FIRST OBSERVER'S MIKE SELECTOR MODULE ASSEMBLY P10-2

31-36-25

BOEING P/N 69-37333-1, -7

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 31568	Mar 10/70

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision

F Indicates foldout pages - print one side only

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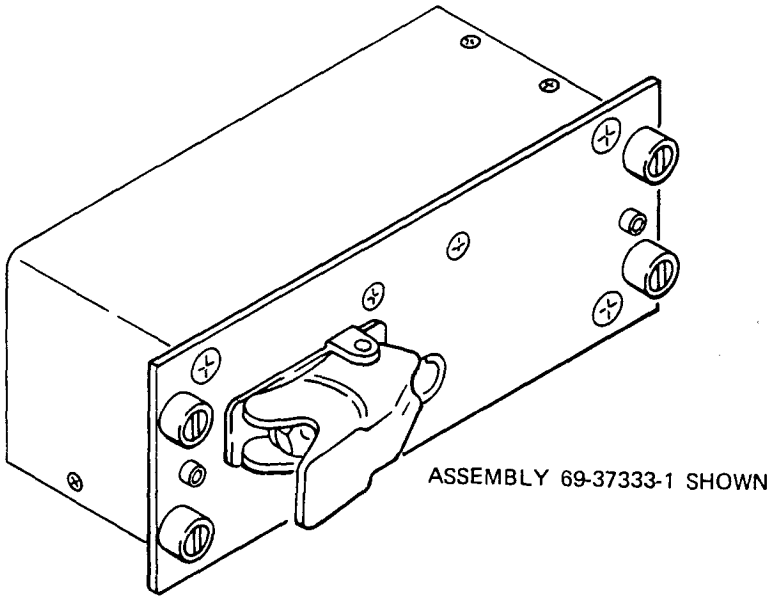
Boeing Part Numbers: 69-37333-1 and -7



First Observer's Mike Selector Module Assembly (P10-2)
Figure 1

1. DESCRIPTION AND OPERATION

A. Description

(1) The first observer's mike selector module assembly consists of baseplate assembly and a backplate which provide support and mounting provisions for a toggle switch, diodes, connectors, and a wire bundle assembly. Quick-release fasteners provide easy removal and installation.

B. Operation

(1) Switch "S1" is a two-position switch which is guarded in the "NORMAL" position. When in this position the output of the first observer's microphones is channeled into the normal interphone system. When the switch is placed in "PA" position, output of the first observer's microphones is channeled into the public address system.

(2) Power connector "L1" provides power for edge lighting when a lightplate is installed on the module assembly.

C. Leading Particulars

Height -- 2.25 inches (approximately)
Width -- 5.75 inches (approximately)
Length -- 3.50 inches (approximately)
Weight -- 1.00 pounds (approximately)
Operating Voltage -- 28.0 volts dc

2. DISASSEMBLY

A. General

(1) Disassemble only as necessary for cleaning, inspection, repair, and replacement of components.

(2) Unsolder wiring connections and remove connector pins only when replacement of wire or component is required. Tag disconnected wires to facilitate reassembly. Refer to Subject 20-12-01 for unsoldering procedures.

CAUTION: USE CARE WHEN HANDLING WIRING CONNECTIONS.

(3) Refer to Subject 31-10-01 for general instructions and illustrations of typical mounting of module elements.

NOTE: Nuts, screws, and washers that are part of the switch and power connector should be retained as a unit.

B. Disassembly (See figure 3.)

(1) Remove screws (1) from clip-on nuts (2) to free connector (3).

(2) Remove screws (4), washers (5), and backplate (6).

(3) Remove screws (7) and covers (8) or spacers (12).

NOTE: Screws (7) have been installed with Loctite sealant and may be difficult to remove.

(4) Do not disassemble screws (9) and standoffs (10 and 11) from covers (8) unless repair or replacement is required.

(5) Remove toggle switch (13), switch guard (14) and power connector (15).

NOTE: Do not disassemble items (16 through 26) unless repair or replacement is required.

3. CLEANING

WARNING: MAKE CERTAIN THAT ALL SOURCES OF FLASH OR FIRE ARE ELIMINATED FROM AREA OF POSSIBLE CONTACT WITH COMBUSTIBLE MATERIALS AND VAPORS DURING THE FOLLOWING PROCEDURE.

CAUTION: DO NOT APPLY ABRASIVE CLEANING MATERIALS OR BRUSHES TO ANY PART OF ASSEMBLY UNLESS OTHERWISE SPECIFIED. USE ONLY CLEANING METHODS AS OUTLINED HEREIN. DO NOT ALLOW SOLVENTS OR CLEANING FLUIDS (EXCEPT NAPHTHA AND ALCOHOL) TO CONTACT ELECTRICAL SURFACES. DO NOT ALLOW SOLVENTS OR CLEANING FLUIDS TO CONTACT IMPREGNABLE MATERIALS.

A. Remove dust or foreign matter from assembly using low pressure air suction.

B. Clean exterior surfaces per "Alkaline Cleaning" in Subject 20-30-03.

C. Clean interior surfaces and electrical contacts with aliphatic naphtha or isopropyl alcohol. Dry thoroughly with low pressure air.

D. For cleaning information related to soldering, refer to "Preparation for Soldering," in Subject 20-12-01.

E. Clean terminal lugs and other bonding areas per Subject 20-11-03.

4. INSPECTION/CHECK

A. Visual Checks

NOTE: Visual examination of wiring, electrical components, and solder connections shall be accomplished with a minimum of 5-power magnification unless otherwise specified.

(1) Check components for security of mounting.

(2) Check components and wire for damage.

(3) Check wire terminals and connections for proper installation.

(4) Check wire insulation for charring, cracking, and brittleness.

(5) Check wire for proper routing.

(6) Check connectors for bent, corroded, or cracked pins.

(7) Check nameplates, metal labels, and Metal-Cals for proper installation and legibility.

(8) Check components for legibility of reference designations and terminal identification.

(9) Check finished surfaces for damage.

(10) Check assembly for warping, bending, or other damage.

(11) Check insulating sleeving for proper installation and evidence of damage.

B. Special Checks

(1) Check vendor components per manufacturer's instructions.

5. REPAIR

A. Repair

(1) Instructions for repair of electrical connectors (plugs, receptacles, sockets, and wire terminations) are contained in "Repair of Electrical Connectors," Subject 20-11-02.

(2) Instructions for repair of soldered connections at terminals or solder cups are contained in "Soldering Electrical Connections," Subject 20-12-01.

(3) Instructions for repair of wire terminations at terminal lugs and preparation of electrical bonding areas are contained in "Repair of Electrical Terminations," Subject 20-11-03.

(4) Straighten assembly components and connector pins if bent.

(5) Silk screen, rubber stamp, or steel stamp as applicable, all damaged reference designations, terminal numbers, or component identification markings. Refer to Subject 20-50-10.

B. Refinish

NOTE: Refer to Subject 20-41-01 for decoding of F and SRF finish symbols and to Subject 20-30-02 for stripping of protective finishes.

(1) If protective finishes are worn or damaged, refinish as indicated:

(a) All Structural Parts -- Apply F-2.21, F-2.30, or SRF-2.30 all over.

(b) Front Plate or Baseplate -- Apply F-12.75 or SRF-14.9031 to front surface and edges.

(c) Screws (with heads exposed on front of front plate or baseplate) -- Apply F-14.91 to heads.

C. Replacement (See figure 3.)

(1) Replace all parts damaged beyond normal repair.

(2) Replace defective wiring with wire type and size as noted on schematic diagram.

(3) Replace all component's which fail to meet manufacturer's overhaul requirements.

(4) If diodes (18) require replacement, cover new diode with clear thermofit sleeving and refer to Subject 20-11-03 for installation procedure.

(5) If terminals (17) require replacement, attaching screws (16) may be difficult to remove as they are installed with Loctite sealant.

NOTE: On installation of new terminals (17), apply Loctite primer, grade T, and Nut-lock compound 74 (Loctite Corporation, 705 North Mountain Road, Newington Connecticut) to threaded areas of screws (16) per manufacturer's instructions.

(6) If studs (23) require replacement, use Deutsch tool R1405-6 for removal and H1403-6 for installation.

(7) If press nuts (24) require replacement, use punch press (or equivalent) utilizing a single impact stroke to install. Drive fastener from back of panel (22) until top of fastener is flush with rear surface of panel. Appendage of fastener shall protrude from front of panel.

(8) Replace damaged or illegible Metal-Cals (25 and/or 26) per Subject 20-50-05.

6. ASSEMBLY

A. General

(1) Complete required REPAIR procedures.

(2) Connect electrical wires per schematic diagram.

B. Reassembly (See figure 3.)

(1) Install power connector (15), toggle switch (13), and switch guard (14).

(2) If previously disassembled, attach standoffs (10 and 11) to covers (8) with screws (9).

(3) Attach covers (8) or spacers (12) to baseplate assembly (20) with screws (7).

NOTE: Apply Loctite primer, grade T, and Nutlock compound 74 (Loctite Corporation, 705 North Mountain Road, Newington Connecticut) to threaded areas of screws (7) per manufacturer's instructions.

(4) Secure connector (3) to backplate (6) using clip-on nuts (2) and screws (1).

(5) Install backplate (6) using washers (5) and screws (4).

7. FITS AND CLEARANCES

A. None.

8. TESTING

A. Test Equipment

(1) Multimeter -- Simpson 260 (or equivalent)

(2) Mating Connector -- BACC45FT22-55S (or equivalent) with pigtail leads as required.

B. Preparation for Test

(1) Check that all parts are properly installed and all wiring connected.

(2) Plug mating connector into module assembly connector.

C. Functional Test

(1) With S1 in "NORM" (left) position, check that continuity (resistance less than 1 ohm) exists between the following pins:

31 and 13	31 and 29	31 and 15	14 and 28
14 and 16	14 and 32	19 and 27	44 and 5
44 and 10	44 and 3	42 and 26	42 and 18
43 and 36	6 and 45	24 and 7	24 and 4
12 and 43	11 and 42		

(2) Check that no continuity (resistance greater than 1 megohm) exists between pins 3 and 17, 12 and 34, and 11 and 33.

(3) Place S1 in the "PA" (right) position and check that continuity exists between pins 3 and 17, 12 and 34, and 11 and 33.

(4) Check that no continuity exists between pins 12 and 43 and 11 and 42.

(5) With multimeter leads between pins 25 (+) and 6 (-), check that resistance measures less than 100 ohms. Reverse leads and check that resistance measures greater than 1 megohm.

(6) Repeat step (5) substituting pin 7 for pin 6.

(7) Check that no continuity exists between pins 1 and 2 and that continuity exists from pin 2 to center conductor of L1 and from pin 1 to outer sleeve of L1.

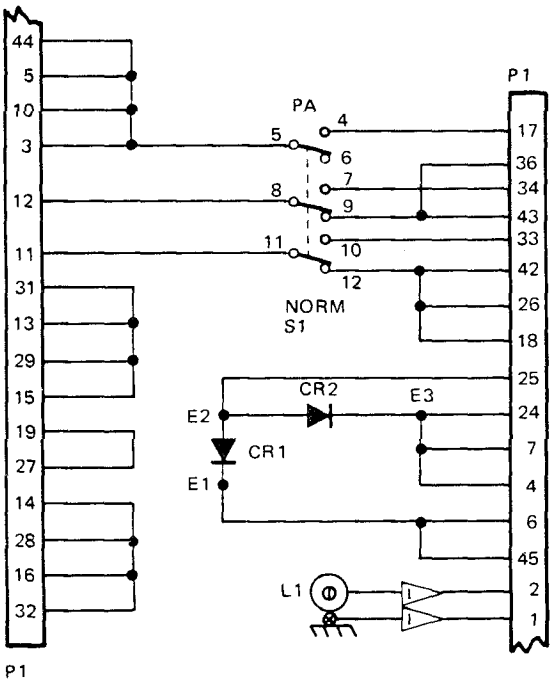
(8) Disconnect all test equipment.

9. TROUBLE SHOOTING

A. If failure of a test occurs, check for defective connections, incorrect wiring connections, and defective components.

NOTE: Trouble shooting is keyed to steps of functional test procedures. Trouble shooting is written with the assumption that all previous steps of the functional test were satisfactorily completed.

	Trouble	Possible Cause	Correction
(1)	Failure of test, para. 3.C.(1)	Defective wiring	Repair or replace wiring
		Defective switch S1	Replace switch
(2)	Failure of test, para. 3.C.(2)	Defective switch S1	Replace switch
(3)	Failure of test, para. 3.C(3)	Defective wiring	Repair or replace wiring
		Defective switch S1	Replace switch
(4)	Failure of test, para. 3.C.(4)	Defective switch S1	Replace switch
(5)	Failure of test, para. 3.C.(5) or (6)	Defective diode(s) CR1 and/or CR2	Replace diode(s)
(6)	Failure of test, para. 3.C.(7)	Defective power connector L1	Replace power connector



NOTE: ALL WIRE BMS 13-16 CLASS I, TYPE I
SIZE AWG 22 UNLESS OTHERWISE NOTED
1 WIRE SIZE AWG 20

Schematic Diagram
Figure 2

10. STORAGE INSTRUCTIONS

A. Protect assembly from dust, moisture, and atmospheric conditions. Place assembly in plastic bag and insert in protective carton, padded sufficiently to ensure against damage during storage and handling. Close, tape, and mark carton with assembly identity and date of overhaul.

B. For further information, refer to "Protection, Storage, and Handling of Airplane Components," Subject 20-70-01.

11. SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

A. Tools used for repair of electrical connectors are listed in Subject 20-11-02.

B. Tools used for repair of electrical terminations and for replacement of insulating sleeving are listed in Subject 20-11-03.

C. Tools used for soldering electrical connections are listed in Subject 20-12-01.

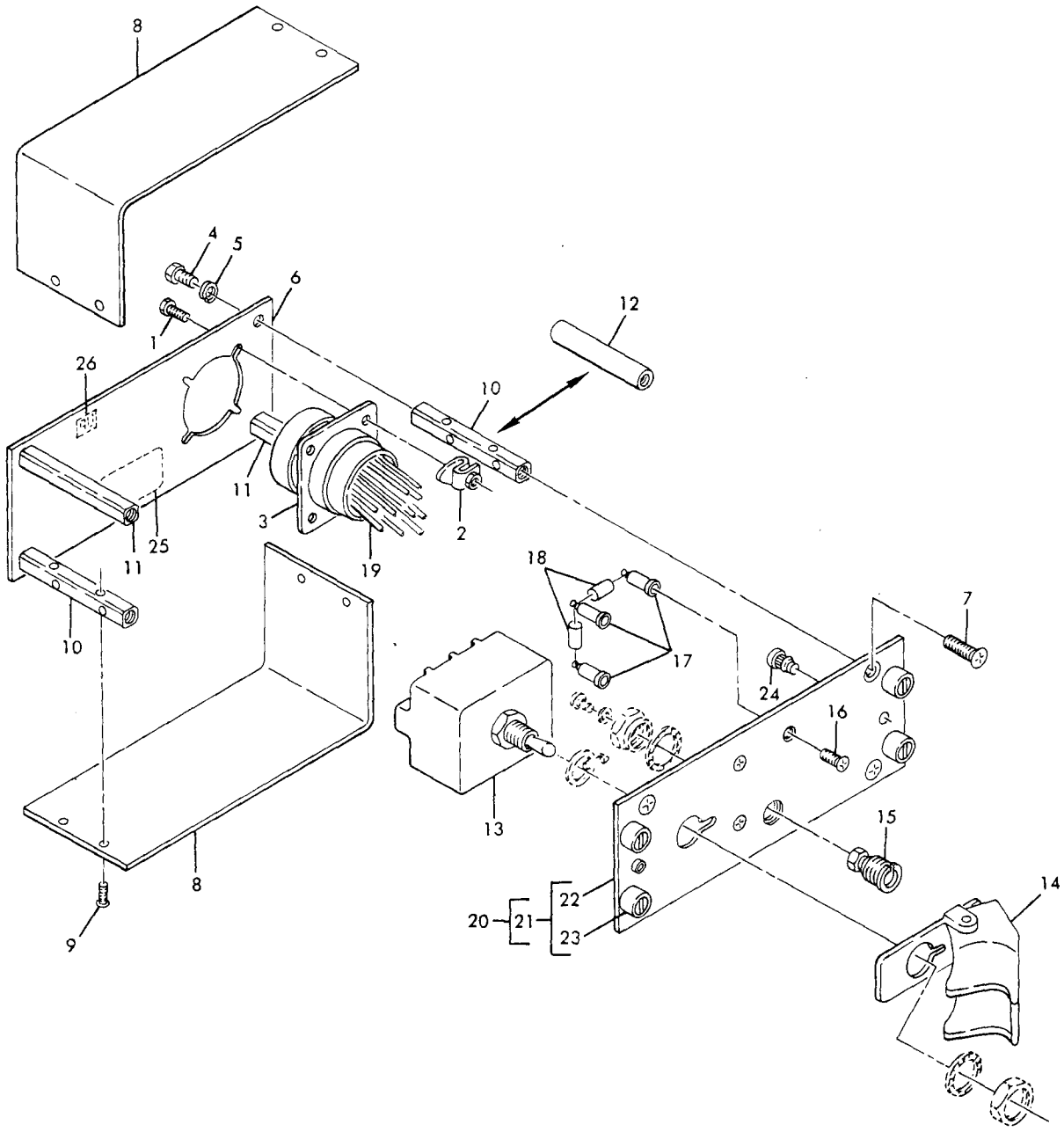
D. R1405-6 -- Stud Removal Tool (Deutsch Fastener Corporation, Los Angeles, California) or equivalent

E. H1403-6 -- Stud Installation Tool (Deutsch Fastener Corporation, Los Angeles, California) or equivalent

NOTE: For additional equipment required for testing, refer to TESTING.

12. ILLUSTRATED PARTS LIST

A. Exploded View



First Observer's Mike Selector Module Assembly (P10-2)
Figure 3

B. Group Assembly Parts List

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
3-	69-37333-1		FIRST OBSERVER'S MIKE SELECTOR MODULE ASSEMBLY (P10-2)		
	69-37333-7		FIRST OBSERVER'S MIKE SELECTOR MODULE ASSEMBLY (P10-2)		
1	BACS12CB04-5		. SCREW		2
2	BACN10NW1		. NUT, Clip-on		2
3	BACC45FN22 -55P		. CONNECTOR		1
4	BACS12CB06-5		. SCREW		4
5	MS35337-41		. WASHER		4
6	69-47505-2		. BACKPLATE		1
7	NAS514P632-5		. SCREW		4
8	69-47505-1		. COVER	a	2
9	NAS514P440-4		. SCREW	a	8
10	69-37268-27		. STANDOFF	a	2
11	69-37268-28		. STANDOFF	a	2
12	66-13524-11		. SPACER	b	4
13	MS24525-23		. SWITCH, Toggle		1
14	11170-1		. GUARD, Switch, V72914		1
15	SCN001		. CONNECTOR, Power, V95354		1
16	NAS514P632-3		. SCREW		3
17	1411A		. TERMINAL, V88245		3
18	1N4723		. DIODE, V04713		2
19	69-37333-5		. WIRE BUNDLE ASSEMBLY		1
20	69-37333-2		. BASEPLATE ASSEMBLY		1
21	BACP10U0225G		. . PANEL ASSEMBLY		1
22	BACP10U0225AG		. . . PANEL		1
23	BACS21DD1		. . . STUD		4
24	BACN10PA06-6		. NUT, Press		2
25	BAC27DCC289		. METAL-CAL		1
26	BACM10L100 -1CU		. METAL-CAL		1

a used on 69-37333-1
b used on 69-37333-7

Reference Designation Index (See Schematic Diagram)		
Reference Designation	Part Number	Item No.
CR1, CR2	1N4723	18
E1, E2, E3	1411A	17
L1	SCN001	15
P1	BACC45FN22-55P	3
S1	MS24525-23	13

VENDOR CODE

Vendor	Name and Address
V04713	Motorola Semi-Conductor Products Inc. 5005 East McDowell Road Phoenix, Arizona 85008
V72914	Grimes Manufacturing Co. 515 North Russell Urbana, Ohio 43078
V88245	Litton Precision Products Inc. USECO Division 13536 Saticoy Street Van Nuys, California 91409
V95354	Methode Manufacturing Corp. 1700 South Hicks Road Rolling Meadows, Illinois 60008