Part I

Chapter 11—Aircrew Equipment Assembly and Oxygen System

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WARNING. The ejection seats must be rendered safe whenever the aircraft is on the ground, by ensuring that the safety pins are inserted in the ejection gun sears and in the delay mechanisms. It is emphasised that pins should not be inserted in the fabric strap above the pilot's head.

1 General

The aircrew equipment assemblies consist of the seats, the flying and safety clothing and associated equipment, including oxygen connections. The description of these items and their use is covered in the following paragraphs. Ejection seats are provided for the pilots and swivel seats for the rear crew members.

Ejection Seats

2 Seats, general

(*a*) The ejection seats, Type 3LS1 Mk. 1 for the 1st pilot and Type 3LS2 Mk. 1 for the 2nd pilot, are similar but partially handed Each seat carries a Mk. 33 parachute assembly with a horseshoe-shaped pack, combined harness, a back pad (incorporating an adjustable kidney pad) and a personal survival pack type R. The seats become Type 3LS1 and 2 Mk. 2 upon the embodiment of a demand emergency oxygen set. (See para. 24(*a*)).

(*b*) The seat pan is adjustable for height, by means of a lever on the inboard side of the seat. The trigger in the end of the lever must be depressed before the height can be adjusted and, when released, locks the seat in the selected position.

(*c*) A " go-forward " lever, forward on the port side of each seat, allows the occupant to lean forwards, by unlocking the attachment between the shoulders and the back of the seat. If the lever is released, the forward position can be held but, on sitting back again, the slack is automatically taken up and locked against renewed forward movement.

(*d*) The adjustable armrests are controlled by either of two levers on each rest, one at the forward end and one at the rear, on the side of the rest.

(*e*) When Mod. ES2986 is embodied a negative-G strap is fitted to the seat pan. It is adjusted by a downward pull.

3 Ejection gun and firing handles

Each seat is fitted with an 80 ft./sec. telescopic ejection gun, which can be fired by either of two handles ; the face screen handle, is above the occupant's head and B-shaped. The seat pan firing handle, for use in conditions of high G or when it is otherwise impossible to reach the screen handle, is in the front of the seat pan. Either handle must be pulled to its full extent to fire the gun. Safety-pins are provided, one for each firing handle. Mod. 3008 introduces a guard over the canopy jettison gun sear on the 1st pilot's ejection seat.

4 Hatch/seat connection

An interconnection between the seat-firing mechanism and each pilot's hatch enables the hatch to be jettisoned automatically when any firing handle is pulled. After operating the handle, there is a delay of one second before the ejection gun fires. The ejection gun time delay firing unit cannot be operated until an interference pin is withdrawn by a lanyard attached to the canopy.

5 Drogue gun

The drogue gun has a time-delay mechanism and fires half a second after the ejection gun has fired, withdrawing the duplex drogues to stabilise the seat. The time-delay mechanism is operated by a static rod, which withdraws a sear from the gun as the seat rises on the rails.

NOTE: Before flight, check that the drogue withdrawal line (between the gun and the flap securing pin) passes over the black lifting line (between the scissors shackle and securing pin on the side of the head box).

6 Back-type parachute assembly, Mk. 33

The parachute pack rests on a support behind the shoulders and is secured by two retaining straps, running between the upper harness lock and the headbox. The harness serves both to restrain the pilot in the seat in normal flight and as a parachute harness. For the former purpose it is attached to the seat by one upper and two lower locks. At the appropriate part of the ejection sequence, the harness locks, together with the pack retaining straps, the face screen, the man portion of the PEC and the leg-restraint lines are released, allowing the pilot to separate from the seat. At the same moment the seat stabilising drogues are detached from the seat, but remain attached to the apex of the parachute, thus opening it automatically.

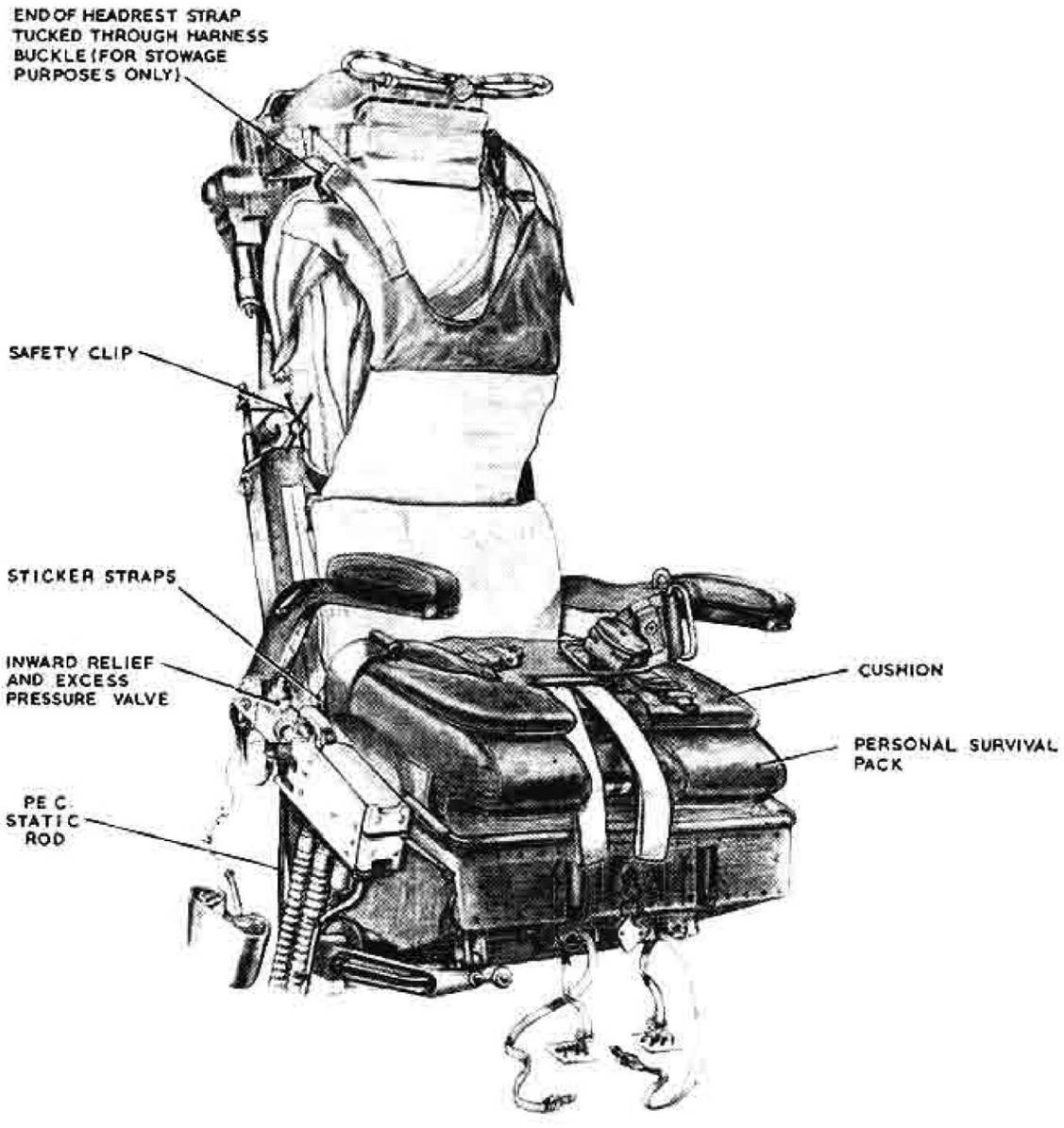

Fig. 1 Mk. 3LS seat equipped (1)

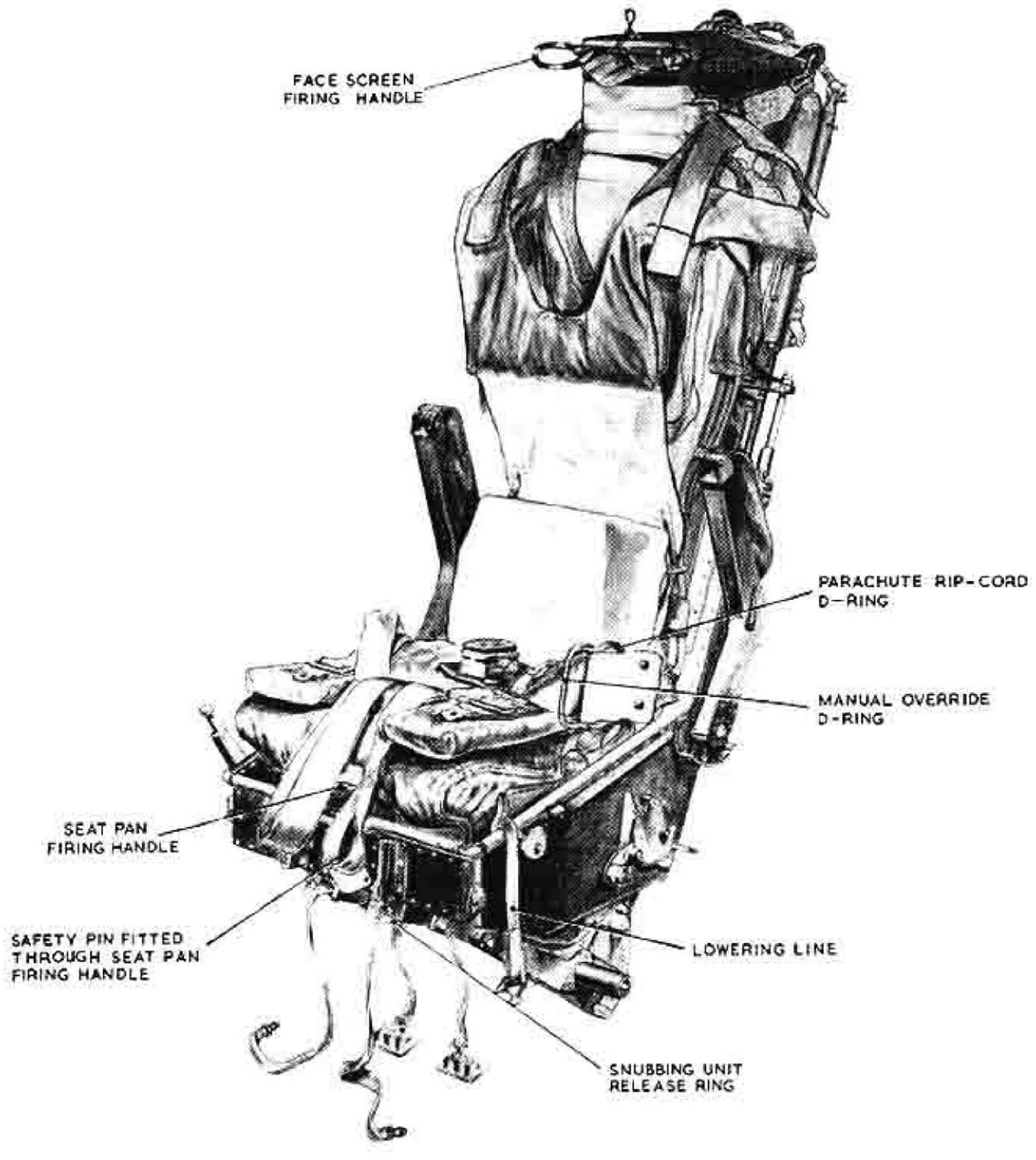

Fig. 2 Mk. 3LS seat equipped (2)

7 R-type survival pack

The survival pack is stowed in the seat pan and attached by quick release fasteners to the outside of the combined harness. A third connection is made (while strapping-in) to the pilot's lifejacket. This embodies a 15 ft. " lowering line ", so that while parachuting the pilot can detach the side connections to the harness and allow the pack to suspend from his lifejacket. It is important that the pack be thus lowered: otherwise difficulties are likely to ensue after alighting, when the harness is discarded.

8 Barostat/G-stop time-delay

NOTE: A barostat operating at 5,000 metres can be fitted for flights over mountainous country.

(*a*) A barostat-controlled mechanism delays automatic separation from the seat until it is below 10,000 feet. Below this height, the mechanism operates after a delay of $1\frac{1}{4}$ seconds, releasing the harness, personal equipment connector and leg restraint cords from the seat. Simultaneously, the drogues are detached from the top of the seat and the parachute pack and top of the face blind are also released. The drogues, however, remain connected to the apex of the parachute and withdraw it upwards.

(*b*) A G-stop is also incorporated in the barostat mechanism so that, in ejections made at high aircraft speeds, the mechanism does not function until the speed of the seat has fallen to a safe value for parachute deployment. Ejection can be made from ground level upwards, provided that the aircraft's flight path and attitude are horizontal and that the speed is at least 90 knots. If the aircraft is descending or nose-down, more height will be required.

9 Leg restraint

(*a*) Leg restraint cords are provided to prevent the legs flailing during ejection. From the cockpit floor these pass upwards, then forwards through snubber units. During strapping in the free ends are threaded through rings on the leg garters and plugged into sockets on the front of the seat pan, the right cord crossing to the left leg and back to the right socket, and *vice versa*. When more cord is required for this operation, the snubber can be temporarily released by pulling on the ring on its front.

(*b*) As the seat rises on ejection, the cords are drawn through the snubbers until the legs are tightly restrained. The floor attachment then shears, but the snubbers prevent the cord running back. When the man separates from the seat during the later ejection sequence, the sockets release the upper ends of the cords. This end may also be released manually, at the end of a normal flight by pulling the man-portion of the PEC away from the seat portion. (Unless the PEC is mated, the leg cord sockets will not grip.)

10 Manual separation

(*a*) To allow the occupant to release himself from the seat, should the automatic devices fail to operate, means of manual separation are embodied.

(*b*) The first (manual override) D-handle on the parachute waist-belt is pulled to disconnect the parachute withdrawal line from the automatic gear. This action also uncovers the second (rip-cord) D-handle.

(*c*) After operating the first D-handle, the harness, the parachute retaining straps, the leg restraint cords and the man-portion of the PEC are released by pushing out and pulling up the manual separation lever to the rear of the seat pan on the left side. After leaving the seat, the parachute can be opened by pulling the rip-cord D-handle on the harness.

Clothing and Personal Equipment Connectors

11 Personal equipment connectors (PEC)

(*a*) The pilots' PEC's are in three portions, the aircraft portion, the seat portion and the man portion. The aircraft portion is attached to the underside of the seat portion, to the right-hand side of each

seat. The man portion, an integral part of the clothing, is attached (during strapping in) to the top of the seat portion. When not in use, the seat portion is protected by a dust cover, for which a stowage is also provided on the back of the pilots' seats.

(*b*) The PEC connects all the personal services to the man. The aircraft supplies (main system oxygen, ventilating air, mic./tel.) are fed into the aircraft portion. As the seat ascends the guide rails on ejection, a static rod causes the seat portion to break away. Mod. 2825 replaces the static rod on the 2nd pilot's seat by a pull-off cable.

(*c*) To prevent loss of emergency oxygen, the lower orifices of the seat portion are closed by valves when the aircraft portion is removed.

(*d*) The man and seat portions are mated by sliding the nose of the man portion into hooks at the front of the seat portion and then pressing the handle at the rear downwards. Correct engagement should be checked by tugging smartly on the oxygen hose.

(*e*) To release, press down on the thumb button in the handle and lift the handle. (This also releases the leg-restrain cords).

(*f*) *Rear crew*

Each rear crew member has an oxygen, AVS and mic./tel. connector. No PEC's are fitted.

12 Pressure jerkins and anti-G suits (high altitude)

Pressure jerkins (Mk. 1 or Mk. 4 for pilots and Mk. 3 for rear crew) are worn in conjunction with anti-G suits Mk. 5A when flying at high altitudes. These two items form a pressure suit to protect the crew member if cabin pressure fails and inflate automatically if the cabin altitude reaches 40,000 feet. They are inflated from the oxygen supply, via a hose assembly which is permanently attached to the jerkin. The oxygen mask and anti-G suit are connected to this before flight. The Pressure Jerkin Hose Assembly used by the pilots (Mk. 6) has a lower end consisting of the PEC man portion: the rear crew's (Mk. 9) terminates in a single bayonet-type oxygen connector. The pressure jerkin also includes a life-jacket stole and is provided with a personal locator beacon, etc.

13 Mask and helmet

A G-type helmet is worn with either a P2A or Q2A oxygen mask. These masks are of the chain-toggle, pressure-breathing type with a bayonet hose connection ; they are identical apart from size. The mask should be tested before flight and the knurled screws adjusted so that there is no leakage under pressure. A lever on the front of the toggle harness is normally in the up position ; should pressurisation failure occur, the lever is put to the down position, to clamp the mask more tightly on the face for pressure breathing.

14 Low-altitude clothing assembly

For flights below 40,000 feet, it is not essential to wear pressure clothing. In such cases, normal flying clothing is worn, with a separate life-jacket. A special mask hose assembly, Mk. 2 for pilots and Mk. 7 for rear crew, has to be worn to connect to the aircraft hose assembly.

Rear Crew Safety Equipment

15 Rear crew seats

(*a*) Each rear crew member is provided with a swivel seat incorporating an assister cushion and a Mk. 40 or Mk. 46 parachute with a demand emergency oxygen set. The two navigators' seats swivel clockwise, the AEO's seat swivels anti-clockwise. The sixth crew seat is a non-swivelling seat fitted with an assister cusion. It must always be fitted facing rearwards.

(*b*) The seats are mounted on rails which allow them to be slid fore and aft as required. The seat rails are reinforced to take crash landing loads. Fore and aft movement of the seats is controlled by either

a lever at the base of the rear of each seat (move to the right to unlock) or by the rearward movement (in relation to occupant) of the yellow/black lever on the left of the seat.

(*c*) Swivelling of the seats is controlled by either a lever at the top of the rear of each seat (move right to unlock) or by forward movement of the yellow/black lever on the left of the seat. These movements also unlock the valve of the seat back, which is spring-loaded, to a forward position necessary to clear obstacles when swivelling. Once either motion of the seat has commenced, the handle may be released and will spring back into its central position to lock the seat again, when the seat has reached the opposite end of the travel.

(*d*) (i) The assister cushion is inflated by compressed air stored in a bottle at the back of the seat at a pressure of 1,200 PSI. A pressure gauge is incorporated in the bottle.

(ii) The air is released to the cushion by pulling up a yellow/black knob, at the right of the seat, to the full extent of its travel. Additionally this action also releases the harness lap strap anchorages thereby freeing the occupant from the seat.

(*e*) The seat thigh supports can be adjusted for individual comfort by means of a star wheel mounted under the supports centrally.

(*f*) The yellow/black swivelling lever incorporates a handle into which the individual parachute static line is clipped when leaving the seat prior to abandoning aircraft.

(*g*) When Mod. 3760, part A, is embodied static line strong points are fitted as follows:

(i) Port seat point, on front face of desk.

(ii) Centre and stbd. seat points, at front ends of centre seat lower rails.

(iii) Sixth crew seat point, at frame 63. The static lines (Mod. 3760, part B) include mic/tel. lead, oxygen hose and electric wiring for the " crew gone " warning signals (see Chap. 15, para. 10). This permits the static lines to remain connected at all times.

16 Back-type parachute assembly Mk. 40 or Mk. 46

(*a*) The Mk. 40 parachute is normally operated by the crew member attaching its static line to the hook on the appropriate swivel seat before leaving the aircraft. The Mk. 46 parachute static line remains connected throughout flight. In either case when the occupant abandons the aircraft, the static line arms the barostat unit, which delays deployment until either the escaper has fallen freely to 13,000 feet or if already below that height, for two seconds so as to be clear of the aircraft. This unit can be overridden by pulling the plastic sheathed tag attached to the parachute end of the static line. Static line operation should always be chosen as it automatically ensures deployment, even if the escaper is knocked out during the escape: the override is a safeguard in case of failure of the automatics, or of inability to hook on the static line for any reason. To override the automatics the handle on the crutch strap should be pulled.

(*b*) The parachute embodies a demand EO set, normally initiated automatically by the static line. A knob on the crutch strap provides direct manual initiation if required.

(*c*) For use of the EO see para. 24(*b*) to (*d*) and 29(*b*).

17 Survival pack type S

Although its size and scale of contents differ, this survival pack is fitted to the parachute harness and lifejacket in a similar way to the pilots' survival pack and should be operated similarly.

(iii) If the 110°C switch in the sensing duct operates, an emergency cooling selection is automatically made and maintained until RESET is selected. An amber warning light below the selector comes on once the switch has operated. Should the temperature still rise, an 115°C switch operates to switch on the emergency cooling and a red light comes on.

Oxygen System

21 Description of oxygen system

(*a*) Oxygen is carried in ten 2,250-litre bottles. The bottles are all charged through a connection aft of the radome ; the correct charging pressure is 1,800 PSI. Two pressure gauges on the AEO's panel BB show the pressure in each half of the system, indicating it as a fraction of the full charge contents. These gauges normally read the same but a system of non-return valves and inter-connections enables one half of the system to supply oxygen should the other half fail.

(*b*) From the oxygen bottles, the high pressure supply lines pass into the pressure cabin. Master valves, one for each side of the system, are below the pressure gauges.

(*c*) The supply is fed to four pressure-reducing valves, which reduce the pressure to 400 PSI. The medium pressure lines pass from each pressure-reducing valve to the regulators. From the regulators, oxygen at breathing pressure is fed on demand.

22 Oxygen regulators, general

(*a*) An oxygen regulator Mk. 21B is supplied for each crew member's normal station and one additional regulator feeds the bomb-aimer's position. The 1st and 2nd pilots' regulators are at the forward ends of the port and starboard consoles. When Mod. 3902 is embodied the Mk. 21B regulators are replaced by Mk. 17F regulators.

(*b*) The regulator is designed to provide the following facilities:

(i) An oxygen supply in direct relation to the rate and strength of the user's respiration.

(ii) The correct ratio of air and oxygen according to cabin altitude. Above 32,000 feet cabin altitude, 100% oxygen is provided. 100% oxygen may be selected at any time.

(iii) A safety pressure, slightly higher than the normal delivery pressure, when cabin altitude exceeds 12,000 feet, and full pressurisation of the oxygen supply and pressure clothing when the cabin altitude is between 39,000 feet and 56,000 feet.

(*c*) *Limitations*

(i) When used with a P-mask and pressure clothing, the regulation will provide protection against loss of cabin pressure up to a cabin altitude of 56,000 feet, provided that a descent is started within 30 secs. of the pressure loss and that a cabin altitude of 40,000 feet is reached within two minutes of the failure and that the oxygen contents have not fallen below $\frac{1}{4}$ of the total capacity.

(ii) When pressure clothing it not worn, protection is given up to 45,000 feet, provided that 40,000 feet cabin altitude is reached within two minutes of the failure.

(iii) When Mk. 17F regulators are fitted the aircraft must not be flown above 48,750 feet to take into account the aerodynamic suck effect of 1,250 feet should the hatch or crew door be jettisoned.

23 Oxygen regulators, controls and indicators

(*a*) *Controls*

On the face of the regulator are three levers, whose operation and function is as follows:

(i) OXYGEN SUPPLY, ON—OFF lever. This lever controls the supply of oxygen to the regulator and must be ON at all times in flight.

(ii) NORMAL OXYGEN—100% OXYGEN lever. When in the normal position, this lever allows air to mix with the oxygen in suitable proportions, up to a cabin altitude of 32,000 feet. Above this altitude, the air inlet is closed and 100% oxygen is delivered in the mask. With the lever at 100% OXYGEN, the air inlet is closed regardless of the altitude ; this position should always be used if toxic fumes are present.

(iii) JERKIN TEST — MASK TEST — EMERGENCY — NORMAL lever. When this lever is set to NORMAL, oxygen or a mixture of oxygen and air as selected by (ii), is fed to the mask at the required pressure when the user breathes in. When the lever is set to EMERGENCY the pressure of oxygen to the mask is, at low altitude, slightly increased (to the same extent as the safety-pressure which automatically occurs in any case above 12,000 feet—above this height safety pressure is approximately doubled). To reach the MASK TEST position, the knob in the end of the lever must be pulled out; in this position the mask can be tested under pressure for leaks before take-off. The JERKIN TEST position gives an appreciably higher pressure and is used to test mask, jerkin and G-suit simultaneously for leaks; it must not be used unless all these items are worn.

(*b*) *Indicators*

(i) A gauge on the regulator shows the pressure of oxygen being delivered to the regulator and should indicate 200-400 PSI at all times; two gauges at the AEO'S station show the main storage cylinder pressures as a fraction of the full charge contents.

(ii) A magnetic indicator on the regulator shows white when oxygen is flowing. A repeater indicator is provided in the rear cabin for the bomb-aimer's regulator so that the other rear crew members can monitor this isolated station.

24 Emergency oxygen

(*a*) *Pilot's emergency oxygen*

(i) An emergency oxygen bottle is installed on the starboard beam of each ejection seat and feeds into the main oxygen system at the seat portion of the PEC, via an RV51 valve; this valve provides the correct amount of pressurisation for height from the emergency oxygen and allows the user to breathe in cabin air when the emergency oxygen is finished (some effort is required to breathe in cabin air, as a valve spring has to be overcome). The main oxygen hose does not have to be disconnected.

(ii) The emergency oxygen is operated automatically on ejection. It can also be selected manually by pulling up the knob on the inboard side of each seat. The set cannot inflate the pressure garments although it can maintain pressure after inflation by the main oxygen system. As the bottle is attached to the seat, emergency oxygen is not available after separation from the seat.

(iii) Mods. ES2424 and 2425 introduce a demand emergency oxygen set to the Type 3LS1 and 3LS2 seats respectively. This provides a more effective emergency system in case of ejection at extreme altitude.

(*b*) *Rear crew's emergency oxygen*

(i) In the case of failure of a main oxygen regulator, rear crew should normally transfer, if possible, to sixth crew member's regulator, rather than use the EO set. This will enable the flight to be continued without reducing altitude.

(ii) For bale-out conditions an emergency oxygen set is carried in the rear crew parachute assemblies, and is automatically initiated by operation of the parachute static line. If necessary direct manual initiation can be effected by pulling a black/yellow knob just below the QRB.

(iii) This set delivers oxygen "on demand" and can produce sufficient flow and pressure to inflate the jerkin and G-suit, at the rapidity required, at altitudes above 40,000 feet. Unlike the main system regulator, "Safety pressure" is provided from ground level (up to 40,000 feet). There is no Air Mix.

(iv) The set consists of a small storage cylinder fitted with an operating head which (a) turns on the supply when the release is operated and (b) reduces the output to a steady medium pressure. This is stowed at the top of the parachute pack. A tube leads the medium pressure oxygen to the demand regulator stowed in the pocket at the back of the right half-belt. From the regulator, a breathing pressure hose is led forward and connected to the Hose Assembly on the clothing while "strapping-in".

(v) The endurance of the set is approximately 10 minutes. It should be noted that although this is a demand set, the cylinder will fairly rapidly exhaust itself if it is accidentally initiated and the outlet is not connected to a mask worn by a man. The set will discharge itself in an attempt to produce safety-pressure. The set must therefore be replaced if accidentally initiated while strapping-in.

Use of Aircrew Equipment Assemblies

25 Clothing assembly

(*a*) When wearing pressure clothing, the air-ventilated suit and anti-G suit are put on beneath the shirt and trousers and the jerkin is put on top of the flying overalls. The hoses from the anti-G suit and AVS are fed through the outer clothing; the AVS hose is connected to the PEC (pilots) or the AVS socket (rear crew). The anti-G hose is connected to the main oxygen hose.

(*b*) When pressure clothing is not worn, the mask hose assembly is used in place of the jerkin hose assembly.

26 Strapping-in procedure

(*a*) *Pilots*

Prior to entering the seat, grasp each lap and shoulder strap in turn and tug smartly to test for security.

(i) Enter the seat and adjust the height.

(ii) Connect the lanyard of the personal survival pack to the pressure jerkin or life-jacket.

(iii) Remove the PEC cover and connect the man portion to the seat portion, checking that it is correctly locked. With low-altitude clothing, connect the oxygen hose clip to the D-ring on the life-jacket.

(iv) Reach towards the face screen handle to adjust clothing upwards.

(v) Pass the left leg restraining cord through the D-ring on the right garter and insert the plug on the end of the cord into the housing on the left snubbing unit. Do up the right cord in the same manner, ensuring that the cords are not interlaced. Adjust the cords for adequate rudder pedal movement by pulling out the toggles in the front of the units and moving the cords as required.

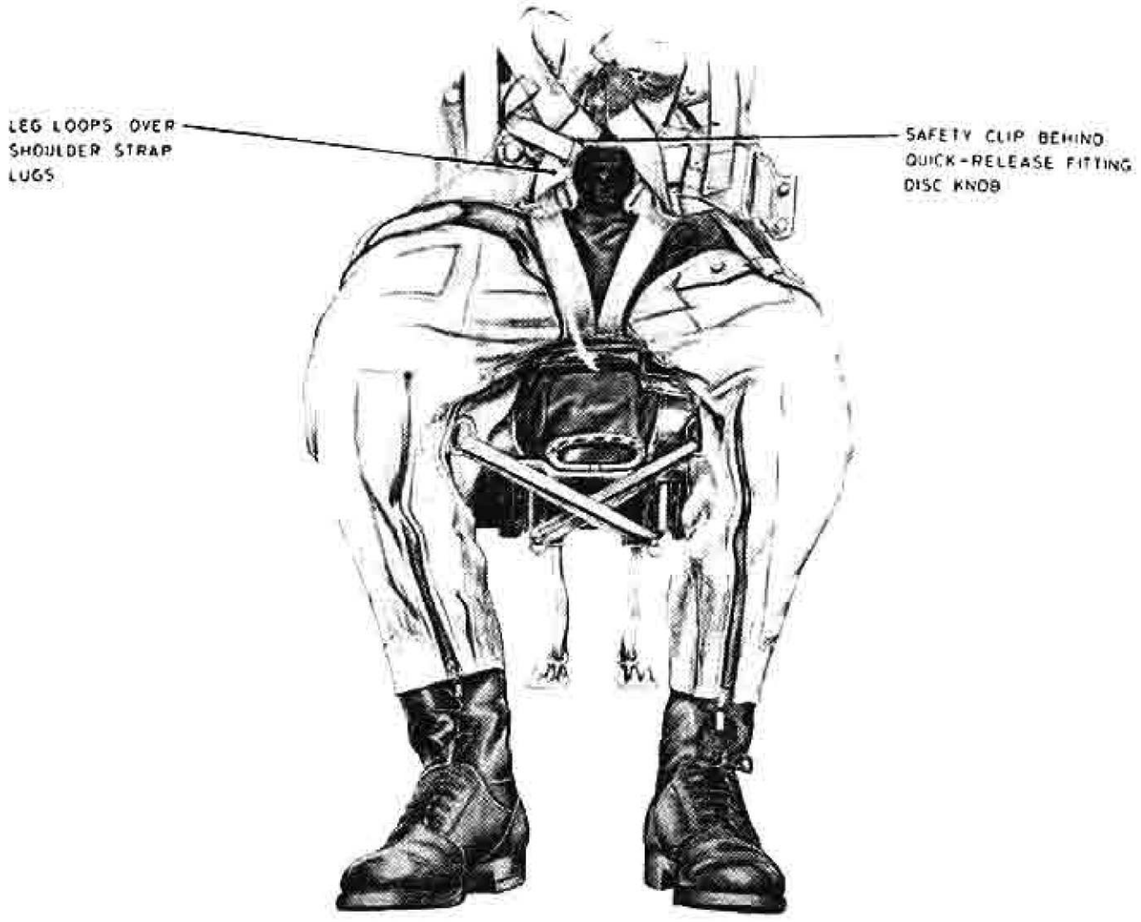

Fig. 4 Leg restraint

NOTE: The sockets will not grip the cord plugs unless the man portion of the PEC has first been locked into position.

(vi) Pull up the back pad and adjust the kidney pad.

(vii) Bring the waistbelt of the combined harness in front of the body, adjust the position of the quick-release box and connect the lap straps, ensuring that they pass over the hoses

to the PEC. Pull down any excess hose below the lap strap. Tighten the lap straps fully, ensuring that the body is well back in the seat. When a negative-G strap is fitted, thread each blue lap strap through the appropriate loop of the negative-G strap before connecting it to the quick release box.

(viii) Thread the crutch loops through the D-rings on the lap straps, ensuring that the loops are so twisted that they lie flat against the thighs. Pass the right shoulder strap through the right crutch loop and the left strap through the left loop and attach the straps to the quick-release box, both shoulder straps of the parachute should be under life-jacket (jerkin) stole. Engage the safety clip under the locking plate of the quick-release box. If necessary tuck the left crutch loop behind the front D-handle on the waist-belt.

(ix) Sit up straight and tighten the inner (blue) shoulder straps, followed by the outer (khaki) ones. These straps should not be tightened to such an extent that the back is bent, as this may cause a hazard on ejection. Tighten the negative-G strap, if fitted.

(x) Operate the "go-forward" lever, lean forward, release the lever and lean back. Check that the harness springs back and locks. This provides a check that the manual override lever has not been inadvertently operated. Retighten the khaki shoulder straps if necessary.

(xi) Put on the helmet and connect the mask tube to the bayonet socket in the hose assembly. Plug in the mic./tel. lead.

(xii) Check the intercomm. and oxygen regulator.

(xiii) Ensure there is no slack in the harness straps of the personal survival pack.

(*b*) *Rear crew members*

(i) Check the contents of the assister cushion bottle and insert pins. The pressure should be 1,200 PSI.

(ii) Remove the demand emergency oxygen pin.

(iii) Slacken all the parachute straps fully and stow them in their stowages before getting in the seat.

(iv) Check that the side harness straps of the personal survival pack are connected to the parachute harness.

(v) Connect the emergency oxygen supply to the oxygen mask hose or pressure jerkin assembly.

(vi) Adjust the parachute quick-release box in front of the body. Pass the thigh straps through the crutch loops and connect them to the quick-release box.

(vii) Connect the shoulder straps to the quick-release box, ensuring that the hose assembly is beneath the right shoulder and leg straps. Tighten the harness.

(viii) Connect the personal survival pack lowering line to the life-jacket.

(ix) Connect the oxygen mask hose or pressure jerkin assembly to the aircraft assembly and make the mic/tel. connection.

(x) Connect the static line to the aircraft hose assembly (Pre-Mod. 3760 to the swivelling lever).

(xi) Fasten the seat lap strap.

(xii) Check the seat swivelling and sliding actions and make sure that the personal survival pack lowering line does not foul on any portion of the seat.

(xiii) Connect the AVS to its separate supply point.

(xiv) Put on the helmet and connect the mask tube to the mask hose or pressure jerkin assembly.

(xv) Connect the mic/tel. lead.

(xvi) Check the intercomm. and oxygen.

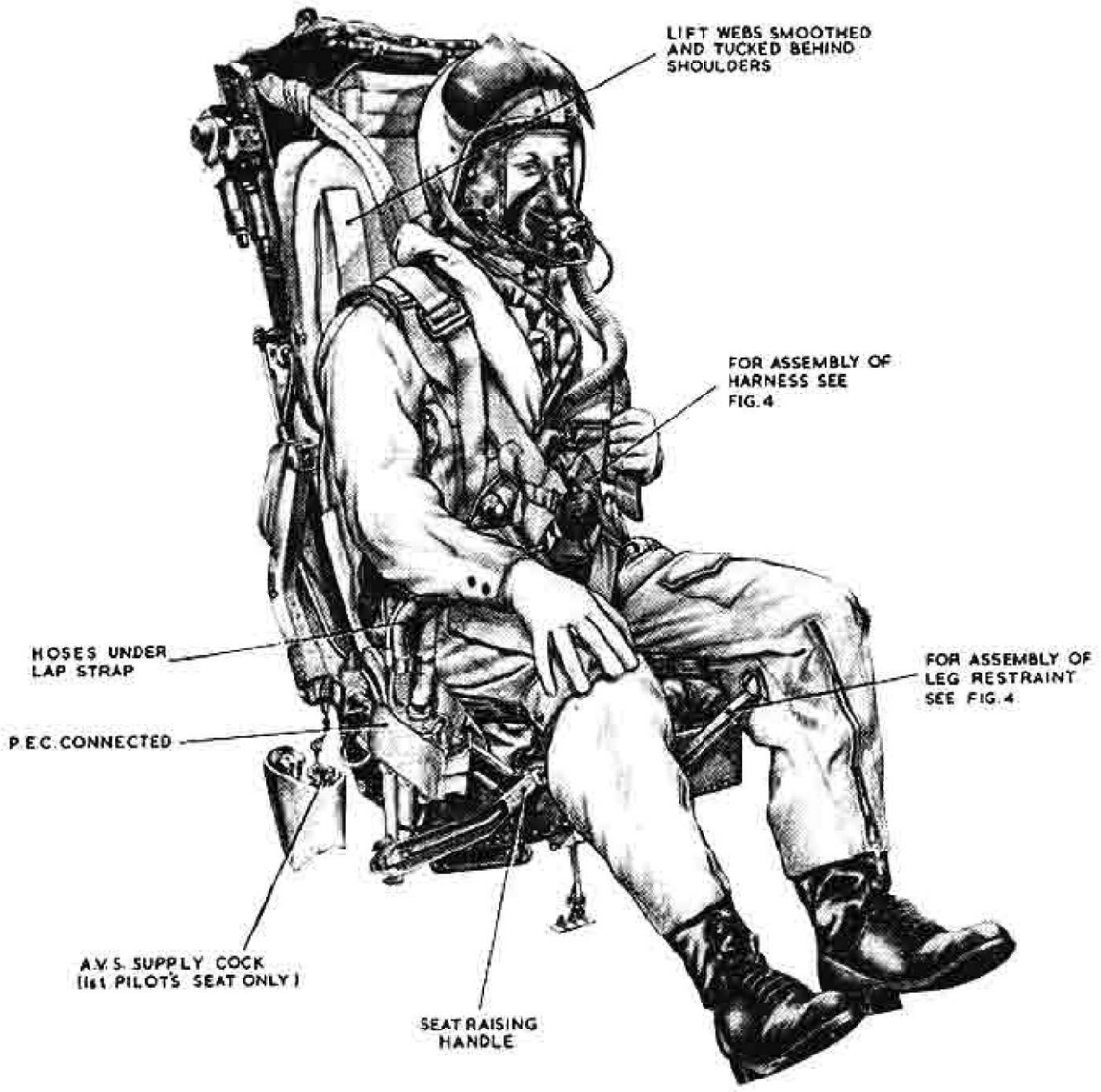

Fig. 5 Mk. 3LS seat occupied (1)

Fig. 6 Mk. 3LS seat occupied (2)

27 Normal exit procedure

(*a*) *Pilots*

(i) Remove helmet and mask, disconnecting mask tube and mic./tel. lead.

(ii) Remove safety clip from quick-release box and undo harness.

(iii) Disconnect dinghy lanyard.

(iv) Disconnect PEC ; this also releases the leg restraint cords.

(v) Move out of the seat, seeing that the leg restraint cords pass through the garter D-rings.

(*b*) *Rear crew members*

(i) Remove helmet and mask, disconnecting mask tube and mic./tel. lead.

(ii) Disconnect safety harness and parachute harness.

(iii) Disconnect the emergency oxygen supply.

(iv) Slacken the parachute straps and stow them in their stowages.

(v) Disconnect the PSP lanyard.

(vi) Disconnect the static line.

(vii) Disconnect the mask hose or pressure jerkin assembly from the aircraft hose assembly, placing the aircraft assembly in its stowage.

(viii) Remove pins.

28 Pressurisation failure

If the cabin pressure fails, each crew member should immediately depress the lever on the P-mask toggle harness. This will clamp the mask tightly against the face to prevent leakage of oxygen. If the cabin altitude is above 40,000 feet, the pressure jerkin and anti-G suit will inflate and oxygen will be delivered under pressure. A descent must be made to 40,000 feet cabin altitude within two minutes of the failure, with a subsequent descent to below 25,000 feet, to avoid the effects of decompression sickness.

29 Regulator failure

(*a*) *Pilots*

If a pilot's regulator fails above 10,000 feet cabin altitude, he should transfer to a spare regulator if available. A spare mask hose assembly should be carried for this purpose. Flights should be restricted to below 40,000 feet since there will be no pressure jerkin connection. If no spare regulator is available he should immediately select emergency oxygen, by pulling up the handle beside his seat. The regulator should be switched off. The emergency oxygen is only sufficient for 10 minutes and descent should therefore be made to an altitude where oxygen is not required. When this altitude has been reached, if the main regulator has been on 100% OXYGEN, switch over to NORMAL so that cabin air can be freely breathed, while maintaining mic/tel., etc.

(*b*) *Crew members*

If a crew member's regulator fails, he can transfer to a spare regulator (if available) otherwise he may use his emergency oxygen bottle, but use of the latter will involve a reduction in the aircraft altitude.