

## Chapter 1

## VAMPIRE T.11

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## COMPOSITION OF THE ASSEMBLY

1. There are two aircrew equipment assemblies for this aircraft, one for the instructor and the other for the pupil. Since they are identical, reference is made to one only throughout this chapter. The assembly consists of the following items:-

Ejection seat	◀ Type 3B ▶
Safety harness	Type ZH
Parachute assembly	Back type Mk. 19
Personal survival pack	Type W (for training) Type Q (for overseas ferry flight)
Emergency oxygen set	Mk. 4
Flying clothing	In accordance with local orders

## ◀ The Type 3B ejection seat

2. The Type 3B seat is ejected from the aircraft by a cartridge-operated gun and it slides

on a guide rail attached to the airframe structure. It incorporates a Type ZH safety harness, leg restraint cords, headrest cushion, parachute pack container and a seat pan which houses a personal survival pack, an emergency oxygen set and incorporates a negative-G strap secured to an anchorage on the inside face of the front wall. ▶

3. The leg restraint cords are designed to ensure that the occupant's legs are drawn back to the seat pan and restrained there during ejection, thereby preventing injury due to flailing.

4. The seat is adjusted for height by a lever at the starboard side of the seat pan; the knob in the end of the lever must be depressed before the seat can be moved. The safety harness "go-forward" control is mounted on the starboard side of the seat pan, the knob being raised to disengage the harness lock.

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

6. Fully automatic facilities are provided to separate the occupant from the seat after ejection and to open his parachute after separation. A manual override control is provided to disconnect the automatic withdrawal device from the seat if the need arises to (a) make a manual bale-out from the aircraft or (b) make a manual separation from the seat after ejection.

7. ◀ The Type 3B ejection seat is described in A.P.4288, Vol. 1, Part 1; similar information dealing with the parachute assembly, safety harness and personal survival pack will be found in A.P.1182A, Vol. 1, A.P.1182B, Vol. 1 and 6 and A.P.1182C, Vol. 1, Book 2, respectively and the emergency oxygen set is described in A.P.1275G, Vol. 1. ▶

#### Connections to the aircraft

8. When the seat is installed in the aircraft and is fully equipped, the following items are connected to the airframe:—

(1) *Left-hand side of the seat:—*

- (a) Static rod from the drogue gun.
- (b) Mic/Tel lead.

(2) *Right-hand side of the seat:—*

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

(3) *Front of the seat:—*

- (a) Leg restraint cords.

#### EQUIPPING THE SEAT

9. The following procedure is to be adopted when fitting the items of equipment into the seat; refer to fig. 1, 2, 3 and 4 for detail, as necessary:—

- (1) Ensure that the seat has been made safe for servicing in accordance with current authorised procedure.
- (2) Drape the safety harness shoulder straps over the top of the parachute

pack container and ensure that the safety harness lap straps and the leg restraint cords are clear of the seat pan.

(3) Check that the bottom edge of the apron is secured to the lower extension of the parachute pack container.

(4) Tension the apron against its securing clips and insert the parachute pack into the container. Before pressing the pack fully home, connect the two halves of the parachute withdrawal line coupling.

(5) Fit the parachute pack into the container and engage the pack restraining straps in the clips on the sides of the container.

(6) Arrange the parachute harness to follow the inner contours of the seat pan and fit the sticker straps to their clips on the sides of the pan. Check that the operating head of the emergency oxygen cylinder is to the left of the seat pan and that the supply tube passes through the tunnel on the left-hand side of the parachute harness. The operating cable is to be arranged so that it passes behind the emergency oxygen cylinder and through the gaiter on the right-hand side of the parachute harness. Ensure that neither the operating cable nor supply tube are kinked.

(7) Connect the knurled and screwed union of the emergency oxygen operating cable to the corresponding union on the anchor section of the static line.

(8) Engage the end fitting of the operating cable housing with the anchor socket and connect the anchor hook to the static line.

(9) Place the personal survival pack on the parachute harness in the seat pan and ensure that the harness back pad is pulled upwards as far as possible. Ensure that the front of the pack is to the front of the seat and that the lanyard is draped over the right-hand side of the seat.

- (10) Remove and retain the safety pin from the emergency oxygen cylinder operating head and check that the 'tell-tale' wire is unbroken.
- (11) Return the seat to the 'safe for parking' condition.

### STRAPPING-IN PROCEDURE

10. When strapping-in, the following procedure is to be used; refer to fig. 3, 4, 5, 6 and 7 for detail, as necessary:-

- (1) Ensure that the seat is made safe for parking in accordance with current authorised procedure.
- (2) Check that the safety equipment is correctly fitted to the seat.
- (3) Ensure that the emergency oxygen cylinder is not overlapping the seat pan.
- (4) Sit in the seat and fit the leg restraint garters. If the garters are stowed in the aircraft, remove them from their stowage and fit them just below the knees, ensuring that the D-rings are to the inside of each leg; the loose ends of garters are to be tucked in on the inside of each leg. If the garters are stored in the flight office, or in such other place as may be approved, they are to be fitted to the legs before entering the aircraft.
- (5) Connect the personal survival pack lanyard to the life-jacket, ensuring that the lanyard passes OUTSIDE the right leg. Connect the quick-release couplings at each side of the personal survival pack to the life-jacket.
- (6) Connect the parachute harness shoulder and leg straps to the quick-release fitting and fit the safety clip behind the disc knob. Ensure that the shoulder straps pass UNDER the folds of the life-jacket and adjust them until the quick-release fitting is located centrally just above the solar plexus. Adjust the leg straps; this will locate the

quick-release fitting over the solar plexus. Ensure that the harness is as tight as possible, consistent with comfort, and that the quick-release fitting is as high as possible.

#### ◀ Note . . .

*It is a feature of the inertia proof quick-release fitting that before the first lug can be engaged, the disc knob must be turned back (away from the operating direction) until the indicator line coincides with the yellow dots. Once the first lug has been inserted, the others may be engaged without further turning of the knob. ▶*

- (7) Fasten the lap straps of the safety harness but do not tighten them.
- (8) ◀ Pass the left leg restraint cord through the right leg garter D-ring and under the safety harness right lap strap; pass the right shoulder strap lug through the loop at the end of the cord. Pass the negative-G strap Y-section upwards under the safety harness lap straps and pass the right shoulder strap lug (carrying the leg restraint cord) through the loop at the end of the right arm of the Y-section. Secure the shoulder strap lug in the quick-release fitting. ▶
- (9) ◀ Repeat the fitting operations for the right leg restraint cord, ensuring that the cord passes through the left leg garter D-ring and that the loops at the end of the cord and the left arm of the negative-G strap Y-section pass over the left shoulder strap lug before it is secured in the quick-release fitting. ▶
- (10) Tighten the lap straps of the safety harness ensuring that the quick-release fitting is located as low as possible against the body and that the parachute harness quick-release fitting is not covered; the manual override D-ring is not to be covered by the left lap strap of the safety harness.

- (11) ◀ Tighten the safety harness shoulder straps, tighten the negative-G strap and tuck the free end behind the straight section. ▶
- (12) Put on the flying and protective helmets, fasten the chin straps and connect the Mic/Tel lead.

**Note . . .**

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

- (13) Connect the oxygen mask tube assembly to the main oxygen hose and adjust the hose in its clip on the safety harness lap strap so that full movement of the head is possible.
- (14) Connect the oxygen mask tube assembly locating chain to the D-ring on the life-jacket.
- (15) Pass the emergency oxygen supply tube under the left shoulder strap of the safety harness, over the main oxygen supply hose and connect it to the oxygen mask tube assembly.

**Note . . .**

*If the supply tube is too long it may be passed under both shoulder straps.*

- (16) Adjust the height of the seat, ideally until the head is in the centre of the headrest cushion.
- (17) Adjust the leg restraint cords until full movement of the rudder pedals and control column is obtained.
- (18) Stretch the arms upwards and check that the main firing handle can be reached with both hands together; DO NOT DISPLACE THE HANDLE FROM ITS STOWAGE.
- (19) A member of the ground crew removes the safety pin from the main firing handle of the seat furthest from him and stows it in the stowage on the side of the parachute pack container.

He then repeats the operation for the other seat.

**Note . . .**

*It is essential to clip the pin and disc into the stowage to avoid the possibility of the pin fouling the canopy when it is being opened or closed.*

**EMERGENCIES**

11. Instructions for dealing with emergencies are contained in A.P.4099J-P.N.

**NORMAL EXIT FROM THE SEAT**

12. When leaving the aircraft after landing, the following sequence is to be used:-

- (1) A member of the ground crew removes the pin from its stowage on the seat nearest to him and fits it through the main firing handle. He then repeats the operation for the other seat.

**Note . . .**

*If a member of the ground crew is not available, the occupant of the seat MUST fit the safety pin before leaving the cockpit.*

- (2) Disconnect the main and emergency oxygen supply from the mask tube assembly.
- (3) Release the safety harness and return the quick-release fitting to the FASTEN position. Free the leg restraint cords.
- (4) Remove the safety clip from the parachute harness quick-release fitting and release the parachute harness; return the quick-release fitting to the locked position.
- (5) Disconnect the personal survival pack side quick-release couplings and lanyard from the life-jacket.
- (6) Disconnect the Mic/Tel lead.
- (7) If it is the practice to stow leg restraint garters in the cockpit, remove them from the legs and place them in their stowage.
- (8) Leave the aircraft.

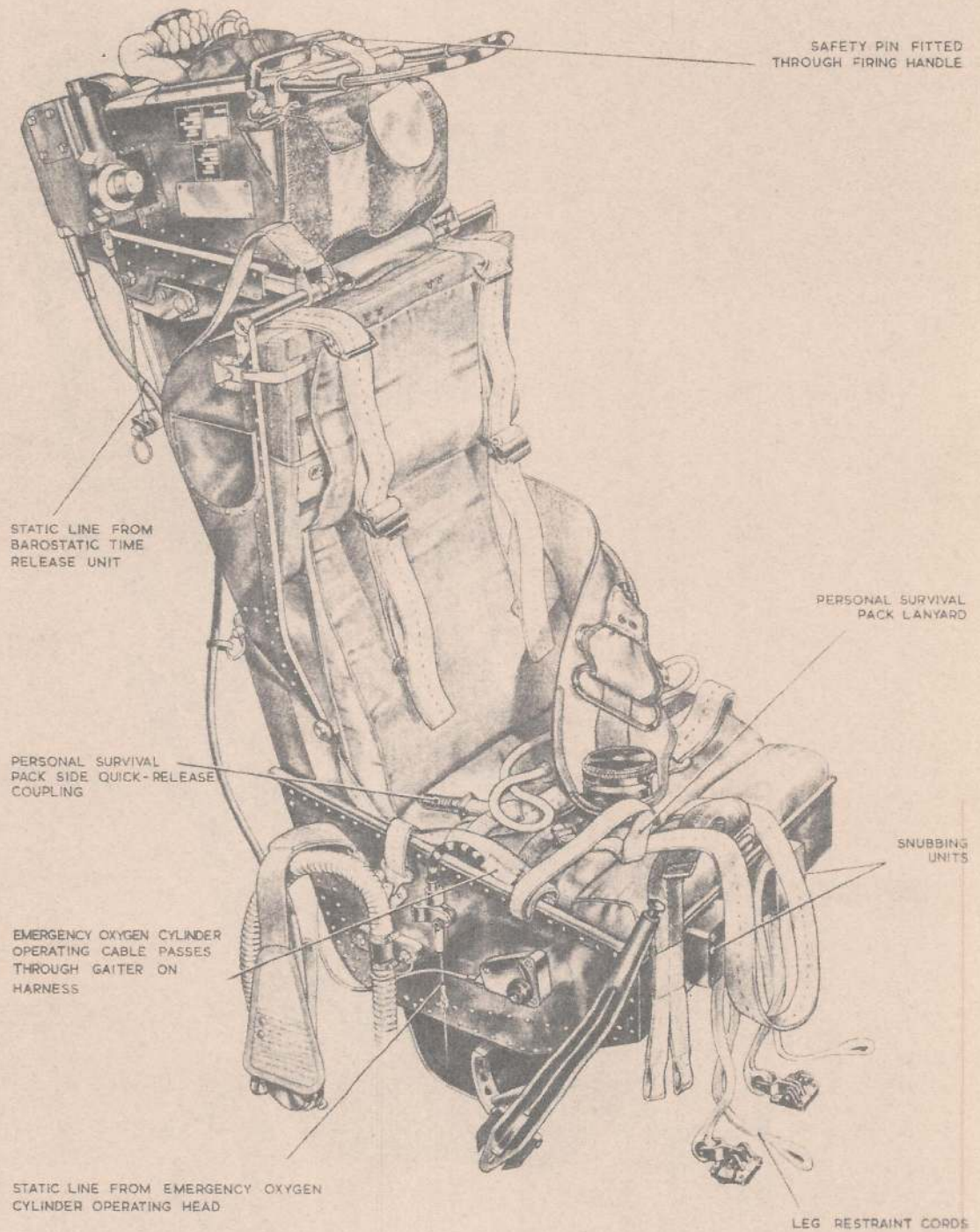


Fig. 1. The seat equipped (1)

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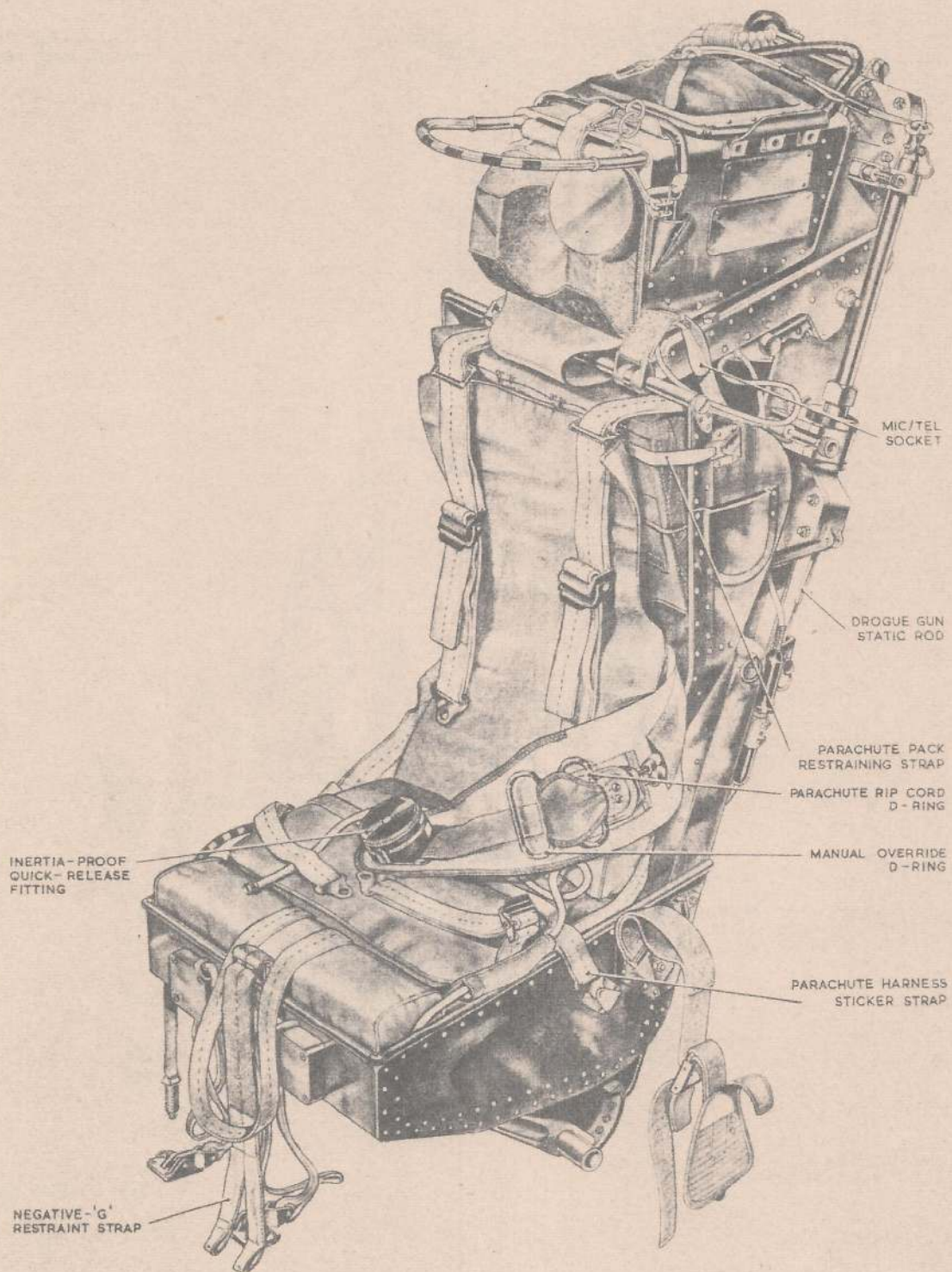


Fig. 2. The seat equipped (2)

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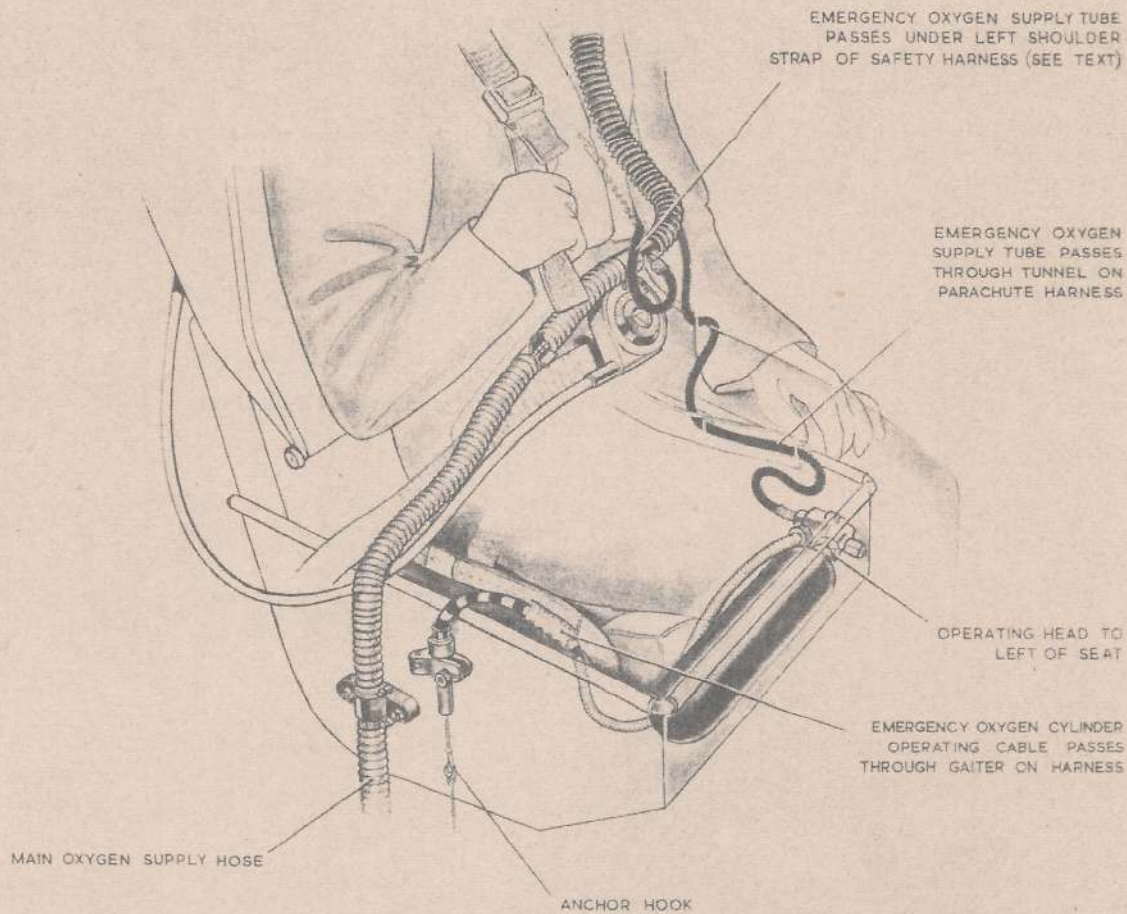


Fig. 3. Arrangement of oxygen supply on seat

HEAD AT CENTRE OF HEADREST

NEGATIVE-G RESTRAINT STRAP AND  
LEG RESTRAINT CORDS PASS  
UNDER SAFETY HARNESS  
LAP STRAPS



LEG RESTRAINT GARTERS

Fig. 7. The seat occupied (2)

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**TELEBRIEF  
CONNECTIONS**

**E**