Chapter 1

PILOT'S CONTROLS AND EQUIPMENT

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

General

1. This chapter covers the location of all the controls, equipment and instruments in the cabin, together with the method of operation wherever this is not obvious. The illustrations are grouped under four main headings to simplify reference to any particular control or item of equipment. Some items for emergency use are also included, but reference should be made to Chap. 3 for details of this equipment.

Entry to cabin

2. The only means of entry and exit is with the cabin canopy open. From inside the cabin the button on the canopy winding handle is depressed and the handle wound clockwise. From outside, the canopy may be moved by depressing the spring-loaded plunger on the starboard side of the fuselage, marked PRESS TO SLIDE CANOPY, and then moving the canopy manually as required. The procedure for making an emergency exit is described in Chap. 3.

Note . . .

When opening the canopy from inside, the initial movement of the winding handle will partially turn off the canopy seal cock lever. This will remind the pilot that the seal must be deflated before opening the canopy, otherwise the seal would be damaged.

Pilot's seat

3. A Mk. 2F Martin Baker automatic ejection seat is fitted, incorporating an emergency oxygen supply and provision for a back type parachute and a K dinghy pack, Type J. During ejection, the seat slides up on rollers in a guide rail bolted to No. 2 bulkhead. The canopy jettison is independent of the ejection seat mechanism and must be manually operated in the normal way before ejection. Attached to the seat are the mic-tel. socket and the anti-'G' and oxygen supply pipe connectors. The connectors are of the quick-release type which disengage automatically on ejection. The procedure for removing the seat is given in Sect. 3, Chapter 11, and a full description and servicing details are given in A.P. 4228B, Vol. 1.

Power-operated ailerons

4. The ailerons are hydraulically operated by servodynes mounted on the main plane rear spars. In an emergency, the control is by the normal cable run with additional electrical trim assistance. The hydraulic selector valve is mounted on the port instrument panel, together with a pressure failure warning indicator and a trim indicator lamp. An electrical trim actuator is operated by a switch on the engine control box.

Flap operation

5. The flap selector lever is on the engine control box. Any flap position up to 60 deg. can be obtained by returning the selector lever to the NEUTRAL position when the desired angle is shown on the position indicator (*fig.* 1). When selecting flaps fully DOWN (60 deg.), the selector lever must be returned to the NEUTRAL or locked position on completion of the flap movement. The lever should, however, be left in the UP position for flaps up.

Starter switch selector button

6. For starting the engine, a Teddington selector starter switch is mounted on the starboard instrument panel. When the starter button is depressed, a cartridge in

the twin-breech turbo-starter is automatically selected and fired, the button being held in the 29 seconds by a delay switch in the ignition system. During this time a normal start should be effected. Should a second attempt to start the engine be necessary, the starter button is depressed again. The subsequent selection and firing of the cartridge, and the 29 seconds delay during which time current is supplied to the ignitor plugs, is entirely automatic. *Attention is drawn to the SAFETY PRECAUTIONS for engine starting outlined in Sect. 2, Chap. 2 of this volume.* The starting procedure is fully detailed in ◀A.P.4320A & C, Vol. 1▶

Redundant controls

7. Any switches on the electrical panel on the starboard side of the cabin not annotated in any of the four illustrations are inoperative on this aircraft, and are only included for the purpose of standardising the panel. The switches are labelled SPARE

Radio equipment

8. A controller for Rebecca Mk. 7 is located by the pilot's seat on the port side of bulkhead No. 2 and a V.H.F. controller is mounted on the port instrument panel, together with a Telebriefing push button and warning lamp.

Key to Fig. 1 (Flying Controls)

1 REBECCA MK. 7 CONTROLLER TYPE 909

2 AILERON ELECTRIC TRIM CIRCUIT BREAKER

3 ALIGHTING GEAR EMERGENCY RETRACTION SWITCH Wire-locked. For operation see Chap. 3

4 ALIGHTING GEAR SELECTOR LEVER
Operates in natural sense, UP-DOWN

5 FLAP SELECTOR LEVER
Maximum angle 60°

6 DIVE BRAKE SELECTOR LEVER IN-DIVE BRAKES-OUT

7 AILERON ELECTRIC TRIM CONTROL SWITCH

8 ELEVATOR TRIM WHEEL

9 POWERED AILERONS HYDRAULIC FAILURE WARNING INDICATOR Also indicates when ailerons selected to MANUAL

10 ALIGHTING GEAR POSITION INDICATOR
No lights-locked UP
Three red lights—between UP and DOWN
Three green lights—locked DOWN

11 FLAP POSITION INDICATOR

12 POWERED AILERONS HYDRAULIC SELECTOR

13 ALTIMETER

14 MACHMETER

15 CLIMB AND DESCENT INDICATOR

16 PORT AILERON TRIM INDICATOR LAMP

17 AIR SPEED INDICATOR

18 ELEVATOR TRIM TAB POSITION INDICATOR

19 ALIGHTING GEAR WARNING LAMP
Lights if undercarriage is UP and throttle is less than ¼ open

20 TURN-AND-SLIP INDICATOR

21 REBECCA MK. 7 RANGE AND BEARING INDICATOR

22 STANDBY COMPASS TYPE E.2A

23 ACCELEROMETER

24 INVERTER FAILURE WARNING LAMP
G.4F compass and artificial horizon

25 ARTIFICIAL HORIZON

26 G.4F COMPASS INDICATOR

27 WHEEL BRAKE PRESSURE GAUGE
Central dial records pressure in air bottle

28 OXYGEN AND ANTI-G PANEL

29 WHEEL BRAKE LEVER

30 WHEEL BRAKE LEVER PARKING CATCH

31 G.4F AND ARTIFICIAL HORIZON SWITCH
Inverter supply

32 PRESSURE HEAD HEATER SWITCH

33 NAVIGATION LAMPS SWITCH

34 IDENTIFICATION LAMP PRESS SWITCH

35 CIRCUIT BREAKER (REBECCA MK. 7)

36 AUDIO WARNING CUT-OUT SWITCH
Powered ailerons

37 LANDING LAMP SWITCH

38 COMPASS CORRECTOR CARD HOLDER

39 MAP AND PILOT'S NOTES CASE

40 SPRING STRUT
Powered ailerons

41 COMPASS CORRECTOR CARD HOLDER

42 RUDDER PEDALS

43 CONTROL COLUMN HANDGRIP

44 CONTROL COLUMN

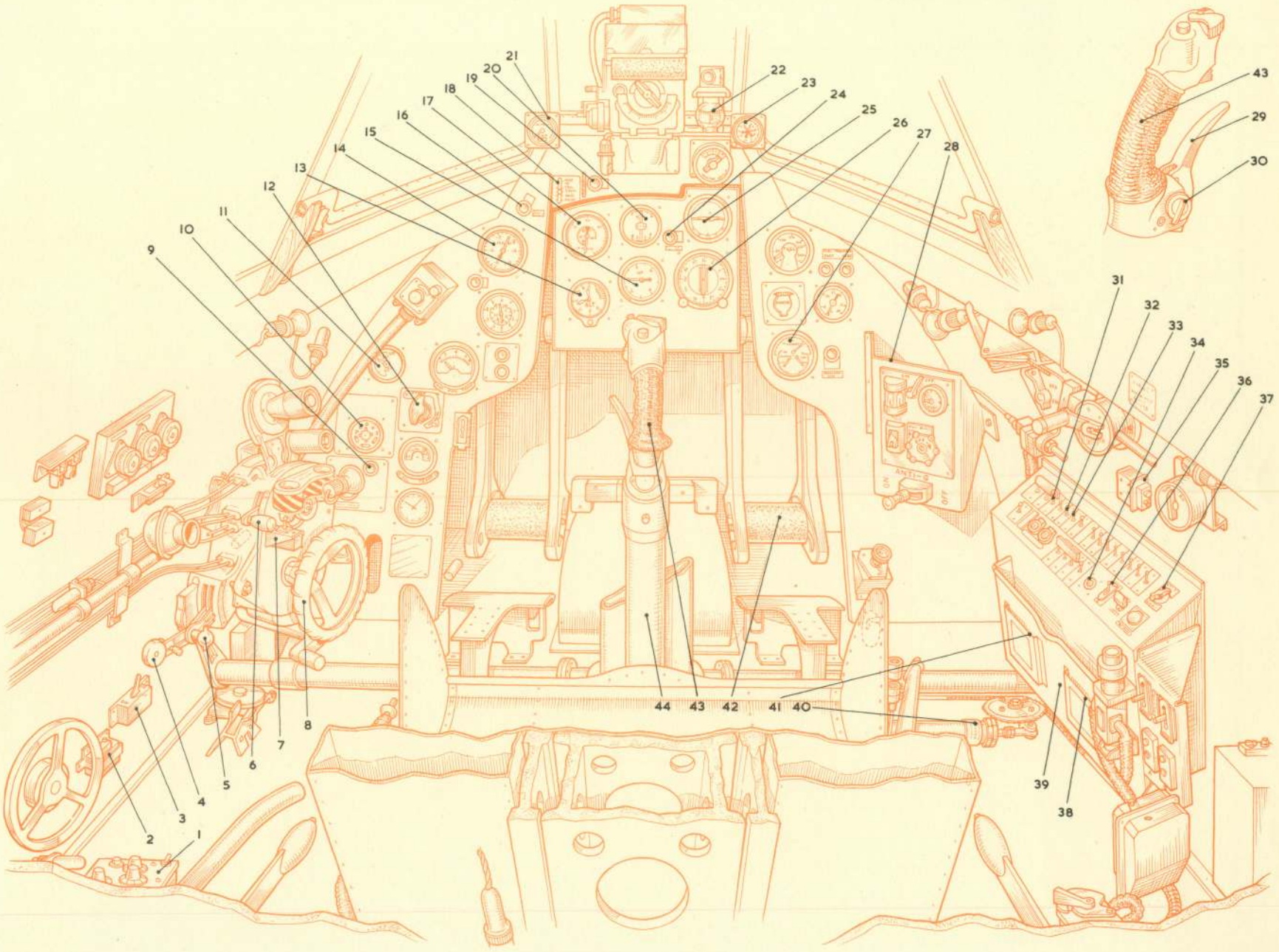

Fig. 1 Flying controls

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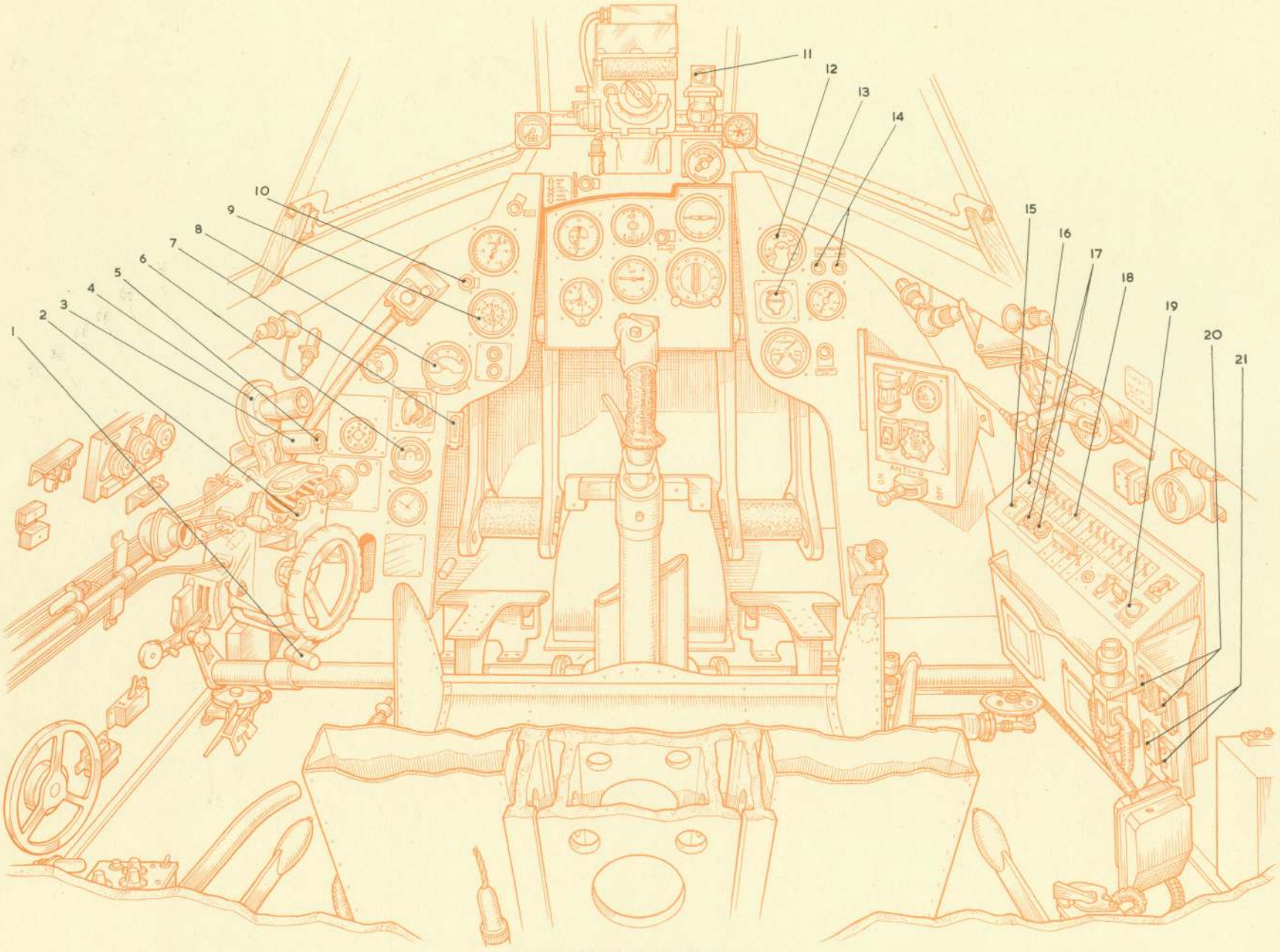

Fig. 2 Engine controls

KEY TO FIG. 2 (ENGINE CONTROLS)

1 LOW-PRESSURE FUEL COCK LEVER
Forward for fuel ON

2 THROTTLE DAMPER
For ground adjustment only

3 HIGH-PRESSURE FUEL COCK
ON (forward)—OFF

4 THROTTLE LEVER
SHUT—THROTTLE—OPEN

5 FLIGHT RELIGHT PRESS SWITCH

6 OIL TEMPERATURE GAUGE

◀ 7 FUEL PUMP ISOLATING SWITCH
For take-off only, over-rides the servo-control on one pump

8 JET PIPE TEMPERATURE GAUGE

9 TACHOMETER

10 LOW FUEL PRESSURE WARNING LAMP

11 FIRE WARNING LAMP

12 PACITOR FUEL CONTENTS GAUGE

13 ENGINE STARTING PRESS SWITCH

14 DROP TANKS FUEL TRANSFER INDICATORS
Show *black* during transfer of fuel

15 BATTERY ISOLATING SWITCH

16 ENGINE STARTER MASTER SWITCH
The relight in flight circuit is independent of this switch

17 GENERATOR FAILURE WARNING LAMPS

18 FUEL BOOSTER PUMP SWITCH ▶

19 FIRE EXTINGUISHER PRESS SWITCH

20 GENERATOR ISOLATING SWITCHES

21 GENERATOR FIELD CIRCUIT BREAKERS

KEY TO FIG. 3 (OPERATIONAL EQUIPMENT)

1 BOMB AND PYLON TANK JETTISON HANDLE
2 STOWAGE FOR GYRO GUNSIGHT RECORDER
3 CAMERA TEST SWITCH
4 GYRO GUNSIGHT RANGING CONTROL
Rotate handle to operate
5 PRESS-TO-TRANSMIT SWITCH
6 TELEBRIEFING SWITCH AND INDICATOR LAMP
7 CONTROLLER TYPE 382 FOR TR. 1934
8 GYRO GUNSIGHT RECORDER
9 GYRO GUNSIGHT
10 GYRO GUNSIGHT SELECTOR AND DIMMER SWITCH
11 CINE CAMERA PRESS SWITCH
Operates camera independently of guns when switch (item 17) is ON
12 GUN FIRING PRESS SWITCH
Also operates cine camera
13 GUN FIRING SWITCH SAFETY CATCH
◀ 14 BOMBS/RP PUSH SWITCH AND SAFETY COVER ▶
15 CAMERA EXPOSER SWITCH
Sunny/Cloudy
◀ 16 V.H.F. SWITCH—NORMAL AND STANDBY, AND V.H.F. TEST SWITCH ▶
17 CINE CAMERA MASTER SWITCH
18 GYRO GUNSIGHT MASTER SWITCH
19 R.P. PAIRS—SALVO SWITCH
20 BOMB DISTRIBUTOR OR SALVO SWITCH
21 BOMB SELECTOR SWITCH—PORT
22 BOMB SELECTOR SWITCH—STARBOARD
23 BOMB NOSE FUSING SWITCH
24 BOMB TAIL FUSING SWITCH
25 R.P. OR GUN SELECTOR SWITCH FOR GYRO GUNSIGHT
◀ 26 R.P., G.45, AND BOMB SELECTOR SWITCH
27 R.P. AUTO SELECTOR SWITCH ▶

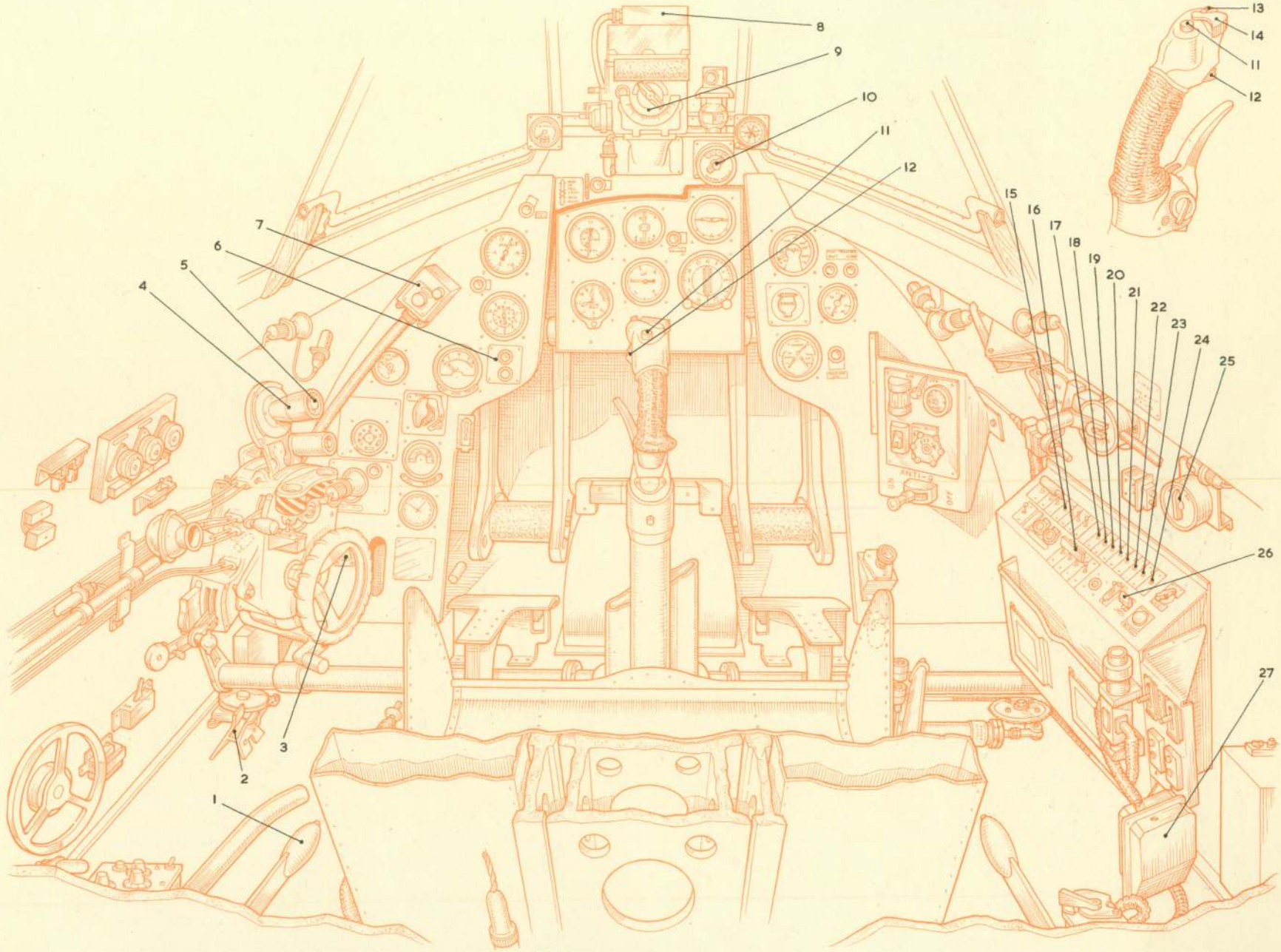

Fig. 3 Operational equipment

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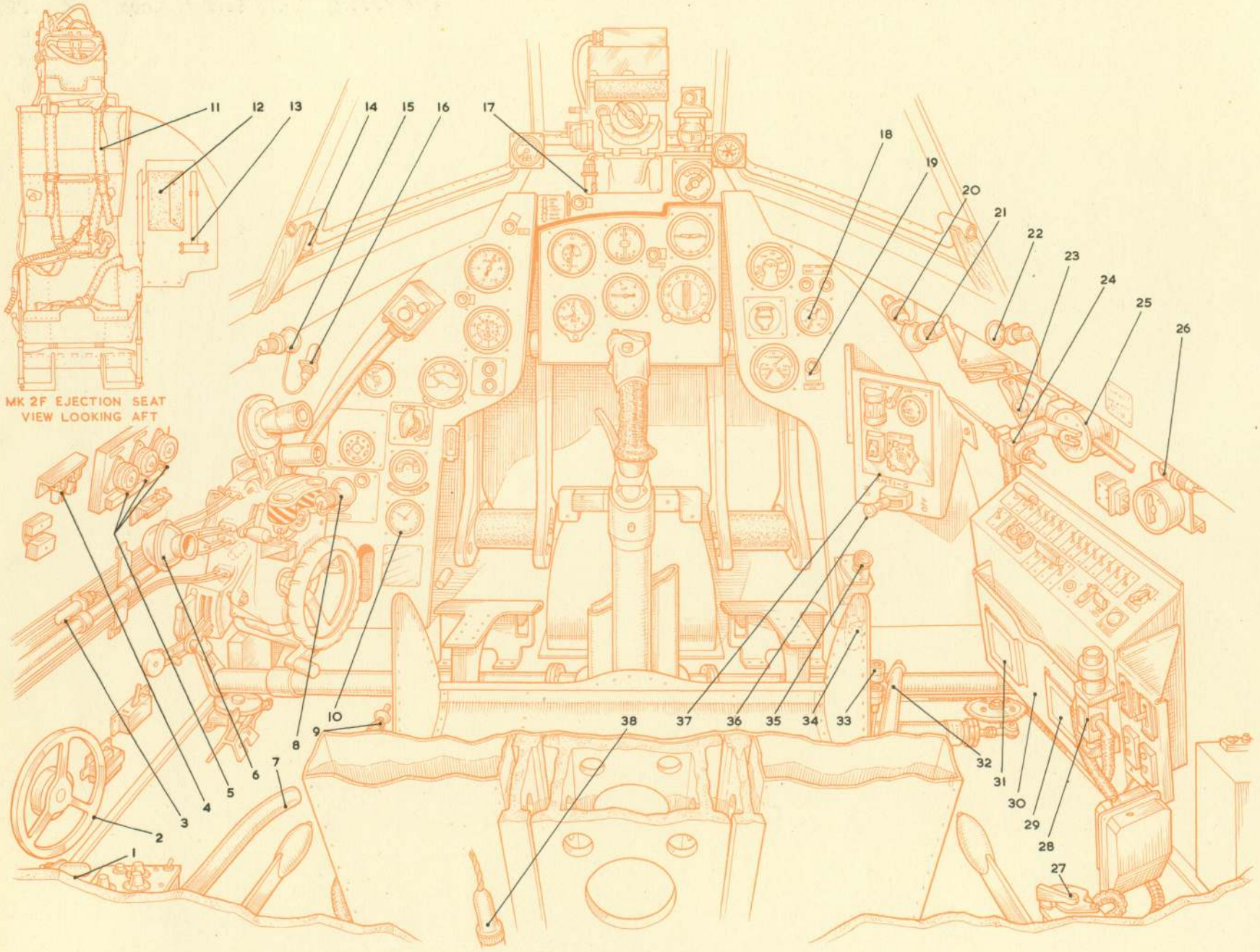

Fig. 4 Miscellaneous equipment

KEY TO FIG. 4 (MISCELLANEOUS EQUIPMENT)

1 FLOODLAMP
2 CABIN AIR CONTROL WHEEL
3 FLOODLAMP
4 STOWAGE FOR G.G.S. FILAMENTS
5 ON/OFF DIMMER SWITCHES
Aft—U/V lamps
Centre—Instrument panel floodlamps
Forward—Electrical panel floodlamps
6 PUNKAH LOUVRE
7 HYDRAULIC HAND PUMP
◀ 8 ULTRA-VIOLET LAMP ▶
9 ANTI-G CONNECTOR SOCKET
◀ 10 CLOCK ▶
11 MIC-TEL QUICK RELEASE CONNECTOR
12 STOWAGE FOR FLYING CONTROL LOCKING GEAR
13 FILLER CAP KEY
14 FLOODLAMP
15 U/V LAMP
16 FLOODLAMP
17 EMERGENCY FLOODLAMP
18 CABIN ALTIMETER
19 CABIN PRESSURE WARNING LAMP
20 FLOODLAMP
21 U/V LAMP
22 U/V LAMP
23 CANOPY SEAL COCK
Turn ON to inflate seal
24 RELEASE BUTTON—CANOPY WINDING HANDLE
25 CANOPY WINDING GEAR BOX
Release button for external use on exterior cockpit wall
26 FLOODLAMP—ELECTRICAL PANEL
27 PRESSURE BREATHING—ECONOMISER SELECTOR VALVE
Valve wirelocked in flight
28 ANTI-G TEST VALVE
29 COMPASS CORRECTOR CARD HOLDER
30 PILOT'S NOTES AND MAP CASE
31 COMPASS CORRECTOR CARD HOLDER
32 SEAT RAISING LEVER
33 MAIN OXYGEN SUPPLY SOCKET
34 PARACHUTE PACK CONTAINER RELEASE
Allows pilot to lean forward without disconnecting harness
35 DE-ICING PUMP
36 ANTI-G CONTROL VALVE
37 OXYGEN PANEL
◀ 38 MIC-TEL DISCONNECTION SOCKET
On ejection of seat ▶