities of the spreader arms into the top harness lock in the back of the seat (fig 6); push the lug in until it locks into position. Ensure that it has locked correctly by pulling on the webbing strap, then allow the strap to wind back.

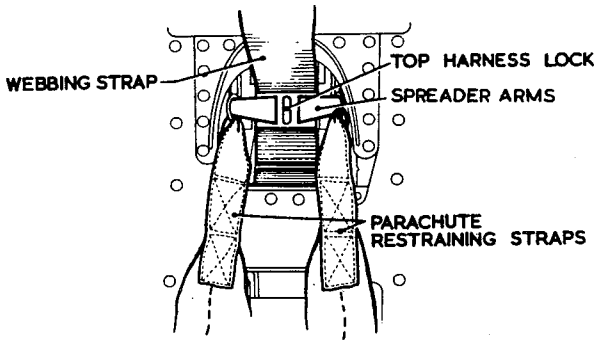

Fig 4 Fitting parachute restraining straps to spreader arms

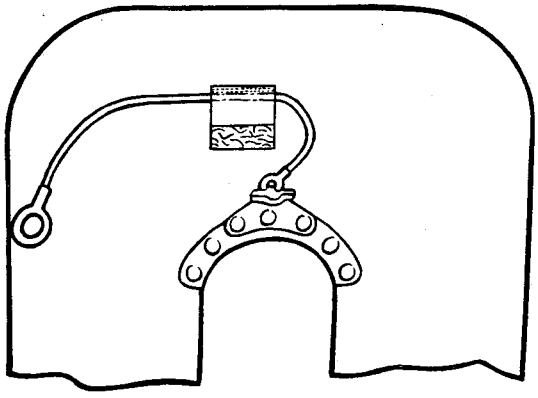

Fig 5 Routeing guillotine static line ▶ (Pre mod PA 688) ◀

17.11 Draw the free ends of the parachute restraining straps forward through the arch of the parachute pack, over the pack and towards the rear of the seat on either side of the drogue container.

17.12 Pass the port restraining strap over the parachute withdrawal line, where it emerges from the pack, and pass it from outboard inwards through the buckle of the short restraining strap on the port side of the drogue container. Ensure that the drogue link line (which is connected to the parachute withdrawal line) is routed OUTSIDE the short restraining strap (fig 7).

17.13 Pass the starboard restraining strap through the buckle of the short restraining strap on the starboard side of the drogue container from outboard inwards.

NOTE...
The front face of the wedge pad is marked TOP FRONT to ensure correct installation.

17.14 Position the wedge pad on top of the parachute pack, between the pack and the drogue container. Pass the ends of the parachute restraining straps through the buckles on each side of the wedge pad so that the ends emerge on the outside of the buckles.

17.15 Connect the two halves of the parachute withdrawal line/link line coupling. Open the yellow gate on the top of the guillotine and route the parachute withdrawal line through the aperture in the guillotine. Close the yellow gate and ensure it correctly retains the parachute withdrawal line and that the coupling is aft of the guillotine (fig 7).

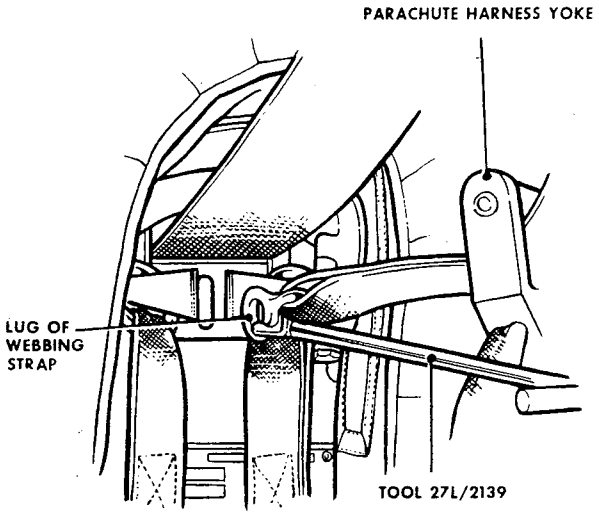

Fig 6 Inserting lug of webbing strap into top harness lock

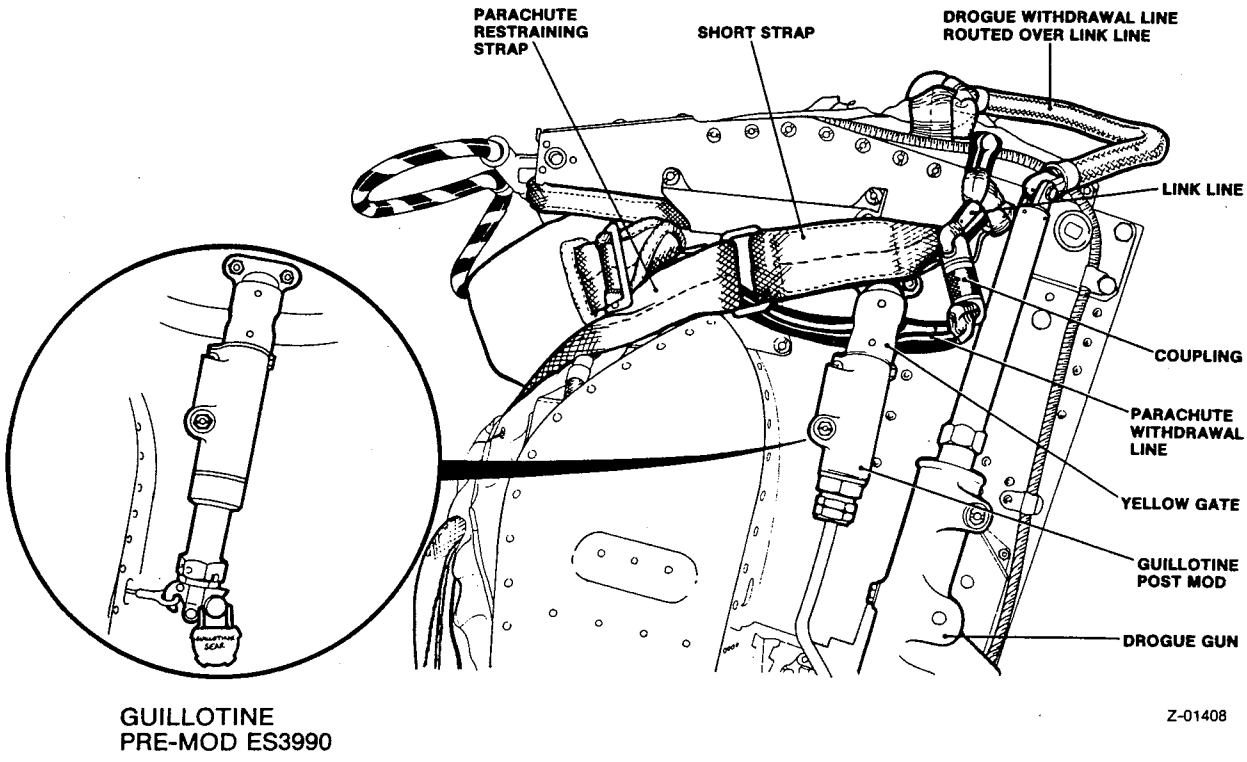

Fig 7 Arrangement on port side of drogue container
▶ (Amended illustration) ◀

17.16 Work the straps back and forth in the self-locking buckles on the wedge pad, keeping it central until the parachute pack and wedge pad are strapped tightly to the seat. Stow the free ends neatly between the drogue container and the strap (fig 7). If the free ends of the restraining straps are short they are to be left free. If long they are to be folded in two before stowing.

17.17 Ensure that the drogue withdrawal line has been routed OVER ALL OTHER LINES.

▶ 17.18 Pre mod ES 3990. Ensure that the safety pin is fitted to the guillotine sear. Ease the sear to attach the static line from the parachute pack. ◀

17.19 Lift the harness clear of the seat pan and fit the negative-g restraint strap as follows:

17.19.1 Thread the white straps through the front bracket on the floor of the seat pan from front to rear. The white straps are marked PORT and STARBOARD; it is essential that they are so positioned to ensure correct installation.

17.19.2 Pass the straps rearwards and thread each strap through its rear bracket on the floor of the seat pan (fig 8).

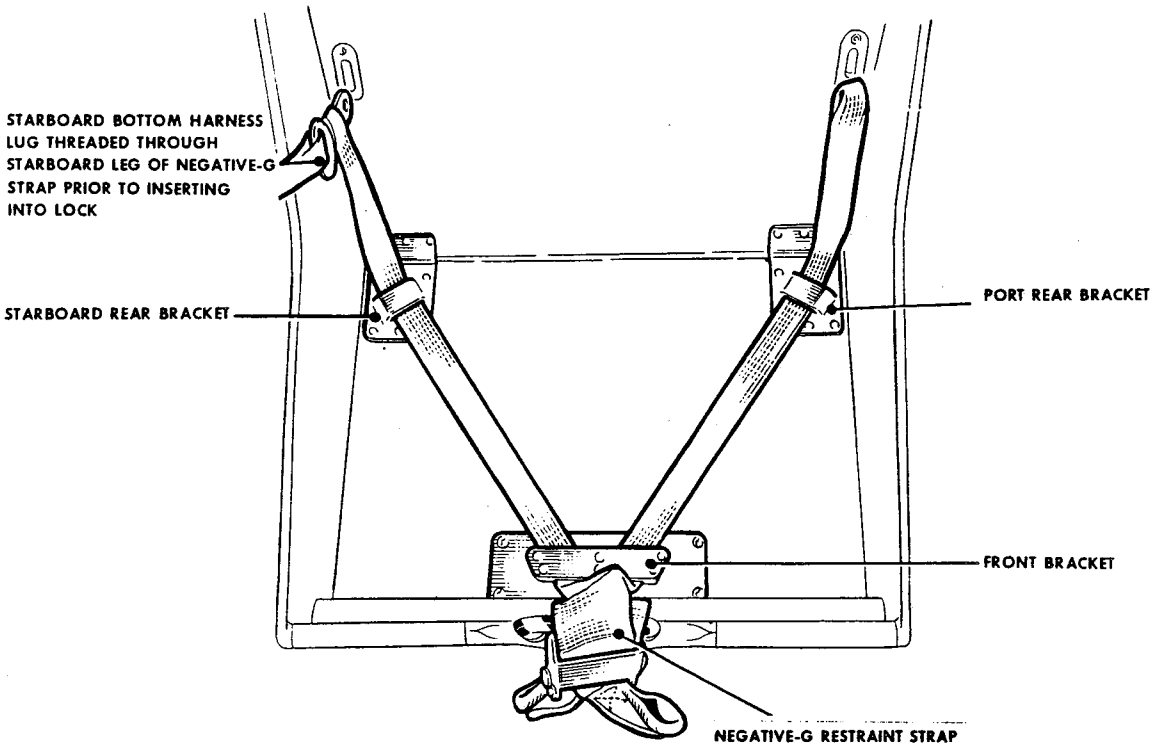

Fig 8 Arrangement of negative-g restraint strap

17.19.3 Engage the looped end of each strap over its respective lower harness lug and insert the lugs into the lower harness locks in the back of the seat pan (fig 8). Ensure that they have locked correctly by pulling on the lugs. Ensure that the harness is arranged correctly and that none of the straps are twisted.

17.19.4 Drape the blue Y-section of the negative-g restraint strap OVER THE TOP of the seat pan firing handle.

17.20 Lift the harness clear, remove the cushion from the personal survival pack (PSP) and place the PSP in the seat pan, draping the lowering line over the port side. Arrange the harness and ensure that the transverse seat strap of the harness crosses OVER the top of the pack at the rear. Replace the cushion on top of the PSP and secure it to the transverse seat strap with the two press-studded beckets provided. Route the leg loops of the harness up through the slot in the cushion. Ensure that they are not crossed.

17.21 Connect the side attachment buckles of the PSP to the quick-release connectors on the harness ensuring that they pass OUTSIDE the harness lap straps.

17.22 Insert the sticker strap lugs into the spring clips on the inside face of the seat pan, routeing the straps outboard of the PSP connectors. Check that the PSP connections are still made.

17.23 Recheck that none of the straps have been twisted and extend the harness straps to their full extent.

17.24 Ensure that the emergency oxygen loop strap is correctly attached to the starboard sticker strap (fig 9). Pass the quick-disconnect plug of the upper oxygen tube assembly through the bridle of the loop strap and engage the quick-disconnect plug with the emergency oxygen supply tube at the clamp fitting on the starboard side of the seat pan (fig 3). Pull lightly on the upper oxygen tube to check security of attachment.

17.25 Secure the main oxygen supply tube to the starboard lap strap by means of the press-studded attachment loop.

17.26 Remove and retain the safety pin from the emergency oxygen cylinder operating head.

▶ 17.27 Leave the safety pins in the Safe for Maintenance condition and report the position of the pins to the NCO i/c aircraft servicing. ◀

STRAPPING-IN PROCEDURE

18 The following procedure is to be adopted when strapping-in to the seat; refer to fig 10 to 12 or detail as necessary.

18.1 Ensure that the safety pins are correctly fitted in the Safe for Parking condition in accordance with current instructions.

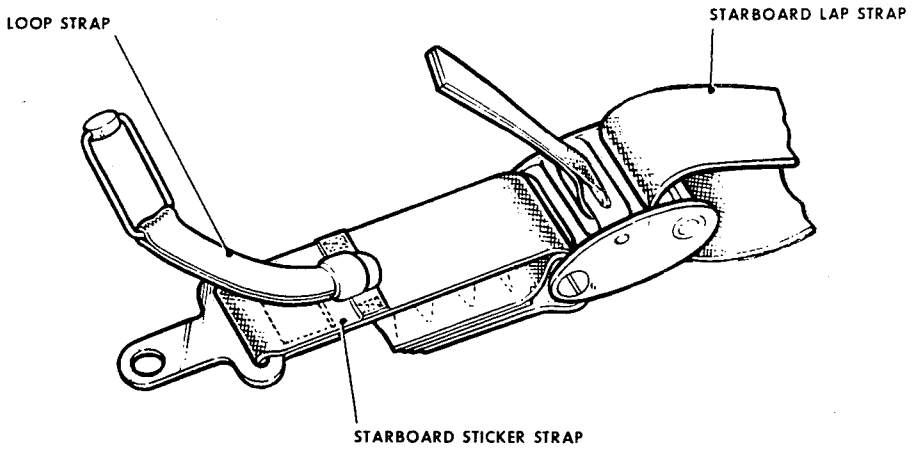

Fig 9 Emergency oxygen loop strap attached to harness

18.2 Carry out the checks detailed in the Flight Reference Cards (AP 4347G or superseding -14 publication in AP 101B-1300 series as applicable).

18.3 Adjust the height of the seat to a satisfactory position, ideally with the head positioned centrally against the wedge pad.

18.4 Thread the leg restraint cord emerging from the RIGHT snubbing unit under the seat pan through the D-ring of the LEFT leg garter and then plug the end fitting of the cord into the RIGHT taper socket on the front of the seat pan. Similarly thread the LEFT cord through the D-ring of the RIGHT leg garter and plug into the LEFT taper socket, thus crossing the cords. It does not matter which cord is laced first but it is essential that they are not interlaced (fig 10). Pull sharply on each cord to check secure locking. Adjust the leg restraint cords to give the desired freedom of leg movement. If there is insufficient length of cord, pull forward more cord. Excess cord should be pulled back through the snubbing units.

18.5 Connect the PSP lowering line to the corresponding quick-release connector on the life preserver or pressure jerkin as appropriate, ensuring that it passes outside the left leg.

18.6 Connect the anti-g air supply hose to the suit.

18.7 Adjust the back pad and the lumbar cushion to the most comfortable position. Bring the harness waistbelt across the body and adjust the quick-release fitting so that it lies centrally with the waistbelt close to the body. Ensure that the quick-release fitting is in the locked position.

18.8 Bring the negative-g restraint strap up between the legs ensuring that it is to the REAR of the seat pan firing handle and NOT PASSED THROUGH it and that the buckle is facing forward. Bring across the lap straps ensuring that the left lap strap passes OVER the PSP lowering line. Thread the lugs of the lap straps through the respective loops in the blue Y-piece of the negative-g restraint strap and connect the lugs into the quick-release fitting.

NOTE...
When fitting a harness lug into an inertia proof quick-release fitting it is necessary to turn the disc knob until the yellow line passes the dots on the body, hold it in this position and insert the lug. Repeat the operation as each of the remaining lugs is fitted.

18.9 Tighten the lap straps by pulling on the running end with one hand and pushing the standing end (the ends carrying the buckles) towards the buckle with the other. This is necessary to relieve tension on the buckles to prevent them becoming stiff in operation.

18.10 Tighten the negative-g restraint strap by pulling downwards on the free end of the blue strap until the strap is as tight as possible and tuck the free end down BEHIND the seat pan firing handle. The strap can be loosened by pulling on the tab attached to the snubber lever of the buckle.

18.11 Move the body about inside the harness, pushing to the back of the seat and retighten the lap straps and negative-g restraint strap, repeating this process until the straps are really tight. It is most important that the lap straps and the negative-g restraint strap are as tight as possible because they provide the principal restraint under all stress conditions.

18.12 Bring the leg loops up between the legs and pass the left leg loop through the metal D-ring on the left lap strap routeing from inboard to outboard. Similarly route the right leg loop. If positioned correctly the leg loops will lie flat on the inside of the thighs (fig 10). Fold the leg loops over towards the quick-release fitting.

18.13 Adjust the back pad and lumbar cushion if necessary, bring down the shoulder straps, and arrange them under the life preserver or jerkin stole. Thread the shoulder strap lugs through the leg loops and connect them into the quick-release fitting (fig 10). Arrange the leg loops to engage on the shoulder strap lugs, without obstructing the quick-release fitting and not on the webbing above them, so that they will disengage freely on operation of the quick-release fitting. To facilitate this engagement it is necessary to fully extend the shoulder straps before strapping-in.

18.14 Tighten the shoulder straps by first taking up the slack on the blue inner (underneath) straps followed by that in the brown outer (top) straps. When tightening these straps, pull on the running end with one hand and push the standing end towards the buckle with the other to relieve tension on the buckles. Ensure there is no undue slack but do not overtighten the shoulder straps as this may cause the back to arch with a consequent bad attitude for ejection.

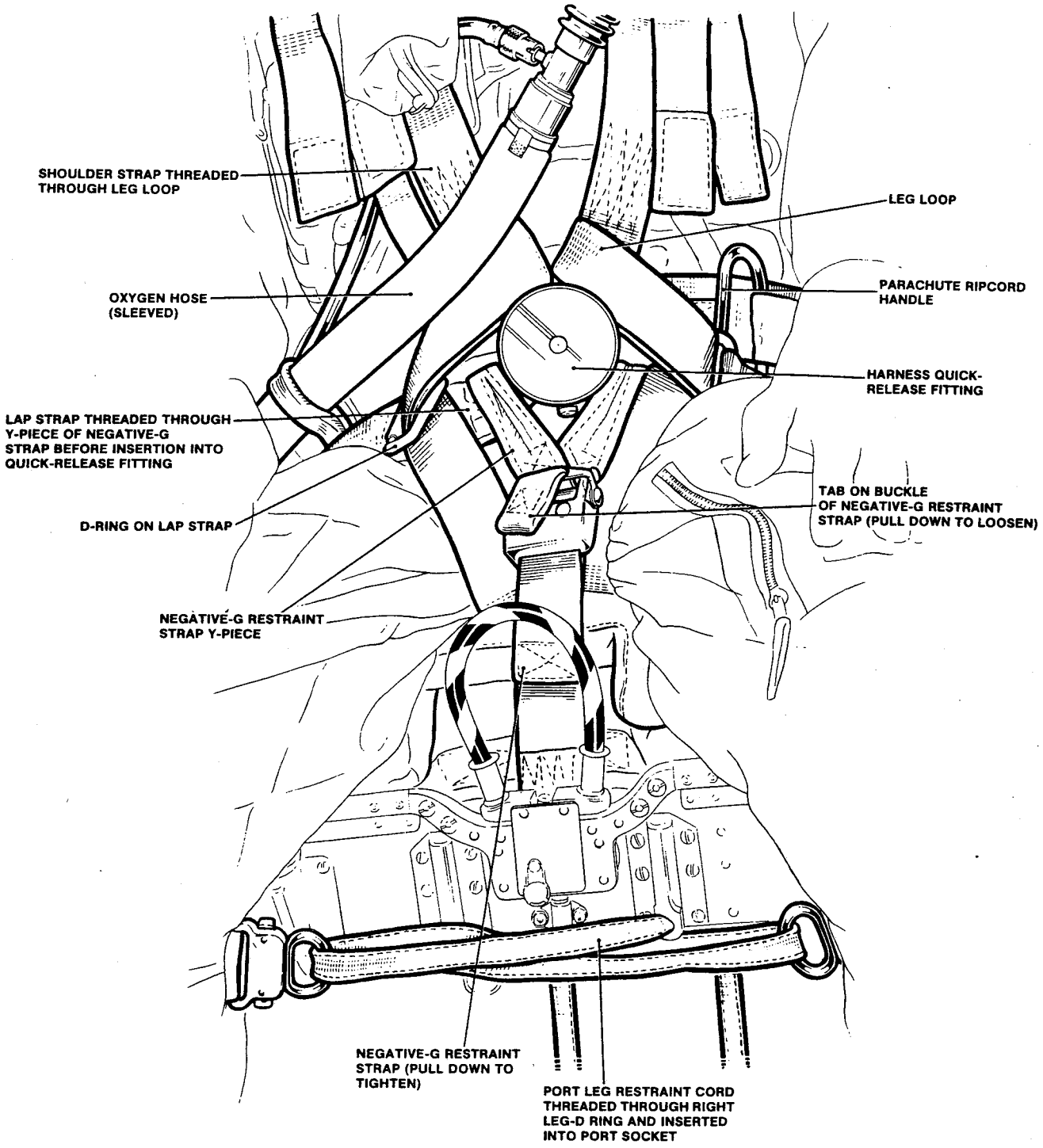

Fig 10 Arrangement of leg restraint cords and harness straps (Mod ES 3890 incorporated)

18.15 This tightening of the shoulder straps will ruckle that part of the lift webs lying between the inner and outer straps. Obtain assistance to pull back the lift webs through the metal runners on the shoulders and then stow the excess length neatly (by lengthening the loops in the lift web) behind the back.

18.16 Put on the flying and protective helmets and fasten the chin straps. Route the upper oxygen tube under the main oxygen tube and right shoulder strap (fig 12) and the main oxygen tube outside the harness; connect them to the oxygen mask; clip the oxygen mask tube locating chain to the D-ring on the life preserver. Connect the mic/tel lead.

NOTE...
If the chin straps are not fastened the helmet and oxygen mask may be wrenched off during ejection with the consequent loss of vital oxygen at high altitude.

FUNCTIONAL TESTS

19 After strapping-in proceed with the following functional tests:

19.1 Ensure that the face screen firing handle can be reached with both hands simultaneously. DO NOT PULL.

19.2 Ensure that the leg restraint cords are locked in their sockets.

19.3 Operate the go-forward mechanism and test for correct functioning.

19.4 Conduct pre-flight oxygen tests.

19.5 Test the mic/tel system.

19.6 Press the anti-g valve TEST button and confirm that the anti-g suit inflates.

20 With assistance remove the safety pins from the Safe for Parking positions.

NOTE...
If assistance is not available the occupant must remove and stow all safety pins.

EMERGENCIES

21 Instructions for dealing with emergencies are contained in Pilot's Notes (AP 4347G (PN) or superseding -15 publication in AP 101B-1300 series as applicable.)

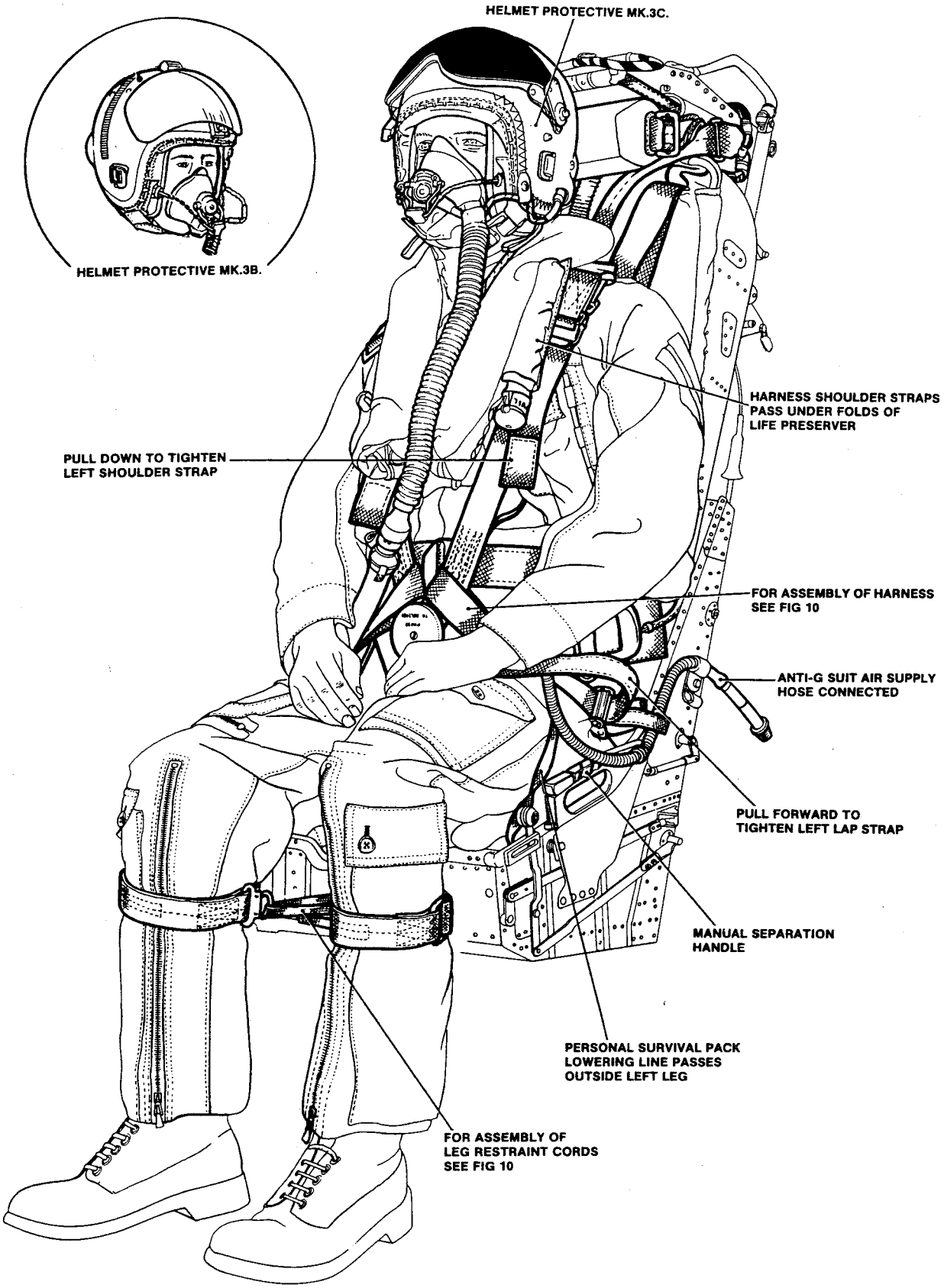

Fig 11 The seat occupied (port view)
(Mod ES 3890 incorporated)

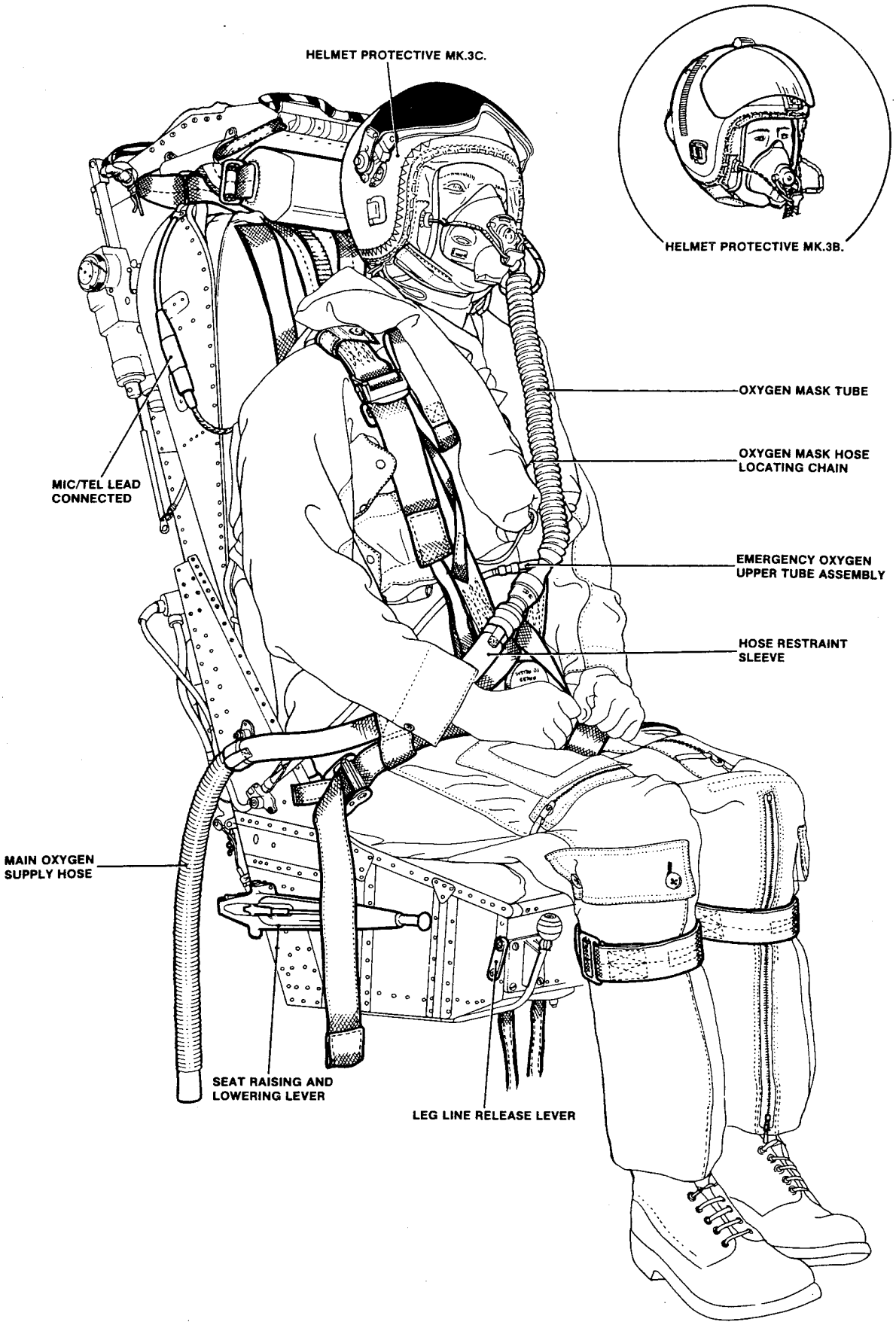

Fig 12 The seat occupied (starboard view)
(Mod ES 3890 incorporated)

LEAVING THE AIRCRAFT AFTER LANDING

22 The following procedure is to be followed when leaving the aircraft after landing:

22.1 Remove the safety pins from their stowage and with assistance of a ground crew member insert them in the Safe for Parking condition.

NOTE...
If a ground crew member is not available the occupant must position all the safety pins himself.

22.2 Disconnect the main and emergency oxygen supply hoses from the oxygen mask.

22.3 Operate the harness quick-release fitting, free the straps and return the fitting to the LOCKED position.

22.4 Operate the leg restraint cord manual release lever and free the cords.

22.5 Disconnect the PSP lowering line.

22.6 Disconnect the mic/tel lead.

22.7 Disconnect the anti-g suit air supply hose from the suit and fit the blanking plug in the end of the hose.

22.8 Vacate the aircraft.

Appendix 1

AIRCREW LIST

INTRODUCTION

1 The following information lists items normally worn or carried by aircrew (AP 830 Vol 1 Pt 3 and AP 108F-0001-1) and details the order of dressing. The items are described in and maintained in accordance with the appropriate 108F Air Publications:

LIST OF ITEMS

2

Ref No	Nomenclature	Contractor
22C/1229212 to 235	Boots, aircrew 1965 pattern (wear with coverall immersion Mk 10)	
22C/1229236 to 251	Boots, aircrew lightweight (NOT to be worn with coverall immersion Mk 10)	
22C/1300194 to 203	Coverall, aircrew Mk 11	Beaufort
22C/1229219 to 235	Coverall, immersion Mk 10 (winter wear)	
22C/1302403 to 412	Coverall, inner Mk 2	
22C/1388537 to 546	Coverall, inner Mk 3	
27VA/4625784	Connector, anti-g	Dunlop
22C/1301631 to 636	Drawers, aircrew, long cotton ribbed	
22C/1374391	Garters, leg restraint	
22C/1303139 to 145	Gloves, cape leather sweat resistant olive drab	As authorised by RAF Commands
22C/1351507 to 513	Gloves, cape leather sweat resistant undyed	
22C/1369699 to 705	Gloves, cape leather water resistant olive drab	
22C/1253255 to 261	Gloves, cape leather water resistant undyed	
22C/1253128 to 130 and 1301989	Helmet protective Mk 2A	Helmets
22C/1301773 to 776	Helmet protective Mk 3B	
22C/1303171 to 174	Helmet protective Mk 3C (double visor)	

Ref No.	Nomenclature	Contractor
22C/1301950 to 953	Jersey, mans, heavy olive drab	
22C/1278106	Knife, emergency Mk 3 (fitted to coverall aircrew Mk 11 and coverall immersion Mk 10)	
22C/1360932 and 934	Life preserver Mk 17/17A	Beaufort
6D/2244807 and 2243465	Mask, oxygen Type P1B	Normalair-Garrett
6D/2244069 and 858	Mask, oxygen Type Q1A	BOC
22C/1301932 to 935	Shirt, aircrew, cotton olive drab	
22C/1303115 to 120	Socks, terryloop Mk 2, olive drab	
22C/1354909 to 917	Socks, immersion Mk 2 (fitted to coverall immersion Mk 10)	
22C/1380510	Sleeve, sealing, angular, (fitted to coverall immersion Mk 10)	
22C/1300180 to 183 and 135631	Trousers anti-g Mk 6C	
22C/1301626 to 630	Vests, sleeved cotton ribbed	

EMERGENCIES

3 Details of emergency procedures are contained in the Flight Reference Cards and the appropriate Aircrew Manual.

ORDER OF DRESSING

4 Thermal comfort in flying clothing is designed on the layer principle and layers may be added or removed as desired. It is important to note that although the immersion coverall when worn will provide protection against water, survival time depends on protection against the cold. This can only be provided by adequate clothing beneath the coverall immersion. Lightweight aircrew boots are to be worn only in tropical or temperate summer environments.

5 A Survival Equipment Fitter or other suitably qualified tradesman should be available to render assistance when necessary. The following order of dressing is recommended:

5.1 Vest, drawers, and socks.

5.2 Anti-g trousers

5.3 Shirt

5.4 Jersey

5.5 Inner coverall

5.6 (a) Aircrew coverall
or
(b) Immersion coverall

Note . . .

Pass the hose of the anti-g trousers through the slit provided in the inner and aircrew coveralls, or through the sealing sleeve of the immersion coverall.

5.7 Boots

5.8 Leg restraint garters

5.9 Life preserver

5.10 Protective helmet with oxygen mask assembly

5.11 Gloves

FUNCTIONAL TESTS

9 Final pre-flight tests of the equipment must be made by the aircrews utilizing the aircraft systems in accordance with current Service instructions.

10 Periodically, routine tests of the equipment must be made using the Universal Test Rig Cabinet Mk 4 in accordance with current Service instructions.

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