TO: ALL HOLDERS OF AUDIO ACCESSORY UNIT ASSEMBLY M69, OVERHAUL MANUAL, 23-56-07

REVISION NO. 33, DATED JUL 1/08

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D & O	D / Assy	Cleaning	Insp / Chk	Repair	Assy	F / C	Test	T / Shooting	S / Tools	Storage	IPL	L / Overhaul
Removed BAE Systems assemblies from manual	X				X			X	X			X	

AUDIO ACCESSORY UNIT ASSEMBLY M69

23-56-07

BOEING P/N 65-85316-11

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
65-52804-23-01		PRR 33940	Dec 5/88
65-52804-23-02			Mar 5/92
65-52804-23-02 R1			Jun 1/94
65-52804-23-02 R2			Jun 1/94

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision
F Indicates foldout pages - print one side only

	PAGE	DATE
	23-56-07	
*	T-1	Jul 1/08
	T-2	BLANK
*	LEP-1	Jul 1/08
	LEP-2	BLANK
*	T/C-1	Jul 1/08
	T/C-2	BLANK
*	1	Jul 1/08
*	2	Jul 1/08
*	3	Jul 1/08
*	4	DELETED
*	401	Jul 1/08
	402	BLANK
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*	702	Jul 1/08
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*	702B	DELETED
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* F	831	DELETED
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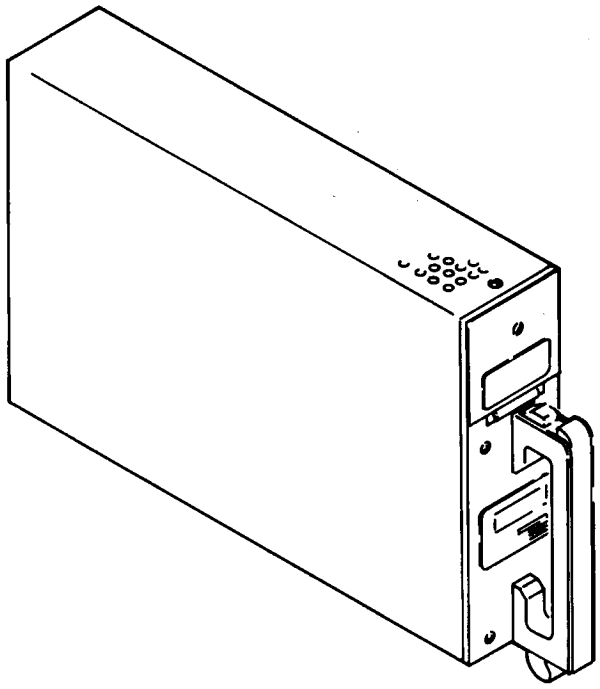
*	1106C	DELETED
*	1106D	DELETED
*	1107	Jul 1/08
*	1108	DELETED
*	1109	DELETED
*	1110	DELETED

TABLE OF CONTENTS

*[1] Special instructions not required. Use standard industry practices.

*[2] Use applicable procedures in SOPM 20-11-04 and standard industry practices.

AUDIO ACCESSORY UNIT ASSEMBLY (M69)



Audio Accessory Unit Assembly
Figure 1

DESCRIPTION AND OPERATION

NOTE: For coverage of 65-52804-11, -23, -38, -49, -53, -67, -69, -79, -81, -116, -124, -127, -129, -131, -133, -135, -137, -139, -142, -144, -146, -148, -154, -158, -159, -163, -171, -175, -179, -183, -185, -187 and -191, refer to BAE Systems (V89954 BAE Systems Controls Inc., 600 Main St., Johnson City, NY 13790-1806) CMM 23-56-07.

1. Description

   A. The audio accessory unit assembly consists of printed circuit assemblies, potentiometers, and a wire bundle mounted in a chassis assembly.

   B. The audio accessory unit assembly is located in the electronic equipment rack.

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2. Operation

A. The audio accessory unit assembly contains components and circuitry used with various communications systems. Amplifiers with associated potentiometers control volume level of the flight, service and attendant interphone systems. Other potentiometers provide control for passenger address sidetone level and volume level indicator sensitivity.

3. Functional Description (See schematic diagram.)

A. Audio System Loads

(1) Impedance matching resistors on printed circuit assembly A1 provide audio system loads.

B. Interphone Signal Isolation

(1) Interphone signal isolation diodes are contained on printed circuit assembly A2.

C. Sensitivity and Output Control

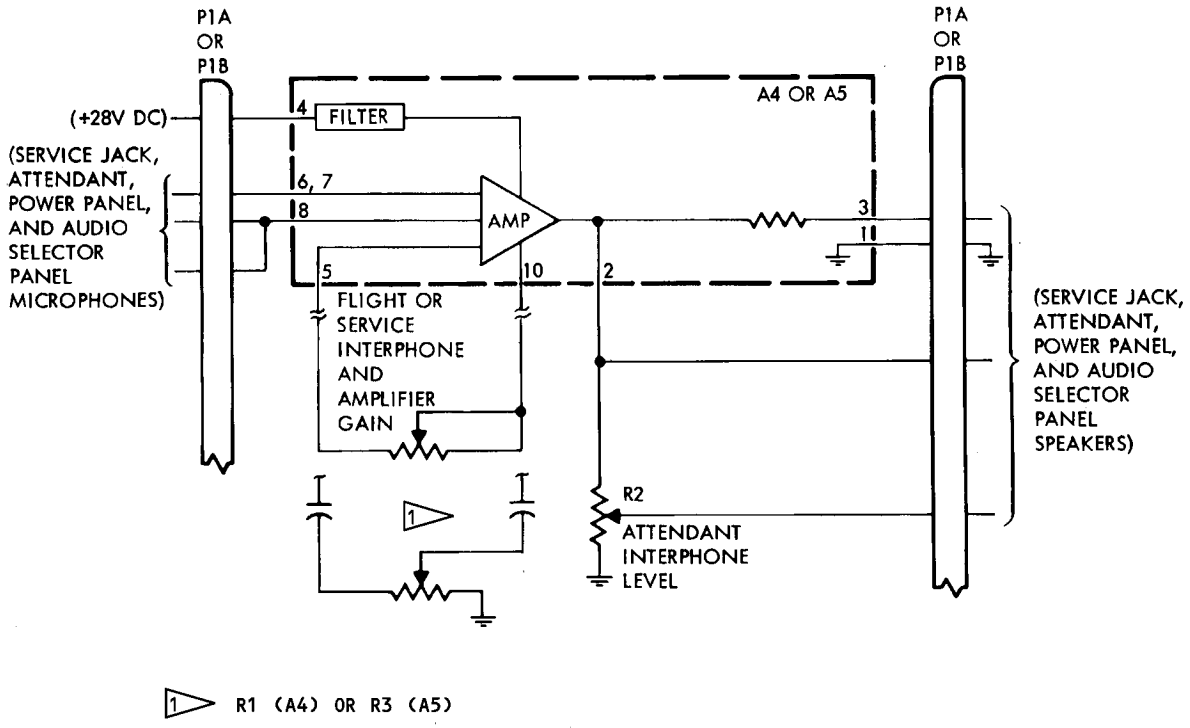
(1) Diode and resistor circuits on printed circuit assembly A3 perform sensitivity and output control of various audio circuits.

D. Interphone Amplifier

(1) Interphone amplifiers A4 and A5 provide audio gain and output level regulation for the flight, service and attendant interphone systems.

(2) Interphone amplifier A4 and A5 operation is functionally identical. Fig. 2 and Ref schematic diagram for audio accessory unit pin numbers.

(a) With +28 volts dc applied to printed circuit assembly pin 4 and pin 1 grounded, circuit will amplify signals applied at pins 6, 7 and 8. The output signal at pins 2 and 3 can be adjusted with the flight or service interphone and amplifier gain control potentiometer.



Common Simplified Interphone Amplifier Circuit
Figure 2

E. Audio signal level potentiometer adjustments are as follows:

(1) Flight Interphone and Amplifier Gain Control R1

(2) Attendant Interphone Level Control R2

(3) Service Interphone and Amplifier Gain Control R3

(4) Passenger Address Sidetone Level Control R4

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REPAIR

1. If printed circuit assembly keying plugs are to be replaced, insert at connector position listed in Fig. 401.

Connector	Insert at Position
J1 (XA1)	5 and 6
J2 (XA2)	7 and 8
J3 (XA3)	13 and 14
J4 (XA4)	9 and K
J5 (XA5)	9 and K
J6 (XA6)	2 and B, 8 and J

Printed Circuit Assembly Connector Indexing
Figure 401

2. Replace damaged wire with BMS 13-16, Class 1, Type 1, size AWG 22 except where noted otherwise on schematic diagram.

TESTING

1. Test Equipment (Fig. 701)

Test Equipment	65-85316-11
Power Supply, 27.5 volts dc, 0.5 amp	1
Audio Signal Generator: Hewlett-Packard 205AG or equivalent	1
Vacuum Tube Voltmeter: Hewlett-Packard 400D or equivalent	1
Multimeter: Simpson 260 or equivalent	1
Capacitor: 47uF ±20%, 35 vdc	C1
Resistor: 150 ohms ±5%, 1/2W	R1, R2, R3
Test Connector (with identified pigtail leads): DPX2MB57S57S33B0000 *[1]	1
Switches: SPST	-
SPDT	S1-S4, S7
SPDT, center off	
SP3T	S5
DPDT, center off	S6
Lamp: 40 ma, 28 volt (1819 or equivalent)	1
Headset: 600 ohm, Telephonics Model TC149G, P/N 20046-1 or equivalent	1

*[1] ITT Corp., DBA ITT Cannon, 666 East Dryer Road, Santa Ana, California 92702-5612

Test Equipment
Figure 701

2. Functional Test

A. Test 65-85316-11 Assembly as follows:

(1) Verify continuity between pins listed in Fig. 702.

From	To
B-51	B-22
B-51	B-30
B-51	B-39
B-40	B-49

From	To
A-12	A-13
A-1	A-2
A-10	A-20
B-41	Chassis

Wiring Continuity Checks
Figure 702

(2) Resistance Check

(a) Verify resistance values listed in Fig. 703.

Component Tested	Measure Between Pins	Resistance (ohms)
A1R3	B-51 to B-28	560 ±40
A1R9	B-51 to B-37	560 ±40
A1R5	B-51 to B-38	560 ±40
A1R4	B-51 to B-44	560 ±40
A1R10	B-51 to B-45	560 ±40
A1R6	B-51 to B-46	560 ±40
A1R2	B-51 to B-47	560 ±40
A1R11	B-51 to B-54	560 ±40
A1R8	B-51 to B-55	560 ±40
A1R1	B-51 to B-56	560 ±40
A1R7	B-51 to B-57	560 ±40
A3R9	A-3 to A-1	200 ±14
A3R8	A-3 to A-4	390 ±30
A3R7	A-5 to A-4	620 ±50
A3R6	A-5 to A-6	820 ±60
A3R5	A-7 to A-6	2K ±150
A3R4	A-12 to A-14	200 ±14
A3R3	A-15 to A-14	390 ±30
A3R2	A-15 to A-16	820 ±60
A3R1	A-16 to A-17	1K ±70

Resistance Checks, Cards A1, A3, and A7
Figure 703 (Sheet 1)

Component Tested	Measure Between Pins	Resistance (ohms)
A7R1	B-25 to B-52	12 ±1K
A1R14	B-25 to B-34	1.2K ±100 *[1]
A1R15	B-25 to B-35	1.8K ±150 *[2]
A1R12	B-36 to B-26	1.2K ±100 *[1]
A1R13	B-36 to B-27	1.8K ±150 *[2]

*[1] 22K ±2200 if 65-54485-40 has replaced 65-54485-2 in A1 position
*[2] 91K ±9100 if 65-54485-40 has replaced 65-54485-2 in A1 position

Resistance Checks, Cards A1, A3, and A7
Figure 703 (Sheet 2)

(b) Verify resistance of 1000 ±100 ohms between pins A-31 and B-30.

(c) Verify that PA ADJUST, R4 S.T. LEV control varies resistance between pins A-21 and A-31 from 0 to 5 ohms CW to 1000 ±100 ohms CCW.

(d) Set R-4 S.T. LEV control for a resistance of 200 ohms between pins A-21 and A-31. Lock R4 control.

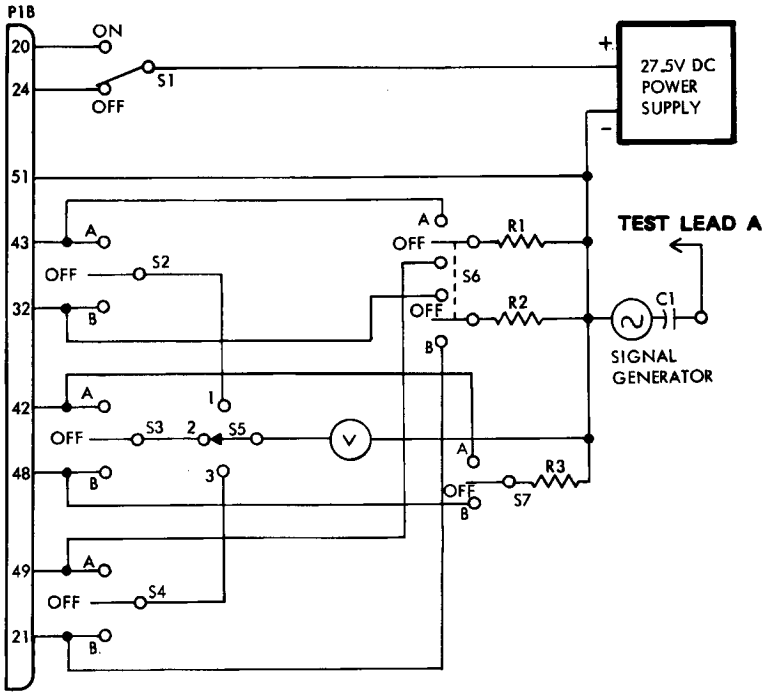
(e) Adjust R2 and verify that resistance between B-31 and B-51 varies from 0 to 5 ohms CCW to 250 ±30 ohms CW.

(3) Diode Check

(a) Verify correct polarity of diode circuits by connecting an ohmmeter to, and measuring resistance between pins in Fig. 704.

Component Tested	Measure Between Pins	50 Ohms Max with (+) at Pin:	100K Min with (+) at Pin:
A2CR1	B-9 to B-19	B-19	B-9
A2CR2	B-8 to B-18	B-18	B-8
A2CR3	B-7 to B-17	B-17	B-7
A2CR4	B-5 to B-16	B-16	B-5
A2CR5	B-5 to B-15	B-15	B-5
A3CR1	A-25 to A-34	A-25	A-34
A3CR2	A-24 to A-34	A-24	A-34
A3CR3	A-43 to A-53	A-53	A-43
A3CR4	A-35 to A-44	A-44	A-35
A7CR1	B-1 to B-10	B-1	B-10
A7CR2	B-6 to B-10	B-6	B-10
A7CR3	B-2 to B-11	B-2	B-11
A7CR4	B-6 to B-11	B-6	B-11
A7CR5	B-3 to B-12	B-3	B-12
A7CR6	B-6 to B-12	B-6	B-12
A7CR7	B-4 to B-13	B-4	B-13
A7CR8	B-6 to B-13	B-6	B-13
A7CR9	B-14 to B-23	B-23	B-14
A7CR10	B-6 to B-14	B-6	B-14

Diode Checks, Cards A2, A3, A7 and A8
Figure 704



Test Setup
Figure 705

(4) A4 Interphone Amplifier

(a) Connect test setup per Fig. 705. Set switches S1 thru S4 and S7 to OFF; S5 to 1; and S6 to A.

(b) Set S2 to A. Verify voltmeter reading of 6.7 ±1 volts.

(c) Set S2 to B. Verify voltmeter reading of 6.7 ±1 volts.

(d) Set S6 to OFF; S3, and S7 to A; and S5 to 2.

(e) Connect test lead A to pin B-43 and adjust audio signal generator for 50 ohms, 250 millivolt, 1000-Hz output.

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(f) Adjust R1 FLT GAIN control and verify that voltmeter reading varies at least from 0.15 to 2.5 volts (rms) (low end of potentiometer is counterclockwise position). Set R1 for an output of 0.7 volt (rms) and lock control. Set S3 to OFF.

(g) Connect test lead A to pin B-32 and adjust audio signal generator for 50 ohms, 250 millivolt, 1000-Hz output.

(h) Connect headset between pins B-33 and B-51 and verify that 1000-Hz signal is present in headset.

(5) A5 Attendant and Service Interphone Amplifier

(a) Set S1 to ON. Set S2 and S7 to OFF; S5 to 3, and S6 to B.

(b) Set S4 to A and verify voltmeter reading of 6.7 $\pm$1 volts.

(c) Set S4 to B and verify voltmeter reading of 6.7 $\pm$1 volts.

(d) Set S3 and S7 to B; S5 to 2; and S4 and S6 to OFF.

(e) Connect test lead A to pin B-49 and adjust audio signal generator for 50 ohm, 250 millivolt, 1000-Hz output.

(f) Adjust R3 SERV ATT GAIN control and verify that voltmeter reading varies from 0.15 to 2.5 volts (rms) (low end of potentiometer is counterclockwise). Set R3 for an output of 1.0 volt (rms) and lock control.

(g) Set R2 for an output of 0.5 volt between pins B-31 and B-51. Lock control.

(h) Connect test lead A to pin B-21. Connect a headset between pin B-50 and ground and verify that 1000-Hz signal is present in headset.

(i) Remove all connections.

B. Verify indexing on rear connector as follows:

NOTE: Darkened portion indicates extended part of keying post.

Assembly	Indexing
65-85316-11	

TROUBLE SHOOTING

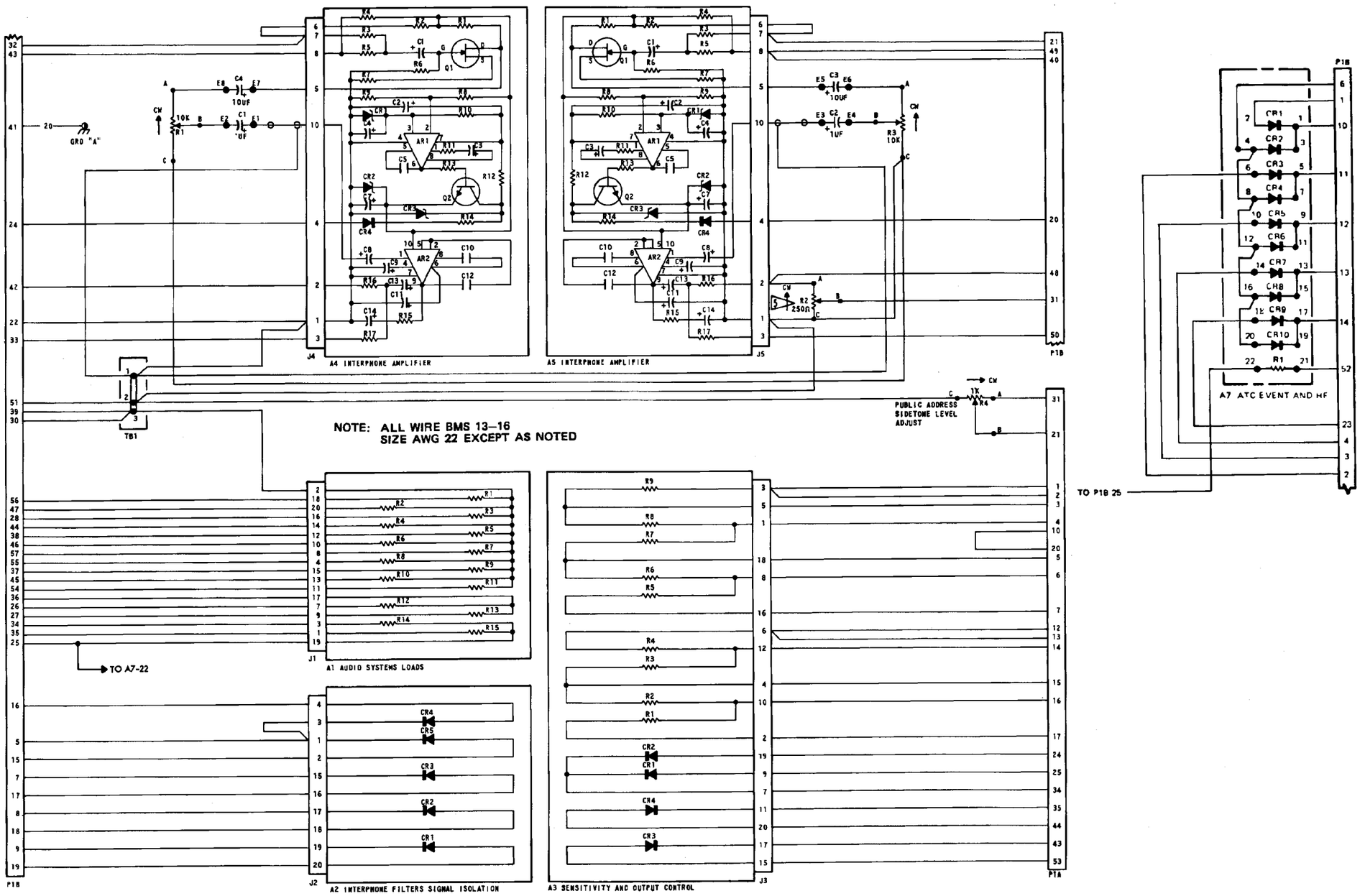
1. If failure of a test occurs, check for defective connections, incorrect wiring connections, and defective components.

2. The trouble shooting table is keyed to the steps of the functional test procedures. Trouble shooting is written with the assumption that al1 previous steps of the functional test were satisfactorily completed.

3. When trouble has been isolated to a specific component, or associated circuitry, it will be necessary to replace components.

A. 65-85316-11

	Trouble	Possible Cause and Corrective Action
(1)	Step (2)(a)	Component tested
(2)	Step (2)(b) or (2)(c)	R4 and K1
(3)	Step (2)(e)	R2
(4)	Step (3)(a) or (4)	Component tested
(5)	Step (5)(b) or (5)(c)	A4
(6)	Step (5)(f) or (5)(g)	A4 or R1
(7)	Step (5)(i)	A4
(8)	Step (6)(c) or (6)(d)	A5
(9)	Step (6)(g) or (6)(h)	A5 or R3
(10)	Step (6)(j)	R2
(11)	Step (6)(k)	A5

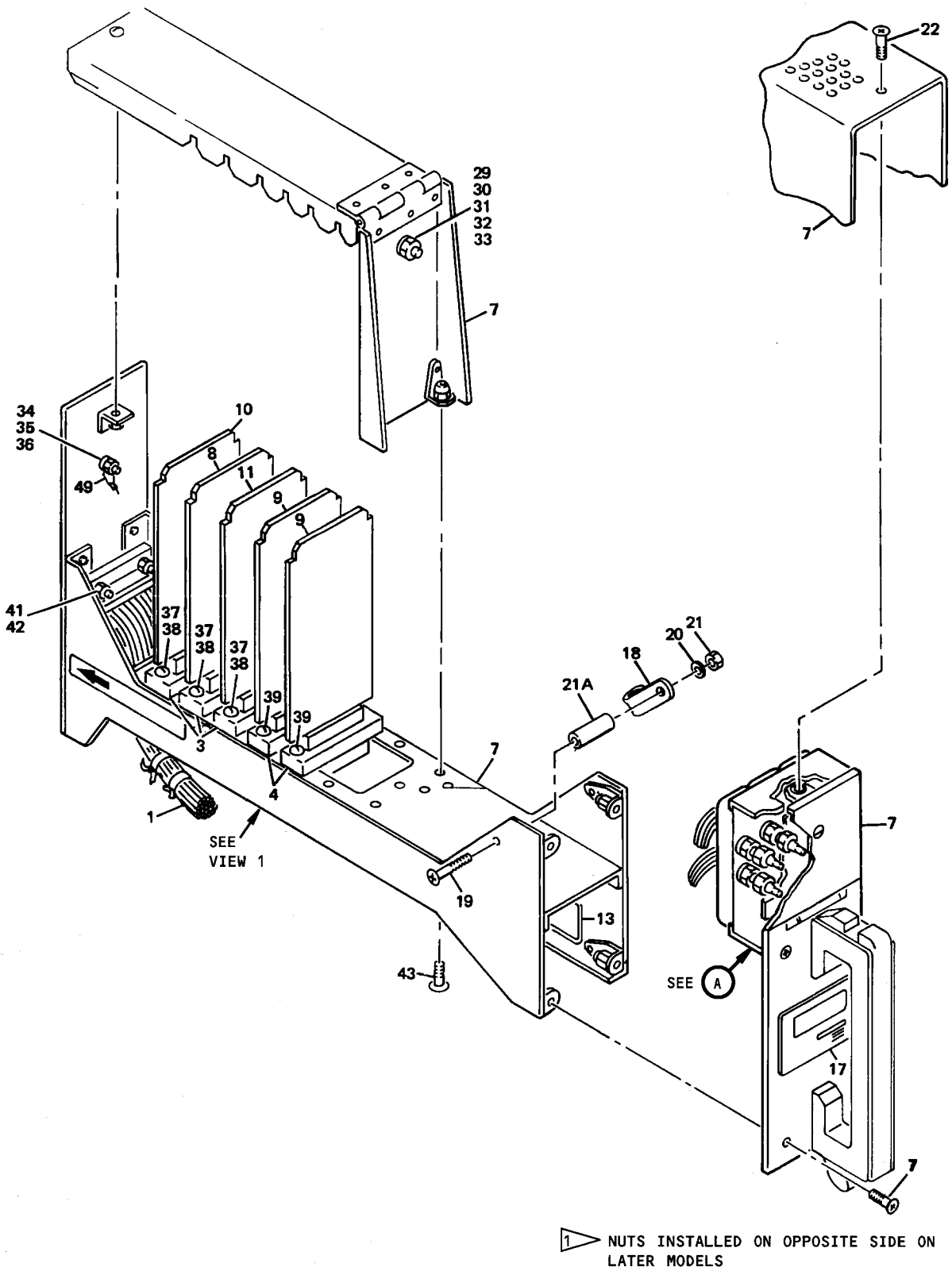


Schematic Diagram
Figure 801

ILLUSTRATED PARTS LIST

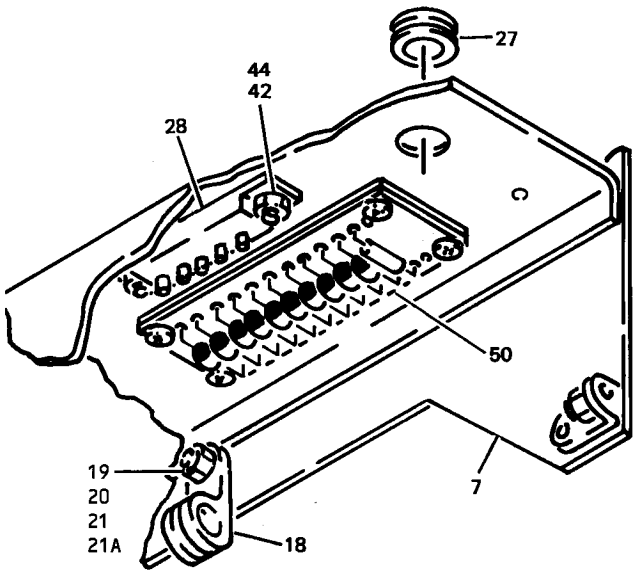
VENDORS

V00779	TYCO ELECTRONICS CORP., 2800 FULLING MILL RD., BLDG-38, MIDDLETOWN, PENNSYLVANIA 17057-3142
V71468	ITT, DBA ITT CANNON, 666 EAST DRYER RD., SANTA ANA, CALIFORNIA 92702-5612
V75382	KULKA ELECTRIC CORPORATION, SUB OF NORTH AMERICAN PHILIPS CORP., 1913 ATLANTIC AVENUE, MANASQUAN, NEW YORK 08736-1005

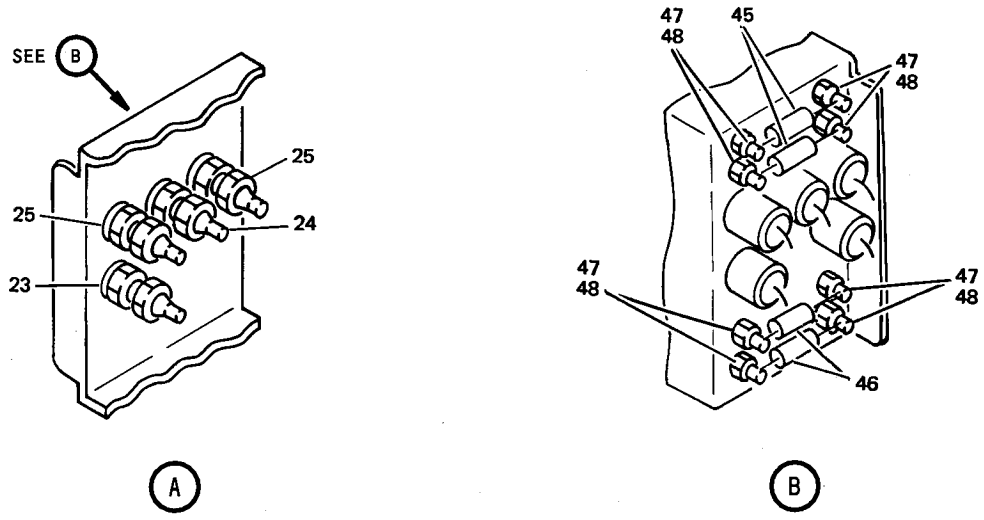


Audio Accessory Unit Assembly (M69)
Figure 1101 (Sheet 1)

1554545



VIEW 1



Audio Accessory Unit Assembly (M69)
Figure 1101 (Sheet 2)

1554601

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-	65-85316-11		AUDIO ACCESSORY UNIT ASSY (M69) (REWORK OF 65-52804-69)		
1	65-52804-70		. WIRE BUNDLE (MODIFIED)		1
-2	582507-1		. KEYING PLUG, V00779		AR
3	582583-1		. CONNECTOR, V00779		3
4	582551-1		. CONNECTOR, V00779		2
-5	66143-2LP		. TERMINAL, V00779		AR
6	DPX2MA57P57P 34B0022		. CONNECTOR, V71468 (REPLD BY DPX2MB57P57P34B0022)		1
6	DPX2MB57P57P 34B0022		. CONNECTOR, V71468 (REPLS DPX2MA57P57P34B0022)		1
7	65-52800-43		. CHASSIS ASSY		1
8	65-54485-8		. PRINTED CIRCUIT ASSY		1
10	65-54485-40		. PRINTED CIRCUIT ASSY (REPLS 65-54485-2)		1
10	65-54485-2		. PRINTED CIRCUIT ASSY (REPLD BY 65-54485-40)		1
11	65-54485-5		. PRINTED CIRCUIT ASSY		1
13	69-34180-13		. MARKER (REPLD BY BAC27DEX1216)		1
13	BAC27DEX1216		. VINYL MARKER (REPLS 69-34180-13)		1
17	69-31184-30		. NAMEPLATE (REPLD BY BAC27DEX3245)		1
17	BAC27DEX3245		. NAMEPLATE (REPLS 69-31184-30)		1
18	BACC10DK		. SUPPORT CLAMP		2
19	NAS514P632-()		. SCREW		2
20	AN960PD6L		. WASHER		2
21	BACN10JC06		. NUT		2
21A	NAS43DDI-60		. SPACER (INSTALLED ON LATER MODELS)		1
22	AN500D6-4		. SCREW (REPLD BY AN500A6-4)		1
22	AN500A6-4		. SCREW (REPLS AN500-6-4 AND AN500D6-4)		1
23	RV6LAYSA102A		. POTENTIOMETER, 1K, 10 PCT, 1/2 W		1
24	RV6LAYSA251A		. POTENTIOMETER, 250 OHMS, 10PCT, 1/2 W		1
25	RV6LAYSA103C		. POTENTIOMETER, 10K, 10 PCT, 1/2 W		2
27	NAS557-6A		. GROMMET		AR
28	411GMF1903-5-12A		. TERMINAL BLOCK, V75382		1
28	411JJ1903-5-12A		. TERMINAL BLOCK, V75382 (OPT)		1
29	BACS12BH7		. SCREW		1
30	MS35337-42		. WASHER		1
31	AN960PD8L		. WASHER		1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
32	NAS43DD3-22		. SPACER		1
33	BACN10MG8		. NUT		1
34	NAS514P632-24		. SCREW		1
35	AN960D6L		. WASHER		2
36	BACN10JC06		. SCREW		1
37	NAS600-9P		. SCREW		6
38	BACN10DN40		. NUT		6
39	NAS600-9P		. SCREW		4
40	BACN10DN40		. NUT		4
41	NAS514P440-6		. SCREW		4
42	BACN10DN40		. NUT		6
43	NAS600-6P		. SCREW		3
44	NAS514P440-8		. SCREW		2
45	M39003-01-2356		. CAPACITOR, 1 uF, 10%, 50 VDC		2
46	M39003-01-2374		. CAPACITOR, 10 uF, 10%, 50 VDC		2
47	1409F9-11		. TERMINAL, V88245		8
48	BACN10DN40		. NUT		8
49	BACT12AC		. TERMINAL LUG		1
50	69-63592-3		. TERMINAL BOARD COMPONENT ASSY		1

- ITEM NOT ILLUSTRATED

FIGURE 1101 REFERENCE DESIGNATION INDEX (SEE SCHEMATIC DIAGRAM)		
REFERENCE DESIGNATION	PART NUMBER	ITEM NO.
A1	65-54485-40	10
A1	65-54485-2	10
A2	65-54485-8	8
A3	65-54485-5	11
A7	69-63592-3	50
C1, C2	M39003-01-2356	45
C3, C4	M39003-01-2374	46
J1, J2, J3	582583-1	3
J4, J5, J6	582551-1	4
P1A, P1B	DPX2MB57P57P34B0022	6
R1, R3	RV6LAYSA103C	25
R2	RV6LAYSA251A	24
R4	RV6LAYSA102A	23
TB1	*411GMF1903-5-12A	28
TB1	411JJ1903-5-12A	28
XA1, XA2, XA3	582583-1	3
XA4, XA5, XA6	582551-1	4

* PREFERRED PART