

Chapter 3

EMERGENCY CONTROLS, EQUIPMENT AND EXIT

(Completely revised)

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WARNING

An aircrew ejection seat is fitted to this aircraft. Before attempting to enter the cabin, therefore, ensure that the instructions given in the **LETHAL WARNING** Marker Card, at the beginning of this volume, have been carried out. In the interests of safety, this is very important.

Introduction

1. This chapter describes the controls and equipment which are provided for use in an emergency, together with the precautions necessary before and after their use. In an emergency, it is essential that the appropriate control be operated without delay. In the interest of safety, therefore,

personnel concerned with the handling of this aircraft should familiarise themselves with these controls. For further information on the operation and function of these controls and the circumstances in which they are to be used, reference should be made to A.P.4347K, Pilot's Notes.

2. The hood jettison gear is interconnected (post Mod.281) with the seat jettison mechanism and operates as follows:-

- (1) Pulling the ejection seat blind handle fires the hood jettison gun and starts the seat clock. The hood gun operates the hood cylinders which unlock the hood release units prior to jettisoning.

The seat gun fires after 1 second delay and ejects the seat.

- (2) Pulling the alternative firing handle, located on the seat pan (*if handle is fitted*) duplicates the function of the ejection seat blind handle, but the pilot is ejected without the protection of the face blind.

Should it be desired to jettison the hood only, this can be done by pulling a handle located at the forward inboard face of the cabin port shelf. Pulling this handle operates the hood jettison gun to unlock the hood prior to jettisoning. (*It does not operate the time delay mechanism and seat gun*).

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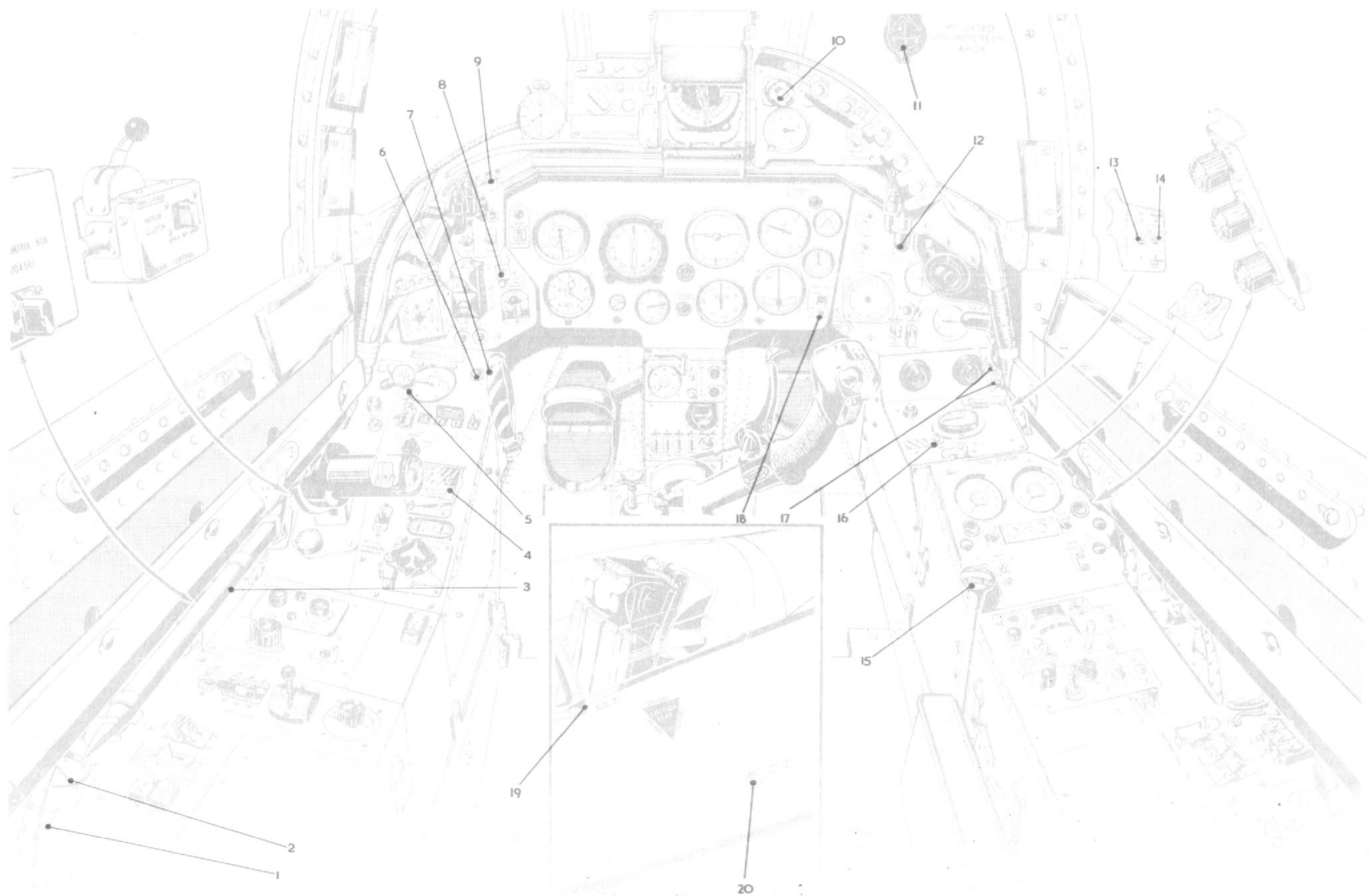


Fig.1 Emergency controls

Note . . .

When the hood gun has been fired, the firing components and piping must be replaced.

Extracting unconscious pilot

3. In the event of the pilot or occupant being physically unable to operate the hood control or becoming unconscious while the aircraft is on the ground and the hood is closed, access to the cabin may be obtained by breaking a transparent panel on the port side of the fuselage and pulling the enclosed ring, thus opening the locks securing the hood side channel members, deflating the hood seal and de-clutching the hood motor and allowing the hood to be lifted off by hand. Finger holes between the hood and windscreen are provided to facilitate the removal of the hood. If, however, the pilot is able to move the lever, integral with the hood control box, to the FREE position, this will release the clutch of the hood winding motor and deflate the hood seal, thus allowing the hood to be pushed open by hand.

Note . . .

Before attempting to enter or lean over the cabin, ensure that the instructions given in the LETHAL WARNING at the beginning of this volume have been carried out.

Ejection seat

4. For details of the operation of the Mk.2H or 3H ejection seat installed in this aircraft, reference should be made to A.P.4288B, Vol.1, and to A.P.4347K, Pilot's Notes.

KEY TO FIG.1**EMERGENCY CONTROLS AND INSTRUMENTS**

- 1 EMERGENCY AIR GAUGE - UNDERCARRIAGE
- 2 EMERGENCY AIR GAUGE - FLAPS
- 3 CROWBAR
- 4 TAIL PLANE STANDBY CONTROL
- 5 EMERGENCY UNDERCARRIAGE CONTROL
Grasp the control between the fingers, press the centre button with the thumb and pull the control to operate.
- 6 HYDRAULIC FAILURE WARNING LAMP
- 7 HOOD JETTISON CONTROL
- 8 EMERGENCY FLAPS CONTROL
Grasp the control between the fingers, press the centre button with the thumb and pull the control to operate.
- 9 INBOARD & OUTBOARD PYLON STORES JETTISON PUSH SWITCHES, ALSO CLEAR AIRCRAFT SWITCH BAR
- 10 FIRE WARNING LIGHT AND EXTINGUISHER PUSH SWITCH
Light indicates when temperature in engine bay and accessories bay exceeds 300 ± 30 deg.C. Pushing the knob will operate the fire extinguisher. The flame switches are of the re-setting type and indicate temporary surges of excessive heat, thus flickering of the lights in flight and during engine run on the ground may occur. Refer to Sect.4, Chap.5.
- 11 STANDBY COMPASS
- 12 RED INSTRUMENT STANDBY LAMP
Port and Starboard
- 13 RED STANDBY LAMP SWITCH
- 14 STANDBY COMPASS LAMP SWITCH
- 15 EMERGENCY OXYGEN BOTTLE SUPPLY RELEASE
- 16 EMERGENCY OXYGEN
Press to test mask.
- 17 EXPLOSION SUPPRESSION WARNING LAMP & SWITCH
- 18 TURN & SLIP NORMAL/EMERGENCY SWITCH
- 19 FINGER HOLES (EMERGENCY HOOD RELEASE)
- 20 EXTERNAL HOOD RELEASE CONTROL

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Hydraulic system

General

5. The hydraulic services are provided with an emergency means of operation for use in the event of hydraulic failure, loss of hydraulic pressure is indicated by a red warning lamp, located on the port instrument panel in the cabin, which when illuminated, warns the pilot that only a few power operations of the ailerons and elevators may be made before they go into manual operation only and that emergency action must be taken when lowering the alighting gear and landing flaps. An additional warning is provided which generates an aural note in the pilot's headphones. A silencing push-switch is provided which, when operated, will retain the audio warning in the suppressed condition. For a detailed description of the hydraulic system, reference should be made to Section 3, Chapter 6, of this volume.

Note . . .

Should hydraulic failure occur in flight, speed must be reduced as much as possible.

Alighting gear and landing flaps

6. In the event of hydraulic failure, the alighting gear and landing flaps may be lowered by the introduction of high pressure air into the hydraulic jacks which operate them. The emergency control for the alighting gear is mounted on the cabin port shelf and that for the landing flaps projects through the port instrument panel. Gauges to indicate the pressure in the air bottles

are located at the rear of the cabin port shelf.

7. To operate either control it is necessary to grasp the control between the fingers, depress the central button in the knob of the control with the thumb and then pull out the control. The control will remain in the operated position as a warning to the ground crew that the emergencies have been used and that the air release valves must be re-set, the hydraulic system bled of air and the high-pressure air bottles recharged before the next take-off. When the emergency flap control is used, there is no pre-selector control and the flaps extend the full limit of their travel.

Note . . .

Once the emergencies have been operated, the positions of the controls and components cannot be changed, except by the ground crew.

Wheel brakes

8. Should the hydraulic system fail the wheel brakes may be operated by means of the energy stored in the hydraulic accumulators in the circuit. These accumulators will give approximately 40 applications of the brakes before the accumulators are exhausted, they come into operation automatically when hydraulic failure occurs. The accumulators are also used when the aircraft is being towed and hydraulic power is not available.

Aileron and elevator power controls

9. In the event of hydraulic failure, an accumulator in each circuit will come into action automatically to give approximately 2 control column reversals. When the accumulators are exhausted, the power controls are automatically disengaged and "dolls eye" indicators, located on the port instrument panel, will show white to indicate that this has occurred.

Emergency retraction of alighting gear

10. The alighting gear cannot normally be retracted while the oleo legs are compressed, due to the UP switch solenoid lock (Sect.5, Chap.1, Group D.7). In an emergency it is possible to override this lock by turning the UP button clockwise and then depressing it. This method of retraction overrides all sequence valves and may damage the leg fairings should these not be fully extended, it should therefore only be used in an absolute emergency such as to bring about a belly-landing to avoid obstructions. The emergency retraction system should not be used because of a defect in the normal system. Should this occur the aircraft must be landed in the normal way for examination and rectification of the fault.

Engine

Emergency balancing of fuel contents

11. The booster pumps in the front fuel tanks, which feed all the fuel to the engine-driven pumps, are controlled by the engine master switch located on the leg panel in the cabin and by individual switches mounted side by side at the forward end of the

cabin starboard shelf. Normally, the pumps are running continuously throughout the flight, but individual switches are provided to enable the pilot to stop either pump in order to balance the fuel levels should this be necessary. Indicators to give warning of fuel transfer failure are located adjacent to the booster pump switches.

Mechanical failure of engine

12. In the event of mechanical failure of the engine, the low-pressure fuel cock must be turned off and the throttle closed. (*Closing of the throttle also closes the high-pressure fuel cock*). The fuel tank booster pumps must also be switched off and no attempt should be made to relight the engine.

Fire extinguisher and warning lamp

13. A combined fire extinguisher push-button switch and warning lamp is located just above the starboard instrument panel. In the event of an engine fire in flight, the low-pressure fuel cock must be turned off, the throttle closed and the aircraft's speed reduced as much as possible, the fire extinguisher push-button is then depressed.

Note . . .

The engine must not be restarted after operating the fire extinguishing system owing to the possible risk of the fire re-

commencing after the fire fighting resources are exhausted.

The extinguisher is automatically-operated by the inertia switches if a crash landing occurs.

Tail plane emergency circuit

14. The incidence of the tail plane is varied by means of a two-speed electric actuator, the normal high speed movement being controlled by a switch on the control column and the emergency low-speed movement by means of a guarded switch on the cabin port shelf. In the event of a breakdown of the normal control circuit, the emergency low speed circuit can be brought into use by raising the guard and operating the shelf switch.

Dinghy and emergency oxygen

15. The dinghy is housed in the pilot's seat pack, together with an emergency oxygen set which may be used in flight, should an emergency arise, by pulling a knob fixed to the side of the cabin starboard shelf, or on ejection of the seat, when it is brought into operation-automatically by means of a static line. When packing the contents of the dinghy pack, in accordance with the instructions contained in A.P.1182C, Vol.1, Sect.2, Chap.8, it is important that the compressed thick-

ness of the pack and water cushion does not exceed 6.5 in. so as to ensure satisfactory head clearance.

Crowbar

16. A 15 in. crowbar, for the pilot's use in extricating himself from the cabin in an emergency, is stowed in clips above the cabin port shelf.

Jettisoning external stores

17. Two switches located on the cabin side adjacent to the port instrument panel are provided for the normal jettisoning of stores carried on the inboard or outboard pylons. In an emergency, it is possible to jettison the external stores from both the inboard and outboard pylons simultaneously by means of the CLEAR A/C switch mounted above the two switches.

Cabin emergency lighting

18. Should the normal cabin lighting fail, an emergency system consisting of two red lamps mounted one on each side of the cabin adjacent to frame 9 can be brought into operation by a switch located on the starboard side of frame 9 above the cabin shelf. The emergency lighting system is supplied with current from a small battery mounted in the radio bay.

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