

Chapter 3 EMERGENCY CONTROLS, EQUIPMENT, AND EXIT - METHOD OF OPERATION

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WARNING

The relevant safety precautions detailed on the LETHAL WARNING marker card must always be observed before entering the cockpit or performing any operations upon the aircraft.

EMERGENCY CONTROLS AND EQUIPMENT

Alighting gear

Emergency lowering

1. Emergency lowering of the alighting gear is controlled by a lever, labelled EMERGENCY U/C, mounted on the cockpit floor to the left of the ejection seat. The lever mechanism incorporates a

spring-loaded plunger with a spring safety clip fitted under the plunger head, to prevent inadvertent operation. A single strand of 28 s.w.g. tinned copper wire is connected between the lever and the lever mounting bracket in the unoperated position, to indicate that the lever has not been disturbed. The alighting gear is lowered by removing the spring safety clip, depressing the plunger in the lever handle, and pulling the lever backwards. This action operates a hydraulic selector, to which the lever is connected by cable, and power from No.1 controls hydraulic system is thereupon diverted to the alight-

ing-gear circuit. If the emergency system has been used, or the indicator wire is found to be broken, the system must be reset before subsequent flight (Sect.3, Chap.6).

Emergency raising

2. An electrically-operated, pitot-pressure-controlled, locking device in the UP section of the alighting-gear selector switch prevents the button being depressed at air speeds below 150 knots. In emergency, the locking device may be overridden by turning the UP button clockwise through 60 deg and then pressing the button in the normal manner.

Ventral tank jettisoning

3. The ventral tank release unit is operated, and the tank jettisoned, by pulling the T-shaped handle, labelled DROP TANK - PULL TO JETTISON (pre Mod. 2177) TANK JETN. PULL (post Mod. 2177), positioned below the port instrument panel. The operation can be combined with guided weapon jettisoning (*para. 4*).

Guided weapon jettisoning

4. The guided weapons are jettisoned by sideways ejection from their pylons. This operation is initiated by lifting a small flap, labelled MISSILE JETT. LIFT & SQUEEZE (pre Mod. 2177) WEPN JETN & PRESS (post Mod. 2177), on the ventral tank jettison handle (*para. 3*), and then squeezing the handle, or depressing the switch, as the case may be. The operation can be combined with ventral tank jettisoning, by subsequently pulling the handle (*para. 3*).

Cockpit emergency air supply

5. Should a failure occur in the main air supply, or the air in the cockpit become contaminated, fresh air can be introduced under ram pressure through a manually-operated valve fitted in the port side of the fuselage. The operating handle, on the side of the port console, moves in a guide and automatically locks in the OPEN or CLOSED position.

Warning indicators

6. Indicators which give warning of fire (*para. 7*), or of critical failure in various aircraft systems, are grouped on the standard warning system indicator unit mounted below the port windscreen. Each individual warning is accompanied

by flashing of an attention light and of a light inside the ATTENTION CANCEL switch (C), and by an audio warning in the pilot's headset; the attention light is mounted above the port coaming panel and the ATTENTION CANCEL switch is on the indicator unit. For more detailed information refer to Sect. 6, Chap. 12.

Fire warnings and fire extinguishers

7. Warning of fire or excessive temperature in the engine bays or reheat zones (*Sect. 4, Chap. 5*) is given by four red indicators, labelled FIRE 1, FIRE 2, RHT.1, and RHT.2 on the standard warning system indicator unit. If a FIRE 1 or FIRE 2 warning appears, the lamp in the associated indicator switch unit at the aft end of the indicator unit will also be illuminated. Pressing the indicator switch unit push-button will discharge the contents of both fire extinguishers into both fire zones of the affected engine bay and if this extinguishes the fire, the warnings will disappear. There is no fire-extinguishing equipment in the reheat zones and if RHT.1 or RHT.2 appears, reheat must be cancelled immediately on both engines; if the warning still persists following this action, the appropriate engine must be shut down.

Emergency oxygen

8. The emergency oxygen cylinder is mounted on the rear of the ejection seat, and is connected to the pilot's mask through the personal equipment connector. Pulling up the yellow-and-black striped knob, on the front of the seat pan at the starboard side, makes the emergency supply available. Transfer

to the emergency supply is automatic when the seat leaves the aircraft during ejection.

Emergency lighting

9. In the event of a d.c. power supply failure, five amber floodlights provide illumination for the instrument panels, and an internal lamp illuminates the emergency compass. The lights are supplied from the emergency battery and are controlled by the EMERGENCY LIGHTS switch on the main instrument panel.

Emergency compass

10. A Type E2B magnetic compass is mounted on the windscreen starboard member.

Ejection seat

11. AMk.4BS ejection seat, incorporating a back-type parachute and a survival pack, is fitted in the cockpit. The ejection sequence, which includes jettisoning of the canopy, is initiated by pulling down the face-screen firing handle or by pulling the alternative firing handle in the seat pan. The safety pins, with red warning discs attached, must remain fitted in the head-rest and seat pan at all times other than immediately prior to, and during flight.

Artificial horizon emergency switch

12. Should the a.c. and d.c. generators both fail, the supply voltage at the artificial horizon will be insufficient because of a resistor inserted in the normal d.c. circuit. The resistor may be by-passed, and the voltage at the instrument increased, by setting a switch, labelled ART. HORIZON NORMAL/

EMGY, to the emergency position; the switch is positioned near the instrument.

Pressure-head heater emergency power supply

13. The pressure-head heater supply is controlled by the PITOT HEATER switch on the starboard console. When the switch is ON the heater is supplied

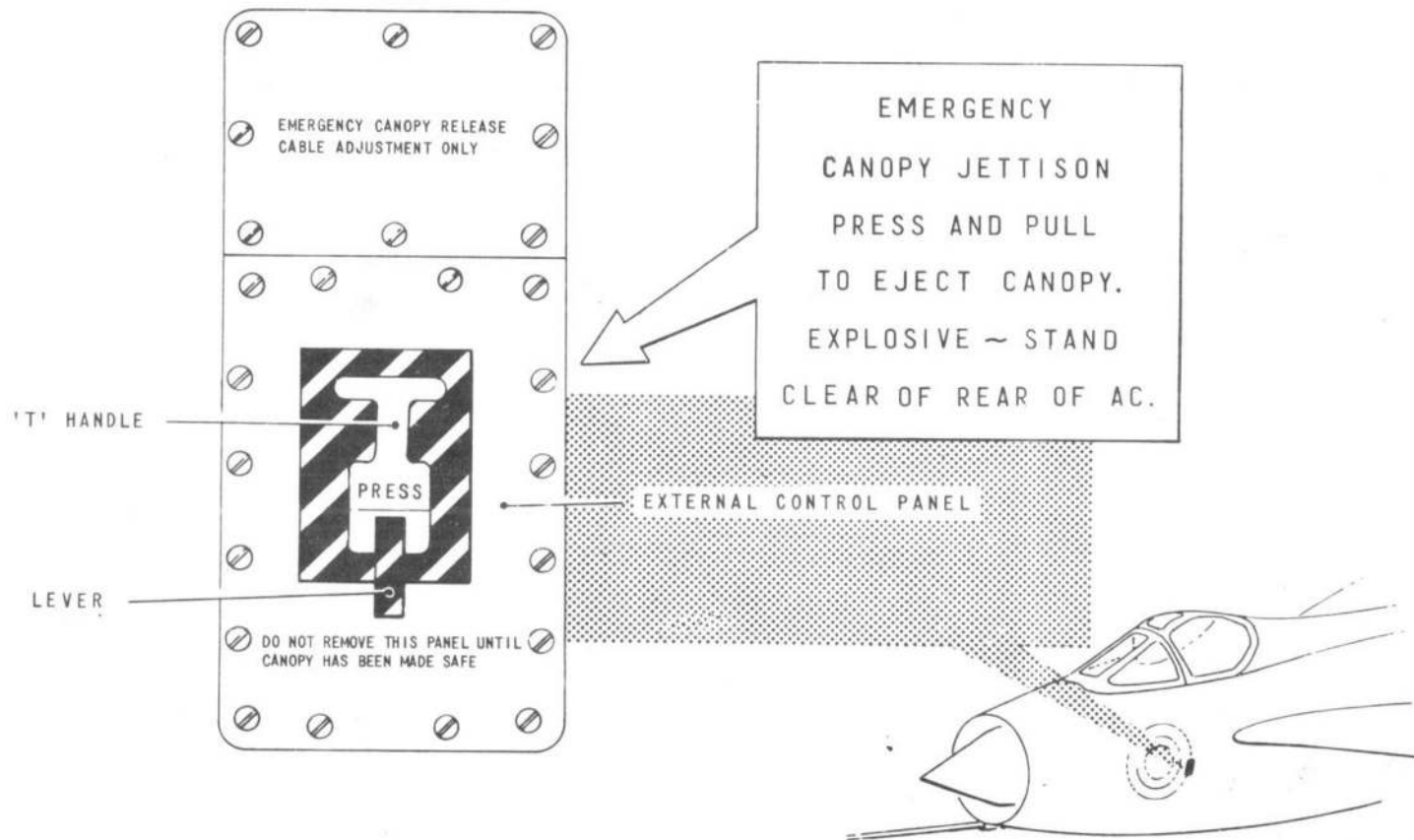
normally from the a. c. system, but should this supply fail the heater may be supplied from the d. c. system by moving the switch to STANDBY.

EMERGENCY EXIT

Canopy jettisoning

14. The canopy can be jettisoned without

actuating the seat-ejecting mechanism by pulling either of two handles, one a spade-grip type mounted on the cockpit floor to the left of the pilot's seat and the other, a T-shaped handle connected to a lever on the external jettisoning control panel (*fig. 1*). After depressing the section marked PRESS the external handle must be pulled outboard.



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Fig. 1. Canopy external jettisoning control

Canopy opening in power failure conditions

15. If electrical or hydraulic failure prevents the canopy being opened normally when the aircraft is on the ground, it can be opened manually. While the canopy remains locked, the jack-end-fitting is released by operating either of two EMERGENCY CANOPY JACK RELEASE levers, one mounted below the top longeron forward of the windscreen arch, and the other near the external canopy-locking handle; then, after unlocking in the normal manner, the canopy can be pushed or lifted open.

◀ Partial opening

16. If an attempt is made to open the canopy in the normal way in conditions of hydraulic or electrical failure, it may open slightly and render the standby and canopy jettisoning systems ineffective. In this case:-

(1) If the failure is hydraulic, close it (manual assistance may be necessary) by selecting, and holding CLOSED, the OPEN-CLOSED switch. If the failure is electrical, close it by manual means.

(2) Lock it by pushing down the CANOPY control handle.

(3) Operate the EMERGENCY CANOPY JACK RELEASE handle.

(4) Pull the CANOPY control handle upwards, but do not operate the OPEN-CLOSED switch.

(5) With external assistance, manually raise the canopy.

Emergency rescue

17. The canopy panels are edged with broken-yellow lines which indicate where to chop, with an axe or other implement, should it be necessary to effect an emergency rescue. ▶

RESTRICTED

A.P. 101B-1001-1A, Sect. 1, Chap. 3
A.L. 118, Dec. 71

FIG. 2. EMERGENCY CONTROLS AND EQUIPMENT
(Illustration overleaf)

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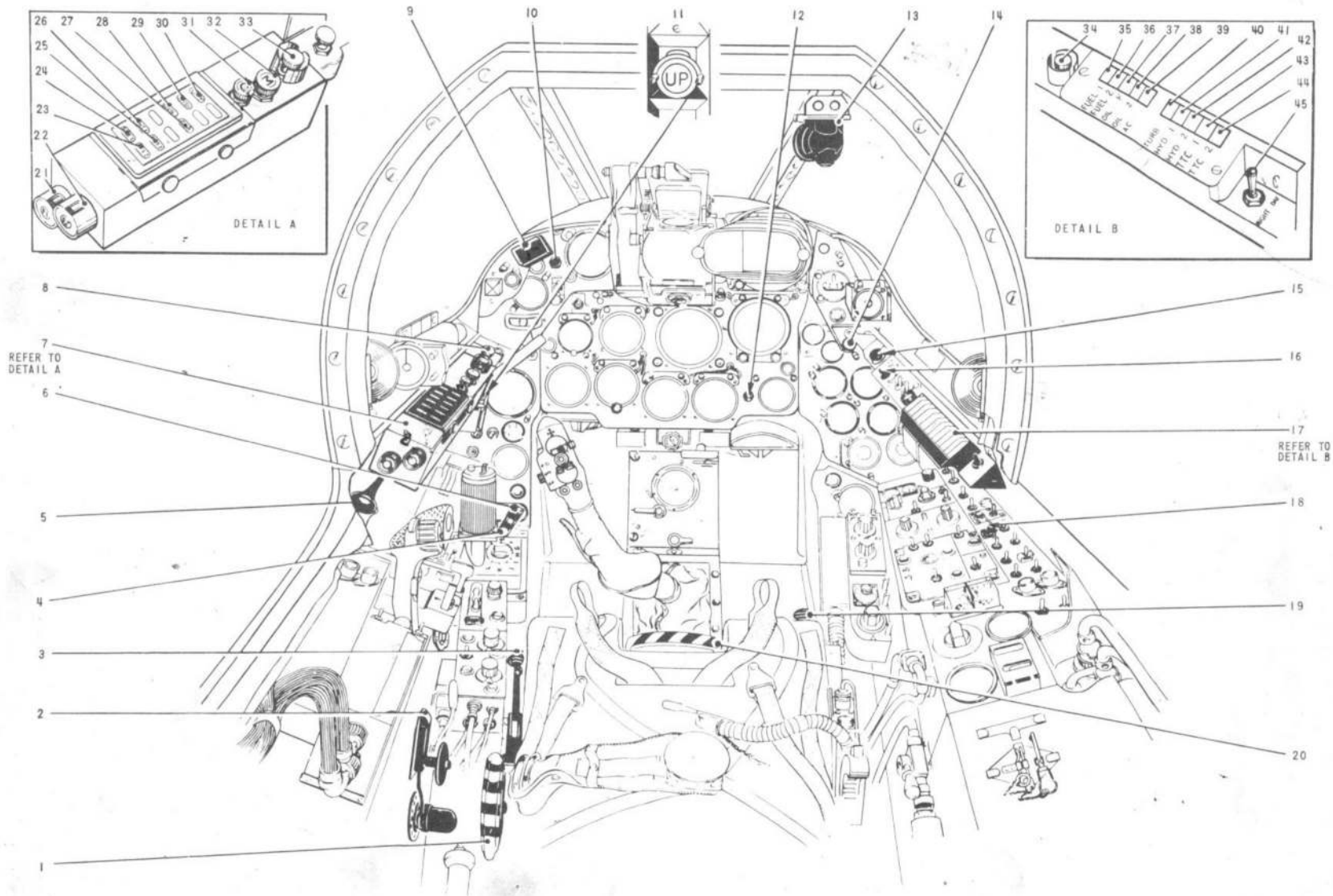


FIG.2. EMERGENCY CONTROLS AND EQUIPMENT

KEY TO FIG.2 (EMERGENCY CONTROLS AND EQUIPMENT)

- | | |
|--|--|
| 1 CANOPY JETTISONING HANDLE
Pull upward to jettison | 25 REHEAT WARNING INDICATOR (NO.2 ENGINE)
Indicates excessive temperature in the vicinity of the jet pipe. Cancel reheat if warning appears, and shut down the engine if the warning persists |
| 2 RAM AIR VALVE CONTROL
Pull knob and slide upward to open valve | 26 REHEAT WARNING INDICATOR (NO.1 ENGINE)
Refer to item 25 |
| 3 ALIGHTING GEAR EMERGENCY LOWERING LEVER
Remove spring safety clip, depress plunger and pull lever backwards | 27 CABIN PRESSURE FAILURE WARNING INDICATOR |
| 4 VENTRAL TANK JETTISONING HANDLE
Pull handle to jettison | 28 GENERATOR FAILURE WARNING INDICATOR |
| 5 EMERGENCY CANOPY JACK-RELEASE HANDLE
(internal stand-by handle). Pull aft to release jack end-fitting, then push canopy upward | 29 HYDRAULIC PRESSURE FAILURE WARNING INDICATOR
is illuminated only when both control hydraulic systems fail |
| 6 GUIDED WEAPONS JETTISON CONTROL
Lift the safety flap on item 4 and :-
squeeze the handle (pre Mod.2177)
depress the switch (post Mod.2177) | 30 OXYGEN PRESSURE FAILURE WARNING INDICATOR
Temporarily inoperative |
| 7 STANDARD WARNINGS SYSTEM INDICATOR UNIT (detail A)
Presents critical warnings | 31 ATTENTION LIGHT CANCEL PUSH-SWITCH
Cancels attention lights, audio warning and push-switch light |
| 8 AUDIO - WARNING MUTE SWITCH (post Mod.388)
Pull switch to mute audio warning facility of standard warnings system | 32 MUTE PULL-SWITCH
Cancels all warnings except FIRE and RHT, and lights up when pulled. Re-imposes warnings and attention lights when depressed |
| 9 ATTENTION LIGHT
Flashes red with each critical warning | 33 STANDARD WARNINGS SYSTEM TEST SWITCH
Depress to test all warning indicators and attention lights. Attention lights remain operative |
| 10 ARTIFICIAL HORIZON SUPPLY C/O SWITCH
Set to EMGY after confined a.c. and d.c. generator failure | 34 AUXILIARY WARNINGS PANEL TEST-SWITCH
Depress to illuminate all serviceable lamps |
| 11 ALIGHTING GEAR EMERGENCY RAISING SELECTOR | 35 FUEL LOW-PRESSURE INDICATOR (NO.1 ENGINE) |
| 12 EMERGENCY LIGHTING SWITCH | 36 FUEL LOW-PRESSURE INDICATOR (NO.2 ENGINE) |
| 13 E2B COMPASS | 37 OIL LOW-PRESSURE INDICATOR (NO.1 ENGINE) |
| 14 E2B COMPASS EMERGENCY LIGHTING DIMMER SWITCH | 38 OIL LOW-PRESSURE INDICATOR (NO.2 ENGINE) |
| 15 ROCKET LAUNCHERS DOORS-UNLOCKED INDICATOR (inoperative) | 39 A.C. GENERATOR FAILURE INDICATOR |
| 16 ROCKET LAUNCHERS EMERGENCY RETRACTION SWITCH (inoperative) | 40 AIR TURBINE STALL INDICATOR |
| 17 AUXILIARY WARNINGS INDICATOR PANEL (detail B) | 41 NO.1 CONTROLS HYDRAULIC FAILURE INDICATOR |
| 18 PITOT HEATER SWITCH | 42 NO.2 CONTROLS HYDRAULIC FAILURE INDICATOR |
| 19 EMERGENCY OXYGEN SUPPLY CONTROL | 43 TOP TEMPERATURE CONTROL INDICATOR (NO.1 ENGINE)
Lights when reheat has been automatically cancelled due to j.p.t. exceeding the maximum by 50° C. Operates only on J.P.T. AUTO selection (Chap.1, fig.8, item 5) |
| 20 EJECTION SEAT ALTERNATIVE FIRING HANDLE | 44 TOP TEMPERATURE CONTROL INDICATOR (NO.2 ENGINE)
Refer to item 43 |
| 21 FIRE EXTINGUISHER, INDICATOR SWITCH UNIT (NO.1 ENGINE) | 45 AUXILIARY WARNINGS INDICATOR PANEL DAY/NIGHT SELECTOR SWITCH X
When set to DAY indicators windows are illuminated; when set to NIGHT, captions are illuminated |
| 22 FIRE EXTINGUISHER INDICATOR SWITCH UNIT (NO.2 ENGINE) | |
| 23 FIRE WARNING INDICATOR (NO.2 ENGINE)
Indicates fire in No.2 engine bay; press indicator switch unit F2 (item 22) to operate the fire extinguishers | |
| 24 FIRE WARNING INDICATOR (NO.1 ENGINE)
Indicates fire in No.1 engine bay; press indicator switch unit F1 (item 21) to operate the fire extinguishers | |



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LIGHTNING MK. 1
COVER PITOT HEAD
EB2-88-511