

Chapter 2

◀ HUNTER F Mk. 6, F(GA) Mk. 9 AND FR Mk. 10 ▶

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COMPOSITION OF THE ASSEMBLY

1. The aircrew equipment assembly for these aircraft consists of the following items:—

Ejection seat	◀ Type ▶ 3H
Safety harness	Type ZH
Parachute assembly	Back type, Mk. 9
Personal survival pack	◀ Type Q c/w cushion (Ref. No. 15A/729)
	or
	Type R Mk.2 c/w cushion (Ref. No. 27C/2428) ▶ (see Note)
Emergency oxygen set	Mk. 4A or Mk. 7A (see Note)
Flying clothing	See App. 1.

Note . . .

If Mod. Ejection Seat/421 is not embodied, a

Mk. 4A emergency oxygen set is installed in the seat cushion and rests between the Type Q personal survival pack and the front of the seat pan. If Mod. 421 is embodied, a Mk. 7A emergency oxygen set is mounted under the seat pan, as illustrated; an emergency oxygen upper tube assembly is needed to complete the system and the Type R ◀ Mk. 2 ▶ personal survival pack is used.

The ◀ Type ▶ 3H ejection seat

2. The ◀ Type ▶ 3H seat is ejected from the aircraft by a cartridge-operated gun ▶ ◀ ; during ejection, the seat slides on a guide rail attached to the airframe structure. It incorporates a Type ZH safety harness, headrest, parachute pack container and leg-restraint cords.

3. The leg restraint cords ensure that the

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occupant's legs are drawn back to the seat pan and restrained there, thus preventing injury during ejection.

4. Post Mod. 421, the bayonet union plug on the emergency oxygen supply tube is clamped to the starboard side of the seat pan, the upper tube assembly being used to convey the oxygen to the user's mask. A stirrup quick-release coupling, fitted over the end of the upper tube assembly before the assembly is fitted to the supply tube, disconnects the assembly from the tube as the occupant separates from the seat after ejection.

5. Two firing handles are fitted to the seat. The ◀ face screen ▶ handle projects from the front of the drogue container and has an integral face screen which protects the face from the air blast during ejection. The ◀ seat pan ▶ handle is fitted behind the centre of the front edge of the seat pan and is intended for use only when the occupant is unable to reach the ◀ face screen ▶ handle, e.g., when subjected to high 'g' forces.

6. Both firing handles are connected to the hood jettison mechanism. When either handle is pulled, the hood is jettisoned immediately; one second later, the seat is ejected. A separate hood jettison handle is fitted in the aircraft for use when it is desired to jettison the hood without abandoning the aircraft.

7. The seat is adjusted for height by a lever at the right-hand side of the seat pan; the plunger in the end of the lever must be depressed before the seat can be moved. The safety harness 'go-forward' lever is fitted to the right-hand side of the seat pan, the lever being raised to disengage the harness lock.

8. As the seat is ejected, all connections to the aircraft are broken and the emergency oxygen supply is turned on automatically.

9. Fully automatic facilities are provided to separate the occupant from the seat and to open his parachute after separation. A manual override control enables the parachute automatic withdrawal device to be disconnected from the seat should the need arise to (a) make a manual bale-out or (b) make a manual separation from the seat after ejection.

10. A full description of the ◀ Type ▶ 3H ejection seat will be found in A.P.4288C, Vol. 1; details of the Mk. 9 parachute assembly and of the Type R, Mk. 2 and Type Q personal survival packs will be found in A.P.1182A, Vol. 1 and A.P.1182C, Vol. 1, Book 2 respectively.

Connections to the aircraft

11. When the assembly is installed in the aircraft, the following items are connected to the airframe:—

(1) *Left-hand side of seat:—*

- (a) Static rod from drogue gun.
- (b) Anti-g suit air supply hose.
- (c) Mic/Tel lead.

(2) *Right-hand side of seat:—*

- (a) Main oxygen supply hose.
- (b) Static line from barostatic time-release unit.
- (c) Static line from emergency oxygen cylinder operating head.

(3) *Front of seat:—*

- (a) Leg restraint cords.

(4) *Top of seat:—*

- (a) Cable to hood jettison unit.
- (b) Cable to time-delay mechanism.

EQUIPPING THE SEAT

12. Before installing the equipment in the seat, the following safety precautions must be observed:—

(1) Fit the safety pins through the ejection gun sear, hood jettison unit sear and time-delay trip lever.

(2) Fit the safety pin through the ◀ seat pan ▶ firing handle.

(3) Fit the safety pin through the safety lock of the drogue gun.

◀(4) Position the main oxygen supply hose OUTSIDE the automatic release cable of the safety harness quick-release fitting. ▶

13. The following procedure is to be used when equipping a Pre-Mod. 421 seat:—

(1) Place the safety harness shoulder straps over the back of the parachute pack container and ensure that the lap straps and leg restraint cords are clear of the seat pan.

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- (2) Place the personal survival pack in the seat pan ensuring that the lowering line satchel is to the rear and that the line emerges from the left-hand end of the satchel.

Note . . .

When Mod. SR.190 is embodied, a different type of quick-release coupling from that illustrated will be fitted on the end of the lowering line.

- (3) Check that the apron is clipped securely to the lower extension of the parachute pack container. Tension the apron against its clips and insert the parachute pack into its container; before pushing the pack fully home, connect the two halves of the parachute withdrawal line coupling.
- (4) Push the pack fully home into its container and fit the pack restraining straps into the clips on the sides of the container.
- (5) Insert the parachute harness sticker straps into the spring clips on the sides of the seat pan. Arrange the harness and cushion containing the emergency oxygen cylinder so that the cushion is level with the front of the seat pan but is not obstructing the ◀ seat pan ▶ firing handle. The cylinder must fit into the space between the front of the personal survival pack and the front of the seat pan, the operating head of the cylinder being to the right of the seat; make sure that the cylinder is 'bedded down' in the space available. The supply tube must pass through both tunnels on the right-hand side of the parachute harness but the operating cable passes through the lower tunnel only.
- (6) Connect the personal survival pack side quick-release couplings to the parachute harness and tuck the straps between the pack and the sides of the seat pan.

Note . . .

When Mod. SR.190 is embodied, a different type of quick-release coupling from that illustrated will be fitted.

- (7) Pass the emergency oxygen cylinder operating cable OVER the safety harness

automatic release cable and connect the union on the cable to the corresponding union on the anchor section of the static line. Engage the ferrule of the operating cable housing with the anchor socket and connect the anchor hook to the static line-cum-manual operating cable. Remove and retain the safety pin from the operating head of the emergency oxygen cylinder.

◀ Note . . .

Ensure that the main oxygen supply hose passes OVER the automatic release cable of the safety harness quick-release fitting. ▶

- (8) Remove the safety pin from the drogue gun safety lock and ensure that the static rod is connected to the guide rail bracket.
- (9) Remove the safety pins from the ejection gun sear, hood jettison unit sear and time-delay trip lever and fit the appropriate pin through the ◀ face screen ▶ firing handle safety strap.
14. The following procedure is to be used when equipping the post-mod. 421 seat; refer to fig. 1, 2, 3 and 4 for detail as necessary:—
- (1) Place the safety harness shoulder straps over the back of the parachute pack container and ensure that the lap straps and leg restraint cords are clear of the seat pan.
- (2) Sit in the seat and raise it fully.
- (3) Fit the emergency oxygen cylinder into its mounting bracket, ensuring that the operating head is to the right of the seat and that the supply tube faces aft.
- (4) Clamp the cylinder into its bracket and fit the locking pin into the clamp.
- (5) Secure the bayonet union plug of the supply tube in the clamp on the right-hand side of the seat pan and, having arranged the tube as shown in fig. 4, fit it into the spring clip below the clamp.
- (6) Fit the emergency oxygen cylinder operating cable housing into the two clips on the right-hand side of the seat pan.

- (7) Ensure that the housing passes outside the safety harness lap strap and main oxygen supply hose and does NOT loop over the safety harness automatic release cable; connect the operating cable to the anchor section of the static line and fit the housing ferrule into the anchor socket.
- (8) Connect the anchor hook to the static line-cum-manual operating cable.
- (9) Place the personal survival pack in the seat pan, ensuring that the lowering line satchel is on the left and that the line emerges from the left-hand side of the seat pan. See note following para. 13 (2).
- (10) Check that the apron is clipped securely to the lower extension of the parachute pack container. Tension the apron against its clips and insert the parachute pack into its container; before pushing the pack fully home, connect the two halves of the parachute withdrawal line coupling.
- (11) Push the pack fully home into its container and fit the pack restraining straps into the spring clips on the sides of the container.
- (12) Insert the parachute harness sticker straps into the spring clips on the sides of the seat pan. Arrange the harness and cushion so that the front edge of the cushion does not overlap the front edge of the seat pan.
- (13) Connect the personal survival pack side quick-release couplings to the fittings on the parachute harness; ensure that the couplings pass outside all other straps. See note following para. 13 (6).
- (14) Pass the bayonet union socket of the emergency oxygen upper tube assembly through the stirrup quick-release coupling and connect it to the bayonet union plug of the supply tube.
- (15) Remove and retain the safety pin from the emergency oxygen cylinder operating head.
- (16) Remove the safety pin from the drogue gun safety lock and ensure that the static rod is connected to the guide rail bracket.
- (17) Remove the safety pins from the ejection gun sear, hood jettison unit sear and time-delay trip lever, and fit the appropriate

pin through the ◀ face screen ▶ firing handle safety strap.

STRAPPING-IN PROCEDURE

15. The strapping-in procedure is as follows; refer to fig. 5, 6 and 7 for details as necessary :-

- (1) Check that the safety pins have been removed from the ejection gun sear, hood jettison unit sear and time-delay trip lever and that safety pins are fitted through the ◀ face screen ▶ and ◀ seat pan ▶ firing handles.
- (2) Fasten the leg restraint garters just below each knee, ensuring that the D-rings are to the inside rear; tuck the surplus strap under each garter.

Note . . .

- (1) *If the garters are stored in the flight office, they may be fitted to the legs prior to entering the cockpit.*
- (2) *A flying suit with the garters already fitted in the legs is also available. If this type of suit is used, item (2) is not applicable.*
- (3) Connect the personal survival pack lowering line to the life jacket, ensuring that the quick-release coupling is below the level of the parachute harness waist-band and that the line passes outside the left leg, as shown in fig. 7. Tuck the surplus line between the pack and the side of the seat pan.
- (4) Connect the anti-g suit air supply hose to the suit. Route the hose outside the harness straps as shown in fig. 7.
- (5) Connect and tighten the parachute harness, ensuring that the shoulder straps pass under the folds of the life jacket stole and that the quick-release fitting is positioned as high as possible compatible with comfort. ◀ Insert the safety clip (if provided) behind the disc knob of the quick-release fitting. ▶

◀ Note . . .

If the parachute harness is equipped with an inertia proof quick-release fitting, a safety pin is not provided. ▶

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- (6) Fasten the safety harness lap straps but do not tighten them.
- (7) Pass the left leg restraint cord through the right leg garter D-ring and under the right lap strap of the safety harness. Pass the lug of the right shoulder strap of the safety harness through the loop in the end of the leg restraint cord and insert the lug into the safety harness quick-release fitting.
- (8) Pass the right leg restraint cord through the left leg garter D-ring and under the left lap strap of the safety harness. Pass the lug of the left shoulder strap of the safety harness through the loop in the end of the leg restraint cord and insert the lug into the safety harness quick-release fitting.
- (9) Tighten the safety harness lap straps ensuring that the quick-release fitting is positioned as low as possible against the body and is not obscuring the parachute harness quick-release fitting; tighten the harness shoulder straps.
- (10) Sit in the seat and adjust its height to position the head level with the centre of the headrest.
- (11) Put on the ◀ appropriate ▶ helmets and fasten the chin straps.

Note . . .

If the chin straps are not fastened, the helmets and oxygen mask may be wrenched off during ejection; at high altitude this would lead to the loss of vital oxygen supply.

- (12) Connect the oxygen mask tube assembly to the main oxygen supply hose and adjust the hose in its clip on the safety harness lap strap to achieve unrestricted head movement.
- (13) Connect the oxygen mask tube locating chain to the D-ring on the life jacket.
- (14) (a) Pre-Mod. 421: Pass the emergency oxygen supply tube under the right shoulder strap of the safety harness and connect it to the oxygen mask tube.

(b) Post-Mod. 421: Pass the emergency oxygen upper tube assembly over the right thigh and connect it to the oxygen mask tube.

- (15) Connect the Mic/Tel lead. This may be connected by the ground crew if more convenient.
- (16) Check that the ◀ face screen ▶ firing handle can be reached with both hands together; DO NOT DISPLACE THE HANDLE FROM ITS STOWAGE.
- (17) Remove the safety pin from the ◀ seat pan ▶ firing handle and place it in its stowage.
- (18) The ground-crew member removes the safety pin from the ◀ face screen ▶ firing handle, shows it to the pilot and then places it in its stowage on the left-hand side of the parachute pack container.

Note . . .

If no ground-crew member is available, the pilot MUST remove and stow the safety pin prior to strapping-in.

EMERGENCIES

16. Instructions for dealing with emergencies are contained in A.P.4347F, J or K - P.N. as appropriate.

LEAVING THE AIRCRAFT AFTER LANDING

17. When leaving the aircraft after landing, the following sequence should be used:-
- (1) Remove the safety pin for the ◀ seat pan ▶ firing handle from its stowage and fit it through the handle.
 - (2) The ground-crew member removes the safety pin for the ◀ face screen ▶ firing handle from its stowage and fits it through the handle safety strap.
 - (3) Disconnect the main oxygen supply hose from the oxygen mask tube assembly.
 - (4) Disconnect the emergency oxygen supply tube (Pre-Mod. 421) or the emergency oxygen

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upper tube assembly (Post-Mod. 421) from the oxygen mask tube.

- (5) Release the safety harness and free the leg restraint cords; return the quick-release fitting to the FASTEN position.
- (6) Release the parachute harness and return the quick-release fitting to the locked position.
- (7) Disconnect the anti-g suit air supply hose

from the suit and fit the blanking plug.

- (8) Disconnect the personal survival pack lowering line from the life jacket.
- (9) Disconnect the Mic/Tel lead.
- (10) If the leg restraint garters are usually stowed in the cockpit, remove them from the legs and place them in the stowage. This operation is not required if the garters are fitted in the suit.

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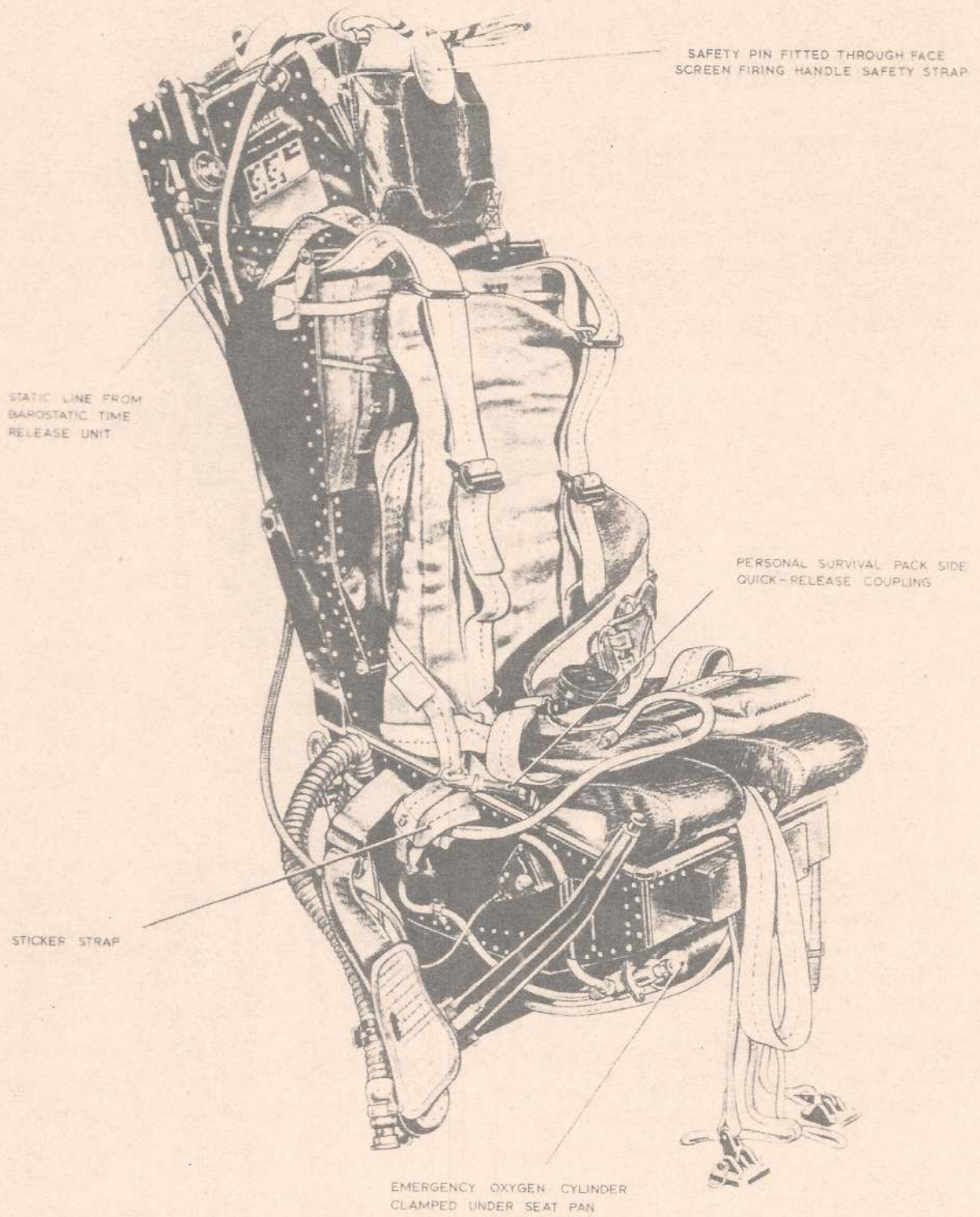
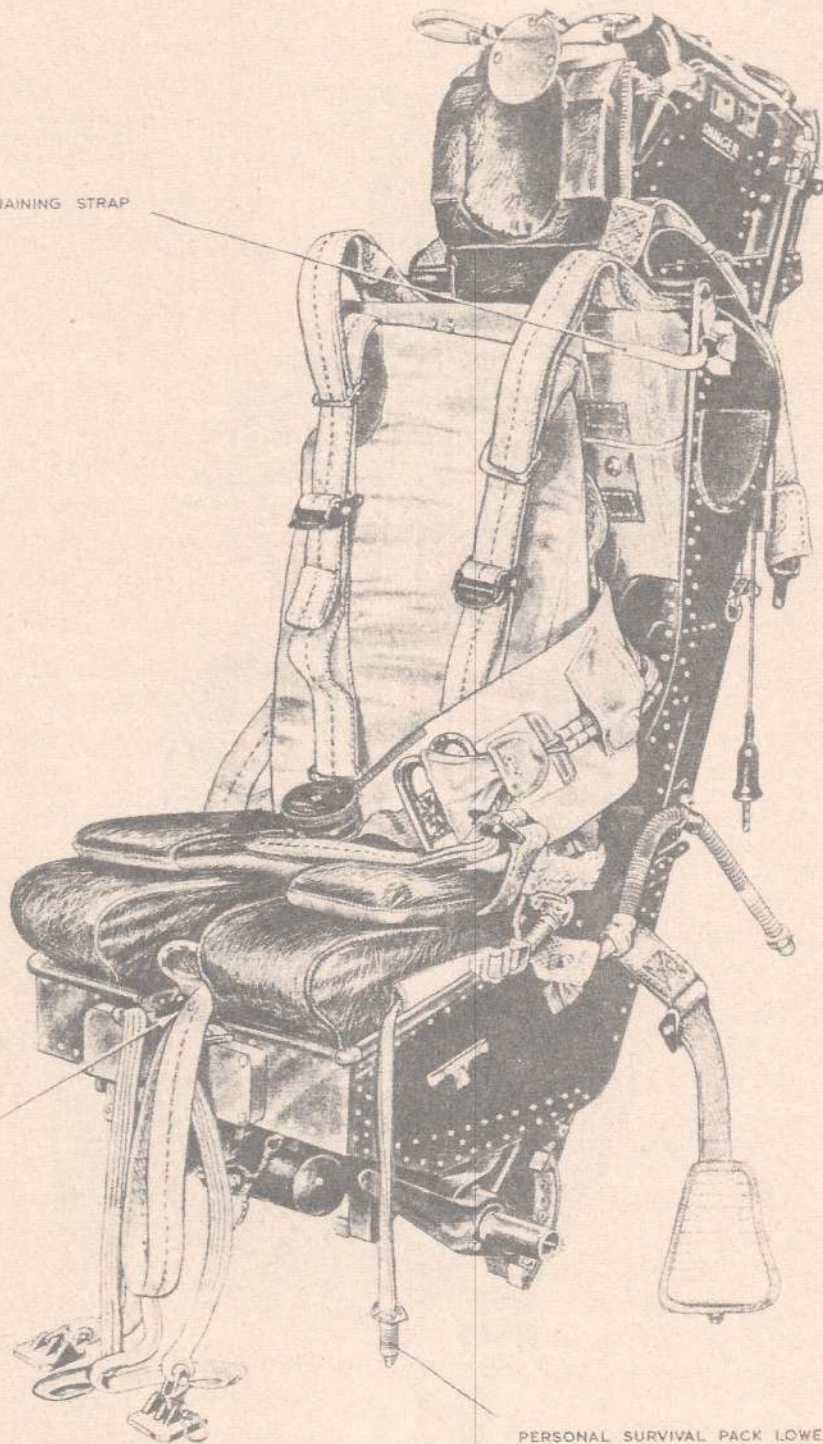


Fig. 1. The seat equipped (1)

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PARACHUTE PACK RESTRAINING STRAP

SAFETY PIN FITTED
THROUGH SEAT PAN
FIRING HANDLE



PERSONAL SURVIVAL PACK LOWERING LINE

Fig. 2. The seat equipped (2)

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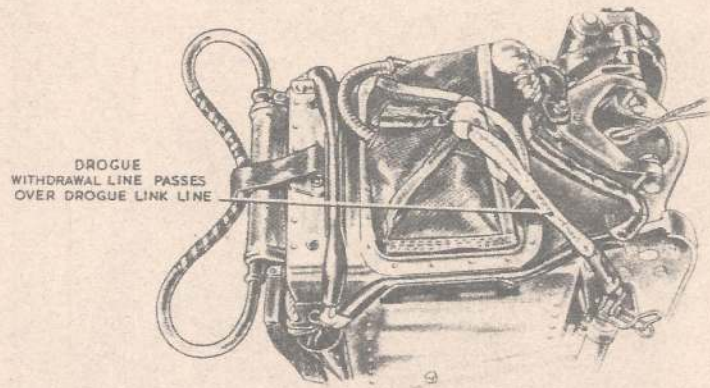


Fig. 3. Arrangement of drogue withdrawal and link lines

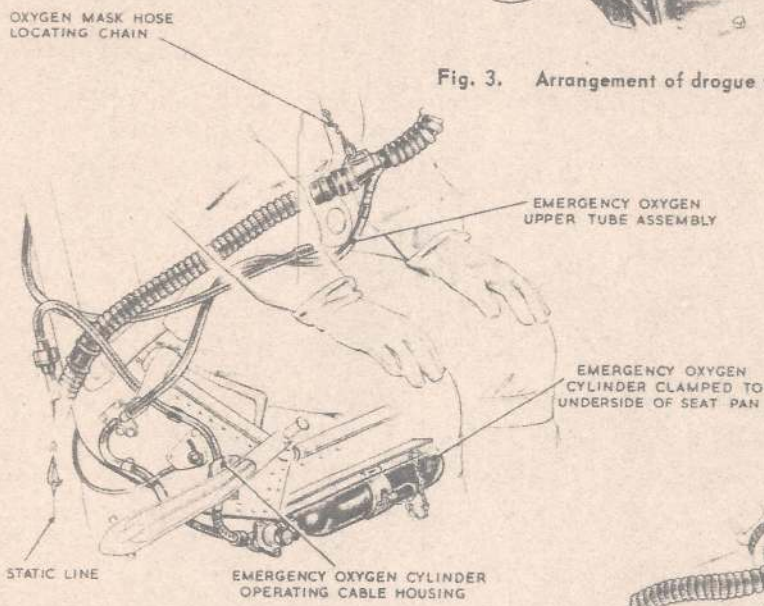


Fig. 4. Arrangement of oxygen supply on seat

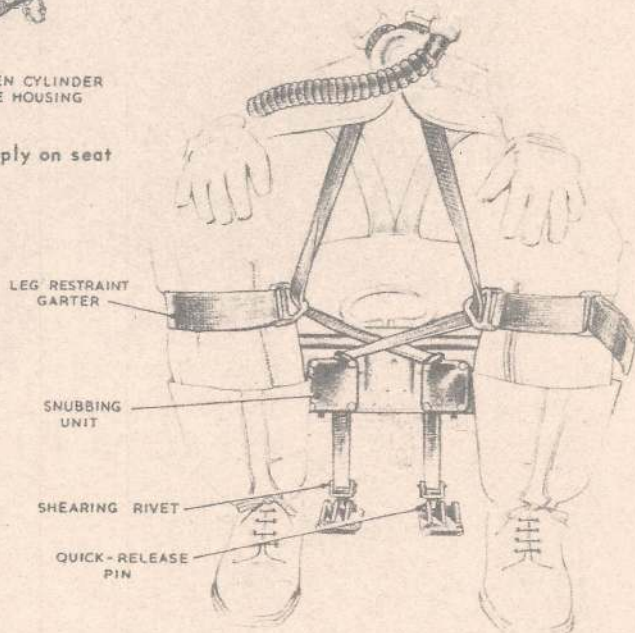


Fig. 5. Arrangement of leg restraint cords

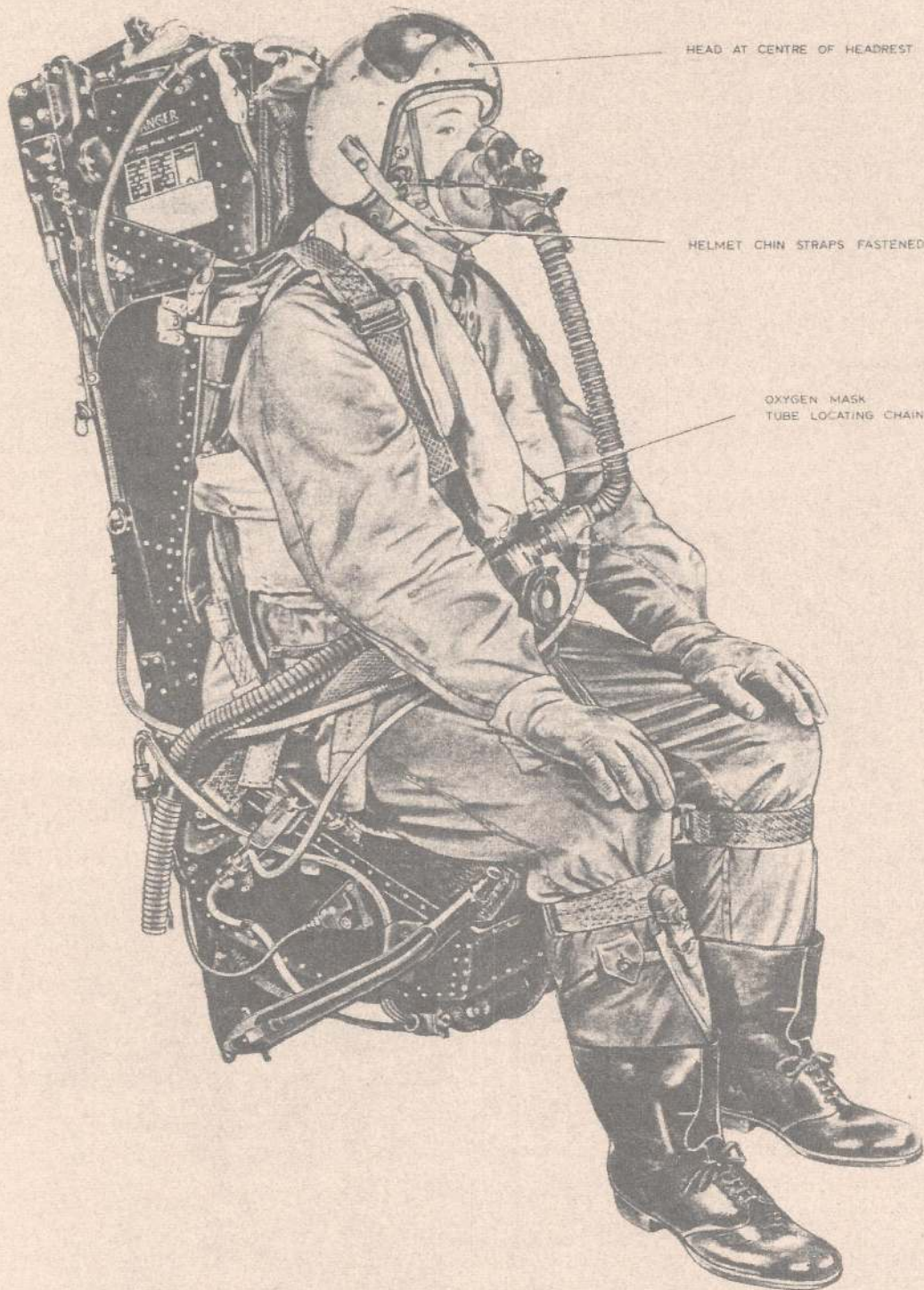


Fig. 6. The seat occupied (1)

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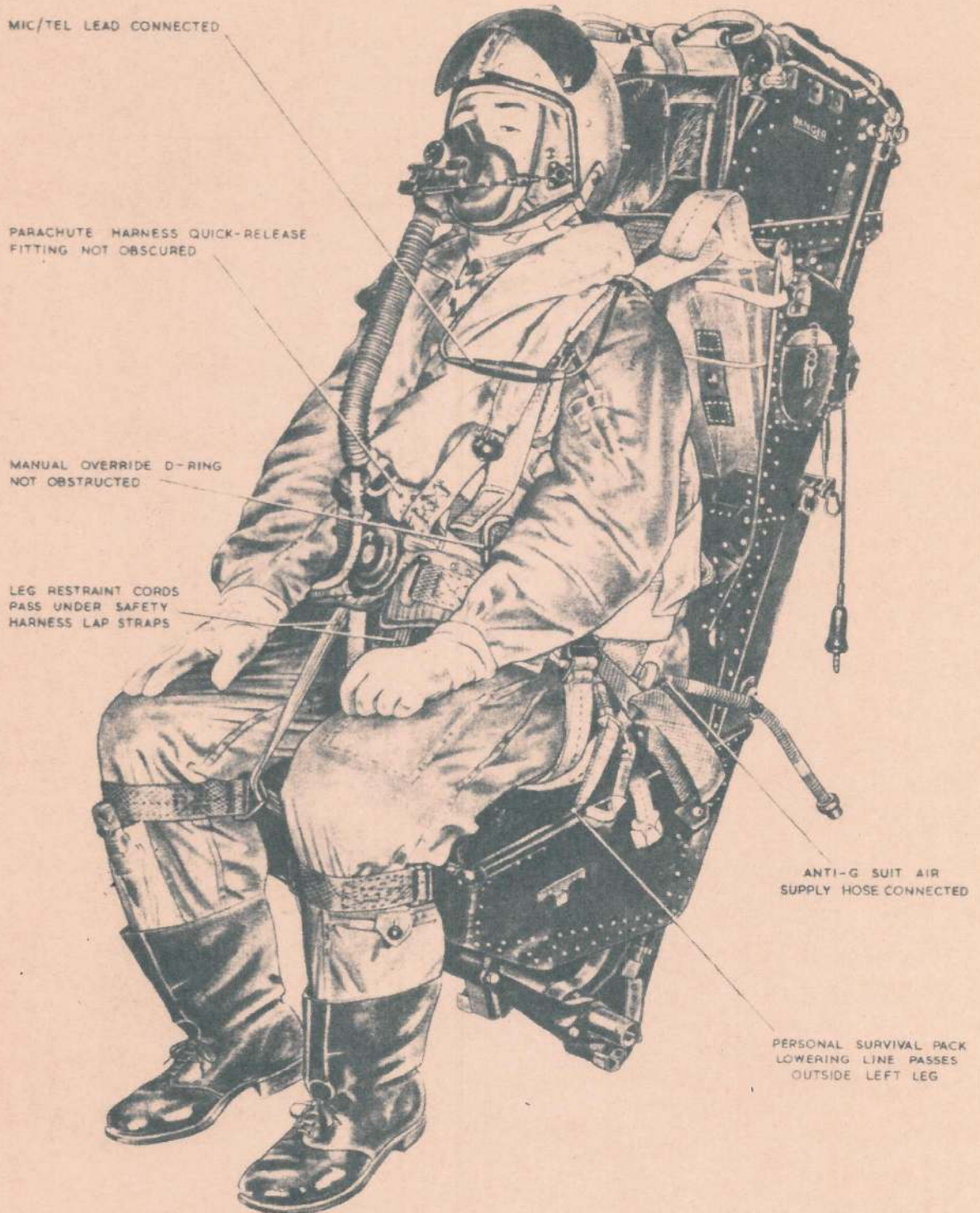


Fig. 7. The seat occupied (2)

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