Chapter 2

CONTROLS AND EQUIPMENT AT CREW STATIONS

LIST OF CONTENTS

(Completely revised)

LIST OF ILLUSTRATIONS

Introduction

1. This chapter provides information regarding the disposition, function and operation of the controls and equipment at the crew stations.

ENTRANCE TO STATIONS

2. Entry to the stations is through the door in the underside of the front fuselage as described in Sect.1, Chap.1 of this book.

CREW STATIONS

General

3. Accommodation is provided for three crew members in rearward-facing bucket-type seats in the aft end of the pressurised cabin. The positions are from port to starboard, A.E.O., navigator/plotter and navigator/bomb-aimer.

4. Facing the crew's seats is a single table extending the full width of the compartment. The table lid is hinged in three sections to provide stowage for charts and other items of equipment; a Type F morse key is mounted on the port side of the table. Three ration heaters (Ref.No.5V/70) are mounted below the table on the support struts; servicing and descriptive information for these heaters is given in A.P.4343E, Vol.1, Sect.10, Chap.5. When using the heaters it is imperative that a hole is made in each tin before they are placed in the heaters. No tin should be continuously heated for a period of more than two hours.

5. The crew's instrument panel, housing mainly radar equipment, is mounted above the table. The upper third of the panel is hinged to provide access to V.H.F. and radar equipment during ground servicing. Normally the hinged portion is held in the closed position by securing screws.

6. Fitted on the port side of the compartment, adjacent to the A.E.O's station, is the generator control panel; and on the starboard side, adjacent to the navigator/bomb aimer's station is a bomb control panel.

7. Two circular windows are fitted in

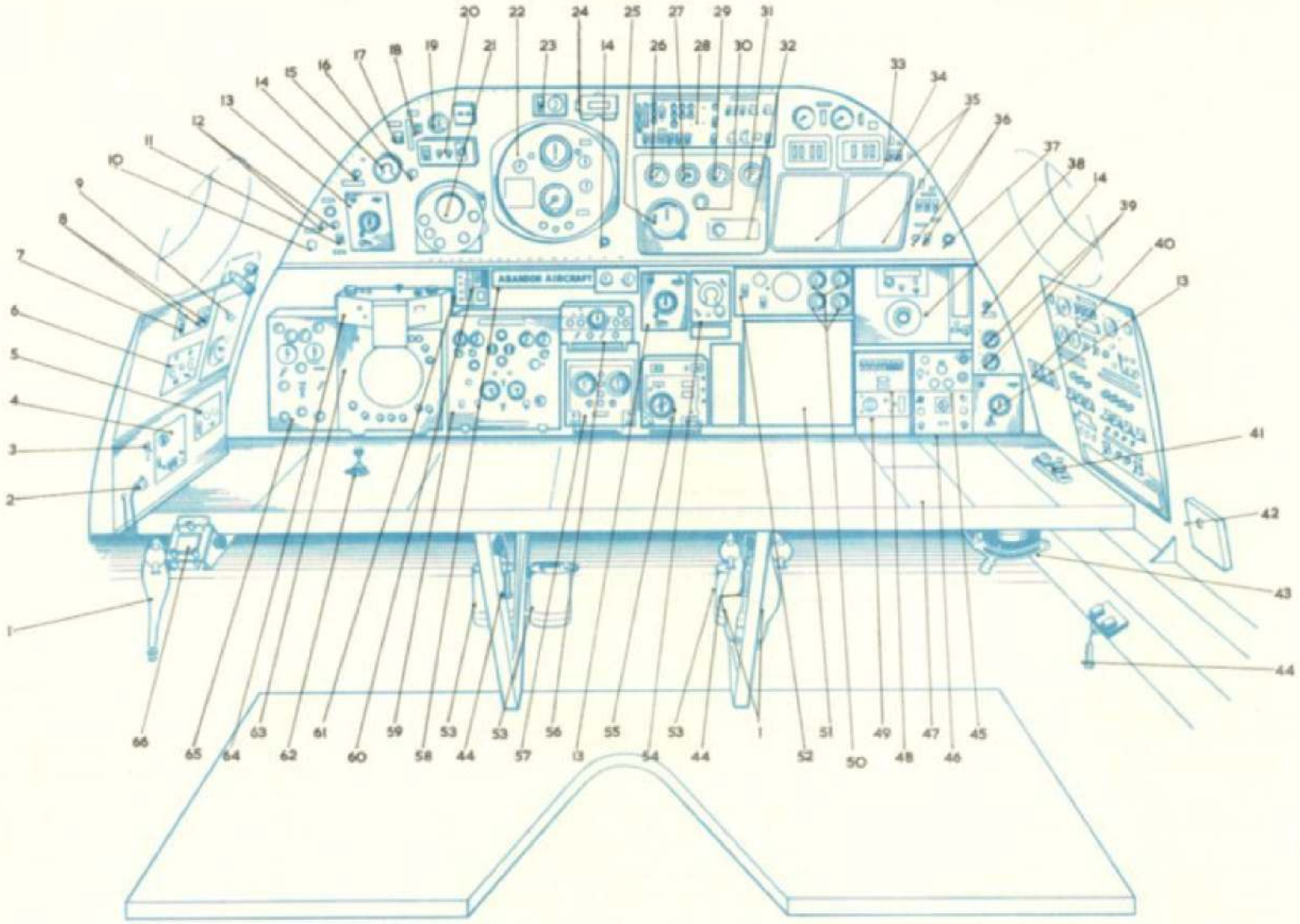

Fig. I. Navigational and miscellaneous controls – crew's station.

KEY TO FIG.1

NAVIGATIONAL AND MISCELLANEOUS CONTROLS AND EQUIPMENT - CREW'S STATION

1. SANITARY CONTAINERS
2. BOMB FIRING SWITCH
3. LIGHT SWITCH
4. FUZE TIMING SELECTOR
5. AIR BURST DELAY SETTING
6. SELECTOR PANEL
7. BOMB JETTISON SWITCH
8. BOMB FUZING SWITCHES
9. BOMB SPACING UNIT PANEL
10. SCANNER ROTARY CONTROL
11. SCANNER ROTATION CONTROL SWITCH
12. H2S SUPPLY INDICATORS
13. OXYGEN REGULATORS
14. LOSS OF CABIN PRESSURE WARNING INDICATORS
15. BOMB BAY TEMPERATURE GAUGE
16. CHARTBOARD LIGHT DIMMER SWITCH
17. BOMB BAY HEATING CONTROL SWITCH
18. BOMB BAY MANUAL HEAT CONTROL
19. TEMPERATURE SELECTOR BOMB BAY
20. A.M.U. CONTROL PANEL
21. INDICATOR UNIT TYPE 7921 - A.R.I.18090
22. NAVIGATION PANEL N.B.S.
23. H2S PRESSURISATION, AIR GAUGE AND CONTROL SWITCH
24. A.M.U. INDICATOR
25. G4B COMPASS, MASTER INDICATOR
26. AIRSPEED INDICATOR
27. ALTIMETER
28. INVERTER CONTROL PANEL
29. FUEL-GONE INDICATOR
30. AIR TEMPERATURE INDICATOR
31. BEARING AND TUNING INDICATOR TYPE 1630 - A.R.I.23023
32. LOOP CONTROLLER TYPE 1342 - A.R.I.23023
33. FUEL-GONE FLOW SWITCH
34. PERISCOPE HEATER SWITCH
35. CONTROL UNITS TYPE 7122 - A.R.I.18051
36. SWITCH AND INDICATOR - A.R.I. 18051
37. CLOCK
38. CONTROL AND INDICATOR UNITS - A.R.I.5800
39. OXYGEN SYSTEM GAUGES
40. EXPLOSION PROTECTION CONTROL PANEL (POST MOD.171)
41. SIGNALLERS KEY
42. BOMB TIME DELAY EMERGENCY JETTISON UNIT
43. PERISCOPE CONTROL HANDLE
44. INTERCOMMUNICATION SOCKETS
45. CONTROL UNIT TYPE 4189 - A.R.I.5874
46. CONTROL UNIT TYPE 7216 - A.R.I.5874
47. ACCESS TO PERISCOPE SIGHTING HEAD
48. R.T. CONTROL PANEL
49. CONTROL UNIT TYPE C629/APX6 - A.R.I.5848
50. FUEL CONTENTS GAUGES
51. CLASSIFIED
52. A.D.F. CHANGE-OVER SWITCH
53. RATION HEATERS
54. CONTROL UNIT TYPE 1274 - A.R.I.23023
55. G.P.I. MK.4
56. INDICATOR UNIT TYPE 26 - A.R.I.5816
57. INDICATOR UNIT TYPE 101 - A.R.I.5851
58. ABANDON AIRCRAFT WARNING SIGN
59. H2S CONTROL UNIT TYPE 585
60. EMERGENCY DOOR OPEN SWITCH
61. WIND INDICATOR UNIT
62. CONTROL UNIT TYPE 626 - A.R.I. 18089.
63. INDICATING UNIT TYPE 301 - N.B.S.
64. CAMERA TYPE R88 - N.B.S.
65. CONTROL UNIT TYPE 595 - N.B.S.
66. CONTROL UNIT TYPE 12580

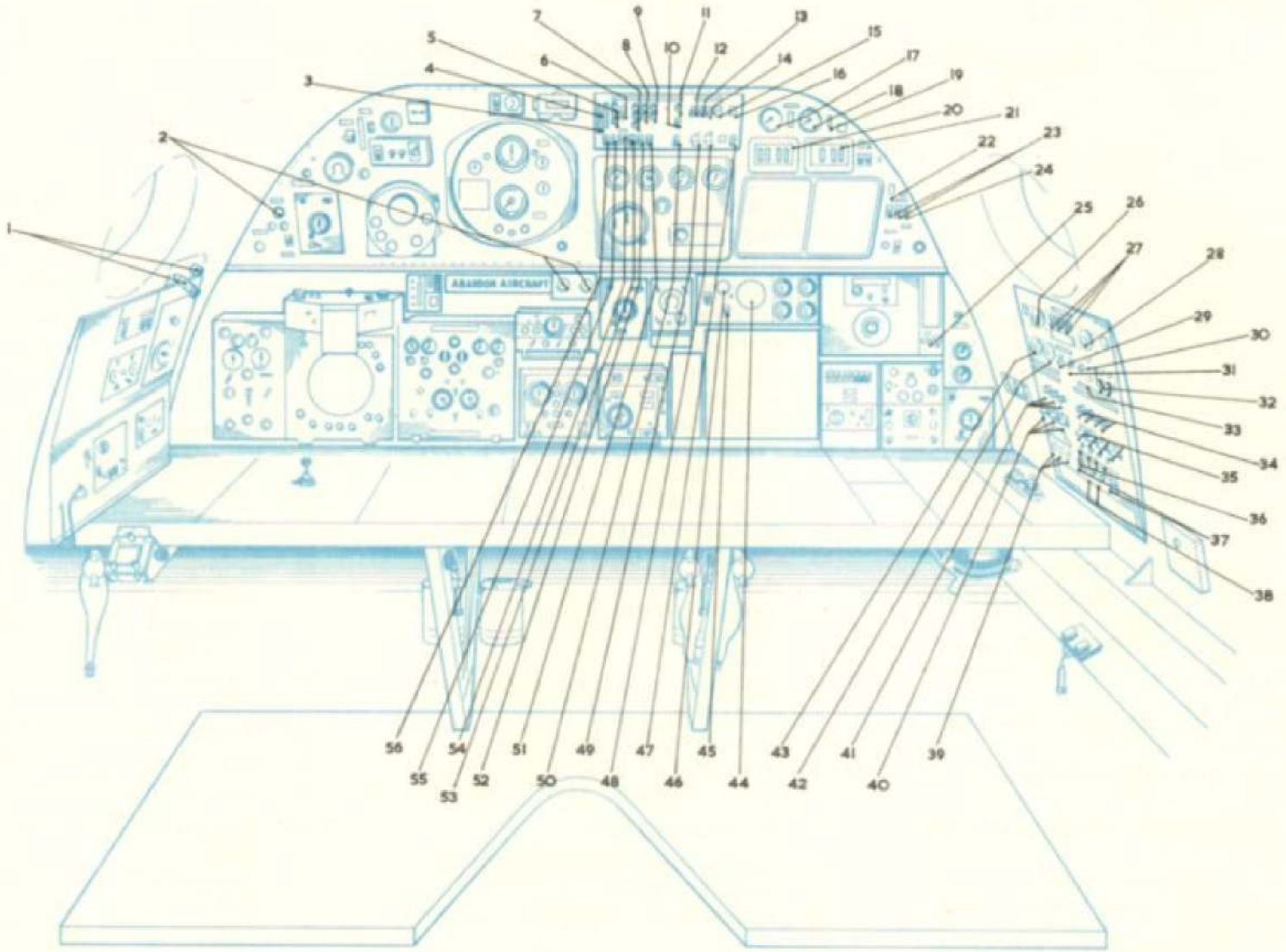

Fig. 2. Electrical controls — crew's station.

KEY TO FIG.2

ELECTRICAL CONTROLS - CREW'S STATION

1. AIR BOMB PANEL AND INDICATOR
2. CHARTBOARD LIGHTS DIMMER SWITCHES
3. H2S CONTROL SWITCH
4. N.B.C. CONTROL SWITCH
5. NO.1 INVERTER (TYPE 350) NEON INDICATORS
6. NO.2 INVERTER (TYPE 350) CONTROL SWITCH
7. NO.3 INVERTER (TYPE 350) NEON INDICATORS
8. NO.4 INVERTER (TYPE 153) NEON INDICATORS
9. NO.5 INVERTER (TYPE 153) NEON INDICATORS
10. NO.3 INVERTER (TYPE 350) CONTROL SWITCH
11. NO.3 INVERTER (TYPE 350) IN-INDICATOR
12. A.R.I.5844 CONTROL SWITCH
13. A.R.I.5800 CONTROL SWITCH
14. LOW RANGE CONTROL SWITCH - A.R.I.5378
15. HIGH RANGE CONTROL SWITCH - A.R.I.18090
16. OSC. TUNING SWITCH - A.R.I.18090
17. 96 VOLT BATTERY LOAD AMMETER
18. 24 VOLT BATTERY LOAD AMMETER
19. G.S. EQUIPMENT CONTROL SWITCH
20. GENERATOR LOAD AMMETERS
21. ROTARY TRANSFORMER LOAD AMMETERS
22. CABIN LIGHTS SWITCH
23. ROOF LIGHTS SWITCHES
24. LIGHT UNDER TABLE SWITCH
25. CHARTBOARD LIGHT DIMMER SWITCH
26. 28 VOLT BUSBAR VOLTMETER
27. RATION HEATERS CONTROL SWITCHES
28. 112 VOLT BUSBAR VOLTMETER
29. 28 VOLT BATTERY ISOLATION SWITCH
30. BATTERY DISCHARGE WARNING INDICATOR
31. 112 VOLT BATTERY ISOLATION SWITCH
32. VOLTAGE TEST SWITCHES
33. BATTERY BUSBAR ISOLATION INDICATOR
34. 112 VOLT GENERATOR FAILURE WARNING LIGHT
35. GENERATOR CONTROL SWITCHES
36. GENERATOR ENGAGE SWITCHES
37. NO. 3 AND 4 GENERATORS PARALLELING SWITCHES
38. NO. 3 AND 4 GENERATORS PARALLELING INDICATORS
39. 28 VOLT TRIMMERS
40. 28 VOLT ROTARY TRANSFORMER CONTROL SWITCHES
41. 28 VOLT ROTARY TRANSFORMER INDICATORS
42. 28 VOLT ROTARY TRANSFORMER TEST SOCKET
43. 28 VOLT ROTARY TRANSFORMER TEST SELECTOR
44. FLIGHT INSTRUMENTS SUPPLY FREQUENCY METER
45. FLIGHT INSTRUMENTS SUPPLY SELECTOR SWITCH
46. FLIGHT INSTRUMENTS SUPPLY VOLTMETER
47. A.D.F. CONTROL SWITCH
48. I.F.F. CONTROL SWITCH
49. GEE MK.3 CONTROL SWITCH
50. NO.3 INVERTER (TYPE 350) START SWITCH
51. NO.5 INVERTER (TYPE 153) CONTROL SWITCH
52. NO.4 INVERTER (TYPE 153) CONTROL SWITCH
53. G4B HEADING STABILISER SWITCH
54. EMERGENCY SELECTION SWITCH
55. NO.1 INVERTOR (TYPE 350) CONTROL SWITCH
56. G4B CUT-OUT SWITCH

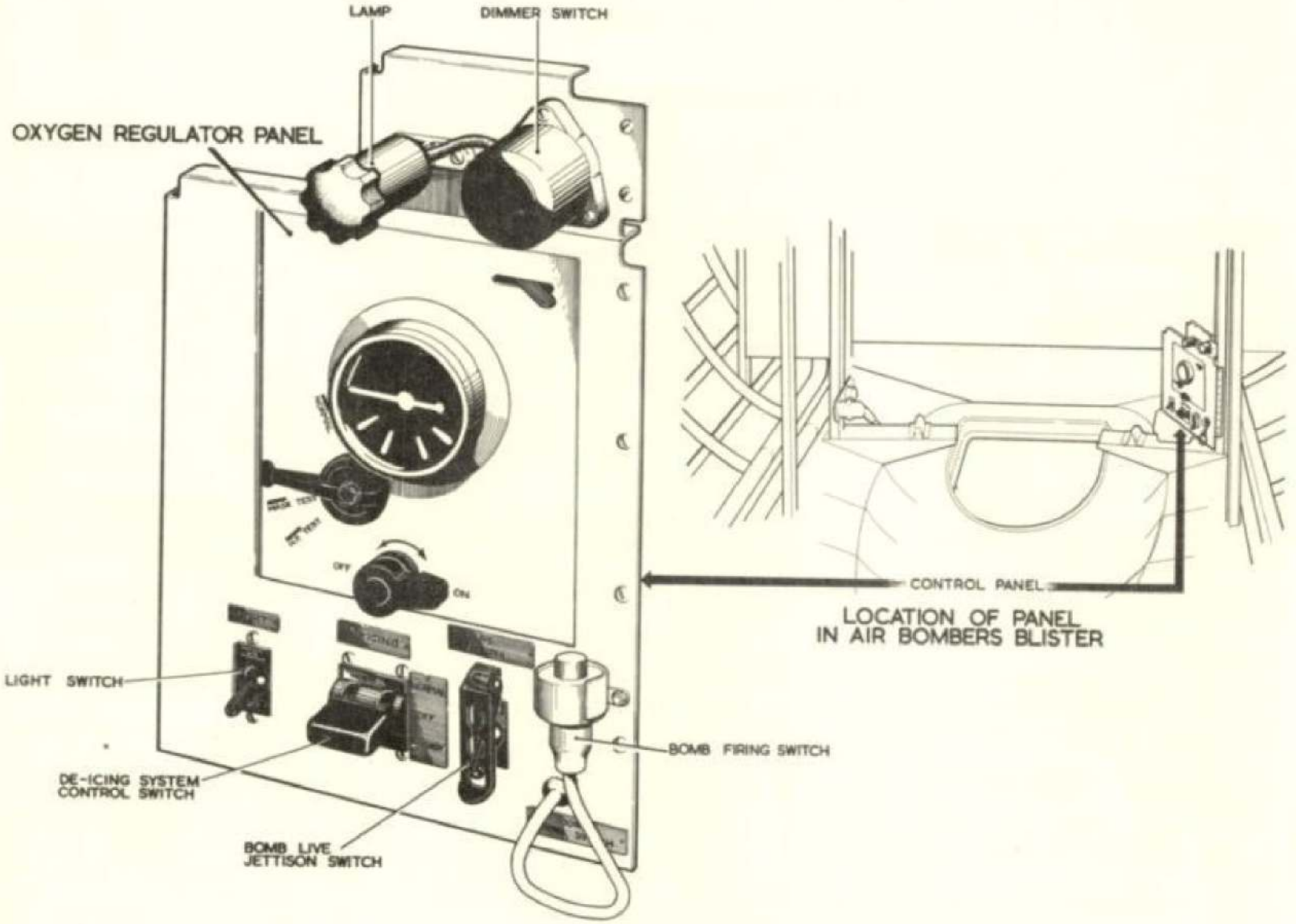

Fig. 3. Controls - air bomber's station.

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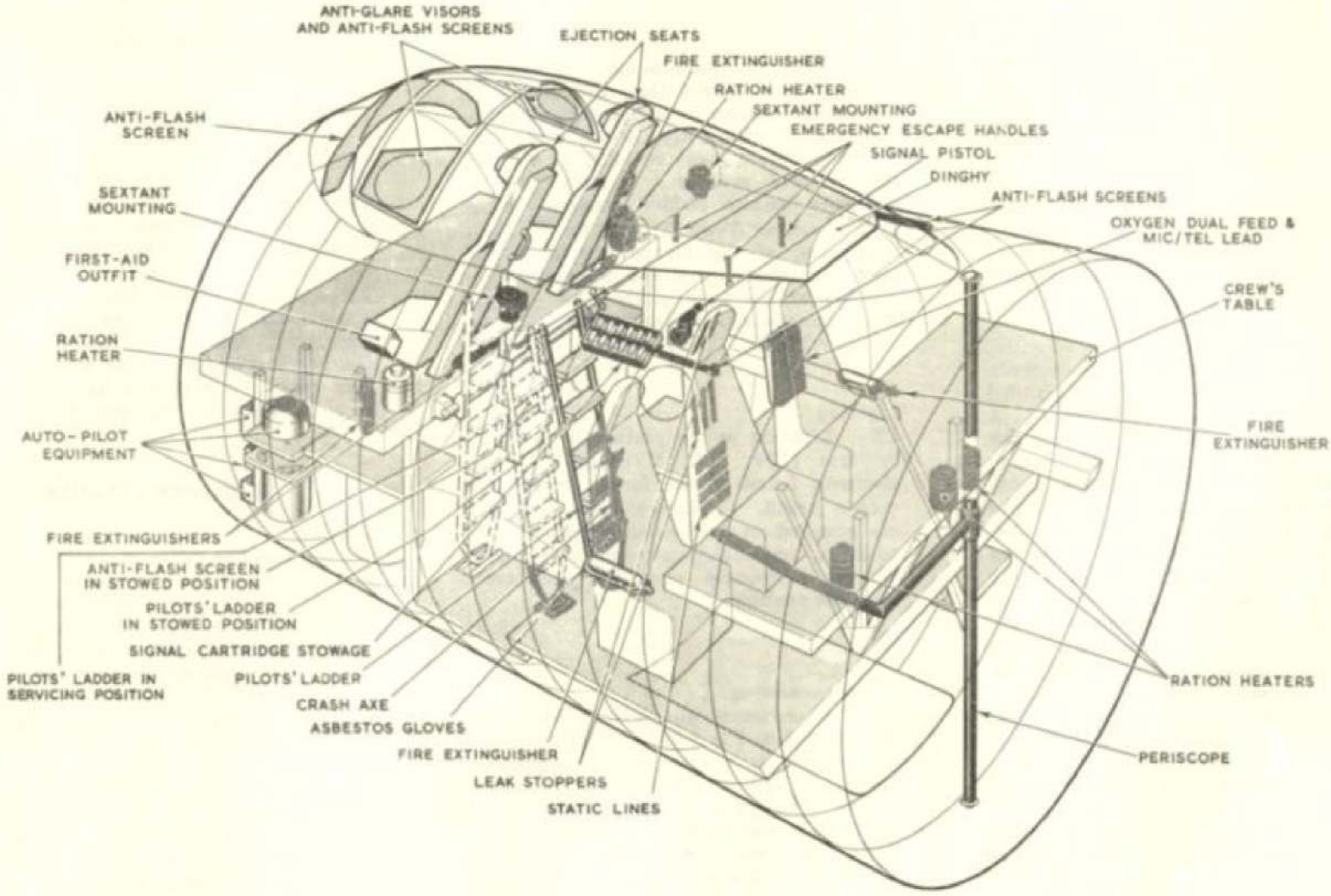

Fig.4. Equipment at crew stations.
(◀ Mod No. 1328 ▶)

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the compartment port and starboard side walls directly above the generator control and bomb control panels. To protect the crew members from nuclear flash each window is fitted with silicon proofed glass cloth anti-flash screens. The screens, secured to the structure above the windows, are normally rolled up and stowed at the tops of the windows. When in use the screens are secured in position over the windows by zip fasteners.

8. In each side of the canopy coaming is a sextant mounting. Above the signaller's seat is a black-and-yellow striped cabin decompression manual control handle.

Periscope installation

9. Provision is made at the crew's position to accommodate an upper and a lower rearward-facing periscope. A control handle at the port edge of the table is connected by cable, passing through a conduit, to the operating mechanism of each periscope; the control switch for illumination of the instrument is on the navigators panel. When the handle is raised upwards the view from the upper periscope is selected and conversely, placing of the handle downwards selects the lower periscope. Movement of the handle to left or right will rotate the selected periscope to give a view through 90 deg. in azimuth. The eye-piece of the sighting head is also at the edge of the table, the table being hinged so that the edge can be raised upwards when a periscope is in use. Full details of the installation are given in Vol.1, Book 2, Sect.5, Chap.2 of this publication.

V.G. recorder

10. Mounting channels together with the necessary pipe connections to the A.S.I. system and a rotary control lever labelled ON - OFF are provided on the port side of the crews compartment to accommodate a V.G. recorder Type I.T.A. 4-3-18. Descriptive and servicing details of this installation are given in Vol.1, Book 2, Sect.5, Chap.2 of this publication.

Seats

11. The rearward-facing seats are bolted to the crew's floor and also form the crash stations in an emergency, since they are sufficiently strong to cater for deceleration loads up to 25 g. when in the vertical position. Each seat is equipped with a padded headrest and a safety harness, Type ZC, (Ref.No.6F/246), consisting of lap straps pinned to the seat and shoulder straps attached to a shackle at the back of the seat. Full descriptive details of the harness are given in A.P.1182B, Vol.1, Sect.1, Chap.10.

Lighting

12. Lighting at the station is provided by four 112V, D.C. "Striplite" tubular elements fitted on the former behind the crew's seats. Three control switches are mounted on the instrument panel. In addition, an anglepoise unit is mounted on the instrument panel at each crew members position.

Sextant mounting

13. A pressure-tight sextant mounting, Mk.1B, is fitted in each side of the cockpit coaming to accommodate a periscope sextant. Each mounting holds the sextant in the retracted or operating position and also maintains cabin pressure at all times. A sleeved carrier tube is provided to take the sextant while, at the upper end of the tube, is a sealing plate which can be opened by operating a lever on the mounting. Interlocking safety catches prevent the sealing plate from being opened until the sextant has been inserted in the carrier tube. Conversely, the sextant cannot be withdrawn until the sealing plate has been closed.

14. It is essential that the index line on the sextant mounting is aligned to the aircraft heading each time a mounting is fitted to the aircraft or whenever a sextant is changed. The method of adjustment is given in Sect.5, Chap.2 of Vol.1, Book 2 of this publication.

Signal pistol

15. A pressure cabin signal discharger pistol Mk.2 (Ref.No.7B/1784) is installed in an air-tight mounting Mk.2, (Ref.No. 7B/1785) in the fuselage wall above the port seat. The pistol is designed so that it can be loaded, fired and unloaded without loss of cabin pressure. In an emergency, the pistol can be removed from its air-tight mounting and used as a hand pistol. Adjacent to the mounting is a stowage for 12 signal cartridges.

AIR BOMBER'S STATION

General

16. Below the cabin is the air bomber's blister, housing, a T4 bombsight (Ref.No. 9/4566) on the port side and, the air bomber's oxygen, i/c. and switching panel on the starboard side. Adjacent to the blister and secured in mountings fixed to the pilots' floor support structure is the T4 bombsight computor, (Ref.No. 9/4567) and amplifier, (Ref.No.9/4579).

17. As part of the crew members protection against nuclear flash, an anti-flash screen is provided for use over the air bomber's window. The screen consists of two 20 s.w.g. L72 plates, painted white on the side facing outwards, hinged together, and with a rubber seal around the periphery which bears against the window frame member to retain the screen in position over the window. When not in use the screen is fitted in a stowage secured to the radar equipment crate under the Second Pilot's floor.