

BOEING 757

AIRCRAFT MAINTENANCE MANUAL

CHAPTER 23 - COMMUNICATIONS

THOMSON AIRWAYS CUSTOMISATIONS

BOEING 757

Monarch

AIR 2000

757-2Y0

MAINTENANCE MANUAL

CABIN VIDEO INFORMATION SYSTEM

TEST PROCEDURE

1. PRESS RED ON/OFF BUTTON ONCE TO SWITCH UNIT ON.
THE GREEN INDICATOR LAMP SHOULD ILLUMINATE IMMEDIATELY.
2. WITHIN 30 SECONDS OF THE GREEN INDICATOR LAMP
ILLUMINATING, THE AMBER COLOURED INDICATOR LAMP SHOULD
ILLUMINATE.
3. ENSURE THAT THE VIDEO ENTERTAINMENT SYSTEM IS POWERED UP,
BUT THE TAPE IS NOT RUNNING.
4. SELECT POSITION 1 ON THE CONTROLLER, AND PRESS THE GREEN
BUTTON. THE GREEN COLOURED INDICATOR LAMP ON THE
CONTROLLER SHOULD ILLUMINATE, AND THE VIDEO SYSTEM
SHOULD DISPLAY THE "WELCOME ABOARD" MESSAGE SEQUENCE.
5. SELECT THE POSITION MARKED "CLEAR" ON THE CONTROLLER,
AND PRESS THE GREEN ENTER BUTTON. THE GREEN LAMP
SHOULD ILLUMINATE, AND THE "WELCOME ABOARD" SEQUENCE
SHOULD CLEAR THE SCREEN WITHIN 15 SECONDS.
6. START THE VIDEO PLAYER, AND ENSURE THAT WITHIN THIRTY
SECONDS THE AUDIO CHANNEL ADVISORY MESSAGE APPEARS ON
THE SCREEN FOR ABOUT 20 SECONDS, AND THEN REVERTS TO
THE VIDEO PICTURE, AND THE AMBER COLOURED INDICATOR
LAMP ON THE CONTROLLER IS ILLUMINATED.
7. SWITCH OFF THE VIDEO PLAYER. THE AMBER LAMP SHOULD
EXTINGUISH.

EFFECTIVITY

G-000U.

Modification MON/757/1430.

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MAINTENANCE MANUAL

PASSENGER ADDRESS SYSTEM - TEST PROCEDURE

1. TEST EQUIPMENT REQUIRED

- a. *Bruel & Kjaer* *Speech Transmission Meter* *Type 3361*
 Consisting of
- b. *Transmitter* *Type 4225*
- c. *Receiver* *Type 4419*
- d. *Sound level calibrator* *Type 4230*
- e. *General Radio Co.* *Sound level meter* *Type 1565-B*
- f. *Sound level calibrator* *Type 1652-A*
- g. *Adaptor lead with 3.3k resistor and 3.3uF capacitor for direct signal injection of the 3361 external speaker output into the supernumerary hand mike socket.*
- h. *Speaker and monitoring positions - Monarch Dwg MON-23-30-170.*
- i. *R.A.S.T.I. Check Sheet.*

2. CALIBRATION OF RECEIVER TYPE 4419

- a. *Set selector switch on the receiver to "pre-amp input".*
- b. *Fit the receiver microphone into the sound level calibrator Type 4230 and switch on the calibrator.*
- c. *Press "Cal" pushkey on the receiver.*
- d. *Adjust pre-amp input "cal" pot to obtain 93.8 dB.*
- e. *The General Radio Co. Sound Level Meter Type 1565A is calibrated with Calibrator Type 1565A set to 500Hz.*

3. TEST EQUIPMENT CALIBRATION AIRCRAFT PHASE

- a. *Supply electrical power.*
- b. *Make sure the cabin interphone and flight interphone systems are serviceable.*
- c. *Make sure the circuit breaker for PASS ADRS AMPL is closed.*
- d. *On the front panel of the passenger address amplifier on E4-3 set and hold the AMP TEST/NORMAL/SPKR TEST switch to the AMP TEST position.*
- e. *Make sure the front panel shows 0+1 dB.*
- f. *Set the AMP TEST/NORMAL/SPKR TEST switch to the NORMAL position.*
- g. *Confirm all loudspeakers position as per Config Sheet.*
- h. *Perform a constant talk test through the P.A. system from the Captains position. A fast count to ten in a firm manner is required.*

FFECTIVITY

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MAINTENANCE MANUAL

TEST PROCEDURE (CONTD/. . .)

3. TEST EQUIPMENT CALIBRATION AIRCRAFT PHASE (CONTD/. . .)

- i. During the constant talk test, move the Sound Level Meter Type 1565B, over the speaker grill at three P.S.U. positions and record the average dB level of the three.
- j. At the supernumerary position, select the P.A. on the A.S.P.
- k. Set Transmitter Type 4225 to +10dB with the output switched to external speaker, connect the adaptor lead to the hand mike socket.
This will key the P.A..
- l. Move the Sound Level Meter Type 1565B over the P.S.U. loudspeaker grill and adjust the "Ext. Speaker" Cal. pots. on Transmitter Type 4225, to give the same output in dB as recorded in the constant talk test.
Note - 100dB is the average in a talk test.

4. AIRCRAFT CALIBRATION GROUND PHASE

- a. A.P.U. on.
- b. Right air condition pack on.
- c. Cargo and pax doors closed.
- d. Move the Sound Level Meter Type 1565B over the loudspeaker grills at all P.S.U.'s fitted with a loudspeaker and confirm the outputs are not less than 2 dB below that obtained in the average talk test.
- e. Carry out R.A.S.T.I. checks at all work stations, attendant stations, toilets and at all seats as specified on check sheet.
Locate the microphone 30 inches above seat squab and at work station 60 inches from floor.
- f. Record all R.A.S.T.I. readings on check sheet.
- g. Switch off all equipment and remove adaptor lead from supernumerary hand mike socket.
- h. Switch off air condition pack.
- i. Shut down A.P.U..

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TEST PROCEDURE (CONTD/...)

5. AIRCRAFT CALIBRATION FLIGHT PHASE (if specified by Planning)
- a. *Stable cruise.*
 - b. *No pax.*
 - c. *Secure test set on supernumerary seat with seat harness.*
 - d. *Locate the microphone 30 inches above seat squab and at work stations 60 inches from floor.*
Carry out R.A.S.T.I. checks at all work stations, attendant stations, toilets, and at all seats as specified on config sheet.
 - e. *Record all R.A.S.T.I. readings on check table.*
 - f. *Switch off all equipment and remove adaptor lead from supernumerary handbike socket.*
 - g. *Inform Captain at the end of test.*

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AES Limited

PUBLICATION REVISION

Document No. AES-TP-0022

**Supplement to the
Boeing 757-200
Technical Publications**

TRANSMITTAL SHEET


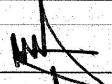
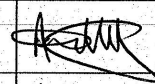

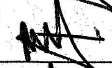
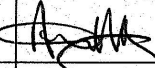



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EASA DESIGN ORGANISATION APPROVAL No. EASA.21J.036**

Reason for Issue: To introduce a supplement to the Aircraft Maintenance Manual, Wiring Diagram Manual and Illustrated Parts Catalogue to cover the introduction of an Airshow System under cover of AES modifications AES-757-088, AES-757-123, AES-757-217 and AES-757-277.

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Revision No.: Issue 1

Manual & Chapter	Prepared by	Responsible for design	Date	Certification Verification Engineer / Approval		
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AMM – 23-32	R McColl		Aug 31/2007			
WDM – 23-32	T N Gaunt		Aug 31/2007			
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EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
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29942 (NT405), 29943 (NT406), 29944 (NT407),

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INTRODUCTION - GENERAL

- 1 This modification introduces a Digital Interface Unit (DIU) and Random Access Device (RAD) to provide random access video and audio information (for example, points of interest) for an Airshow 420 system. The information is displayed on the aircraft video monitors for passenger entertainment. This technical publication supplement describes the installed equipment, and gives the removal, installation and test procedures for the equipment.
- 2 Technical publications which are affected and which should be used with this supplement are the:
 - Aircraft Maintenance Manual
 - Wiring Diagram Manual
 - Illustrated Parts Catalogue.
- 3 Manuals which are not listed are not affected (for example the Structural Repair Manual).
- 4 Aircraft applicability and effectivity codes are given in the table below (in effectivity order).

Registration	Manufacturer's serial number (variant No).	Customer effectivity code	Cust eff code terminator
G-OOBJ	27147 (NB507)	002	-
G-OOBI	27146 (NB506)	006	-
G-CPEU	29941 (NT404)	504	-
G-OOBG	29942 (NT405)	505	-
G-CPEV	29943 (NT406)	506	-
G-OOBH	29944 (NT407)	507	-
G-CPEP	25268 (NB322)	952	999

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LIST OF EFFECTIVE PAGES

CH-SECT-UNIT	PAGE No.	DATE	CH-SECT-UNIT	PAGE No.	DATE
AMM - LEP JUN	i	AUG 31/07	23-32-53	405	AUG 31/07
AMM - REVISIONS	ii	AUG 31/07			
AMM - INTRO	iii	AUG 31/07			
AMM-CONTENTS	iv	AUG 31/07			
23-32-50	1	AUG 31/07			
23-32-50	2	AUG 31/07			
23-32-50	3	AUG 31/07			
23-32-50	4	AUG 31/07			
23-32-50	5	AUG 31/07			
23-32-50	6	AUG 31/07			
23-32-50	7	AUG 31/07			
23-32-50	101	AUG 31/07			
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23-32-50	204	AUG 31/07			
23-32-50	205	AUG 31/07			
23-32-50	501	AUG 31/07			
23-32-50	502	AUG 31/07			
23-32-51	401	AUG 31/07			
23-32-51	402	AUG 31/07			
23-32-51	403	AUG 31/07			
23-32-52	401	AUG 31/07			
23-32-52	402	AUG 31/07			
23-32-52	403	AUG 31/07			
23-32-53	401	AUG 31/07			
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23-32-53	403	AUG 31/07			
23-32-53	404	AUG 31/07			

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RECORD OF REVISIONS

REV No.	INSERTION DATE	BY	REV No.	INSERTION DATE	BY	REV No.	INSERTION DATE	BY

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INTRODUCTION

- 1 This section supplements the manufacturer's aircraft maintenance manual.
- 2 For aircraft applicability, and effectivity codes, refer to page ii of this supplement.
- 3 Report all wear, cracks, scores, dents, scorching, corrosion, distortion, de-lamination or damaged threads of non-separable items to the Design Department of Aerospace Engineering Solutions Ltd, who will issue a suitable repair scheme.

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AIRSHOW SYSTEM

DESCRIPTION AND OPERATION

1 General

- A The Airshow system is a sub-system of the passenger entertainment video system. The system supplies passengers with a video display of data about the flight of the aircraft. This data can include the airline logo, maps of the flight, geographical points, altitude, speed and external air temperature.
- B The system consists of:
- A Digital Interface Unit (DIU), which is installed in the E6 rack of the aft equipment centre.
 - A Cabin Control Unit (CCU), (also called the Airshow Control Unit (ACU)) is installed in the Video Control Centre (VCC).
 - A Random Access Device (RAD), which is installed in the E6 rack of the aft equipment centre.
 - A video isolation transformer), which is installed in the E6 rack of the aft equipment centre.
- C The 28v dc right bus bar supplies electrical power to the system through circuit breakers on the P11 overhead panel in the flight compartment.

2 Component Details (Fig. 1)

A Digital interface unit

- (1) The Digital Interface Unit (DIU) is a computer which uses airplane data to generate video maps and flight data for display on the passenger entertainment video system. The DIU receives input data from the Cabin Control Unit (CCU), Digital Air Data Computer (DADC) and Flight Management Computer (FMC). The DIU processes this data and uses it to select maps, points of interest, and flight data for output to the passenger entertainment video centre.
- (2) A CD-ROM drive is built into the DIU, and is used to read a Compact Disk (CD) which supplies the DIU with its main operating system and display media. The system data is read from the CD to the DIU memory for the system to operate. The DIU only reads the CD after power up of the DIU.

B Cabin control unit

- (1) The CCU is the control interface to the DIU. The cabin crew use the CCU to select the display mode.

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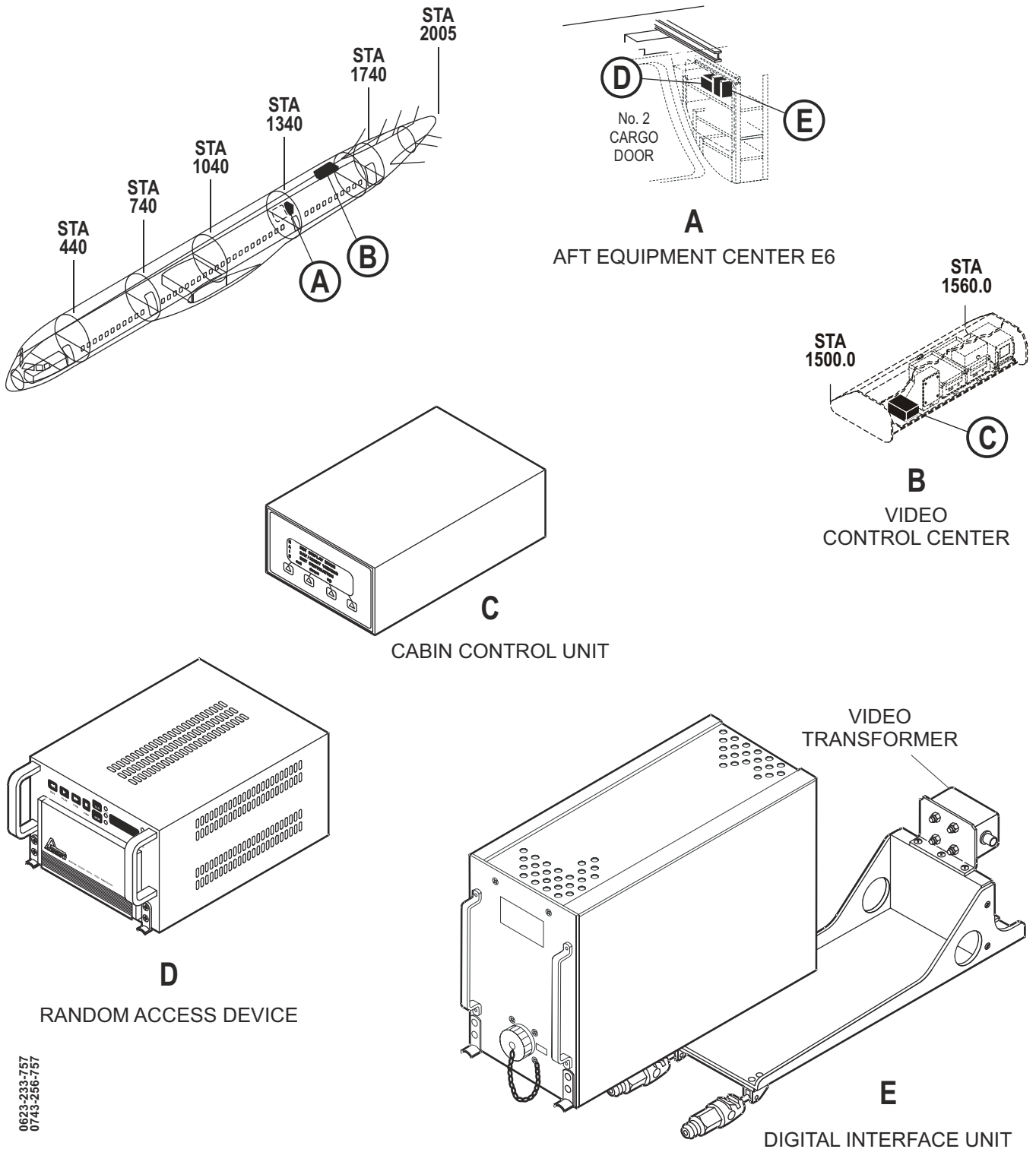
- (2) The front panel of the CCU has four buttons below a display, which control the system. The display shows four lines of text or symbols. The bottom line of the display always shows the labels for the four buttons. The labels change to show the different functions available on the different menus.
- (3) A vertical label with a black background at the left edge of the display shows which menu is currently active. Some typical selections for the control and programming of the system include:
 - (a) MAIN - The main menu display permits selection of the different "set" menus.
 - (b) SET GMT (GMT) - The set Greenwich Mean Time (GMT) menu lets the user set the system clock for AIRSHOW.
 - (c) SET TIME TO DESTINATION (TTD) - Lets the user set time to destination data which shows on the display page only when the time is set to something other than "0".
 - (d) SET DESTINATION (DEST) - This menu lets the user set the destination airport for the flight.
 - (e) SET DISPLAY MODE (MODE) - This menu lets the user set the display mode of the AIRSHOW output page (LOGO, INFO, MAP, AUTO). In the different modes the system shows different display sequences.
 - (f) DAY/NIGHT VIEWING (COLR) - This menu lets the user adjust the brightness of the AIRSHOW display colour scheme depending on whether it is night or day.
 - (g) RAD CONTROL (CRAD) - This menu is used to choose and play video segments from the RAD. After a RAD disk drive is selected from the CRAD menu, disk segments or "program play" are selected from the CONTROL (CTRL) sub-menu.

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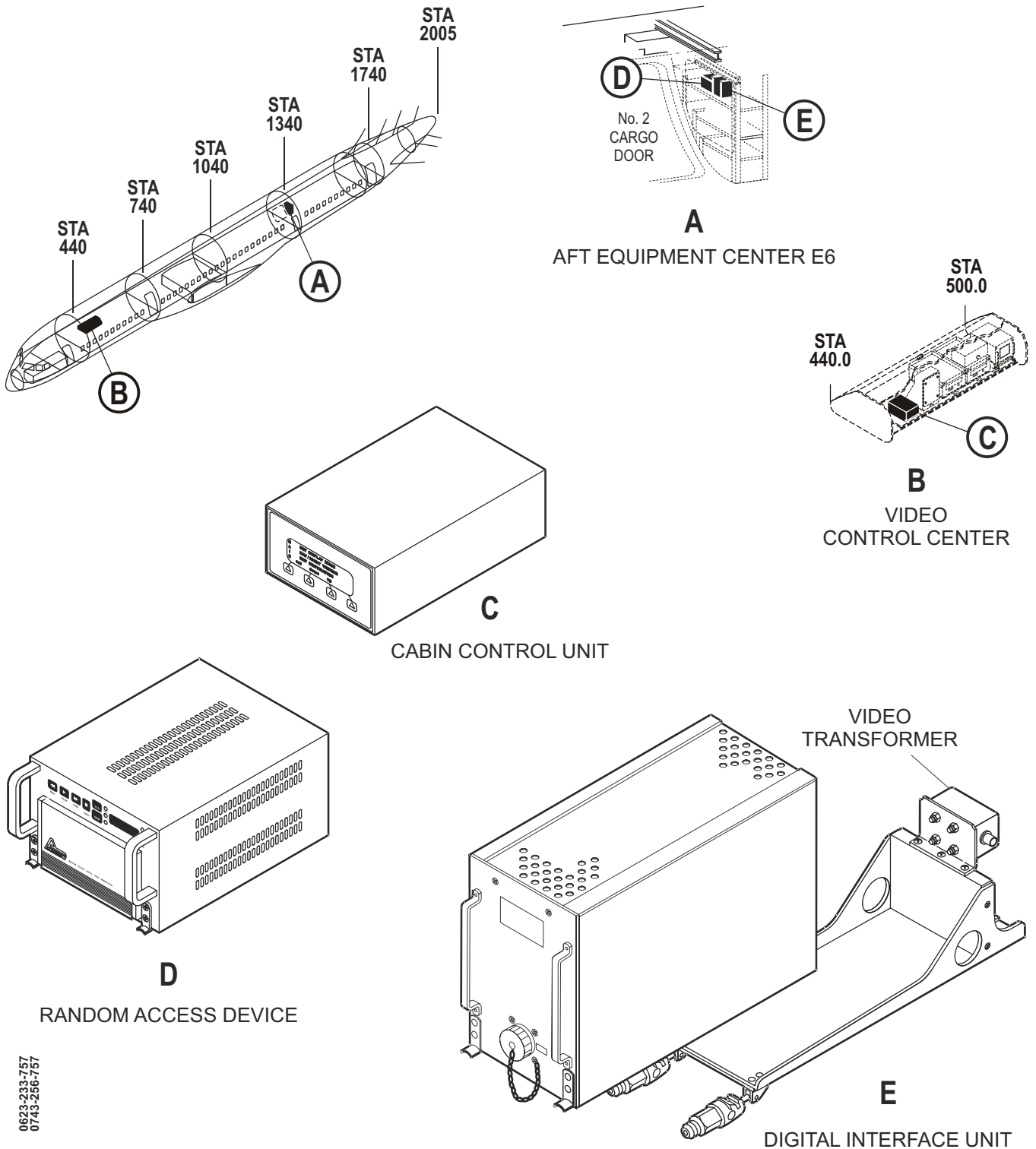
Passenger Flight Information Display System - Component Location

Figure 1

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(AES-TP-0022)
 25268 (NB322)

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Passenger Flight Information Display System - Component Location

Figure 1

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- (h) RAD PROGRAM (PRAD) - This menu is used to program RAD segments for automatic playback in "program play" mode. After a RAD disk drive is selected from the PRAD menu, segments to be included in the program for automatic play are to be selected from the PROG sub-menu.
- (i) SET LANGUAGE (LANG) - This menu lets the user set the text language displayed on the AIRSHOW output pages

C Random access device

- (1) This is a CD-based random-access digital video reproducer. It provides short video segments with sound, or longer programs which use the CDs in extended play mode. The RAD is also known as a random access digital video reproducer (RADVR).
- (2) The RAD uses 115v ac and 28v dc electrical supplies, through circuit breakers on the P37 miscellaneous electrical equipment panel and P11 overhead circuit breaker panels.
- (3) The RAD provides video and/or audio from two CDs, each with a capacity of one hour of video with audio. The CDs can contain short segments for safety briefings or destination instructions, or it can have movies of up to 2 hours in duration (1 hour from each CD).
- (4) The RAD can be controlled either manually, using the front panel controls, or automatically, using the CCU to program the DIU.

3 Operation

B Functional Description

- (1) The 28v dc right bus bar supplies electrical power through circuit breakers on the P11 panel to the system. The system is always operational when the bus bar is energized and the circuit breakers are closed.
- (2) The DIU keeps maps in memory that cover the operating area of the airplane. The DIU gets position, heading, and speed data from the left FMC. The DIU uses these data to select which map to show and to put an airplane symbol on the map, which shows the approximate position and heading of the flight. The DIU also gets altitude and air temperature data from the ADC to show on the INFO pages. The DIU makes all necessary video displays and supplies a video signal output to the video entertainment system.
- (3) The maps in the DIU can cover the full flight range of the airplane, but only the maps which have the position of the airplane show. If the DIU cannot receive data from the FMC or ADC, it still operates OK. It still shows all sequences of maps and information pages, but the data on them is incorrect. If position input is lost, the last position stays constant on the map. If heading input is lost, the

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airplane symbol becomes a white square. With good heading input the DIU shows the approximate heading on the map as a white airplane symbol, which points in one of 16 compass directions.

- (4) The cabin control unit is used to set the display mode of the digital interface unit. These are some of the typical display modes available from the SET DISPLAY MODE menu:
- (a) LOGO mode: The airline logo shows constantly, whether in flight or on the ground.
 - (b) INFO mode: Four flight information (INFO) pages, with many items of data, show in a sequence on the monitors. When multiple languages are installed, AIRSHOW shows only one language during the sequence. AIRSHOW then goes through the sequence with the other language.
 - (c) MAP mode: AIRSHOW shows its highest resolution map of the flight area. The position of the airplane shows a white airplane symbol. The completed part of the flight path of the airplane shows as a red line. Flight data is shown at the top of the screen. It includes ground speed, altitude, and time of destination. The units of measurement for ground speed and altitude can be shown in Imperial, metric or nautical units. The nearest geographical point is also shown at the bottom of the screen (if installed).
 - (d) AUTO mode: This mode enables the automatic display of the various modes (MAP, INFO, LOGO) in sequence.
 - (e) PROFILE mode: This mode enables an automatic display of the various modes (pre-flight, cruise or decent) in sequence based on the aircraft's current altitude and speed.

B Control

- (1) Provide electrical power (ref. AMM 24-22-00/201).
- (2) Make sure these circuit breakers are closed:

- (a) On the overhead circuit breaker panel P11:

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- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

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- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC

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– 11H34, CABIN INFO CONTROL

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(b) On the right miscellaneous electrical panel P37:

– 37A7, VIDEO CONTROL CENTRE AC

- (3) Make sure that the Inertial Reference System is aligned and in NAV mode (Ref AMM 34-21-00/201).
- (4) Operate the CCU to select an AIRSHOW display mode:
 - (a) Use the UP and DOWN keys to scroll through the SET DISPLAY MODES selection on the centre line of the CCU.
 - (b) Push the SET key to make the selection, which then shows the MODE set menu on the display.
 - (c) In the MODE set menu, use the UP and DOWN keys with the SET key to make the applicable AIRSHOW display mode selection.
- (5) Operate the passenger entertainment video System Control Unit (SCU) to show the AIRSHOW video on the monitors in the passenger cabin.
- (6) View the AIRSHOW display pages on the video monitors.

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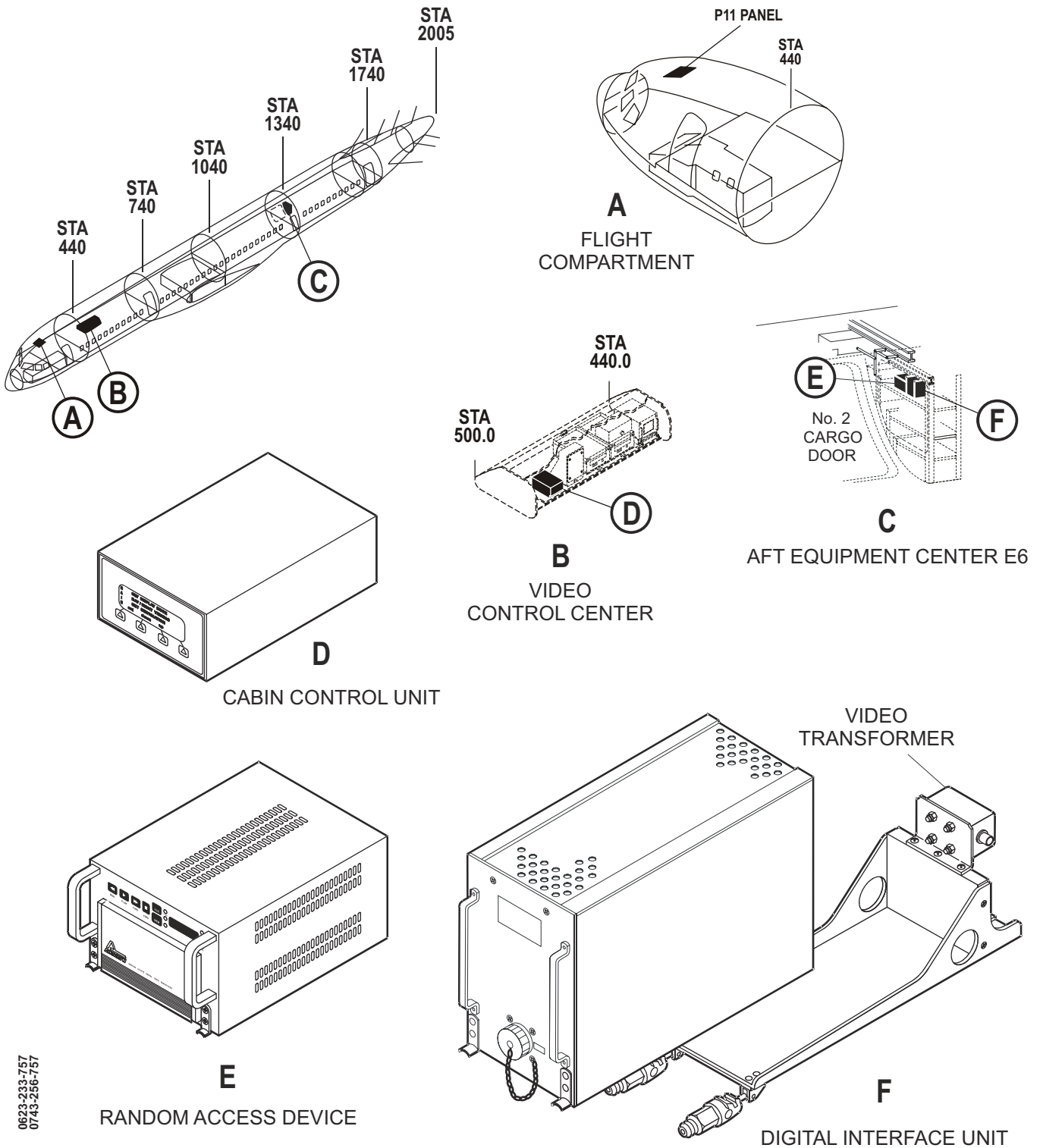
COMPONENT INDEX

COMPONENT	QTY	ACCESS/AREA	REFERENCE AMM
CIRCUIT BREAKER VIDEO SYS - DC	1	FLT COMPT, P11 11H30	
CABIN INFO CONTROL	1	11H34	
CABIN INFO COMPUTER	1	11H29	
CIRCUIT BREAKER VIDEO CONTROL CENTRE - AC	1	119BL, MAIN EQUIP CTR, P37 37A7	
UNIT - CABIN CONTROL, AES-M9007	1	VIDEO CONTROL CTR	23-32-53
UNIT - DIGITAL INTERFACE, AES- M90006	1	NO. 2 CARGO DOOR, AFT EQUIP CTR, E6-1	23-32-51
UNIT - RANDOM ACCESS, AES-M90008	1	NO. 2 CARGO DOOR, AFT EQUIP CTR, E6-1	23-32-52

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Airshow System - Component Location

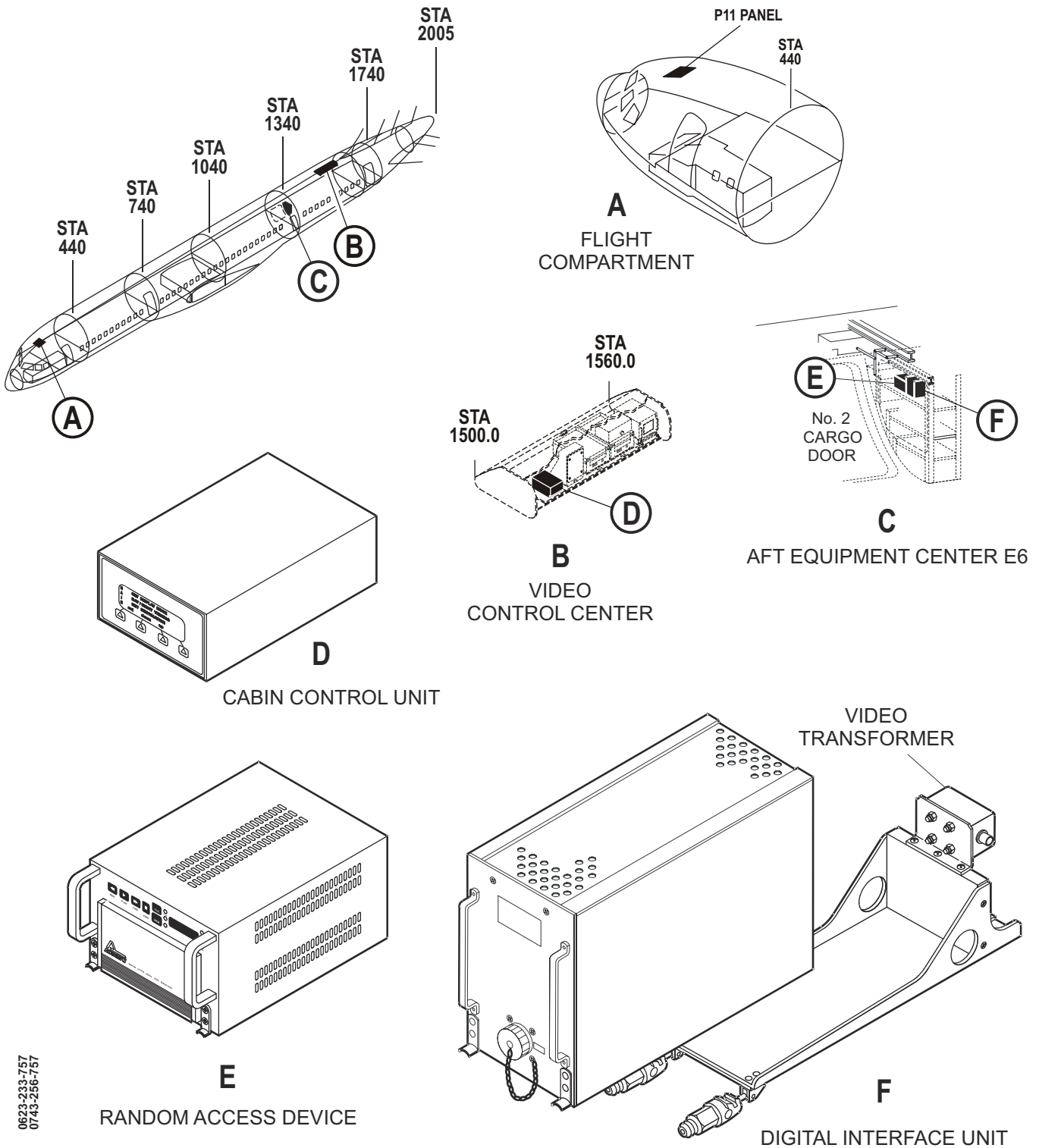
Figure 101

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(AES-TP-0022)

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Airshow System - Component Location

Figure 101

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(AES-TP-0022)
 25268 (NB322)

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AIRSHOW SYSTEM
MAINTENANCE PRACTICES

1 General

A This pageblock contains these procedures:

- (1) A software configuration check of the digital interface unit (DIU).
- (2) CD-ROM removal and insertion procedures.
- (3) CD-ROM cleaning and handling procedures.

B The software for the Airshow 420 DIU is on a CD-ROM which must be in the RAD. The DIU has an access door for the CD-ROM drive on its front panel. The CD-ROM contains the system software for the DIU, together with customized route and graphics information that is unique to the airline. The CD-ROM must be inserted into the CD-ROM drive correctly and the software must be loaded into the DIU memory for the system to operate.

2 Software Configuration Check

A General

- (1) This task tells you how to do a software configuration check of the Digital Interface Unit (DIU).
- (2) Do this task to make sure that the software was loaded correctly, or to identify the current software configuration of the DIU.

NOTE: You must know the correct part number for the custom Airshow software your system uses to do this procedure.

B Location

- (1) Zone 154 (right aft cargo compartment)
- (2) Access - door 822 (No. 2 cargo door)

C Equipment

- (1) Airshow test Compact Disk (CD) P/N 921900-01-9999-11 (if this is not available, use the First Choice Airlines customized CD P/N 921900-01-5220-2C)

D Procedure

- (1) Open and then close these circuit breakers on the P11 panel:

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-50

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EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

(2) Open and then close this circuit breaker on the P37 panel:

- 37A7, VIDEO CONTROL CENTRE AC

(a) At the video control centre:

- 1 Push the main power switch on the video System Control Unit (SCU) to set it to on.
- 2 Push the PREV switch.
- 3 Touch AIRSHOW on the SCU touch-screen.

(b) Make sure the correct software part numbers for your system show on the Airshow copyright page shown on the preview screen.

NOTE: It can take up to five minutes for the software information to appear on the copyright page.

- 1 If the part numbers are not correct, then do the task to install the software (Ref AMM 23-32-50/201) or replace the DIU with one that has the correct software (Ref AMM 23-32-51/401).
- 2 Set the main power switch on the video SCU unit to OFF to put the airplane back to its usual condition:

3 DIU CD-ROM Removal and Insertion

A Access

(1) Locations:

- Zone 154 - aft cargo compartment (right)
- Zone 200 - passenger cabin
- Zone 210 - flight compartment

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-50

(2) Access:

- Panel 822
- No. 2 Cargo Door

B Equipment

- (1) Airshow test CD 921900-01-9999-11 (if not available use the First Choice Airlines customized CD P/N 921900-01-5220-2C)

C CD-ROM Removal

- (1) If necessary, supply electrical power (Ref AMM 24-22-00/201).
- (2) Open these circuit breakers and attach DO-NOT-CLOSE tags to them:

- (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:

- 37A7, VIDEO CONTROL CENTRE AC

- (c) Get access to the DIU in the aft equipment centre, located in the aft cargo compartment.

- (d) On the front panel of the DIU, loosen the knurled knob on the CD-ROM drive door to get access to the CD-ROM drive.

- (e) Push the EJECT button on the CD-ROM drive.

- (f) Remove the CD-ROM caddy from the DIU.

- (g) Close the CD-ROM drive access door and tighten the knurled knob.

- (h) If necessary, remove the CD-ROM from the caddy:

- (1) To open the CD caddy, pinch the sides of the caddy opposite the

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

metal shutter and lift the clear plastic cover.

- (2) Grasp the CD by its edges and remove it from the caddy.

B CD-ROM Installation

- (1) Do these steps to insert the CD-ROM into the DIU:

- (a) Clean the CD to be loaded. Do this task: Compact Disc Cleaning and Handling.

NOTE: It is recommended that the CD-ROM is cleaned before it is put in the DIU. If the CD-ROM is dirty, the DIU might not be able to load the software properly.

- (b) Load the CD into the CD caddy:

- 1 Open the CD caddy by pinching the sides of the caddy opposite the metal shutter and lift the clear plastic cover.
- 2 Place the CD into the caddy with the label side up (shiny side down).
- 3 Close the CD caddy cover.

- (c) Open these circuit breakers and attach DO-NOT-CLOSE tags:

- 1 On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 2 On the right miscellaneous equipment panel, P37:
- 37A7, VIDEO CONTROL CENTRE AC

- (d) In the aft cargo compartment (zone 154), in the aft equipment centre, get access to the DIU.

- (e) On the front panel of the DIU, loosen the knurled knob on the CD-ROM

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-50

drive door, to get access to the CD-ROM drive.

CAUTION: ALLOW THE DIU TO ACCEPT THE CD-ROM CADDY AUTOMATICALLY. DO NOT FORCE THE CD-ROM CADDY INTO THE DIU. THE DIU MUST HAVE POWER APPLIED BEFORE INSTALLING THE CD-ROM CADDY. IF YOU FORCE THE CD-ROM CADDY INTO THE DIU, YOU WILL DAMAGE THE DIU CD-ROM DRIVE.

(f) Insert the caddy into the DIU so the arrow faces the drive opening and the clear top cover of the caddy faces the right side of the DIU as you face the unit.

(g) Do this task: Software Configuration Check

NOTE: You must cycle power to the DIU so the system software on the CD-ROM loads to the DIU memory. The DIU will only load the system software when the unit is in power-up mode. The AIRSHOW will not operate if the disk is not loaded properly, or if the DIU power is not cycled after you load the CD-ROM.

(h) Close the CD-ROM drive access door and tighten the knurled knob.

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-50

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AIRSHOW SYSTEM

ADJUSTMENT/TEST

1 General

- A This procedure does a system test of the Airshow. To test an individual system component, it is necessary to do the complete system test.
- B The passenger entertainment (video) system (Ref AMM 23-32-00/501) must be operational to do this procedure.

2 System Test - Airshow System

A Equipment

- (1) Airshow Test CD 921900-01-9999-11 (if not available use the First Choice Airlines Customized CD P/N 921900-01-5220-2C). If an Airshow test CD is not available, a CD-ROM with both audio and video program segments may be used in its place.
- (2) Headset - for Passenger Entertainment monitoring (commercially available)

B Access

- (1) Location Zones 119 Main Equipment Centre 200 Upper Half of Fuselage

C Prepare for System Test

- (1) Supply electrical power (Ref AMM 24-22-00/201).
- (2) Make sure the Inertial Reference System (IRS) is aligned and in NAV mode (Ref AMM 34-21-00/201).
- (3) Set the IFE (PES) switch on the forward attendant panel, P21, to the ON position (switch light ON).

D System Test - AIRSHOW System

- (1) Energize the video system control unit (SCU), located in the video control centre.
- (2) Operate the video SCU to route AIRSHOW video to the monitors in the passenger cabin.
- (3) At the AIRSHOW cabin control unit (CCU), located in the video control centre (VCC), use the UP, DOWN, and SET keys to set the AIRSHOW DISPLAY MODE to AUTO or PROFILE.

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-50

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NOTE: If the CCU is in power saver mode, touching a panel button will reactivate it.

- (a) Make sure the AIRSHOW system cycles a series of displays on the video monitors with a cycle time of approximately 10 seconds for each display.
 - (4) Make the selections on the CCU to display the AIRSHOW MAP mode.
 - (a) Make sure the correct airplane position is displayed on the map screen display.
 - (5) Make the selections on the CCU to display the AIRSHOW INFO mode.
 - (6) Set a positive altitude into the CAPT's altimeter using the baro adjust knob. 1) Make sure the altitude data displayed on the blue information screen display agrees with the CAPT's altimeter reading $\pm 10\%$.
- E Do a test of the random access device (RAD):
- (1) Put the test CD-ROM in the top RAD CD-ROM drive with the label side up.
 - (2) Make the selections on the CCU to play the RAD WORK segment from the CD-ROM.
- NOTE: If another CD-ROM is used in place of the specified test CD-ROM, select a program segment on the CD which is known to have both audio and video output.
- (a) Make sure that the RAD video output is displayed on the SCU screen.
 - (b) Make sure you hear RAD audio on a headset connected at the video SCU or passenger seat DPCU.
 - (3) Put the airplane back to its usual condition:
 - (a) Push the STOP key on the RAD.
 - (b) Remove the test CD-ROM from the RAD.
 - (c) Push the SCU power switch to the off position.
 - (d) Push the PES (or IFE) switch on the P21 forward attendant panel to the OFF position (switch light OFF).
 - (e) Remove electrical power if no longer necessary (Ref AMM 24-22-00/201).

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-50

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DIGITAL INTERFACE UNIT

REMOVAL/INSTALLATION

1. General

A The DIU is in the aft equipment centre on shelf E6-1.

2. Removal

A Location and access

- (1) Location - Zone 154 aft cargo compartment (right).
- (2) Access - Panel 822 No. 2 cargo door.

B Procedure

(1) Remove the CD-ROM caddy from the DIU:

- (a) Get access to the DIU on the E6 rack in the aft equipment centre (Ref AMM 20-10-01/401).
- (b) Open the CD-ROM access door on the front panel of the DIU.
- (c) Push the eject button on the CD-ROM drive.
- (d) Remove the CD caddy and retain it for the installation.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

(b) On the right miscellaneous equipment panel, P37:

- 37A7, VIDEO CONTROL CENTRE AC

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-51

- (3) Remove the digital interface unit (Ref AMM 23-32-50/201).

3 Installation

A Location and access

- (1) Location - Zone 154 aft cargo compartment (right).
(2) Access - Panel 822 No. 2 cargo door.

B Procedure

- (1) Make sure these circuit breakers are open and have DO-NOT-CLOSE tags attached:

- (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:

- 37A7, VIDEO CONTROL CENTRE AC

- (2) Install the digital interface unit (Ref AMM 20-10-01/401).

- (3) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

- (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-51

- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:
 - 37A7, VIDEO CONTROL CENTRE AC

4 Test the installation:

CAUTION: ALLOW THE DIU TO ACCEPT THE CD-ROM CADDY AUTOMATICALLY. DO NOT FORCE THE CD-ROM CADDY INTO THE DIU. THE DIU MUST HAVE POWER APPLIED BEFORE INSTALLING THE CD-ROM CADDY. IF YOU FORCE THE CD-ROM CADDY INTO THE DIU, YOU WILL DAMAGE THE DIU CD-ROM DRIVE.

A Procedure

- (1) Put the CD-ROM caddy into the DIU.
- (2) Open, and then close these circuit breakers:

- (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:
 - 37A7, VIDEO CONTROL CENTRE AC

NOTE: You must cycle power to the DIU so that the system software on the CD-ROM loads to the DIU memory. The DIU will only load the system software when the unit is in power-up mode. The AIRSHOW will not operate if the disk is not loaded properly, or if the DIU power is not cycled after you load the CD-ROM.

- (3) After you apply power to the system, allow the system 1-2 minutes to initialize.
- (4) Energize the video system control unit (SCU), located in the video control centre.

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-51

- (5) Do this task: Software Configuration Check (Ref AMM 23-32-50/201).
- (6) Make the selections on the SCU to display the AIRSHOW video on the monitors in the passenger cabin.
- (7) Use the UP, DOWN, and SET keys on the AIRSHOW cabin control unit to select an AIRSHOW display mode.
- (8) Make sure the selected AIRSHOW display page is shown clearly on the video monitors.
- (9) De-energize the video SCU.
- (10) Close the No. 2 Cargo Door, 822 (Ref AMM 06-41-00/201).

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-51

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RANDOM ACCES DEVICE (RAD) UNIT

REMOVAL/INSTALLATION

1 General

The RAD is in the aft equipment centre on shelf E6-1.

2 Removal

A Access

- (1) Location Zone 154 Aft Cargo Compartment (Right)
- (2) Access Panel 822 No. 2 Cargo Door

B Procedure

- (1) Remove the CD-ROM caddy from the RAD:
 - (a) Get access to the RAD on the E6 rack in the aft equipment centre.
 - (b) Open the CD-ROM access door on the front panel of the RAD.
 - (c) Push the eject button on the CD-ROM drive.
 - (d) Remove the CD caddy and retain it for the installation.
- (2) Open these circuit breakers and attach DO-NOT-CLOSE tags:
 - (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:
 - 37A7, VIDEO CONTROL CENTRE AC

- (3) Remove the random access device (Ref AMM 20-10-01/401).

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

AMM SUPP - 23-32-52

3 Random Access Device Installation

A Access

(1) Location Zone:

- 154 Aft Cargo Compartment (Right)

(2) Access Panel

- 822 No. 2 Cargo Door

B Procedure

- (1) Make sure these circuit breakers are open and have DO-NOT-CLOSE tags attached:

(a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

(b) On the right miscellaneous equipment panel, P37:

- 37A7, VIDEO CONTROL CENTRE AC

- (2) Install the random access device unit (Ref AMM 20-10-01/401).

- (3) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:
 - 37A7, VIDEO CONTROL CENTRE AC

(4) Do these steps to test the installation:

- (a) Load the CD-ROM caddy with the appropriate Airshow CD-ROM.

CAUTION: ALLOW THE DIU TO ACCEPT THE CD-ROM CADDY AUTOMATICALLY. DO NOT FORCE THE CD-ROM CADDY INTO THE DIU. THE DIU MUST HAVE POWER APPLIED BEFORE INSTALLING THE CD-ROM CADDY. IF YOU FORCE THE CD-ROM CADDY INTO THE DIU, YOU WILL DAMAGE THE DIU CD-ROM DRIVE.

- (b) Insert the CD-ROM caddy into the RAD.

- (c) Open, and then close this circuit breaker:

- 1 On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- 2 On the right miscellaneous equipment panel, P37:
 - 37A7, VIDEO CONTROL CENTRE AC

NOTE: You must cycle power to the RAD so that the system software on the CD-ROM loads to the DIU memory. The DIU will only load the system software when the unit is in power-up mode. The AIRSHOW will not operate if the disk is not loaded properly, or if the DIU/RAD power is not cycled after you load the CD-ROM.

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

- (b) After you apply power to the system, allow the system 5 minutes to initialize.
 - (c) Energize the video system control unit (SCU), located in the video control centre.
 - (d) Do this task: Software Configuration Check (Ref AMM 23-32-50/201).
 - (e) Make the selections on the SCU to display the AIRSHOW video on the monitors in the passenger cabin.
 - (f) Use the UP, DOWN, and SET keys on the AIRSHOW cabin control unit to select an AIRSHOW display mode.
 - 1 Make sure the selected AIRSHOW display page is shown clearly on the video monitors.
 - (g) De-energize the video SCU.
- (5) Close the No. 2 Cargo Door, 822 (Ref AMM 06-41-00/201).

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

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CABIN CONTROL UNIT

REMOVAL/INSTALLATION

1 General

- A** The Cabin Control Unit (CCU) is in the Video Control Centre (VCC) in an overhead stowage compartment.

2 Removal

A Access

(1) Location Zones:

- 200 Upper Half of Fuselage
- 211 Control Cabin Left
- 212 Control Cabin Right

B Procedure

- (1) Open these circuit breakers and attach DO-NOT-CLOSE tags:

- (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:

- 37A7, VIDEO CONTROL CENTRE AC

- (2) Disconnect the electrical connector (ref. Figure 401 (20)) from the CCU (50). Put protective caps on the electrical connectors.

- (3) Remove the six screws (70) and washers (60) which attach the mounting bracket (10) to the pallet in the overhead stowage compartment.

Note It is not possible to remove the CCU mounting bracket because the isolation transformer is hard wired to the aircraft.

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

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- (4) Remove the four screws (30) and washers (40), then remove the CCU (50) from the mounting bracket (10).

3 Installation

A Access

- (1) Location Zones:

1. 200 Upper Half of Fuselage
2. 211 Control Cabin Left
3. 212 Control Cabin Right

B Procedure

- (1) Make sure these circuit breakers are open and have DO-NOT-CLOSE tags attached:

- (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:

- 37A7, VIDEO CONTROL CENTRE AC

- (2) Put the CCU (ref. Figure 401 (50)) in position on the mounting bracket (10) and attach it with four screws (30) and washers (40).

Note It was not possible to remove the CCU mounting bracket from the aircraft because the isolation transformer is hard wired to the aircraft.

- (3) Put the mounting bracket (10) in position on the pallet and attach it with the six screws (70) and washers (60).

- (4) Remove the protective caps from the electrical connectors. Connect the electrical connector (20) to the CCU (50).

- (5) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

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- (a) On the overhead circuit breaker panel, P11:

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H32, CABIN INFO CONTROL

EFFECTIVITY: 29941 (NT404), 29942 (NT405), 29943 (NT406), 29944 (NT407)

- 11H29, CABIN INFO CMPTR
- 11H30, VIDEO SYSTEM DC
- 11H34, CABIN INFO CONTROL

EFFECTIVITY: 25268 (NB322), 27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407)

- (b) On the right miscellaneous equipment panel, P37:

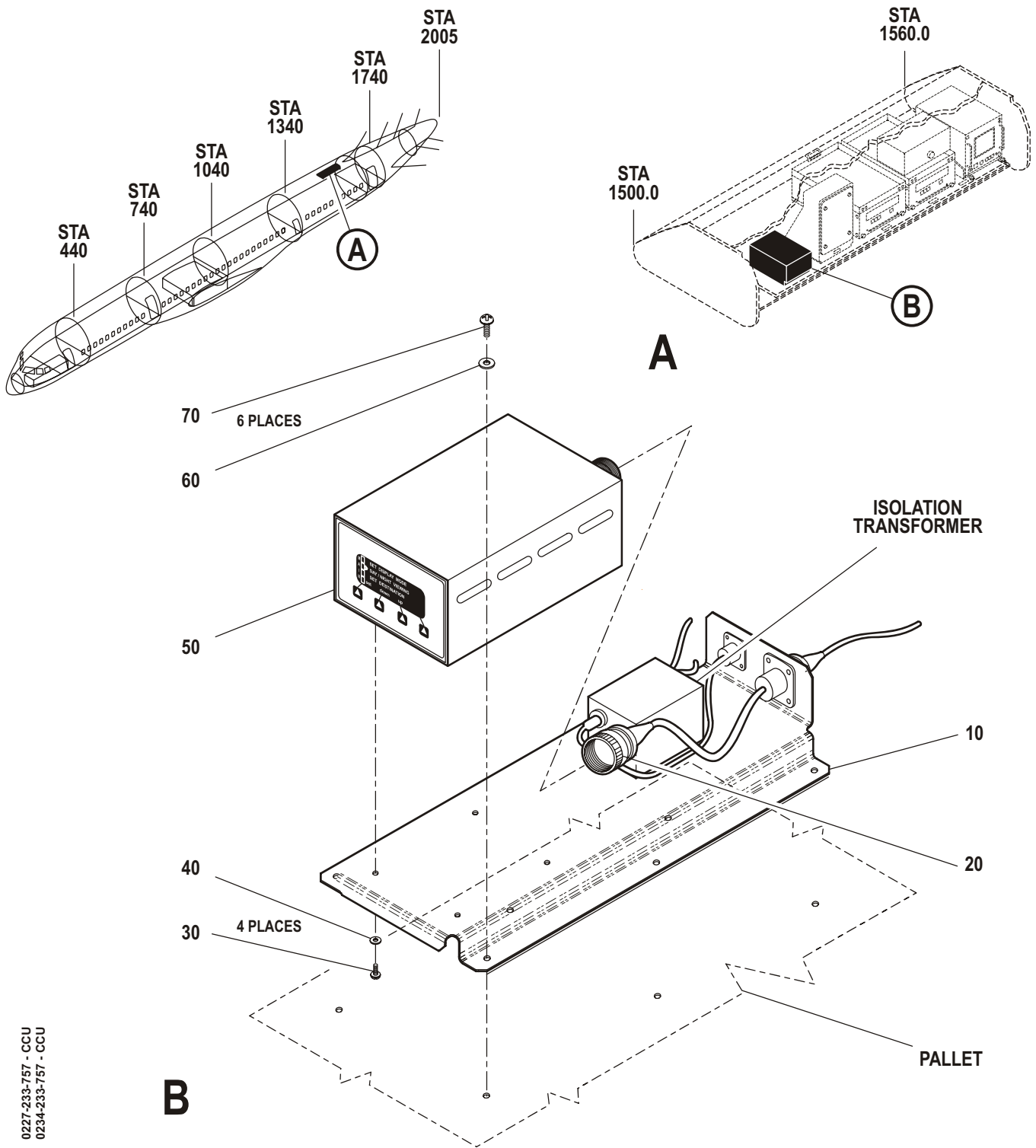
- 37A7, VIDEO CONTROL CENTRE AC

(5) Test the installation:

- (a) After you apply power to the system, allow the system 1-2 minutes to initialize.
- (b) Energize the video system control unit (SCU), located in the video control centre.
- (c) Make the selections on the SCU to display the AIRSHOW video on the monitors in the passenger cabin.
- (d) Use the UP, DOWN, and SET keys on the AIRSHOW cabin control unit to select an AIRSHOW display mode.
 - 1 Make sure the selected AIRSHOW display page is shown clearly on the video monitors.
- (e) De-energize the video SCU.

EFFECTIVITY

(AES-TP-0022) 25268 (NB322),
27146 (NB506), 27147 (NB507), 29941 (NT404),
29942 (NT405), 29943 (NT406), 29944 (NT407),

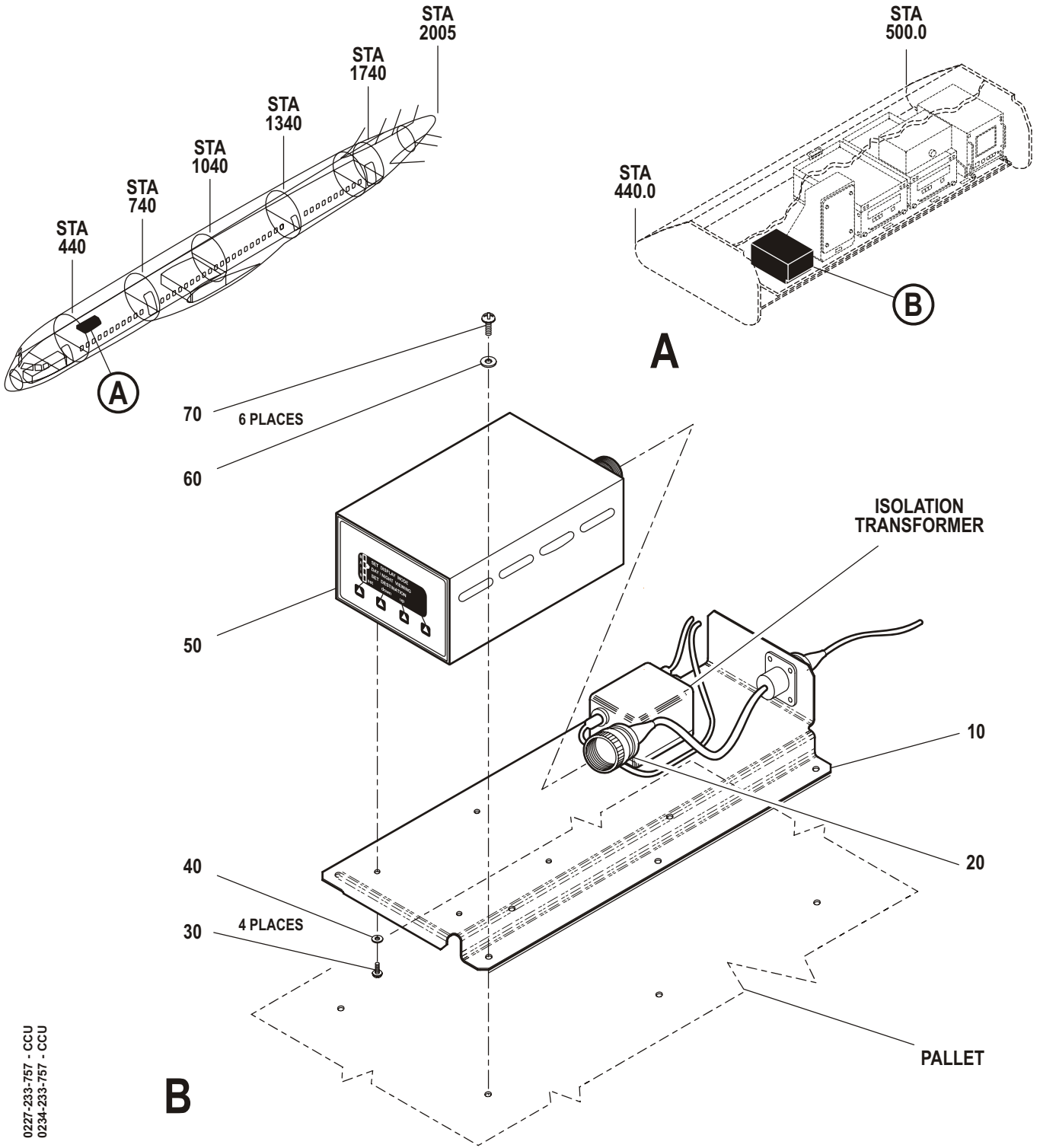


0227-233-757 - CCU
 0234-233-757 - CCU

Figure 401 – Cabin Control Unit – Removal/Installation

EFFECTIVITY
(AES-TP-0022)
 25268 (NB322)

AMM SUPP - 23-32-53



0227-233-757 - CCU
 0234-233-757 - CCU

Figure 401 - ~~Unit~~ ~~Installation~~

EFFECTIVITY

(AES-TP-0022)

27146 (NB506), 27147 (NB507), 29941 (NT404),
 29942 (NT405), 29943 (NT406), 29944 (NT407),

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www.aesglobal.com

JAR21 APPR: CAA.JA.02304

MODIFICATION TITLE:
INTRODUCTION OF REPLACEMENT
SOLID STATE COCKPIT VOICE
RECORDER

MODIFICATION No.
AES-757-340
ISSUE 1
Page 1 of 6

A/C TYPE:.	A/C VARIANT:	A/C REG:.	A/C SERIAL No.:
B757	757-28A	G-OOOB	23822
B757	757-28A	G-OOOC (C-FTDV)	24017
B757	757-23A	G-OOOG	24292
B757	757-2YO	G-OOOK	25054
B757	757-2YO	G-OOOX	26158
B757	757-2YO	G-CPEP	25268
B757	757-236	G-OOOZ	25593

Retro. Action: SEE SHT. YES/NO	Certificate of Airworthiness Category: PUBLIC TRANSPORT - PASSENGER	Classification: MAJOR/MINOR
Project No.: 0273	Performance Group: TURBINE JET	ATA: 23

Reason for Modification: TO FACILITATE CONTINUED OPERATOR COMPLIANCE WITH JAR-OPS 1.710	Reports: NONE
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WEIGHT CHANGE SEE SECTION 5.5.1	ELECTRICAL LOAD SEE SECTION 5.5.2	NOISE SEE SECTION 5.3	DOCUMENTS SEE SECTION 11.0
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CERTIFICATE OF DESIGN

I hereby certify that this modification defines all the changes associated with this certificate.

The technical information contained in this document has been approved under the authority of
JAA Design Organisation Approval No CAA.JA.02304

I further certify that, with the exceptions listed below, the design of this modification complies with the requirements specified by the
CAA as the certification basis for this type of aircraft and with any additional requirements notified by the CAA in respect of the
particular modification.

EXCEPTIONS

NONE

APPROVAL STATUS COMPLETE/INCOMPLETE (see section 10)	CAA STC No.: NOT APPLICABLE
	JAA STC No.: NOT APPLICABLE

ISSUE	1						
DRN No.	0900						
APPROVAL DATE	M A E 17.09.04						

ISSUE	RAISE ISSUE DETAIL					SHEETS AFFECTED	
ISSUE	DATE	COMPILED	CVE / APP STRUCTURES	CVE / APP DESIGN	CVE / APP SYSTEMS	DOCUMENTS AFFECTED	SEE SHT
1	16/09/04	P NOEL	M A E	A M D	A L H	MMEL MAINT MANUAL	4
						WDM REPAIR MANUAL	
						FLIGHT MANUAL CREW MANUAL	
						MAINT. SCHEDULE PART CATALOGUE	4
						* OPERATORS RESPONSIBILITY	

DETAILS OF MODIFICATION

1.0 Introduction

1.1 This modification removes the existing cockpit voice recorder from the E7 rack and installs a new Honeywell 120 minute Solid state Cockpit Voice Recorder. The new SSCVR is compatible with the current Flight deck Area Mic Panel and requires no modification. There is no requirement to remove or add any new or existing wires or looms from the current installation.

2.0 Modification Definition

2.1 The operator has requested this modification to replace the now obsolete Fairchild CVR model A100 with a new Solid State CVR. This modification removes the existing CVR (P/N 93A100-30 or 93A100-80) from the E7 Rack and installs a new 120 minute SSCVR (P/N 980-6022-001).

2.2 The new SSCVR is interchangeable with the current tray and tray connectors.

2.3 The SSCVR is compatible with the existing Area Mic Panel (93A152-50 or 93A152-60) currently fitted on the flight deck.

3.0 Approval Procedures

3.1 This modification certification/approval/validation has been carried out in accordance with JAR 21.

4.0 Basis of Certification/Validation/Approval

4.1 CAA Certification/Validation/Approval Basis For The Aircraft/Modification

4.1.1 The certification basis of the aircraft type is FAR25, UK Type Certificate Data Sheet FA28 refers.

4.1.2 The following JAR/FAR design requirements are addressed within this modification.

Requirement	Description
JAR/FAR 25.1301	Function and Installation
JAR/FAR 25.1309 (b)	Equipment, Systems and Installations
JAR/FAR 25.1457	Cockpit voice recorders

4.2 Design Requirements For Certificate Of Airworthiness

4.2.1 Not Applicable

4.3 Environmental Requirements

4.3.1 The aircraft noise requirements are detailed in CAA Noise Certificate No. 58 & 77, UK TCDS FA28 refers.

4.4 Design Requirements Associated With operational Approvals

4.4.1 The following JAR-OPS Amendment 6 requirements are addressed within this modification.

JAR-OPS 1.700 - Cockpit voice recorders-1

JAR-OPS 1.710 - Cockpit voice recorders-3

5.0 Compliance with the Basis of Certification/Validation/Approval

5.1 Compliance with the Certification/Validation/Approval Basis for the Aircraft/Modification.

5.1.1. Embodiment of this modification does not affect the certification basis of the aircraft.

5.1.2 **JAR/FAR 25.1301/ JAR/FAR 25.1309 (b):** The basic functionality of the cockpit voice recorder system remains unaffected by this modification as certified at build by the aircraft constructor. This modification introduces new Maintenance manual supplements reflecting the amended ground test procedures for the replacement CVR unit (see Para 5.5 for details).

5.1.3 **JAR/FAR 25.1457:** The physical and electrical installation of the CVR remains unchanged from build as certified by the constructor. The new unit is coloured bright orange and contains an integrated Underwater Locating Beacon (ULB). Compliance with the requirement is maintained.

5.1.4 The new SSCVR is UK CAA approved (Approval ref AR01291 refers).

5.1.5 The new SSCVR unit is approved to ED-56a and TSO C-123.

5.1.6 Compatibility with the existing Area Mic panel located in the Flight Deck has been shown through previous equipment constructor testing (ref Honeywell STC no. ST01032SE).

5.1.7 The existing circuit breaker is retained unaltered from build.

5.2 Compliance With Design Requirements For Certificate Of Airworthiness

5.2.1 Not Applicable.

5.3 Compliance with Environmental Requirements

5.3.1 Embodiment of this modification does not affect the existing noise certificate.

5.4 Compliance with Design Requirements Associated with Operational Approvals

5.4.1 The initial C of A issue date for the subject aircraft requires compliance with JAR-OPS 1.710. Installation of the new SSCVR allows for a 2-hour recording capability facilitating additional operator compliance with JAR-OPS 1.700.

5.4.2 The new SSCVR is installed with an integral Underwater Locating Beacon (ULB) maintaining compliance with the requirements of JAR-OPS 1.700 (d).

5.5 Required (Amendments to) Manuals and other Documents Including Mandatory Placards.

5.5.1 Weight: Introduction of the new SSCVR results in a weight decrease of 9.7lbs at Fus. Station 1640.

5.5.2 Electrical Load Demand: In normal operation the new SSCVR results in a power load reduction of 13VA on the 115VAC Bus Right (Section 2) phase B. Emergency Flight times and battery discharge times are not adversely affected.

5.5.3 The Aircraft Flight Manual is not affected by this modification.

5.5.4 A supplement to the existing Aircraft Maintenance Manual (AMM) and Illustrated Parts Catalogue (IPC) has been produced with this modification. It is the operator's responsibility to insert the provided supplements in the applicable manuals and amend the MPD as required to reflect maintenance of the associated system in accordance with the new supplements.

6.0 Conditions Affecting This Approval

6.1 The compatibility of this modification with other previously approved modifications installed on the particular aircraft, must be verified by the installer. Where the potential for interactions between modifications exists, the advice of the Design Organisation/CAA shall be sought.

7.0 Continued Airworthiness

7.1 The influence of the modification on Airworthiness Directive, Service Bulletin eligibility and other data must be considered and the publications monitored accordingly. The maintenance schedule for the aircraft should include reference to this material additional to the original design. Co-ordination is the responsibility of the operator.

8.0 Survey

8.1 No further survey required.

9.0 Authorisation of Release to Service

9.1 In addition to the actions required by the procedures for release to service following maintenance or modification, the following actions must be completed prior to signing the Certificate of Release to Service:

- a) All actions and ground test procedures specified by the modification instructions must be completed satisfactorily.
- b) It must be verified that the documents or amendments to documents, above are as specified, including any changes specified under Section 8 above.

10.0 Approval

10.1 This Minor modification AES-757-340 (MCA-AES-757-340) and related instructions has been approved under the authority of JAA Design Organisation Approval no. CAA.JA.02304.

11. Documents Required

11.1 Documents Introduced

<u>Document Number</u>	<u>Issue</u>	<u>Title</u>
MEI-433	1	INTRODUCTION OF REPLACEMENT SOLID STATE CVR

11.2 Existing Drawings Also Required

<u>Drawing Number</u>	<u>Issue</u>	<u>Title</u>
None		

11.3 Reports/Documents

<u>Document Number</u>	<u>Issue</u>	<u>Title</u>	<u>Document Affected</u>
23-71-01-01 AES supplement No 1	1	IPC Consolidated (S/N: 23822, 24017, 24292, 25593, 25054, 26158, 25268)	D6-49286-ATZ (IPC)
23-71-01 P401 AES supplement No 1 & 23-71-01 P501 AES supplement No 1	1	AMM (S/N: 23822, 24017)	D633N116 (AMM)
23-71-01 P401 AES supplement No 1 & 23-71-01 P501 AES supplement No 1	1	AMM (S/N: 24292)	D633N122 (AMM)
23-71-01 P401 AES supplement No 1 & 23-71-01 P501 AES supplement No 1	1	AMM (S/N: 25054, 26158, 25268)	D633N132 (AMM)
23-71-01 P401 AES supplement No 1 & 23-71-01 P501 AES supplement No 1	1	AMM (S/N: 25593)	D633N137 (AMM)

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FIRST CHOICE AIRWAYS 757-236

MAINTENANCE MANUAL

VOICE RECORDER – ADJUSTMENT/TEST

1. General

- A. This procedure contains three tasks. The three tasks are as follows:
- (1) Operational Test
 - (2) System Test
 - (3) Bulk Erasure Test

2. Operational Test - Voice Recorder Control Panel

A. General

- (1) This adjustment/test procedure is an operational test of the voice recorder control panel.

B. References

- (1) 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
211/212 Flight Compartment

D. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
 - (a) 11H33, VOICE RECORDER

E. Voice Recorder Control Panel Test

- (1) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).
- (2) Do the steps that follow for the operational test:
 - (a) Push and hold the TEST switch on the voice-recorder control panel for approximately 1/2 second.

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VOICE RECORDER – ADJUSTMENT/TEST

- (b) Make sure that the meter needle on the voice-recorder control panel (if installed) deflects once after pushing the TEST switch.
 - (c) Make sure you hear a tone in the headset while the TEST switch is pushed.
 - (3) Disconnect the headphone from the voice-recorder control panel.
 - (4) Remove electrical power if it is not necessary (AMM 24-22-00).
3. System Test - Voice Recorder System
- A. General
 - (1) This system test procedure is a four channel test of the system with flight crew microphones.
 - B. References
 - (1) 23-51-00/501, Flight Interphone
 - (2) 24-22-00/201, Electrical Power – Control
 - C. Access
 - (1) Location Zones
211/212 Flight Compartment
 - D. Prepare for Test
 - (1) Supply electrical power (AMM 24-22-00).
 - (2) Make sure that the Flight Interphone system operates correctly (AMM 23-51-00/501).
 - (3) Make sure that this circuit breaker on the main power distribution panel P6 is closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (4) Make sure that these circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11H33, VOICE RECORDER
 - (b) 11S15, AIR/GND SYS 1
 - E. Four Channel Microphone Test
 - (1) Connect the 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).

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VOICE RECORDER – ADJUSTMENT/TEST

- (2) Connect the boom microphone to the captain's jack panel (P13) (AMM 23-51-00).
- (3) Set the BOOM/OXY switch on the captain's audio-selector panel (P8) to the BOOM position.
- (4) Put a cover on the area microphone at the voice-recorder control panel.
- (5) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (6) Disconnect the boom microphone from the captain's jack panel (P13).
- (7) Connect the boom microphone into the first-officer's jack panel (P14).
- (8) Set the BOOM/OXY switch on the first-officer's audio-selector panel (P8) to the BOOM position.
- (9) Put a cover on the area microphone at the voice-recorder control panel.
- (10) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

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VOICE RECORDER – ADJUSTMENT/TEST

- (11) Disconnect the boom microphone from first-officer's jack panel.
- (12) Connect a microphone to the observer's jack panel.
- (13) Put a cover on the area microphone at the control panel.
- (14) Push the observer's PTT switch to speak into the microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (15) Disconnect the microphone from the captain, the first officer and the first-observer (or the supernumerary) jack panels.
- (16) Remove the cover from the area microphone on the voice recorder control panel.
- (17) Move approximately three feet away from the area microphone on the voice recorder control panel.
- (18) Speak in a usual voice.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (19) Put the boom microphones and the audio selector panels back in the usual condition.

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VOICE RECORDER – ADJUSTMENT/TEST

(20) Disconnect the headset from the voice-recorder control panel.

(21) Remove electrical power if it is not necessary (AMM 24-22-00).

4. Bulk Erasure Test - Voice Recorder System

A. References

- (1) 10-11-01/201, Normal Parking
- (2) 24-22-00/201, Electrical Power - Control
- (3) 32-09-02/201, Air/Ground Relays

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the circuit breakers on the main power distribution panel P6, and the overhead circuit breaker panel P11 are closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (b) 11S15, AIR/GND SYS 1

D. Erasure Tests

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the parking brake is set (AMM 10-11-01).
- (3) Open this circuit breaker on the main power distribution panel P6 and attach DO-NOT-CLOSE tag:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS. THE SPOILERS CAN RETRACT QUICKLY AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (4) Do the deactivation procedure for the spoilers (AMM 27-61-00) or move all persons and equipment away from the spoilers.

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MAINTENANCE MANUAL

VOICE RECORDER – ADJUSTMENT/TEST

WARNING: MAKE SURE YOU DO THE FLIGHT MODE SIMULATION CORRECTLY. IF THE PROCEDURE IS NOT DONE CORRECTLY, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Do the Flight Mode Simulation procedure for the No. 1 air/ground system (AMM 32-09-02).
- (6) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel (P5).
- (7) Push the ERASE button on the voice-recorder control panel for approximately ½ second. (a) Make sure that you do not hear a modulated sound in the headphone.
- (8) Remove DO-NOT-CLOSE tag and close this circuit breaker on the P6 panel:
(a) 6F4, LANDING GEAR PARKING BRAKE VLV
- (9) Push the ERASE button on the control panel.
(a) Make sure that you do not hear a modulated sound in the headphone.
- (10) Put the airplane back to the ground mode (AMM 32-09-02).
- (11) Do the activation procedure for the spoilers if you did the deactivation procedure (AMM 27-61-00).

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MAINTENANCE MANUAL

VOICE RECORDER – ADJUSTMENT/TEST

- (12) Push and hold the ERASE switch on the voice recorder control panel for 2 seconds.
 - (a) After approximately 1 second, make sure that a single 400Hz tone of approximately 3 seconds duration can be heard in the headset, and that no meter (if installed) deflections are present.

- (13) Disconnect the headset from the voice-recorder control panel.

- (14) Remove electrical power if it is not necessary (AMM 24-22-00).

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MAINTENANCE MANUAL

VOICE RECORDER – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is to remove the voice recorder. The second task is to install the voice recorder.

2. Remove the Voice Recorder Unit

A. General

- (1) The M201 voice recorder is in the E7 equipment rack in the aft passenger cabin ceiling, forward of the aft galley. Electrical connections are made through a single connector at the rear of the unit.

B. References

- (1) 20-10-01/401, E/E Rack Mounted Components
(2) 25-22-02/401, Lowered Ceiling Panels

C. Access

- (1) Location Zone
253/254 Area above passenger cabin ceiling - section 46

D. Procedure

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
(a) 11H33, VOICE RECORDER
- (2) Do this task: "Remove the Lowered Ceiling Panels", (AMM 25-22-02/401), to get access to the voice recorder above the No. 1 aft ceiling panel.
- (3) Remove the voice recorder unit (AMM 20-10-01).
- (4) Remove the Underwater Locator Beacon (ULB) and install it on the new voice recorder if it does not come with a ULB already installed.

3. Install Voice Recorder Unit

A. References

- (1) 20-10-01/401, E/E Rack Mounted Components

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FIRST CHOICE AIRWAYS 757-28A

MAINTENANCE MANUAL

VOICE RECORDER – REMOVAL/INSTALLATION

- (2) 25-22-02/401, Lowered Ceiling Panels
- B. Access
- (1) Location Zones
253/254 Area above passenger cabin ceiling - section 46
- C. Procedure
- (1) Install the ULB if the new voice recorder does not have a ULB installed.

NOTE: An underwater locator beacon (ULB) must be installed on the voice recorder when the voice recorder is installed on the airplane.
 - (2) Install the voice recorder unit (AMM 20-10-01).
 - (3) Do this task: "Install the Lowered Ceiling Panels", (AMM 25-22-02/401), to install the No. 1 aft ceiling panel.
 - (4) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
 - (a) 11H33, VOICE RECORDER
- D. Voice recorder installation test.
- (1) Supply electrical power (AMM 24-22-00).
 - (2) Connect a 600 ohm headset at the voice-recorder control panel.
 - (3) Push and hold the TEST switch on the voice-recorder control panel (P5) for approximately 1/2 second.
 - (a) Make sure that the meter needle on the voice-recorder control panel deflects once after pushing the TEST switch.

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MAINTENANCE MANUAL

VOICE RECORDER – REMOVAL/INSTALLATION

- (b) Make sure you hear a tone in the headphone to indicate a successful self-test.
- (4) Release the TEST switch.
- (5) Disconnect the headset at the voice recorder control panel or at the voice recorder front panel.
- (6) Remove electrical power if it is not necessary (AMM 24-22-00).

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MAINTENANCE MANUAL

VOICE RECORDER – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is to remove the voice recorder. The second task is to install the voice recorder.

2. Remove the Voice Recorder Unit

A. General

- (1) The M201 voice recorder is in the E7 equipment rack in the aft passenger cabin ceiling, forward of the aft galley. Electrical connections are made through a single connector at the rear of the unit.

B. References

- (1) 20-10-01/401, E/E Rack Mounted Components
(2) 25-22-02/401, Lowered Ceiling Panels

C. Access

- (1) Location Zone
253/254 Area above passenger cabin ceiling - section 46

D. Procedure

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
(a) 11H33, VOICE RECORDER
- (2) Do this task: "Remove the Lowered Ceiling Panels", (AMM 25-22-02/401), to get access to the voice recorder above the No. 1 aft ceiling panel.
- (3) Remove the voice recorder unit (AMM 20-10-01).
- (4) Remove the Underwater Locator Beacon (ULB) and install it on the new voice recorder if it does not come with a ULB already installed.

3. Install Voice Recorder Unit

A. References

- (1) 20-10-01/401, E/E Rack Mounted Components

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MAINTENANCE MANUAL

VOICE RECORDER – REMOVAL/INSTALLATION

- (2) 25-22-02/401, Lowered Ceiling Panels
- B. Access
- (1) Location Zones
253/254 Area above passenger cabin ceiling - section 46
- C. Procedure
- (1) Install the ULB if the new voice recorder does not have a ULB installed.

NOTE: An underwater locator beacon (ULB) must be installed on the voice recorder when the voice recorder is installed on the airplane.
 - (2) Install the voice recorder unit (AMM 20-10-01).
 - (3) Do this task: "Install the Lowered Ceiling Panels", (AMM 25-22-02/401), to install the No. 1 aft ceiling panel.
 - (4) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
 - (a) 11H33, VOICE RECORDER
- D. Voice recorder installation test.
- (1) Supply electrical power (AMM 24-22-00).
 - (2) Connect a 600 ohm headset at the voice-recorder control panel.
 - (3) Push and hold the TEST switch on the voice-recorder control panel (P5) for approximately 1/2 second.
 - (a) Make sure that the meter needle on the voice-recorder control panel deflects once after pushing the TEST switch.

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VOICE RECORDER – REMOVAL/INSTALLATION

- (b) Make sure you hear a tone in the headphone to indicate a successful self-test.
- (4) Release the TEST switch.
- (5) Disconnect the headset at the voice recorder control panel or at the voice recorder front panel.
- (6) Remove electrical power if it is not necessary (AMM 24-22-00).

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FIRST CHOICE AIRWAYS 757-236

MAINTENANCE MANUAL

VOICE RECORDER – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is to remove the voice recorder. The second task is to install the voice recorder.

2. Remove the Voice Recorder Unit

A. General

- (1) The M201 voice recorder is in the E7 equipment rack in the aft passenger cabin ceiling, forward of the aft galley. Electrical connections are made through a single connector at the rear of the unit.

B. References

- (1) 20-10-01/401, E/E Rack Mounted Components
(2) 25-22-02/401, Lowered Ceiling Panels

C. Access

- (1) Location Zone
253/254 Area above passenger cabin ceiling - section 46

D. Procedure

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
(a) 11H33, VOICE RECORDER
- (2) Do this task: "Remove the Lowered Ceiling Panels", (AMM 25-22-02/401), to get access to the voice recorder above the No. 1 aft ceiling panel.
- (3) Remove the voice recorder unit (AMM 20-10-01).
- (4) Remove the Underwater Locator Beacon (ULB) and install it on the new voice recorder if it does not come with a ULB already installed.

3. Install Voice Recorder Unit

A. References

- (1) 20-10-01/401, E/E Rack Mounted Components

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VOICE RECORDER – REMOVAL/INSTALLATION

- (2) 25-22-02/401, Lowered Ceiling Panels
- B. Access
- (1) Location Zones
253/254 Area above passenger cabin ceiling - section 46
- C. Procedure
- (1) Install the ULB if the new voice recorder does not have a ULB installed.

NOTE: An underwater locator beacon (ULB) must be installed on the voice recorder when the voice recorder is installed on the airplane.
 - (2) Install the voice recorder unit (AMM 20-10-01).
 - (3) Do this task: "Install the Lowered Ceiling Panels", (AMM 25-22-02/401), to install the No. 1 aft ceiling panel.
 - (4) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
 - (a) 11H33, VOICE RECORDER
- D. Voice recorder installation test.
- (1) Supply electrical power (AMM 24-22-00).
 - (2) Connect a 600 ohm headset at the voice-recorder control panel.
 - (3) Push and hold the TEST switch on the voice-recorder control panel (P5) for approximately 1/2 second.
 - (a) Make sure that the meter needle on the voice-recorder control panel deflects once after pushing the TEST switch.

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- (b) Make sure you hear a tone in the headphone to indicate a successful self-test.
- (4) Release the TEST switch.
- (5) Disconnect the headset at the voice recorder control panel or at the voice recorder front panel.
- (6) Remove electrical power if it is not necessary (AMM 24-22-00).

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FIRST CHOICE AIRWAYS 757-2YO

MAINTENANCE MANUAL

VOICE RECORDER – ADJUSTMENT/TEST

1. General

A. This procedure contains three tasks. The three tasks are as follows:

- (1) Operational Test
- (2) System Test
- (3) Bulk Erasure Test

2. Operational Test - Voice Recorder Control Panel

A. General

- (1) This adjustment/test procedure is an operational test of the voice recorder control panel.

B. References

- (1) 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
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D. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
 - (a) 11H33, VOICE RECORDER

E. Voice Recorder Control Panel Test

- (1) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).
- (2) Do the steps that follow for the operational test:
 - (a) Push and hold the TEST switch on the voice-recorder control panel for approximately 1/2 second.

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VOICE RECORDER – ADJUSTMENT/TEST

- (b) Make sure that the meter needle on the voice-recorder control panel (if installed) deflects once after pushing the TEST switch.
 - (c) Make sure you hear a tone in the headset while the TEST switch is pushed.
 - (3) Disconnect the headphone from the voice-recorder control panel.
 - (4) Remove electrical power if it is not necessary (AMM 24-22-00).
3. System Test - Voice Recorder System
- A. General
 - (1) This system test procedure is a four channel test of the system with flight crew microphones.
 - B. References
 - (1) 23-51-00/501, Flight Interphone
 - (2) 24-22-00/201, Electrical Power – Control
 - C. Access
 - (1) Location Zones
211/212 Flight Compartment
 - D. Prepare for Test
 - (1) Supply electrical power (AMM 24-22-00).
 - (2) Make sure that the Flight Interphone system operates correctly (AMM 23-51-00/501).
 - (3) Make sure that this circuit breaker on the main power distribution panel P6 is closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (4) Make sure that these circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11H33, VOICE RECORDER
 - (b) 11S15, AIR/GND SYS 1
 - E. Four Channel Microphone Test
 - (1) Connect the 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).

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VOICE RECORDER – ADJUSTMENT/TEST

- (2) Connect the boom microphone to the captain's jack panel (P13) (AMM 23-51-00).
- (3) Set the BOOM/OXY switch on the captain's audio-selector panel (P8) to the BOOM position.
- (4) Put a cover on the area microphone at the voice-recorder control panel.
- (5) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (6) Disconnect the boom microphone from the captain's jack panel (P13).
- (7) Connect the boom microphone into the first-officer's jack panel (P14).
- (8) Set the BOOM/OXY switch on the first-officer's audio-selector panel (P8) to the BOOM position.
- (9) Put a cover on the area microphone at the voice-recorder control panel.
- (10) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

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VOICE RECORDER – ADJUSTMENT/TEST

- (11) Disconnect the boom microphone from first-officer's jack panel.
- (12) Connect a microphone to the observer's jack panel.
- (13) Put a cover on the area microphone at the control panel.
- (14) Push the observer's PTT switch to speak into the microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.
- (15) Disconnect the microphone from the captain, the first officer and the first-observer (or the supernumerary) jack panels.
- (16) Remove the cover from the area microphone on the voice recorder control panel.
- (17) Move approximately three feet away from the area microphone on the voice recorder control panel.
- (18) Speak in a usual voice.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.
- (19) Put the boom microphones and the audio selector panels back in the usual condition.

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(20) Disconnect the headset from the voice-recorder control panel.

(21) Remove electrical power if it is not necessary (AMM 24-22-00).

4. Bulk Erasure Test - Voice Recorder System

A. References

- (1) 10-11-01/201, Normal Parking
- (2) 24-22-00/201, Electrical Power - Control
- (3) 32-09-02/201, Air/Ground Relays

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the circuit breakers on the main power distribution panel P6, and the overhead circuit breaker panel P11 are closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (b) 11S15, AIR/GND SYS 1

D. Erasure Tests

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the parking brake is set (AMM 10-11-01).
- (3) Open this circuit breaker on the main power distribution panel P6 and attach DO-NOT-CLOSE tag:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS. THE SPOILERS CAN RETRACT QUICKLY AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (4) Do the deactivation procedure for the spoilers (AMM 27-61-00) or move all persons and equipment away from the spoilers.

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FIRST CHOICE AIRWAYS 757-2YO

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VOICE RECORDER – ADJUSTMENT/TEST

WARNING: MAKE SURE YOU DO THE FLIGHT MODE SIMULATION CORRECTLY. IF THE PROCEDURE IS NOT DONE CORRECTLY, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Do the Flight Mode Simulation procedure for the No. 1 air/ground system (AMM 32-09-02).
- (6) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel (P5).
- (7) Push the ERASE button on the voice-recorder control panel for approximately ½ second. (a) Make sure that you do not hear a modulated sound in the headphone.
- (8) Remove DO-NOT-CLOSE tag and close this circuit breaker on the P6 panel:
(a) 6F4, LANDING GEAR PARKING BRAKE VLV
- (9) Push the ERASE button on the control panel.
(a) Make sure that you do not hear a modulated sound in the headphone.
- (10) Put the airplane back to the ground mode (AMM 32-09-02).
- (11) Do the activation procedure for the spoilers if you did the deactivation procedure (AMM 27-61-00).
- (12) Push and hold the ERASE switch on the voice recorder control panel for 2 seconds.
(a) After approximately 1 second, make sure that a single 400Hz tone of approximately 3 seconds duration can be heard in the head set, and that no meter (if installed) deflections are present.
- (13) Disconnect the headset from the voice-recorder control panel.
- (14) Remove electrical power if it is not necessary (AMM 24-22-00).

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VOICE RECORDER – ADJUSTMENT/TEST

1. General

- A. This procedure contains three tasks. The three tasks are as follows:
- (1) Operational Test
 - (2) System Test
 - (3) Bulk Erasure Test

2. Operational Test - Voice Recorder Control Panel

A. General

- (1) This adjustment/test procedure is an operational test of the voice recorder control panel.

B. References

- (1) 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
211/212 Flight Compartment

D. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
 - (a) 11H33, VOICE RECORDER

E. Voice Recorder Control Panel Test

- (1) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).
- (2) Do the steps that follow for the operational test:
 - (a) Push and hold the TEST switch on the voice-recorder control panel for approximately 1/2 second.

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- (b) Make sure that the meter needle on the voice-recorder control panel (if installed) deflects once after pushing the TEST switch.
 - (c) Make sure you hear a tone in the headset while the TEST switch is pushed.
 - (3) Disconnect the headphone from the voice-recorder control panel.
 - (4) Remove electrical power if it is not necessary (AMM 24-22-00).
3. System Test - Voice Recorder System
- A. General
 - (1) This system test procedure is a four channel test of the system with flight crew microphones.
 - B. References
 - (1) 23-51-00/501, Flight Interphone
 - (2) 24-22-00/201, Electrical Power – Control
 - C. Access
 - (1) Location Zones
211/212 Flight Compartment
 - D. Prepare for Test
 - (1) Supply electrical power (AMM 24-22-00).
 - (2) Make sure that the Flight Interphone system operates correctly (AMM 23-51-00/501).
 - (3) Make sure that this circuit breaker on the main power distribution panel P6 is closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (4) Make sure that these circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11H33, VOICE RECORDER
 - (b) 11S15, AIR/GND SYS 1
 - E. Four Channel Microphone Test
 - (1) Connect the 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).

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- (2) Connect the boom microphone to the captain's jack panel (P13) (AMM 23-51-00).
- (3) Set the BOOM/OXY switch on the captain's audio-selector panel (P8) to the BOOM position.
- (4) Put a cover on the area microphone at the voice-recorder control panel.
- (5) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (6) Disconnect the boom microphone from the captain's jack panel (P13).
- (7) Connect the boom microphone into the first-officer's jack panel (P14).
- (8) Set the BOOM/OXY switch on the first-officer's audio-selector panel (P8) to the BOOM position.
- (9) Put a cover on the area microphone at the voice-recorder control panel.
- (10) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

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- (11) Disconnect the boom microphone from first-officer's jack panel.
- (12) Connect a microphone to the observer's jack panel.
- (13) Put a cover on the area microphone at the control panel.
- (14) Push the observer's PTT switch to speak into the microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (15) Disconnect the microphone from the captain, the first officer and the first-observer (or the supernumerary) jack panels.
- (16) Remove the cover from the area microphone on the voice recorder control panel.
- (17) Move approximately three feet away from the area microphone on the voice recorder control panel.
- (18) Speak in a usual voice.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (19) Put the boom microphones and the audio selector panels back in the usual condition.

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VOICE RECORDER – ADJUSTMENT/TEST

- (20) Disconnect the headset from the voice-recorder control panel.
- (21) Remove electrical power if it is not necessary (AMM 24-22-00).

4. Bulk Erasure Test - Voice Recorder System

A. References

- (1) 10-11-01/201, Normal Parking
- (2) 24-22-00/201, Electrical Power - Control
- (3) 32-09-02/201, Air/Ground Relays

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the circuit breakers on the main power distribution panel P6, and the overhead circuit breaker panel P11 are closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (b) 11S15, AIR/GND SYS 1

D. Erasure Tests

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the parking brake is set (AMM 10-11-01).
- (3) Open this circuit breaker on the main power distribution panel P6 and attach DO-NOT-CLOSE tag:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS. THE SPOILERS CAN RETRACT QUICKLY AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (4) Do the deactivation procedure for the spoilers (AMM 27-61-00) or move all persons and equipment away from the spoilers.

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WARNING: MAKE SURE YOU DO THE FLIGHT MODE SIMULATION CORRECTLY. IF THE PROCEDURE IS NOT DONE CORRECTLY, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Do the Flight Mode Simulation procedure for the No. 1 air/ground system (AMM 32-09-02).
- (6) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel (P5).
- (7) Push the ERASE button on the voice-recorder control panel for approximately ½ second. (a) Make sure that you do not hear a modulated sound in the headphone.
- (8) Remove DO-NOT-CLOSE tag and close this circuit breaker on the P6 panel:
(a) 6F4, LANDING GEAR PARKING BRAKE VLV
- (9) Push the ERASE button on the control panel.
(a) Make sure that you do not hear a modulated sound in the headphone.
- (10) Put the airplane back to the ground mode (AMM 32-09-02).
- (11) Do the activation procedure for the spoilers if you did the deactivation procedure (AMM 27-61-00).

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- (12) Push and hold the ERASE switch on the voice recorder control panel for 2 seconds.
 - (a) After approximately 1 second, make sure that a single 400Hz tone of approximately 3 seconds duration can be heard in the head set, and that no meter (if installed) deflections are present.
- (13) Disconnect the headset from the voice-recorder control panel.
- (14) Remove electrical power if it is not necessary (AMM 24-22-00).

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VOICE RECORDER – ADJUSTMENT/TEST

1. General

- A. This procedure contains three tasks. The three tasks are as follows:
- (1) Operational Test
 - (2) System Test
 - (3) Bulk Erasure Test

2. Operational Test - Voice Recorder Control Panel

A. General

- (1) This adjustment/test procedure is an operational test of the voice recorder control panel.

B. References

- (1) 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
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D. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
 - (a) 11H33, VOICE RECORDER

E. Voice Recorder Control Panel Test

- (1) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).
- (2) Do the steps that follow for the operational test:
 - (a) Push and hold the TEST switch on the voice-recorder control panel for approximately 1/2 second.

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- (b) Make sure that the meter needle on the voice-recorder control panel (if installed) deflects once after pushing the TEST switch.
 - (c) Make sure you hear a tone in the headset while the TEST switch is pushed.
 - (3) Disconnect the headphone from the voice-recorder control panel.
 - (4) Remove electrical power if it is not necessary (AMM 24-22-00).
3. System Test - Voice Recorder System
- A. General
- (1) This system test procedure is a four channel test of the system with flight crew microphones.
- B. References
- (1) 23-51-00/501, Flight Interphone
 - (2) 24-22-00/201, Electrical Power – Control
- C. Access
- (1) Location Zones
211/212 Flight Compartment
- D. Prepare for Test
- (1) Supply electrical power (AMM 24-22-00).
 - (2) Make sure that the Flight Interphone system operates correctly (AMM 23-51-00/501).
 - (3) Make sure that this circuit breaker on the main power distribution panel P6 is closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (4) Make sure that these circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11H33, VOICE RECORDER
 - (b) 11S15, AIR/GND SYS 1
- E. Four Channel Microphone Test
- (1) Connect the 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).

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- (2) Connect the boom microphone to the captain's jack panel (P13) (AMM 23-51-00).
- (3) Set the BOOM/OXY switch on the captain's audio-selector panel (P8) to the BOOM position.
- (4) Put a cover on the area microphone at the voice-recorder control panel.
- (5) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

- (6) Disconnect the boom microphone from the captain's jack panel (P13).
- (7) Connect the boom microphone into the first-officer's jack panel (P14).
- (8) Set the BOOM/OXY switch on the first-officer's audio-selector panel (P8) to the BOOM position.
- (9) Put a cover on the area microphone at the voice-recorder control panel.
- (10) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.

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- (11) Disconnect the boom microphone from first-officer's jack panel.
- (12) Connect a microphone to the observer's jack panel.
- (13) Put a cover on the area microphone at the control panel.
- (14) Push the observer's PTT switch to speak into the microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.
- (15) Disconnect the microphone from the captain, the first officer and the first-observer (or the supernumerary) jack panels.
- (16) Remove the cover from the area microphone on the voice recorder control panel.
- (17) Move approximately three feet away from the area microphone on the voice recorder control panel.
- (18) Speak in a usual voice.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak.
- (19) Put the boom microphones and the audio selector panels back in the usual condition.

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VOICE RECORDER – ADJUSTMENT/TEST

(20) Disconnect the headset from the voice-recorder control panel.

(21) Remove electrical power if it is not necessary (AMM 24-22-00).

4. Bulk Erasure Test - Voice Recorder System

A. References

- (1) 10-11-01/201, Normal Parking
- (2) 24-22-00/201, Electrical Power - Control
- (3) 32-09-02/201, Air/Ground Relays

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Prepare for Test

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the circuit breakers on the main power distribution panel P6, and the overhead circuit breaker panel P11 are closed:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV
 - (b) 11S15, AIR/GND SYS 1

D. Erasure Tests

- (1) Supply electrical power (AMM 24-22-00).
- (2) Make sure that the parking brake is set (AMM 10-11-01).
- (3) Open this circuit breaker on the main power distribution panel P6 and attach DO-NOT-CLOSE tag:
 - (a) 6F4, LANDING GEAR PARKING BRAKE VLV

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS. THE SPOILERS CAN RETRACT QUICKLY AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (4) Do the deactivation procedure for the spoilers (AMM 27-61-00) or move all persons and equipment away from the spoilers.

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FIRST CHOICE AIRWAYS 757-23A

MAINTENANCE MANUAL

VOICE RECORDER – ADJUSTMENT/TEST

WARNING: MAKE SURE YOU DO THE FLIGHT MODE SIMULATION CORRECTLY. IF THE PROCEDURE IS NOT DONE CORRECTLY, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Do the Flight Mode Simulation procedure for the No. 1 air/ground system (AMM 32-09-02).
- (6) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel (P5).
- (7) Push the ERASE button on the voice-recorder control panel for approximately ½ second. (a) Make sure that you do not hear a modulated sound in the headphone.
- (8) Remove DO-NOT-CLOSE tag and close this circuit breaker on the P6 panel:
(a) 6F4, LANDING GEAR PARKING BRAKE VLV
- (9) Push the ERASE button on the control panel.
(a) Make sure that you do not hear a modulated sound in the headphone.
- (10) Put the airplane back to the ground mode (AMM 32-09-02).
- (11) Do the activation procedure for the spoilers if you did the deactivation procedure (AMM 27-61-00).

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MAINTENANCE MANUAL

VOICE RECORDER – ADJUSTMENT/TEST

- (12) Push and hold the ERASE switch on the voice recorder control panel for 2 seconds.
 - (a) After approximately 1 second, make sure that a single 400Hz tone of approximately 3 seconds duration can be heard in the head set, and that no meter (if installed) deflections are present.

- (13) Disconnect the headset from the voice-recorder control panel.

- (14) Remove electrical power if it is not necessary (AMM 24-22-00).

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FIRST CHOICE AIRWAYS 757-2YO

MAINTENANCE MANUAL

VOICE RECORDER – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is to remove the voice recorder. The second task is to install the voice recorder.

2. Remove the Voice Recorder Unit

A. General

- (1) The M201 voice recorder is in the E7 equipment rack in the aft passenger cabin ceiling, forward of the aft galley. Electrical connections are made through a single connector at the rear of the unit.

B. References

- (1) 20-10-01/401, E/E Rack Mounted Components
(2) 25-22-02/401, Lowered Ceiling Panels

C. Access

- (1) Location Zone
253/254 Area above passenger cabin ceiling - section 46

D. Procedure

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
(a) 11H33, VOICE RECORDER
- (2) Do this task: "Remove the Lowered Ceiling Panels", (AMM 25-22-02/401), to get access to the voice recorder above the No. 1 aft ceiling panel.
- (3) Remove the voice recorder unit (AMM 20-10-01).
- (4) Remove the Underwater Locator Beacon (ULB) and install it on the new voice recorder if it does not come with a ULB already installed.

3. Install Voice Recorder Unit

A. References

- (1) 20-10-01/401, E/E Rack Mounted Components

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VOICE RECORDER – REMOVAL/INSTALLATION

(2) 25-22-02/401, Lowered Ceiling Panels

B. Access

(1) Location Zones
253/254 Area above passenger cabin ceiling - section 46

C. Procedure

(1) Install the ULB if the new voice recorder does not have a ULB installed.

NOTE: An underwater locator beacon (ULB) must be installed on the voice recorder when the voice recorder is installed on the airplane.

(2) Install the voice recorder unit (AMM 20-10-01).

(3) Do this task: "Install the Lowered Ceiling Panels", (AMM 25-22-02/401), to install the No. 1 aft ceiling panel.

(4) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
(a) 11H33, VOICE RECORDER

D. Voice recorder installation test.

(1) Supply electrical power (AMM 24-22-00).

(2) Connect a 600 ohm headset at the voice-recorder control panel.

(3) Push and hold the TEST switch on the voice-recorder control panel (P5) for approximately 1/2 second.

(a) Make sure that the meter needle on the voice-recorder control panel deflects once after pushing the TEST switch.

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VOICE RECORDER – REMOVAL/INSTALLATION

- (b) Make sure you hear a tone in the headphone to indicate a successful self-test.
- (4) Release the TEST switch.
- (5) Disconnect the headset at the voice recorder control panel or at the voice recorder front panel.
- (6) Remove electrical power if it is not necessary (AMM 24-22-00).

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**AIR 2000
MANUAL UPDATE
B757-200**

***AIRWORKS
COCKPIT DOOR SURVEILLANCE
SYSTEM (CDSS)
INSTALLATION***

**AIRCRAFT MAINTENANCE MANUAL
SUPPLEMENT**

**DOC. NO.: AMM230061
FAA PROJECT NO.: ST10129LA-T**

**REVISION NC
MAY 06, 2003**

B757-200
AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

REVISION RECORD

Retain this record in front of the manual. Upon receipt of a revision, insert the revised pages in the manual; enter the revision number, date filed, and initial.

REVISION NUMBER	REVISION DATE	DATE FILED	BY
Initial Release	May 06, 2003	May 06, 2003	AirWorks

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

SERVICE BULLETIN LIST

SERVICE BULLETIN	DATE	TITLE	DATE OF INCORPORATION INTO MANUAL

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

INTRODUCTION

1. GENERAL

This publication is a supplement to the airplane Maintenance Manual and pertains only to the installation and assemblies of the AirWorks Cockpit Door Surveillance System (CDSS) Installation.

2. RELATED PUBLICATION

This publication is one of the three pertaining to the AirWorks Cockpit Door Surveillance System (CDSS). The other manuals are:

- (1) Illustrated Parts Catalog
- (2) Wiring Diagram Manual Supplement

The three publications must be used together to effectively maintain the AirWorks Cockpit Door Surveillance System in satisfactory functional condition.

3. SCOPE

This publication and two related publications pertain only to the installation of the new AirWorks Cockpit Door Surveillance System.

4. CONTENTS

This publication consists of a front matter, introduction (this section), description and operation, removal/installation and adjustment/test of the new system.

5. EFFECTIVITY

This maintenance manual supplement applies to AIR 2000 B757-200 S/N NB322, NT404, NT406, NT245, NT246, NJ001, NJ002, NJ003, NA442, NA443, NA447, NB134, NA346, NA397, NB329, NT232 and NA352 airplanes.

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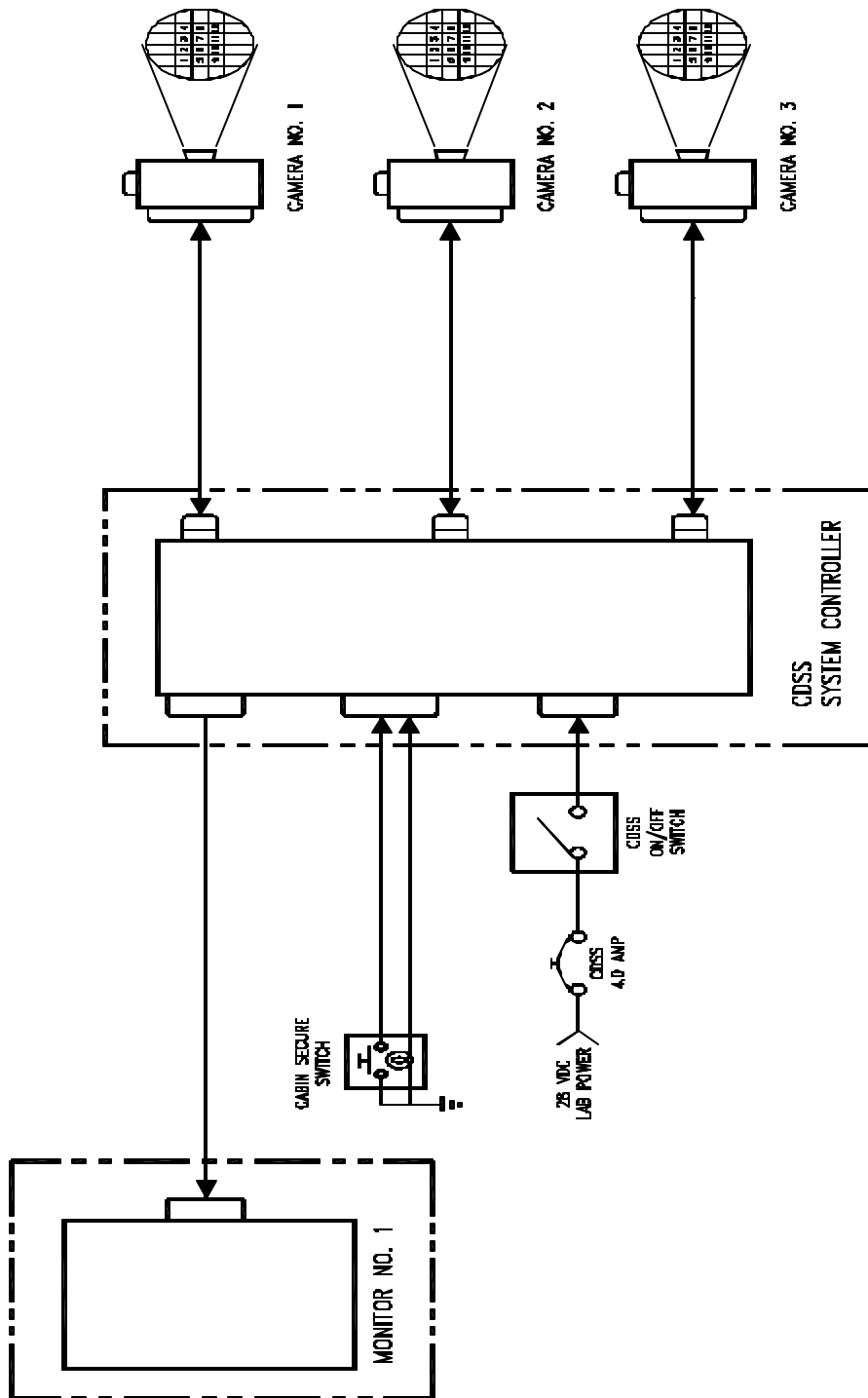
AIRWORKS CDSS SYSTEM – DESCRIPTION AND OPERATION

1. General Description (Ref. Fig 1)

- A. The CDSS System allows the pilot and copilot to view video images of the area outside the cockpit door through a video monitor mounted on the P9 panel between the flight crew. Power to the CDSS system is controlled from an On-Off push-button switch located on the overhead panel.
- B. Viewing camera selection is performed by touching the monitor screen to activate a selection menu and then touching the screen icon corresponding to the desired camera. The monitor screen goes blank after a pre-defined time period. Monitor brightness control is effected by repeatedly touching the desired brightness control icon on the screen. The CDSS System consists of the following components:
 - (1) One 6.4 inch LCD monitor in the cockpit.
 - (2) Three wide angle viewing cameras with integral light for viewing in darkness.
 - (3) One system control unit located at STA 406.5 above the ceilings.
 - (4) One system power On-Off switch on P5 overhead panel.
 - (5) One 4.0 Amp circuit breaker labeled “CDSS PWR” located on the P11 circuit breaker panel.
 - (6) One Cabin Secure switch located on the flight attendant panel.
 - (7) One fault relay is added to the On-Off switch assembly located on the P5 overhead panel.
- C. The CDSS monitor is mounted in the operational and visual field of view of both the Pilot and the First Officer. The monitor is touch screen controlled to allow the Pilot or First Officer to select the viewing camera, one camera at a time. The monitor can display the location of the cameras.
- D. The three viewing cameras are mounted outside the flight crew compartment door. One camera views down and aft and the others view sideways. The cameras have wide viewing angle.
- E. The system is powered from the 28 VDC non-essential bus with an estimated current consumption of 4.0 Amps. The ON/OFF switch allows the flight crew to turn off power to the system.

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT



CDSS System Simplified Schematic Diagram

Figure 1

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

2. General System Operation

- A. To turn on power to the CDSS System, press and release the "CDSS" lighted switch on the overhead panel. To turn off the CDSS system, press and release the "CDSS" lighted switch on the overhead panel, OFF (white illumination).

When the CDSS system is powered on, pilot and copilot will have 2 options to select the system operation mode: MANUAL or AUTO thru the LCD monitors. Manual mode allows the crew to choose one camera at a time and AUTO mode shows all the cameras automatically.

B. LCD Monitor (Ref. Fig 2)

- (1) The LCD monitor is located on the P9 panel between the crew and powered by 12V DC input from the system control unit located at STA 406.5 above the ceilings.
- (2) To turn on the Monitor touch the screen once in any area. The monitor will turn on and the on-screen menu will be seen.
- (3) There are two modes in which the system switcher can work: Automatic and Manual. Touch the "MANU" icon then select "SWITCHER" to choose the mode.
- (4) Select AUTO mode allows the user to determine how long you want each camera to remain on the screen. Use the buttons "+" or "-" to increase or decrease the time. The time selected will show in the window to the left of the "+" button. The indicated number is in seconds.

NOTE: Touch "AUTO" then touch "BACK" and the number shown on the screen indicates the camera being shown and it will change as the other cameras are AUTO selected.

- (5) Select MANUAL mode by touching the button "MANUAL" allows the pilot and copilot to manually determine which camera they would like to see.

C. Viewing Cameras (Ref. Fig 3)

- (1) The three viewing cameras are powered by 12V DC input from the system control unit located at the STA 406.5 above the ceiling.
- (2) When the CDSS system is on, the three viewing cameras start working immediately.

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

D. System Control Unit (Ref. Fig 4)

- (1) The system control unit is located at the STA 406.5 above the ceilings and powered by the system On-Off switch 28V DC input in the cockpit overhead panel.
- (2) The system control unit is responsible for feeding the power to the cameras and monitor and the video signal transferring from cameras to the monitor.

E. Circuit Breaker (Ref. Fig 5)

- (1) One 4.0 Amp circuit breaker C9901 located in the P11 circuit breaker panel controls the power supply to the system.

F. System On-Off Switch (Ref. Fig 6)

- (1) The system On-Off switch is located in the cockpit overhead panel. It allows the flight crew to enable/disable the whole CDSS system power.
- (2) The OFF light is white illuminated when the system is turned off and the FAULT amber light will be illuminated when the system fails to operate. When the CDSS system is on and operating properly, there will be no illumination on the switch.

G. Fault Relay (Ref. Fig 6)

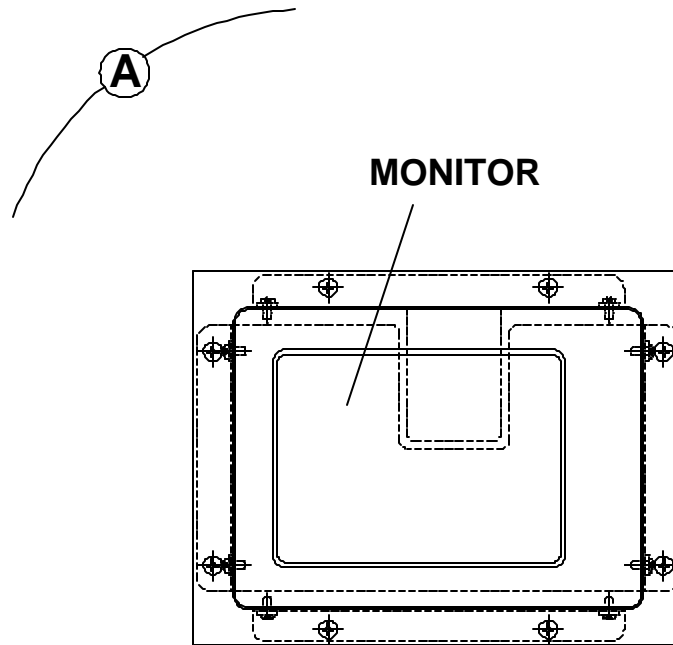
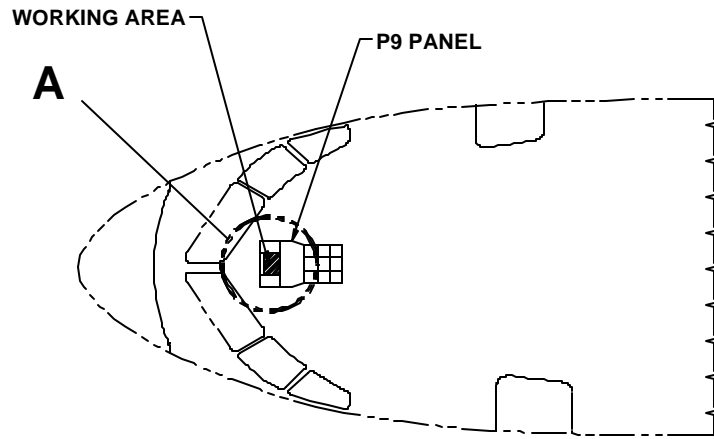
- (1) The system control unit will trigger the fault relay to enable the amber FAULT light on the On-Off switch when it detects the system is not working properly. The flight crew can reset the relay by using the switch and may need to perform a troubleshooting if the amber FAULT light is still on after reset.

H. Cabin Secure Switch (Ref. Fig 7)

- (1) The Cabin Secure is added to the CDSS system to allow the cabin crew to be informed that the cabin is secure for the flight through the input by the flight attendant.

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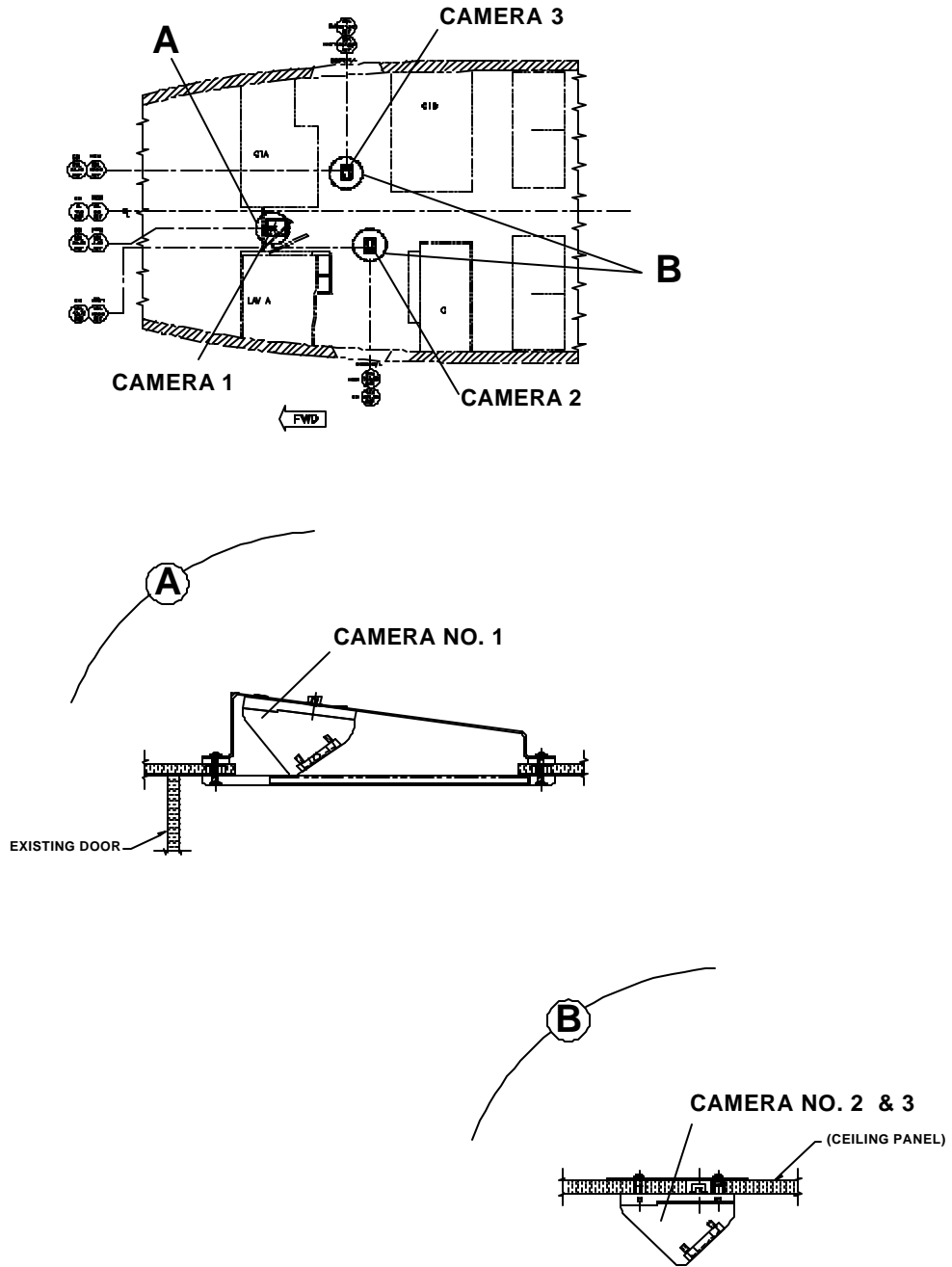


Monitor Display Instl Kit, CDSS System

Figure 2

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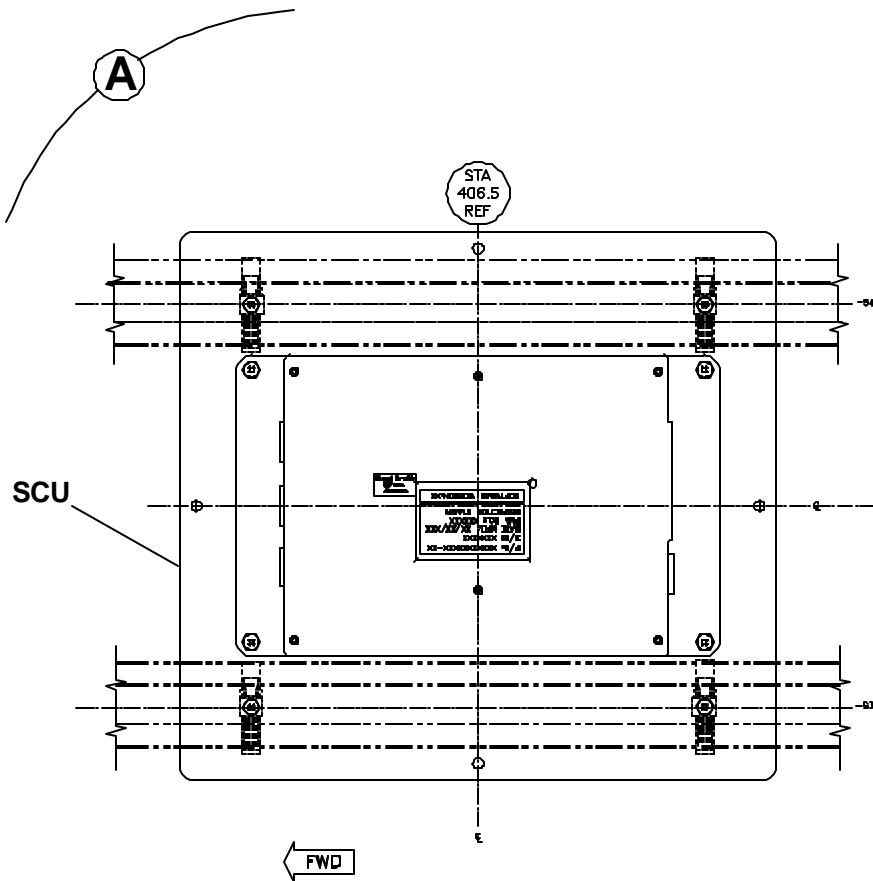
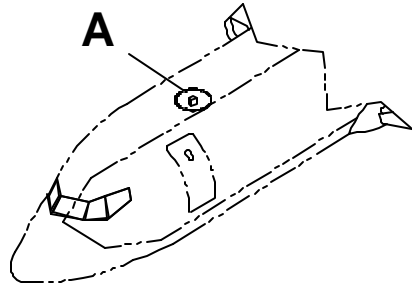


Camera Instl Kit, CDSS System

Figure 3

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

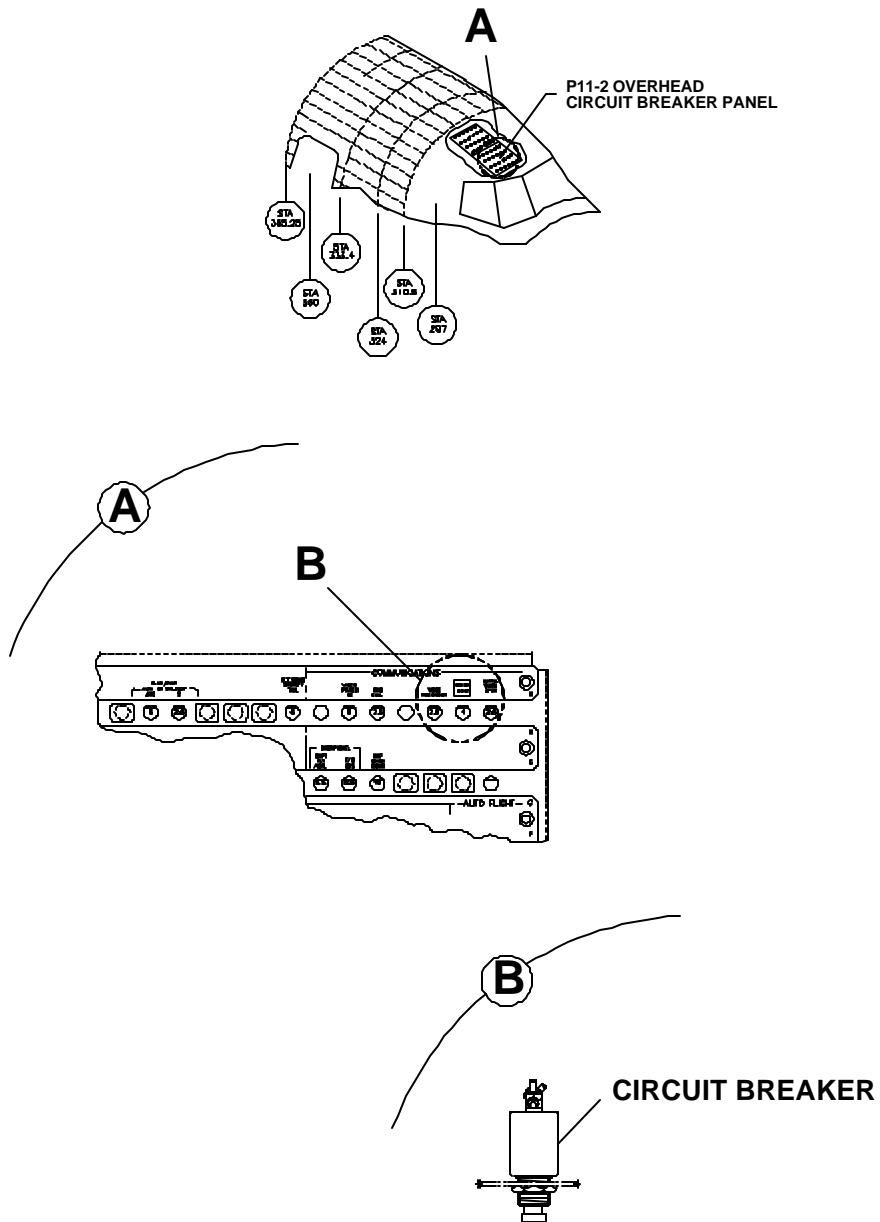


System Control Unit Instl Kit, CDSS System

Figure 4

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

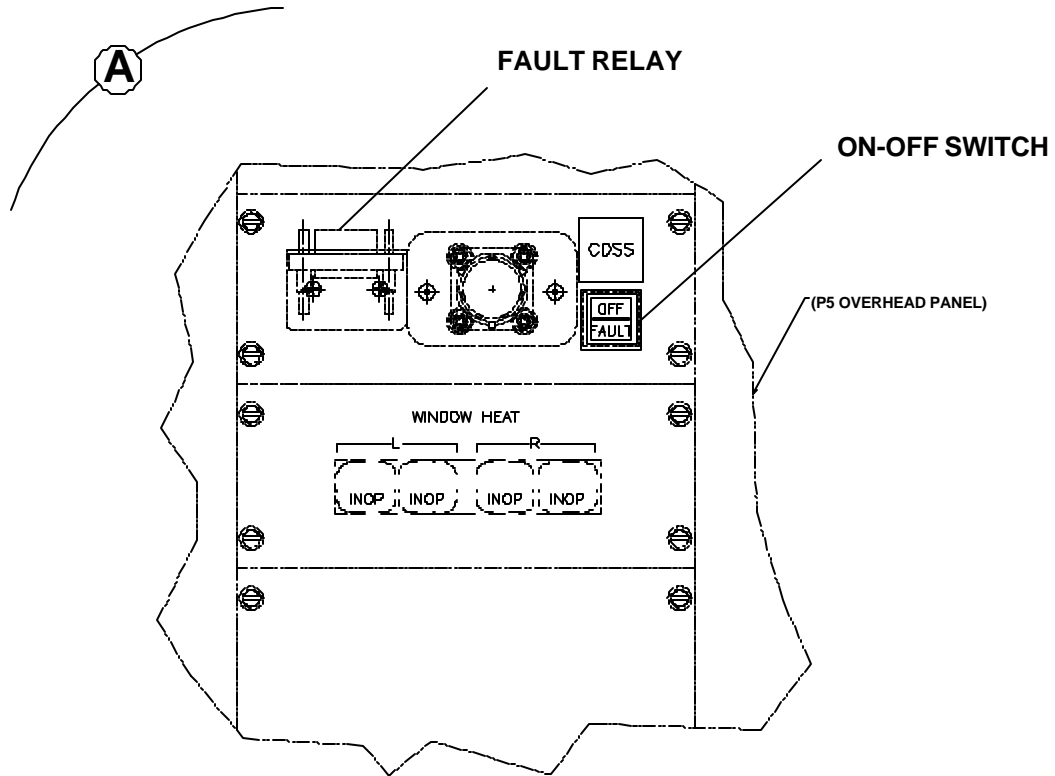
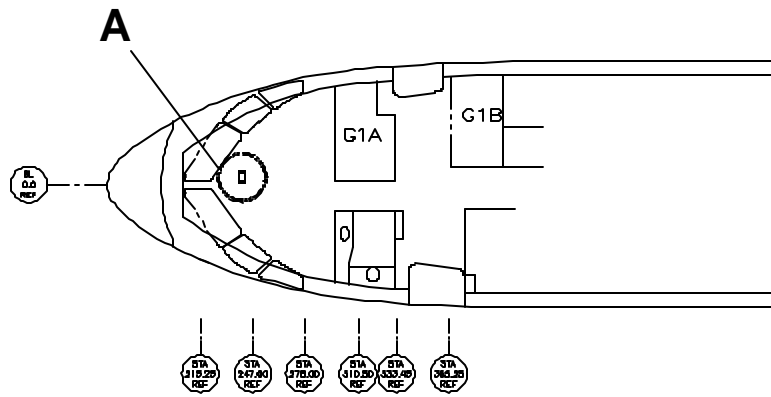


Circuit Breaker MOD Kit, CDSS System

Figure 5

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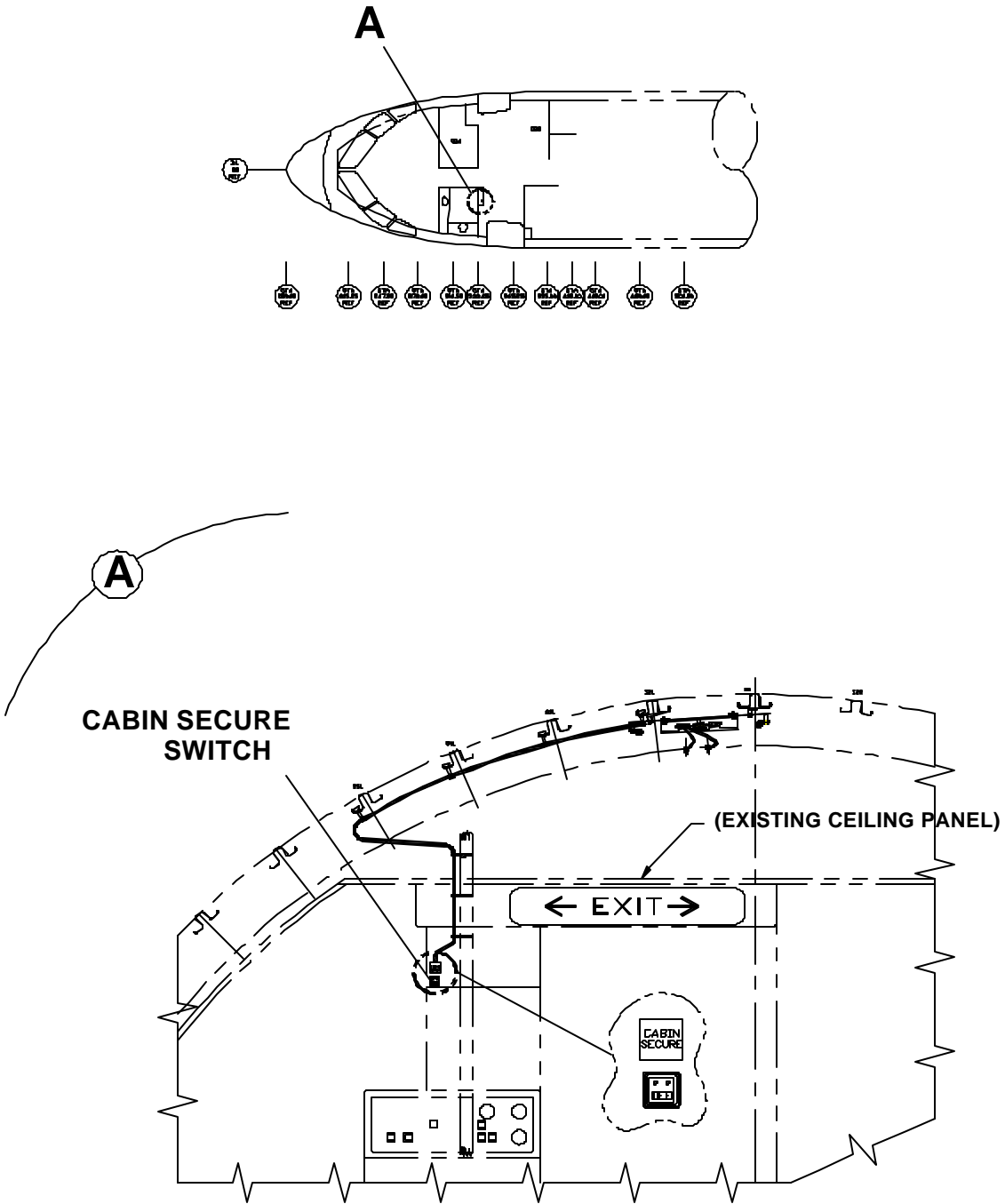


On-Off Switch MOD Kit, CDSS System

Figure 6

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT



Cabin Secure Switch MOD Kit, CDSS System

Figure 7

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

AIRWORKS CDSS SYSTEM – REMOVAL/INSTALLATION

1. General

A. This section details maintenance instructions of removal and installation for the following components:

- (1) LCD Monitor
- (2) Viewing Cameras
- (3) System Control Unit
- (4) System On-Off Switch
- (5) Cabin Secure Switch
- (6) Fault Relay

B. This section also details the procedures of the CDSS Deactivation.

C. Refer to AirWorks CDSS System – Adjustment/Test page 201 when performing the CDSS system test.

2. LCD Monitor (Ref. Fig 101)

A. Removal

- (1) Open the circuit breaker C9901 at the P11 circuit breaker panel and attach “DO – NOT – CLOSE” tag.
- (2) Gain access to the cockpit.
- (3) Remove and retain four (4) screws securing the monitor assembly to the angle assemblies from the monitor location.
- (4) Pull the monitor assembly accordingly and lift the monitor assembly until the electrical cable connector is seen.
- (5) Disconnect the electrical cable connector from the back of the monitor assembly.
- (6) Remove and retain four (4) screws securing the face plate and monitor holder to the angle assembly.
- (7) Remove and retain eight (8) screws securing the monitor holder to the monitor assembly.

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- (8) Remove the monitor assembly.

B. Installation

- (1) Verify the circuit breaker C9901 at the P11 circuit breaker panel is open and tagged.
- (2) Install the holder to the monitor assembly using the screws retained from the removal procedure.
- (3) Install the electrical cable connector to the monitor thru the cut-out on the holder assembly.
- (4) Install the face plate to the monitor assembly using the screws retained from the removal procedure.
- (5) Mount monitor and holder assemblies to the angle assemblies and secure by using screws retained from the removal procedure.
- (6) Perform the CDSS system test.

3. Viewing Cameras (Ref Fig 102)

A. Removal (Camera No. 1)

- (1) Open the circuit breaker C9901 at the P11 circuit breaker panel and attach "DO – NOT – CLOSE" tag.
- (2) Remove the ceiling panel.
- (3) Disconnect the electrical cable connector from the camera.
- (4) Remove and retain the four (4) screws and washers securing the camera bracket to the ceiling panel from the camera location.
- (5) Remove and retain the four (4) screws and washers securing the camera to the camera bracket.
- (6) Remove the camera.

NOTE: By removing and retaining the four (4) screws securing the camera cover and lens to the ceiling panel, the cover and lens can be removed without removing the ceiling panel. To install the camera cover and lens, using the retained screws from the removal procedure.

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B. Installation (Camera No. 1)

- (1) Verify the circuit breaker C9901 at the P11 circuit breaker panel is open and tagged.
- (2) Install the camera to camera bracket using the screws and washers retained from the removal procedure.
- (3) Install the electrical cable connector to the camera.
- (4) Install the camera bracket to the ceiling panel using the screws and washers retained from the removal procedure.
- (5) Install the ceiling panel.
- (6) Perform the CDSS system test.

C. Removal (Camera No. 2 & 3)

- (1) Open the circuit breaker C9901 at the P11 circuit breaker panel and attach "DO – NOT – CLOSE" tag.
- (2) Remove the ceiling panel.
- (3) Disconnect the electrical cable connector from the camera.
- (4) Remove and retain the four (4) screws and washers securing the camera to the ceiling panel from the camera location.
- (5) Remove the camera.

D. Installation (Camera No. 2 & 3)

- (1) Verify the circuit breaker C9901 at the P11 circuit breaker panel is open and tagged.
- (2) Install the camera to the ceiling panel using the screws and washers retained from the removal procedure.
- (3) Install the electrical cable connector to the camera.
- (4) Install the ceiling panel.
- (5) Perform the CDSS system test.

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4. System Control Unit (Ref. Fig 103)

A. Removal

- (1) Open the circuit breaker C9901 at the P11 circuit breaker panel and attach “DO – NOT – CLOSE” tag.
- (2) The SCU is only mounted to STA 406.5 between stringers S3L and S4L above the ceilings.
- (3) Disconnect all electrical cable connectors from the control unit.
- (4) Remove and retain four (4) screws and washers securing the system control unit to the mounting doubler assembly.
- (5) Remove the system control unit.

B. Installation

- (1) Verify the circuit breaker C9901 at the P11 circuit breaker panel is open and tagged.
- (2) Install the system control unit to the mounting doubler assembly using the screws and washers retained from the removal procedure.
- (3) Install all electrical cable connectors to the system control unit.
- (4) Perform the CDSS system test.

5. On-Off Switch Assembly (Ref. Fig 104)

A. Removal

- (1) Open the circuit breaker C9901 at the P11 circuit breaker panel and attach “DO – NOT – CLOSE” tag.
- (2) Gain access to the P5 cockpit overhead panel where the On-Off switch is located.
- (3) Remove the existing panel.
- (4) Disconnect the electrical cable connector from the On-Off switch.
- (5) Remove the switch.

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B. Installation

- (1) Verify the circuit breaker C9901 at the P11 circuit breaker panel is open and tagged.
- (2) Install the On-Off switch cable assembly to the disconnect plate and relay using the screws, nuts and washers retained from the removal procedure.
- (3) Install tie-wrap to secure the cable to the standoff.
- (4) Connect the cable connector to the On-Off switch connector.
- (5) Connect the switch to the cable assembly thru the existing panel.
- (6) Install the existing panel back to its original location.
- (7) Perform the CDSS system test.

6. Cabin Secure Switch (Ref. Fig 105)

A. Removal

- (1) Open the circuit breaker C9901 at the P11 circuit breaker panel and attach "DO – NOT – CLOSE" tag.
- (2) Gain access to the existing flight attendant panel by the door 1L.
- (3) Remove the existing flight attendant panel.
- (4) Remove the button and switch body from the retention clip.

B. Installation

- (1) Verify the circuit breaker C9901 at the P11 circuit breaker panel is open and tagged.
- (2) Install the button and switch body to the retention clip thru the existing flight attendant panel retained from the removal procedure.
- (3) Install the existing flight attendant panel back to the original location.
- (4) Perform the CDSS system test.

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7. Fault Relay (Ref. Fig 104)

A. Removal

- (1) Open the circuit breaker C9901 at the P11 circuit breaker panel and attach “DO – NOT – CLOSE” tag.
- (2) Gain access to the P5 cockpit overhead panel where the On-Off switch is located.
- (3) Remove the existing panel.
- (4) Remove and retain the hardware securing the fault relay to the existing panel.
- (5) Disconnect the fault relay from the cable assembly.
- (6) Remove the fault relay.

B. Installation

- (1) Verify the circuit breaker C9901 at the P11 circuit breaker panel is open and tagged.
- (2) Install the fault relay to the existing panel using the screws and washers retained from the removal procedure.
- (3) Install the electrical cable assembly to the fault relay.
- (4) Install the existing panel back to the original location.
- (5) Perform the CDSS system test.

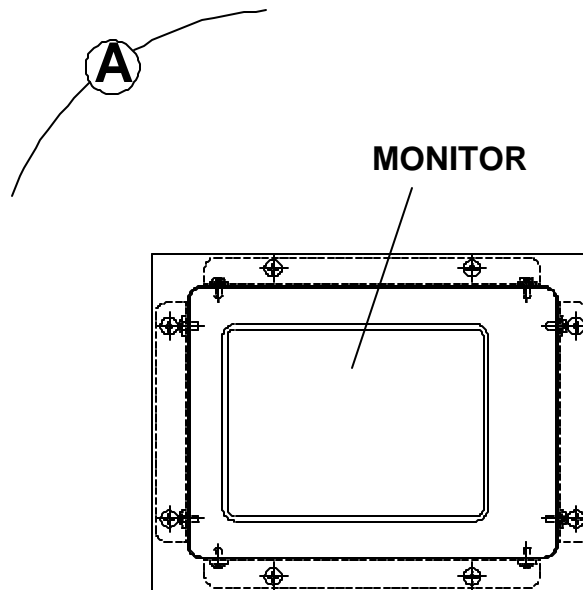
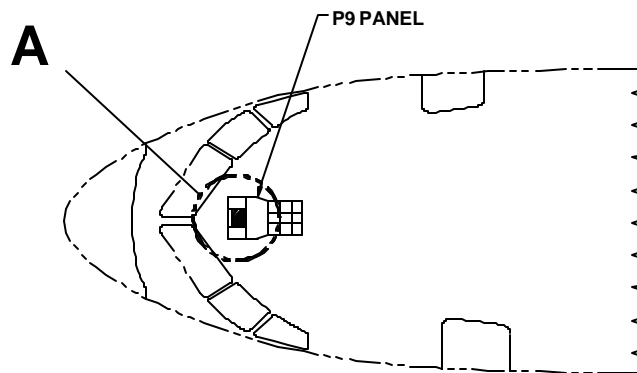
8. CDSS Deactivation

- A. Pull “CDSS PWR” C9901 C/B at the P11-2 position (T/B 112, STA 272, WL 218, RBL 016) and secure with red safety collar.
- B. Mark C/B Panel at same location with gray “INOP” label. Cover CDSS “ON/OFF” switch on pilot’s O/H panel with gray “INOP” label.
- C. Cover CDSS “Cabin Secure” switch on station 1L attendant panel with gray “INOP” label.
- D. Place gray “INOP” label on top edge of monitor

NOTE: DO NOT PLACE LABEL ON SCREEN.

- E. Return aircraft to serviceable condition.

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AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

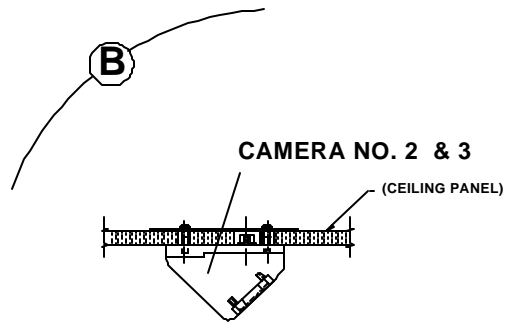
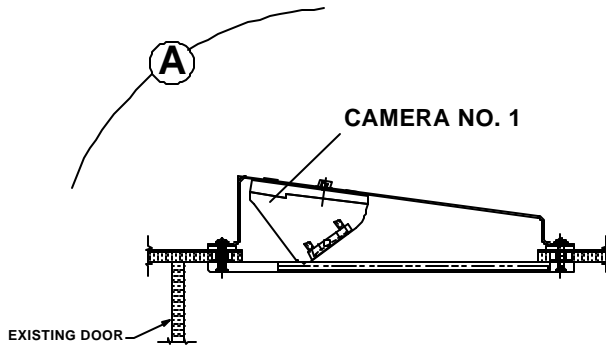
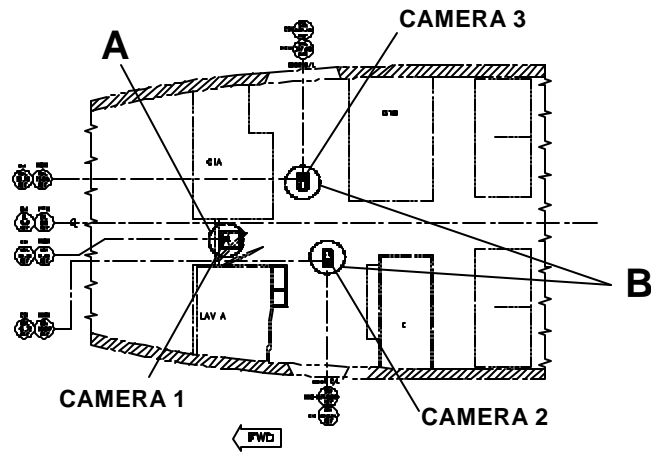


Monitor Display Instl Kit, CDSS System

Figure 101

B757-200

AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

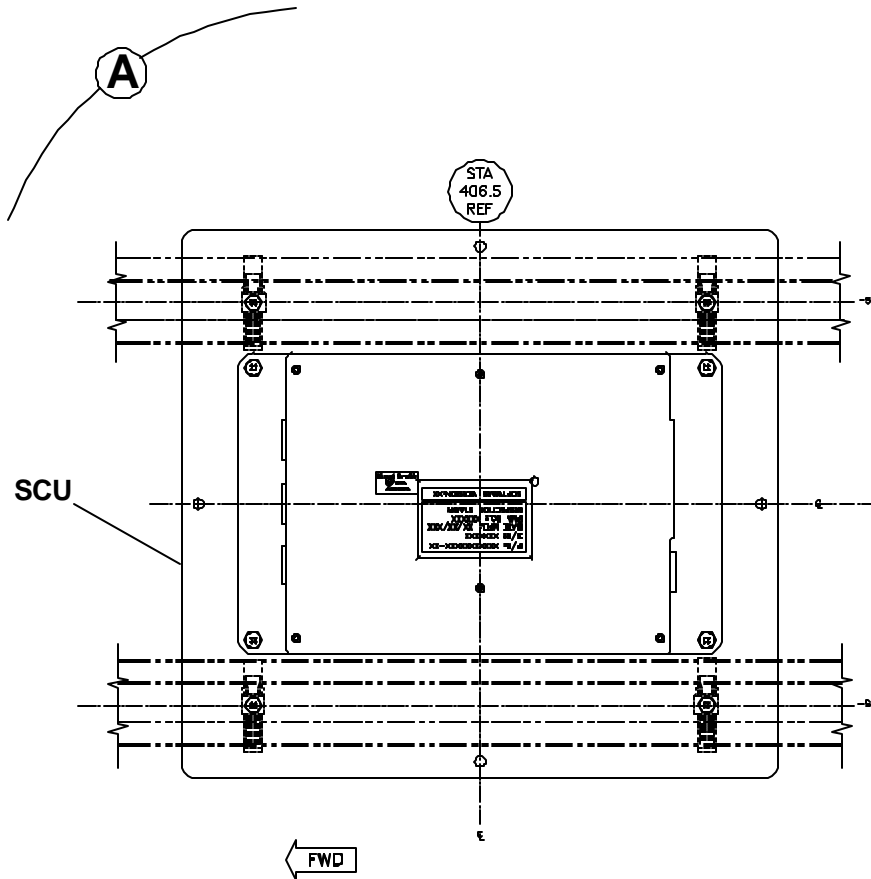
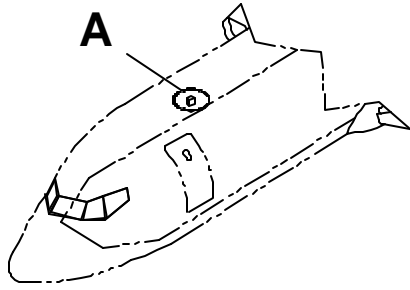


Camera Instl Kit, CDSS System

Figure 102

B757-200

AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

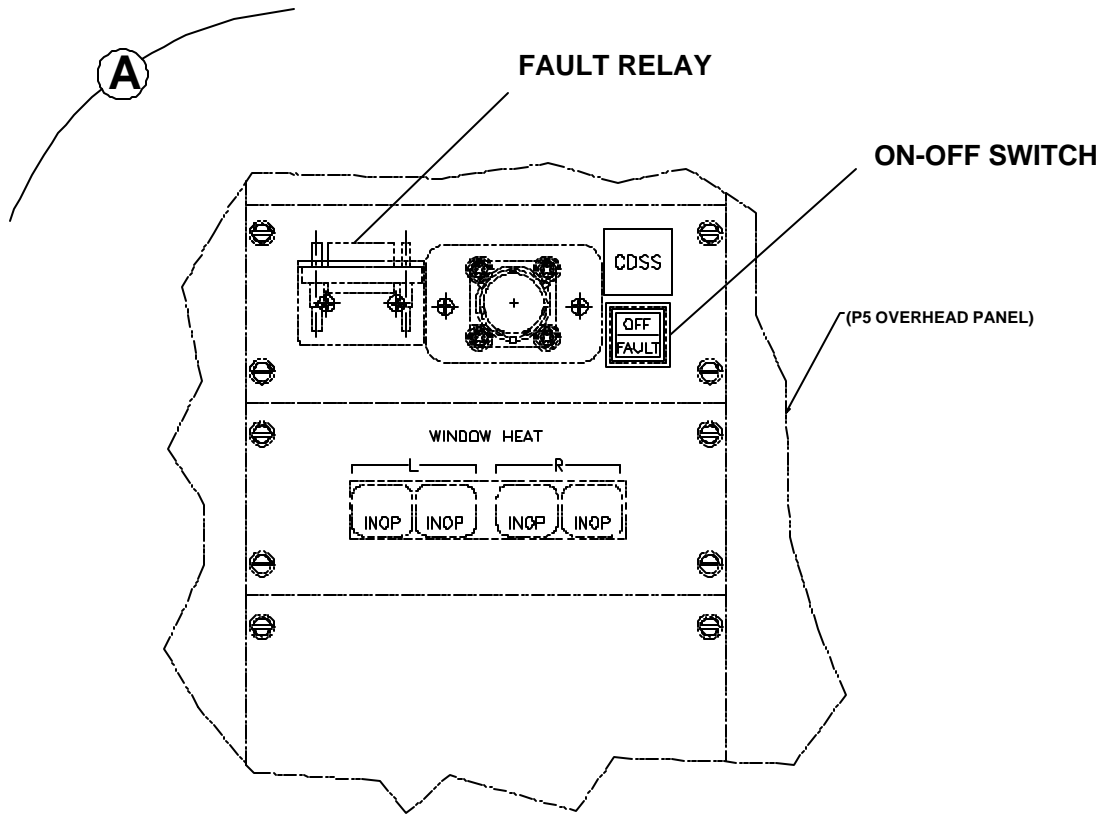
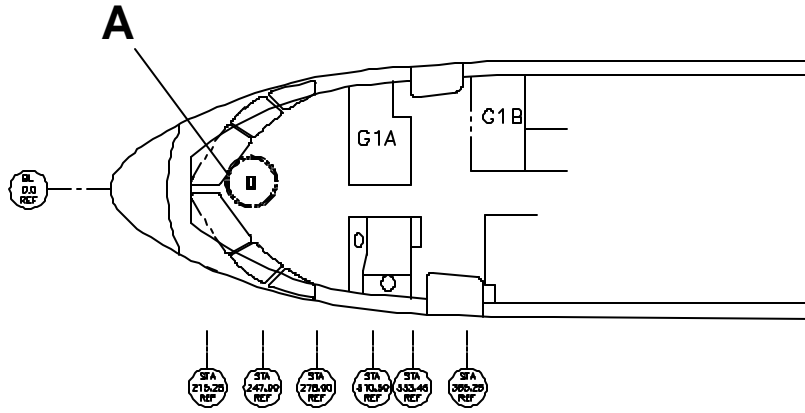


System Control Unit Instl Kit, CDSS System (B757-200)

Figure 103

B757-200

AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

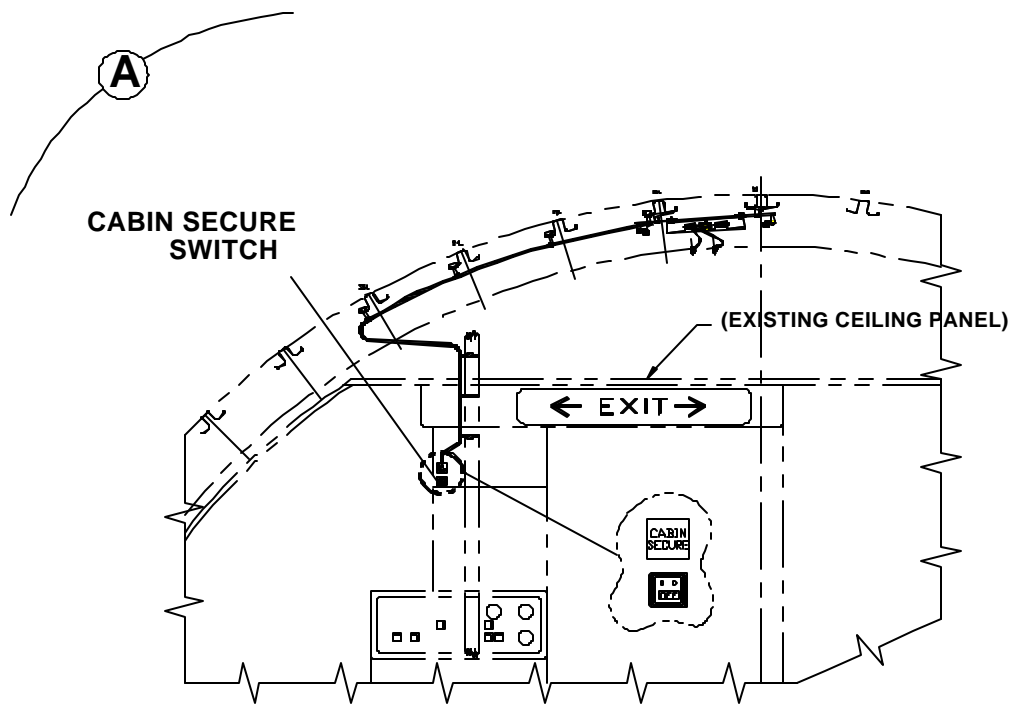
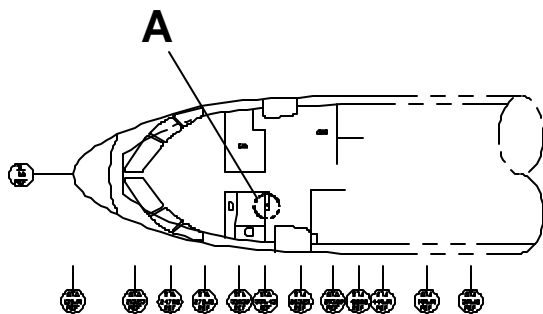


On-Off Switch MOD Kit, CDSS System

Figure 104

B757-200

AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT



Cabin Secure Switch MOD Kit, CDSS System

Figure 105

B 757-200
AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

AIRWORKS CDSS SYSTEM – ADJUSTMENT/TEST

1. General

A. This procedure is for testing the functionality of the AirWorks CDSS system installation.

2. CDSS System Test

A. Preparation for test

- (1) Make sure the circuit breaker C9901 at the P11 circuit breaker panel is closed.
- (2) The functional test should be done with APU power and all aircraft systems powered. The CDSS system is independent of other systems operation and is basically a standalone system.

B. CDSS System Operation Test

- (1) Apply power to the CDSS System by pressing the Power On-Off switch on the P5 Overhead Panel.
- (2) Verify that the switch does not illuminate (dark illumination).
- (3) Turn on the monitor.
- (4) Select AUTO and Manual mode to see if the picture is showing correctly and clearly.

NOTE: For the detail operation procedure of the monitor, refer to AirWorks CDSS System – Description and Operation.

- (5) If the amber FAULT light illuminates, reset the On-Off switch to re-power the CDSS system. The amber light should be disappeared. Otherwise, refer to the AirWorks CDSS System – Troubleshooting.

B757-200
AIRCRAFT MAINTENANCE MANUAL SUPPLEMENT

AIRWORKS CDSS SYSTEM – TROUBLESHOOTING

1. General

A. The following troubleshooting is provided for quick reference. It should be noted that not all failure causes may be listed.

<u>DISCREPANCY</u>	<u>PROBABLE CAUSES</u>
No white OFF light on when the system is off	<ul style="list-style-type: none"> a. Defective On-Off switch. b. Defective cable wiring. c. Circuit breaker open/defective. d. Defective system control unit. e. Defective fault relay.
The On-Off switch is not dark when the system is on	<ul style="list-style-type: none"> a. Defective On-Off switch. b. Defective system control unit. c. Defective cable wiring. d. Defective fault relay.
The amber FAULT light is on	<ul style="list-style-type: none"> a. Defective monitor (e.g. backlight failure, monitor disconnected, touch screen failure) b. Defective system control unit c. Defective cameras d. Defective On-Off switch e. Defective cable wiring

B. In order to maintain the best performance of the CDSS system, it is recommended to replace the defective system components immediately after the defective component is determined.

AirWorks

30212 Tomas Ave. Rancho Santa Margarita Ca. 92688

AIRCRAFT TYPE: 757-200, -300

DOC. NO.: SB230185

JOB NUMBER: 030003

REVISION: NC

STC PROJECT NO.: ST10129LA-T

DATE: March 26, 2004

SERVICE BULLETIN

**FOR AIRWORKS COCKPIT DOOR SURVEILLANCE SYSTEM (CDSS)
CAMERA 1 LENS REPLACEMENT
ON BOEING 757-200, -300 SERIES**

Prepared By:


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Date:

03/26/2004

Checked By:


B. Quirino

Date:

03/26/2004

Engineering Approval:


G. Carrera

Date:

03/26/2004

Quality Approval:


T. Jett

Date:

03/26/2004



Prepared By: T. Gossett 03/26/04	 30212 Tomas Rd., Rancho Santa Margarita, Ca. 92688		Page No.: 3 of 7
Checked By: B. Quirino 03/26/04	Subject: Service Bulletin for the First Choice Camera 1 Lens Replacement on Boeing 757-200, -300	Ref:	Document No.: SB230185 Revision: NC

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Checked By: B. Quirino 03/26/04	Subject: Service Bulletin for the First Choice Camera 1 Lens Replacement on Boeing 757-200, -300	Ref:	Document No.: SB230185 Revision: NC

1.0 PLANNING

1.1 Effectivity

1.1.1 This Service Bulletin applies to First Choice Airways 757-200, -300 Aircraft equipped with the AirWorks Cockpit Door Surveillance System (CDSS).

1.2 Concurrent Requirement

1.2.1 None.

1.3 Reason

1.3.1 When camera 1 is displayed on monitor an excessive glare inhibits quality of picture caused by an external camera lens which is not parallel to camera.

1.4 Description

1.4.1 This Service Bulletin describes the removal of Cover Assembly, P/N AW230502-03 and AW230502-05 Rev. D installed on Boeing 757-200, -300 aircraft equipped with the AirWorks Cockpit Door Surveillance System (CDSS) and modifying the assembly by replacing the lens (P/N AW230502-05) with a Close-out P/N AW230502-09 Rev. A2.

1.5 Compliance

1.5.1 Compliance with this Service Bulletin is not mandatory.

1.6 Approvals

1.6.1 This document has been approved by AirWorks Engineering and Quality departments. This document does not require approval via signature by the FAA, but rather made available for reference.

1.6.2 Quality assurance of the modification described by this Service Bulletin is the responsibility of the modifying agency.

1.7 Manpower

1.7.1 Incorporation of this Service Bulletin will require approximately 1/2 man-hours.

1.8 Weight / Balance

1.8.1 The weight increase of replacing the Lens with a Close-out is negligible.

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1.0 PLANNING (CONTINUED...)

1.9 References

- 1.9.1 AirWorks Drawing No.: AW230185, CDSS System Camera Installation Kit.
- 1.9.2 AirWorks Engineering Order No.: EO230018
- 1.9.3 AirWorks Aircraft Maintenance Manual Supplement, Doc no. AMM230018

1.10 Publications Affected

- 1.10.1 None.

2.0 MATERIALS / PARTS LISTING

2.1 Material Requirements

- 2.1.1 The following parts are required for this installation:

PART NO.	DESCRIPTION	QTY
AW230502-09 Rev. A2	Close-out	1
RTV108	Adhesive	ref

2.2 Availability

- 2.2.1 Materials required to implement this modification (s) may be obtained from AirWorks, Inc., 30212 Tomas Road, Rancho Santa Margarita, CA 92688 (Tel 949-858-5469), in accordance with contractual agreements.

2.3 Re-identified parts

- 2.3.1 None.

2.4 Tools / Tooling

- 2.4.1 Standard hand tools required to implement this Service Bulletin are to be furnished by the installer.

Prepared By: T. Gossett 03/26/04	<h1 style="margin: 0;">AirWorks</h1> <p style="margin: 0;">30212 Tomas Rd., Rancho Santa Margarita, Ca. 92688</p>		Page No.: 6 of 7
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3.0 ACCOMPLISHMENT INSTRUCTIONS

3.1 Cover Lens Removal

- 3.1.1 Gain access to the cockpit.
- 3.1.2 Open the circuit breaker C9901 at the P11-1 or P11-2 circuit breaker panel and attach "DO- NOT - CLOSE" tag.
- 3.1.3 Remove and retain four (4) screws securing the Cover and Lens, see Fig 1.

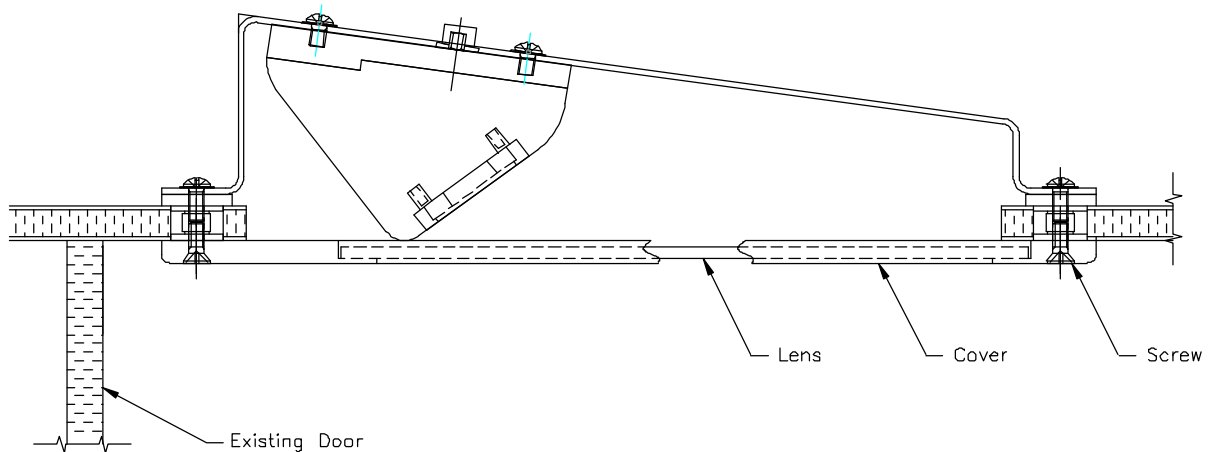


Fig. 1

- 3.1.4 Pull off the Cover P/N AW230502-03 and Lens P/N AW230502-05.

3.2 Cover and Lens Separation

- 3.2.1 Remove the Lens P/N AW230502-05 from the Cover P/N AW230502-03.

3.3 Cover and Close-out Assembly

- 3.3.1 Obtain Close-out P/N AW230502-09 and bond to Cover P/N AW230502-03 using RTV108.

Prepared By: T. Gossett 03/26/04	<h1 style="margin: 0;">AirWorks</h1> <p style="margin: 0;">30212 Tomas Rd., Rancho Santa Margarita, Ca. 92688</p>		Page No.: 7 of 7
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3.0 ACCOMPLISHMENT INSTRUCTIONS (CONTINUED...)

3.4 Cover and Close-out Installation

3.4.1 Install the Cover and Close-out using 4 existing screws, as shown in fig. 2.

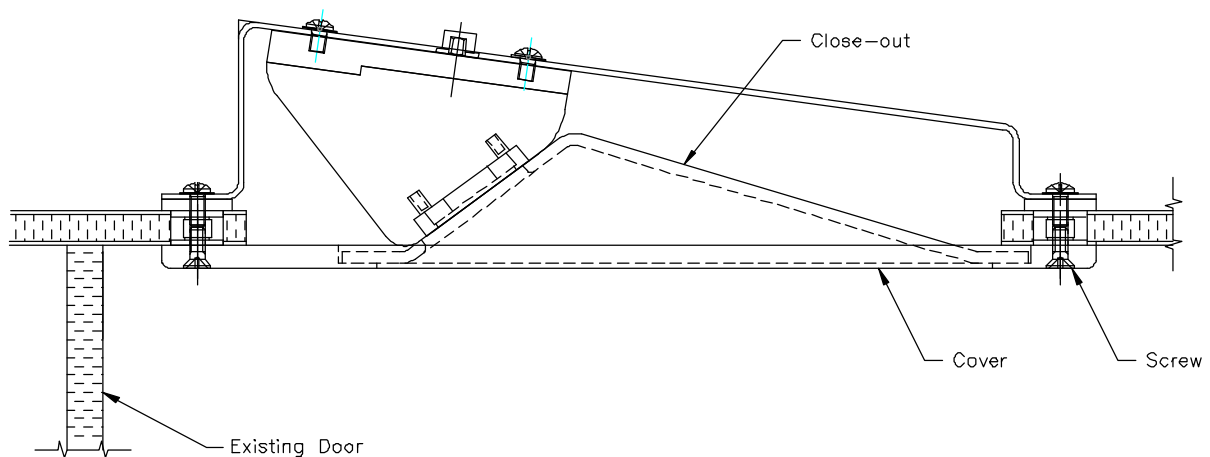


Fig. 2

3.4.2 Remove "DO – NOT – CLOSE" tag and close circuit breaker C9901 at the P11-1 or P11-2 circuit breaker panel.

3.4.3 Perform the CDSS system test. (Ref AirWorks Aircraft Maintenance Manual Supplement, Doc no. AMM230018)

4.0 QUALITY ASSURANCE

4.1 Procedures

4.1.1 For quality assurance purposes, please adhere to the following procedure.

4.1.2 Upon completion of this Service Bulletin, approval for return to service per FAR 43.5 shall be documented.

PUBLICATION REVISION

**AES Limited Supplement
To
FIRST CHOICE AIRWAYS Ltd
Aircraft Technical Publications**

TRANSMITTAL SHEET

THE TECHNICAL CONTENT OF THIS DOCUMENT IS APPROVED UNDER THE AUTHORITY
OF EASA, DOA No **EASA.21J.00036**

TRANSMITTAL SHEET	015		
ISSUE	1	2	3
DRN No.	1368	1450	1474
COMPILED	T HAWKINS	A MADDY	A MADDY
APPROVAL DATE	21.09.05	01.11.05	05.12.05
CVE / APP STRUCTURES	M EVANS	M EVANS	M EVANS
CVE / APP DESIGN	A DOLBY	A DOLBY	A DOLBY
CVE / APP SYSTEMS	A HEISSIG	A HEISSIG	A HEISSIG

Effectivity: See specific ATA sections for applicable effectivities.

Reason for Issue: To introduce AES Limited Supplements for Modification No. AES-757-416.

Procedure: Carry out the supplement insertion procedure detailed on the attached sheet.

IMPORTANT: Embodiment of the revision must be recorded on the Customisations Index at the front of each manual.

[Note: Refer to file copy for original signatures]

Record of Previous Issues:

<u>ISSUE</u>	<u>RAISE IN ISSUE DETAIL</u>
1 INIT	IAL ISSUE
2	PG2: AMM CHAPTER 23-24-00 P/BLOCK 501 RAISED TO ISSUE 2
3	PG2: IPC CHAPTER 23-24-01-02A RAISED TO ISSUE 2 CHANGE INDICATED BY MARGINAL LINE

Procedure:

Illustrated Parts Catalogue (IPC) Chapter 23 - Communication

Effectivity: 29941 (NT404), 29943 (NT406), 32446 (NT245), 29942 (NT405),
29944 (NT407), 27146 (NB506), 27147 (NB507), 24292 (NB134),
25054 (NA346), 26158 (NB329), 25593 (NA352)

Insert the specified AES supplements in manual D6-49286-ATZ IPC in applicable ATA Chapter under First Choice Airways Customisation.

ATA CHAPTER	ISSUE	TOTAL NO. OF PAGES
23-24-01-01A 1		2
23-24-01-02A 2		3
23-24-02-01A 1		3

Aircraft Maintenance Manual (AMM) Chapter 23 - Communication

Insert the specified AES supplements in the applicable manual as shown below under First Choice Airways Customisation.

ATA CHAPTER	PAGE BLOCK	ISSUE	NO. OF PAGES
23-24-00 0	01	1	4
23-24-00 1	01	1	3

ATA CHAPTER	PAGE BLOCK	ISSUE	NO. OF PAGES
23-24-00 5	01	2	2
23-24-01 4	01	1	5
23-24-02 4	01	1	4
23-24-03 4	01	1	2
23-24-04 4	01	1	2

Effectivity: 29941 (NT404), 29943 (NT406)

Insert the AES supplements specified above in manual D633N104 AMM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 24292 (NB134)

Insert the AES supplements specified above in manual D633N122 AMM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 25268 (NB322), 25054 (NA346), 26158 (NB329)

Insert the AES supplements specified above in manual D633N132 AMM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 25593 (NA352)

Insert the AES supplements specified above in manual D633N137 AMM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 27146 (NB506), 27147 (NB507)

Insert the AES supplements specified above in manual D633N141 AMM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 29942 (NT405), 29944 (NT407)

Insert the AES supplements specified above in manual D633N159 AMM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 32446 (NT245), 32447 (NT246)

Insert the AES supplements specified above in manual D633N163 AMM in the applicable ATA Chapter under First Choice Airways Customisation.

Wiring Diagram Manual (WDM) Chapter 23 - Communication

Insert the specified AES supplements in the applicable manual as shown below under First Choice Airways Customisation.

ATA CHAPTER	PAGE BLOCK	ISSUE	NO. OF PAGES
23-24-11 1A		1	1

Effectivity: 29941 (NT404), 29943 (NT406)

Insert the AES supplements specified above in manual D280N004 WDM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 24292 (NB134)

Insert the AES supplements specified above in manual D280N022 WDM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 25268 (NB322), 25054 (NA346), 26158 (NB329)

Insert the AES supplements specified above in manual D280N032 WDM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 25593 (NA352)

Insert the AES supplements specified above in manual D280N037 WDM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 27146 (NB506), 27147 (NB507)

Insert the AES supplements specified above in manual D280N041 WDM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 29942 (NT405), 29944 (NT407)

Insert the AES supplements specified above in manual D280N059 WDM in the applicable ATA Chapter under First Choice Airways Customisation.

Effectivity: 32446 (NT245), 32447 (NT246)

Insert the AES supplements specified above in manual D280N063 WDM in the applicable ATA Chapter under First Choice Airways Customisation.

BOEING 757

FIRST CHOICE AIRWAYS D633N132



MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER - DESCRIPTION AND OPERATION

1. General

- A. The emergency locator transmitter (ELT) is located in the aft section of the aircraft (approximately station 1490). The ELT provides an emergency locator signal to aid in search and rescue operations. The ELT transmits on international distress frequencies 121.5, 243.0, and 406.025 MHz.
- B. A G-switch inside the ELT will cause the ELT to activate automatically in a crash situation. The activation will only occur when the ELT is installed in the correct orientation.
- C. Manual operation of the ELT can be accomplished locally with a switch on the ELT or remotely with a switch located on the ELT control panel on the pilot's overhead panel, P5.
- D. The ELT is mounted on structure that is installed against the aircraft fuselage. Four screws hold the ELT to the aircraft. An Aircraft Identification Module (AIM) unit is attached to the ELT and secured to the aircraft via two screws. The AIM provides automated reprogramming of the 406MHz message in the ELT unit. The purpose of the AIM is to allow the replacement of the ELT unit without the need to reprogram with aircraft specific data.
- E. The ELT contains a self-contained battery pack for its power. When it is necessary to replace the batteries, replace the battery pack as a unit.
- F. The ELT transmits through a dedicated antenna located on the top of the fuselage forward of the vertical fin. One coaxial cable connects the antenna to the coaxial connector on the ELT.

2. Component Details (Fig. 1)

A. Emergency Locator Transmitter (ELT)

- (1) The ELT is secured to mounting structure, and consists of these components:
 - (a) The ELT contains a non-rechargeable battery pack assembly for its power. The battery pack is replaced as a unit.
 - (b) A printed circuit assembly (PCA) which contains all the electronics and the "G"-switch (gravity switch). The "G"-switch activates under high gravitational force such as experienced in a crash.
 - (c) An end cap contains the coaxial connector for the antenna, a connector for interface to the control panel, and an ARM/OFF/TX switch.

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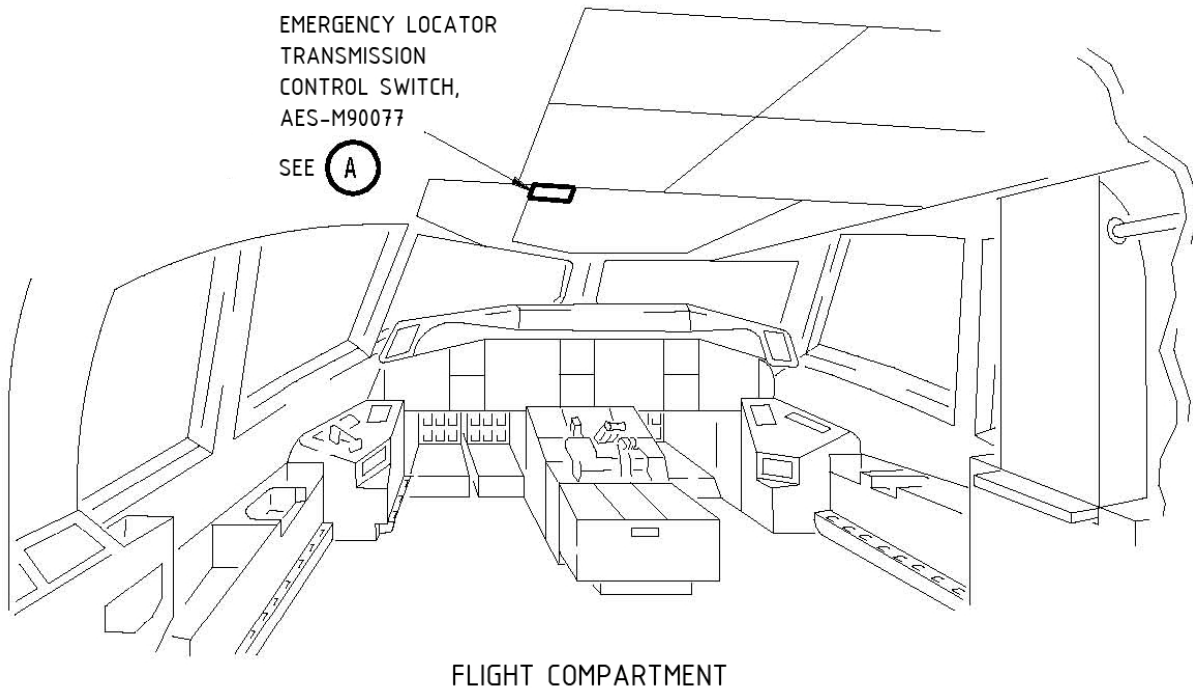
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FIRST CHOICE AIRWAYS D633N132

MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER - DESCRIPTION AND OPERATION



ELT REMOTE CONTROL SWITCH, AES-M90077



EMERGENCY LOCATOR TRANSMISSION REMOTE CONTROL SWITCH

Emergency Locator Transmitter – Component Location
Figure 1 (Sheet 1)

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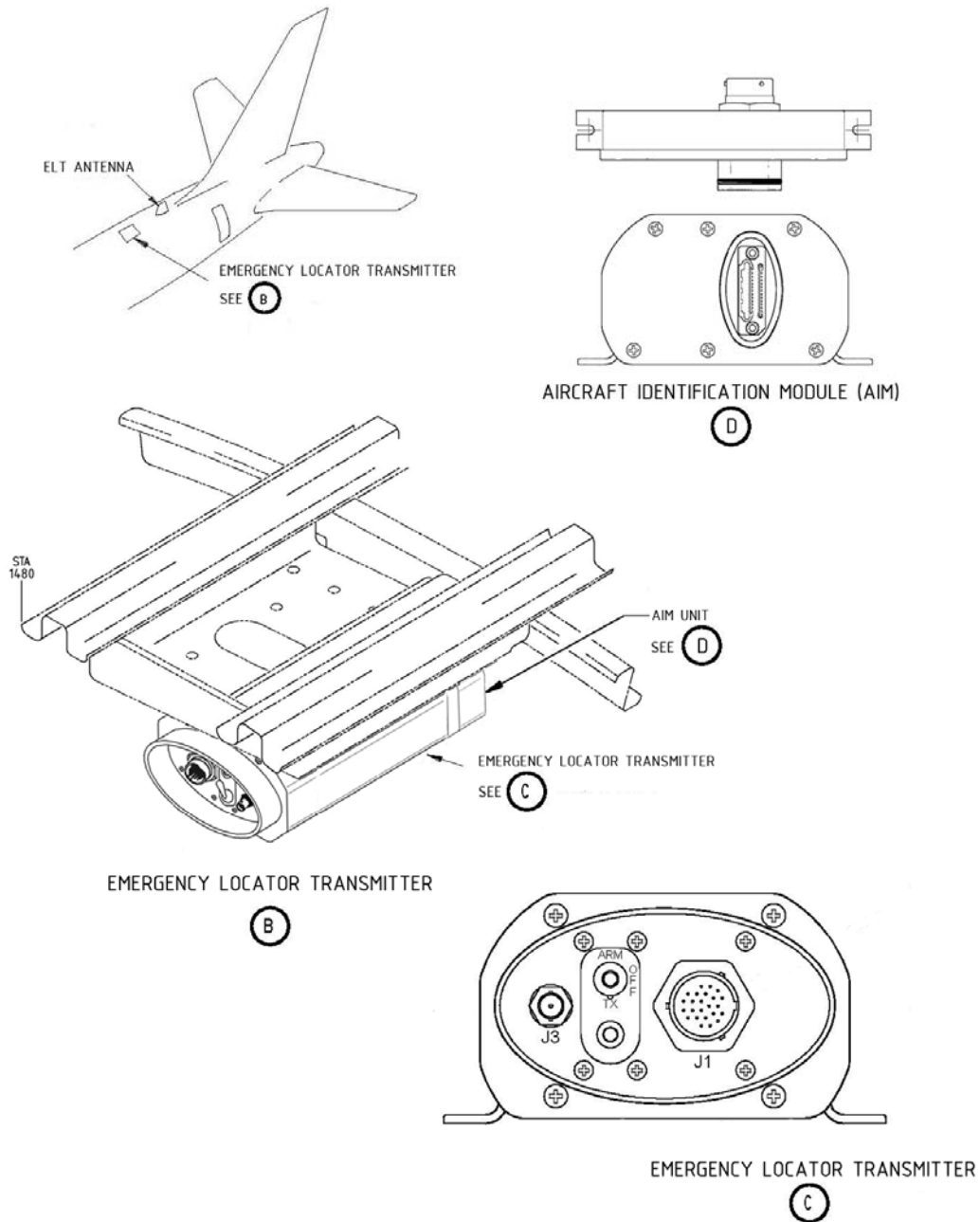
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FIRST CHOICE AIRWAYS D633N132



MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER - DESCRIPTION AND OPERATION



Emergency Locator Transmitter – Component Location
Figure 1 (Sheet 2)

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FIRST CHOICE AIRWAYS D633N132



MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER - DESCRIPTION AND OPERATION

B. Remote Control Switch

- (1) The ELT remote control switch is a guarded, three position toggle switch located on pilots overhead panel P5. The switch allows for testing, resetting, or manually activating the ELT from the flight compartment, provided the ARM/OFF/TX switch on the ELT is set to "ARM". The ELT remote switch allows deactivation of the ELT after it has been activated, but it does not allow disarming or disabling the ELT.
- (2) The ELT will begin transmitting and the light next to the switch will come on when the ELT switch is set to "ON". The ELT can be reset or deactivated by momentarily switching the remote switch to "TEST/RESET" and then allowing it to return to the "ARMED" position. This will also cause the light next to the switch to go off. The switch is spring loaded from "TEST/RESET" back to "ARMED". With the switch set to "ARMED", the ELT is set to be automatically activated. With the guard closed, the switch will be in the "ARMED" position.

C. External Antenna

- (1) The external antenna is a blade type antenna mounted on the top of the fuselage 5 inches left of the centerline stringer. The antenna is connected to the ELT by a single cable, the length of which must not exceed two metres. The antenna is impedance matched to the coaxial cables.

D. Aircraft Identification Module (AIM)

- (1) The AIM unit connects to the ELT unit and is mounted on structure secured to the aircraft fuselage by two screws.
- (2) The AIM unit provides automated re-programming of the ELT 406MHz message protocol by connection of a plug coded with the specific aircraft 24-bit address.

3. Operation

A. Functional Description

- (1) The ELT has a non-rechargeable battery pack as its power supply.
- (2) When properly installed on the aircraft, the ELT will start automatically in a crash. It can also be operated by setting the switch on the ELT to "TX" or the remote switch on the ELT control panel to "ON". For normal operation, the switch on the ELT is set to "ARM" and the switch on the control panel is set to "ARMED". The ELT light will be off.

B. Control

- (1) For normal operation, set the switch on the ELT to "ARM" and the control panel switch to "ARMED".
- (2) When testing the ELT, set the switch on the remote control panel to "TEST/RESET" and back to "ARMED" in less than two seconds to start a self test. The remote panel LED will blink three times to show successful self test.
- (3) If the ELT is accidentally activated, reset it by setting the local switch to "TX" and immediately back to "OFF", or by setting the remote switch momentarily to "TEST/RESET" and allowing it to return to the "ARMED" position.

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MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER (ELT) – COMPONENT INDEX

COMPONENT	FIG. 102 SHT	QTY	ACCESS / AREA	AMM REFERENCE
ANTENNA – EMERGENCY LOCATOR TRANSMITTER, AES-M90079	2	1	FUSELAGE	23-24-02
SWITCH – EMERGENCY LOCATOR TRANSMITTER REMOTE CONTROL, AES-M90077	1	1	FLIGHT COMPARTMENT, P5 PANEL	23-24-03
TRANSMITTER – EMERGENCY LOCATOR, AES-M90078	2	1	AFT PASSENGER CABIN CEILING	23-24-01
AIRCRAFT IDENTIFICATION MODULE – AIM, AES-M90078T	2	1	AFT PASSENGER CABIN CEILING	23-24-04

Emergency Locator Transmitter (ELT) – Component Index
Figure 101

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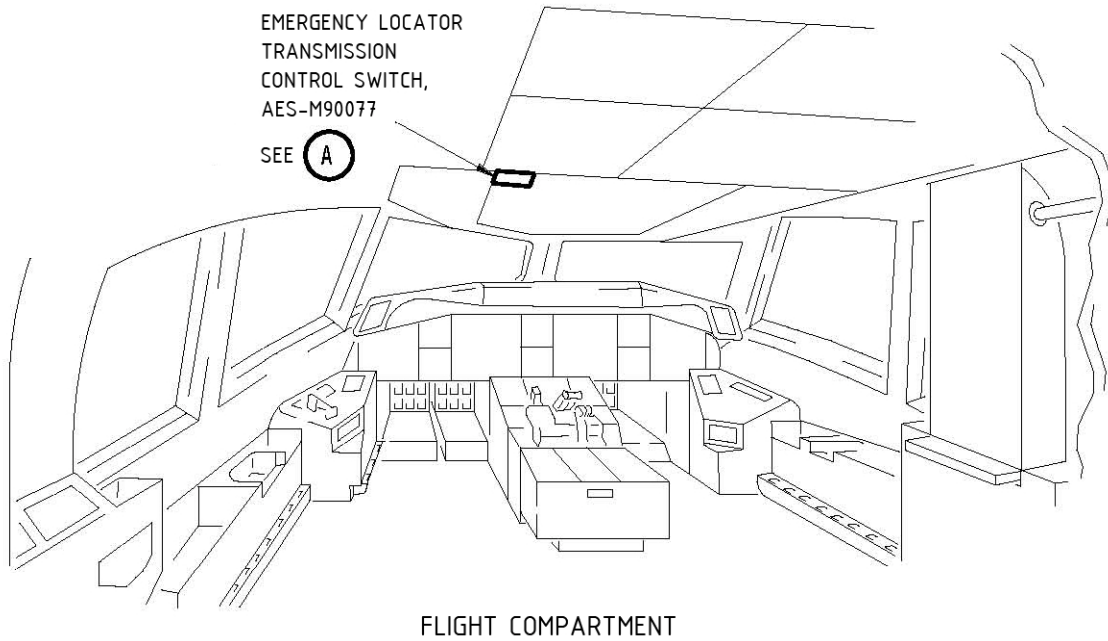
BOEING 757



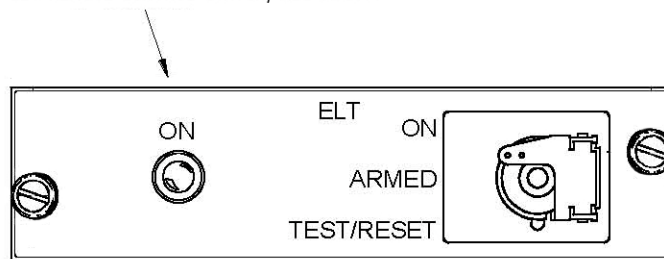
FIRST CHOICE AIRWAYS D633N132

MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER (ELT) – COMPONENT INDEX



ELT REMOTE CONTROL SWITCH, AES-M90077



EMERGENCY LOCATOR TRANSMISSION REMOTE CONTROL SWITCH

(A)

Emergency Locator Transmitter (ELT) – Component Location
Figure 102 (Sheet 1)

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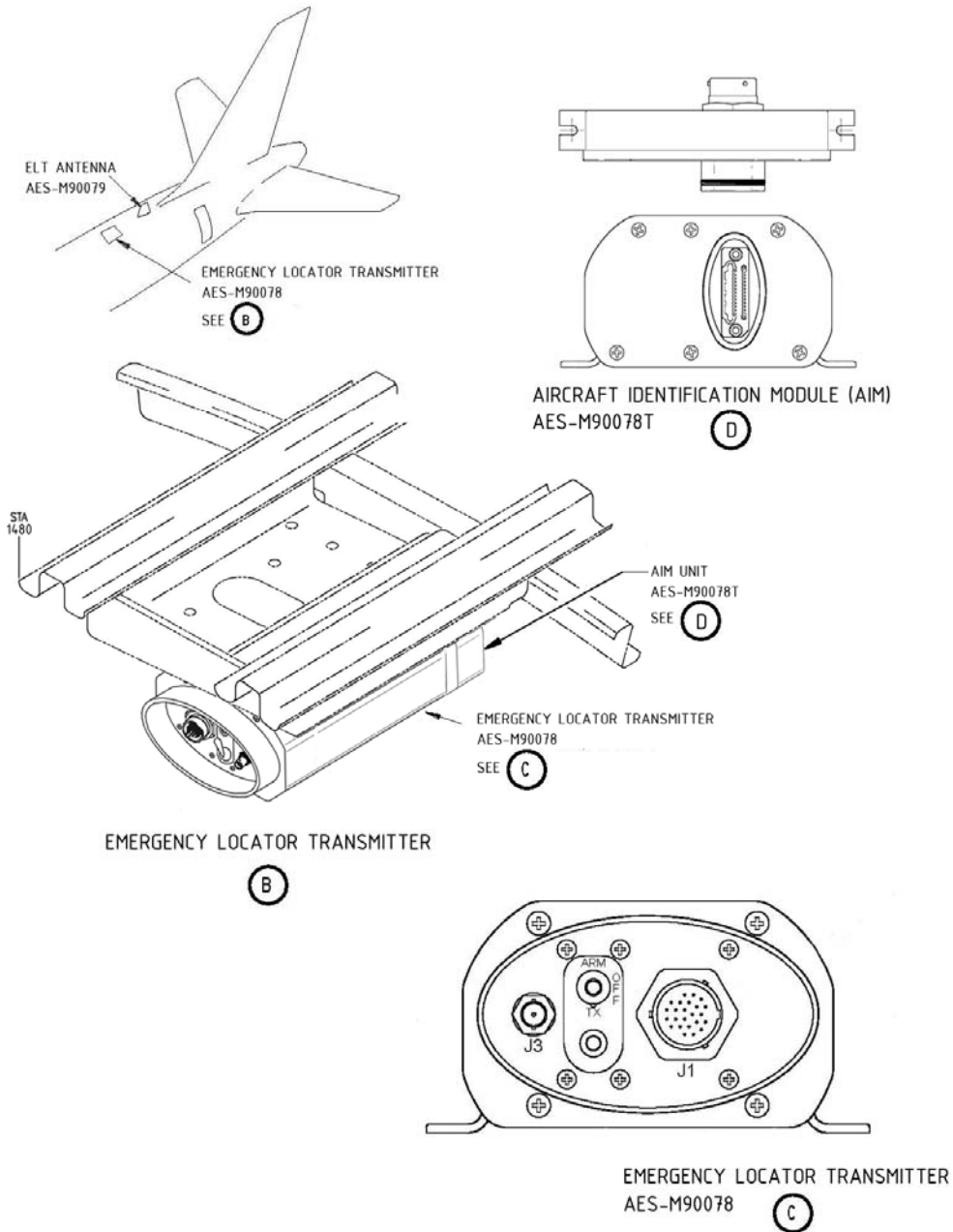
BOEING 757

FIRST CHOICE AIRWAYS D633N132



MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER (ELT) – COMPONENT INDEX



Emergency Locator Transmitter (ELT) – Component Location
Figure 102 (Sheet 2)

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BOEING 757



FIRST CHOICE AIRWAYS D633N132

MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER – ADJUSTMENT / TEST

1. General

- A. This procedure contains one task. This task is the operational test of the emergency locator transmitter (ELT). This task takes a minimum quantity of time and uses only equipment found on the aircraft.

2. Emergency Locator Transmitter – Operational Test

A. References

- (1) AMM 23-12-00/501, VHF Communication System
- (2) AMM 23-51-00/501, Flight Interphone system
- (3) AMM 24-22-00/201, Electrical Power - Control

B. Access

- (1) Location Zones
21 1/212 Flight Compartment

C. Procedure

- (1) Supply electrical power (AMM 24-22-00/201).
- (2) Make sure these systems operate:
 - (a) The flight interphone system (AMM 23-51-00/501).
 - (b) The VHF communication system (AMM 23-12-00/501).
- (3) Set the VHF-R communication system to listen for the 121.5 Mhz test frequency (AMM 23-12-00/501).

NOTE: Any VHF system with a bottom mounted antenna can be used for this test. If the VHF antenna is on the top, it is possible to hear the ELT signal even though the ELT antenna has failed.

NOTE: **FOR CANADIAN REGISTERED A/C ONLY:**
THE OPERATIONAL TEST MAY ONLY BE CONDUCTED DURING THE FIRST FIVE MINUTES OF ANY UTC (CO-ORDINATED UNIVERSAL TIME) HOUR, AND IS RESTRICTED IN DURATION TO NO MORE THAN FIVE SECONDS.

CAUTION: MAKE SURE YOU FOLLOW THE LOCAL ELT OPERATION REGULATIONS. TELL THE AUTHORITIES IF AN ACCIDENTAL TRANSMISSION IS MADE. THIS WILL PREVENT EMERGENCY SEARCH OPERATIONS THAT ARE NOT NECESSARY.

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CA

UTION: DURING THE PERFORMANCE OF THIS TEST, THE ELT CONTROL PANEL SWITCH AND THE SWITCH ON THE ELT FRONT PANEL MUST NOT BE KEPT IN THE "TX" POSITION FOR MORE THAN 15 SECONDS AT A TIME. IF ANY TWO CONSECUTIVE STEPS (REQUIRING EITHER OF THESE SWITCHES TO BE SET TO THE "TX" POSITION) TAKE LONGER THAN 15 SECONDS TO COMPLETE, MOVE THE ELT CONTROL PANEL SWITCH TO THE "TEST/RESET" POSITION AND THEN BACK TO THE "ON" POSITION OR THE SWITCH ON THE ELT FRONT PANEL TO THE "OFF" POSITION AND THEN BACK TO THE "TX" POSITION TO CONTINUE. IF THE ELT IS INADVERTENTLY OPERATED FOR LONGER THAN 15 SECONDS THEN THE AUTHORITIES MUST BE INFORMED TO PREVENT EMERGENCY SEARCH OPERATIONS THAT ARE NOT NECESSARY.

- (4) Follow the local ELT operation requirements.

NOTE: When the ELT is set to on it will transmit immediately on 121.5 and 243 MHz.

- (5) Open the guard on the ELT switch on the pilot's overhead panel, P5.
(6) Set the ELT switch on the control panel to the "ON" position for less than 15 seconds.
(a) Make sure the ELT light on the ELT control panel comes on and blinks steadily, and that the ELT signal can be heard on the VHF system.
(7) Set and hold the ELT switch on the control panel to "TEST/RESET" for at least three seconds and then release.
(a) Make sure the switch returns to the "ARMED" position.
(b) Make sure the ELT signal cannot be heard on the VHF system.
(8) Close the guard over the ELT switch.
(9) Do the steps that follow to do the self-test from the ELT remote control panel P5:

NOTE: The self-test includes a 406 MHz test transmission. This test transmission does not cause a search operation.

- (a) Move the switch on the remote panel from the "ARMED" position to the "TEST/RESET" and release within two seconds.
1) Make sure that the light-emitting diode (LED) on the ELT comes on and blinks four times.
(10) Remove electrical power if it is not necessary (AMM 24-22-00/201)

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EMERGENCY LOCATOR TRANSMITTER – MAINTENANCE PRACTICES

1. General

A. This procedure contains these tasks.

- (1) The removal of the Emergency Locator Transmitter (ELT).
- (2) The installation of the ELT.
- (3) The replacement of the ELT battery.

B. The emergency locator transmitter (ELT) is located in the area above the aft passenger cabin ceiling. Access to the ELT is through a ceiling panel in the aft passenger ceiling area station 1500.

2. Remove Emergency Locator Transmitter

A. Access

- (1)) Location Zone
253/254 Area above passenger cabin ceiling - section 46

B. Procedure

- (1) Get access to the ELT:
(a) Release the latches along the edge of the aft passenger ceiling panel.
(b) Release the ceiling panel from the lanyard and let the panel open fully.
- (2)) Remove the ELT:
(a) Make sure the ELT switch is in the OFF position.
(b) Disconnect the coaxial connector from the forward end of the ELT.
(c) Disconnect the large circular connector on the forward end of the ELT.
(d) Loosen four off fastener screws and remove the ELT.
(e) Put a protective cover on the electrical connectors.

3. Install Emergency Locator Transmitter

A. Reference

- (1) AMM 23-24-00/501, Emergency Locator Transmitter
- (2) AMM 24-22-00/201, Electrical Power Control

B. Access

- (1)) Location Zone
253/254 Area above passenger cabin ceiling - section 46

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EMERGENCY LOCATOR TRANSMITTER – MAINTENANCE PRACTICES

C. Procedure

- (1) Get access to the ELT:
 - (a) Release the latches along the edge of the aft passenger ceiling panel.
 - (b) Release the ceiling panel from the lanyard and let the panel open fully.
- (2) Install the ELT:

NOTE: THE 15 CHARACTER HEXADECIMAL BEACON IDENTIFICATION AND S/N MUST BE PROVIDED TO YOUR LOCAL REGISTRATION, CODING AND TYPE APPROVAL OFFICE

- (a) Make sure the switch on the forward end of the ELT is set to OFF.
- (b) Examine the ELT mounting structure for damage.
- (c) Connect aft end of ELT to AIM unit and secure ELT to mounting structure using four of f screws.
- (d) Examine the electrical connectors for bent or broken pins, dirt and damage.
- (e) Connect the coaxial cable to the forward end of the ELT.
- (f) Connect the large circular connector to the forward end of the ELT.
- (g) Set the ELT switch on the forward end of the ELT to “ARM”

D. ELT Installation Test

- (1) Do this task: Emergency Locator Transmitter - Operational Test (AMM 23-24-00/501).
- (2) Put the ceiling panel back to its usual position.
 - (a) Lift the ceiling panel and attach the lanyard.
 - (b) Close the ceiling panel and tighten the latches.
 - 1) Make sure the ceiling panel is tight.

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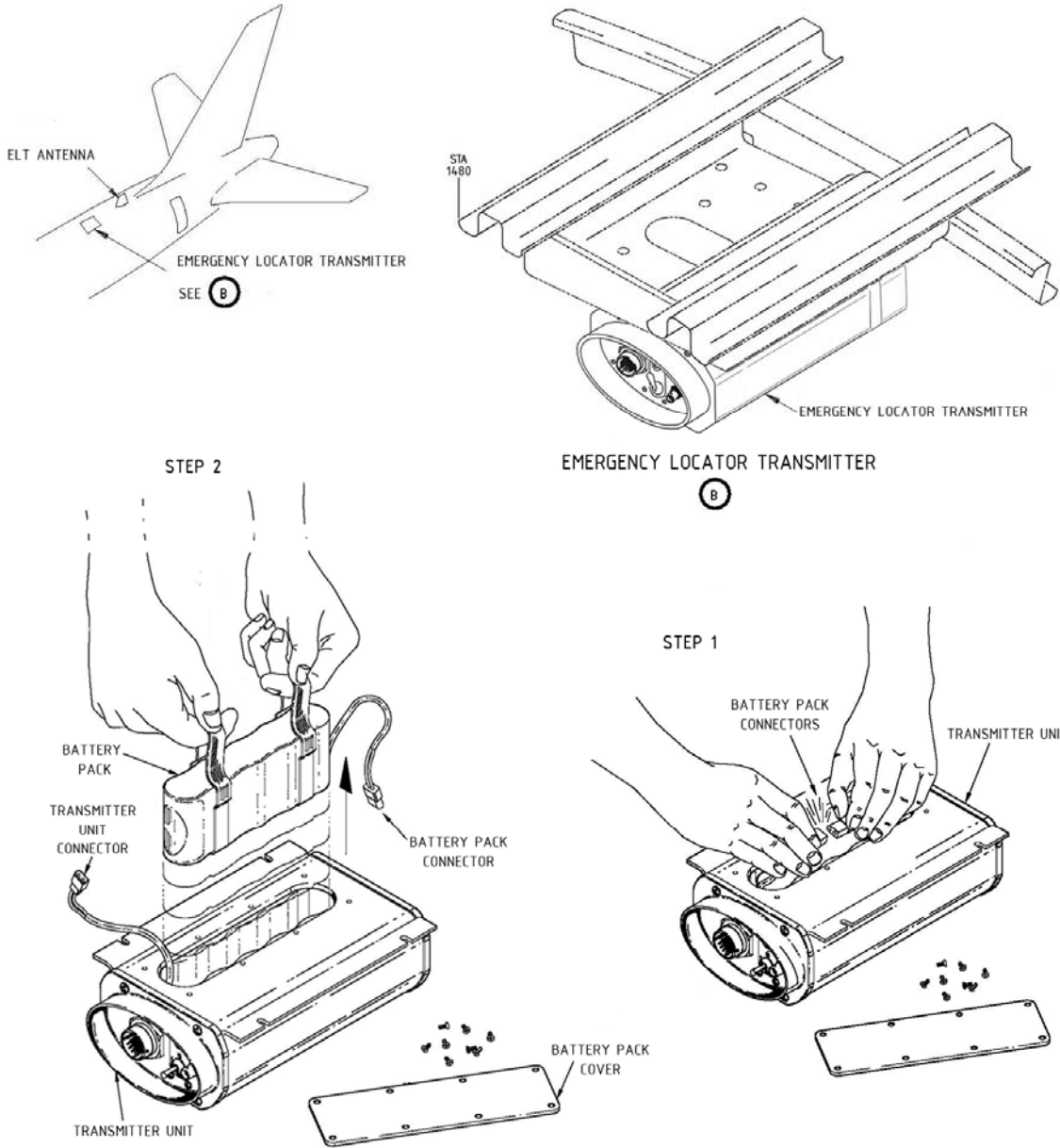
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MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER – MAINTENANCE PRACTICES



EMERGENCY LOCATOR TRANSMITTER BATTERY REPLACEMENT

Figure 401 (Sheet 1)

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EMERGENCY LOCATOR TRANSMITTER – MAINTENANCE PRACTICES

4. Replace ELT Battery

NOTE: The battery must be replaced every five years. The expiration date is written on the Transmitter Unit label. It is recommended that the battery also be replaced if the total cumulative false activation/transmission time is estimated to be greater than 1 hour. (This does not include the effect of usual monthly self-tests.)

A. Access

- (1) Location Zone
253/254 Area above passenger cabin ceiling - section 46

B. Procedure – Figure 401 (sheet 1)

- (1) Removal of Battery Pack:
(a) Remove the transmitter unit from the aircraft mounting position.
(b) Remove eight screws securing the battery pack cover to the transmitter unit and remove the cover.

CAUTION ON: GRASP BOTH ENDS OF THE BATTERY PACK CONNECTOR TO PULL APART. DO NOT PULL ON CONNECTOR WIRES TO DISCONNECT BATTERY PACK CONNECTOR.

- (c) Disconnect battery pack connector
(d) Unfold battery pack pull-tabs and remove battery pack by pulling tabs straight up.

- (2) Handling of Battery Pack:
(a) Disposal of old batteries must be carried out using approved battery disposal sites.
(b) In addition, the battery pack cells must not be:
1) Deformed (through excessive external pressure to the cell)
2) Short-circuited (by shorting the positive battery pack terminal to the negative terminal).

- (3) Installation of Battery Pack:
(a) Remove the battery expiration sticker portion from the new battery pack label. Then remove the wax paper backing from the sticker and attach the sticker to the battery expiration section on the label of the transmitter unit.
(b) Install the new lithium battery pack in the battery compartment while holding the transmitter battery pack connector out of the way.
(c) Connect the battery pack connector to the transmitter unit connector.
(d) Fold the battery pack pull-tabs and flatten against the top of the battery pack
(e) Install the battery pack cover on the transmitter unit and secure using eight screws.
(f) Reinstall the transmitter unit (AMM 23-24-01).

- (4) Install the ELT in the mounting bracket do a test of the installation (refer to the Install Emergency Locator Transmitter paragraph).

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MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER (ELT) ANTENNA – REMOVAL / INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the emergency locator transmitter (ELT) antenna.
- (2) An installation of the ELT antenna.

B. The ELT antenna, AES-M90079, is found on the upper left section of the fuselage at station 1510.

2. ELT Antenna Removal (Fig. 401)

A. Equipment

- (1) Sealant removal tool - hardwood or plastic

B. Access

(1) Location Zones

- | | |
|-----|---|
| 253 | Area above passenger cabin ceiling - section 46 (Left) |
| 254 | Area above passenger cabin ceiling - section 46 (Right) |

C. Removal Procedure

- (1) Remove the bolts that attach the ELT antenna to the aircraft.

CAUTION: ON: BE CAREFUL WHEN YOU REMOVE THE AERODYNAMIC FILLET SEAL WITH THE SEALANT REMOVAL TOOL. DAMAGE TO THE AIRCRAFT SKIN OR THE COAXIAL CABLE CAN OCCUR.

- (2) Use the sealant removal tool to remove the weather aerodynamic fillet seal from the base of the antenna.
- (3) Lift the ELT antenna until you have access to the coaxial connector.
- (4) Disconnect the coaxial cable from the antenna at the coaxial connector.
 - (a) Make sure the coaxial cable does not fall down through the opening.

3. ELT Antenna Installation (Fig. 401)

A. Equipment

- (1) Bonding Meter (SWPM 20-20-00)
- (2) Gloves, neoprene or rubber; Commercially available
- (3) Respirator; Commercially available
- (4) Spatula - commercially available

B. Consumable Materials

- (1) A00247 Sealant - Chromate, Type BMS 5-95, Class B
- (2) B00148 Solvent - Methyl Ethyl Ketone (MEK), TT-M-261
- (3) C00064 Coating - Surface Treatment - MIL-C-5541, Type II, Grade C class 1 for Aluminum or Aluminum Alloys - Alodine 1000 Clear
- (4) C00175 Primer - BMS 10-79, Type III

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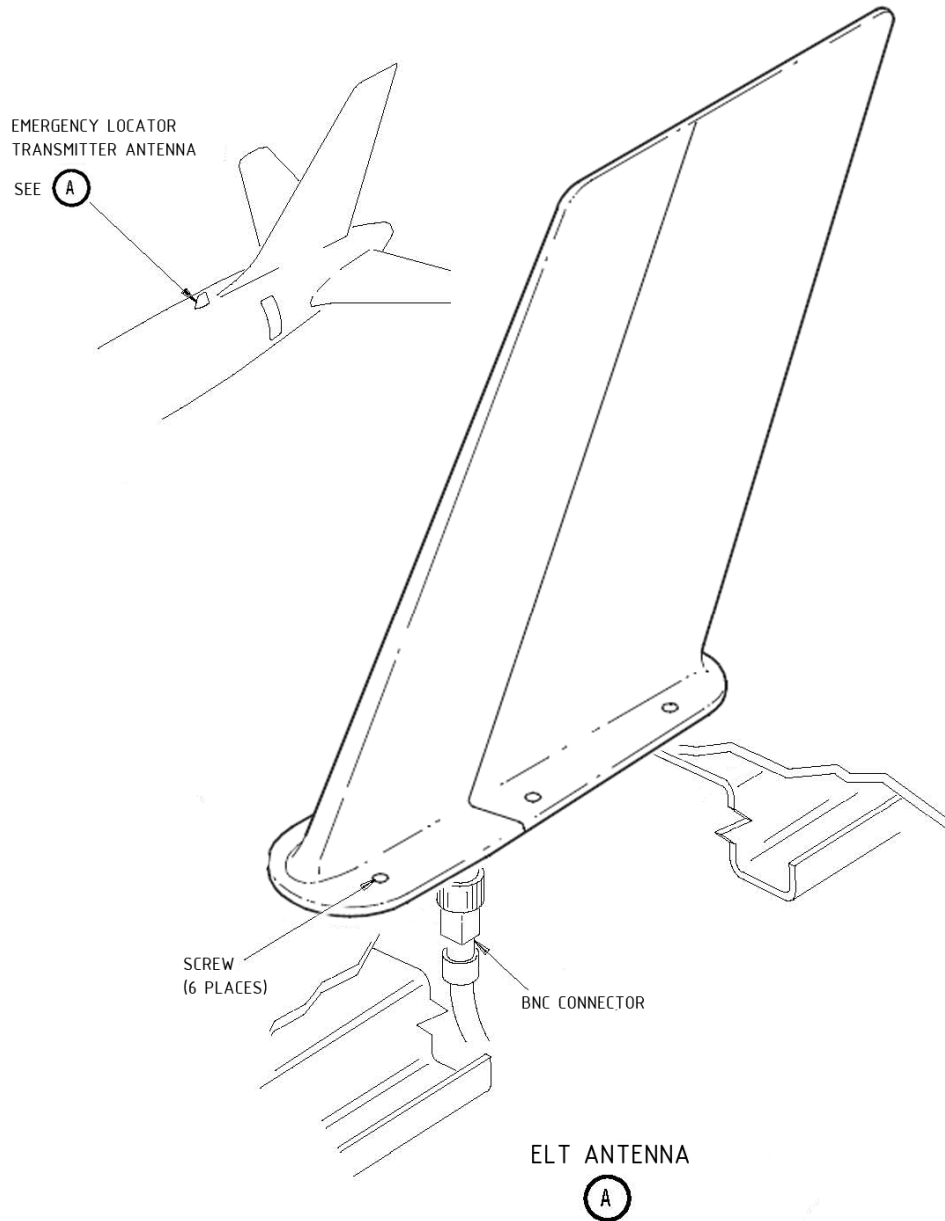
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EMERGENCY LOCATOR TRANSMITTER (ELT) ANTENNA – REMOVAL / INSTALLATION



Emergency Locator Transmitter (ELT) Antenna Installation
Figure 401

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- (5) D00015 Grease - BMS 3-24, Corrosion Preventive
- (6) G00034 Cheesecloth - New, Clean, Dry, Lint Free
- (7) G01395 Compound - Corrosion Inhibiting Matinox 6856K, BMS 3-27

C. References

- (1) AMM 23-24-00/501, Emergency Locator Transmitter
- (2) AMM 24-22-00/201, Electrical Power - Control
- (3) AMM 51-21-04/701, Alodine Coating
- (4) AMM 51-31-01/201, Seals and Sealing
- (5) SWPM 20-20-00, Electrical Bonding and Grounding

D. Access

- (1) Location Zones
 - 253 Area above passenger cabin ceiling - section 46 (Left)
 - 254 Area above passenger cabin ceiling - section 46 (Right)

E. Installation Procedure

WARNING: DO NOT GET METHYL ETHYL KETONE (MEK) IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM MEK. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE MEK. KEEP MEK AWAY FROM SPARKS, FLAME AND HEAT. MEK IS A POISONOUS AND FLAMMABLE SOLVENT WHICH CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Clean the aircraft mating surface with MEK:
 - (a) Make a clean cheesecloth moist (not soaked) with MEK.
 - (b) Rub the aircraft mating surface with the cheesecloth until the surface is clean.
- (2) If the aircraft surface has corrosion or other damage, refer to airplane SRM for acceptable limits and rectification procedures.
- (3) Apply a layer of BMS 3-27 (corrosion inhibiting compound) to the surfaces that follow:
 - (a) The opening for the coaxial cable
 - (b) The threads of the bolts
- (4) Attach the coaxial connector to the ELT antenna.
- (5) Align the holes on the ELT antenna with the holes on the aircraft.
- (6) Install 5 of the 6 bolts which attach the ELT antenna to the aircraft.
- (7) Measure the bond resistance between the ELT antenna and the aircraft skin (SWPM 20-20-00).
 - (a) Make sure the resistance is less than 5 milliohms.
- (8) Install the last bolt.

WARNING: DO NOT GET METHYL ETHYL KETONE (MEK) IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM MEK. PUT ON PROTECTIVE SPLASH GOGGLES AND GLOVES WHEN YOU USE MEK. KEEP

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EMERGENCY LOCATOR TRANSMITTER (ELT) ANTENNA – REMOVAL / INSTALLATION

MEK AWAY FROM SPARKS, FLAME AND HEAT. MEK IS A POISONOUS AND FLAMMABLE SOLVENT WHICH CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (9) Use a spatula to apply sealant BMS 5-95 around the flange of the ELT antenna to make an aerodynamic fillet seal (AMM 51-31-01/201).
 - (10) Apply a layer of sealant BMS 5-95 on the top surface of the bolts.
- F. Installation Test
- (1) Do this task: Emergency Locator Transmitter - Operational Test (AMM 23-24-00/501).
 - (2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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MAINTENANCE MANUAL

AIRCRAFT IDENTIFICATION MODULE (AIM) – MAINTENANCE PRACTICES

1. General

A. This procedure contains these tasks.

- (1) The removal of the Aircraft Identification Module (AIM).
- (2) The installation of the AIM.

B. The aircraft identification module is located in the area above the aft passenger cabin ceiling and is attached mechanically to the ELT Transmitter. Access to the ELT/AIM is through a ceiling panel in the aft passenger ceiling area station 1500.

2. Remove Aircraft Identification Module

A. Access

- (1)) Location Zone
253/254 Area above passenger cabin ceiling - section 46

B. Procedure

- (1) Get access to the AIM:
(a) Release the latches along the edge of the aft passenger ceiling panel.
(b) Release the ceiling panel from the lanyard and let the panel open fully.
- (2)) Remove the AIM:
(a) Make sure the ELT switch is in the OFF position.
(b) Loosen two off fastener screws holding the AIM unit to the aircraft structure.
- (c) Remove the AIM

3. Install Aircraft Identification Module

A. Reference

- (1) AMM 23-24-00/501, Emergency Locator Transmitter
- (2) AMM 24-22-00/201, Electrical Power Control

B. Access

- (1)) Location Zone
253/254 Area above passenger cabin ceiling - section 46

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AIRCRAFT IDENTIFICATION MODULE (AIM) – MAINTENANCE PRACTICES

C. Procedure

- (1) Get access to the AIM:
 - (a) Release the latches along the edge of the aft passenger ceiling panel.
 - (b) Release the ceiling panel from the lanyard and let the panel open fully.
- (2)) Install the AIM:

NOTE:

- (1) Make sure that the Hex identification code recorded on the AIM is transferred to the Hex identification label on the transmitter unit.
- (2) Register the Hex identification code (transferred to the Hex identification label on the transmitter unit) with the appropriate National COSPAS/SARSAT office.
 - (a) Make sure the switch on the forward end of the ELT is set to OFF.
 - (b) Examine the AIM mounting structure for damage.
 - (c) Connect the 31 pin connector on the AIM to the 31 pin connector on the back of the transmitter unit, which is accessible by removing the transmitter unit programming connector faceplate.
 - (d) Secure AIM to mounting structure using two off screws.
 - (e) Set the ELT switch on the forward end of the ELT to "ARM"
 - (f) Install an ELT identification code decal to match the one installed on the ELT transmitter

D. ELT Installation Test

- (1) Do this task: Emergency Locator Transmitter - Operational Test (AMM 23-24-00/501).
- (2) Put the ceiling panel back to its usual position.
 - (a) Lift the ceiling panel and attach the lanyard.
 - (b) Close the ceiling panel and tighten the latches.
 - 1) Make sure the ceiling panel is tight.

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**B757 MANUAL SUPPLEMENT - ATP 3510
SECTION 1 CHAPTER 23
CONTROL PAGE - ISSUE 2**

- A. File the attached Temporary Revision/Alerts in the Manual Supplement in ATA Chapter/Section/Subject/Page sequence
- B. File this Control Page in front of the Chapter TRs/Alerts.
- C. The following list shows active TRs/Alerts together with TRs/Alerts added by this control page.

Chapter Section Subject	Page	TR/Alert No.
23-11-02	401	BA 23-586
23-12-02	401	BA 23-578
23-22-00-5	501	BA 23-570
23-22-00-5	501	BA 23-571
23-51-01	401	BA 23-579
23-51-02	401	* BA 23-588

- D. Remove and Destroy the following TRs/Alerts:

* Indicates TRs/Alerts issued with this control page

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TEMPORARY REVISION No. 23-586

THIS TEMPORARY REVISION IS ISSUED BY BRITISH AIRWAYS ENGINEERING (TECHNICAL INFORMATION SERVICES, G2, TBA, S401, P. O. BOX 10, HEATHROW AIRPORT, HOUNSLOW, MIDDLESEX TW6 2JA).
CAA DESIGN APPROVAL No. DAI/8566/78.

Manual Reference 23-11-02 Page 401 para 2 and 3

(Tasks 23-11-02-024-001 and 23-11-02-424-005)

REASON FOR REVISION

To carry out the requirements of the Safety and Technical Strategy Board Cross-Connection Project G/38/98.

ACTION

After the existing paragraph 2.C.(2)(b) and before 2.C.(2)(c) add the following:

CAUTION: CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. CLEARLY IDENTIFY CONNECTIONS UPON DISCONNECTION AND FUNCTION CHECK UPON RECONNECTION.

After the existing paragraph 3.C.(1)(b) and before the existing paragraph 3.C.(1)(c) add the following:

CAUTION: CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. POSITIVELY IDENTIFY CONNECTIONS PRIOR TO RECONNECTION.

Remove the existing paragraph 3.D(3) and add the following:

(3) Do these tasks:

(a) Connect the head-set boom microphone to the captain's jack panel(P13).

(b) On aircraft with two HF systems installed:

1) Put the mode selector switch for the system not being tested to OFF.

Originator: Gary Kerr

Reference: 757-W-MCR-23-GK-99-452

Workbook: JS 23-060

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TEMPORARY REVISION No. 23-578

THIS TEMPORARY REVISION IS ISSUED BY BRITISH AIRWAYS ENGINEERING (TECHNICAL INFORMATION SERVICES, G2, TBA, S401, P. O. BOX 10, HEATHROW AIRPORT, HOUNSLOW, MIDDLESEX TW6 2JA).
CAA DESIGN APPROVAL No. DAI/8566/78.

Manual Reference 23-12-02 Page 401 para 2 and 3

(Tasks 23-12-02-024-001 and 23-12-02-424-004)

REASON FOR REVISION

To carry out the requirements of the Safety and Technical Strategy Board Cross-Connection Project G/38/98.

ACTION

After the existing paragraph 2.B.(2)(b) and before 2.B.(2)(c) add the following:

CAUTION: CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. CLEARLY IDENTIFY CONNECTIONS UPON DISCONNECTION AND FUNCTION CHECK UPON RECONNECTION.

After the existing paragraph 3.C.(1)(b) and before the existing paragraph 3.C.(1)(c) add the following:

CAUTION: CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. POSITIVELY IDENTIFY CONNECTIONS PRIOR TO RECONNECTION.

Remove the existing paragraphs 3.D.(3) and 3.D.(4) and insert the following:

- (3) On aircraft with VHF communication control panels with two frequency control knobs:
- (a) Set the TFR switch on each panel to the left position.
 - 1) Make sure a bar shows across the right frequency display.
 - (b) Set the TFR switch on each panel to the left position.
 - 2) Make sure a bar shows across the left frequency display.

Originator: Gary Kerr

Reference: 757-W-MCR-23-GK-99-449 23-12-02

Workbook: JS 23-055 Page 401

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- (c) Adjust the outer PANEL/FLOOD AISLE STAND switch on the left lighting control panel (P5).
- 1) Make sure the intensity of the lights at each VHF communication control panel changes.
- (4) On aircraft with VHF communication control panels with one frequency control knob:
- (a) Set the TFR switch on each panel to the left position.
 - 1) Make sure a bar shows across the right frequency display.
 - (b) Set the TFR switch on each panel to the right position.
 - 1) Make sure a bar shows across the left frequency display.
 - (c) Adjust the outer PANEL/FLOOD AISLE STAND switch on the left lighting control panel (P5).
 - 1) Make sure the intensity of the lights at each VHF communication control panel changes.
- (5) Open the circuit breakers for the VHF systems where the control panel was not changed
- | | |
|-------|-------------------------------|
| 11C3 | VHF COMM LEFT |
| 11G4 | VHF COMM CENTER(IF INSTALLED) |
| 11G31 | VHF COMM RIGHT |
- (a) Select a frequency where normal VHF transmissions can be expected to be heard e.g. airfield weather.
 - (b) Select VHF systems' audio button on any audio select panel, adjust the volume as required.
 - (c) Verify that communications traffic can be heard.

NOTE: If VHF transmissions are not currently available to be heard, it is permissible to tune to a test frequency and listen for the correct side tone.
- (a) Close the circuit breakers on the overhead circuit breaker panel.
- | | |
|-------|-------------------------------|
| 11C3 | VHF COMM LEFT |
| 11G4 | VHF COMM CENTER(IF INSTALLED) |
| 11G31 | VHF COMM RIGHT |

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TEMPORARY REVISION No. 23-570

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For CHIEF ENGINEER QUALITY AND TRAINING

Manual Reference 23-22-00-5 Page 501

REASON FOR REVISION

To add an ACARS system test.

ACTION

Please read the following for the ACARS test on this aircraft post EOC-757-023G246.

2.

ACARS System Test

A. References

- (1) 23-12-00/501, VHF Communications System
- (2) 23-42-00/501, Cabin Interphone System
- (3) 23-51-00/501, Flight Interphone System
- (4) 24-22-00/501, Electrical Power - Control
- (5) 32-09-02/201, Air/Ground Relays
- (6) 32-44-00/501, Parking Brake System
- (7) 34-61-00/501, Flight Management computer System
- (8) 52-71-00/501, Door Warning System

B. Access

- (1) Location Zone
211/212 Flight Compartment

C. Prepare for the ACARS No. 1 System Test

- (1) Supply electrical power (Ref. 24-22-00).
- (2) Make sure these systems operate:
 - (a) The Center and Right VHF Communications Systems (Ref. 23-12-00).
 - (b) The Airborne Printer (Ref. 31-35-00).
- (3) Close the Circuit Breakers that follow:
 - (a) P11G4, VHF C COMM
 - (b) P11G5, ACARS PRTR
 - (c) P11G6, ACARS MU L AC
 - (d) P6G4, ACARS DC PWR
- (4) Gain access to the ACARS menu:
 - (a) Press the MENU keys on the L and R C/DUs.
 - (b) Check that the <ACARS prompt shows adjacent to Line Select Key 2L on both C/DUs.

Originator: R Kinnell
Reference: EOC-757-023G246
Workbook: CC 23-007

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TEMPORARY REVISION No. 23-570 (Cont'd)

- (c) Press the LSK adjacent to the < ACARS prompt on the L MCDU and check that the ACARS MENU is displayed.
- (d) Press the LSK adjacent to the < ACARS prompt on the R C/DU and check that TIMEOUT RESELECT is displayed.

NOTE: It is only possible to access ACARS on one C/DU at a time.

- (e) Press the MENU key on the L C/DU, then select FMC.
- (f) Press the LSK adjacent to the < ACARS prompt on the R C/DU and check that the ACARS MENU is displayed.

D. Do the ACARS Operational test.

- (1) Push the MENU key on the L FMC C/DU.
- (2) Make sure ACARS is shown adjacent to the LSK.
- (3) Push the ACARS LSK.
- (4) Make sure the ACARS Menu is shown.
- (5) Push the MISC LSK.
- (6) Make sure the MISCELLANEOUS menu page is shown.
- (7) Enter BAW into the scratch-pad before MAINTENANCE is selected.
(If this is not done the maintenance will not be displayed and the scratch pad message ACCESS DENIED will be displayed).
- (8) Push the MAINTENANCE LSK.
- (9) Make sure the MAINTENANCE menu page is shown.
- (10) Push the MU STATUS LSK.
- (11) Push the SYS TEST LSK.
- (12) Push the MENU keys on both the L and R FMC C/DUs.
- (13) De-select the Left on the L FMC C/DU.
- (14) Push the ACARS MENU LSK on the R FMC C/DU.
- (15) Make sure the ACARS menu page is shown.
- (16) Push the MODE LSK.
- (17) Make sure the MODE page is shown.
- (18) Push the ACARS MENU LSK on the R FMC C/DU.
- (19) Make sure the ACARS menu page is shown.
- (20) Push the MISC LSK.

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- (21) Make sure the MISCELLANEOUS menu page is shown.
- (22) Enter BAW into the scratch-pad before MAINTENANCE is selected.
- (23) Push the MAINTENANCE LSK.
- (24) Push the ACARS DIAGNOSIS LSK.
- (25) Make sure the ACARS DIAGNOSIS page is shown.
- (26) Make sure the registration number shown under REG NO is correct.
- (27) Return to the CDU menu.
- (28) Select the ACARS prompt.
- (29) Select the ACARS MENU page.
- (30) Push the MODE LSK.
- (31) Make sure the MODE page is shown.

E. Voice Mode Switching

- (1) Test the ACARS MU VOICE Mode Switching
 - (a) Press the LSK adjacent to the VOICEp prompt to Select Voice mode on the MCDU.
 - (b) Check that VOICE mode is indicated by the MCDU <selp prompt.

NOTE: In the Voice Mode, the C VHF is tuned through the mode page of the C/DU.

- (c) Reselect Data mode on the MCDU and check indications on the MCDU and Switchlight (if fitted).

F. ARINC 429 Interface Tests

- (1) Prepare for Tests
 - (a) Press the LSK adjacent to the ACARS MENU prompt.
 - (b) From the ACARS MENU, press the LSK adjacent to the MISCp prompt to access the MISCELLANEOUS menu.
 - (c) Enter the access code BAW into the scratch pad and press the LSK adjacent to the < MAINTENANCE prompt.
 - (d) From the MAINTENANCE page, press the LSK adjacent to the <MU STATUS prompt.
 - (e) On the ACARS SYSTEM STATUS page, check that MU STATUS shows OK.
 - (f) From the ACARS SYSTEM STATUS page, press the LSK adjacent to the < 429 PORTS.
 - (g) Using the NEXT PAGE key to move through the 429 PORT STATUS pages, check that OK is displayed in the STS column adjacent to the <MCDU 1, <MCDU 2, and <PRINTR prompts.
 - (h) Return to the Main menu using the <RETURN and <MENU keys.

G. VHF Interface Test

(1) Do the VHF Link Test

- (a) Check that the NO COM advisory is not displayed.
 - 1) If the NO COM advisory is displayed, it does not always indicate an ACARS system fault. A NO COM advisory may be caused by any of the situations that follow: The aircraft is outside ACARS ground network coverage, the VHF path between the VHF aerial and the ACARS ground station is blocked by an object such as a hangar structure, ground equipment, or buildings, the system has just been powered up and the frequency search logic has not yet found the local ACARS frequency, the ACARS ground station is inoperative, or the VHF communication system is not operating correctly.
- (b) From the ACARS MENU, press the LSK adjacent to the MISC prompt to access the MISCELLANEOUS menu.
- (c) Enter the access code BAW into the scratch pad and press the LSK adjacent to the MAINTENANCE prompt.
- (d) From the MAINTENANCE page, press the LSK adjacent to the <MU STATUS prompt.
- (e) From the ACARS SYSTEM STATUS page, press the LSK adjacent to the SYS TESTSp prompt.
- (f) From the ACARS SYSTEM TESTS page, press the LSK adjacent to the VHF LINKTEST prompt. A successful test is indicated by PASS coming into view beside the prompt. Note that QUEUED or SENDING may be displayed before PASS or FAIL.

H. Printer Interface Test

- (1) From the ACARS SYSTEM TESTS page, press the LSK adjacent to the PRINTER TEST prompt.
- (2) Check that the test message "The quick brown fox jumped over the 1234567890 lazy dogs." is printed out by the printer.

I. Discrete Input Tests

- (1) Gain access to the ACARS DIAGNOSIS page.
 - (a) Select the LSK adjacent to the RETURN prompt twice to return to the MAINTENANCE menu.
 - (b) From the MAINTENANCE menu, press the LSK adjacent to the ACARS DIAGNOSIS prompt.
- (2) Test Park Brake Input.
 - (a) Make sure the parking brake is set.
 - (b) Check that the BRAKE indication on the ACARS DIAGNOSIS page shows SET.

WARNING: MAKE SURE IT IS SAFE TO RELEASE THE PARKING BRAKE. INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE AEROPLANE MOVES ACCIDENTALLY.

- (c) Release the parking brake.
- (d) Check that the BRAKE indication on the ACARS DIAGNOSIS pageshows RLS.
NOTE: The sensor operates directly from the park brake handle.

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(e) Reset the Park Brake.

(3) Door Input Test.

- (a) Press the microswitch on passenger doors 1L, 2L, and 4L simultaneously to simulate closure of these doors.
- (b) Check that the DOORS CLSD field on the ACARS DIAGNOSIS page shows YES.
- (c) Open and Close each of the above doors in turn and check that in each case the DOORS CLSD field shows NO when the door is open.

(4) Air Ground Input Test.

- (a) Check that the GND/AIR field on the ACARS DIAGNOSIS page shows GND.
- (b) Activate the main gear sensors to simulate airborne state of the AIR/GND sensing system and then check that the GND/AIR field shows AIR.
- (c) De-activate the main gear sensors and check that the GND/AIR field shows GND.

(5) Program Pin Checks.

- (a) Enter into the scratch-pad the first four characters of the PROG ID (from the DIAGNOSIS page) followed by /KT (for example BA5P/KT), and then press the LSK adjacent to the A/L ID data field. Check that the A/L ID field changes to read KT.
- (b) Enter into the scratch-pad the first four characters of the PROG ID (from the DIAGNOSIS page) followed by /-- (for example BA5P/--), and then press the LSK adjacent to the A/L ID data field. This clears the A/L back to its default value as set by the program pins. Check that the A/L ID field changes to read BA.
- (c) Check that the REG NO field correctly displays the aircraft's registration preceded by a period (full stop).
- (d) Press the LSK adjacent to the <RETURN prompt.
- (e) From the MAINTENANCE page, press the LSK adjacent to the <MU STATUS prompt.
- (f) On the ACARS SYSTEM STATUS page, check that the ACFT CODE reads A/C TYPE B757C.

J. SELCAL Interface Test

(1) Prepare for the Test

- (a) Open the Circuit Breakers that follow:
 - P11G6, ACARS AC L
 - P6G4, ACARS DC PWR
- (b) Remove the L ACARS MU.

(2) Test the SELCAL Interface

- (a) Connect pin G9 to pin H9 on the MU backplate connector DB9058A (top plug of ACARS MU connector).
- (b) Check that the SELCAL chime sounds and the VHF C SELCAL light illuminates.

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- (3) Replace the MU
 - (a) Remove the link from the MU that connects ground from the backplate connector DB9058A (top plug of ACARS MU connector).
 - (b) Install the L ACARS MU and then close the circuit breakers that follow.
 - P11G6, ACARS AC L
 - P6G4, ACARS DC PWR

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23 February, 1998

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TEMPORARY REVISION No. 23-571

THIS TEMPORARY REVISION IS ISSUED BY BRITISH AIRWAYS ENGINEERING (TECHNICAL INFORMATION SERVICES, G2, TBA, S401, P. O. BOX 10, HEATHROW AIRPORT, HOUNSLOW, MIDDLESEX TW6 2JA) AND COMPLIES WITH BCAR'S CHAPTER A5-3, B5-3 AND/OR TSS No. 0-2 AS REQUIRED. CAA DESIGN APPROVAL No. DAI/8566/78.



For CHIEF ENGINEER QUALITY AND TRAINING

Manual Reference 23-22-00-5 Page 501

REASON FOR REVISION

To add an ACARS printer test.

ACTION

Please read the following for the ACARS test on this aircraft post EOC-757-023G246.

2. Operational Test

A. General

- (1) The operational test make sure the AIDS Printer works properly. No test equipment is necessary for this test.

B. References

- (1) AMM 24-22-00/201, Electrical Power Control

C. Access

- (1) Location Zone
212 Flight Compartment (Right)
119BL Main Equipment Bay E3-3

D. Prepare for the test

- (1) Supply electrical power (AMM 24-22-00/201).
- (2) Make sure these circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11J7, FLIGHT RECORDER AC
 - (b) 11J8, FLIGHT RECORDER DC
 - (c) 11S1, AIDS SENSOR
- (3) Make sure the DMEP and DFDAU failure lights on the DMEP are off.

E. Printer Test

- (1) Make sure the PTR failure light on the DMEP is off.
- (2) Push the RSET switch on the DMEP
- (3) Make sure the green POWER ON lamp on the printer is on.
- (4) Make sure the amber PTR BUSY lamp on the printer is off.

Originator: R Kinnell
Reference: EOC-757-023G246
Workbook: CC 23-007

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(5) On the DMEP, push in the PRNT switch.

(6) Make sure the printer print out the message that follows:

NOTE: The PTR BUSY lamp will be on steady and will flash on and off at the completion of the message.

(a) TEST MESSAGE

ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMN

OPQRSTUVWXYZ

0123456789

0

1

2

3

4

5

6

7

8

9

END OF TEST MESSAGE

(7) On the printer, push the ALERT RESET switch.

(8) Make sure the PTR BUSY lamp is off.

(9) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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10 August, 1999

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TEMPORARY REVISION No. 23-579

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CAA DESIGN APPROVAL No. DAI/8566/78.

Manual Reference 23-51-01 Page 401 para 2 and 3

(Tasks 23-51-01-004-001 and 23-51-01-404-014)

REASON FOR REVISION

To carry out the requirements of the Safety and Technical Strategy Board Cross-Connection Project G/38/98.

ACTION

After the existing paragraph 2.D.(4) and before 2.D.(5) add the following:

CAUTION: CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. CLEARLY IDENTIFY CONNECTIONS UPON DISCONNECTION AND FUNCTION CHECK UPON RECONNECTION.

After the existing paragraph 3.D.(1) and before the existing paragraph 3.D.(2) add the following:

CAUTION: CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. POSITIVELY IDENTIFY CONNECTIONS PRIOR TO RECONNECTION.

Remove the existing paragraph 3.D.(7) and insert the following:

(7) Supply electrical power (Ref 24-22-00).

(a) If the audio selector panel is in the centre pedestal.

1) Verify that when each microphone select switch is operated, only the associated transmit button illuminates, its associated audio select switch illuminates and lamp in the previously selected transmit button goes out.

2) Push the passenger address(PA) microphone select switch on the audio selector panel.

3) Make sure that the light in the switch comes on.

Originator: Garry Kerr

Reference: 757-W-MCR-23-GK-99-499

Workbook: JS 23-056

23-51-01

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- 4) Make a PA announcement using the press to talk switch on the audio selector panel.
 - 5) Make sure that you hear clear audio through the passenger address speakers.
 - 6) Make a PA announcement using the associated pilots control column press to talk switch.
 - 7) Make sure that you hear clear audio through the passenger address speakers.
- (b) If the audio selector panel is in one of the observers positions.
- 1) Push the passenger address(PA) microphone select switch on the audio selector panel.
 - 2) Make sure that the light in the switch comes on.
 - 3) Make a PA announcement.
 - 4) Make sure that you hear clear audio through the passenger address speakers.

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18 October, 1999

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TEMPORARY REVISION No. 23-588

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CAA DESIGN APPROVAL No. DAI/8566/78.

Manual Reference 23-51-02 Page 401

REASON FOR REVISION

Engineering Safety and Technical Strategy Board Requirement.
Category 2, 3 and 4 cross connectable units must have a generic caution statement in the applicable Maintenance Manual removal/installation tasks.

ACTION

1. Add the following caution message to MM Task 23-51-02-004-001.
Interphone Speaker Removal.

CAUTION : CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. CLEARLY IDENTIFY CONNECTIONS UPON DISCONNECTION AND FUNCTION CHECK UPON RECONNECTION.

2. Add the following caution message to MM Task 23-51-02-404-011.
Interphone Speaker Installation.

CAUTION : CROSS CONNECTION POSSIBILITY WHEN WORKING WITH THIS COMPONENT. POSITIVELY IDENTIFY CONNECTIONS PRIOR TO RECONNECTION.

Originator: R. Vessey
Reference: 757/W/MCR/23/TD/99/732 23-51-02
Workbook: JS 34-067 Page 401

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R 3	JAN 20/09	GUI.1	401	JAN 28/04	01	402	MAY 28/99	02
R 4	JAN 20/09	GUI.1	R 402	JAN 20/09	01.1	403	JAN 28/05	03
5	SEP 28/06	GUI	403	MAY 28/01	01	404	JAN 28/05	02
6	JAN 28/05	GUI	R 404	JAN 20/09	01.1	405	JAN 28/05	02
R 7	JAN 20/09	GUI.1				406	BLANK	
R 8	JAN 20/09	GUI.1	23-11-03			23-21-00		
9	JAN 20/08	GUI	R 401	JAN 20/09	01.1	R 1	JAN 20/09	01.1
R 10	JAN 20/09	GUI.1	R 402	JAN 20/09	10.1	2	SEP 20/92	19
R 11	JAN 20/09	GUI.1	403	MAY 28/99	08	3	JAN 28/02	01
12	BLANK		404	BLANK		4	JAN 28/02	23
23-00-00			23-11-04			5	JAN 28/02	08
1	JAN 28/00	10	R 401	JAN 20/09	01.1	6	BLANK	
2	MAR 20/88	10	R 402	JAN 20/09	01.1	23-21-00		
3	DEC 20/96	18	23-11-04			101	MAR 20/94	18
4	SEP 20/91	12	601	DEC 20/94	01	102	MAR 20/94	20
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1	DEC 20/95	02	23-12-00			501	JAN 28/02	03
2	SEP 20/92	21	1	JAN 20/99	20	502	JAN 28/02	03
3	SEP 20/92	18	2	MAR 20/93	21	503	JAN 28/02	03
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5	SEP 28/06	01	4	DEC 20/96	18	23-21-01		
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8	SEP 28/06	01	7	DEC 20/96	18	23-31-00		
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101	DEC 20/93	17	11	DEC 20/95	01	4	DEC 20/92	24
102	DEC 20/93	17	12	BLANK		5	SEP 28/05	22
103	DEC 20/93	15	23-12-00			6	JAN 28/01	21
104	BLANK		101	DEC 20/93	15	R 7	JAN 20/09	22.1
23-11-00			102	DEC 20/95	06	R 8	JAN 20/09	18.101
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506	MAY 20/08	14	503	MAY 28/01	17	D 14	DELETED	08
507	SEP 28/07	13	504	MAY 28/99	12	23-31-00		
508	SEP 28/07	01	23-12-01			101	DEC 20/92	28
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505	MAY 28/02	18				405	MAR 20/94	02
506	JAN 20/98	19	23-32-00			406	BLANK	
507	JAN 28/00	10	1	JAN 28/05	13			
508	SEP 28/05	30	2	DEC 20/93	12	23-32-12		
509	SEP 28/05	19	3	DEC 20/93	12	401	MAR 20/94	01
510	SEP 28/05	18	4	JAN 28/05	10	402	MAR 20/94	01
511	MAY 28/02	17	5	JAN 28/05	15	403	MAR 20/94	01
512	SEP 28/05	24	R 6	JAN 20/09	13.1	404	BLANK	
513	JAN 20/98	25	R 7	JAN 20/09	13.101			
514	BLANK		R 8	JAN 20/09	11.101	23-34-00		
			R 9	JAN 20/09	13.1	1	SEP 28/05	05A
23-31-00			10	BLANK		2	SEP 20/92	16A
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602	SEP 20/97	18	101	SEP 20/92	13	4	SEP 20/92	12A
R 603	JAN 20/09	09.1	102	DEC 20/93	08	5	JAN 28/02	12A
604	BLANK		103	SEP 20/92	13	6	JAN 28/02	16A
			104	BLANK		7	JAN 28/02	09A
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401	JAN 20/98	05	23-32-00			9	DEC 20/93	07A
402	MAR 20/93	09	501	JAN 28/05	06	10	BLANK	
403	MAY 28/02	14	502	JAN 28/05	13	23-34-00		
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23-31-02			504	JAN 28/05	13	102	SEP 20/92	18
401	JAN 28/02	02	505	MAY 28/06	14	103	SEP 20/92	11
402	DEC 20/93	01	506	MAY 28/06	13	104	SEP 20/92	03
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405	MAR 20/93	06	406	SEP 28/00	11	402	SEP 28/00	11
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			408	BLANK		404	SEP 28/00	09
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202	MAR 20/93	03	402	SEP 20/92	06	202	JAN 28/03	16
203	MAR 20/93	03	403	MAY 20/98	08	203	SEP 28/00	14
204	MAR 20/93	03	404	MAY 20/98	07	204	SEP 28/00	12
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206	BLANK		23-32-03			23-34-05		
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204	MAR 20/93	03						
205	MAR 20/93	03	23-32-04			23-34-06		
206	BLANK		401	MAY 28/06	17	401	MAR 20/97	07
			402	MAY 28/06	23	R 402	JAN 20/09	12.101
			403	MAY 28/06	18	R 403	JAN 20/09	09.101
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R 4	BLANK		R 408	JAN 20/09	03.1	404	BLANK	
23-41-00			23-42-07			23-51-02		
101	SEP 20/90	06	401	JAN 28/05	01	401	MAR 20/93	07
102	SEP 20/90	06	402	JAN 28/05	01	402	SEP 20/87	01
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502	MAY 28/99	02	402	JAN 20/08	17	23-51-03		
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2	SEP 20/92	28	2	SEP 20/92	21	403	MAY 28/99	07
3	SEP 20/92	11	3	SEP 20/91	02	404	MAY 20/98	06
R 4	JAN 20/09	15.1	R 4	JAN 20/09	03.1	405	MAY 28/99	09
R 5	JAN 20/09	15.101	D 5	DELETED	01	406	MAY 28/99	19
R 6	JAN 20/09	07.101	D 6	DELETED		407	MAY 28/99	10
R 7	JAN 20/09	05.1	23-43-00			408	MAY 28/99	02
R 8	BLANK		101	MAR 20/94	01	23-61-00		
23-42-00			102	MAR 20/94	01	1	SEP 20/91	01
101	MAR 20/94	13	23-43-00			2	MAR 20/90	01
102	MAR 20/94	01	R 501	JAN 20/09	01.101	23-61-00		
103	MAR 20/94	19	502	BLANK		101	SEP 20/93	01
104	MAR 20/94	16	23-43-01			102	SEP 20/90	01
23-42-00			401	JAN 20/98	01	103	SEP 20/93	01
R 501	JAN 20/09	13.101	402	MAR 20/96	01	104	SEP 20/90	01
R 502	JAN 20/09	18.101	403	SEP 28/02	01	105	SEP 20/90	01
503	SEP 28/04	16	404	SEP 20/93	01	106	BLANK	
504	DEC 20/90	14	23-51-00			23-61-01		
505	DEC 20/93	13	1	SEP 20/91	01	201	MAY 28/03	01
506	BLANK		2	SEP 20/93	24	202	JAN 28/02	01
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403	JAN 28/03	01	R 6	JAN 20/09	04.1	206	JAN 28/03	01
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402	JAN 28/03	01	101	INT BLANK		210	JAN 28/07	01
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801	SEP 28/06	01	103	DEC 20/91	22	212	JAN 28/07	01
802	SEP 20/98	01	104	SEP 20/93	14	213	JAN 28/07	01
803	MAY 28/06	01	105	SEP 20/93	04	214	JAN 28/07	01
804	BLANK		106	SEP 20/93	01	215	JAN 28/07	01
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403	SEP 20/92	04	503	JUN 20/91	01	219	JAN 28/07	01
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506	SEP 28/06	06						
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COMMUNICATIONS - DESCRIPTION AND OPERATION

1. General

A. The 757 airplane has facilities for transmitting and receiving voice communications from ground stations or other airplanes. Facilities are also available for communication within the airplane.

2. Communications Systems (Fig. 1)

- A. Two HF communication systems (23-11) are installed on the airplane.
(1) The HF communication system, provides long-range voice communication with ground stations or other airplanes. The system can be used to transmit or receive after selection of an operating frequency and mode.
- B. Three VHF communications systems (23-12) are installed on the airplane.
(1) The VHF Communication system provides short range, line-of-sight A.M. voice communications with ground stations or other airplanes.
- C. A five channel SELCAL system (23-21) is installed on the airplane. The system provides aural/visual notification to the flight crew that someone desires contact with them on one of the radio transceivers, and makes continuous monitoring of radio frequencies unnecessary.
- D. The PA (passenger address) system (23-31) provides the pilots and attendants with a way to distribute announcements and boarding music to passengers through cabin speakers. Circuits in the system send chime signals to the cabin speakers.
- E. The passenger entertainment (video) system (23-32) provides prerecorded video programs for passenger viewing. The programs are displayed on monitors located throughout the passenger cabin.
- F. The passenger entertainment system (23-34) provides entertainment audio to the passenger seats. Entertainment audio is supplied by either the entertainment tape (music) or video tape reproducers.
- G. The service interphone system (23-41) provides the staff and crew with interior and exterior communication capability. Circuits in the system connect service interphone jacks to the flight compartment.
- H. The cabin interphone system (23-42) provides facilities for communication among cabin attendants, and between the flight compartment crewmembers and attendants. The system can be switched to the input of the passenger address system for PA announcements.
- I. The ground crew call system (23-43) provides a signaling capability (through the ground crew call horn) between the flight compartment and nose landing gear area.
- J. The flight interphone system (23-51) provides facilities for interphone communication among flight compartment crewmembers, and provides the means for them to key, transmit, and receive on airplane radio systems and receive on airplane navigation receivers.
- K. Static dischargers (23-61) discharge static buildup on the trailing edges of the wings and both the horizontal and vertical stabilizers of the airplane.
- L. The voice recorder system (23-71) records flight compartment communications and conversations. The latest 30 or 120 minutes of recorded conversation is available on tape or from solid state memory. Erasing is accomplished only when the airplane is on the ground with the parking brake set.

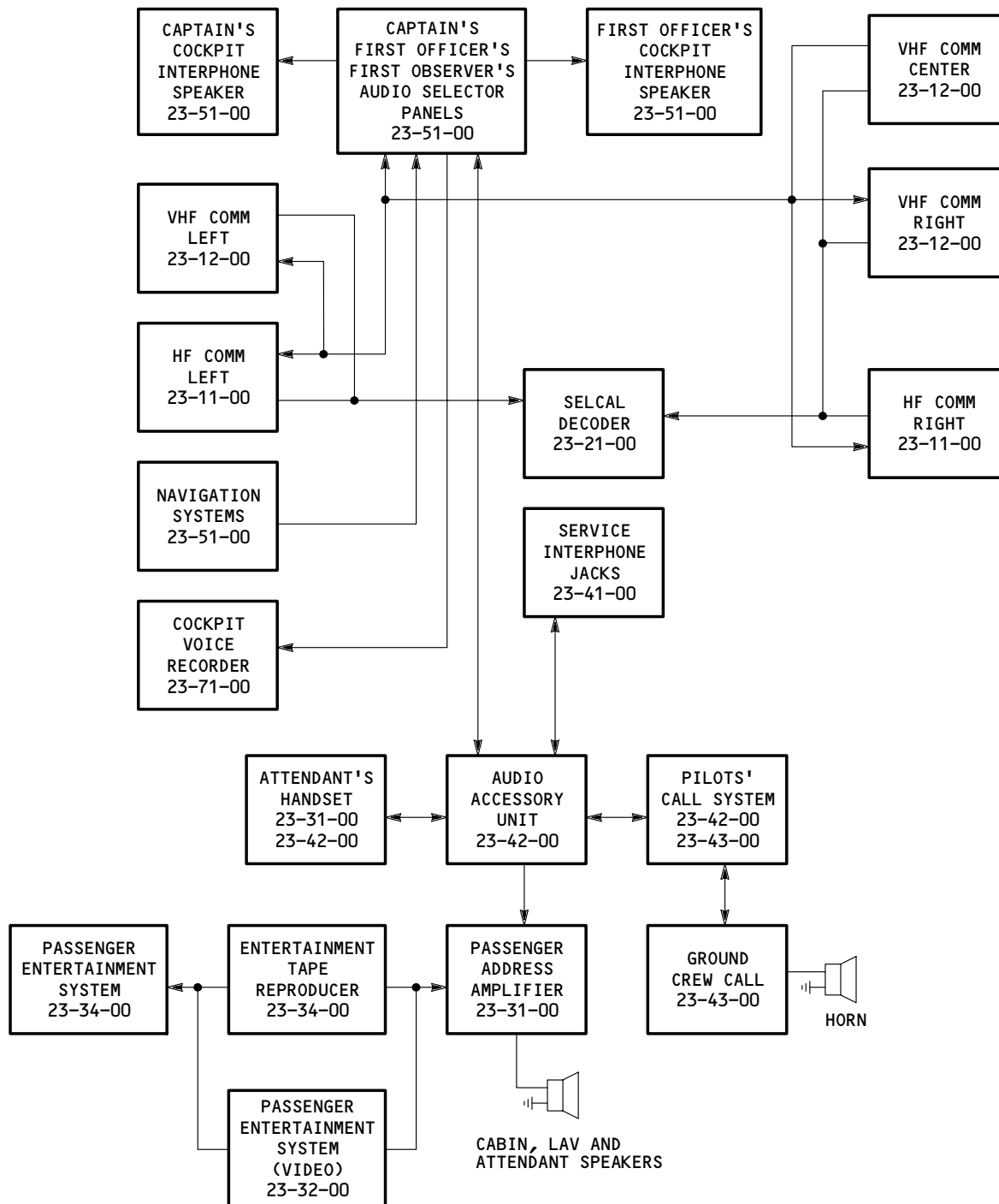
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Communication System Block Diagram
Figure 1

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3. Antenna Locations (Fig. 2)

- A. The VHF communication antennas are located on the upper and lower centerline of the fuselage at the following locations:
- (1) The left VHF Communication antenna is installed on the top forward centerline of the fuselage.
 - (2) The right VHF Communication antenna is installed on the lower forward centerline of the fuselage.
 - (3) The center VHF communication antenna is installed on the lower aft centerline of the fuselage.
- B. The HF communications antenna is located in the leading edge of the vertical stabilizer.

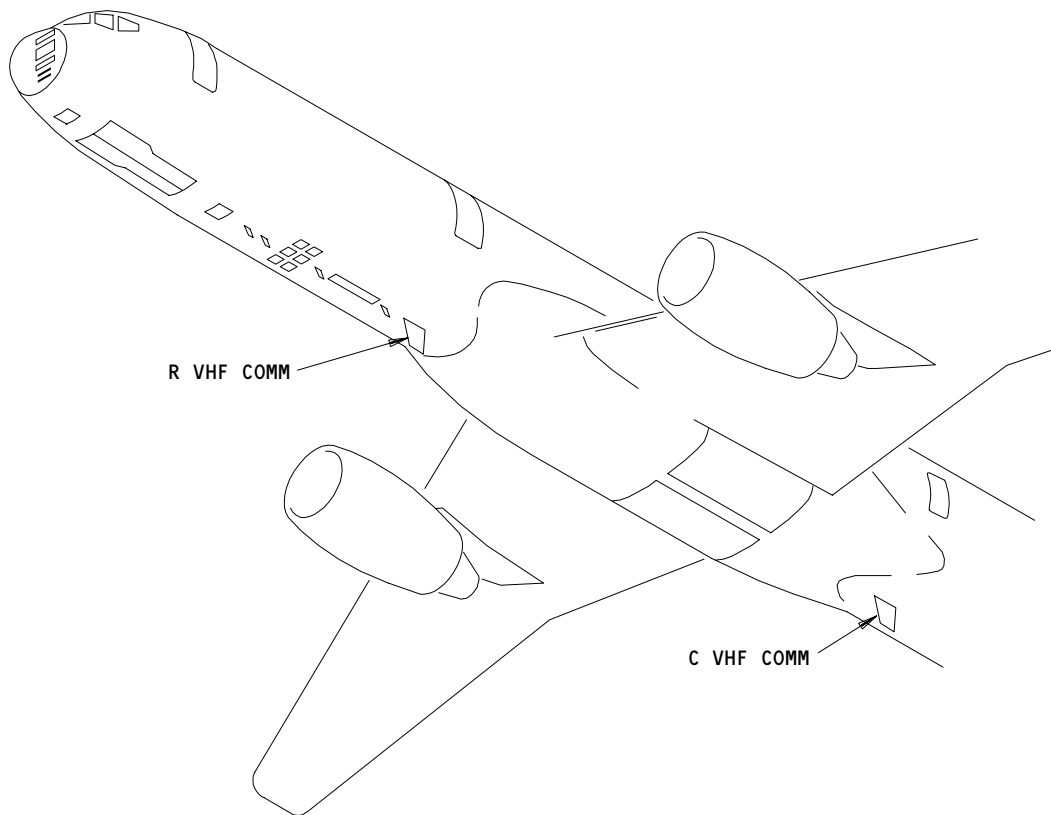
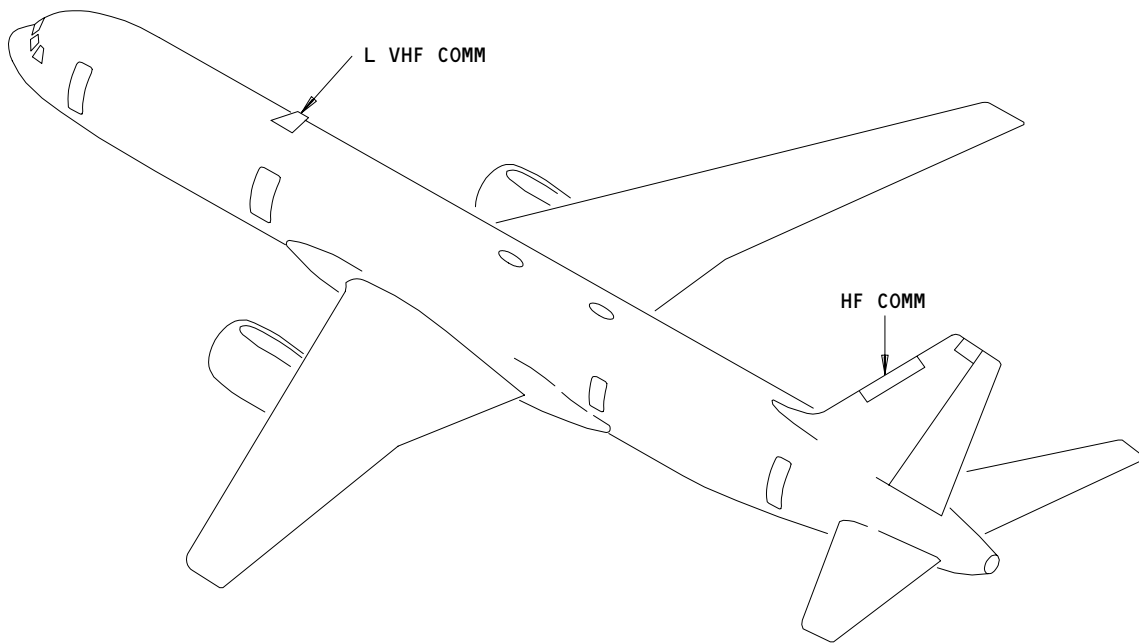
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Communication Antenna Locations
Figure 2

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HF COMMUNICATION SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. One or Two HF (high frequency) communications systems (referred to as the HF systems) provide long-range air-to-ground or air-to-air communications.
- B. The HF system consists of an HF communication transceiver, an HF communication control panel, an HF communication antenna coupler, and a HF communication antenna. The HF communication antenna is a slot-type, shunt-fed antenna. If two HF systems are installed, the HF systems share the single HF communication antenna.
- C. The HF systems operate in the 2.800 to 23.999 megahertz (MHz) frequency range on 21,200 channels or in the 2.000 to 29.999 MHz frequency range on 28,000 channels in either amplitude modulated (AM) or upper side band (USB) modes.
- D. The audio, microphone and PTT functions of the HF system are interfaced with the audio selector panels (ASP's) of the flight interphone system (AMM 23-51-00/001).
- E. The left HF system utilizes 115v ac 400 Hz 3-phase power from the left bus. The right HF system (if installed) utilizes 115v ac 400 Hz 3-phase power from the right bus. The HF COMM LEFT and HF COMM RIGHT circuit breakers located on the overhead panel P11 control power to the HF systems.

2. Component Details (Fig. 1)

A. HF Communication Control Panel

- (1) The left and right (if installed) HF communication control panels (referred to as the control panels) are located on their respective side of the pilots' overhead panel P5. The control panels weigh approximately 2.2 pounds and are self-contained, including power supply. Each control panel is dedicated to providing mode control, frequency selection, and radio frequency (RF) sensitivity adjustment for its respective HF communication transceiver.
- (2) The front panel of the control panel contains a mode control switch, two sets of frequency selector knobs, a frequency display, and an RF SENS (sensitivity) control. The mode control switch sets the HF system to OFF, or selects either the AM (amplitude modulated) or USB (upper side band) mode of operation. The left frequency selector knobs select the MHz and 100 kHz digits on the frequency display. The right frequency selector knobs select the 10 kHz and 1.0 kHz digits on the frequency display. The RF SENS control adjusts the signal sensitivity of the receiver circuits in the HF comm transceiver.
- (3) The control panel contains circuits inside which convert the mode and frequency selections into digital form. The control panel provides a 32-bit word to the HF comm transceiver in ARINC-429 format.

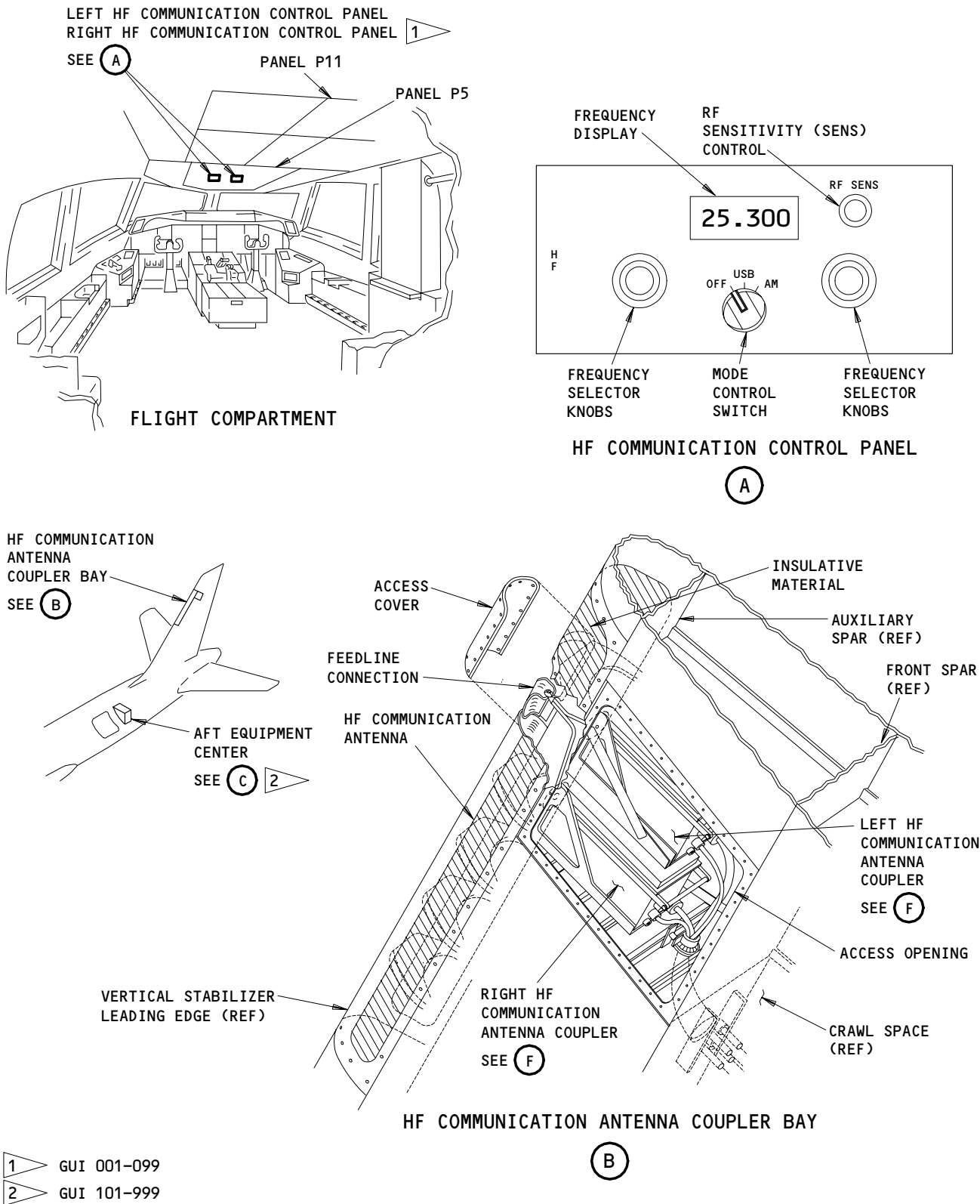
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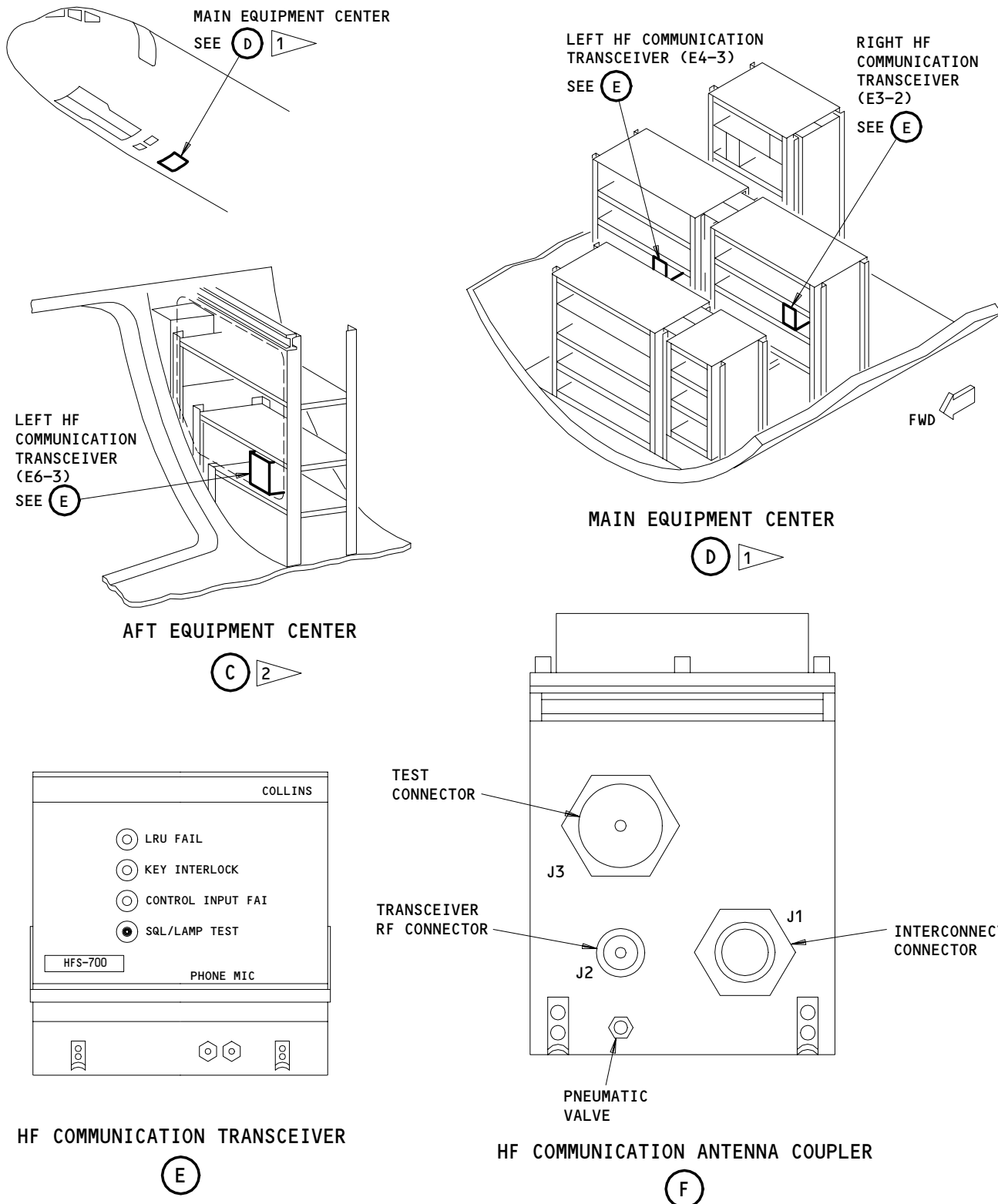


HF Communication System - Component Location
Figure 1 (Sheet 1)

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HF Communication System - Component Location
Figure 1 (Sheet 2)

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B. HF Communication Transceiver

- (1) The left and right (if installed) HF communication transceivers (referred to as the transceivers) are located in the aft equipment center or in the main equipment center. The transceivers are 6 MCU rack mounted units weighing approximately 26.5 pounds. Each transceiver contains an internal blower motor.
- (2) The HF communication transceiver contains a transmitter and a receiver. The transmitter output is 125W in the AM mode and 400W pep in the USB mode.
- (3) Program pins on the transceiver determine the operating characteristics of the HF system. A program pin is provided to select an operating range from 2.000 MHz to 29.999 MHz or from 2.800 MHz to 23.999 MHz. A program pin is provided to select internal blower motor operation during transmit only or all the time electrical power is applied to the transceiver.
- (4) The transceiver front panel contains the following:
 - (a) LRU FAIL light which comes on as a result of transceiver faults such as:
 - 1) Low transmitter output power.
 - 2) Low power supply voltages.
 - 3) Frequency control board microcomputer failure.
 - 4) Frequency synthesizer out-of-lock.
 - (b) KEY INTERLOCK light which comes on as a result of HF comm antenna coupler faults such as:
 - 1) HF comm antenna coupler internal power failure.
 - 2) Excessive tuning time.
 - 3) Extreme tuning reactance.
 - (c) The HF transmitter is disabled when the KEY INTERLOCK light is on.
 - (d) CONTROL INPUT FAIL light which comes on as a result of improper inputs from the control panel such as:
 - 1) Lack of HF label code for the 32-bit control word input.
 - 2) Invalid serial data input.
 - 3) Insufficient repetition rate of HF data.
 - (e) SQL/LAMP TEST switch, when pushed, provides a test condition where the following occurs:
 - 1) LRU FAIL light comes on.
 - 2) KEY INTERLOCK light comes on.
 - 3) CONTROL INPUT FAIL light comes on.
 - 4) Receiver audio squelch is disabled.

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- 5) Radio frequency (rf) sensitivity line is grounded.
- (f) PHONE jack provides a receptacle for utilizing a headphone.
- (g) MIC jack provides a receptacle for utilizing a hand microphone.
- (5) Each HF transceiver uses 115v ac 3-phase power from its respective HF COMM circuit breaker on the overhead circuit breaker panel, P11.

C. HF Communication Antenna Coupler

- (1) The left and right (if installed) HF communication antenna couplers (referred to as the antenna couplers) are located in the antenna coupler bay of the vertical stabilizer. The antenna couplers are rack-mounted, pressurized units weighing 17 pounds each. Each antenna coupler is pressurized with dry air at 5-7 psig.
- (2) AIRPLANES WITH ROCKWELL COLLINS ANALOG HF ANTENNA COUPLER;
The antenna coupler consists of rf tuning elements and control circuits which comprise a closed tuning loop. The antenna coupler is tunable over the frequency range from 2 to 30 MHz. Typical tuning time required is 2 to 7 seconds. The antenna coupler constantly monitors the rf transmissions to automatically adjust the tuning elements.
- (3) AIRPLANES WITH ROCKWELL COLLINS DIGITAL HF ANTENNA COUPLER;
The antenna coupler provides fast tuning and built in test capability. A microprocessor controller executes sophisticated tuning algorithms to provide fast tuning solutions utilizing relay switched tuning elements. A novel impedance measuring discriminator is used to measure antenna impedance and standing wave ratios as the antenna is automatically tuned.
 - (a) The tune time for a frequency not in the memory is usually 2 to 4 with a maximum time of 7 seconds.
 - (b) The tune time for a frequency saved in memory is:
 - 1) HFS-700 or HFS-900 transceiver, usually 1 second.
 - 2) HFS-900D transceiver, usually 200 milliseconds
- (4) AIRPLANES WITH ALLIED SIGNAL DIGITAL HF ANTENNA COUPLER;
The antenna coupler provides fast tuning and built in test capability. The reactance elements of RF tuning signals are switched by means of RF relays, which are controlled by a tuning control card. The tuning control card contains a microprocessor, data memories, and frequency measurement. The antenna coupler automatically stores tuning information.
 - (a) The tune time for a frequency not in memory is within 1 second.

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- (b) The tune time for a frequency saved in memory is within 20 milliseconds.
 - (5) In dual HF installations, the antenna couplers are electrically interlocked so that only one HF system transmits at any time. Faults within the antenna coupler cause the KEY INTERLOCK light on the transceiver to come on. The following situations are considered faults:
 - (a) Antenna coupler fails to home within 15 seconds of rechannel pulse.
 - (b) Antenna coupler fails to tune within 15 seconds of RF application.
 - (c) Internal arcing is detected.
 - (6) Access to the antenna couplers is via access panel 322 CL on the left side of the vertical stabilizer. The panel is between the front and auxiliary spar and uses approximately 60 retaining screws.
- D. HF Communication Antenna
- (1) The HF communication antenna (referred to as the antenna) is built into the leading edge of the vertical stabilizer. The antenna is a shunt-fed slot-type antenna which is approximately eight feet long. An inverted U shaped insulative portion of the leading edge structure surrounds the antenna element on three sides.
 - (2) The single antenna functions as the transmit and receive antennas for the HF system(s). The feedline connections from the antenna coupler mounting racks are at the lower edge of the insulative portion at the top of the antenna element.

3. Operation (Fig. 2)

A. Functional Description

- (1) General
 - (a) IN DUAL HF INSTALLATIONS;
the left and right HF systems each function as independent systems with the single antenna as the only common component. The functional signal flow is similar for the left and right systems including the X-Y crossconnections between the antenna couplers. The antenna coupler connections to the single antenna assembly are also similar.
 - (b) Each HF system has a 115v ac three-phase circuit breaker on P11. One phase of the 115v ac provides power directly to the control panel. The mode control switch on the control panel operates the power relay in the transceiver.
 - (c) The 115v ac is applied to the transceiver power supply, the transceiver blower motor and the antenna coupler which has its own power supply. The transceiver power supply provides +5v dc, +28v dc and the other voltages required by the transmitter and receiver circuitry. The +28v dc is also provided to the antenna coupler.
 - (d) The blower motor runs all the time that the transceiver is powered.

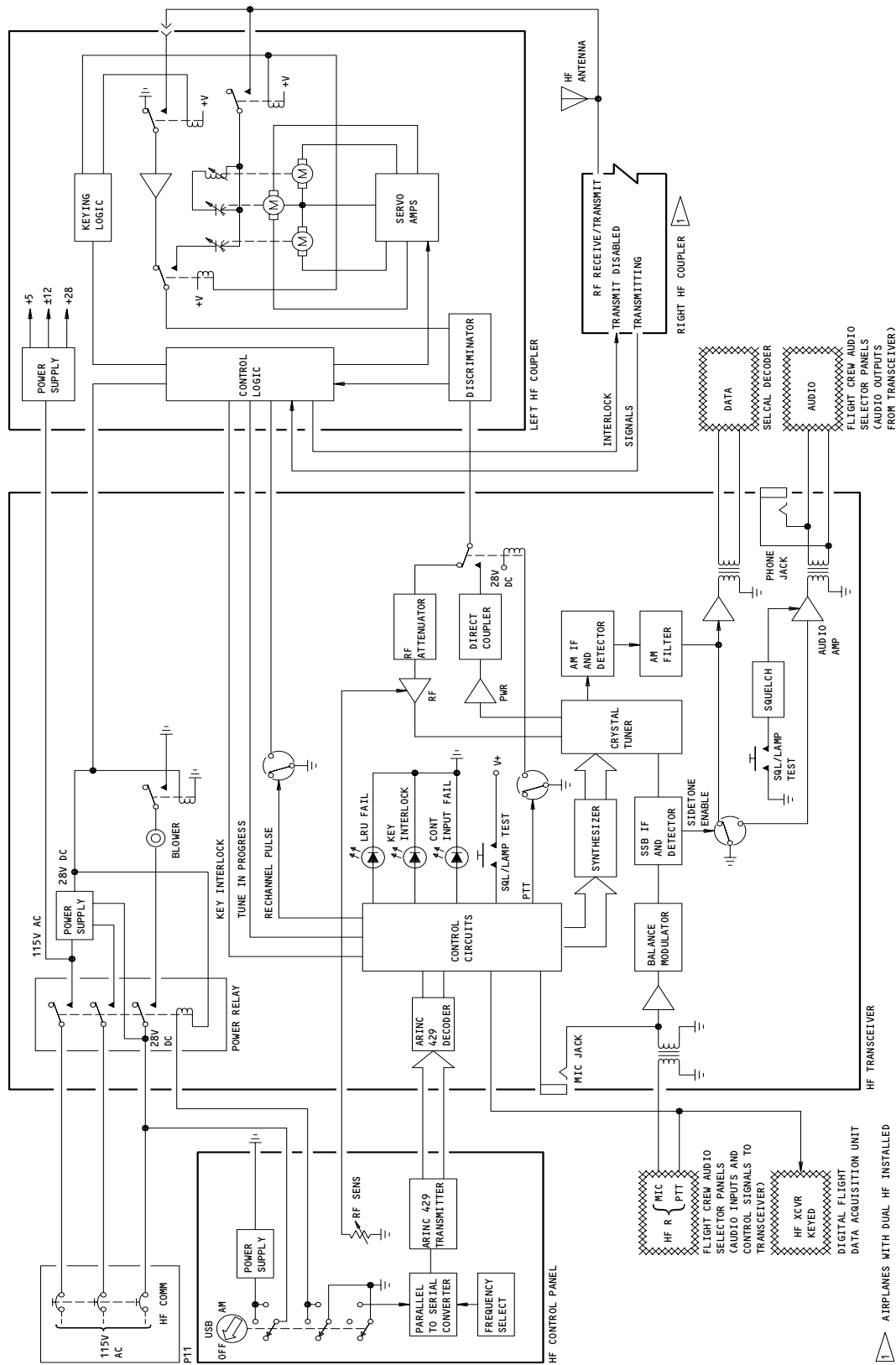
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HF Communications System Schematic (Typical)
Figure 2

▲ AIRPLANES WITH DUAL HF INSTALLED

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- (e) The frequency selector knobs on the control panel are connected to the frequency display and to the binary encoders. Parallel serial shift registers process the frequency and mode data to generate the 32-bit digital word with the HF comm address label in ARINC 429 low-speed format.
- (f) The HF comm 32-bit word is received at the port B decoder of the transceiver. The decoder monitors the input word for proper address, parity, sign status matrix, and interval. The control circuits tune the transceiver to the desired mode and frequency via the synthesizer.
- (g) The operating frequency band of the transceiver is between 2.800 MHz and 23.999 MHz. Whenever the frequency selector knobs are selected below 2.800 MHz or above 23.999 MHz the HF system will not function. If an out-of-band frequency is selected, a 1 kHz tone will be heard through the headset when transmission is attempted.
- (h) Whenever a new frequency is selected at the control panel, the control circuits in the transceiver output a "rechannel" pulse to the antenna coupler. The rechannel input causes the antenna coupler tuning elements to go to the "home" position. Tuning of the antenna coupler to the selected frequency is initiated by a PTT input to the antenna coupler. While the antenna coupler elements are tuning, the transceiver transmits a low wattage AM output. The "tune-in-progress" 1 kHz tone is the sidetone output. When the antenna coupler tuning is complete, the transceiver returns to the receive mode.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is approximately 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep or not always audible.

(2) Receive Mode

- (a) The RF signal is received at the antenna and routed thru the antenna coupler(s) to the transceiver(s) via coaxial cables. Normally each antenna coupler is tuned to the frequency which is selected on the control panel for the transceiver.
- (b) The received RF signal enters the antenna coupler via the antenna feedlines and thru a relay to an isolation amplifier. The relay protects the isolation amplifier whenever the right HF system is transmitting (if installed). The RF signal is routed thru transmit/receive relays, the discriminator circuits, and on to the transceiver via the coaxial cable.

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- (c) The received RF signal enters the transceiver thru a transmit/receive relay into the RF amplifier controlled by internal AGC and the RF SENS on the control panel. The tuning circuits perform the frequency conversions and the IF detectors provide the AM or USB audio portions of the signal. The audio is output to the headphone jack and to the flight interphone system (AMM 23-51-00/001) . The AM audio is also output to the SELCAL system (AMM 23-21-00/001).
- (3) Transmit Mode
- (a) The microphone and PTT inputs for the HF system are provided by the flight interphone system via the audio selector panels (AMM 23-51-00/001). After the frequency is selected and the antenna coupler has been tuned, pushing the PTT switch will cause the transceiver to transmit. The microphone input is modulated as AM or USB onto the RF and the power amplifiers output the signal from the transceiver thru a directional coupler and transmit/receive relay. The audio sidetone is detected and output, provided the power output is greater than 40 watts.
 - (b) The transmitted signal enters the front of the antenna coupler via the coaxial cable. The PTT input from the transceiver is also provided to the antenna coupler. The RF signal inputs to the discriminator circuits, thru transmit/receive relays, the tuning network and thru another transmit/receive relay. In dual HF systems, an inhibit signal goes to the other system.
 - (c) The RF signal output is fed to the antenna on the feedline from the antenna coupler mounting rack. The transceiver and antenna coupler will be inhibited by the key interlock signal if any antenna coupler faults exist or if the other HF system is transmitting (dual HF installations only).
- B. Test
- (1) Listen and make sure the transceiver internal blower fan is on.
 - (2) Do these steps at the front panel of the transceiver:
 - (a) Push and hold the SQL/LAMP TEST switch.
 - 1) Make sure the LRU FAIL, KEY INTERLOCK, and CONTROL INPUT FAIL lights come on and remain on. Make sure the receiver squelch is disabled.
 - (b) Release the SQL/LAMP TEST switch. Make sure the LRU FAIL, KEY INTERLOCK and CONTROL INPUT FAIL lights go out.

C. Control

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WARNING: DO NOT OPERATE THE HF COMMUNICATION SYSTEM WHILE PERSONS REFUEL OR DEFUEL THE AIRPLANE. AN EXPLOSION CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO THE AIRPLANE.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (1) Turn on procedure.
 - (a) Provide electrical power (AMM 24-22-00/201).
 - (b) Make sure the HF COMM LEFT and HF COMM RIGHT (if installed) circuit breakers on the overhead circuit breaker panel, P11, are closed.
 - (c) Set the mode selector switch on the HF communication control panel (P5) to either the AM or USB position.

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FAULT ISOLATION/MAINT MANUAL

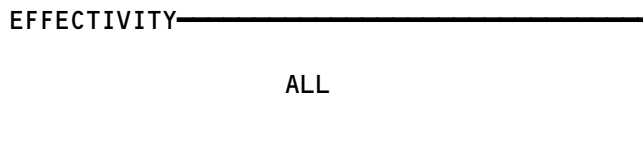
HF COMMUNICATIONS SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ANTENNA - HF, M244	2	1	322CL, VERTICAL FIN	23-11-00
CIRCUIT BREAKER -	2		FLT COMPT, P11	
HF COMM LEFT, C3005		1	11G8	*
HF COMM RIGHT, C3006		1	11G34	*
COUPLER - L HF COMM ANTENNA, M241	2	1	322CL, VERTICAL FIN	23-11-01
COUPLER - R HF COMM ANTENNA, M242	2	1	322CL, VERTICAL FIN	23-11-01
PANEL - L HF COMM CONT, M82	2	1	FLT COMPT, P5	23-11-02
PANEL - R HF COMM CONT, M83 1	2	1	FLT COMPT, P5	23-11-02
TRANSCEIVER - L HF COMM, M152	1	1	119BL, MAIN EQUIP CTR, E4-3	23-11-03
TRANSCEIVER - R HF COMM, M153 1	1	1	119BL, MAIN EQUIP CTR, E3-2	23-11-03

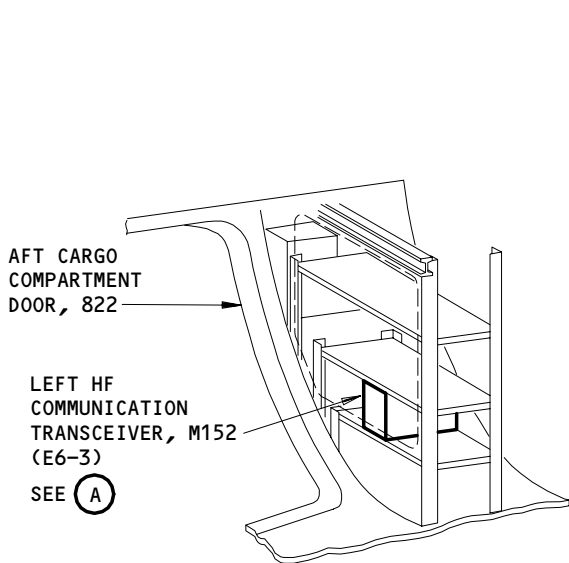
* SEE THE WDM EQUIPMENT LIST

1 GUI 001-099

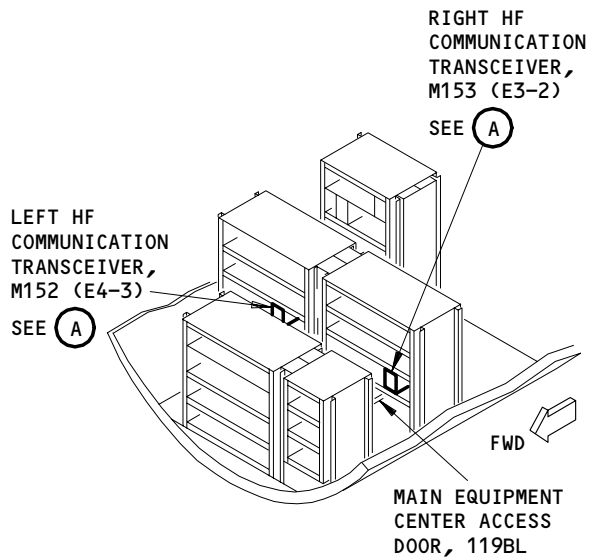
HF Communications System - Component Index
Figure 101



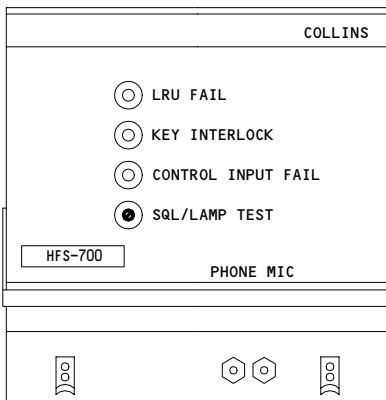
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AFT EQUIPMENT CENTER 2



MAIN EQUIPMENT CENTER 1

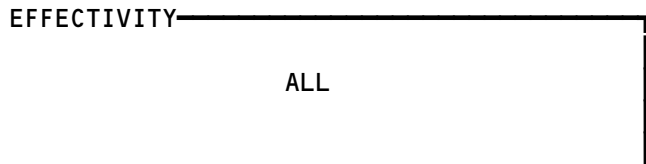


LEFT OR RIGHT COMMUNICATION TRANSCEIVER, M152 OR M153

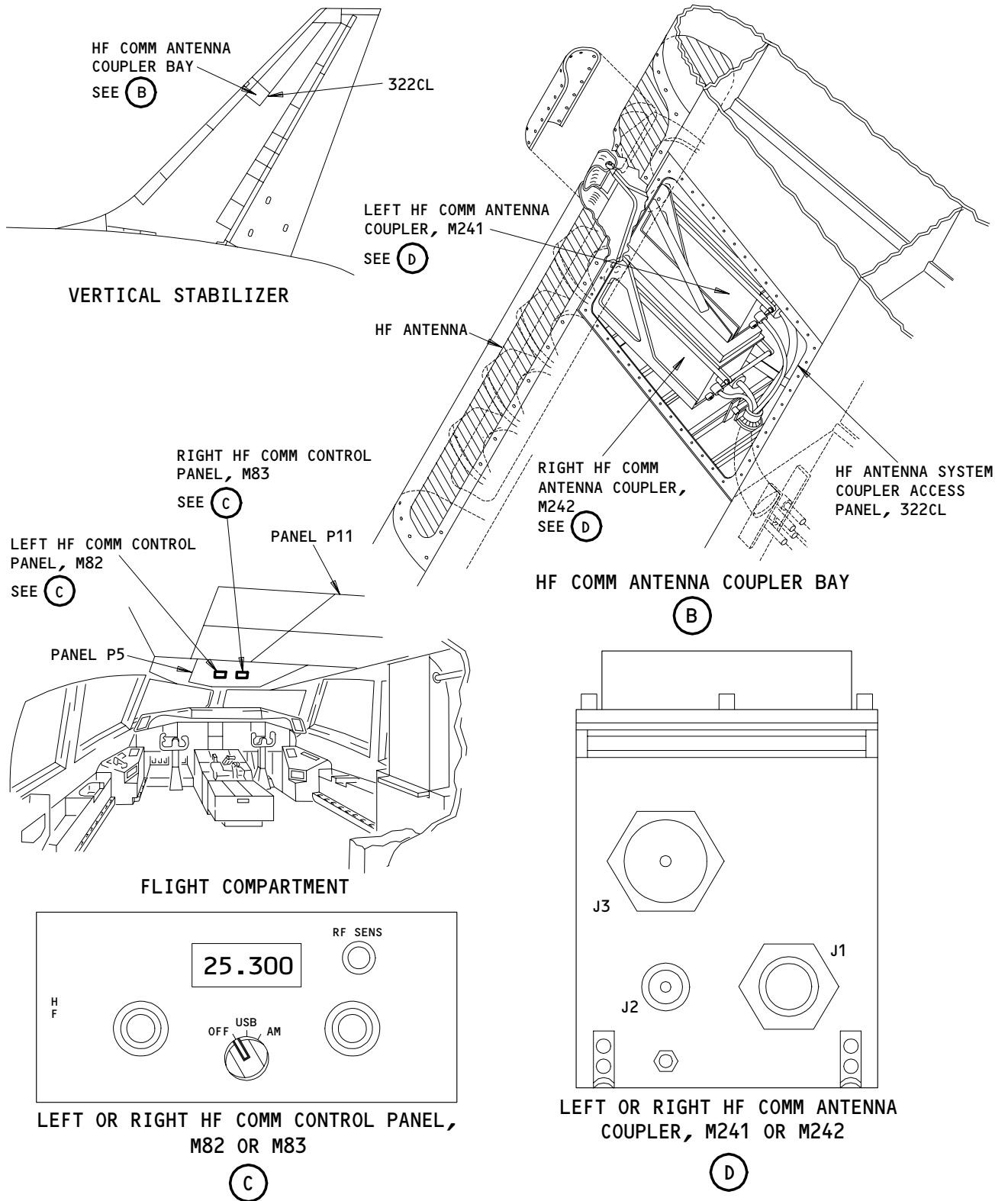
(A)

- 1 GUI 001-099
- 2 GUI 101-999

HF Communications System - Component Location
Figure 102 (Sheet 1)



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HF Communications System - Component Location
Figure 102 (Sheet 2)

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HF COMMUNICATION SYSTEM – ADJUSTMENT/TEST

1. General

- A. This procedure includes an operational test and a system test. The operational test is a short test which uses the self-test status lights on the transceiver. The system test is a complete test of the HF communications system.

TASK 23-11-00-715-003

2. Operational Test – HF Communication System

A. General

- (1) This test does a short check of the left HF communication system and the right HF communications system (if installed). The test uses the status lights on the transceiver front panel.
- (2) AIPLANES WITH ROCKWELL COLLINS COUPLERS AND TRANSCEIVERS;
HF Antenna Coupler Tuning
 - (a) A tune tone is generated while the HF antenna coupler tunes to a new frequency. The tune tone can be continuous or pulsed (determined by the coupler/transceiver configuration). Some couplers save previously tuned frequencies in memory. If a coupler is set to a frequency in memory, then the tune time can be very short and you may not hear the tune tone. If you hear the tune tone for more than 7 seconds (15 seconds maximum), then it is an indication of a tuning failure.
 - (b) Rockwell Collins Analog HF Antenna Coupler (Model 490S-1, Part Number 792-6140-001):
 - 1) The tune time is 2-4 seconds typical, 7 seconds maximum.
 - 2) The tune tone is continuous.
 - (c) Rockwell Collins Digital HF Antenna Coupler (Model CPL-920D, Part Number 822-0987-XXX):
 - 1) The tune time for a frequency not in memory is 2 to 4 seconds typical, 7 seconds maximum.
 - 2) The tune time for a frequency saved in memory is:
 - a) HFS-700 or HFS-900 transceiver installed: 1 second typical.
 - b) HFS-900D transceiver installed: 200 milliseconds typical.

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- 3) Up to 100 frequencies can be saved in memory.
- 4) HFS-700 or HFS-900 transceiver installed: The tune tone is pulsed.
- 5) HFS-900D transceiver installed: The tune tone is continuous.

B. Equipment

- (1) Handheld or headset/boom microphone

C. References

- (1) AMM 24-22-00/201, Electrical Power - Control

D. Access

- (1) Location Zones

119	Main Equipment Center (LH)
120	Main Equipment Center (RH)
211	Control Cabin (LH)
212	Control Cabin (RH)
153	Aft cargo compartment (LH)
154	Aft cargo compartment (RH)

- (2) Access Panel

119BL	Main Equipment Center Access Panel
822	Aft Cargo Compartment Door

- (3) GUI 101-999;
Access Panel

823	No. 3 Cargo Door
-----	------------------

E. Prepare for Test

S 865-002

- (1) Supply electrical power (AMM 24-22-00/201).

S 865-004

- (2) Make sure the applicable circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G34, HF COMM RIGHT (IF INSTALLED)

F. HF Operational Test

S 715-002

WARNING: DO NOT OPERATE THE HF COMMUNICATIONS SYSTEM WHILE PERSONS REFUEL OR DEFUEL THE AIRPLANE. AN EXPLOSION CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO THE AIRPLANE.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (1) Do the HF Operational Test as follows:
 - (a) Set the mode selector switch to the USB position on the left HF communication control panel (P5).

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- (b) Set the frequency selectors to an AM frequency between 2.8 MHz and 23.999 MHz (or between 2.000 MHz and 29.999 MHz on airplanes with wideband frequency operation enabled).
- (c) Connect the headset to the PHONE jack on the left transceiver front panel.

NOTE: If headphone is not available, it is acceptable to use the cockpit headphone or speaker. Ensure someone is monitoring the front panel for proper indications.

- (d) Connect the hand microphone to the MIC jack on the left transceiver front panel.

NOTE: If hand microphone is not available, it is acceptable to use the cockpit microphone. Ensure someone is monitoring the front panel for proper indications.

- (e) Push and hold the SQL/LAMP TEST switch on the left transceiver front panel.
 - 1) Make sure all three status lights on the transceiver front panel come on and stay on.
 - 2) Make sure the squelch is removed and you can hear background noise in the headset.
- (f) Release the SQL/LAMP TEST switch.
 - 1) Make sure all the status lights go off.

NOTE: If a status light stays on after the SQL/LAMP TEST switch is released, a fault condition is shown.

- (g) Push and release the hand mic PTT switch.
 - 1) Listen for a 1 kHz tune-in-progress tone in the headset.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep or may not always be audible.

- 2) Make sure none of the status lights on the transceiver front panel remain illuminated.

NOTE: The Key Interlock light will momentarily blink when the microphone is keyed.

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- (h) Push and hold the PTT switch.
 - 1) Make sure none of the status lights on the transceiver front panel remain illuminated.

NOTE: The Key Interlock light will momentarily blink when the microphone is keyed.

NOTE: A 1 kHz tone will be heard while the PTT switch is pushed if an out-of-band frequency (below 2.8 MHz or above 23.999 MHz) is set.

- (i) Release the PTT switch.

G. Right HF Operational Test (Dual HF system installations only)

S 915-008

- (1) Do the HF Operational Test again with the right HF communication system (if it is installed).

H. Restore the Airplane to Normal

S 865-009

- (1) Remove the headset and the hand mic from the jacks on the transceiver front panel.

S 865-010

- (2) Set the mode selector switch to the OFF position on the left and right (if installed) HF communication control panels.

S 865-013

- (3) Remove electrical power if it is not necessary (AMM 24-22-00).

TASK 23-11-00-735-014

3. System Test - HF Comm System

A. General

- (1) This test does a check of the left HF communication system and the right HF communication systems (if installed). It includes all system adjustment specifications necessary for the best performance.

B. Equipment

- (1) Handheld or headset/boom microphone

C. References

- (1) AMM 23-51-00/501, Flight Interphone System
- (2) AMM 24-22-00/201, Electrical Power - Manual Control

D. Access

- (1) Location Zones

119	Main Equipment Center (LH)
120	Main Equipment Center (RH)
211	Control Cabin (LH)
212	Control Cabin (RH)
153	Aft Cargo Compartment (LH)
154	Aft Cargo Compartment (RH)

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- (2) GUI 101-999;
Location Zones
161/162 Bulk cargo compartment (Left/Right)
- (3) Access Panel
119BL Main Equipment Center Access Panel
822 Aft Cargo Compartment Door
- (4) GUI 101-999;
Access Panel
823 No. 3 Cargo Door

E. Prepare for Test

S 865-085

WARNING: DO NOT OPERATE THE HF COMMUNICATIONS SYSTEM WHILE PERSONS REFUEL OR DEFUEL THE AIRPLANE. AN EXPLOSION CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO THE AIRPLANE.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (1) Supply electrical power (AMM 24-22-00/201).

S 865-016

- (2) Make sure the captain's audio selector panel is serviceable (AMM 23-51-00/501).

S 865-018

- (3) Make sure the applicable circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G34, HF COMM RIGHT (if installed)

F. HF System Test

S 735-050

- (1) Do the HF System test as follows:
 - (a) Connect the headset/boom microphone to the captain's jack panel (P13).
 - (b) Push the L HF MIC SELECTOR switch on the captain's ASP (P8).
 - (c) Adjust the L HF listen switch.
 - (d) Set the BOOM/OXY (or BOOM/MASK) switch to the BOOM position.
 - (e) Set the mode selector switch to the USB position on the left HF communication control panel (P5).
 - (f) Push and hold the SQL/LAMP TEST switch on the left transceiver front panel.
 - 1) Make sure all three status lights on the transceiver front panel come on and stay on.

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- 2) Make sure the squelch is removed and you can hear background noise.
- (g) Release the SQL/LAMP TEST switch and make sure all status lights go off.

NOTE: If a status light stays on after the SQL/LAMP TEST switch is released, a fault condition is set.

- (h) Turn the RF SENS control fully clockwise on the HF comm control panel (P5).
- (i) Set the frequency selectors to an USB frequency between 2.8 MHz and 23.999 MHz.
- (j) Push and release the captain's PTT switch.
 - 1) Listen for a 1 kHz tune-in-progress tone in the headset.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep or may not always be audible.

- 2) Make sure none of the status lights on the left transceiver front panel remain illuminated.

NOTE: The Key Interlock light will momentarily blink when the microphone is keyed.

- (k) Push and hold the PTT switch.
 - 1) Make sure none of the status lights on the left transceiver front panel remain illuminated.

NOTE: The Key Interlock light will momentarily blink when the microphone is keyed.

NOTE: A 1 kHz tone will be heard while the PTT switch is pushed if an out of band frequency is set.

- (l) Release the PTT switch.
- (m) Push the PTT switch and speak into the microphone.
 - 1) Listen for sidetone in the captain's headset.
- (n) Do a test message with another HF radio.
 - 1) Make sure there is no noise when you transmit and receive.
- (o) While you receive, turn the RF SENS control slowly counterclockwise and then clockwise.
 - 1) Make sure the audio level changes when you turn the control.

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- (p) While you receive, turn the L HF listen switch through its full range on the captain's ASP (P8).
 - 1) Make sure the audio level changes smoothly.
- (q) Set the mode selector to USB on the left HF communication control panel (P5).
- (r) Set the frequency selectors to an approved USB frequency.
- (s) Push and release the captains' PTT switch.
 - 1) Listen for a 1 kHz tune-in-progress tone in the headset.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep or may not always be audible.

- 2) Make sure the status lights on the left HF communication transceiver front panel do not remain illuminated.

NOTE: The Key Interlock light will momentarily blink when the microphone is keyed.

- (t) Push and hold the PTT switch.
 - 1) Make sure the status lights on the left HF communication transceiver front panel do not remain illuminated.

NOTE: The Key Interlock light will momentarily blink when the microphone is keyed.

NOTE: A 1 kHz tone will be heard while the PTT switch is pushed if an out-of-band-frequency has been set.

- (u) Release the PTT switch.
- (v) Push the PTT switch and speak into the microphone.
 - 1) Listen for sidetone in the captain's headset.
- (w) Do a test message with a different HF radio.
 - 1) Make sure there is no noise when you transmit and receive.

G. Right HF System Test (Dual HF system installations only)

S 915-043

- (1) Do the HF System Test again but with the right HF communications system (if it is installed).

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H. Put the Airplane Back to Its Usual Condition

S 865-044

- (1) Set the mode selector switch to the OFF position on the left HF communication control panel and the right HF communication control panel (if installed).

S 845-047

- (2) Put the captain's audio selector panel back to its usual condition.

S 865-048

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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HF COMMUNICATION ANTENNA COUPLER – REMOVAL/INSTALLATION

1. General

- A. The HF comm antenna couplers, M241 and M242, (if installed), are on the racks in the vertical stabilizer. The couplers weigh 17 pounds each and are pressurized with dry air at 5-7 psig.

TASK 23-11-01-024-001

2. Remove the HF Communication Antenna Coupler (Fig. 401)

A. References

- (1) AMM 06-42-00/201, Empennage Access Doors and Panels
- (2) AMM 20-10-01/401, E/E Rack Mounted Components – Standard Practices
- (3) AMM 24-22-00/201, Electrical Power – Manual Control
- (4) AMM 23-51-00/501, Flight Interphone System

B. Access

- (1) Location Zones
 - 322 Vertical Stabilizer – auxiliary spar to front spar
- (2) Access Panels
 - 322CL Antenna Coupler Bay Access Panel

- C. AIRPLANES WITH COLLINS ANALOG HF COUPLERS;
Prepare for the Removal

S 864-034

CAUTION: YOU MUST PREPARE THE HF COMM ANTENNA COUPLER FOR THE REMOVAL. IF NOT, INTERNAL PARTS ARE EASILY DAMAGED WHEN YOU MOVE THE COMPONENT.

- (1) Make sure the applicable circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 864-028

- (2) Supply the electrical power (AMM/24-22-00/201).

S 864-029

WARNING: DO NOT TRANSMIT WITH THE HF COMMUNICATION SYSTEM. IF YOU TRANSMIT, THE HF COMM ANTENNA COUPLER IS NOT PREPARED FOR THE REMOVAL.

- (3) Set the mode selector switch to the USB position on the applicable HF communication control panel, (P5).
 - (a) Set the frequency display to an approved test frequency.

NOTE: When the HF communication system first tunes to a new frequency, the HF comm antenna coupler is in the HOME position. The HOME position helps prevent internal damage when you move the component.

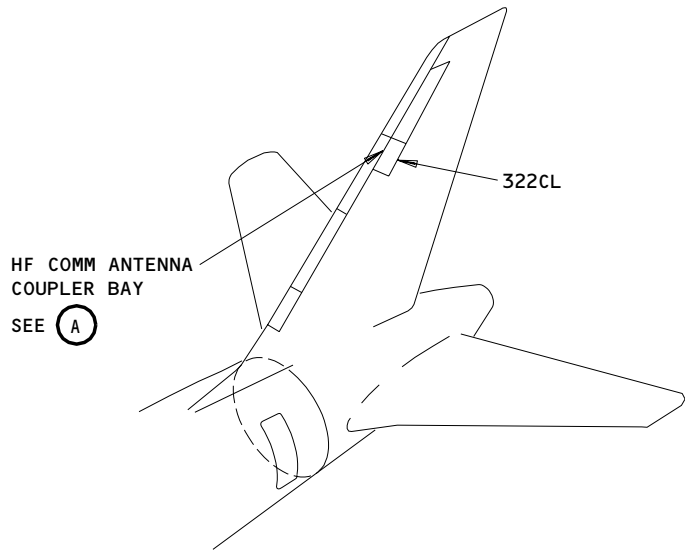
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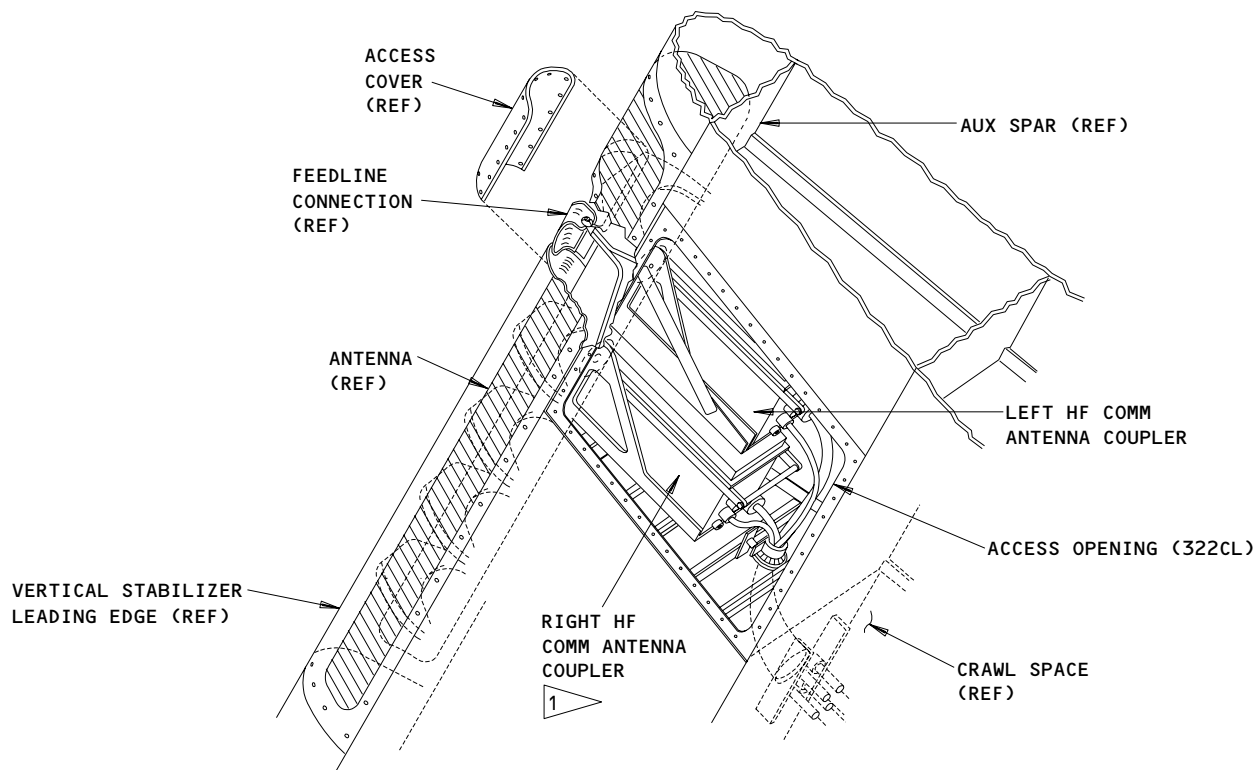
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VERTICAL STABILIZER



HF COMM ANTENNA COUPLER BAY

(A)

1 AIRPLANES WITH DUAL HF SYSTEMS

HF Comm Antenna Coupler Installation
Figure 401

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S 864-030

- (4) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

D. Procedure

S 864-002

- (1) Open the applicable circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 014-006

WARNING: MAKE SURE THE POWER IS OFF THE HF SYSTEM(S) BEFORE YOU OPEN THE ACCESS PANEL. AN HF TRANSMISSION CAN CAUSE AN ELECTRICAL SHOCK TO PERSONS.

- (2) Remove the access panel 322 CL on the left side of the vertical stabilizer (AMM 6-42-00/201).

NOTE: It will be necessary to remove approximately 60 screws.

S 024-036

CAUTION: MOVE THE HF COMM ANTENNA COUPLER CAREFULLY. SET THE COMPONENT ON ITS BOTTOM. DO NOT SET THE COMPONENT ON ITS END (WITH THE HANDLE UP). INTERNAL PARTS ARE EASILY DAMAGED.

- (3) Remove the HF communication antenna coupler (AMM 20-10-01/401).

TASK 23-11-01-424-008

3. Install the HF Communication Antenna Coupler

A. References

- (1) AMM 6-42-00/201, Empennage Access Doors and Panels

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- (2) AMM 20-10-01/401, E/E Rack Mounted Components - Standard Practices
- (3) AMM 24-22-00/201, Electrical Power - Manual Control
- (4) AMM 23-51-00/501, Flight Interphone System

B. Access

- (1) Location Zone
322 Vertical Stabilizer - auxiliary spar to front spar
- (2) Access Panel
322CL Antenna Coupler Bay Access Panel

C. Procedure

S 424-032

CAUTION: MOVE THE HF COMM ANTENNA COUPLER CAREFULLY. SET THE COMPONENT ON ITS BOTTOM. DO NOT SET THE COMPONENT ON ITS END (WITH THE HANDLE UP). INTERNAL PARTS ARE EASILY DAMAGED.

- (1) Before you install the coupler, make sure there is no corrosion and or electrical arcing at the back of the coupler mount, at the rear connection.

S 414-043

- (2) Install the HF comm antenna coupler (AMM 20-10-01/401).

S 414-011

- (3) Install the access panel, 322 CL, on the left side of the vertical stabilizer (AMM 6-42-00/201).

S 864-008

- (4) Remove the DO-NOT-CLOSE tags and close the applicable circuit breakers on the overhead circuit breaker panel, P11:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G30 or 11G34, HF COMM RIGHT (if installed)

D. Installation Test - HF Communication Antenna Coupler

S 864-012

WARNING: DO NOT OPERATE THE HF SYSTEM WHILE FUEL IS PUT INTO THE AIRPLANE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (1) Supply electrical power (AMM 24-22-00/201).

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S 864-014

- (2) Make sure the captain's audio selector panel operates (AMM 23-51-00/501).

S 864-015

- (3) Set the mode selector switch to the USB position on the HF communication control panel, (P5).
 - (a) Set the frequency display to an approved test frequency.
 - (b) Set the RF SENS control to an applicable level.

S 864-017

- (4) Connect the headset-boom microphone to the captain's jack panel (P13).

S 864-018

- (5) Push the L HF (or R HF), microphone selector switch, as applicable, on the captain's audio selector panel (P8).
 - (a) Adjust the L HF, (or R HF), listen switch as applicable.
 - (b) Set the BOOM/OXY (or BOOM/MASK) switch to the BOOM position.

S 864-022

- (6) Push and release the captain's PTT switch.
 - (a) Listen for 1 KHz tune-in-progress sound in the headset.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is approximately 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep.

S 864-023

- (7) Push and hold the PTT switch.
 - (a) Speak into the microphone.
 - (b) Listen for the sidetone in the headset.

S 864-035

- (8) Release the PTT switch.
- E. Put the airplane back to its usual condition.

S 864-048

- (1) Set the mode selector switch to the OFF position on the HF communication control panel (P5).

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- S 864-025
(2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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HF COMMUNICATIONS CONTROL PANEL – REMOVAL AND INSTALLATION

1. General

- A. The control panel for the left HF communication system, M82, is installed on the left side of pilots' overhead panel, P5. The control panel for the right HF communication system, M83, (if installed), is on the right side of pilots' overhead panel, P5.

TASK 23-11-02-004-034

2. Remove the HF Communication Control Panel

A. Access

- (1) Location Zones
211/212 Flight Compartment

B. Procedure

S 864-002

- (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11G8, HF COMM LEFT

S 024-026

CAUTION: CLEARLY IDENTIFY THE CONNECTOR FOR THE PANEL POSITION (LEFT OR RIGHT) DURING REPLACEMENT. THERE IS A CROSS-CONNECTION POSSIBILITY DURING INSTALLATION.

- (2) Do these steps to remove the HF communication control panel:
(a) Loosen the four quarter-turn fasteners.
(b) Lift the HF communication control panel to get access to the electrical connector.
(c) Disconnect the electrical connector.
(d) Put protective covers on the electrical connector.

TASK 23-11-02-404-035

3. Install the HF Communication Control Panel

A. References

- (1) AMM 23-51-00/501, Flight Interphone System
(2) AMM 24-22-00/201, Electrical Power – Manual Control

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Procedure

S 864-036

- (1) Make sure these circuit breakers are open on the overhead circuit breaker panel, P11:
(a) 11G8, HF COMM LEFT

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(b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 424-028

CAUTION: CLEARLY IDENTIFY THE CONNECTOR FOR THE PANEL POSITION (LEFT OR RIGHT) DURING REPLACEMENT. THERE IS A CROSS-CONNECTION POSSIBILITY DURING INSTALLATION.

- (2) Do these steps to install the HF communication control panel:
 - (a) Remove the protective covers from the electrical connector.
 - (b) Examine the electrical connector for bent or broken pins, dirt, and damage.
 - (c) Connect the electrical connector.
 - (d) Put the HF communication control panel into its position on the pilots overhead panel, P5.
 - (e) Tighten the four quarter-turn fasteners.

S 864-007

- (3) Remove the DO-NOT-CLOSE tag and close the circuit breaker on the P11 panel for the HF communication control panel that you installed:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 864-029

- (4) Make sure that the circuit breaker for the other panel (if installed) is open.

NOTE: You will close one circuit breaker at a time to do a check for a cross-connection.

D. Installation Test - HF Communication Control Panel.

S 864-009

WARNING: DO NOT OPERATE THE HF COMMUNICATIONS SYSTEM WHILE FUEL IS PUT INTO THE AIRPLANE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (1) Do not operate the HF system while fuel is put into the airplane.

S 864-030

- (2) Supply electrical power (AMM 24-22-00/201).

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- S 714-031
- (3) Use the new HF communication control panel to set the applicable HF communication system to a test frequency.
- S 864-010
- (4) Make sure the captain's audio selector panel operates (AMM 23-51-00/501).
- S 864-011
- (5) Connect the headset-boom microphone to the captain's jack panel (P13).
- S 864-012
- (6) Push the L HF or R HF MIC SELECTOR switch, as applicable, on the captain's audio selector panel (P8).
- (a) Adjust the L HF or R HF listen switch, as applicable.
 - (b) Set the BOOM/OXY (or BOOM/MASK) switch to the BOOM position.
 - (c) Set the mode selector switch to the AM or USB position on the HF communication control panel (P5).
 - (d) Set the frequency select switches to an approved test frequency.
 - (e) Set the RF SENS control to an applicable level.
- S 864-016
- (7) Push and release the captain's PTT switch.
- (a) Listen for a 1 KHz tune-in-progress sound in the headset.
- NOTE:** A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is approximately 1 to 7 seconds.
- S 864-017
- (8) Push and hold the PTT switch.
- (a) Speak into the microphone.
 - (b) Listen for the sidetone in the headset.
- S 864-020
- (9) Release the PTT switch.
- S 864-018
- (10) Set the mode selector switch to the OFF position on the HF communication control panel (P5).
- S 864-032
- (11) Remove the DO-NOT-CLOSE tag and close the last circuit breaker (if installed), on the P11 panel, for the HF communication control panels:
- (a) 11G8, HF COMM LEFT

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(b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 714-033

(12) If a second HF system is installed, do these steps:

(a) Use the applicable HF communication control panel to set the HF communication system to a test frequency.

(b) Repeat the communication test for the applicable HF communication control panel, and make sure the HF communication system operates satisfactorily.

S 864-019

(13) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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HF COMMUNICATION TRANSCEIVER – REMOVAL AND INSTALLATION

1. General

- A. The left HF communication transceiver, M152 and the right HF communication transceiver, M153, (if installed), is located in the main equipment center on the E3 or E4 rack or in the aft equipment center on the E6 rack.

TASK 23-11-03-024-001

2. Remove the HF Communication Transceiver

A. References

- (1) AMM 20-10-01/401, E/E Rack Mounted Components – Standard Practices

B. Access

(1) Location Zones

153	Aft Cargo Compartment (Left)
154	Aft Cargo Compartment (Right)
119	Main Equipment Center (Left)
120	Main Equipment Center (Right)
211	Control Cabin (Left)
212	Control Cabin (Right)

(2) Access Panel

822	Aft Cargo Compartment Door
119BL	Main Equipment Center Access

C. Procedure

S 864-002

- (1) Open the applicable circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11G8, HF COMM LEFT
(b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 024-008

- (2) Remove the HF communication transceiver (AMM 20-10-01/401).

TASK 23-11-03-424-009

3. HF Communication Transceiver Installation

A. References

- (1) AMM 20-10-01/401, E/E Rack Mounted Components – Standard Practices

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(2) AMM 24-22-00/201, Electrical Power - Manual Control

B. Access

(1) Location Zones

153	Aft Cargo Compartment (Left)
154	Aft Cargo Compartment (Right)
119	Main Equipment Center (Left)
120	Main Equipment Center (Right)
211	Control Cabin (Left)
212	Control Cabin (Right)

(2) Access Panel

822	Aft Cargo Compartment Access
119BL	Main Equipment Center Access

C. Procedure

S 424-010

(1) Install the HF communication transceiver (AMM 20-10-01/401).

S 864-012

(2) Remove DO-NOT-CLOSE tags and close the applicable circuit breakers on the overhead circuit breaker panel, P11:

(a) 11G8, HF COMM LEFT

(b) 11G30 or 11G34, HF COMM RIGHT (if installed)

D. Installation Test - HF Communication Transceiver.

S 864-015

WARNING: DO NOT OPERATE THE HF SYSTEM WHILE FUEL IS PUT INTO THE AIRPLANE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE EQUIPMENT.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

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- (1) Supply electrical power (AMM 24-22-00/201).
S 864-017
 - (2) Set the mode selector switch to the AM position on the HF communication control panel (P5).
S 204-019
 - (3) Make sure the internal blower fan on the transceiver operates.
S 744-040
 - (4) AIRPLANES WITH COLLINS HFS-700 TRANSCEIVER;
Do these steps to do the transceiver test:
 - (a) Push and hold the SQL/LAMP TEST switch on the transceiver front panel.
 - 1) Make sure the LRU FAIL, KEY INTERLOCK, and CONTROL INPUT FAIL lights come on and stay on.
 - (b) Release the SQL/LAMP TEST switch.
 - 1) Make sure the LRU FAIL, KEY INTERLOCK, and CONTROL INPUT FAIL lights go out.
- E. Put the airplane back to its initial condition.
- S 864-021
- (1) Set the mode selector switch to the OFF position on the HF communication control panel, (P5).

S 864-022

 - (2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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HF COMMUNICATION ANTENNA – REMOVAL/INSTALLATION

1. General

- A. Two tasks are in this procedure:
 - (1) Removal of the HF communication antenna.
 - (2) Installation of the HF communication antenna.
- B. The HF communication antenna is part of the leading edge of the vertical stabilizer.

TASK 23-11-04-024-001

2. HF Communication Antenna Removal

- A. References
 - (1) AMM 55-35-01/401, Vertical Stabilizer Leading Edge
- B. Access
 - (1) Location Zones
 - 211 Flight Compartment,(Left)
 - 212 Flight Compartment,(Right)
 - 321 Vertical Stabilizer

C. Procedure

S 864-022

WARNING: REMOVE THE POWER FROM EACH HF COMMUNICATION SYSTEM, BEFORE YOU REMOVE THE HF COMMUNICATION ANTENNA. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURIES TO PERSONS.

- (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 024-003

- (2) Remove the part of the leading edge of the vertical stabilizer that contains the HF communication antenna (AMM 55-35-01/401).

TASK 23-11-04-424-004

3. HF Communication Antenna Installation

- A. References
 - (1) AMM 23-11-00/501, HF Communication System
 - (2) AMM 55-35-01/401, Vertical Stabilizer Leading Edge

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B. Access

(1) Location Zones

- 211 Flight Compartment (Left)
- 212 Flight Compartment (Right)
- 321 Vertical Stabilizer

C. Procedure

S 864-007

WARNING: REMOVE THE POWER FROM EACH HF COMMUNICATION SYSTEM BEFORE YOU INSTALL THE HF COMMUNICATION ANTENNA. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURIES TO PERSONS.

- (1) Make sure these circuit breakers are open on the overhead circuit breaker panel, P11.
 - (a) 11G8, HF COMM LEFT
 - (b) 11G30 or 11G34, HF COMM RIGHT (if installed)

S 754-020

- (2) Install part of the leading edge of the vertical stabilizer that contains the HF communication antenna (AMM 55-35-01/401).

S 864-019

- (3) Remove DO-NOT-CLOSE tags and close these circuit breakers on the overhead circuit breaker panel, P11:
 - (a) 11G8, HF COMM LEFT
 - (b) 11G30 or 11G34, HF COMM RIGHT (if installed)

D. Installation Test

S 754-021

- (1) Do this task: System Test - HF Communication System (AMM 23-11-00/501).

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HF COMMUNICATION ANTENNA - INSPECTION/CHECK

1. General

- A. This procedure has this task.
 - (1) An electrical bond check of the HF communication antenna.
- B. The HF communication antenna is part of the leading edge of the vertical stabilizer.
- C. You must remove the HF antenna coupler(s) to do the electrical bond check. The HF antenna coupler(s) are installed adjacent to the HF communication antenna in the vertical stabilizer.

TASK 23-11-04-766-001

2. HF Communication Antenna - Electrical Bond Check (Fig. 601)

- A. Equipment
 - (1) Bonding Meter (SWPM 20-20-00)
- B. References
 - (1) AMM 23-11-01/401, HF Communications Antenna Coupler
 - (2) SWPM 20-20-00, Electrical Bonding and Grounding
- C. Procedure

S 426-002

CAUTION: YOU MUST PREPARE EACH HF ANTENNA COUPLER FOR REMOVAL. IF YOU DO NOT PREPARE FOR THE REMOVAL, YOU CAN EASILY CAUSE DAMAGE TO THE INTERNAL PARTS OF THE HF ANTENNA COUPLER.

- (1) Remove the HF communications antenna coupler(s) (AMM 23-11-01/401).

S 766-004

- (2) Measure the resistance that follows at each antenna coupler mount (SWPM 20-20-00):
 - (a) The RF center conductor of the antenna coupler mount to the antenna coupler mount frame.
 - 1) Make sure the resistance is 10 milliohms or less.
 - (b) The RF center conductor of the antenna coupler mount to the auxiliary spar.
 - 1) Make sure the resistance is 10 milliohms or less.

S 426-005

- (3) Install the HF antenna coupler(s) (AMM 23-11-01/401).

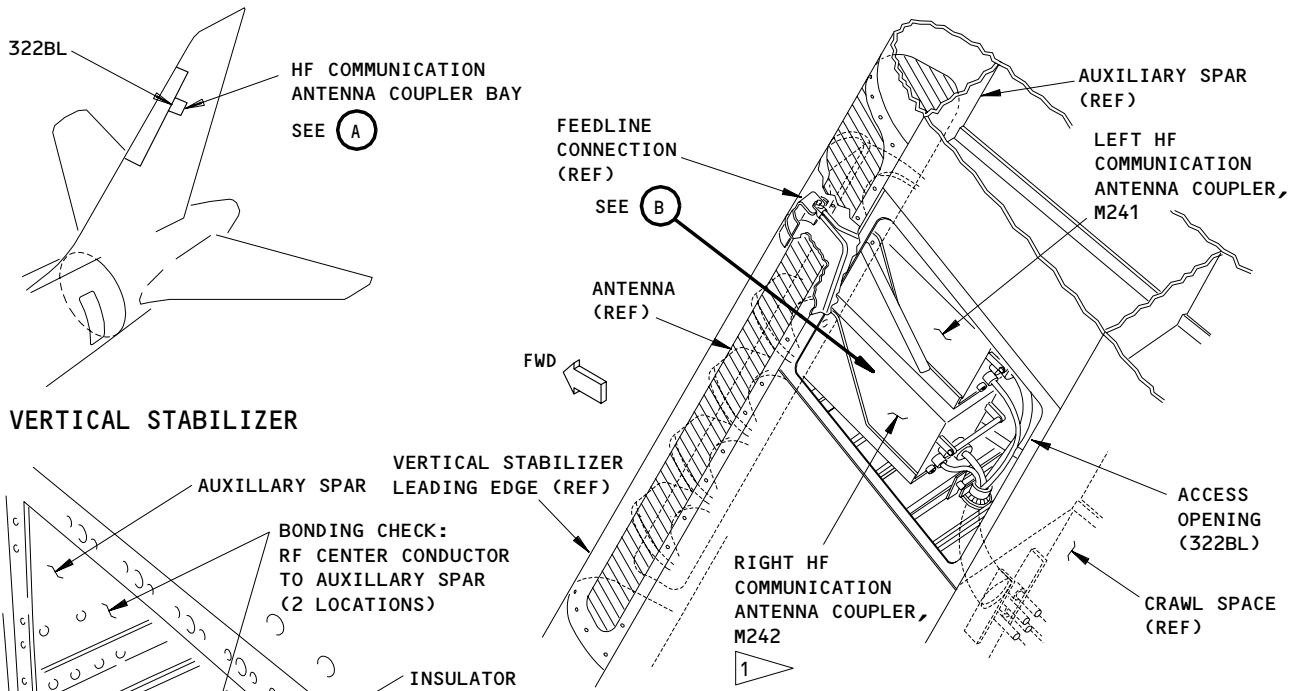
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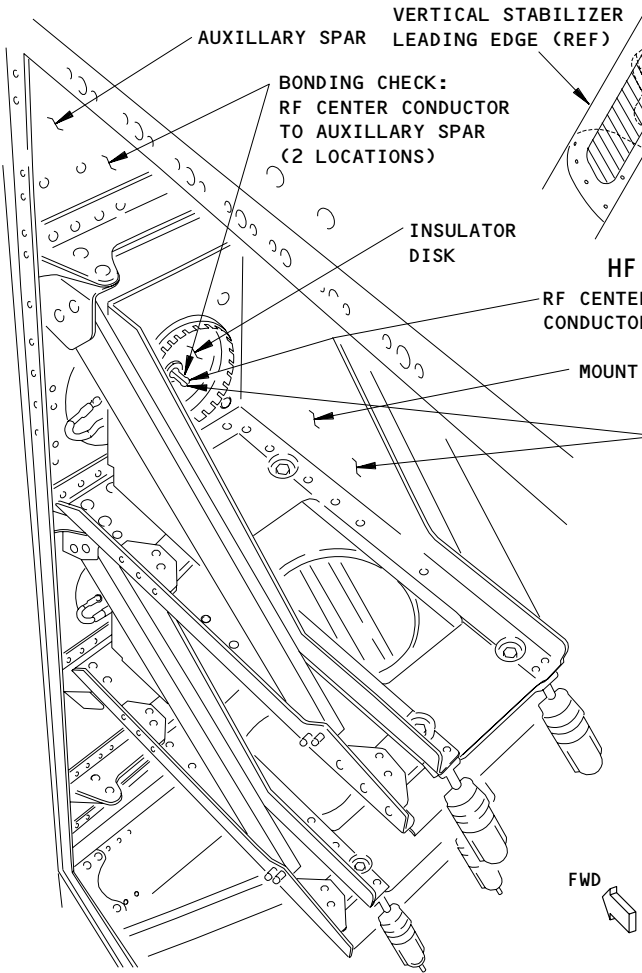
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VERTICAL STABILIZER



HF ANTENNA COUPLER MOUNT(S)

1 IF INSTALLED

(B)

NOTE: THE HF ANTENNA COUPLER(S) ARE REMOVED.

HF Communications Antenna Electrical Bond Check
Figure 601

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VHF COMMUNICATION SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. Two or three VHF (Very High Frequency) communications systems (referred to as the VHF systems) are installed on the airplane (Ref Fig. 1 for effectivity).
- B. The VHF systems provide short-range line-of-sight voice communications with ground stations or other airplanes. The VHF systems can operate in the 118.00-megahertz (MHz) to 136.975-MHz frequency range, in either 25-khz or 8.33-khz increments.
- C. All of the VHF systems use 28v dc power. The left VHF system uses power from from the dc standby bus, the right VHF system from the right dc bus, and the center VHF system (if installed) from the left dc bus. Each VHF system has a circuit breaker on the overhead circuit breaker panel, P11.
- D. The VHF system major components are: a VHF communication control panel, a VHF communication transceiver, and a VHF communication antenna.

2. Component Details (Fig. 1)

A. VHF Communication Control Panel

- (1) The VHF communication control panel (referred to as the control panel) provides frequency tuning data to the VHF communication transceiver. Each control panel contains a dual set of frequency control knobs, two frequency displays, two frequency-in-use lights, and a TFR (transfer) switch.
- (2) The frequency selector knobs are two concentric knobs used to dial a desired frequency. The outer knob varies the ones, tens, and hundreds of MHz; the inner knob varies the tenths and hundredths of MHz.
- (3) The TFR (transfer) switch allows selection of either displayed frequency. When set, the selected frequency display is illuminated, and the frequency-in-use light above the display is on.
- (4) The left, right, and center, (if installed), control panels are installed on the pilots' P8 panel.

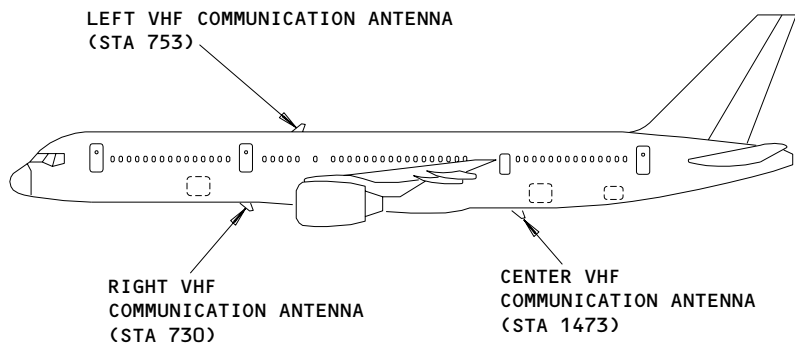
B. VHF Communication Transceiver

- (1) The VHF communication transceiver (referred to as the transceiver) processes audio inputs for radio frequency (rf) transmission, and processes rf signals for audio reception.
- (2) AIRPLANES WITH BENDIX RTA-44A VHF TRANSCEIVERS INSTALLED;
The front panel of the transceiver contains two jacks, a SQ/TEST switch, and three test result lights. The two jacks (MIC and PHN) enable testing of the transceiver without going through interphone circuits. The SQ/TEST switch disables the squelch circuits, and enables a self-test of the critical circuitry in the system. The two COMM lights indicate transceiver health (green) or failure (red), and the red DATA IN light indicates frequency tuning data input failure.

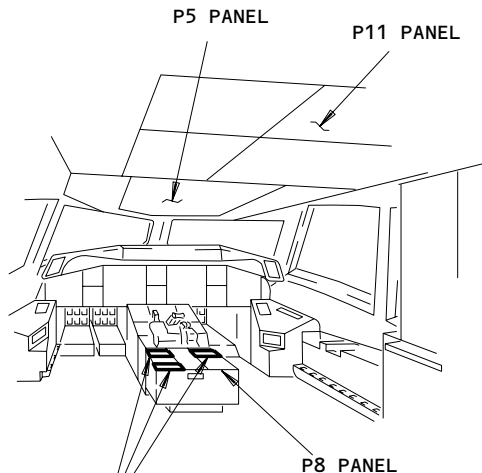
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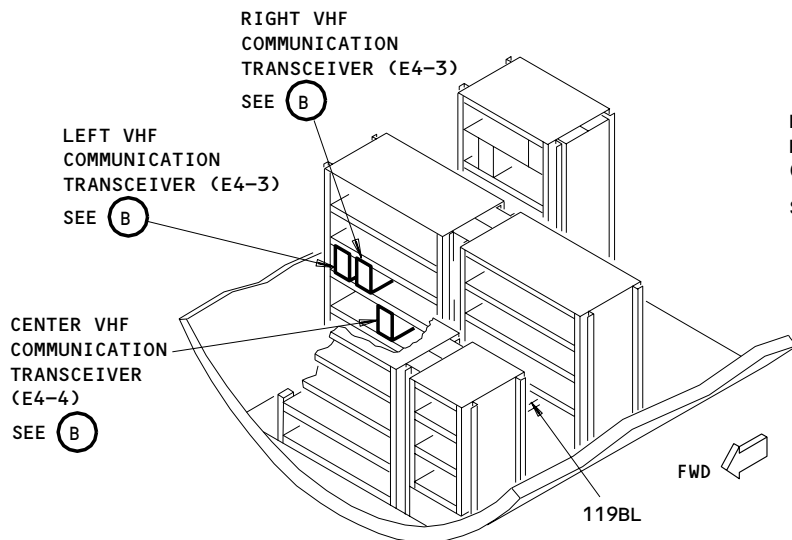
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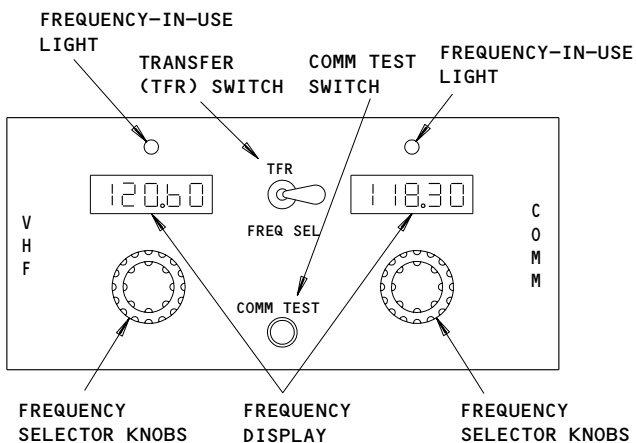
VHF COMMUNICATION ANTENNA LOCATION



FLIGHT COMPARTMENT

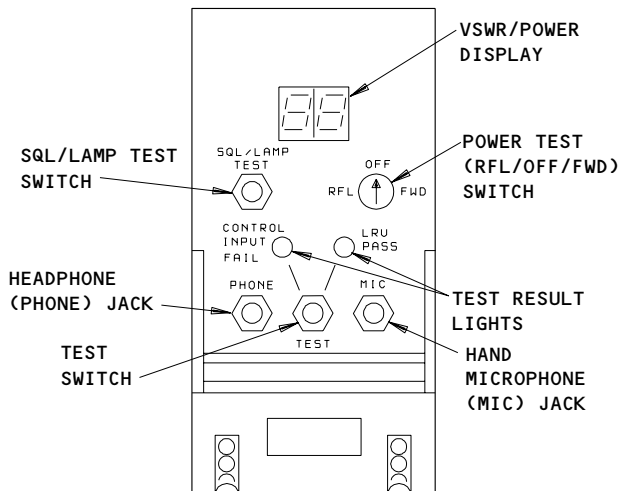


MAIN EQUIPMENT CENTER



VHF COMMUNICATION CONTROL PANEL

(A)



VHF COMMUNICATION TRANSCEIVER

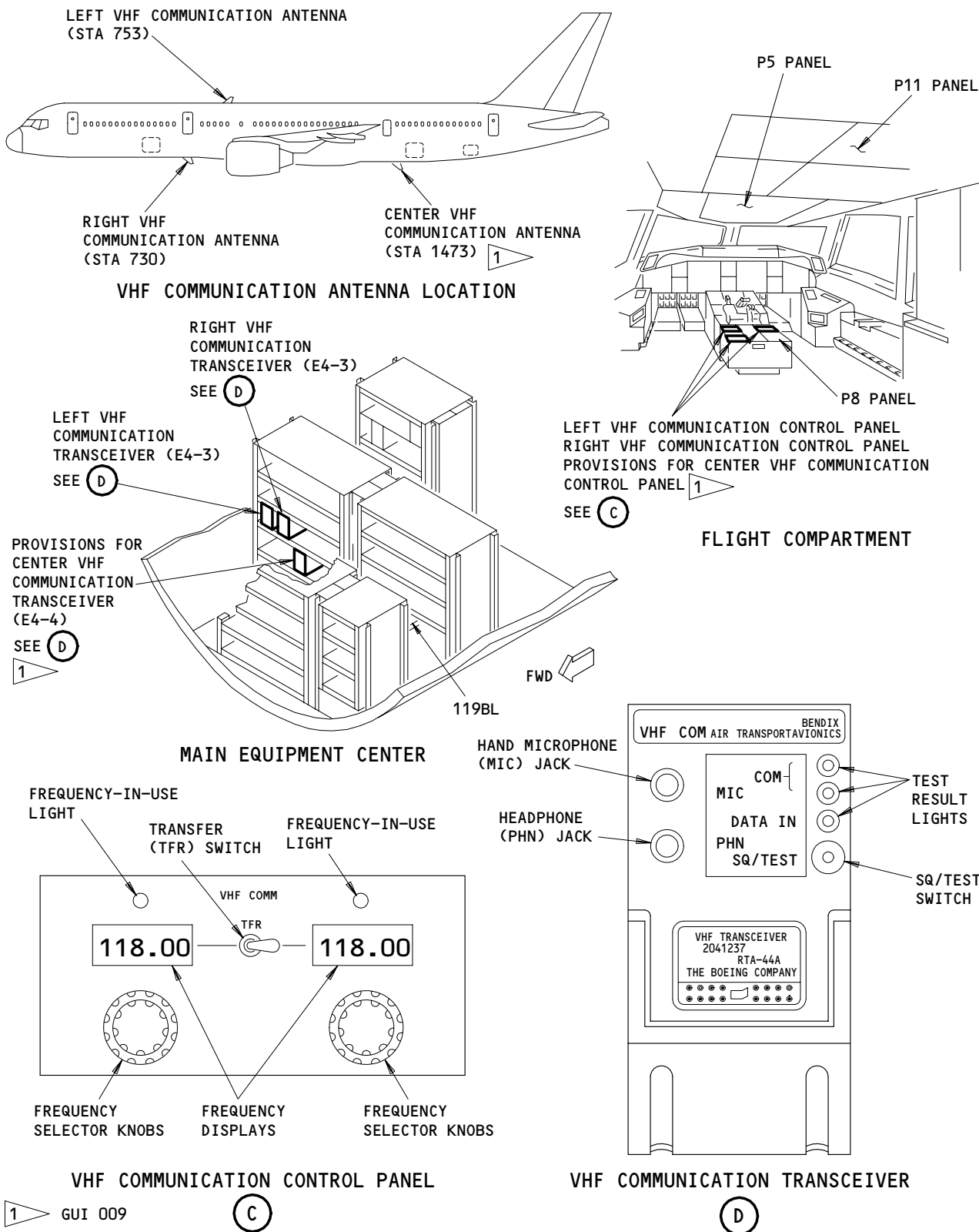
(B)

**VHF Communications System - Component Location
Figure 1 (Sheet 1)**

EFFECTIVITY
GUI 001-008, 010-099

23-12-00

A77099



VHF Communications System - Component Location
Figure 1 (Sheet 2)

EFFECTIVITY
GUI 009, 101-999

23-12-00

- (3) AIRPLANES WITH COLLINS VHF-700/700A XCVRS INSTALLED;
The front panel of the transceiver contains two jacks, two test switches, a three-position switch, two test result lights, and a digital display. The two jacks (MIC and PHONE) enable testing of the transceiver without going through interphone circuits. The SQL/LAMP TEST switch disables the squelch circuits, and tests all front panel lights. The TEST switch enables a self-test of the critical circuitry in the system. The two test result lights indicate LRU PASS and frequency CONTROL INPUT FAIL. The RFL/OFF/FWD (reflected, off, forward) switch, checks rf power to the antenna, and shows the result in watts on the display.
- (4) The left, right and center (if installed) transceivers are located in the main equipment center on rack E4.

C. VHF Communication Antenna

- (1) The VHF communication antenna (referred to as the antenna) is a blade type antenna, mounted on the centerline of the airplane fuselage. Each antenna is impedance-matched to its transmission line. A coaxial cable connector on the antenna provides interconnection between the antenna and transceiver.

3. Operation (Fig. 2)

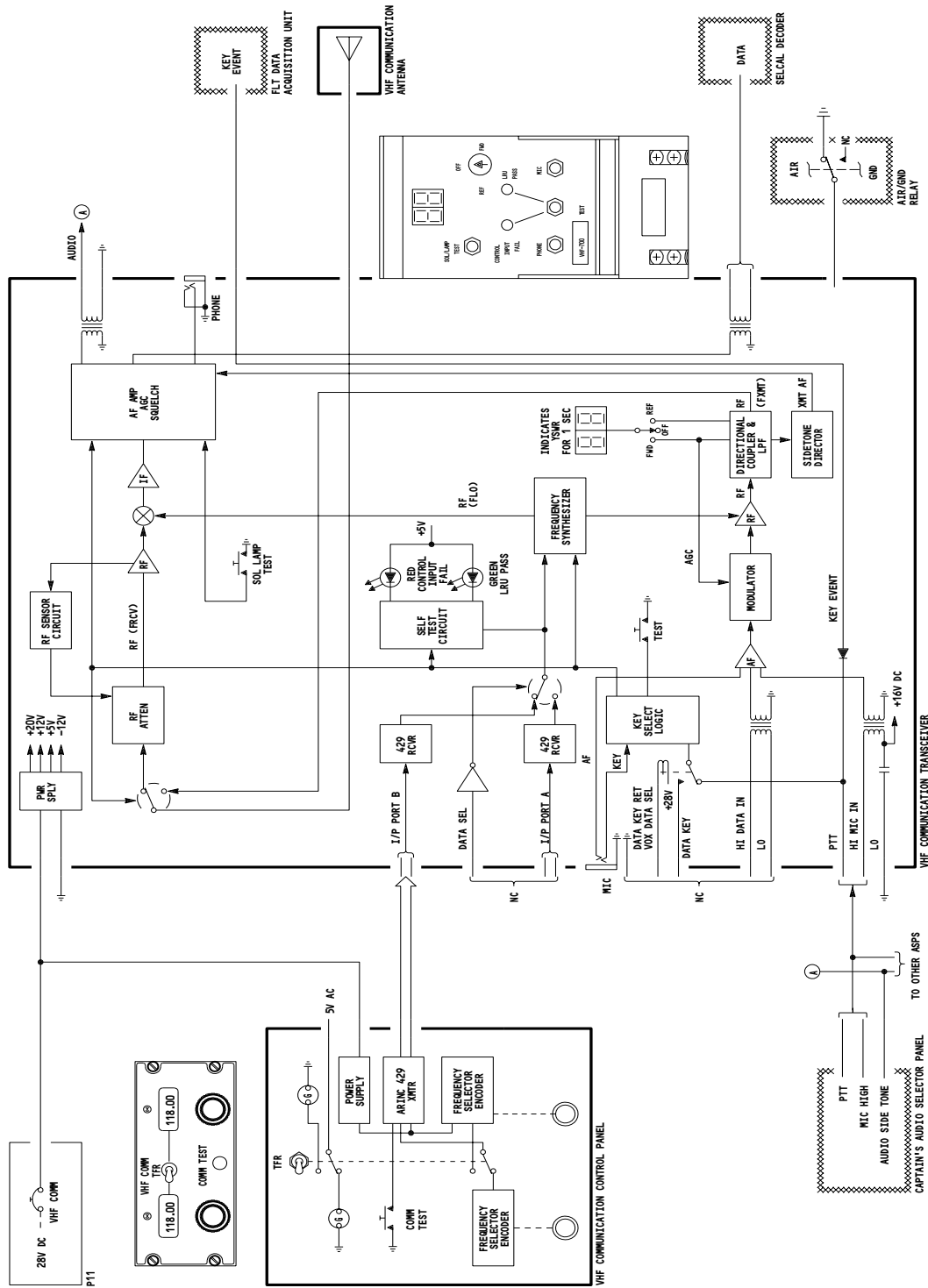
A. Functional Description

- (1) The left, right and center (if installed) VHF systems are identical for voice communications.
- (2) Voice communications:
 - (a) The reception and transmission of the audio are accomplished on the same frequency. The selected frequency is set on the control panel, and the applicable VHF MIC SELECTOR switch is pushed on the crewmember's audio selector panel of the flight interphone system (AMM 23-51-00/001).
 - (b) The SELCAL system (AMM 23-21-00/001) alerts crewmembers when a ground station desires contact with them. The appropriate VHF switch light, on the pilots' call panel (P5), comes on and a chime sounds.
 - (c) To receive, the volume control on the crewmember's audio selector panel is adjusted to obtain a comfortable listening level for the applicable VHF system. The crewmember may then listen to any messages received over the selected frequency.

EFFECTIVITY

ALL

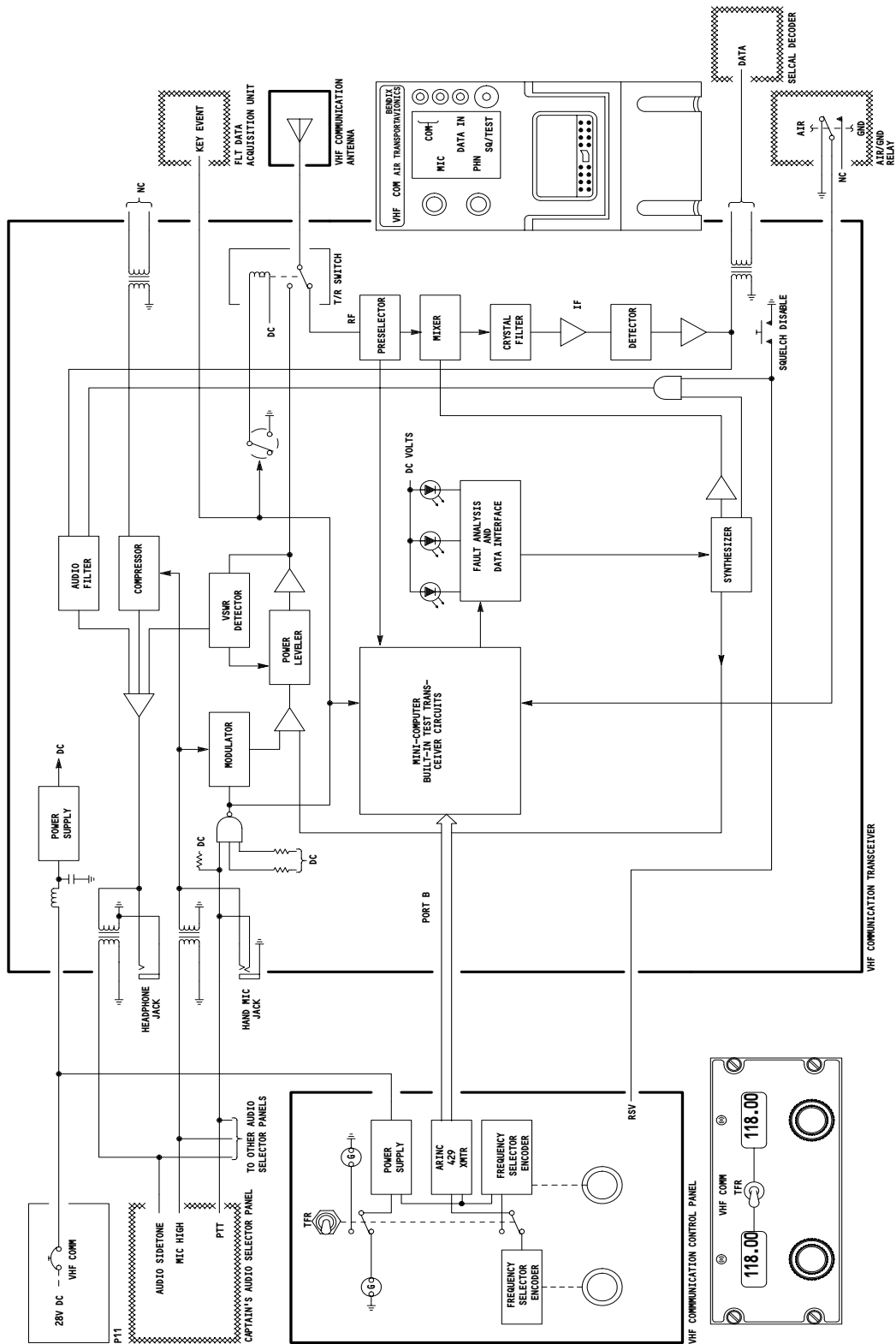
23-12-00



VHF Communication Schematic (Example)
Figure 2 (Sheet 1)

EFFECTIVITY
GUI 001-099

23-12-00



VHF Communications System Schematic (Example)
Figure 2 (Sheet 2)

EFFECTIVITY
GUI 101-999

23-12-00

- (d) To transmit, a PTT switch (AMM 23-51-00/001) for the microphone being used is pushed. The PTT switch controls circuits within the transceiver which disconnect the receiver circuits, and connect the transmitter circuits to the antenna. Transmission begins when audio signals are impressed on the microphone circuits. Sidetone is provided to the crewmember's headset to indicate proper operation of the transmitter. When the PTT switch is released, the system returns to the receive mode.
 - (e) Frequency tuning data from the control panel is transmitted to the transceiver by an ARINC 429 digital data bus. The data bus provides one-way digital data transmission between components.
 - (f) The transceivers accept microphone and PTT inputs from the audio selector panels, and from a microphone jack located on the front panel of the transceiver. The antennas transmit and receive rf signals. These signals are distributed by the transceivers. The transceivers provide audio signals to the audio selector panels, and to the headphone jack on the transceiver's front panel. Each time a microphone is keyed (by pressing the PTT switch), an ATC event signal is recorded by the flight data recorder.
- (3) Power:
- (a) Both the control panel and the transceiver are supplied with 28v dc from a single circuit breaker directly to the units with no switching. In the control panel the power supply generates operating power for the electronics. In the transceiver the power supply generates dc for electronics use, part of which is supplied to a switching device for controlling dc that is used during transmission only.
- (4) Frequency Selection:
- (a) The frequency selection data originates in the control panel as parallel bcd code, converted to serial bcd, formatted into an ARINC 429 word and transmitted to the transceiver over an ARINC 429 data bus.
 - (b) In the transceiver, the data is routed to the microprocessor through port B of the port select switch. The microprocessor then issues serial frequency data to the synthesizer.

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(5) AIRPLANES WITH BENDIX RTA-44A VHF TRANSCEIVERS INSTALLED;

Transmit:

- (a) Transmission is initiated by grounding the PTT line. The PTT line causes the transmit dc to be applied to the transmission portions of the transceiver and to the antenna switch, which connects the transmitter output to the antenna while blocking the receiver input.
- (b) The PTT line is also routed to the SELCAL decoder via the pilot's call panel. Grounding the PTT line resets the SELCAL switch light associated with the transceiver selected on the audio selector panel.
- (c) The frequency is set by the microprocessor input to the synthesizer which in turn drives the transmitter rf drivers in the transmitter's rf sections. The modulator amplitude modulates the carrier in the transmitter rf section where it is further amplified and applied to the antenna switch, and on to the antenna.
- (d) The frequency synthesizer output is low level amplitude modulated by audio from the interphone system (or data from the ACARS) and amplified for transmission. The forward power output is sampled and fed back to the modulator where it is used to linearize the modulated drive signal, ensuring that the modulated drive signal accurately follows the modulation. Forward power is also sampled to generate sidetone audio to the voice audio output. The RF output is then routed through the antenna switch to the antenna.
- (e) In the transmitter rf section, the output power is sampled and used to regulate the output power to a nominal 25 watts and to generate a sidetone enable signal. The side tone enable signal, when true, gates the side tone audio into the audio output amplifier and on to the flight interphone system and the transceiver's front panel headset jack.
- (f) The PTT (or data key) signal is routed out of the transceiver as a key event signal. This is used by the digital flight data recorder system to record the times during which the transceiver is keyed.

(6) AIRPLANES WITH COLLINS VHF-700/700A XCVRS INSTALLED;

Transmit:

- (a) Transmission is initiated by grounding the PTT line. This activates the antenna switch and switches the frequency synthesizer output to the transmitter section.
- (b) The PTT line is also routed to the SELCAL decoder via the pilot's call panel. Grounding the PTT line resets the SELCAL switchlight associated with the transceiver selected on the audio selector panel.

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- (c) The frequency synthesizer output is low level amplitude modulated by audio from the interphone system and amplified for transmission. The forward power output is sampled and fed back to the modulator where it is used to linearize the modulated drive signal, ensuring that the modulated drive signal accurately follows the modulation. Forward power is also sampled to generate sidetone audio to the voice audio output. The rf output is then routed through the antenna switch to the antenna.
 - (d) The PTT signal is routed out of the VHF transceiver as a key event signal. This PTT signal is used by the flight data recorder system to record the time(s) during which the VHF transceiver is keyed.
- (7) AIRPLANES WITH BENDIX RTA-44A VHF TRANSCEIVERS INSTALLED;
Receive:
- (a) With no transmit dc to the antenna switch, the incoming signals are passed to the receiver rf section. Here they are amplified and mixed with a local oscillator signal from the synthesizer to produce the IF signal which is further amplified and the amplitude modulation detected. The detector's output is routed directly (not through the squelch) to the SELCAL system, and to the squelch circuit. When the incoming signal is strong enough to provide a sufficient agc signal, the squelch is turned on, gating the detected audio through to the output audio amplifier, and on to the flight interphone system and to the transceiver front panel jack.
- (8) AIRPLANES WITH COLLINS VHF-700/700A XCVRS INSTALLED;
Receive:
- (a) When the transceiver is not keyed, the output from the frequency synthesizer is switched to the receiver mixer and the antenna switch connects the antenna to the receiver input.
 - (b) With no signal input, the receiver noise output from the detector is filtered and compared to a squelch threshold voltage in the squelch comparator. The comparator output turns off the voice audio output to the interphone systems.
 - (c) When a signal is received, it is amplified in the rf section and fed to the first mixer. Also in the rf section there is a negative feedback to the variable attenuator to prevent overloading the rf amplifier when there are excessively strong signals. In the first mixer, the frequency synthesizer output is beat with the incoming signal to produce a 20.025 MHz IF. The IF is filtered, amplified and mixed with 9.325 MHz to produce a third IF of 10.7 MHz which is filtered, amplified and detected. Now the detector output is strong and the squelch comparator will gate the audio output through to the voice output amplifier.

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(d) The data output is not squelch controlled and supplies tone sets to SELCAL directly, without filtering or gating.

B. AIRPLANES WITH BENDIX RTA-44A VHF TRANSCEIVERS INSTALLED;

Self-Test

(1) The VHF transceiver has a self-test, including breaking the squelch, which is initiated by pushing the front panel SQ/TEST switch. The microprocessor performs an analysis to isolate faults to the module level, and displays the number of a faulty module on an internal hexadecimal display (used for component maintenance only). In addition, all the front panel lights illuminate for 3 seconds (for a lamp test), and extinguish for 3 seconds while the self-test is in progress. If there are no faults detected, or in-flight faults registered, the green COMM light illuminates for 3 seconds and then extinguishes. If there is a fault detected, or in-flight faults registered, the appropriate failure light illuminates for 3 seconds and then extinguishes. The red COMM light comes on for a transceiver fault, and the red DATA IN light comes on for a frequency tuning data input failure.

C. AIRPLANES WITH COLLINS VHF-700/700A XCVRS INSTALLED;

Self-Test

- (1) The transceiver has a self-test system that is initiated by pushing the test switches on the front panel of the transceiver. The SQL/LAMP TEST switch is used to disable transceiver squelch, and to check the front panel lights prior to system self-testing. The red CONTROL INPUT FAIL and green LRU PASS lights come on when the SQL/LAMP TEST switch is pushed.
- (2) The TEST switch is pushed to initiate the CONTROL INPUT FAIL and LRU PASS tests. The CONTROL INPUT FAIL test checks that the transceiver is receiving valid frequency tuning data from the control panel. If the tuning data is not valid, the red CONTROL INPUT FAIL light comes on indicating a control panel failure. The light remains on for about four seconds after TEST is pushed.
- (3) The LRU PASS test is initiated at the same time as the CONTROL INPUT FAIL test. The LRU PASS test identifies a failure in the transceiver. After pushing the TEST switch, the green LRU PASS light should come on for about four seconds. At the same time, the display should show a value of less than 3.0. This value is the voltage standing wave ratio (VSWR). If the LRU PASS light fails to come on, a problem may exist in the transceiver.
- (4) After the CONTROL INPUT FAIL/LRU PASS tests are completed, turning the RFL/OFF/FWD (power test) switch will cause power values to show on the display. When the RFL/OFF/FWD switch is in the FWD position, a minimum value of 25 for forward power should show on the display. When the RFL/OFF/FWD switch is in the RFL position, the display should show 25 percent or less of the forward power value. This is the reflected power.

D. Control

- (1) Turn-on procedure:
 - (a) Apply electrical power (AMM 24-22-00/201).
 - (b) Make sure the STBY PWR switch, on the pilots' overhead panel, P5, is in the AUTO position.

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MAINTENANCE MANUAL

- (c) Make sure the VHF COMM LEFT, RIGHT, and CENTER (if installed) circuit breakers on the overhead circuit breaker panel, P11, are closed.

EFFECTIVITY

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BOEING
757
FAULT ISOLATION/MAINT MANUAL

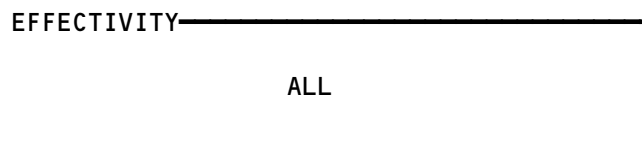
VHF COMMUNICATIONS SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ANTENNA - C VHF COMM, M247 1	1	1	BOTTOM FUSELAGE, AFT	23-12-03
ANTENNA - L VHF COMM, M245	1	1	TOP FUSELAGE, FWD	23-12-03
ANTENNA - R VHF COMM, M246	1	1	BOTTOM FUSELAGE, FWD	23-12-03
CIRCUIT BREAKER -	2		FLT COMPT, P11	
VHF COMM CENTER, C546 1		1	11G4	*
VHF COMM LEFT, C544		1	11C3	*
VHF COMM RIGHT, C545		1	11G31	*
PANEL - (FIM 23-51-00/101)				
CAPT AUDIO SELECTOR, M70				
F/O AUDIO SELECTOR, M71				
OBS AUDIO SELECTOR, M98				
PANEL - C VHF CONTROL, M80 2	2	1	FLT COMPT, P8	23-12-02
PANEL - L VHF CONTROL, M78	2	1	FLT COMPT, P8	23-12-02
PANEL - R VHF CONTROL, M79	2	1	FLT COMPT, P8	23-12-02
RELAY - (FIM 31-01-36/101)				
AIR/GROUND, K10388				
RELAY - (FIM 31-01-37/101)				
AIR/GROUND, K200 1				
AIR/GROUND, K201				
TRANSCEIVER - C VHF COMM, M190 2	2	1	119BL, MAIN EQUIP CTR, E4-3	23-12-01
TRANSCEIVER - L VHF COMM, M188	2	1	119BL, MAIN EQUIP CTR, E4-3	23-12-01
TRANSCEIVER - R VHF COMM, M189	2	1	119BL, MAIN EQUIP CTR, E4-3	23-12-01
UNIT - (FIM 31-31-00/101)				
FLT DATA ACQUISITION, M138				

* SEE THE WDM EQUIPMENT LIST

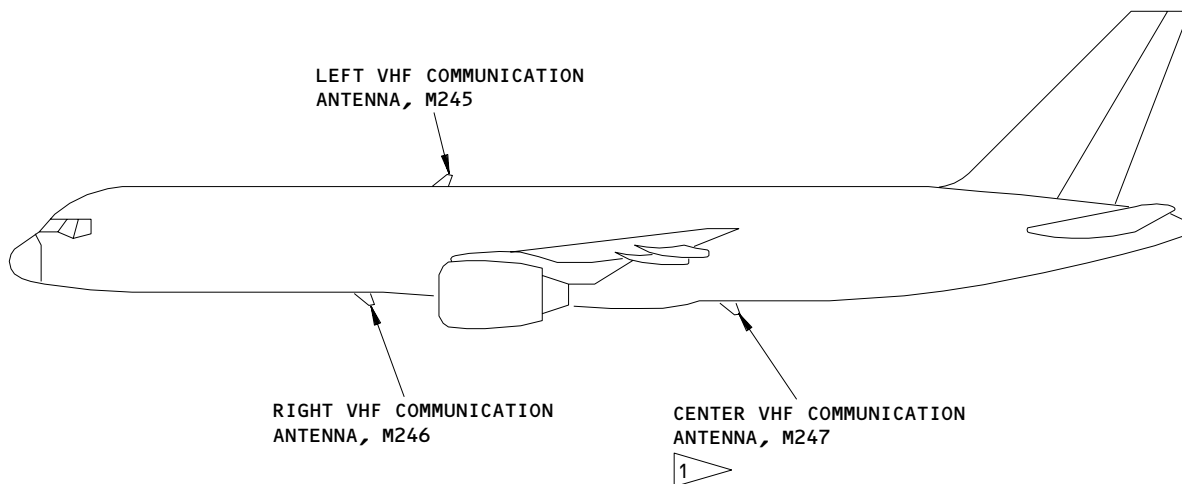
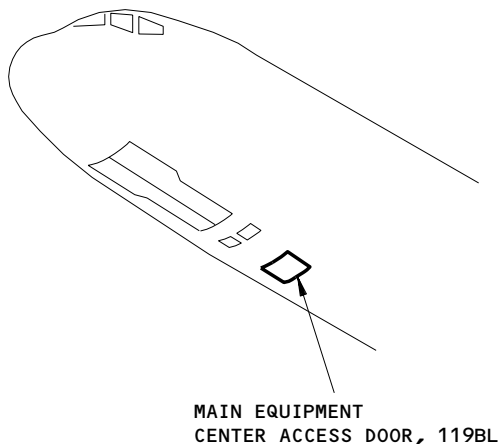
- 1 GUI 001-099
- 2 GUI 001-008,010-099

VHF Communications System - Component Location
Figure 101



23-12-00

BOEING
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 FAULT ISOLATION/MAINT MANUAL



1 AIRPLANES WITH A CENTER VHF
 COMMUNICATION ANTENNA INSTALLED

VHF Communication System - Component Location
 Figure 102 (Sheet 1)

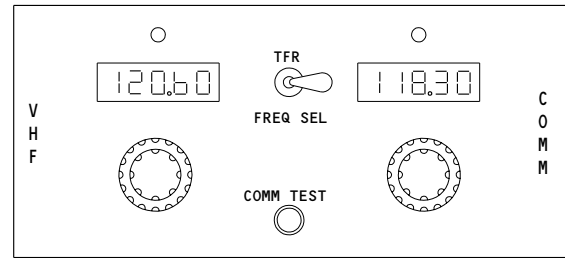
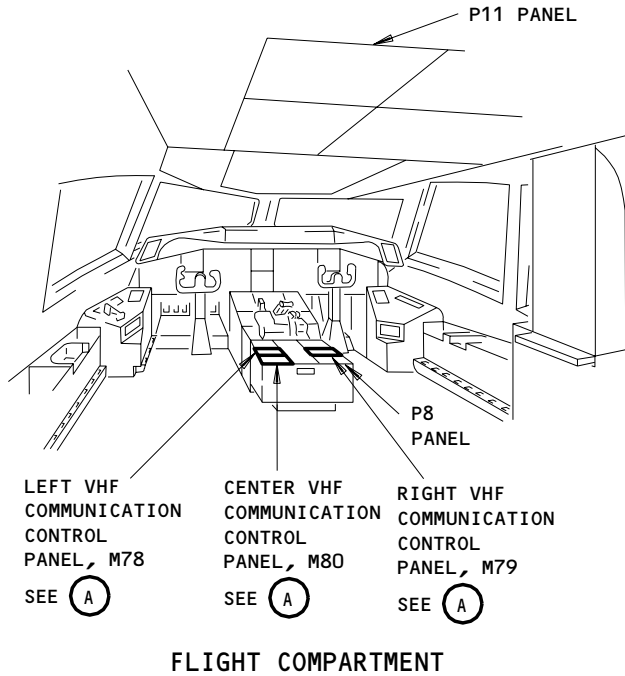
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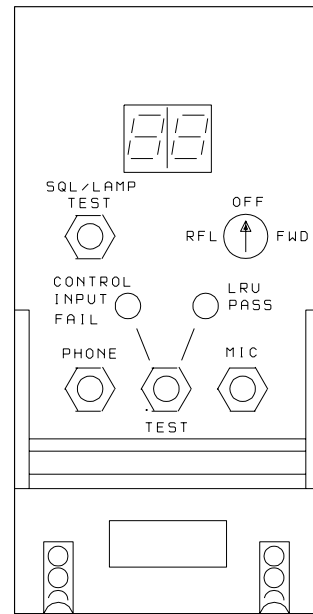
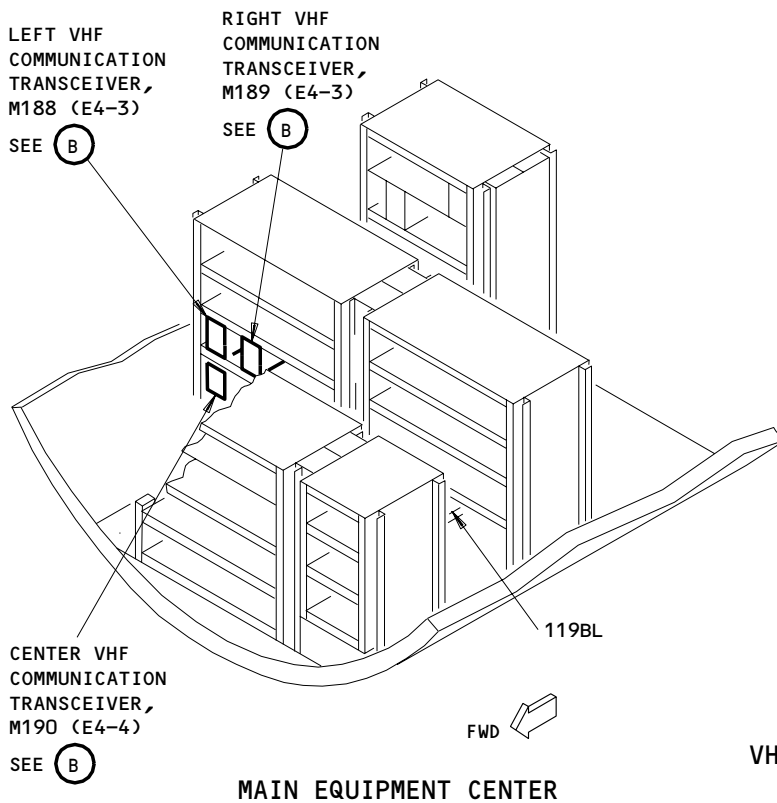
757

FAULT ISOLATION/MAINT MANUAL



LEFT, RIGHT, OR CENTER VHF COMMUNICATION CONTROL PANEL, M78, M79, OR M80

(A)



LEFT, RIGHT OR CENTER VHF COMMUNICATION TRANSCIVER, M188, M189, OR M190

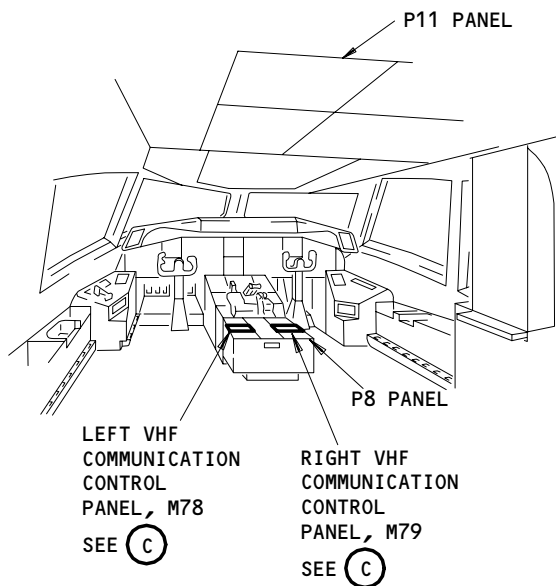
(B)

VHF Communications System - Component Location
Figure 102 (Sheet 2)

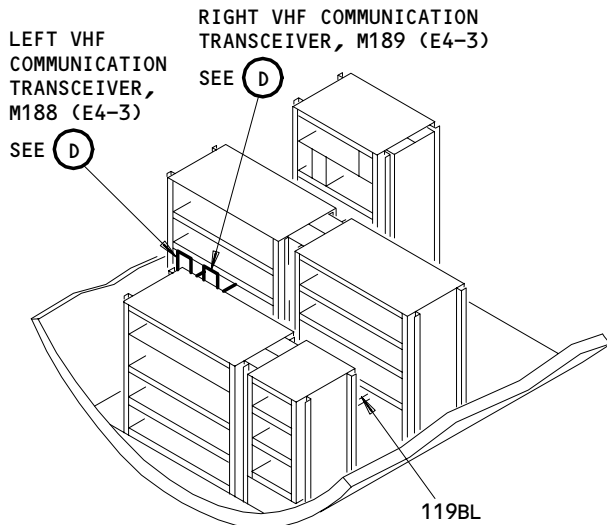
EFFECTIVITY
GUI 001-008, 010-099

23-12-00

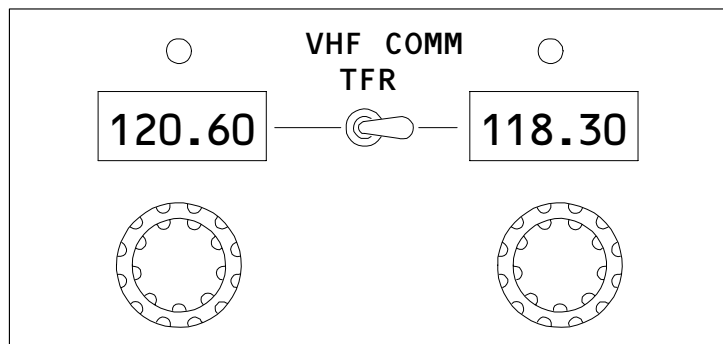
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FAULT ISOLATION/MAINT MANUAL



FLIGHT COMPARTMENT

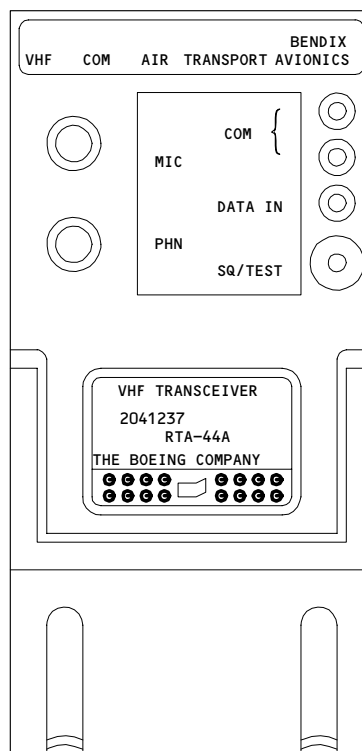


MAIN EQUIPMENT CENTER



LEFT OR RIGHT VHF COMMUNICATION CONTROL PANEL, M78 OR M79

(C)



LEFT OR RIGHT VHF COMMUNICATION TRANSCEIVER, M188 OR M189

(D)

VHF Communications System - Component Location
Figure 102 (Sheet 3)

EFFECTIVITY
GUI 009, 101-999

23-12-00

VHF COMMUNICATION SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains one task. The task is the system test of the VHF communications system.

TASK 23-12-00-735-001

2. System Test - VHF Communication System

A. General

- (1) This test does a check of the VHF communication system to make sure of good system performance.

B. Equipment

- (1) AIRPLANES WITH BENDIX RTA-44A VHF TRANSCEIVERS;
Meter - thru-line RF wattmeter with type 50C element, Bird Model 43:
Bird Electronic Corp., 30303 Aurora Road, Cleveland, OH 44139
- (2) AIRPLANES WITH BENDIX RTA-44A VHF TRANSCEIVERS;
Leads - coax test, for wattmeter connection

C. References

- (1) AMM 23-51-00/501, Flight Interphone System
(2) AMM 24-22-00/201, Electrical Power - Control

D. Access

- (1) Location Zones
- | | |
|-----|-------------------------------|
| 119 | Main Equipment Center (Left) |
| 120 | Main Equipment Center (Right) |
| 211 | Flight compartment, left |
| 212 | Flight compartment, right |

E. Prepare for the System Test

S 865-002

- (1) Supply electrical power (AMM 24-22-00/201).

S 865-003

- (2) Set the STBY PWR switch, on the pilots' overhead panel P5, to AUTO.

S 865-004

- (3) Make sure the flight interphone system operates (AMM 23-51-00/501).

EFFECTIVITY

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02

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F. Self-Test - VHF Communication Transceiver

S 745-074

- (1) AIRPLANES WITH COLLINS VHF-700/700A TRANSCEIVERS;
At each VHF comm transceiver, (E4 rack) do the steps that follow:
- (a) Push and hold the SQL/LAMP TEST switch.
 - 1) Make sure the red CONTROL INPUT FAIL and the green LRU PASS lights come on and stay on.
 - (b) Release the SQL/LAMP TEST switch.
 - (c) Push and release the TEST switch.
 - 1) Make sure the LRU PASS light comes on for approximately four seconds, and the display shows less than 3.0.
 - (d) Turn and hold the rotary switch in the FWD position.
 - 1) Make sure a value of at least 25 W (Watts) is shown on the display.
 - (e) Turn and hold the rotary switch in the RFL position.
 - 1) Make sure the value shown in the display is less than 25 percent of the value shown when the rotary switch is held in the FWD position.
 - (f) Release the rotary switch.

S 745-076

- (2) AIRPLANES WITH BENDIX RTA-44A VHF TRANSCEIVERS;
At each VHF comm transceiver, (E4 rack) do the steps that follow:
- (a) Push and hold the SQ/TEST switch.
 - 1) Make sure the green COMM light, red COMM light, and red DATA IN light come on for approximately three seconds.
 - 2) Make sure the green COMM light, red COMM light, and red DATA IN lights go off.
 - 3) Make sure that after approximately three seconds, the green COMM light comes on and stays on.
 - 4) Make sure the red COMM light and the red DATA IN light stay off.
 - (b) Release the SQ/TEST switch.

G. VHF Communications Control Panel Test

S 755-045

- (1) At each VHF comm control panel (P8), do the steps that follow:
- (a) Set the TFR switch on each panel to the left position.

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- (b) Make sure the left transfer light (above the frequency display), and the left frequency display are on.
- (c) Adjust the outer PANEL/FLOOD AISLE STAND switch on the left lighting control panel (P5).
 - 1) Make sure the intensity of the lights at each VHF comm control panel changes.
- (d) Do the VHF Control Panel Test paragraph again with the TFR switch set to the right position.

H. VHF Communications Test

S 715-010

- (1) Do the steps that follow to do the VHF communications test:
 - (a) Connect the headset/boom mic to the captain's jack panel, on the captain's auxiliary instrument panel, P13.
 - (b) Make applicable selections on the captain's audio selector panel (P8):
 - 1) Push the VHF-L MIC SELECTOR switch on the captains ACP.
 - 2) Adjust the VHF-L volume control knob to the 12-o'clock position.
 - 3) Make sure the BOOM/OXY (or the BOOM/MASK) switch is set to the BOOM position.
 - (c) Set the frequency selectors on the VHF-L comm control panel to two approved test frequencies.
 - (d) Push the PTT switch on the captain's audio selector panel or control wheel.
 - (e) Make a communication with a test radio.
 - (f) Use the TFR switch on the VHF-L comm control panel, and make sure the transmission and reception on both frequencies is clear.
 - 1) Make sure there is an audio sidetone during the transmissions.
 - (g) During the voice communication, adjust the VHF-L volume (on the audio selector panel) along the full range.
 - 1) Make sure the audio level changes smoothly with no change in the voice quality.
 - (h) At each remaining audio selector panel, set VHF-L MIC SELECTOR and make a voice transmission.
 - (i) Make sure of the conditions that follow:
 - 1) The audio sidetone is satisfactory.
 - 2) The audio level changes smoothly along the full range of VHF-L volume control.

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I. Right VHF Communication System Test

S 715-011

- (1) Do the VHF Communications Test again for the VHF-R.

J. Center VHF Communication System Test

S 715-078

- (1) AIRPLANES WITH CENTER VHF COMMUNICATIONS SYSTEM;
Do the VHF Communications Test again for the VHF-C.

K. VHF Communications Antenna Test

S 765-081

- (1) AIRPLANES WITH BENDIX RTA-44A TRANSCEIVERS;
Do the steps that follow to do the VHF Communications Antenna Test:
- (a) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
 - 1) 11C3, VHF COMM LEFT
 - (b) Install the thruline wattmeter between the left VHF comm antenna and the transceiver at D41721, on the E4 rack.
 - (c) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
 - 1) 11C3, VHF COMM LEFT
 - (d) With the wattmeter, make sure the transmitted power is larger than 18 watts.
 - (e) Make sure the reflected power is less than 25 percent of the transmitted power value.
 - (f) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
 - 1) 11C3, VHF COMM LEFT
 - (g) Disconnect the wattmeter from D41721.
 - (h) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
 - 1) 11C3, VHF COMM LEFT

S 765-016

- (2) Do the VHF Communications Antenna Test again for VHF-R.
(a) Use the VHF COMM RIGHT (11G31) circuit breaker on P11 and D41731 on the rear of E4.

L. Put the Airplane Back in Its Usual Condition

S 865-010

- (1) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

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23-12-00

VHF COMMUNICATION TRANSCEIVER – REMOVAL/INSTALLATION

1. General

- A. The left, right, and center (if installed) VHF communication transceivers M188, M189 and M190, are located in the main equipment center on equipment rack E4. The removal/installation procedure is the same for each of the VHF transceivers.

TASK 23-12-01-024-004

2. Remove the VHF Communication Transceiver

- A. References
(1) AMM 20-10-01/401, E/E Rack Mounted Components
- B. Access
(1) Location Zones
119/120 Main Equipment Center
- C. Procedure

S 864-002

- (1) Open the applicable circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
(a) 11C3, VHF COMM LEFT
(b) 11G4, VHF COMM CENTER (if installed)
(c) 11G31 OR 11G33, VHF COMM RIGHT

S 024-001

- (2) Remove the VHF communication transceiver, (AMM 20-10-01/401).

TASK 23-12-01-424-003

3. Install the VHF Communication Transceiver

- A. References
(1) AMM 20-10-01/401, E/E Rack Mounted Components
(2) AMM 24-22-00/201, Electrical Power – Manual Control
- B. Access
(1) Location Zones
119/120 Main Equipment Center
- C. Procedure

S 424-005

- (1) Install the VHF communication transceiver (AMM 20-10-01/401).

S 864-006

- (2) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the overhead circuit breaker panel, P11, as required:
(a) 11C3, VHF COMM LEFT
(b) 11G4, VHF COMM CENTER (if installed)
(c) 11G31 or 11G33, VHF COMM RIGHT

EFFECTIVITY

ALL

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03.1

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D. Installation Test

S 744-030

- (1) AIRPLANES WITH COLLINS VHF-700/700A TRANSCEIVERS;
Do the steps that follow:
- (a) Supply electrical power (AMM 24-22-00/201).
 - (b) Set the STBY PWR switch, on the pilots' overhead panel P5, to the AUTO position.
 - (c) Push and hold the SQL/LAMP TEST switch on the transceiver front panel.
 - 1) Make sure the red CONTROL INPUT FAIL, and green LRU PASS lights on the transceiver front panel come on and stay on.
 - (d) Release the SQL/LAMP TEST switch.
 - (e) Push and release the TEST switch on the VHF transceiver front panel.
 - (f) Make sure of the conditions that follow:
 - 1) The CONTROL INPUT FAIL light does not come on.
 - 2) The green LRU PASS light comes on for approximately four seconds.
 - 3) The display shows less than 3.0.

S 744-034

- (2) AIRPLANES WITH BENDIX RTA-44A TRANSCEIVERS;
VHF Communication Transceiver Installation Test
Do these steps to do a test of the VHF communication transceiver:
- (a) Supply electrical power (AMM 24-22-00/201).
 - (b) Set the STBY PWR switch, on the pilots' overhead panel P5, to AUTO.
 - (c) Push and hold the SQ/TEST switch on the VHF transceiver front panel.
 - (d) Make sure the conditions that follow occur:
 - 1) The three front panel lights come on for three seconds, then go off.
 - 2) After three seconds, the green COMM light comes on and stays on until the SQ/TEST pushbutton switch is released.
 - 3) The red COMM light and red DATA IN light stay off.

E. Put the Airplane Back to Its Initial Condition

S 864-008

- (1) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

ALL

23-12-01

VHF COMMUNICATION CONTROL PANEL – REMOVAL/INSTALLATION

1. General

- A. The left, right, and center (if installed) VHF communication control panels M78, M79 and M90 are installed on the pilots' aft control stand P8. The removal and installation procedures are the same for each of the control panels.

TASK 23-12-02-004-036

2. VHF Communication Control Panel – Removal

A. Access

- (1) Location Zones
211/212 Flight Compartment

B. Procedure

S 864-002

- (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
- (a) 11C3, VHF COMM LEFT
 - (b) 11G4, VHF COMM CENTER (IF INSTALLED)
 - (c) 11G31, VHF COMM RIGHT

S 024-037

CAUTION: CLEARLY IDENTIFY THE CONNECTOR FOR THE PANEL POSITION (LEFT, RIGHT OR CENTER) DURING REPLACEMENT. THERE IS A CROSS-CONNECTION POSSIBILITY DURING INSTALLATION.

- (2) Remove the VHF communication control panel.
- (a) Loosen the four quarter-turn fasteners.
 - (b) Lift the VHF communication control panel to get access to the electrical connector.
 - (c) Disconnect the electrical connector.
 - (d) Put protective covers on the electrical connector.

TASK 23-12-02-404-038

3. VHF Communication Control Panel – Installation

A. References

- (1) AMM 24-22-00/201, Electrical Power – Manual Control

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Procedure

S 864-039

- (1) Make sure these circuit breakers are open on the overhead circuit breaker panel, P11:
- (a) 11C3, VHF COMM LEFT

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- (b) 11G4, VHF COMM CENTER (IF INSTALLED)
- (c) 11G31, VHF COMM RIGHT

S 424-040

CAUTION: CLEARLY IDENTIFY THE CONNECTOR FOR THE PANEL POSITION (LEFT, RIGHT OR CENTER) DURING REPLACEMENT. THERE IS A CROSS-CONNECTION POSSIBILITY DURING INSTALLATION.

- (2) Install the VHF communication control panel.
 - (a) Remove the protective covers from the electrical connector.
 - (b) Examine the electrical connector for bent or broken pins, dirt, and damage.
 - (c) Connect the electrical connector.
 - (d) Put the VHF comm control panel in its position on the P8 panel.
 - (e) Tighten the four quarter-turn fasteners.

S 864-006

- (3) Remove the DO-NOT-CLOSE tag and close the circuit breaker on the P11 panel for the VHF communication control panel that you installed:
 - (a) 11C3, VHF COMM LEFT
 - (b) 11G4, VHF COMM CENTER (IF INSTALLED)
 - (c) 11G31, VHF COMM RIGHT

S 864-041

- (4) Make sure that the two circuit breakers for the other panels are open.

NOTE: You will close one circuit breaker at a time to do a check for a cross-connection.

D. VHF Communication Control Panel Installation Test

S 864-008

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-009

- (2) Set the STBY PWR switch, on the pilots' overhead panel, P5, to the AUTO position.

S 714-043

- (3) Use the new VHF communication control panel to set the applicable VHF communication system to a test frequency.

S 714-044

- (4) Make sure the VHF communication system operates satisfactorily.

S 864-045

- (5) Remove the DO-NOT-CLOSE tag and close the circuit breaker on the P11 panel for one of the other VHF communication control panels:
 - (a) 11C3, VHF COMM LEFT

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- (b) 11G4, VHF COMM CENTER (IF INSTALLED)
- (c) 11G31, VHF COMM RIGHT

S 714-047

- (6) Use the applicable VHF communication control panel to set the VHF communication system to a test frequency.

S 714-048

- (7) Make sure the VHF communication system operates satisfactorily.

S 864-049

- (8) Remove the DO-NOT-CLOSE tag and close the last circuit breaker on the P11 panel for the VHF communication control panels:
 - (a) 11C3, VHF COMM LEFT
 - (b) 11G4, VHF COMM CENTER (IF INSTALLED)
 - (c) 11G31, VHF COMM RIGHT

E. Put the airplane back to its original condition.

S 864-014

- (1) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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VHF COMMUNICATION SYSTEM ANTENNA – REMOVAL/INSTALLATION

1. General

- A. AIRPLANES WITH VHF COMM ANTENNAS IN STANDARD LOCATIONS;
The left VHF communication antenna, M245, is mounted on the top centerline of the airplane at station 753. The right VHF communication antenna, M246, is located on the bottom centerline of the airplane at station 730. The center VHF communication antenna, M247, (if installed), is located on the bottom centerline of the airplane at station 1473. The removal and installation procedures are the same for all of the antennas.
- B. AIRPLANES WITH VHF COMM ANTENNAS IN ALTERNATE LOCATIONS;
The left VHF communication antenna, M245, is mounted on the top centerline of the airplane at station 1430. The right VHF communication antenna, M246, is located on the bottom centerline of the airplane at station 1473. The center VHF communication antenna, M247, is located on the top centerline of the airplane at station 753. The removal and installation procedures are the same for all of the antennas.

TASK 23-12-03-024-001

2. VHF Communication Antenna Removal (Fig. 401)

- A. Consumable Materials
(1) B00183 Solvent – BMS 11-7 (AMM 20-30-02/201)
- B. References
(1) AMM 20-10-22/701, Metal Surface Cleaning
(2) AMM 51-31-01/201, Seals and Sealing
- C. Access
(1) Location Zones
- | | |
|---------|--|
| 233/234 | Area above passenger cabin ceiling – section 43 (exterior) |
| 123/124 | Area below forward cargo compartment (exterior) |
| 155/156 | Area below aft cargo compartment (exterior) |
- D. Procedure
- S 864-023
- (1) Open the applicable circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags.
- (a) 11C3, VHF COMM LEFT
 - (b) 11G4, VHF COMM CENTER (IF INSTALLED)
 - (c) 11G31, VHF COMM RIGHT

S 024-029

- (2) Remove the bolts from the antenna base.

S 014-003

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO REMOVE THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

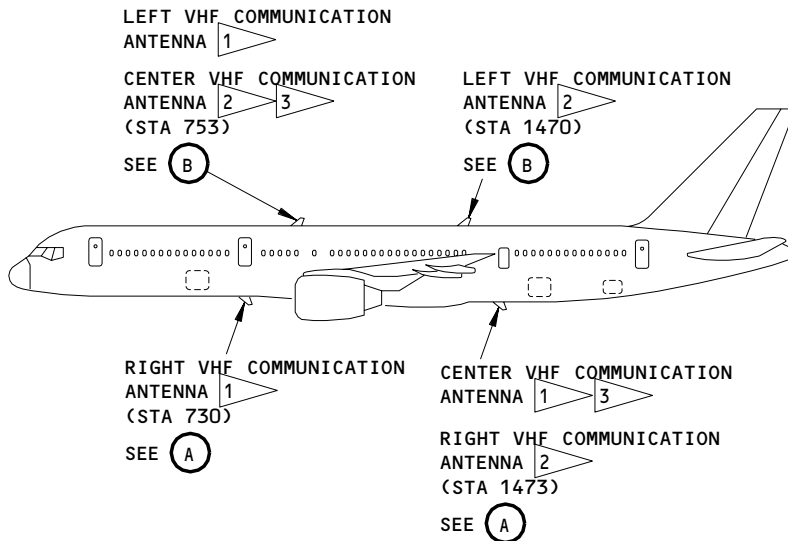
EFFECTIVITY

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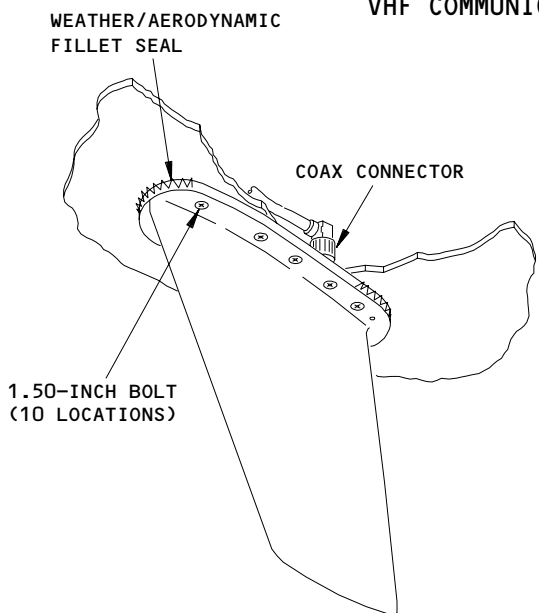
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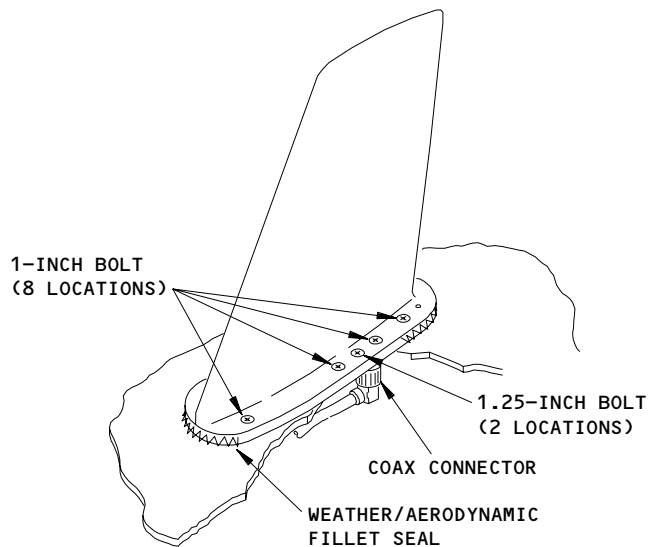


VHF COMMUNICATION ANTENNA LOCATION



CENTER OR RIGHT VHF COMMUNICATION ANTENNA

(A)



LEFT OR CENTER VHF COMMUNICATION ANTENNA

(A)

- 1 STANDARD ANTENNA LOCATION
- 2 ALTERNATE ANTENNA LOCATION
- 3 AIRPLANES WITH CENTER VHF SYSTEM INSTALLED

VHF Antenna Installation
Figure 401

EFFECTIVITY	ALL
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23-12-03

- (3) Pry around the antenna with an approved sealant removal tool until the seal is fully broken (AMM 51-31-01/201).

S 014-004

CAUTION: DO NOT PULL THE ANTENNA CABLE. LOWER THE ANTENNA AND DISCONNECT THE CABLE. THIS WILL PREVENT DAMAGE TO THE ANTENNA CABLE.

- (4) Lower the antenna until you have access to the antenna cable connector.

S 034-005

- (5) Disconnect the antenna cable and remove the antenna.

S 114-044

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO REMOVE THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

- (6) Remove the used sealant from the airplane skin (AMM 51-31-01/201).

S 114-006

- (7) Clean the airplane surface with the solvent and a clean rag.
 - (a) Remove all unwanted materials (AMM 20-10-22/701).

TASK 23-12-03-424-007

3. VHF Communication Antenna - Installation (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Electrical Power - Control
- (2) AMM 51-21-04/701, Alodine 1200 Coating
- (3) AMM 51-31-01/201, Seals and Sealing

B. Equipment

- (1) Resistance measuring bridge or ohmmeter to measure 0.001 ohm.

C. Consumable Materials

- (1) A00247 Sealant - BMS 5-95 (AMM 20-30-01/201)
- (2) C00064 Coating - Protective (Alodine 1200) (AMM 20-30-03/201)

D. Access

- (1) Location Zones

233/234	Area above passenger cabin ceiling - section 43 (exterior)
123/124	Area below forward cargo compartment (exterior)
155/156	Area below aft cargo compartment (exterior)

E. Procedure

S 864-022

- (1) Make sure the applicable circuit breakers on the overhead circuit breaker panel, P11, are open:
 - (a) 11C3, VHF COMM LEFT
 - (b) 11G4, VHF COMM CENTER (IF INSTALLED)

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(c) 11G31, VHF COMM RIGHT

S 214-009

- (2) Look at the antenna O-ring (given with the new antenna), and replace if it is damaged.

S 204-010

CAUTION: MAKE SURE THE MATING SURFACES ARE CLEAN. A GROUND THAT IS NOT SUFFICIENT WILL CAUSE SYSTEM FAILURE.

- (3) Make sure the mating surfaces of the antenna and the airplane have no unwanted material.

S 624-011

- (4) Prepare the mating surfaces for a layer of Alodine 1200 (AMM 51-21-04/701).

S 624-012

- (5) Apply a layer of Alodine 1200 to the mating surfaces of the antenna and the airplane (AMM 51-21-04/701).

S 434-013

- (6) Connect the coaxial cable to the antenna.

S 824-025

- (7) Put the antenna in position.

S 394-026

- (8) Apply a layer of sealant on the mounting bolts.

S 434-030

- (9) Install a mounting bolt of correct length (AIPC 23-12-03-01) and tighten before the sealant is dry.

S 204-015

- (10) Remove unwanted sealant from around the mounting bolt.

S 224-016

- (11) Make sure the resistance from the antenna base to airplane skin is not larger than 0.001 ohm.

S 864-045

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO APPLY AND REMOVE THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

- (12) Apply a weather-aerodynamic fillet seal to the edge of the antenna as shown (AMM 51-31-01/201).

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S 204-018

- (13) Remove all unwanted sealant from around the antenna base (AMM 51-31-01/201).

S 864-024

- (14) Remove DO-NOT-CLOSE tags and close the applicable circuit breakers on the overhead circuit breaker panel, P11:
 - (a) 11C3, VHF COMM LEFT
 - (b) 11G4, VHF COMM CENTER (IF INSTALLED)
 - (c) 11G31, VHF COMM RIGHT

F. VHF Communication Antenna Installation Test

S 864-020

- (1) Supply electrical power (AMM 24-22-00/201).

S 714-032

- (2) Tune in a VHF station and make sure the transmission and reception are satisfactory.

S 864-028

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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02

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SELCAL SYSTEM - DESCRIPTION AND OPERATION

1. General

- A. The SELCAL system provides notification to the flight crew when a ground station desires contact on one of the communication transceivers. SELCAL reduces pilot diversions and workload by eliminating the need for continuous monitoring of communication frequencies.
- B. A ground station calls a particular airplane by transmitting a set of four audio tones over a communications transceiver. The SELCAL decoder receives the audio from the particular transceiver and compares the tones to an assigned code. When the tones and the code are the same, a chime sounds and a light on the pilots' call panel comes on, corresponding to the communications transceiver which received the signal. The decoder and indicator are manually reset after each call.
- C. The SELCAL system consists of a SELCAL decoder, a shorting receptacle, and alert lamps on the pilots' call panel. System electrical power comes from the left main DC bus, through a circuit breaker on overhead circuit breaker panel P11.

2. Component Details (Fig. 1)

A. SELCAL Decoder

- (1) The decoder monitors audio from the VHF and HF communication transceivers, recognizes receipt of the SELCAL code assigned to the airplane, and provides flight compartment call alert signals.
- (2) The decoder has no front panel features, and is located on shelf 3 of the main equipment center rack E4 (E4-3).

B. Shorting Receptacle

- (1) The SELCAL shorting receptacle provides a 4-bit binary code to the decoder for each of the four tones that make up the SELCAL code.
- (2) The shorting receptacle is located on the E4-3 rack disconnect bracket assembly near the rear of the SELCAL decoder.

C. SELCAL Alert Indicators

- (1) There is one blue alert indicator on the pilots' call panel for each transceiver connected to the SELCAL decoder. Each indicator alerts the flight crewmembers of a ground-to-air call received by that transceiver. Pushing the indicator resets the light and decoder.

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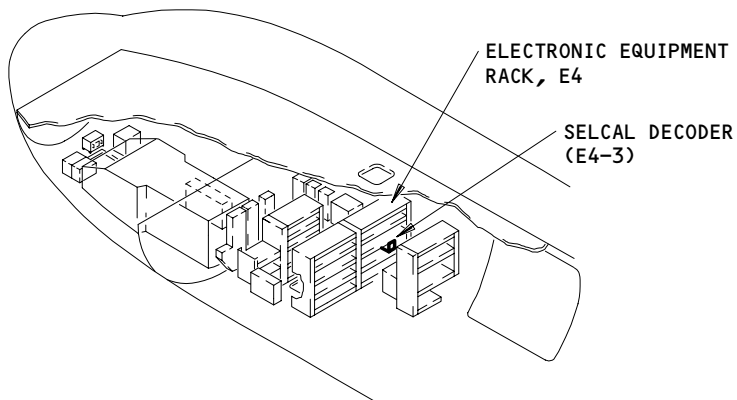
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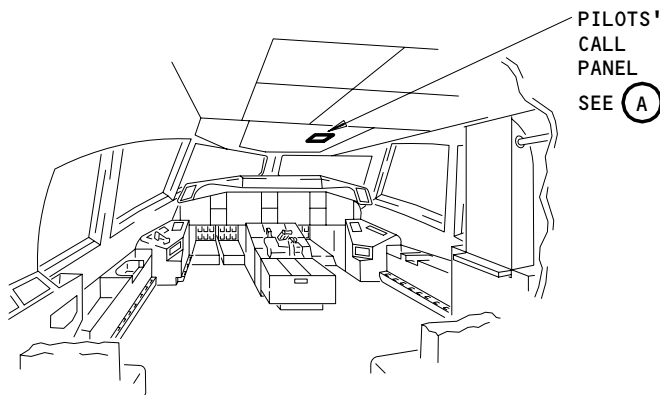
Page 1
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BOEING

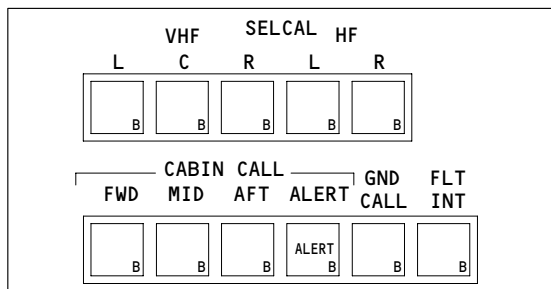
757 MAINTENANCE MANUAL



MAIN EQUIPMENT CENTER

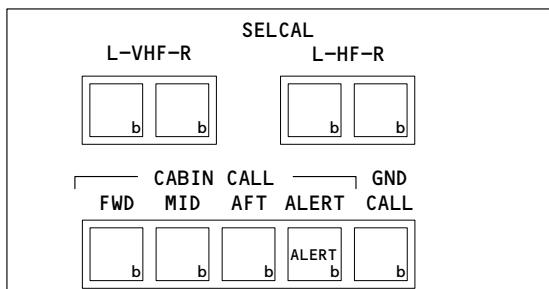


FLIGHT COMPARTMENT



PILOTS' CALL PANEL

(A) 1



PILOTS' CALL PANEL

(A) 2

- 1 ALL EXCEPT GUI XA-MMX
- 2 GUI XA-MMX

SELCAL System Component Location
Figure 1

EFFECTIVITY	ALL
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23-21-00

- (2) The SELCAL alert indicators are located on the pilots' call panel, on the pilots' overhead panel P5.

3. Operation (Fig. 2)

A. Functional Description

- (1) Power and audio inputs are wired directly to the decoder. Thus, the only operational control is for the reset function. The system is reset by pushing the associated indicator or by keying the PTT line for the associated transceiver.
- (2) The decoder monitors audio from the VHF and HF transceivers. When the received code matches the code programmed by the shorting receptacle, the decoder recognizes it as a call to that airplane. The decoder turns on the indicator associated with the transceiver which received the call, and also sounds a chime in the flight compartment. The indicator and SELCAL decoder are then manually reset to wait for the next call.

B. Control

- (1) To place the system in operation, perform the following:
 - (a) Supply electrical power (Ref 24-22-00/201).
 - (b) Make sure that SELCAL circuit breaker on overhead panel P11 is closed.
 - (c) Make sure that the VHF and HF communications systems operate correctly.

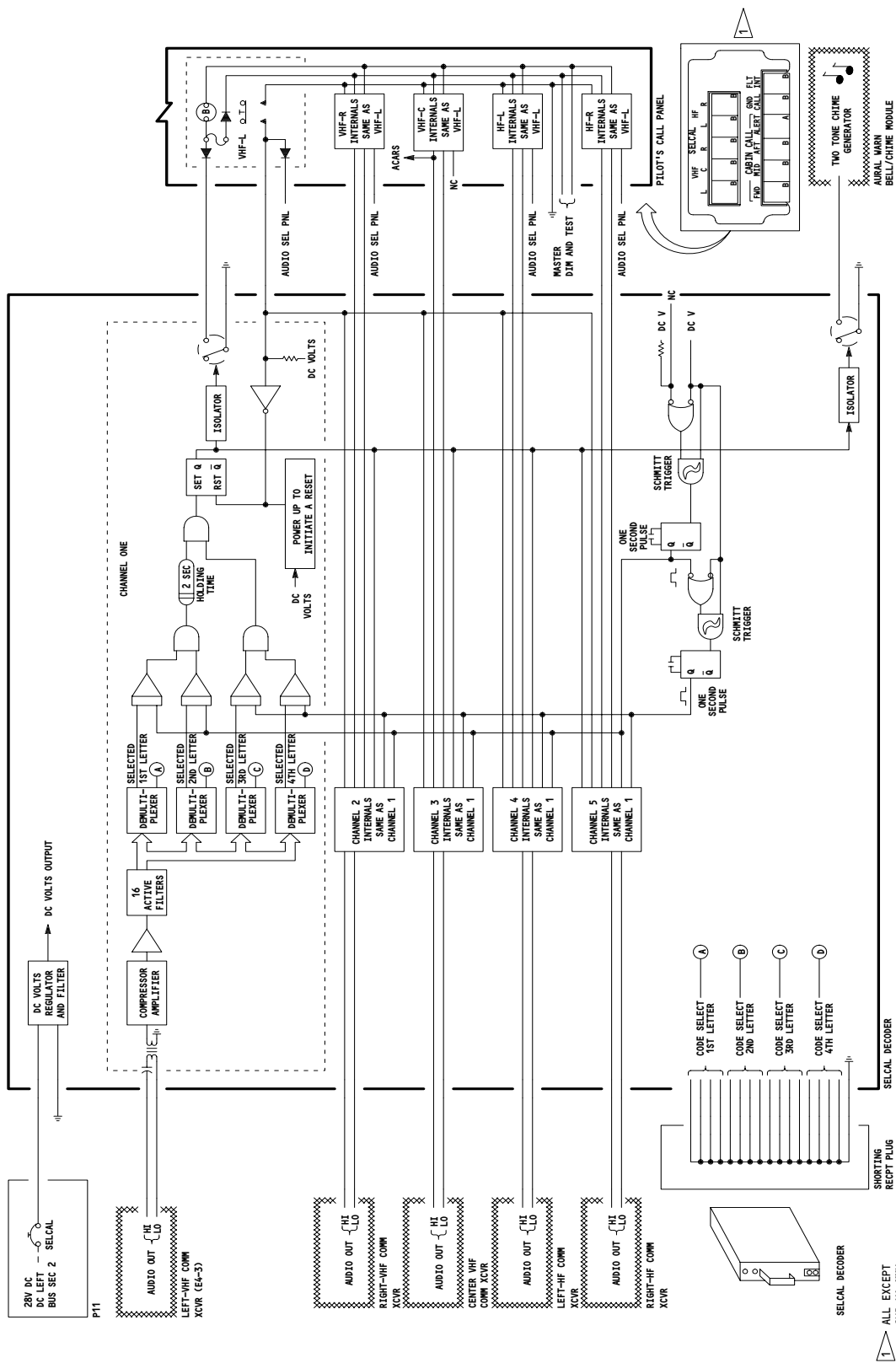
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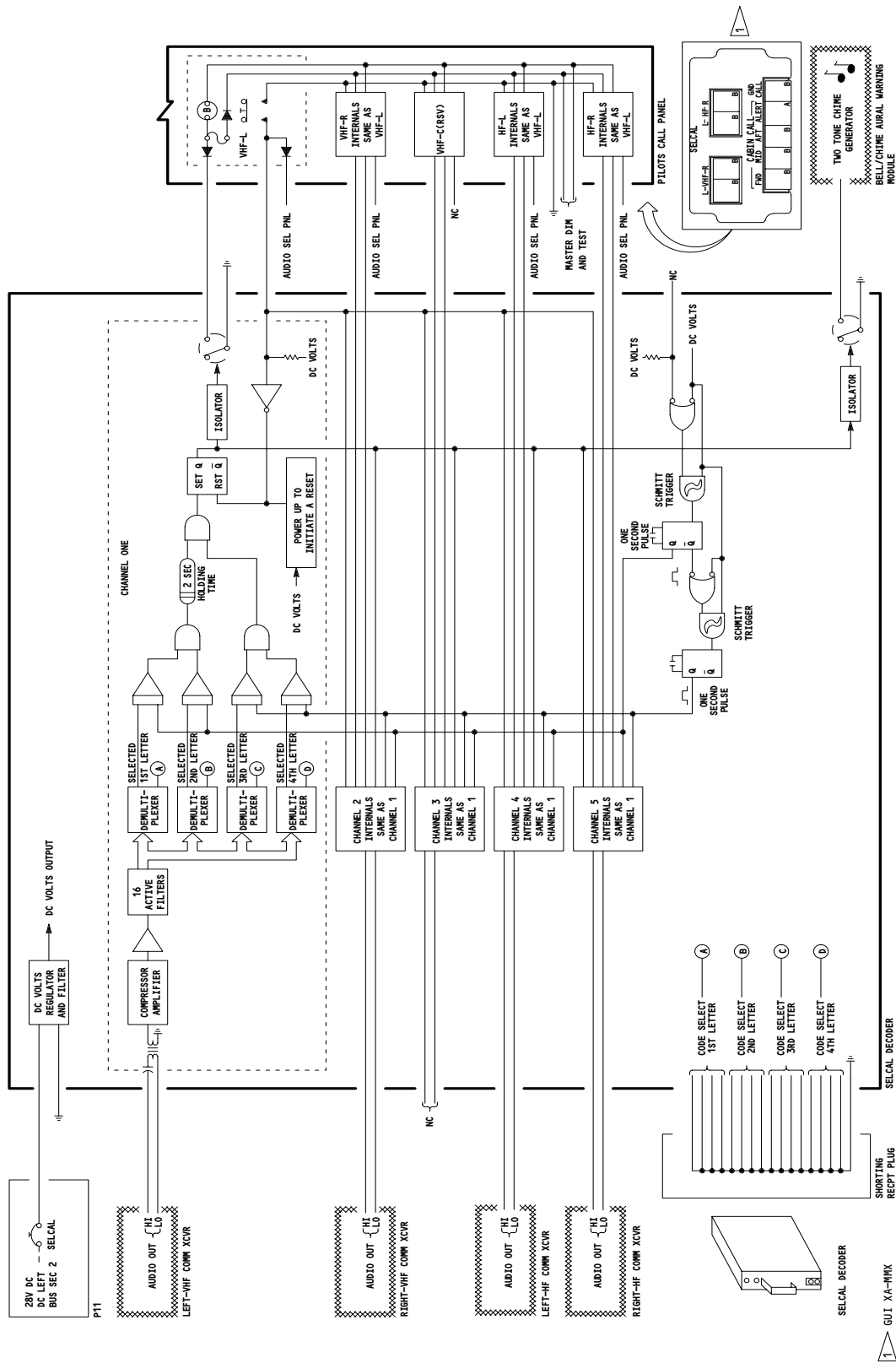


SELCAL System Schematic
Figure 2 (Sheet 1)

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91869V



SELCAL System Schematic
Figure 2 (Sheet 2)

EFFECTIVITY

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757
FAULT ISOLATION/MAINT MANUAL

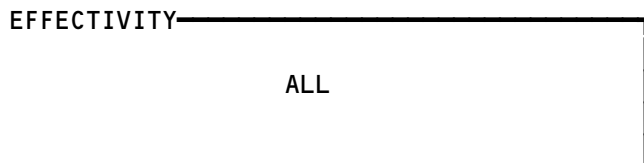
SELCAL SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
CIRCUIT BREAKER - SELCAL, C539	--	1	FLT COMPT, P11 1163	
DECODER - SELCAL, M180 MODULE - (31-51-00/101)	--	1	119BL, MAIN EQUIP CTR, E4-3	23-21-01
AURAL WARNING BELL, M1000 PANEL - (23-42-00/101)				
PILOTS' CALL, M51 RECEPTACLE - SELCAL SHORTING, M974	--	1	119BL, MAIN EQUIP CTR, BACK OF E4-3	*
SWITCHES - (23-42-00/101)				
C VHF COMM, S2	--	1		
L HF COMM, S4	--	1		
L VHF COMM, S1	--	1		
R HF COMM, S5	--	1		
R VHF COMM, S3	--	1		
L HF COMM, S4				
L VHF COMM, S1				
R HF COMM, S5				
R VHF COMM, S2				
TRANSCEIVERS - (23-11-00/101)				
L HF COMM, M152				
R HF COMM, M153				
TRANSCEIVERS - (23-12-00/101)				
C VHF COMM, M190				
L VHF COMM, M188				
R VHF COMM, M189				

* SEE THE WDM EQUIPMENT LIST

- 1 > ALL EXCEPT GUI XA-MMX
2 > GUI XA-MMX

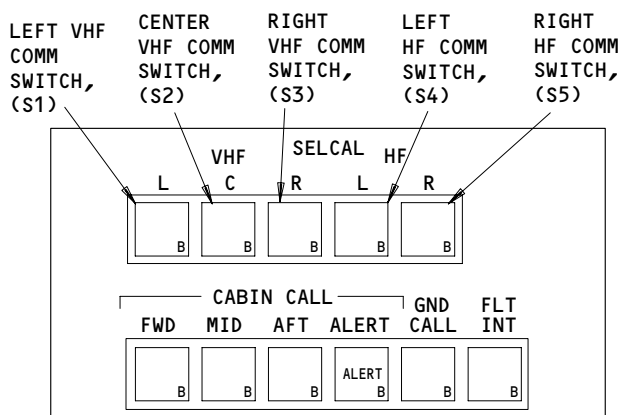
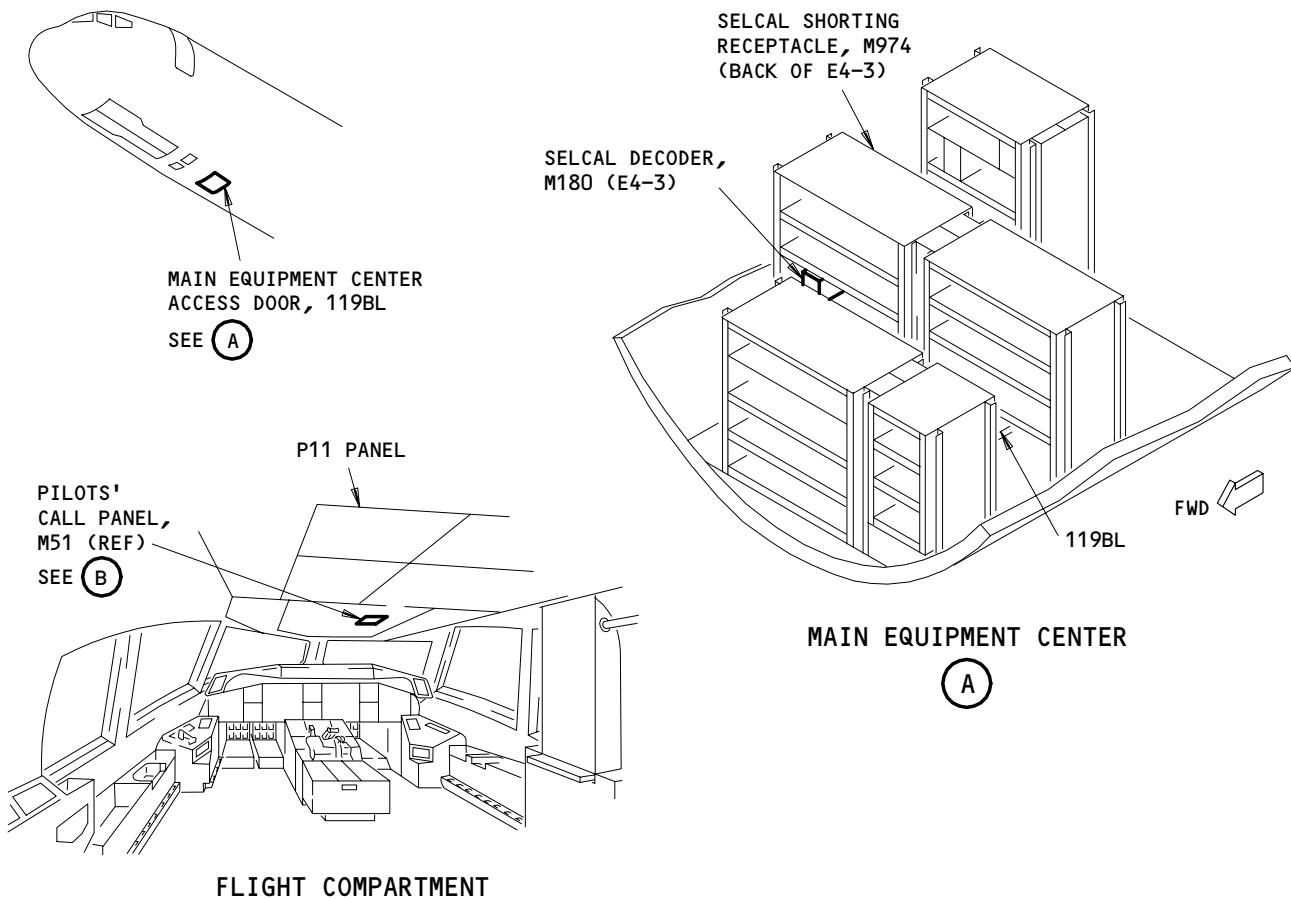
Selcal System - Component Index
Figure 101



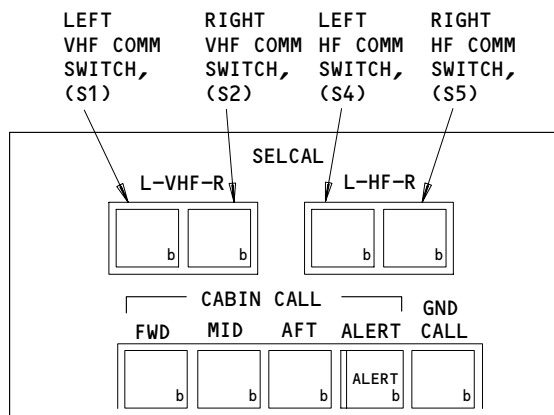
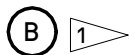
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757 FAULT ISOLATION/MAINT MANUAL



PILOTS' CALL PANEL, M51 (REF)



PILOTS' CALL PANEL, M51 (REF)



- 1 ALL EXCEPT GUI XA-MMX
- 2 GUI XA-MMX

**Selcal System - Component Location
Figure 102**

EFFECTIVITY	ALL
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SELCAL SYSTEM – ADJUSTMENT/TEST

1. General

- A. This procedure contains one task. This task is the system test of the SELCAL system.

TASK 23-21-00-735-001

2. System Test – SELCAL System

A. General

- (1) This test makes sure the SELCAL system operates correctly.
(2) Use only approved test frequencies for this test.

B. References

- (1) AMM 23-11-00/501, HF Communications System
(2) AMM 23-12-00/501, VHF Communications System
(3) AMM 23-42-00/501, Cabin Interphone System
(4) AMM 23-51-00/501, Flight Interphone System
(5) AMM 24-22-00/201, Electrical Power – Control
(6) AMM 31-51-00/501, Warning System

C. Equipment

- (1) Encoder
(a) CTS-700 Ramp Test Set (PN: 10000005-01 or 10000005-02)
Avtech Corporation
3400 Wallingford Ave N
Seattle, WA 98013
(b) N1304A Encoder – SELCAL Ground Equipment
Motorola Inc
1000 Mittel Drive
Wood Dale, IL 60191

NOTE: This encoder is used with HF and VHF transmitters as part of a SELCAL ground station.

D. Access

- (1) Location Zones
211/212 Flight Compartment

E. Prepare for Test

S 865-002

- (1) Supply electrical power (AMM 24-22-00/201).

S 715-048

- (2) Make sure these items are serviceable:
(a) AIRPLANES WITH HF COMMUNICATIONS SYSTEMS;
HF communications system (AMM 23-11-00/501).
(b) VHF communications system (AMM 23-12-00/501).
(c) Pilots' call panel (AMM 23-42-00/501).
(d) Captain's audio selector panel (AMM 23-51-00/501).

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(e) Aural warning system (AMM 31-51-00/501).

S 865-003

- (3) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
- (a) 11G3, SELCAL

S 865-004

- (4) Connect the headset/boom mic to the captain's auxiliary instrument-panel P13.

F. Procedure

S 715-087

- (1) Do a check of the SELCAL system to make sure you receive signals from the VHF-L system:
- (a) Make the applicable selections and settings on the captain's audio-selector panel, on the pilots' aft control-stand P8:
 - 1) Push the VHF-L microphone selector switch.
 - 2) Adjust the VHF-L volume control knob to approximately the 12 o'clock position.
 - 3) Set the BOOM/OXY (or the BOOM/MASK) switch to the BOOM position.
 - (b) Find an appropriate test frequency. Use the VHF-L system to have the airplane assigned SELCAL-code transmitted from the ground station over the VHF-L communications.

NOTE: If the transmitting station is not available, make a SELCAL coded transmission with the SELCAL encoder. Make sure the transmissions are approved.

- (c) Make sure the indications that follow occur:
 - 1) The VHF-L switchlight on the pilots' call panel (P5) comes on.
 - 2) Make sure you hear a chime in the flight compartment.
- (d) Push the VHF-L switchlight on the pilots' call panel.

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(e) Make sure the VHF-L switchlight goes off.

S 715-093

(2) Do a check of the SELCAL system to test the PTT switch reset function:

(a) Use the VHF-L system to have the airplane assigned SELCAL code transmitted from the ground station over the VHF-L communications. Use the same appropriate test frequency.

NOTE: If the transmitting station is not available, make a SELCAL coded transmission with the SELCAL encoder. Make sure the transmissions are approved.

(b) Make sure the VHF-L switchlight on pilots' call panel (P5) comes on.

(c) Push captains' PTT switch and make sure the VHF-L switchlight on pilots' call panel goes off.

NOTE: Make sure the appropriate microphone switch is set on the captain's audio-selector panel.

S 715-094

(3) Do a check of the SELCAL system to make sure you receive signals from the VHF-R system:

(a) Do a test equivalent to the VHF-L test, but use the VHF-R communication system.

S 715-095

(4) AIRPLANES WITH VHF-C COMMUNICATION SYSTEM;

Do a check of the SELCAL system to make sure you receive signals from the VHF-C system:

(a) Do a test equivalent to the VHF-L test, but use the VHF-C communication system.

S 715-096

(5) AIRPLANES WITH LEFT HF COMMUNICATION SYSTEM;

Do a check of the SELCAL system to make sure you receive signals from the HF-L system:

(a) Do a test equivalent to the VHF-L test, but use the HF-L communication system and an HF frequency.

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S 715-097

- (6) AIRPLANES WITH RIGHT HF COMMUNICATIONS SYSTEM;
Do a check of the SELCAL system to make sure you receive signals from the HF-R system:
- (a) Do a test equivalent to the VHF-L test, but use the HF-R communication system and an HF frequency.

S 865-091

- (7) Put the Airplane back to its usual condition
- (a) Put SELCAL system back to its usual condition.
 - (b) Put the HF and VHF radio communication systems back to their usual condition.
 - (c) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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SELCAL DECODER - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is the removal procedure. The second task is the installation procedure.
- B. SELCAL decoder M180 is on shelf 3 of main equipment center rack E4.

TASK 23-21-01-004-002

2. Remove the SELCAL Decoder

- A. References
 - (1) AMM 20-10-01/401, E/E Rack Mounted Components
- B. Access
 - (1) Location Zone
119/120 Main Equipment Center
 - (2) Access Panels
119BL Main Equipment Center
- C. Procedure
 - S 864-010
 - (1) Open this circuit breaker on the overhead panel P11 and attach DO-NOT-CLOSE tag:
 - (a) 11G3, SELCAL
 - S 024-013
 - (2) Remove SELCAL decoder (AMM 20-10-01/401).

TASK 23-21-01-404-001

3. Install SELCAL Decoder

- A. General
 - (1) SELCAL decoder M180 is on shelf 3 of main equipment center rack E4.
- B. References
 - (1) AMM 20-10-01/401, E/E Rack Mounted Components
 - (2) AMM 24-22-00/201, Electrical Power - Control
- C. Equipment
 - (1) Encoder
 - (a) CTS-700 Ramp Test Set (PN: 10000005-01 or 10000005-02)
Avtech Corporation
3400 Wallingford Ave N
Seattle, WA 98013

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- (b) N1304 Encoder - SELCAL Ground Equipment
Motorola Inc
1000 Mittel Drive
Wood Dale, IL 60191

NOTE: This encoder is used with HF and VHF transmitters as part of a SELCAL ground Station.

D. Access

- (1) Location Zone
119/120 Main Equipment Center
- (2) Access Panels
119BL Main Equipment Center

E. Procedure

S 424-012

- (1) Install the SELCAL decoder (AMM 20-10-01/401).

S 864-011

- (2) Remove D0-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
 - (a) 11G3, SELCAL

F. SELCAL decoder installation test:

S 864-003

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-008

- (2) Have approved SELCAL-coded transmission sent from ground station.

NOTE: If ground station is not available, do a SELCAL-coded transmission with the SELCAL encoder. Make sure the transmissions are approved.

S 204-007

- (3) Make sure applicable SELCAL light and chime come on.

S 864-005

- (4) Push applicable SELCAL switch.

S 204-004

- (5) Make sure the SELCAL light goes off.

S 864-009

- (6) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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PASSENGER ADDRESS SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The passenger address (PA) system provides these outputs:
 - (1) Voice announcements from the pilots to the flight attendants and passengers
 - (2) Voice announcements from the cabin attendants to the passengers
 - (3) Flight attendant and passenger alerting chimes sounds.
 - (4) Boarding music for the passengers
 - (5) Pre-recorded Announcement
 - (6) Video audio
- B. The passenger address systems consists of these units:
 - (1) A passenger address (PA) amplifier
 - (2) A pre-recorded announcement machine (PRAM). The PRAM provides boarding music and pre-recorded audio announcements.
 - (3) The PA loudspeakers. The speakers are located in the passenger service units (PSU), galley, lavatory, and attendant areas.
- C. The PA amplifier gets power from the 28v dc battery bus, through a circuit breaker on the overhead circuit breaker panel, P11.
- D. The PRAM gets power from the 28v dc right bus, through a circuit breaker on the overhead panel, P11. It also gets power from the 115v ac right utility bus, through a circuit breaker on the miscellaneous electrical equipment panel, P37.

2. Component Details (Fig. 1)

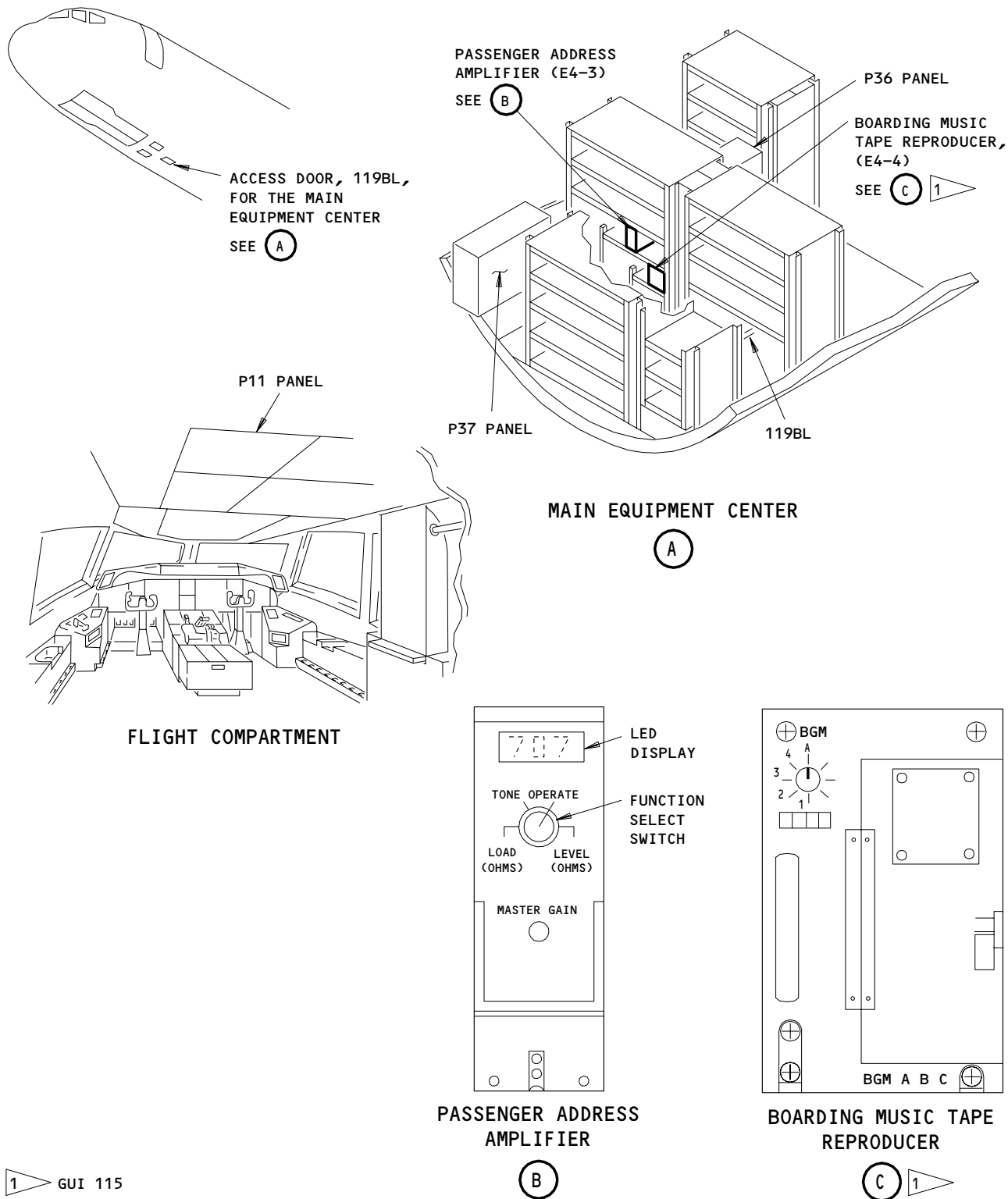
A. Passenger Address Amplifier

- (1) The passenger address (PA) amplifier is a 2 MCU shelf-mounted unit weighing approximately 6.5 pounds. It is located on the E4-3 shelf in the main equipment center. Cooling air is from the equipment cooling system via inlet and exhaust ports at the bottom and top of the unit, respectively.
- (2) The PA amplifier provides audio power amplification for driving the passenger cabin speakers. Separate outputs provide audio to speakers and sidetone to the audio selector panels (ASP's).
- (3) Audio inputs are amplified from the priority inputs. Chime signals are generated from discrete inputs. External inputs automatically increase the PA volume level for flight mode operation and decompression situations.

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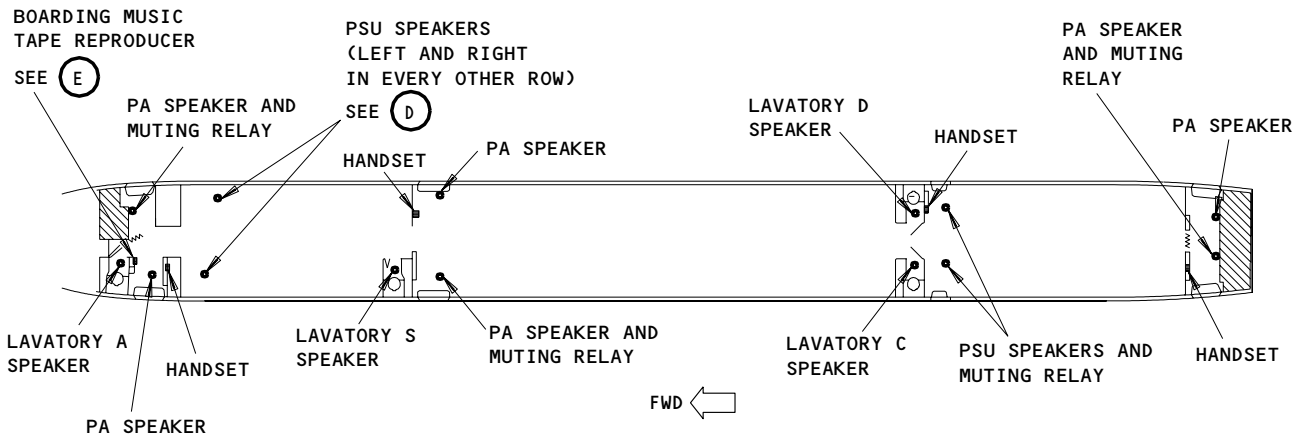


Passenger Address System - Component Location
Figure 1 (Sheet 1)

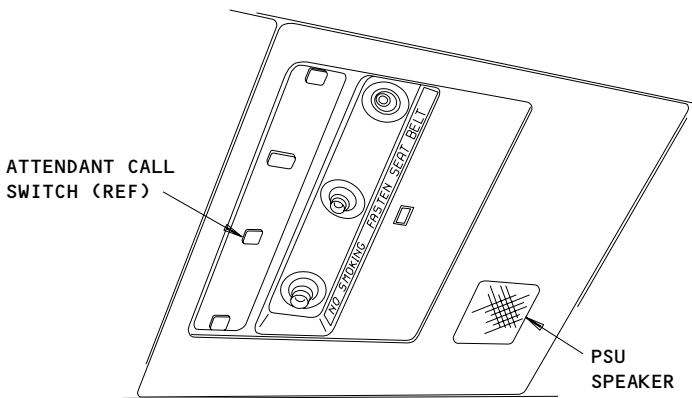
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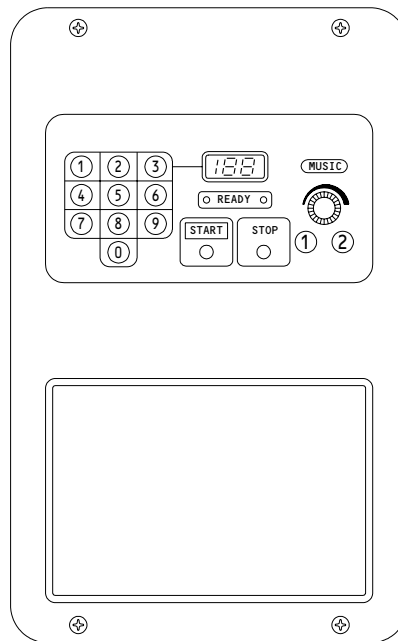


HANDSET AND SPEAKER LOCATIONS



PASSENGER SERVICE UNIT (REF)
(EXAMPLE)

(D)



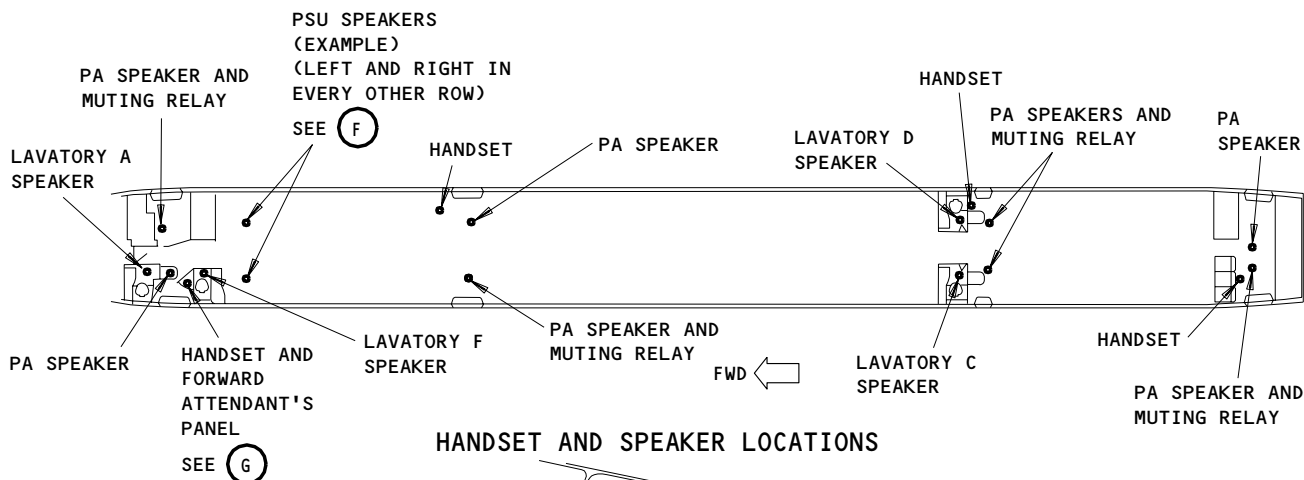
BOARDING MUSIC TAPE REPRODUCER

(E)

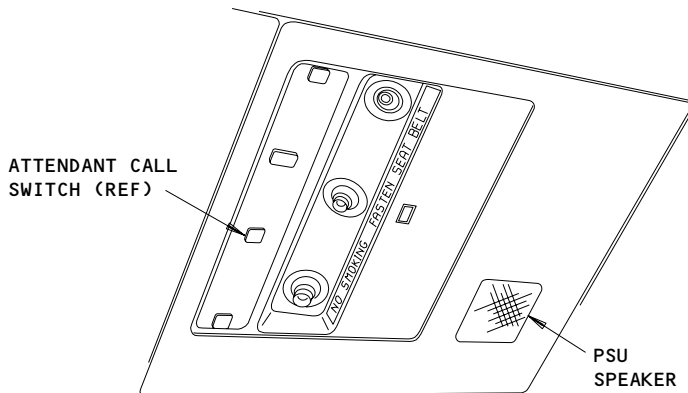
Passenger Address System - Component Location
Figure 1 (Sheet 2)

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GUI 001-014

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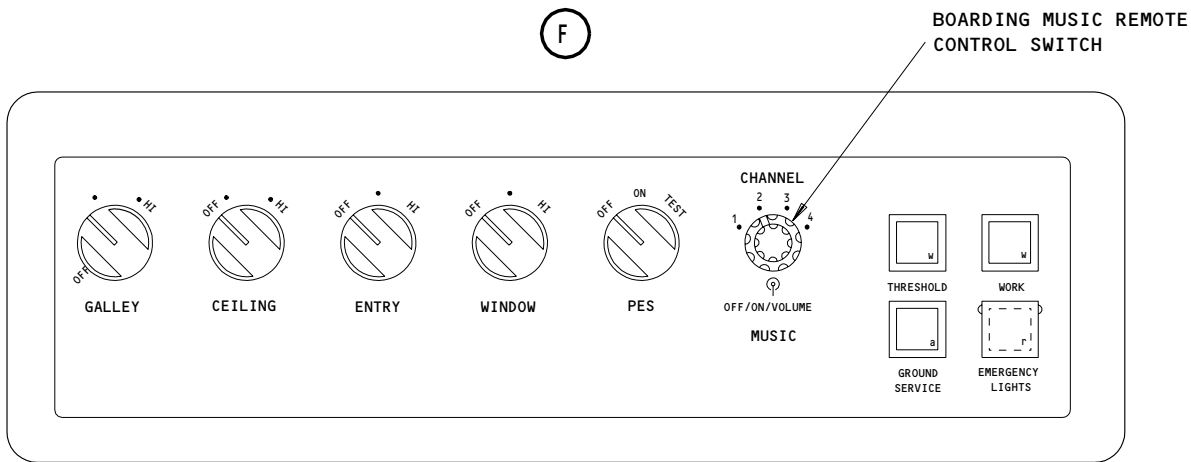


HANDSET AND SPEAKER LOCATIONS



PASSENGER SERVICE UNIT (EXAMPLE)

(F)



FORWARD ATTENDANT'S PANEL

(G)

**Passenger Address System - Component Location
Figure 1 (Sheet 3)**

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- (4) Collins PA Amplifier
 - (a) The PA amplifier front panel contains a three character LED for test meter readouts. A four position function switch is spring loaded from LOAD back to TONE and from LEVEL back to OPERATE. The LED is off when the TONE and OPERATE positions are selected. In the LOAD position, the amplifier measures the magnitude of the load impedance at 587 Hz. In the TONE position, a 587 Hz test tone is produced in the cabin and at attendant stations. In the LEVEL position, the switch measures main power amplifier output at 587 Hz into an internal load with the speakers disconnected as a reference for setting the gain controls. Normal operation of the PA amplifier requires the switch to be in the OPERATE position.
- B. GUI 115;
 - Entertainment Tape Reproducer
 - (1) Boarding music comes from the audio entertainment reproducer (AMM 23-34-00). In that system, boarding music is a unique channel of entertainment, which goes to the PA system.
 - (2) Boarding music channel selection and volume can be set with the MUSIC controls on the forward attendant's panel P21.
- C. GUI 001-114;
 - Boarding Music and Announcement Tape Reproducer
 - (1) The tape reproducer is a wall mount unit which supplies prerecorded announcements and boarding music programs. Power input is 115ac from the right utility bus. The unit is located at the forward attendant station.
 - (2) The tape reproducer uses a Philips-type audio cassette tape recorded in a four-track recording format, with the first two tracks for announcements and the last two tracks for music programs. Up to 16 different announcements may be recorded on each of tracks 1 and 2 (a total of 32 messages maximum) with 8 seconds blank tape between the announcements to help locate them. The announcements number consecutively from 1 to 16 on track 1 and from 17 to 32 on track 2 as counted from start of tape. The announcement for play is set by putting the assigned two-digit number on the front panel numeric display with the keypad. The tape plays in one direction only.
 - (3) The tape reproducer has a solid state stored voice (SSSV) to produce high reliability emergency announcements, which play when the applicable keyline switch operates. The highest priority keyline connects to the cabin decompression switch to override any other pre-recorded announcement or entertainment with the emergency decompression announcement.
 - (4) The tape reproducer front panel has a tape access door, lighted user controls and an LED display. A control knob and two switch-lights operate the boarding music functions:
 - (a) MUSIC-1,-2 switch-lights -- energize the boarding music to play the program (1, 2) selected. MUSIC-1 plays tape track 3 and MUSIC-2 plays tape track 4.

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- (b) MUSIC control -- adjusts the sound level.
- (5) The lighted keypad, LED display, and these switch-light buttons operate the prerecorded announcement functions:
 - (a) The keypad -- permits the user to put numbers into the display.
 - (b) READY light -- indicates that the displayed announcement is ready to play.
 - (c) START button -- plays the displayed announcement, and then stops.
 - (d) STOP button -- stops play of the tape and SSSV announcements. It also resets the display to " 0", and resets all operational modes.
- (6) The LED display shows the announcement number ready to play, or " 0" while no announcement plays. It also shows the system status with alpha-numeric status code:
 - (a) 0 -- shows that the system is not playing an announcement and is ready for the next instruction.
 - (b) E -- shows that the user has put in an invalid announcement number. The system permits announcement numbers from 01 through 32, as well as some special maintenance codes. To reset this status, push the STOP button and the correct number.
 - (c) EP -- (Emergency Playback) shows when the system plays an emergency announcement from prerecorded tape or from SSSV.
- (7) There are maintenance codes, which the user can put in at the keypad to do troubleshooting on the tape reproducer. These code numbers are all higher than the highest announcement number used. To use them, push the STOP button. Then push the applicable maintenance code on the keypad. Then push the MUSIC-1 switch-light to begin the operation. Push the STOP button to stop the maintenance operation:
 - (a) 80 -- (PLAY mode) Plays the tape track selected.
To use: push STOP, then 80, then MUSIC-1. The tape starts to play with the audio silent. Then push the number for the applicable tape track (1,2,3,4) to hear the audio on that track. During play the display shows the tape track in play.
 - (b) 81 -- (CUE mode) Makes the tape deck fast-wind the tape forward.
 - (c) 82 -- (REVIEW mode) Makes the tape deck fast-wind the tape back to the start.

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- (d) 83 -- (TEST mode) Makes the SSSV announcements play (if installed). To use: push STOP, then 83, then MUSIC-1, then the applicable announcement number from the list below. During play the display shows the announcement number. If the selected announcement is blank (not installed) the display resets to " 0".

Announcement Number	Display Shows
1 for SSSV DECOMP	01
2 for SSSV 1	02
3 for SSSV 2	03
4 for SSSV 3	04
5 for SSSV 4	05

- (8) To open the tape access door push the STOP button. Then push the access code (90, 91, 92, 93) as set by the internal DIP switch. Then push the MUSIC-1 button.

D. Passenger Address Speakers

- (1) Passenger address speakers provide PA announcements and boarding music to the passengers. Speakers are installed in the ceiling adjacent to passenger doors, lavatory ceilings and passenger service units.
- (2) Speakers mounted near attendants handsets are muted when the adjacent handset is taken off hook to prevent feedback when making a PA announcement. The audio accessory unit senses the off hook condition and provides a ground to energize the appropriate muting relay (Ref Fig. 1 for muted speaker locations).

3. Operation

A. Functional Description

(1) General

- (a) The PA system supplies voice messages, entertainment audio, and chime signals to all passengers and attendants in the passenger cabin through various speakers. Also, PA sidetone goes to the flight crew through the audio selector panels.
- (b) Each PA input has an order of priority. The pilot (flight compartment) announcements are the highest priority. The attendant announcements are the second highest priority. Video system audio and prerecorded announcements are both third priority. Prerecorded announcements override passenger entertainment audio. The lowest priority input is the boarding music. The PA inputs with higher priority will override those with lower priority.
- (c) Discrete signals from the passenger signs system cause a low tone chime signal to sound on all speakers. A single low chime sounds whenever the NO SMOKING or the FASTEN SEAT BELT signs are switched on or off.

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- (d) Discrete signals from the passenger service units (PSUs) or lavatories cause a single high tone chime to sound on the passenger compartment speakers when an ATTENDANT CALL switch is pushed.
 - (e) The lavatory smoke detectors are connected in parallel with the ATTENDANT CALL inputs. If the smoke detector senses smoke, it generates a continuously repeating attendant call discrete. This causes a continuous repeating chime from the passenger address amplifier.
 - (f) Discrete signals from the cabin interphone system cause chimes to sound on all PA speakers. A single hi/lo chime occurs when attendant call is dialed (FWD, MID, AFT) through the cabin interphone. The hi/lo chime is repeated three times when an ALERT call is dialed.
 - (g) Voice announcements from the pilots are made via the flight interphone system (Ref 23-51-00). The PA amplifier supplies sidetone to the pilots' headset during voice announcements. Voice announcements from the attendants are made via the cabin interphone system (Ref 23-42-00). Amplification by the PA amplifier is enabled by PTT inputs.
 - (h) The PA amplifier has circuitry to provide system testing. All PA speakers can be checked. Output levels of the amplifier can be determined to allow for adjustments.
 - (i) The system controls amplifier gains and compensates for increased noise levels when the oxygen masks are deployed and whenever either engine is operating.
- (2) Passenger Address Audio
- (a) Collins PA amplifier:
 - 1) Each audio input into the PA amplifier has a PTT control signal. Priorities within the PA amplifier are in numerical order with No. 1 as the highest priority input.
 - 2) Compression and amplification circuits within the PA amplifier have internal and external adjustments. The MASTER GAIN on the front panel allows the amplifier to be calibrated for full power output to a particular speaker load. The PA amplifier is capable of providing up to 120 watts from the main output and up to 20 watts from the auxillary output.
 - 3) The PA amplifier has circuitry to provide system testing. All PA speakers can be checked. Loads on the amplifier output circuit can be measured. Output levels of the amplifier can be measured to allow for adjustments.

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- (3) Speaker Distribution
 - (a) The PA amplifier main output drives all speakers. All speakers are connected in parallel. Speakers installed near attendant station handsets have a muting relay which disconnects the speakers when the handset is taken off hook. Reference wiring diagram (WDM 23-31-42) for speaker location, equipment numbers and connector numbers.
 - (b) The PSU speaker above the passenger seat group fwd of door 4 left is also muted by the aft attendant's handset.
- (4) GUI 115;
Tape Reproducer
 - (a) The tape reproducer is operated from the MUSIC control on the fwd attendant panel P21. Rotating the MUSIC control clockwise from the OFF position powers the capstan drive within the tape reproducer. The MUSIC control also controls the boarding music volume and provides the PTT 4 (priority 4) input to the PA amplifier.
 - (b) Audio from the tape reproducer is provided to the PA amplifier. The PA amplifier will output the tape reproducer audio provided a higher priority input (pilot or attendant announcement) is not present.
 - (c) Audio from the tape reproducer is also provided to the passenger entertainment system (Ref 23-34-00) for distribution to the passenger seats.
- (5) GUI 001-114;
Tape Reproducer (Fig. 3)
 - (a) The announcement/boarding music reproducer supplies PTT and audio signals to the PA amplifier. Pre-recorded announcements are input as PTT-3 (priority 3) level audio, boarding music is input as PTT-4 (priority 4) level audio.
 - (b) PTT signals from the flight compartment and the attendant handsets will momentarily pause the tape reproducer playback. When the PTT stops, tape playback resumes from where it was paused.
 - (c) If a prerecorded announcement is set to play while boarding music playback is in progress, the announcement will override the boarding music. The boarding music will resume when the announcement has completed.
 - (d) A discrete from the oxygen indication relay starts the emergency decompression announcement if decompression occurs. This announcement will override any other reproducer audio playback and be repeated automatically for a preset number of times.

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- (e) Audio from the tape reproducer also goes to the passenger seats through the passenger entertainment system (AMM 23-34-00).
- B. BITE (Collins PA Amplifiers)
- (1) PA Amplifier Front Panel
- (a) A four-position function select switch and three-digit LED display enable proper operation of the PA system to be verified.
- (2) PA Amplifier Test
- (a) OPERATE – Normal operating mode for the PA amplifier. Switch should be returned to this detented position whenever test are complete. The LED test meter remains off in this mode.
- NOTE: The function select switch must be in the OPERATE position for normal operation.
- (b) TONE – This mode provides a functional test of all speakers. A high chime tone (587 Hz) is continuously generated out to all speakers in the detented position. The LED test meter remains off in this mode.
- (c) LOAD (OHMS) – This mode measures the impedance of the speaker network at 587 Hz. No audible tone is heard on the speakers. The LED test meter displays 000 to 999 ohms. If upper limits are exceeded both decimal points will illuminate. This position is spring-loaded and will return to the TONE position when released.
- (d) LEVEL (VRMS) – This mode measures the PA amplifier output voltage to the speakers. The output is dissipated into an internal dummy load and the speakers are disconnected. The LED test meter displays 00.0 to 99.9 VRMS. If upper limits are exceeded both decimal points will illuminate. This position is spring-loaded and will return to the OPERATE position when released.

C. Control

- (1) Power
- (a) Supply electrical power (AMM 24-22-00/201).
- (2) GUI 001-114;
Boarding Music Control
- (a) Select either music program key 1 or 2, located beneath the MUSIC volume control, on the boarding music tape reproducer.
- NOTE: Operation of either MUSIC 1 or 2 keys is ignored when a announcement is being played back.
- (b) When the READY light is lit, press the START key to start boarding music operation.

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- (c) Adjust boarding music volume (MUSIC) to a comfortable listening level.
- (d) The STOP key may be used to stop boarding music playback.
- (3) GUI 115;
Boarding Music Control
 - (a) Rotate MUSIC control clockwise on fwd attendant panel P21.
 - (b) Adjust boarding music to a comfortable listening level.
- (4) Control for Voice Announcements
 - (a) Lift the attendant handset from the hook.
 - (b) Push the PA call switch.
 - (c) Push the PTT switch.
 - (d) Speak into the microphone to make the announcement.
- (5) GUI 001-114;
Prerecorded Announcement Control
 - (a) Do these steps to start an announcement:
 - 1) Enter the two digit number, from 01 to 32, for the message to be played on the 10-key pad on the front of the tape reproducer.
 - a) If an invalid message number is entered, an "E" appears on the numeric display.
 - b) If the wrong number is entered, use the STOP key to reset the numeric display to "0".
 - c) Use the STOP key to reset any error message displayed.
 - 2) When the READY light comes on, press the START key to begin playback of the selected message.
 - (b) During message search and playback, no other key operation other than the STOP key is accepted. On completion of the message playback, the numeric display is reset to "0". The STOP key interrupts the message being played back and resets the numeric display to "0".

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D. For more details on the Passenger Address System, refer to these wiring diagrams and functional schematics (as applicable):

- WDM 23-31-11: Passenger Address System Input Circuitry - Passenger Address System
- SSM 23-31-13: Passenger Address Output Controls
- WDM 23-31-17: Passenger Address Boarding Music - Tape Reproducer
- WDM 23-31-18: Passenger Address Boarding Music and Select Panel
- WDM 23-31-19: Passenger Address Boarding Music - Tape Reproducer and Announcement
- WDM 23-31-21: Passenger Address and Muting Speakers - Left
- WDM 23-31-22: Passenger Address Speakers - Left Output No. 1
- WDM 23-31-23: Passenger Address Speakers - Left Output No. 2
- WDM 23-31-24: Passenger Address Speakers - Left Output No. 3
- WDM 23-31-25: Passenger Address and Muting Speakers - Left
- WDM 23-31-26: Passenger Address LAV and Galley Speakers
- WDM 23-31-31: Passenger Address and Muting Speakers - Right
- WDM 23-31-32: Passenger Address Speakers - Right Output No. 1
- WDM 23-31-33: Passenger Address Speakers - Right Output No. 2
- WDM 23-31-34: Passenger Address Speakers - Right Output No. 3.
- WDM 23-31-41: Passenger Address Speakers and Audio Accessory Unit
- WDM 23-31-42: Passenger Address Speaker Location
- SSM 23-31-01: Passenger Address System

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




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

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PASSENGER ADDRESS SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
AMPLIFIER - PASSENGER ADDRESS, M177	1	1	119BL, MAIN EQUIP CTR, E4-3	23-31-01
CIRCUIT BREAKER -	1		FLT COMPT, P11	
PASS ADRS AMPL, C548		1	11C22	*
TAPE REPRO DC, C4027		1	11H34	*
CIRCUIT BREAKER -	1		119BL, MAIN EQUIP CTR, P37	
TAPE RPDR AC, C4028		1	37E2	*
DIODE	--	*	119BL, MAIN EQUIP CTR, E4-3, TB141A	*
RELAYS -				
ANNOUNCEMENT CONTROL, K10637 	1	1	119BL, MAIN EQUIP CTR, P36	*
MUTING, K10270	2,3	1	PASS. CABIN, ATTND CEILING PANEL	*
MUTING, K10498	2,3	1	PASS. CABIN, AFT L CEILING PANEL	*
MUTING, K10500	2,3	1	PASS. CABIN, FWD R CEILING PANEL	*
MUTING, K10503	2,3	1	PASS. CABIN, MID L CEILING PANEL	*
RELAYS - (31-01-34/101)				
FASTEN SEAT BELT, K10028				
NO SMOKING, K10029				
RELAY - (31-01-36/101)				
LEFT ENG START TO STOP, K10212				
RELAYS - (31-01-37/101)				
OXYGEN DEPLOY INDICATION, K10038				
RIGHT ENG START TO STOP, K10224				
REPRODUCER - BOARDING MUSIC TAPE, M10031 	3	1	119B1, MAIN EQUIP CTR, E4-4	23-31-06
REPRODUCER - BOARDING MUSIC TAPE, M10748 	2	1	PASS. CABIN, LEFT FWD LAV WALL	23-31-06
SPEAKERS -				
LAVATORY, LAV A, M10012	2,3	1	PASS. CABIN, LEFT FWD LAV	23-31-05
LAVATORY, LAV C, M10014	2,3	1	PASS. CABIN, LEFT MID LAV	23-31-05
LAVATORY, LAV D, M10015	2,3	1	PASS. CABIN, RIGHT MID LAV	23-31-05
LAVATORY, LAV F, M10013 	3	1	PASS. CABIN, LEFT FWD MID LAV	23-31-05
LAVATORY, LAV S, M10654 	2	1	PASS. CABIN, LEFT MID LAV	23-31-05
PA, B10110	2,3	1	PASS. CABIN, AFT L CEILING PANEL	23-31-08
PA, B10111	2,3	1	PASS. CABIN, FWD R CEILING PANEL	23-31-08
PA, B10112	2,3	1	PASS. CABIN, FWD L CEILING PANEL	23-31-08
PA, B10114	2,3	1	PASS. CABIN, MID R CEILING PANEL	23-31-08
PA, B10116	2,3	1	PASS. CABIN, MID L CEILING PANEL	23-31-08
PA, B10140	2,3	1	PASS. CABIN, AFT R CEILING PANEL	23-31-08
PSU, M10342	2,3	*	PASS. CABIN, PSU MODULES	23-31-02
PSU, M10343	2,3	2	PASS. CABIN, MID ATTND STA	23-31-02
SWITCH - (33-22-00/101)				
BOARDING MUSIC REMOTE CONTROL, S10179				
UNIT - (23-42-00/101)				
AUDIO ACCESSORY, M108				

* SEE THE WDM EQUIPMENT LIST

-  GUI 001-014
-  GUI 115

Passenger Address System - Component Index
Figure 101

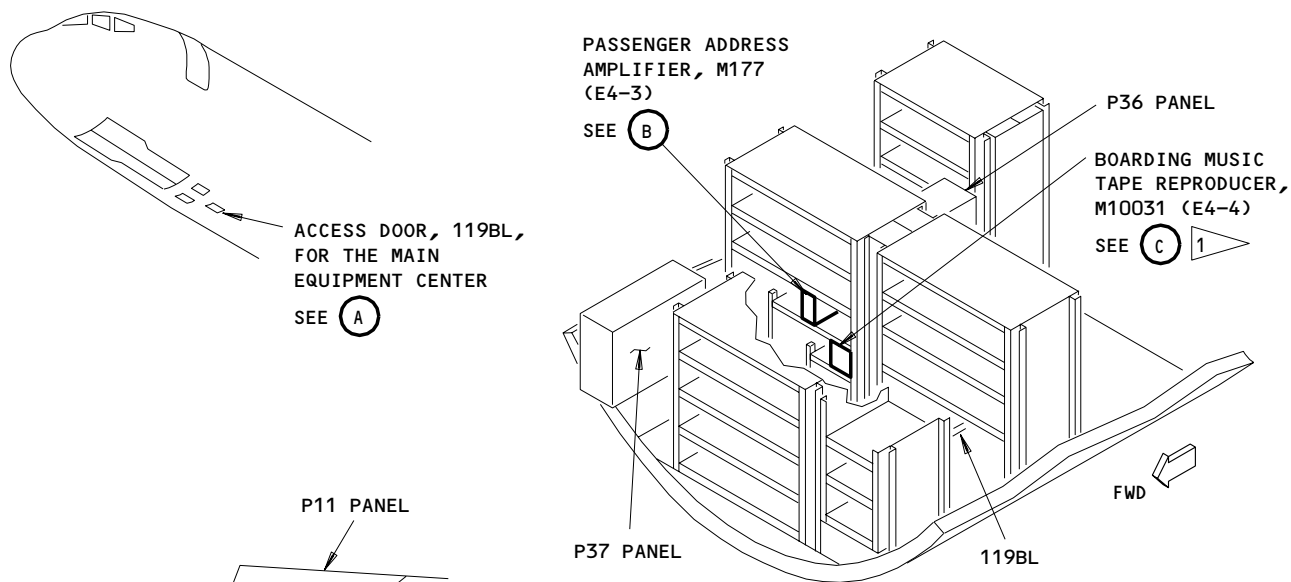
EFFECTIVITY

ALL

23-31-00

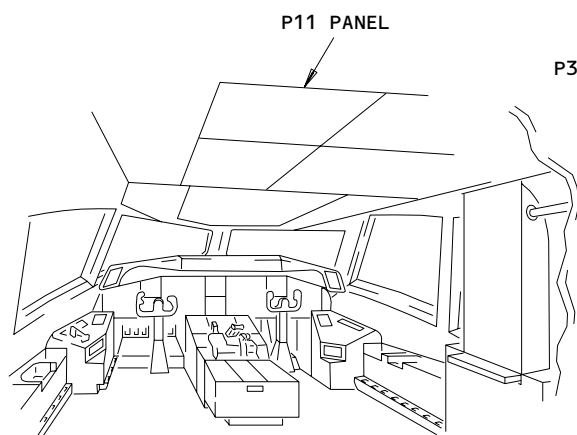
BOEING

757 FAULT ISOLATION/MAINT MANUAL

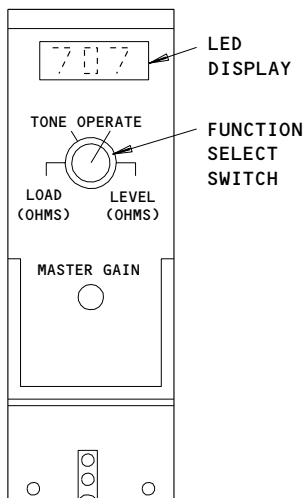


MAIN EQUIPMENT CENTER

(A)

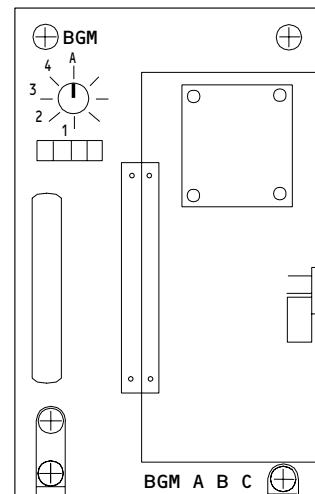


FLIGHT COMPARTMENT



PASSENGER ADDRESS AMPLIFIER, M177

(B)



BOARDING MUSIC TAPE REPRODUCER, M10031

(C) 1

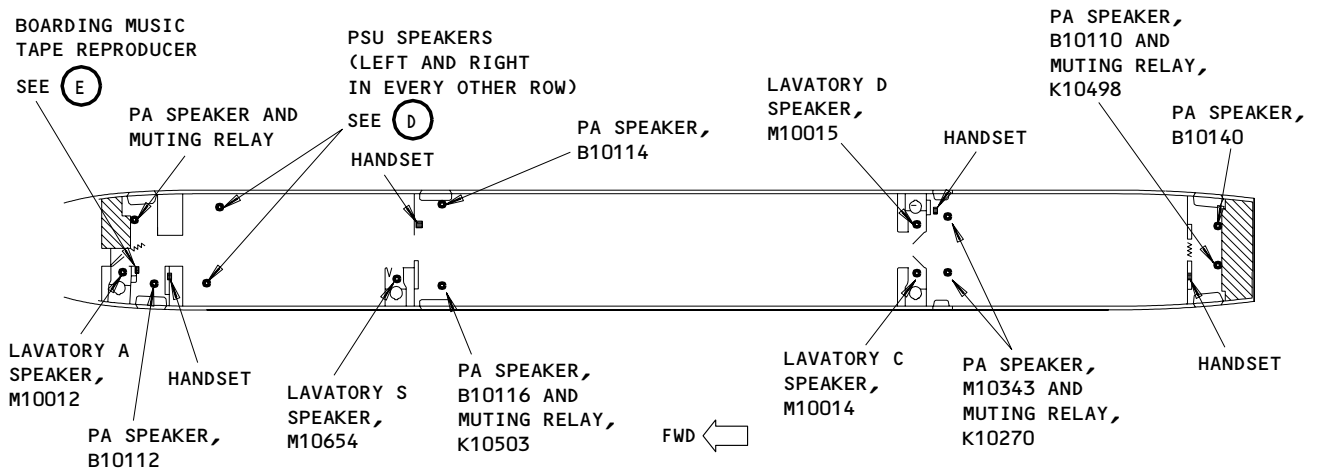
1 GUI 115

Passenger Address System - Component Location
Figure 102 (Sheet 1)

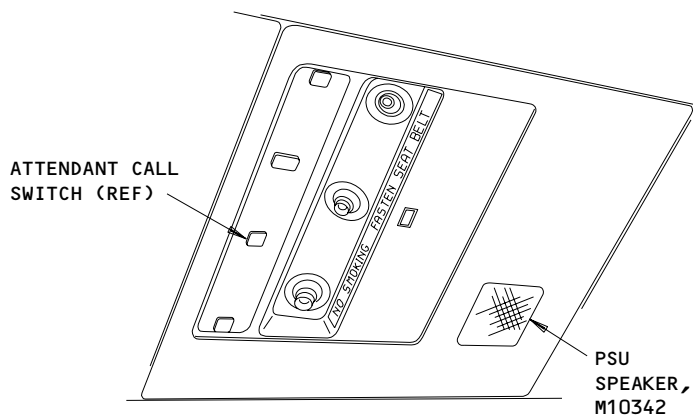
EFFECTIVITY

ALL

23-31-00

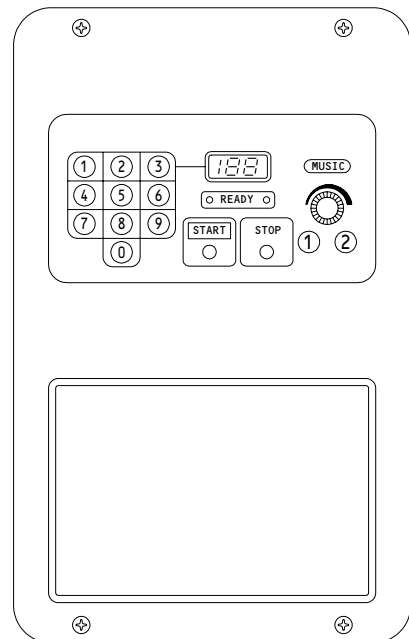


HANDSET AND SPEAKER LOCATIONS



**PASSENGER SERVICE UNIT (REF)
(EXAMPLE)**

(D)



BOARDING MUSIC TAPE REPRODUCER, M10748

(E)

**Passenger Address System - Component Location
Figure 102 (Sheet 2)**

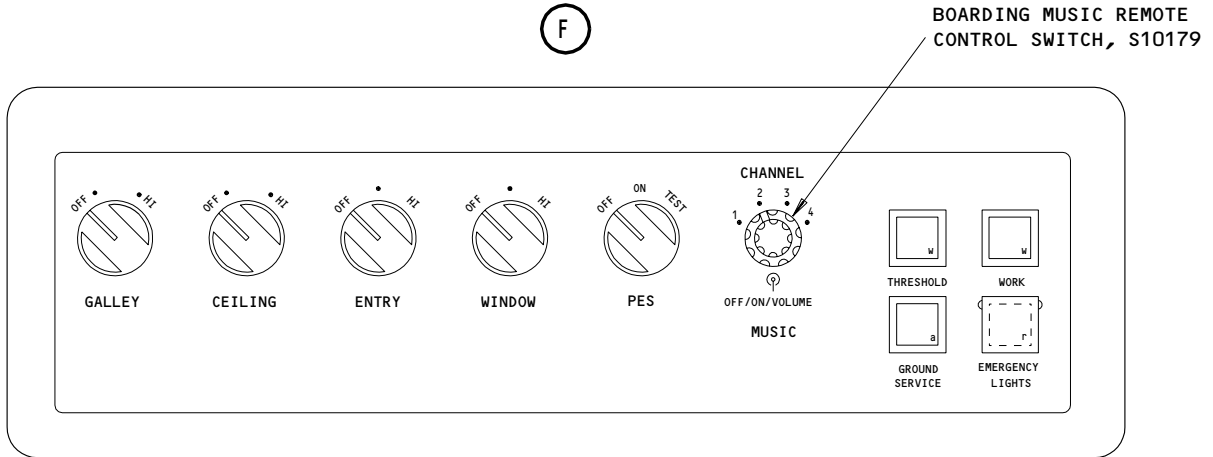
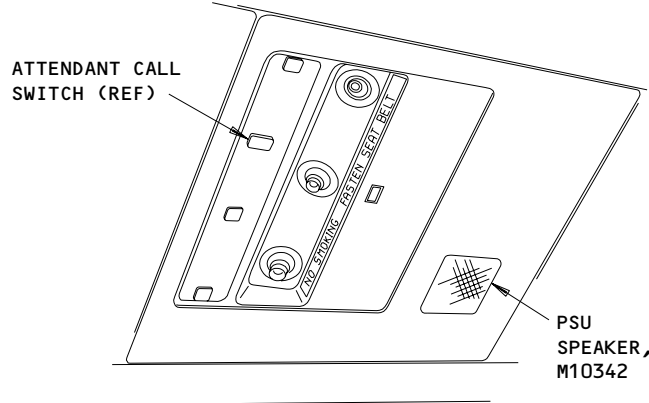
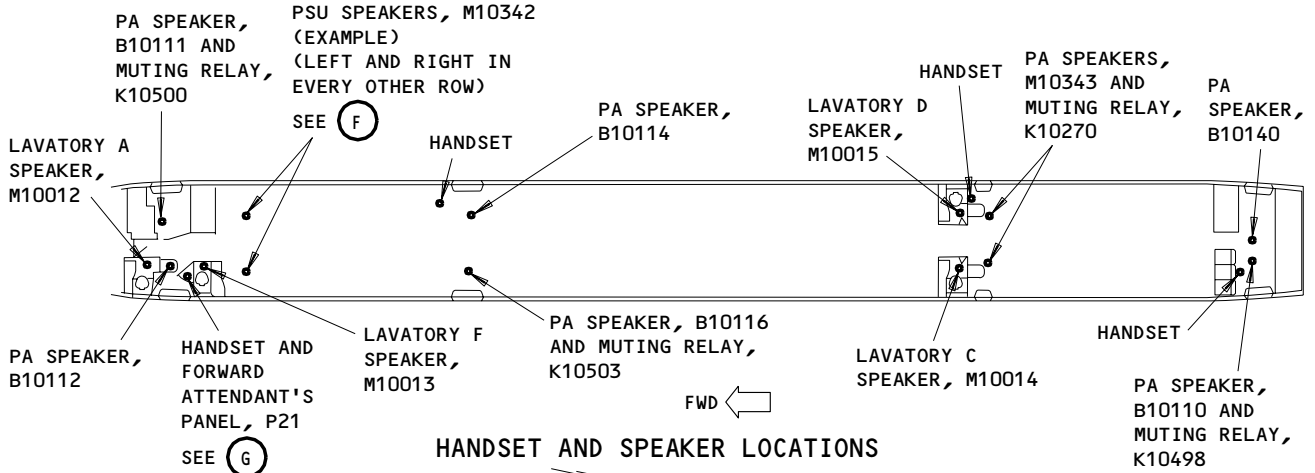
EFFECTIVITY
GUI 001-014

23-31-00

BOEING

757

FAULT ISOLATION/MAINT MANUAL



Passenger Address System - Component Location
 Figure 102 (Sheet 3)

EFFECTIVITY
 GUI 115

23-31-00

BT2607

09

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PASSENGER ADDRESS SYSTEM – ADJUSTMENT/TEST

1. General

- A. This procedure contains two tasks. The first task is the Operational Test of the passenger address system (PA system). The second task is the System Test of the PA system.
- B. The operational test gives a fast check of the PA system. The system test gives a more complete test of the PA system. Both the operational test and system test are divided into a sequence of tests.
- C. To do these tests these other systems must operate:
 - (1) Passenger Video Entertainment System (AMM 23-32-00)
 - (2) Passenger Audio Entertainment System (AMM 23-34-00)
 - (3) Cabin Interphone System (Ref 23-42-00)
 - (4) Flight Interphone System (AMM 23-51-00)

TASK 23-31-00-715-001

2. Passenger Address System – Operational Test

A. General

- (1) The operational test includes these tasks:
 - (a) Passenger Address Amplifier Test
 - (b) Boarding Music Test
 - (c) Chimes Test
 - (d) Voice Annunciations Test (with override and mute)

B. References

- (1) AMM 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) AMM 23-42-00/501, Cabin Interphone
- (3) AMM 23-51-00/501, Flight Interphone
- (4) AMM 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
 - 120 Main Equipment Center (RH side)
 - 200 Upper Half of Fuselage
- (2) Access Panel
 - 119BL Main Equipment Center

D. Prepare for the Operational Test

- S 865-002
- (1) Supply electrical power (AMM 24-22-00/201).

EFFECTIVITY

ALL

23-31-00

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S 015-114

- (2) Open the access door, 119BL, for the passenger address amplifier (AMM 06-41-00/201).

E. AIRPLANES WITH COLLINS PA AMPLIFIERS;
Passenger Address Amplifier Test

S 745-232

- (1) Do these steps at the front panel of the PA amplifier.
 - (a) Set the function select switch to TONE.
 - 1) Make sure a tone comes from the PA speakers.
 - (b) Momentarily set the function select switch to LOAD.
 - 1) Make sure the front panel shows a minimum of 30 OHMS.
 - (c) Set and hold the function select switch to LEVEL.
 - 1) Make sure the front panel shows 69.0 to 71.0 VRMS.
 - (d) Set the function select switch to OPERATE.

F. GUI 115;
Boarding Music Test

S 715-023

- (1) Do these steps at forward attendant panel, P21, to do a test of the volume control:
 - (a) Slowly turn MUSIC control from the OFF position to the HI position.
 - 1) Make sure the boarding music is clear and the sound increases.
 - (b) Set the MUSIC control to the usual level of sound.

G. Boarding Music Test (GUI 001-014)

S 715-027

- (1) Do these steps at the boarding music tape reproducer to test the boarding music operation:
 - (a) Push the MUSIC 1 switch.
 - (b) Push the START switch.
 - (c) Slowly turn the MUSIC level control clockwise.
 - 1) Make sure the boarding music is clear and the sound level increases.

EFFECTIVITY

ALL

23-31-00

- (d) Set the MUSIC level control to the usual sound level.
- (e) Push the MUSIC 2 switch.
 - 1) Make sure a different track of boarding music comes from the speakers.
- (f) Push the STOP switch.
 - 1) Make sure the boarding music stops.
- (g) Push the START switch to start the boarding music.
 - 1) Make sure the boarding music is heard clearly from the PSU and lavatory speakers.
- (h) Enter a valid, two-digit message number from 01 to 32.
- (i) Push the START switch.
 - 1) Make sure the boarding music stops and you hear the message.
 - 2) Make sure the boarding music starts when the message is completed.

H. Chime Test

S 715-041

- (1) Do these steps on overhead panel, P5, to do a test of the chime operation:
 - (a) Set the FASTEN SEAT BELT switch from the OFF position to the ON position.
 - 1) Make sure you hear a low chime sound from the PA speakers.
 - (b) Set the FASTEN SEAT BELT switch from the ON position to the OFF position.
 - 1) Make sure you hear a low chime sound from the PA speakers.

S 715-104

- (2) Repeat the "Chime Operation Test" with the NO SMOKING switch.

NOTE: If the NO SMOKING switch has been deactivated, the chime test for that switch is not required.

EFFECTIVITY

ALL

23-31-00

I. Voice Annunciations Test (with override and mute)

NOTE: There must be no feedback with the PA announcements.

S 865-042

- (1) Continue the boarding music operation.

S 715-043

- (2) Test of the Attendant PA override.
- (a) Do these steps with the forward attendant handset:
 - 1) Push the PA switch.
 - 2) Push the PTT switch.
 - a) Make sure the boarding music stops without much of a click.
 - 3) Speak into the handset microphone.
 - a) Make sure you hear clear voice in the passenger cabin.
 - b) Make sure no sound comes from the speakers adjacent to the handset.

S 865-045

- (3) Open this circuit breaker on the P11 panel, and attach a DO-NOT-CLOSE tag:
- (a) 11C23, INTERPHONE CABIN SERVICE

S 715-046

- (4) Do these steps at each handset location.
- (a) Lift the handset off the hook.
 - (b) DO NOT press the PA call switch.
 - (c) Push the PTT switch.
 - (d) Speak into the handset.
 - 1) Make sure you hear the clear voice.
 - (e) Put the handset back on the hook.

S 865-053

- (5) Close this circuit breaker on the P11 panel:
- (a) 11C23, INTERPHONE CABIN SERVICE

S 715-054

- (6) Do this test on each audio selector panel (ASP) in the flight compartment:
- (a) Push the PA MIC SELECTOR switch.
 - (b) Set the PA listen switch to the ON position.
 - (c) Use the hand microphone to make a PA voice announcement.
 - 1) Make sure the voice is heard clearly in all of the passenger cabin.

EFFECTIVITY

ALL

23-31-00

- (d) Hold the hand microphone PTT switch.
 - 1) Make sure PA announcement cannot be made from an attendant handset at the same time.
 - (e) Set the BOOM/OXY toggle switch to the BOOM position.
 - (f) Use the boom-microphone headset to make a voice announcement through the PA system.
 - (g) Adjust the PA listen switch.
 - 1) Make sure the sidetone is clear and volume varies accordingly.
 - (h) Set the toggle switch to the select OXY microphone position.
 - (i) Use the oxygen mask microphone to make a PA voice announcement with the headphones.
 - 1) Make sure the announcement is heard clearly in all of the passenger cabin.
 - 2) Make sure there is a PA sidetone at the usual sound level on headphones.
 - (j) Put the audio selector panels back to their usual configurations.
- J. Put the Airplane Back to Its Usual Condition

S 865-055

- (1) Put all of the handsets back on the hook.

S 865-056

- (2) Put the audio selector panels back to the usual condition.

S 865-113

- (3) GUI 115;
Turn the MUSIC control to OFF at the fwd attendant panel, P21.

S 865-058

- (4) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

ALL

23-31-00

TASK 23-31-00-735-059

3. Passenger Address System - System Test

A. General

- (1) This test does a check of the passenger address system which includes all system adjustment specifications that are necessary for correct performance.
- (2) The system test does a test for each of these systems:
 - (a) The Passenger Address Amplifier
 - (b) The Speaker Sound Level
 - (c) The Flight Mode
 - (d) The Decompression Mode
 - (e) The Boarding Music
 - (f) The PA Override
 - (g) The Microphones
 - (h) The Chimes

B. References

- (1) AMM 23-42-00/501, Cabin Interphone
- (2) AMM 23-51-00/501, Flight Interphone
- (3) AMM 24-22-00/201, Electrical Power - Control
- (4) AMM 36-00-00/201, Pneumatic Power - Apply and Remove
- (5) AMM 71-00-00/201, Power Plant

C. Equipment

- (1) Random noise generator - 543-1
Pacific Electro Dynamics
11465 Willows Rd. N.E.
Redmond, WA 98052
- (2) Sound Level Meter - Quest Electronics 2400-10 (or equivalent)
Rice Safety Equipment Co. In.
Seattle, Washington
- (3) Boarding music tapes - one set.

D. Access

- (1) Location Zones
 - 119/120 Main Equipment Center (RH side)
 - 200 Upper Half of the Fuselage
- (2) Access Panel
 - 119BL Main Equipment Center

E. Prepare for the System Test

- S 865-060
- (1) Supply electrical power (AMM 24-22-00/201).

EFFECTIVITY

ALL

23-31-00

S 015-116

- (2) Open the access door, 119BL, for the passenger address amplifier (AMM 06-41-00/201).

F. AIRPLANES WITH COLLINS PA AMPLIFIERS;
Passenger Address Amplifier Test

S 745-233

- (1) For a Collins PA Amplifier, do these steps at the front panel of the amplifier:
 - (a) Set the function select switch to TONE.
 - 1) Make sure a tone comes from the PA speakers.
 - (b) Momentarily set the function select switch to LOAD.
 - 1) Make sure the front panel shows a minimum of 30 OHMS.
 - (c) Set and hold the function select switch to LEVEL.
 - 1) Make sure the front panel shows 69.0 to 71.0 VRMS.
 - (d) Set the function select switch to OPERATE.

G. Speaker Sound Level Test

S 735-072

- (1) At the captains or first officers sidewall, connect a random noise generator to the hand microphone jack.

S 865-073

- (2) On the noise generator set the PWR/PTT switch to the ON position.

S 865-074

- (3) At the applicable audio selector panel on the P8 panel (Capt or F/O), push the PA microphone selector switch.

S 865-075

- (4) Set the sound level meter to the SLOW and "C" positions.

S 735-076

- (5) Use the sound level meter to do a check on each speaker:
 - (a) Slowly move the sound level meter across the speaker panel.

EFFECTIVITY

ALL

23-31-00

- (b) Make sure the highest value from the sound level meter shows as follows:

<u>Speaker</u>	<u>Sound Level</u>
PSU	109 ±5dB
Galley (ceiling)	109 ±5dB
Attendant (ceiling)	109 ±5dB
Lavatory	109 ±5dB

H. Flight Mode Test

S 865-078

- (1) Set the sound level meter to the SLOW and ALL PASS positions.

S 865-079

- (2) Momentarily dry-motor the left engine, refer to the operating procedures (AMM 71-00-00).

S 735-080

- (3) At the same time, move the sound level meter across the speaker panel.
- (a) Make sure the measured sound level is 6 ± 2 db more than the value written in the Speaker Sound Level Test.

NOTE: It is necessary to compare only one speaker.

I. Decompression Mode Test

S 865-267

CAUTION: MAKE SURE THE CIRCUIT BREAKERS "PASSENGER OXYGEN LEFT" AND "PASSENGER OXYGEN RIGHT" ARE OPEN. IF THEY ARE CLOSED, THE PSU OXYGEN MASKS WILL COME DOWN.

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
- (a) 11A21 or 11A23, PASSENGER OXYGEN LEFT
- (b) 11A23 or 11A24, PASSENGER OXYGEN RIGHT

S 865-247

- (2) Make sure these circuit breakers on the P11 panel are closed:
- (a) 11A24 or 11A25, PASSENGER OXYGEN CONT

EFFECTIVITY

ALL

23-31-00

(b) 11A25 or 11A26, PASSENGER OXYGEN MANUAL DEPLOY

S 865-199

(3) On the overhead panel, P5, push the PASS OXY switch to the ON position.

(a) Make sure the PASS OXY ON light comes on.

S 735-084

(4) At the PA speaker, move the sound level meter across the speaker panel.

(a) Make sure the measured sound level is 3 ± 1 db more than the values written in the Speaker Sound Level Test.

NOTE: It is only necessary to compare one speaker.

NOTE: If the Decompression Test and Flight Mode Test are done at the same time, the required sound level will be 9 ± 2 db more than the values recorded in Speaker Sound Level Test.

S 865-085

(5) Open this circuit breaker on the P11 panel:

(a) 11A24 or 11A25, PASSENGER OXYGEN CONT

S 865-049

(6) Close this circuit breaker on the P11 panel:

(a) 11A24 or 11A25, PASSENGER OXYGEN CONT

S 865-086

(7) On the overhead panel, P5, make sure the PASS OXY ON light goes off.

S 865-087

(8) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:

(a) 11A21 or 11A23, PASSENGER OXYGEN LEFT

(b) 11A23 or 11A24, PASSENGER OXYGEN RIGHT

S 865-088

(9) At the random noise generator, set the PWR/PTT switch to the OFF position.

EFFECTIVITY

ALL

23-31-00

S 865-050

(10) Disconnect the random noise generator from the hand microphone jack.

J. GUI 115;

Boarding Music Test

S 735-090

(1) Do these steps at the forward attendant panel, P21.

(a) Slowly turn the MUSIC control from the OFF position to the HI position.

1) Make sure you hear the boarding music clearly with a sound level that increases.

(b) Set the MUSIC control to the usual sound level.

S 865-193

(2) Do a check of the track selector function at the front panel of the tape reproducer in the main equipment center:

(a) Set the BGM TRACK SELECT switch to the 1 position.

1) Make sure you hear the boarding music clearly on the PSU and lavatory speakers.

(b) Set the BGM TRACK SELECT switch to the 2 position.

1) Make sure you hear a different track of boarding music clearly on the PSU and lavatory speakers.

(c) Set the BGM TRACK SELECT switch to the 3 position.

1) Make sure you hear a different track of boarding music clearly on the PSU and lavatory speakers.

(d) Set the BGM TRACK SELECT switch to the 4 position.

1) Make sure you hear a different track of boarding music clearly on the PSU and lavatory speakers.

(e) Set the BGM TRACK SELECT switch to the A position.

1) Make sure the boarding music stays on.

K. GUI 001-014;

Boarding Music Test

S 735-092

(1) Do a test of the boarding music at the front panel of the tape reproducer.

(a) Push the MUSIC 1 switch.

EFFECTIVITY

ALL

23-31-00

- (b) Push the START switch.
- (c) Slowly turn the VOLUME control clockwise.
 - 1) Make sure the boarding music is clear and the sound level increases.
- (d) Set the MUSIC control to the usual sound level.
- (e) Push the MUSIC 2 switch.
 - 1) Make sure a different track of boarding music comes from the speakers.
- (f) Push the STOP switch.
 - 1) Make sure the boarding music stops.
- (g) Push the START switch to start the boarding music.
 - 1) Make sure you heard the boarding music clearly on the PSU and lavatory speakers.
- (h) Enter a valid, two-digit message number from 01 to 32.
- (i) Push the START switch.
 - 1) Make sure the boarding music stops and you hear the announcement.
 - 2) Make sure the boarding music starts when the announcement is complete.

L. PA Override Test

S 865-124

- (1) Lift the forward attendant handset off the hook.

S 865-138

- (2) Push the PA switch.

S 715-126

- (3) Push the PTT switch.
 - (a) Make sure the boarding music stops.

S 755-127

- (4) Speak into the handset.
 - (a) Make sure you hear clear voice in the passenger cabin.
 - (b) Make sure no sound comes from the speaker adjacent to the handset.

M. Microphones Test

S 755-135

- (1) Use the boom microphone to make a PA announcement from the pilot's audio selector panel:
 - (a) Set the toggle switch to BOOM.

EFFECTIVITY

ALL

23-31-00

- (b) Push the MIC SELECTOR switch labeled PA on (switch-light on).
- (c) Set the PA volume control to listen.
- (d) Make a PA announcement with the boom microphone.
 - 1) Make sure the sidetone is clear.
 - 2) Make sure clear voice comes from the PA speakers.
 - 3) Make sure an attendant handset cannot make a PA announcement while the pilot does.

S 865-125

- (2) Open this circuit breaker on the P11 panel.
 - (a) 11C23, INTERPHONE CABIN SERVICE

S 715-136

- (3) Make sure the forward attendant handset can make a PA announcement.

S 865-126

- (4) Close this circuit breaker on the P11 panel:
 - (a) 11C23, INTERPHONE CABIN SERVICE

S 715-201

- (5) Use the pilot's hand microphone to make a PA announcement:
 - (a) Push the MIC SELECTOR switch labeled PA on (switch-light on).
 - (b) Use the hand microphone to make a PA announcement.
 - 1) Make sure clear voice comes from the PA speakers.
 - 2) Make a PA announcement from the pilot's microphone and an attendant's handset at the same time.
 - a) Make sure PA announcement cannot be made from an attendant's handset.

N. Chimes Test

S 865-171

- (1) Set the NO SMOKING switch from the OFF to ON position, at the overhead panel, P5.
 - (a) Make sure a low chime comes from the PA speakers.

S 865-129

- (2) Set the NO SMOKING switch from the ON to OFF position.
 - (a) Make sure a low chime comes from the PA speakers.

EFFECTIVITY

ALL

23-31-00

- S 865-130
- (3) Set the FASTEN SEAT BELT switch from the OFF to ON position.
 - (a) Make sure a low chime comes from the PA speakers.
- S 865-131
- (4) Set the FASTEN SEAT BELT switch from the ON to OFF position.
 - (a) Make sure a low chime comes from the PA speakers.
- 0. Put the Airplane Back to Its Usual Condition
 - S 865-099
 - (1) Put the audio selector panels back to the usual condition.
 - S 865-100
 - (2) Put all of the handsets back on the hook.
 - S 085-101
 - (3) Remove the test equipment:
 - (a) The random noise generator
 - (b) The sound level meter
 - (c) The test tapes.
 - S 865-187
 - (4) GUI 115;
Turn the MUSIC control to OFF at the forward attendant panel, P21.
 - S 415-121
 - (5) Close the access door, 119BL (AMM 06-41-00/201).
 - S 865-104
 - (6) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

ALL

23-31-00

PASSENGER ADDRESS SYSTEM – INSPECTION/CHECK

1. General

- A. This subject has one task. The task is a test of the passenger address speakers and of the PA override function. Use two persons to do this task. One person listens to the speakers in the passenger compartment. The other person operates the PA system from the flight compartment.

TASK 23-31-00-716-001

2. Test – Passenger Address Speakers and PA Override

A. References

- (1) AMM 23-31-06/201, Boarding Music Tape Reproducer
- (2) AMM 23-51-00/501, Flight Interphone
- (3) AMM 24-22-00/201, Electrical Power – Control

B. Access

- (1) Location Zones
200 Upper Half of Fuselage

C. Prepare for the Test

S 866-002

- (1) Supply electrical power (AMM 24-22-00/201).

D. PA Speakers Test

S 866-037

- (1) GUI 115;
Turn the MUSIC control on at the P21 forward attendant panel, and adjust the music level.

S 866-029

- (2) GUI 001-014;
Do these steps at the boarding music tape reproducer to start the music.

S 866-006

- (3) Do these steps at the boarding music tape reproducer to start the music.
 - (a) Make sure the unit has a cassette installed (AMM 23-31-06/201).

EFFECTIVITY

ALL

23-31-00

- (b) Push the MUSIC 1 switch.
- (c) Push the START switch.
- (d) Turn the VOLUME control to adjust the sound level.

S 756-008

- (4) Make sure you hear the boarding music from all PA speakers.

E. Handset and Speaker Mute Function test

S 756-009

- (1) Do these steps with each attendant handset:
 - (a) Lift the handset off the hook, and push the PA switch.
 - (b) Push the PTT switch.
 - 1) Make sure the boarding music stops, while you push the switch.
 - (c) Speak into the handset microphone.
 - 1) Make sure you hear a clear voice from all PA speakers.
 - 2) Make sure no sound comes from the speaker near the handset.
 - (d) Put the handset back on the hook.
 - 1) Make sure you hear the boarding music again.

F. Microphones and Override Functions Test

S 756-010

- (1) Do these steps at each audio selector panel (ASP) (AMM 23-51-00):
 - (a) Push the MIC SELECTOR switch labeled PA.
 - (b) Set the BOOM/OXY toggle switch to BOOM.
 - (c) Use the boom microphone in the headset to speak through the PA speakers.
 - 1) Make sure the boarding music stops.
 - 2) Make sure you hear a clear voice in the passenger cabin.
 - (d) Do these steps to do a test of the override function.
 - 1) Use any attendant handset to speak through the PA speakers.
 - 2) At the same time, use the boom microphone to speak through the PA speakers from the flight compartment.
 - a) Make sure the sound from the attendant handset stops, while the voice from the flight compartment comes through the PA speakers.

EFFECTIVITY

ALL

23-31-00

- (e) Set the BOOM/OXY toggle switch to OXY.
 - (f) Use the oxygen mask microphone to speak through the PA speakers.
 - 1) Make sure the boarding music stops.
 - 2) Make sure you hear a clear voice in the passenger cabin.
- G. Put the Airplane Back to Its Usual Condition
- S 866-081
 - (1) Set the audio selector panels back to the usual configurations.
 - S 866-084
 - (2) GUI 001-014;
Push the STOP button on the tape reproducer.
 - S 866-089
 - (3) Remove electrical power, if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

ALL

23-31-00

09.1

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PASSENGER ADDRESS AMPLIFIER – REMOVAL/INSTALLATION

1. General

- A. The passenger address amplifier, M177, is installed in the main equipment center on shelf 3 of rack E4 (E4-3).
- B. This procedure contains two tasks. The first task removes the passenger address amplifier. The second task installs the passenger address amplifier.

TASK 23-31-01-004-001

2. Passenger Address Amplifier Removal

A. References

- (1) 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) 20-10-01/401, E/E Rack Mounted Components

B. Access

(1) Location Zones

- 120 Main Equipment Center (RH side)
- 211 Control Cabin – Sect 41 (LH side)

(2) Access Panel

- (a) 119BL Main Equipment Center

C. Passenger Address Amplifier Removal (Fig. 401)

S 864-002

- (1) Open this circuit-breaker on the overhead circuit-breaker panel, P11, and attach the DO-NOT-CLOSE tag:
 - (a) 11C22, PASS ADRS AMPL

S 024-005

- (2) Remove the passenger address amplifier (AMM 20-10-01/401).

TASK 23-31-01-404-006

3. Passenger Address Amplifier Installation

A. References

- (1) 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) 20-10-01/401, E/E Rack Mounted Components

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- (3) 24-22-00/201, Electrical Power - Control
- B. Access
 - (1) Location Zones
 - 120 Main Equipment Center (RH side)
 - 211 Control Cabin - Sect 41 (LH side)
 - (2) Access Panel
 - 119BL Main Equipment Center

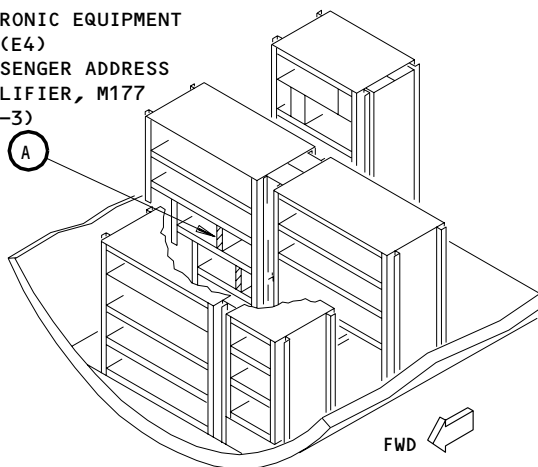
C. PA Amplifier Installation (Fig. 401)

- S 864-030
 - (1) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is open and has a DO-NOT-CLOSE tag attached:
 - (a) 11C22, PASS ADRS AMPL
- S 424-008
 - (2) Install the passenger address amplifier (AMM 20-10-01/401).

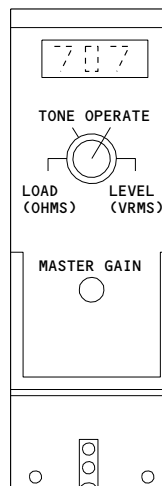
ELECTRONIC EQUIPMENT RACK (E4)

- PASSENGER ADDRESS AMPLIFIER, M177 (E4-3)

SEE (A)



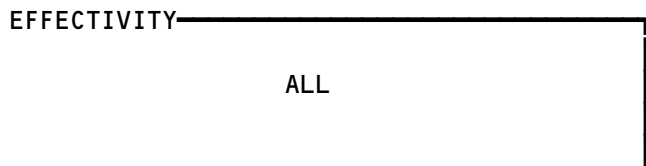
MAIN EQUIPMENT CENTER



PA AMPLIFIER

(A)

Passenger Address Amplifier Installation
Figure 401



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S 864-010

- (3) Remove the DO-NOT-CLOSE tag and close this circuit-breaker on the P11 panel:
 - (a) 11C22, PASS ADRS AMPL

D. PA Amplifier Installation Test

S 864-042

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-043

- (2) Turn the function select switch on the PA amplifier to LEVEL.
 - (a) Make sure the front panel display reads 69.0 to 71.0 VRMS.

S 864-044

- (3) Turn the function select switch to OPERATE.

E. Put the Airplane Back to Its Usual Condition

S 414-028

- (1) Close the access door, 119BL (AMM 06-41-00/201).

S 864-024

- (2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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PSU SPEAKER – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes a PSU speaker. The second task installs the speaker and does a test of the installation.
- B. PSU speakers are installed in the passenger service units (PSU) in the passenger compartment.

TASK 23-31-02-004-001

2. PSU Speaker Removal

A. Access

- (1) Location Zones
200 Upper half of Fuselage

B. PSU Speaker Removal (Fig. 401)

S 864-002

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag.
 - (a) 11C22, PASS ADRS AMPL

S 014-004

- (2) Open the PSU oxygen-light spacer panel (PSU panel) for the PSU speaker assembly:
 - (a) Push a small screwdriver (or other applicable tool) into the access hole on each side of the PSU panel to release the latches.
 - (b) Lower the PSU panel until the lanyard holds it.
 - (c) Remove the hook from the loop on the PSU.
 - (d) Lower the PSU panel to the full length of the lanyard.

S 034-007

- (3) Disconnect the wires from the terminals of the speaker transformer.

S 024-008

- (4) AIRPLANES WITH SPRING-MOUNT SPEAKERS;
Remove the speaker from the panel assembly:
 - (a) Move the two torsion springs that attach the speaker.

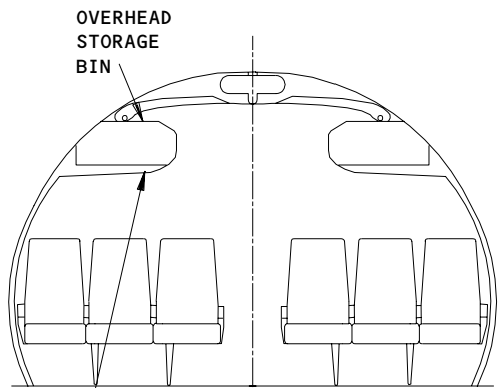
EFFECTIVITY

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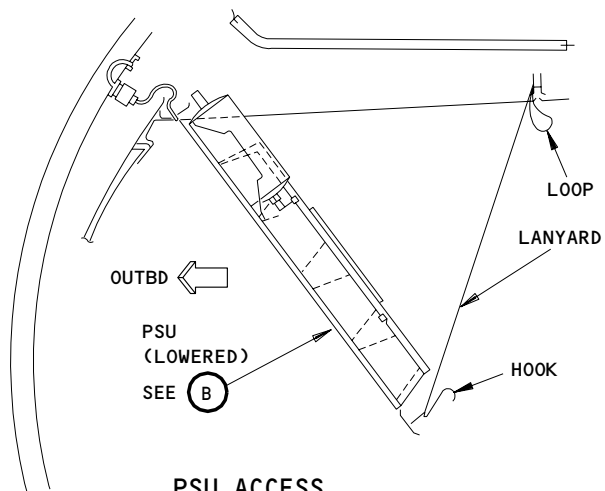
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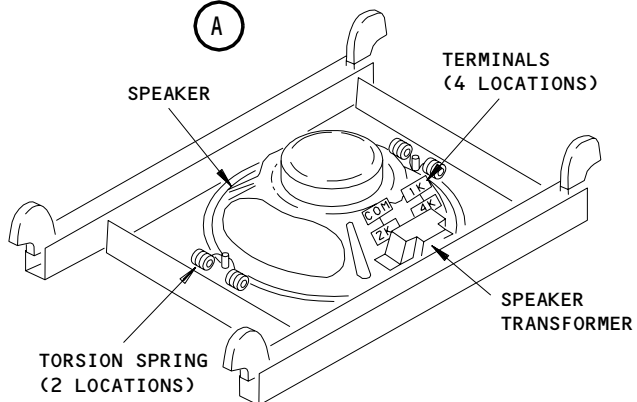
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PSU ACCESS
SEE (A)

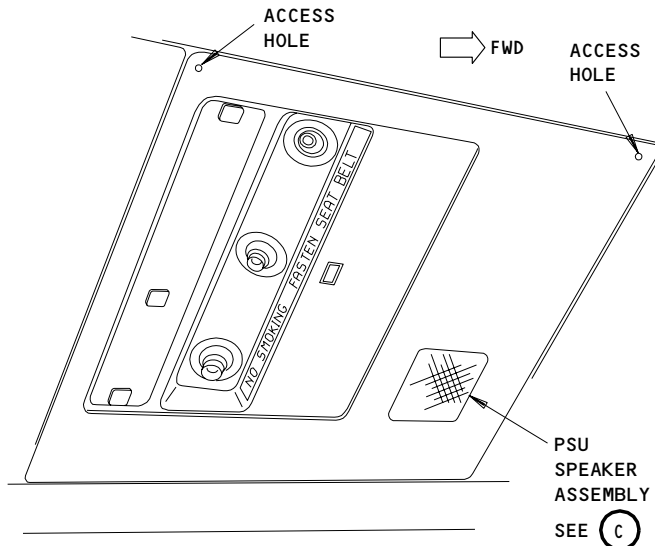


PSU ACCESS
(A)

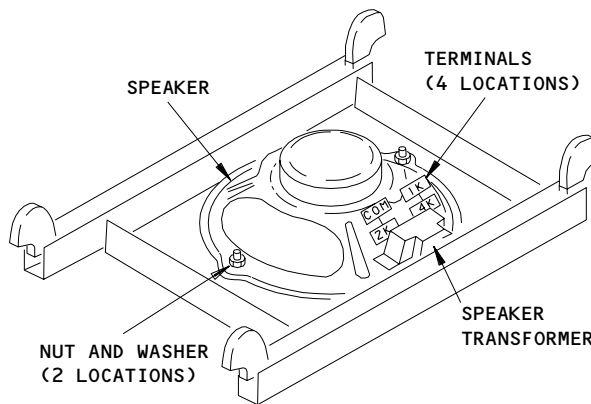


PSU SPEAKER ASSEMBLY (SPRING MOUNTED)

(C)



PSU (BOTTOM VIEW)
(B)



PSU SPEAKER ASSEMBLY (STUD MOUNTED)

PSU Speaker Installation
Figure 401

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- (b) Lift the speaker to remove it from the panel assembly.
- (c) Keep the gasket for the installation.

S 024-009

- (5) AIRPLANES WITH STUD-MOUNT SPEAKERS;
Remove the speaker from the panel assembly:
 - (a) Remove the two nuts and washers that attach the speaker.
 - (b) Lift the speaker to remove it from the panel assembly.
 - (c) Keep the nuts and gasket for the installation.

TASK 23-31-02-404-009

3. PSU Speaker Installation

A. References

- (1) AMM 24-22-00/201, Electrical Power - Control

B. Access

- (1) Location Zones
200 Upper Half of Fuselage

C. PSU Speaker Installation (Fig. 401)

S 864-025

- (1) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is open and a DO-NOT-CLOSE tag is attached:
 - (a) 11C22, PASS ADRS AMPL

S 434-010

- (2) Install the speaker gasket onto the panel assembly.

S 424-011

- (3) AIRPLANES WITH SPRING-MOUNTED SPEAKERS;
Install the speaker into the panel assembly:
 - (a) On the panel assembly, move the torsion springs to permit speaker installation.
 - (b) Put the speaker onto the panel assembly with the gasket aligned.

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(c) Release the torsion springs with the speaker in the correct position.

S 424-012

(4) AIRPLANES WITH STUD-MOUNTED SPEAKERS;

Install the speaker into the panel assembly.

(a) Put the speaker onto the panel assembly with the gasket aligned.

(b) Attach the speaker to the panel assembly with the two nuts and washers.

S 434-013

(5) Connect the electrical wires to the COM and 2K terminals of the speaker transformer.

S 414-016

(6) Close the PSU panel assembly:

(a) Lift the PSU panel assembly and attach the lanyard hook to the loop.

(b) Close the PSU panel fully.

1) Make sure the two latches close.

D. PSU Speaker Installation Test

S 864-016

(1) Supply electrical power (AMM 24-22-00/201).

S 864-018

(2) Remove the DO-NOT-CLOSE tag and close the P11 panel circuit-breaker as follows:

(a) 11C22, PASS ADRS AMPL

S 714-024

(3) Use a handset to make a PA announcement.

(a) Make sure clear voice comes from the installed speaker.

S 864-026

(4) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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LAVATORY SPEAKER – REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) Forward Lavatory-A Speaker Removal
 - (2) Forward Lavatory-A Speaker Installation (with installation test)
 - (3) Ceiling-Mounted Lavatory Speaker Removal
 - (4) Ceiling-Mounted Lavatory Speaker Installation (with installation test)
- B. The passenger address speaker for the forward lavatory A is installed on the inboard wall to the right of the mirror and above the fluorescent lamp. In all other lavatories, the passenger address speaker is installed in the lavatory ceiling.
- C. To do this procedure the cabin interphone system must operate (AMM 23-42-00).

TASK 23-31-05-004-001

2. Forward Lavatory-A Speaker Removal

- A. References
 - (1) AMM 24-22-00/201, Electrical Power – Control
 - (2) AMM 33-26-00/201, Lavatory Lights – Maintenance Practices
- B. Access
 - (1) Location Zones
 - 211 Control Cabin (LH side)
 - 221 Passenger Cabin (LH side)
- C. Forward Lavatory-A Speaker Removal (Fig. 401)
 - S 864-002
 - (1) Open this circuit-breaker on the overhead circuit-breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 - (a) 11C22, PASS ADRS AMPL
 - S 014-008
 - (2) Remove the lens cover on the fluorescent lamp to the right of the mirror (AMM 33-26-00/201).

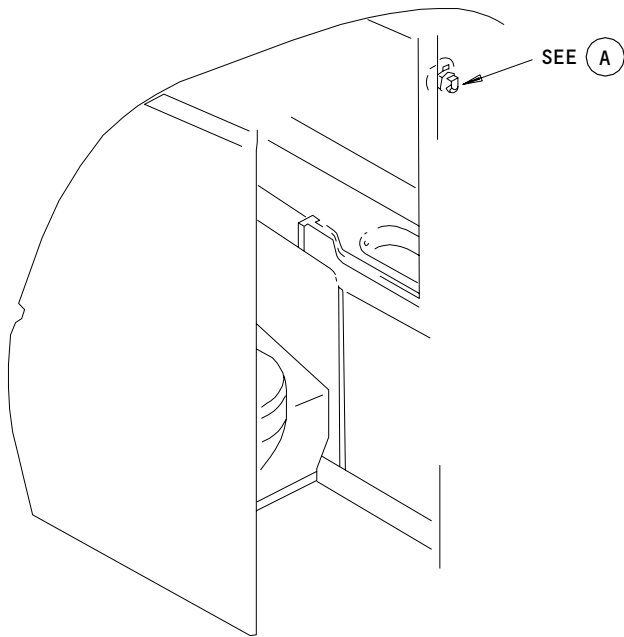
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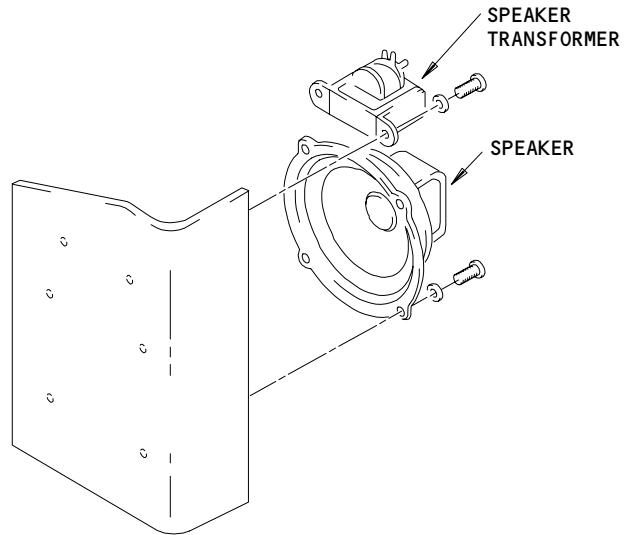
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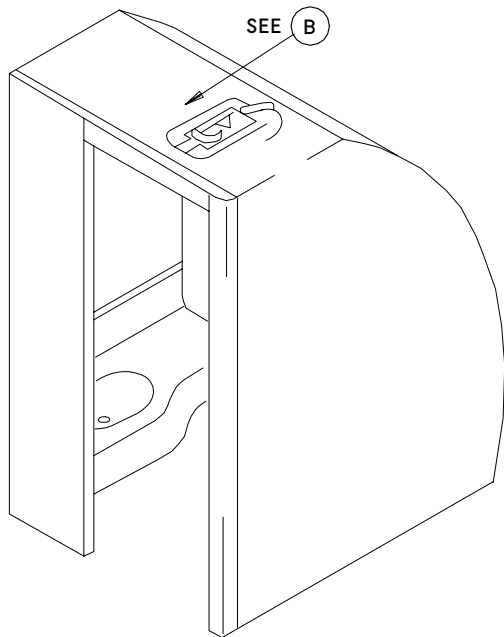
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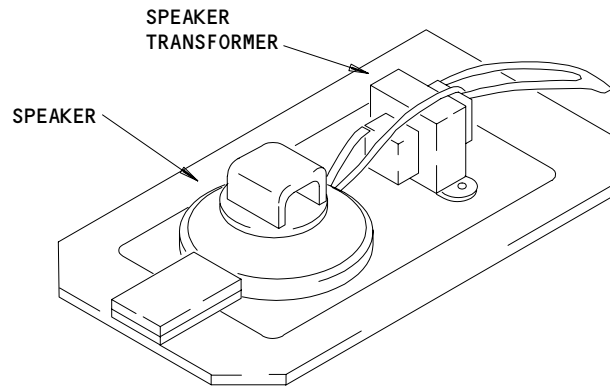
LAVATORY A SPEAKER



(A)



LAVATORY SPEAKER



(B)

Lavatory PA Speaker Installation
Figure 401

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S 034-005
(3) Disconnect the speaker wires from the transformer terminals.

S 034-006
(4) Remove the four screws and washers that hold the speaker to the inboard wall.

S 024-007
(5) Remove the speaker.

TASK 23-31-05-404-009

3. Forward Lavatory-A Speaker Installation

A. References

- (1) AMM 24-22-00/201, Electrical Power - Control
- (2) AMM 33-26-00/201, Lavatory Lights - Maintenance Practices

B. Access

- (1) Location Zones
 - 211 Control Cabin - Sect 41 (LH side)
 - 221 Passenger Cabin - Sect 41 (LH side)

C. Forward Lavatory-A Speaker Installation (Fig. 401)

S 424-010
(1) Put the speaker into the inboard wall.

S 434-011
(2) Install the four screws and washers the hold the speaker on the inboard wall.

S 434-042
(3) Connect the speaker wires to the correct locations on the transformer terminals.

S 414-012
(4) Install the lens cover on the fluorescent lamp (AMM 33-26-00/201).

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D. Lavatory Speaker Installation Test

S 864-009

- (1) Supply the electrical power (AMM 24-22-00/201).

S 864-010

- (2) Remove the DO-NOT-CLOSE tag and close this circuit-breaker on the P11 panel:
 (a) 11C22, PASS ADRS AMPL

S 714-013

- (3) Speak into an attendant handset.
 (a) Make sure the voice comes through the speaker.

E. Put the Airplane Back to Its Usual Condition

S 864-015

- (1) Put the handset back on the hook.

S 864-016

- (2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 23-31-05-004-018

4. Ceiling-Mounted Lavatory Speaker Removal

A. References

- (1) AMM 24-22-00/201, Electrical Power - Control
 (2) AMM 33-26-00/201, Lavatory Lights - Maintenance Practices

B. Access

- (1) Location Zones
- | | |
|-----|-------------------------------------|
| 211 | Control Cabin - Sect 41 (LH side) |
| 221 | Passenger Cabin - Sect 41 (LH side) |
| 231 | Passenger Cabin - Sect 43 (LH side) |
| 251 | Passenger Cabin - Sect 46 (LH side) |
| 252 | Passenger Cabin - Sect 46 (RH side) |

C. Ceiling-Mounted Lavatory Speaker Removal (Fig. 401)

S 864-019

- (1) Open this circuit-breaker on the overhead circuit-breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 (a) 11C22, PASS ADRS AMPL

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- S 014-021
- (2) Remove the small circular plug in the ceiling near the passenger address speaker.

- S 034-023
- (3) Remove the screw in the hole.

- S 014-024
- (4) Lower the lavatory ceiling panel.

- S 914-024
- (5) Identify the speaker wires and their locations on the transformer terminals.

- S 034-025
- (6) Disconnect the speaker wires from the transformer terminals.

- S 034-026
- (7) Remove the four screws and washers that hold the speaker to the ceiling panel.

- S 024-027
- (8) Remove the speaker and keep the hardware for the installation.

TASK 23-31-05-404-028

5. Ceiling-Mounted Lavatory Speaker Installation

A. References

- (1) AMM 24-22-00/201, Electrical Power - Control
- (2) AMM 33-26-00/201, Lavatory Lights - Maintenance Practices

B. Access

(1) Location Zones

211	Control Cabin - Sect 41 (LH side)
221	Passenger Cabin - Sect 41 (LH side)
231	Passenger Cabin - Sect 43 (LH side)
251	Passenger Cabin - Sect 46 (LH side)
252	Passenger Cabin - Sect 46 (RH side)

C. Ceiling-Mounted Lavatory Speaker Installation (Fig. 401)

S 424-029

- (1) Put the speaker onto the ceiling panel at its usual position.

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- S 434-030
- (2) Install the four screws and washers that hold the speaker on the ceiling panel.
- S 434-031
- (3) Connect the speaker wires to the correct locations on the transformer terminals.
- S 414-032
- (4) Lift the ceiling panel into the closed position.
- S 034-033
- (5) Install the screw that attaches the ceiling panel to the ceiling.
- S 414-034
- (6) Install the small circular plug in the hole.
- D. Lavatory Speaker Installation Test
- S 864-035
- (1) Supply the electrical power (AMM 24-22-00/201).
- S 864-036
- (2) Remove the DO-NOT-CLOSE tag and close this circuit-breaker on the P11 panel:
- (a) 11C22, PASS ADRS AMPL
- S 714-039
- (3) Speak into an attendant handset.
- (a) Make sure clear voice comes through the speaker.
- E. Put the Airplane Back to Its Usual Condition
- S 864-041
- (1) Put the handset back on the hook.
- S 864-042
- (2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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BOARDING MUSIC TAPE REPRODUCER – MAINTENANCE PRACTICES

1. General

- A. The boarding music tape reproducer (referred to as the tape reproducer), M10031, is installed on shelf E4-4 in the main equipment center.
- B. This procedure contains six tasks. The first two tasks remove and install the tape reproducer. The third task does a test of the tape reproducer. The fourth and fifth tasks remove and install the tape magazine. The sixth task cleans the tape reproducer.

TASK 23-31-06-002-001-001

2. Remove the Boarding Music Tape Reproducer

- A. References
 - (1) 20-10-01/401, EE Rack-Mounted Components
- B. Access
 - (1) Location Zones
 - 119/120 Main Equipment Center
 - 211/212 Flight Compartment
 - (2) Access Panel
 - 119BL Main Equipment Center

C. Remove Boarding Music Tape Reproducer

- S 862-002-001
 - (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 - (a) 11H34, TAPE REPRODUCER DC
- S 022-003-001
 - (2) Remove the tape reproducer from shelf E4-4 (Ref 20-10-01/401).

TASK 23-31-06-402-004-001

3. Install the Boarding Music Tape Reproducer

- A. References
 - (1) 20-10-01/401, EE Rack-Mounted Components

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B. Access

(1) Location Zones

119/120 Main Equipment Center
211/212 Flight Compartment

(2) Access Panel

119BL Main Equipment Center

C. Install Boarding Music Tape Reproducer

S 422-005-001

- (1) Install the tape reproducer on shelf E4-4 (Ref 20-10-01/401).

S 862-006-001

- (2) Make sure the tape magazines are installed.

S 862-007-001

- (3) Remove the DO-NOT-CLOSE tag, and close this circuit breaker on the P11 panel:

(a) 11H34, TAPE REPRODUCER DC

S 712-008-001

- (4) Do the procedure, Test of the Tape Reproducer.

TASK 23-31-06-702-009-001

4. Test of the Tape Reproducer

A. References

- (1) 24-22-00/201, Electrical Power - Control

B. Access

(1) Location Zones

211/212 Flight Compartment
221 Passenger Cabin - Section 41 (Left)

C. Test of the Tape Reproducer

S 862-010-001

- (1) Supply electrical power (Ref 24-22-00/201).

- S 862-032-001
- (2) Make sure this circuit breaker on the P11 panel is closed:
 - (a) 11C22, PASS ADRS AMPL

- S 712-013-001
- (3) Do these steps to do a test of the tape reproducer.
 - (a) Turn the MUSIC control to ON at the forward attendant panel, P21.
 - 1) Make sure you hear the boarding music clearly.
 - 2) Make sure the sound level changes when you turn the MUSIC control.
 - (b) Turn the MUSIC control to OFF.

- S 862-011-001
- (4) Remove electrical power if it is not necessary (Ref 24-22-00/201).

TASK 23-31-06-002-012-001

5. Remove the Tape Magazine

A. Access

- (1) Location Zones
119/120 Main Equipment Center

- (2) Access Panel
119BL Main Equipment Center

B. Remove Tape Magazine

- S 012-014-001
- (1) Open the access door on the front panel of the tape reproducer.

- S 022-015-001
- (2) Lift the tape magazine, and remove it from tape reproducer.

TASK 23-31-06-402-016-001

6. Install the Tape Magazine

A. Access

- (1) Location Zones
119/120 Main Equipment Center

- (2) Access Panel
119BL Main Equipment Center

B. Install the Tape Magazine

- S 412-017-001
- (1) Open the access door on the front panel of the tape reproducer.
- S 422-018-001
- (2) Insert the tape magazine between the guides until it engages into the magazine connector. Make sure the tape magazine is correctly installed in a vertical position.
- S 412-019-001
- (3) Close the access door, and latch it to the front panel.
- S 712-020-001
- (4) Do the procedure, Test of the Tape Reproducer.

TASK 23-31-06-102-021-001

7. Clean the Tape Reproducer

- A. Consumable Materials
 - (1) Isopropyl Alcohol (Ref 20-30-02/201)
 - (2) Clean cotton tip applicator - commercial source
- B. References
 - (1) 20-10-01/401, EE Rack-Mounted Components
- C. Access
 - (1) Location Zones
 - 119/120 Main Equipment Center
 - 211/212 Flight Compartment
 - (2) Access Panel
 - 119BL Main Equipment Center

D. Prepare to Clean the Tape Reproducer

S 862-022-001

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 - (a) 11H34, TAPE REPRODUCER DC

S 862-023-001

- (2) Open the access door on the front panel of the tape reproducer.

S 862-024-001

- (3) Remove the tape magazine.

S 212-025-001

- (4) Examine each tape magazine for damage.

E. Clean the Tape Reproducer

S 212-026-001

- (1) Examine the tape heads, guides, capstan and sensors for unwanted material.

S 112-027-001

CAUTION: DO NOT USE STRONG DETERGENTS OR SOLVENTS TO CLEAN THE HEADS. BE VERY CAREFUL OR YOU CAN CAUSE DAMAGE TO THE HEADS.

- (2) Carefully clean the head with a cotton tip applicator moist with isopropyl alcohol. Clean the head until the cotton tip does not change color.

S 162-028-001

- (3) Let the surfaces of the head dry fully.

F. Install the Tape Magazine

S 422-029-001

- (1) Install the tape magazine.

S 412-030-001

- (2) Close the access door and latch it to the front panel.

S 862-033-001

- (3) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
 - (a) 11H34, TAPE REPRODUCER DC

S 712-031-001

- (4) Do the procedure, Test of the Tape Reproducer.

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BOARDING MUSIC TAPE REPRODUCER – MAINTENANCE PRACTICES

1. General

- A. This procedure has two tasks. The first task removes the boarding music tape reproducer. The second task installs the tape reproducer and does a test of the installation.
- B. The boarding music tape reproducer (referred to as the tape reproducer), M10748 is installed on the aft wall of the forward left lavatory.

TASK 23-31-06-002-006-002

2. Boarding Music Tape Reproducer Removal

A. References

- (1) 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) 24-22-00/201, Electrical Power Control

B. Access

- (1) Location Zones
 - 120 Main Equipment Center (RH side)
 - 221 Passenger Cabin – section 41 (LH side)

- (2) Access Panel

- 119BL Main Equipment Center

C. Prepare for the Removal

S 862-038-002

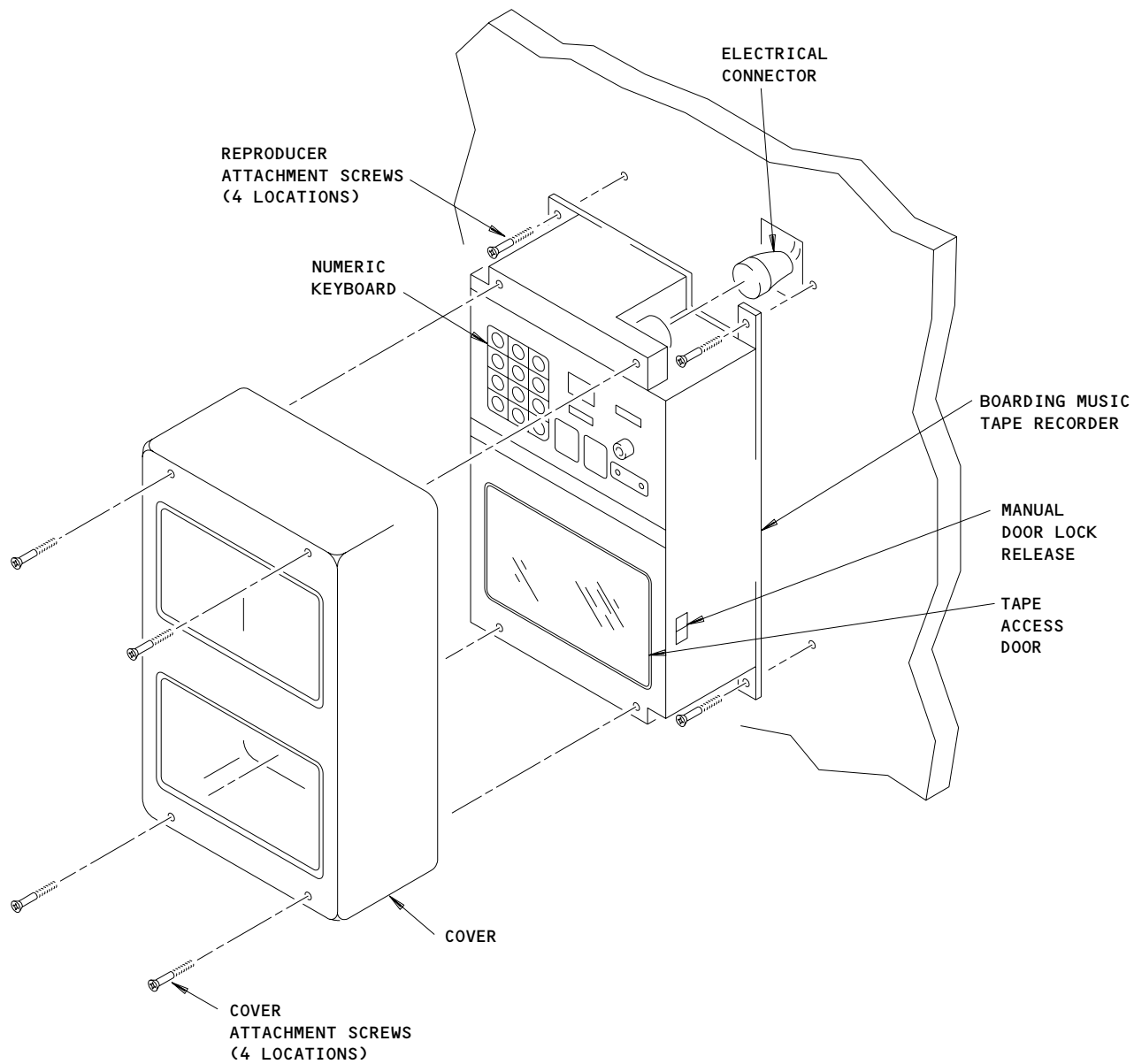
- (1) Supply electrical power (Ref 24-22-00/201).

S 032-039-002

CAUTION: DO NOT USE FORCE TO OPEN THE ACCESS DOOR OR TO REMOVE THE CASSETTE. IF YOU USE FORCE, YOU CAN CAUSE DAMAGE TO THE TAPE REPRODUCER.

- (2) Remove the cassette from the tape reproducer:

- (a) Push the access code (90) on the numeric keyboard.



Passenger Address System - Component Location
Figure 201

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(b) Push the MUSIC 1 button to open the tape access door.

NOTE: If the access door does not open automatically, you must open it manually. Carefully lift up on the manual door lock release on the right side of the tape reproducer. Let the door open automatically.

(c) Lift the cassette out of the tape reproducer.

NOTE: If the tape is caught in the mechanism, leave the cassette in the tape reproducer and close the access door. Send the tape reproducer back for repair with the cassette inside.

S 012-040-002

(3) Open the access door, 119BL, for the right miscellaneous electrical equipment panel P37 (Ref 06-41-00/201).

S 862-041-002

(4) Open this circuit breaker on the right miscellaneous electrical equipment panel, P37, and attach a DO-NOT-CLOSE tag:
(a) 37E2, TAPE RPDR

D. Boarding Music Tape Reproducer Removal

S 012-042-002

(1) Remove the cover from the tape reproducer:
(a) Remove the cover attachment screws.
(b) Lift the cover off from the tape reproducer.

S 022-043-002

(2) Remove the tape reproducer from the lavatory wall:
(a) Remove the reproducer attachment screws from the corners of the unit.
(b) Disconnect the electrical connector at the top of the tape reproducer.

- (c) Remove the tape reproducer, and keep the hardware and the cassette for the installation.

TASK 23-31-06-402-037-002

3. Boarding Music Tape Reproducer Installation

A. References

- (1) 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) 24-22-00/201, Electrical Power Control

B. Access

- (1) Location Zones
 - 120 Main Equipment Center (RH side)
 - 221 Passenger Cabin - section 41 (LH side)

- (2) Access Panel

- 119BL Main Equipment Center

C. Boarding Music Tape Reproducer Installation

S 862-050-002

- (1) Make sure this circuit breaker on the right miscellaneous electrical equipment panel is open, P37, and attach has a DO-NOT-CLOSE tag:
 - (a) 37E2, TAPE RPDR

S 422-051-002

- (2) Install the tape reproducer onto the lavatory wall:
 - (a) Connect the electrical connector at the top of the tape reproducer.
 - (b) Install the reproducer attachment screws to the corners of the tape reproducer.

S 412-052-002

- (3) Attach the cover over the tape reproducer with the cover attachment screws.

D. Boarding Music Tape Reproducer Installation Test

S 862-053-002

- (1) Supply electrical power (Ref 24-22-00/201).

- S 862-054-002
- (2) Remove the DO-NOT-CLOSE tag, and close this circuit breaker on the P37 panel:
 - (a) 37E2, TAPE RPDR

- S 862-055-002
- (3) Make sure the tape access door is closed.

- S 862-056-002
- (4) Push the access code (90) on the numeric keyboard.

- S 862-057-002
- (5) Push the MUSIC 1 button to open the tape access door.

NOTE: If the door opens automatically, the installation is ok.

E. Put the Airplane Back to Its Usual Condition

- S 432-058-002
- (1) Put the cassette into the tape reproducer.
 - (a) Close the tape access door.

- S 412-059-002
- (2) Close the access door, 119BL (Ref 06-41-00/201).

- S 862-060-002
- (3) Remove electrical power if it is not necessary (Ref 24-22-00/201).

EFFECTIVITY
GUI 001-014

23-31-06
CONFIG 2
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03

PASSENGER ADDRESS (PA) SPEAKER – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes a PA speaker. The second task installs the speaker and does a test of the installation.
- B. The passenger address speakers (referred to as the PA speakers) are in the cabin ceiling panels. The sound comes from the main section of the PA amplifier.

TASK 23-31-08-004-001

2. PA Speaker Removal

- A. References
 - (1) AMM 25-22-02/401, Lowered Ceiling Panels – Removal/Installation
- B. Access
 - (1) Location Zone
200 Upper Half of Fuselage

C. Prepare to Remove the PA Speaker

S 864-002

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 - (a) 11C22, PASS ADRS AMPL or PASS ADRS

S 014-004

- (2) Lower the ceiling panel for the PA speaker (AMM 25-22-02/401).

D. PA Speaker Removal (Fig. 401)

S 024-022

- (1) If the PA speaker has a cover, do these steps to remove it:
 - (a) Remove the 4 screws that attach the cover.
 - (b) Remove the speaker cover.
 - (c) Keep the speaker cover and the screws for the installation.

S 024-006

- (2) Do these steps to remove the PA speaker from the ceiling panel:
 - (a) Disconnect the wires from the PA speaker.

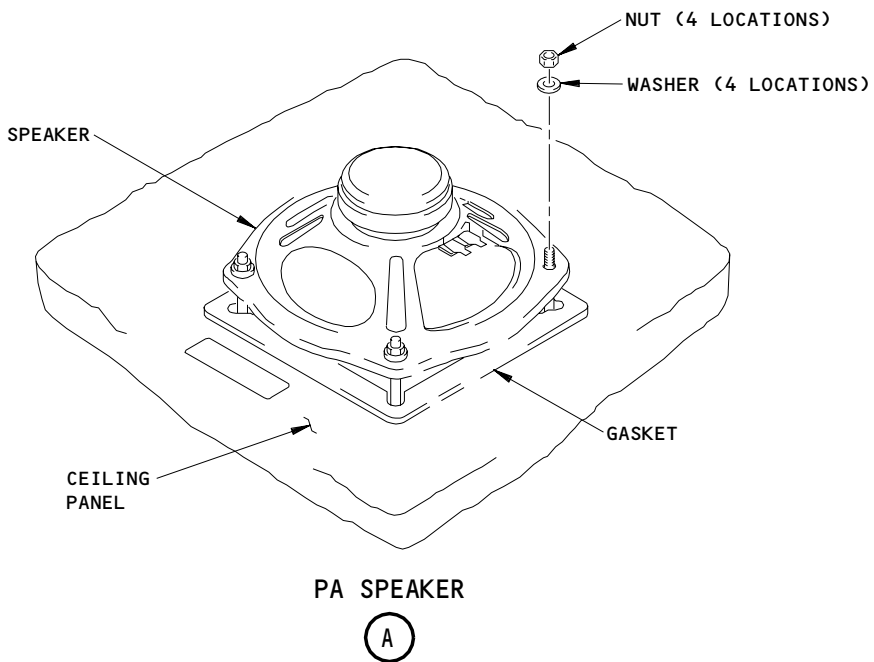
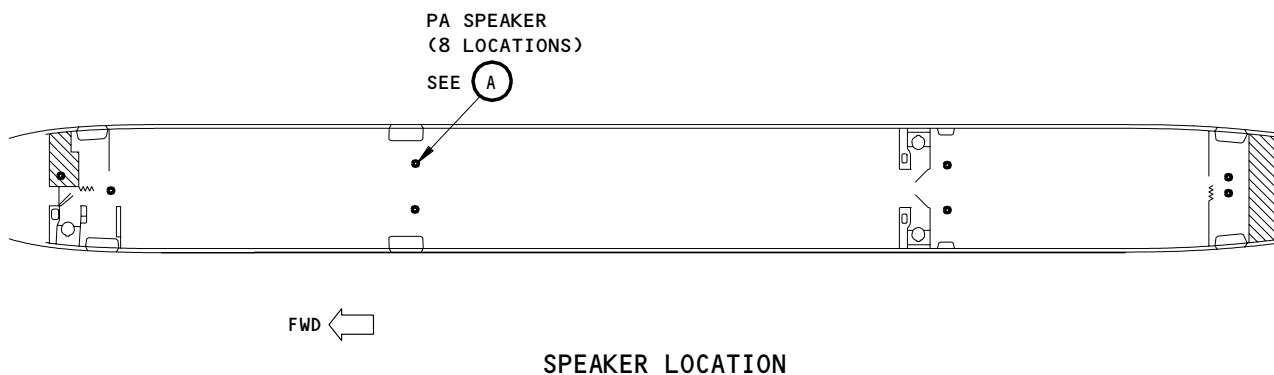
EFFECTIVITY

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Passenger Address Speaker Installation
Figure 401

EFFECTIVITY

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01

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C73984

- (b) Remove the four nuts and washers that attach the PA speaker to the ceiling panel.
- (c) Remove the PA speaker and keep the hardware for the installation.

TASK 23-31-08-404-009

3. PA Speaker Installation

A. References

- (1) AMM 24-22-00/201, Electrical Power - Control
- (2) AMM 25-22-02/401, Lowered Ceiling Panels - Removal/Installation

B. Access

(1) Location Zones

- 120 Main Equipment Center (RH side)
- 200 Upper Half of Fuselage

(2) Access Panel

- 119BL Main Equipment Center

C. PA Speaker Installation (Fig. 401)

S 864-019

- (1) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is open and a DO-NOT-CLOSE tag is attached:
 - (a) 11C22, PASS ADRS AMPL or PASS ADRS

S 424-007

- (2) Install the PA speaker onto the ceiling panel:
 - (a) Attach the PA speaker to the ceiling panel with the four nuts and washers kept from the removal.

NOTE: Make sure you put the connection terminals in the correct position.

- (b) With the polarity correct, connect the two wires to the speakers.

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S 424-023

- (3) If a speaker cover was installed, place the cover over the speaker and fasten it with the 4 screws kept from the removal.

S 414-008

- (4) Lift and fasten the ceiling panel (AMM 25-22-02/401).

S 864-014

- (5) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

(a) 11C22, PASS ADRS AMPL or PASS ADRS

D. PA Speaker Installation Test

S 864-017

- (1) Supply electrical power (AMM 24-22-00/201).

S 714-020

- (2) Use a handset to make a PA announcement.
 - (a) Make sure clear voice comes from the installed speaker.

S 864-018

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

ALL

23-31-08

01.2

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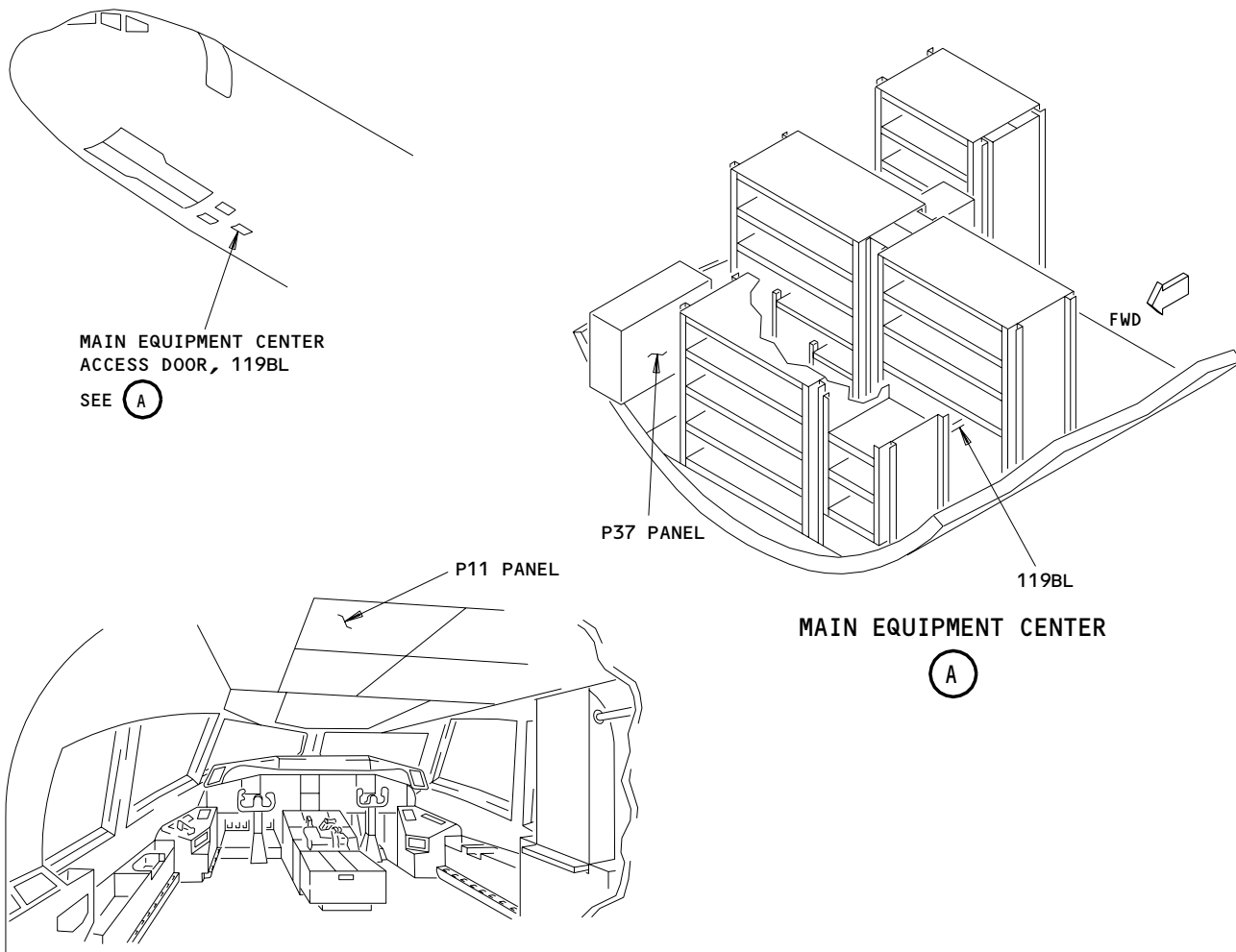
PASSENGER ENTERTAINMENT (VIDEO) SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The video system provides prerecorded video programs for passenger viewing. The video programs are displayed on video monitors located in the passenger cabin. The video program audio can be heard through the passenger address system speakers (AMM 23-31-00) and/or through the audio entertainment system at each individual seat (23-34-00).
- B. The video tape reproducer (VTR) and control distribution unit (CDU) are located in the control center.
- C. The VCC is located in an aft right overhead stowage bin in the passenger cabin.
- D. The video system receives 115v ac power from one of two sources. When the airplane is in the air, the video system receives 115v ac power from the right utility bus. When the airplane is on the ground or when either engine is being started, the video system receives 115v ac power from the right main ac bus. The video system receives 115v ac power through six circuit breakers on right misc electrical equipment panel P37. The system also receives 28v dc power from the right dc bus through a circuit breaker on overhead panel P11. The source of 28v dc power does not change.

2. Component Details (Fig. 1)

- A. Video Tape Reproducer (VTR)
 - (1) The video tape reproducer(s) (VTR's) is located in the video control center.
 - (2) The VTR's provide prerecorded video and audio for the video entertainment system. The front panel of the VTR has controls for cassette tape operation.
 - (3) The VTR has the following displays and controls:
 - (a) The REW switch will rewind the video tape.
 - (b) The PLAY switch will start video tape playback.
 - (c) The FF switch will fast forward the video tape.
 - (d) The EJECT switch will eject the cassette tape from the VTR.
 - (e) The STOP switch will stop the movement of the cassette tape.
 - (f) The counter display shows the relative position of the cassette tape in the VTR. The display can be reset by pressing the RESET switch.



MAIN EQUIPMENT CENTER
ACCESS DOOR, 119BL
SEE (A)

P37 PANEL

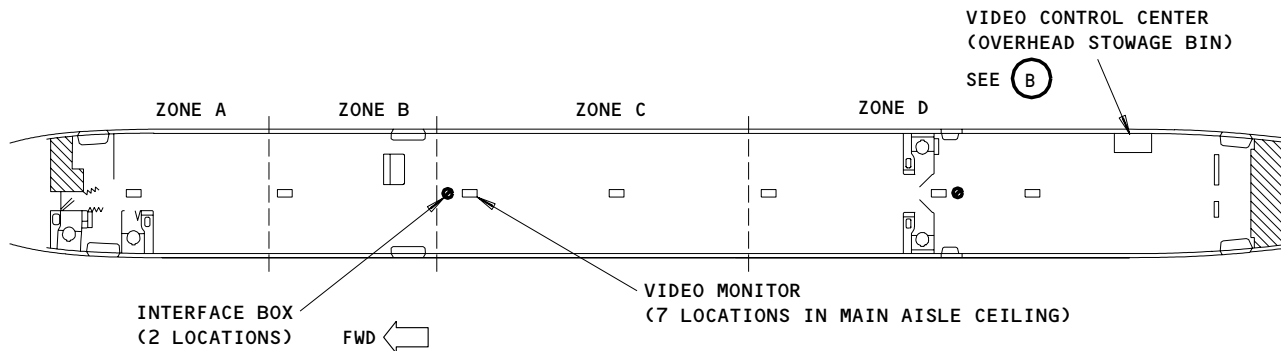
119BL

MAIN EQUIPMENT CENTER

(A)

P11 PANEL

FLIGHT COMPARTMENT



VIDEO CONTROL CENTER
(OVERHEAD STORAGE BIN)
SEE (B)

INTERFACE BOX
(2 LOCATIONS)

VIDEO MONITOR
(7 LOCATIONS IN MAIN AISLE CEILING)

FWD

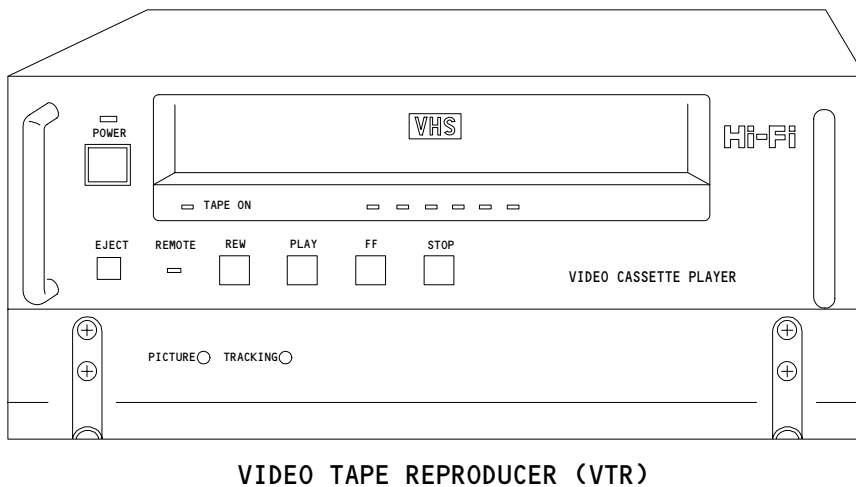
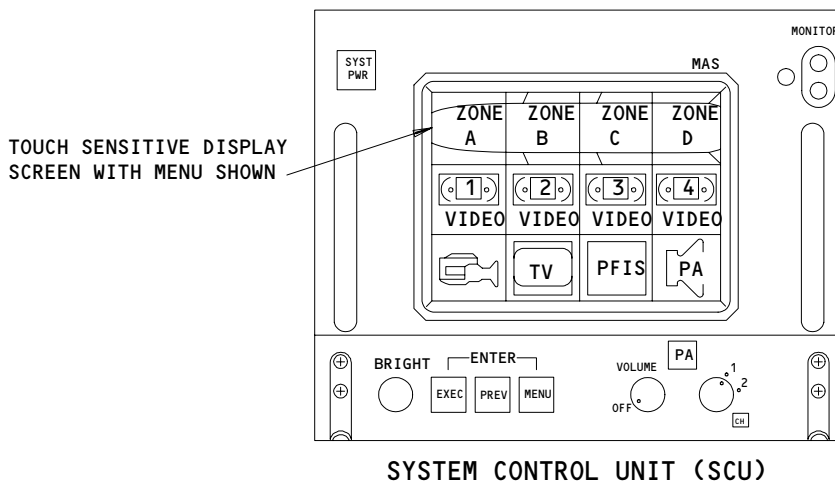
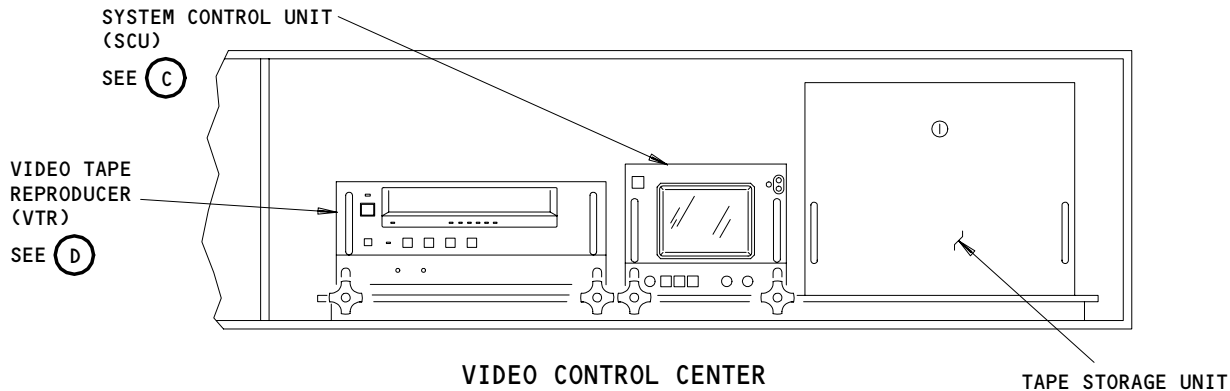
VIDEO MONITOR, INTERFACE BOX,
AND CONTROL CENTER LOCATIONS

Passenger Entertainment (Video) System - Component Location
Figure 1 (Sheet 1)

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GUI 115

23-32-00

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Passenger Entertainment (Video) System - Component Location
Figure 1 (Sheet 2)

EFFECTIVITY
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B. Control Distribution Unit (CDU)

- (1) The control distribution unit (CDU) is located in the video control center. The CDU controls the distribution of video signals to the video monitors. The CDU also controls the distribution of video audio signals to the passenger address (Ref 23-31-00) and/or passenger entertainment (Ref 23-34-00) systems.
- (2) Control switches and indicators on the CDU front panel provide the following functions:

SWITCH/INDICATOR	FUNCTIONS
SYSTEM POWER	Controls power of the CDU, switch AC and DC power to Airplane.

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23-32-00

ETI meter	Shows total operating time of CDU. ETI meter cannot be reset.
MONITOR Controls	Control video source selection for preview monitor. Also controls which audio channel (primary or secondary) is provided to the AUDIO MONITOR jack.
Preview Monitor	Two inch, black and white monitor that allows operator to preview video before broadcasting it to the passengers.
MON PWR ON/OFF	Provide on/off control for passenger cabin video monitors. Switches are illuminated when selected.
Source SEL/IND	Control video source selection for passenger cabin video monitors. Also controls video audio source selection for the main multiplexer. IND lights and display show source selected.
PA Controls	Keys PA amplifier and controls volume of video audio broadcast over PA speakers. Also controls which audio channel (primary or secondary) is provided to the PA amp.
MONITOR CONTROL	Provides individual off control for passenger cabin video monitors. Monitor(s) that is selected off at this control will remain off when MON PWR ON switch is selected on.
AUDIO MONITOR Headset Jack	Provides for monitoring of audio channel selected by MONITOR controls.

C. Video Monitors

- (1) Video monitors are mounted in the passenger cabin ceiling above the main aisle. The forward monitor is retractable and all other monitors are fixed position. Adjustment controls on the monitors are not accessible to flight personnel.

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3. Operation

A. Functional Description

- B. The video system receives ac power from either the right utility bus or the right main bus. Selection of the power source is controlled by the bus switching relay and an air/gnd relay. Circuit breakers for the video system are located on right miscellaneous electrical equipment panel P37. There are two sets of circuit breakers on the P37 panel for the video system. One set of circuit breakers controls the power from the right utility bus. The second set of circuit breakers controls the power from the right main bus.
- C. Power for the video system from both buses is supplied to the bus switching relay. When the airplane is in the air, the bus switching relay will be deenergized and power from the right utility bus will be supplied to the video system. If the airplane is on the ground, a signal from an air/gnd relay will energize the bus switching relay. The energized relay will supply power from the right main bus to the video system.
- D. When the airplane is in the air, power from the right utility bus will be supplied to the video system as follows:
- (1) Video monitors 1 thru 4 receive 115v ac power from the VIDEO SYSTEM (UTIL BUS) MONITOR FWD circuit breaker on the P37 panel.
 - (2) Video monitors 5 thru 7 receive 115v ac power from the VIDEO SYSTEM (UTIL BUS) MONITOR AFT circuit breaker on the P37 panel.
 - (3) The control distribution unit and video tape reproducer receive 115v ac from the VIDEO SYSTEM (UTIL BUS) AC SYSTEM circuit breaker on the P37 panel.
- E. When the airplane is on the ground, power from the right main bus will be supplied to the video system as follows:
- (1) Video monitors 1 thru 4 receive 115v ac power from the VIDEO SYSTEM (MAIN BUS) MONITOR FWD circuit breaker on the P37 panel.
 - (2) Video monitors 5 thru 7 receive 115v ac power from the VIDEO SYSTEM (MAIN BUS) MONITOR AFT circuit breaker on the P37 panel.
 - (3) The control distribution unit and video tape reproducer receive 115v ac from the VIDEO SYSTEM (MAIN BUS) AC SYSTEM circuit breaker on the P37 panel.

- F. Deployment of the passenger oxygen masks will cause a relay within the control distribution unit to energize, removing power from the video system.
- G. The CDU distributes video and audio signals from the VTR. The CDU has the capability to distribute signals from two VTRs and a television tuner (not installed). Distribution of these signals is controlled by the SOURCE SEL switch. As the SEL switch is pressed the VTR light next to the switch comes on and the LED display counts 1, 2, indicating which VTR is supplying the video signals (VTR 2 not installed). Once VTR 2 is reached, pressing the SEL switch again will cause the LIVE light to come on. The LED display will be blank. Pressing the SEL switch again will cause the VTR light to come on and the LED display will show 1. The cycle will continue as the SEL switch is pressed.
- H. The MONITOR SEL switch controls the video source selection for the two inch preview monitor and the audio source selection for the AUDIO MONITOR jack. The switch works similar to the SOURCE SEL switch except that the sequence goes VTR 1 PRI, VTR 1 SEC, VTR 2 PRI, VTR 2 SEC, LIVE PRI and LIVE SEC. Once LIVE SEC is reached, pressing the SEL switch again will cause the VTR and PRI lights to come on and the LED display will show 1. The cycle will be repeated as the SEL switch is pressed.
- I. The master on/off function of the video system is controlled by the SYS POWER switch on the control distribution unit (CDU). The MON PWR switches control the on/off function of all passenger cabin video monitors, provided the monitor is not selected off at the MONITOR CONTROL switches.
- J. Video and audio signals are detected by the video tape reproducer (VTR) from the video cassette tape. The video signal is routed to the CDU for distribution to the video monitors.
- K. Rotating the control distribution unit PA switch clockwise from OFF provides a PTT-3 signal to the PA amplifier (AMM 23-31-00). This allows video audio to be broadcast over the PA speakers. Audio volume will increase as the PA switch is rotated clockwise. The SEL switch controls whether the primary (PRI) or secondary (SEC) audio channel is provided to the PA amplifier.
- L. Control
 - (1) Turn-On Procedure
 - (a) Provide electrical power (Ref 24-22-00).
 - (b) Check that the following overhead panel P11 circuit breakers are closed:
 - 1) PASS ADDR AMPLIFIER
 - 2) VIDEO SYSTEM DC
 - (c) Check that the following right miscellaneous electrical equipment panel P37 circuit breakers are closed:
 - 1) MULTIPLEXER
 - 2) VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - 3) VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - 4) VIDEO SYSTEM (MAIN BUS) AC SYSTEM
 - 5) VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - 6) VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - 7) VIDEO SYSTEM (UTIL BUS) AC SYSTEM

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- (d) Set PES switch on forward attendant panel P21 to ON.
 - 1) At the control distribution unit:
 - a) Press SYS POWER switch to on (switchlight on).
 - b) Press MONITOR SEL switch until indicators read VTR 1 PRI.
 - c) Press MON PWR ON switch. Check that light in switch comes on.
 - d) Press SOURCE SEL switch until indicators read VTR 1.
 - e) If video audio is desired over the PA speakers, rotate the PA volume control clockwise from OFF to mid-point. Press the SEL switch to select primary or secondary audio, as desired.
 - 2) At the video tape reproducer:
 - a) Insert video cassette into VTR and wait five seconds for tape to thread.
 - b) Press the PLAY switch.
 - 3) Observe video picture on CDU preview monitor and adjust VTR TRACKING control as necessary.
- (2) Access for Audio Monitoring.
 - (a) Connect stethoscope headset to passenger control unit (PCU) at any passenger seat.
 - 1) Set channel selector on PCU to 1 or 2.
 - 2) Adjust volume control on PCU to obtain a comfortable listening level.
 - (b) Connect headset to AUDIO MONITOR jack on the CDU.

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11.101

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M. For more details on the Passenger Entertainment System, refer to these wiring diagrams and functional schematics (as applicable):

- WDM 23-32-01: Video System
- WDM 23-32-02: Video System
- WDM 23-32-03: Video System
- WDM 23-32-04: Cabin Information System
- WDM 23-32-05: Video System
- WDM 32-32-06: Video System
- WDM 23-32-07: Video System
- WDM 23-32-08: Video System
- WDM 23-32-09: Video System
- WDM 23-32-10: Video System
- WDM 23-32-11: Video System
- WDM 23-32-12: Video System - Audio
- WDM 23-32-13: Video System - Head-End Interface
- WDM 23-32-21: Cabin Information System
- WDM 23-32-31: Video Entertainment System - Tray 1 VDU 1
- WDM 23-32-32: Video Entertainment System - Tray 1 VDU 2
- WDM 23-32-33: Video Entertainment System - Tray 1 VDU 3
- WDM 23-32-34: Video Entertainment System - Tray 1 VDU 4
- WDM 23-32-41: Video Entertainment System - Tray 2 VDU 5
- WDM 23-32-42: Video Entertainment System - Tray 2 VDU 6
- WDM 23-32-43: Video Entertainment System - Tray 2 VDU 7
- WDM 23-32-44: Video Entertainment System - Tray 2 VDU 8
- WDM 23-32-51: Video Entertainment System - Tray 3 VDU 9
- WDM 23-32-52: Video Entertainment System - Tray 3 VDU 10
- WDM 23-32-53: Video Entertainment System - Tray 3 VDU 11
- WDM 23-32-54: Video Entertainment System - Tray 3 VDU 12
- WDM 23-32-61: Video Entertainment System - Tray 4 VDU 13
- WDM 23-32-62: Video Entertainment System - Tray 4 VDU 14
- WDM 23-32-63: Video Entertainment System - Tray 4 VDU 15
- WDM 23-32-64: Video Entertainment System - Tray 4 VDU 16
- WDM 23-32-71: Video Entertainment System - Tray 5 VDU 17
- WDM 23-32-72: Video Entertainment System - Tray 5 VDU 18
- WDM 23-32-73: Video Entertainment System - Tray 5 VDU 19
- WDM 23-32-74: Video Entertainment System - Tray 5 VDU 20
- SSM 23-32-01: Video System.

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 FAULT ISOLATION/MAINT MANUAL

PASSENGER ENTERTAINMENT (VIDEO) SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
AMPLIFIER - (23-31-00/101) PASSENGER ADDRESS, M177				
BOX - AFT INTERFACE, M10685	1	1	PASS. CABIN	*
BOX - FWD INTERFACE, M10684	1	1	PASS. CABIN	*
BOX - JUNCTION, M10668		1	PASS. CABIN, VIDEO CONTROL CTR	*
CIRCUIT BREAKERS -	1		119BL, MAIN EQUIP CTR, P37	
VIDEO SYSTEM (MAIN BUS) MONITOR AFT, C4441		1	37A7	*
VIDEO SYSTEM (MAIN BUS) MONITOR FWD, C4440		1	37A6	*
VIDEO SYSTEM (MAIN BUS) SYSTEM AC, C4442		1	37A8	*
VIDEO SYSTEM (UTIL BUS) MONITOR AFT, C4362		1	37C7	*
VIDEO SYSTEM (UTIL BUS) MONITOR FWD, C4361		1	37C6	*
VIDEO SYSTEM (UTIL BUS) SYSTEM AC, C4363		1	37C8	*
CIRCUIT BREAKER -	1		FLT COMPT, P11	
VIDEO SYSTEM DC, C4364		1	11H30	*
MONITORS -	1			
NO. 1, M10669		1	PASS. CABIN	23-32-01
NO. 2, M10670		1	PASS. CABIN	23-32-02
NO. 3, M10671		1	PASS. CABIN	23-32-02
NO. 4, M10672		1	PASS. CABIN	23-32-02
NO. 5, M10673		1	PASS. CABIN	23-32-02
NO. 6, M10674		1	PASS. CABIN	23-32-02
NO. 7, M10675		1	PASS. CABIN	23-32-02
RELAYS - (31-01-37/101)				
BUS SWITCHING, K10642				
SYS NO. 2 AIR/GND, K10239				
REPRODUCER - VIDEO TAPE	2	1	PASS. CABIN, VIDEO CONTROL CTR	23-32-04
UNIT - SYSTEM CONTROL	2	1	PASS. CABIN, VIDEO CONTROL CTR	23-32-03

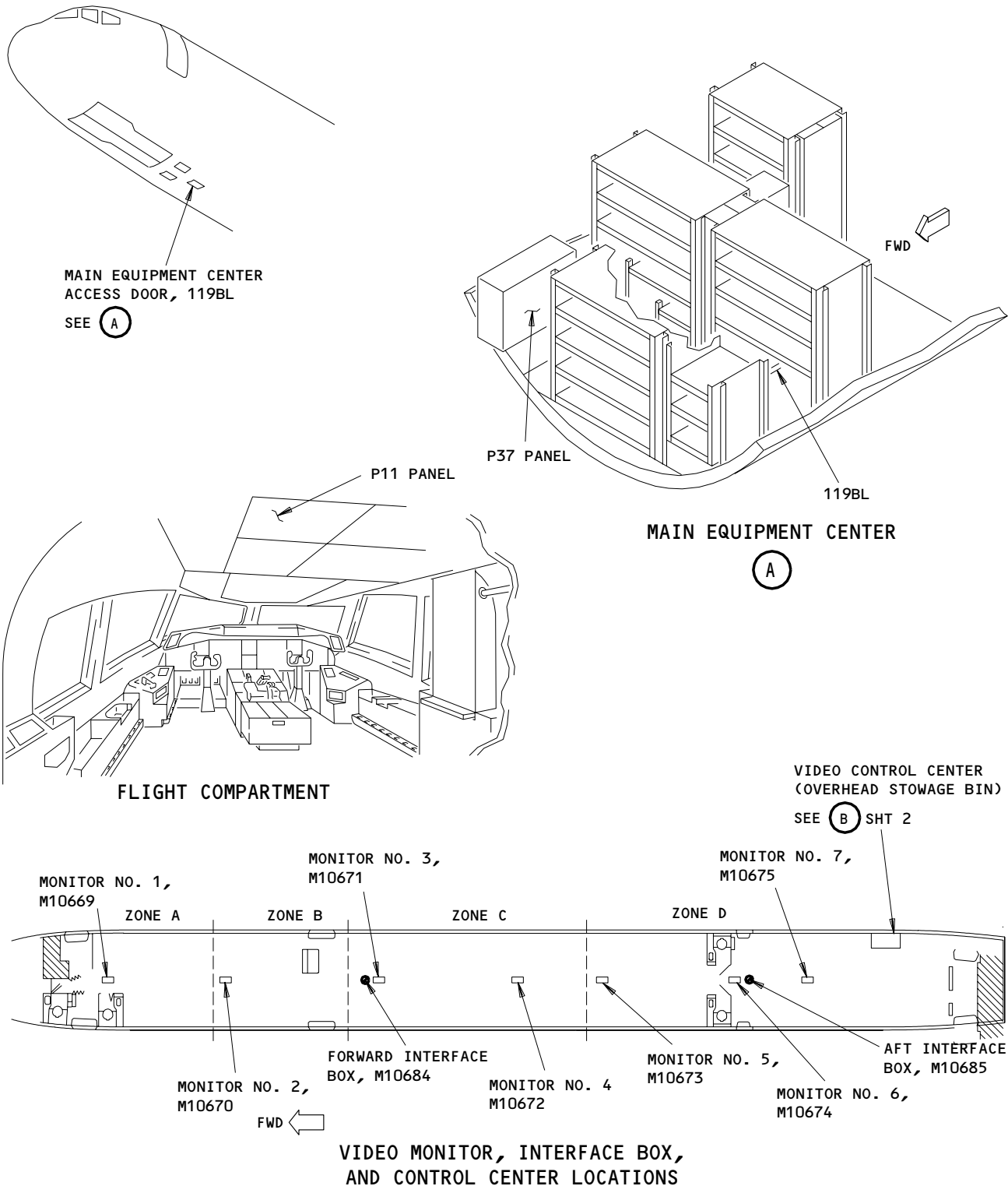
* SEE THE WDM EQUIPMENT LIST

Passenger Entertainment (Video) System - Component Index
 Figure 101

EFFECTIVITY
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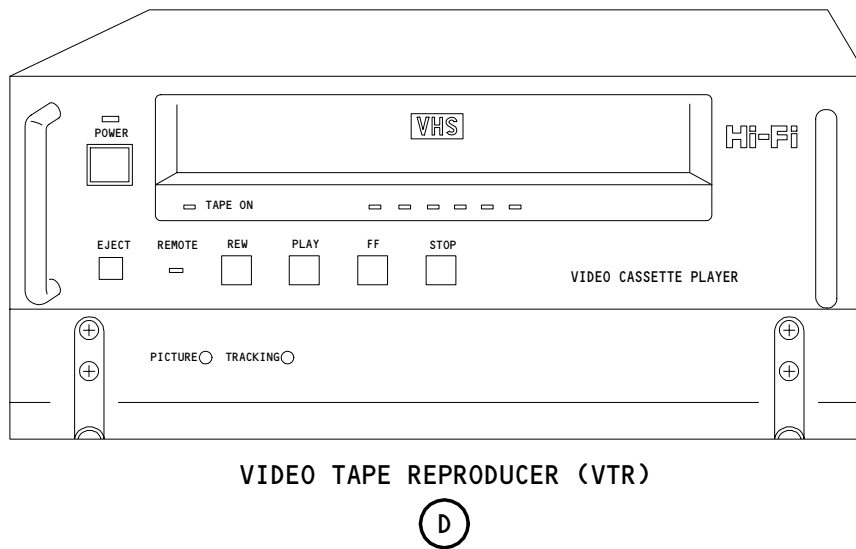
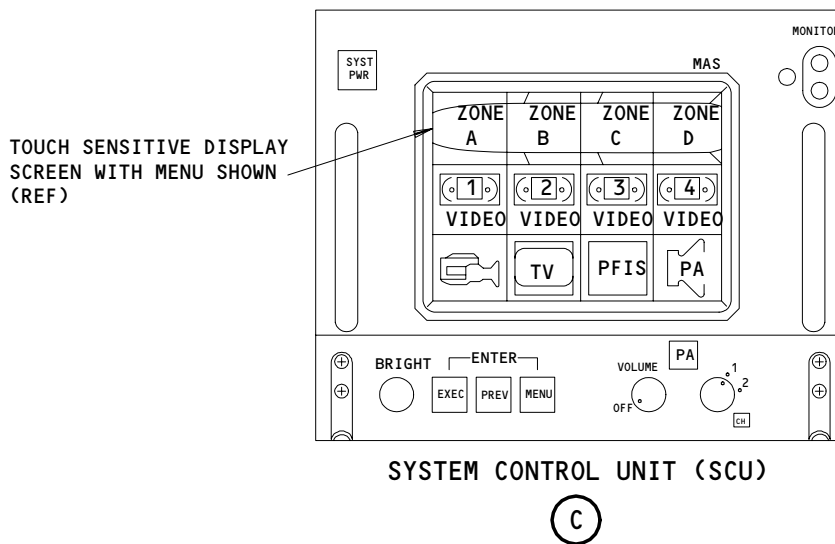
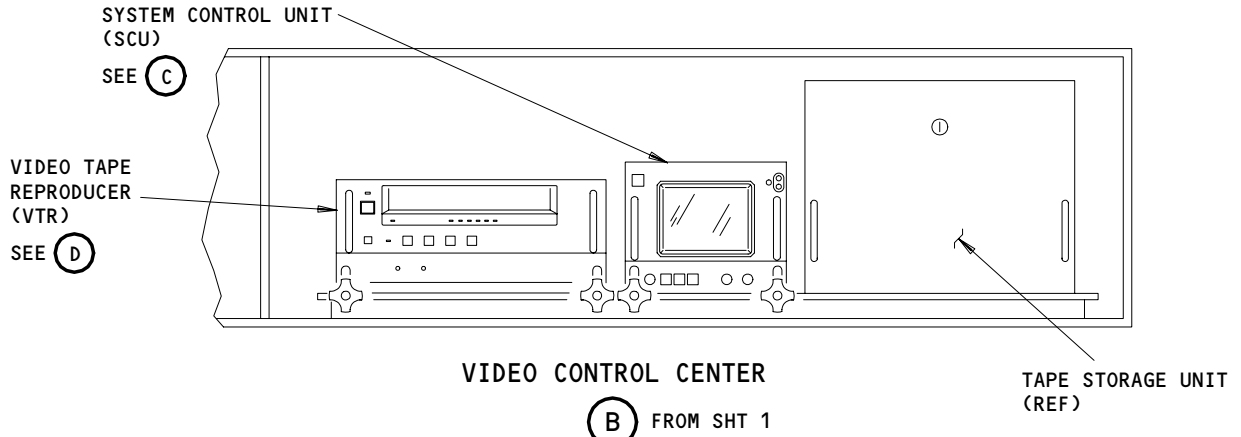


Passenger Entertainment (Video) System - Component Location
Figure 102 (Sheet 1)

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FAULT ISOLATION/MAINT MANUAL



Passenger Entertainment (Video) System - Component Location
Figure 102 (Sheet 2)

EFFECTIVITY
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PASSENGER ENTERTAINMENT (VIDEO) SYSTEM – ADJUSTMENT/TEST

1. General

- A. This procedure has two tasks. The operational test is fast, and only makes sure the system operates well enough to play a video tape. The system test is a more careful test of the video and sound distribution, the controls, and the programmable functions of the system, as well as the connections to related systems.
- B. This system connects to these other systems:
 - Passenger Address System (Ref 23-31-00)
 - Passenger Entertainment (Audio) System (Ref 23-34-00).To do this procedure they must be serviceable.

TASK 23-32-00-715-043

2. Operational Test – Passenger Entertainment (Video) System

A. General

- (1) This task does an operational test of the passenger entertainment (video) system. The test method is to play a tape, and to make sure each unit in the system operates. This test uses a minimum of time, and only the equipment found on the airplane.
- (2) To do an installation test on a single unit, it is necessary to do the whole operational test. This will make sure the system can play a video tape, and can send the picture and sound to the correct unit.

B. References

- (1) AMM 23-31-00/501, Passenger Address System
- (2) AMM 23-34-00/501, Passenger Entertainment System
- (3) AMM 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zone
 - 200 Upper Half of Fuselage

D. Prepare for the Operational Test

S 865-056

- (1) Supply electrical power (Ref 24-22-00/201).

S 865-111

- (2) Put the PES (IFE) switch to ON at the forward attendant panel, P21.

S 865-057

- (3) Energize the following units in the video control center by pushing the power switch:
(a) Video Tape Reproducer(s)(VTR).

E. Video System Operational Test

S 865-000

- (1) Play a tape in the video tape reproducer:

CAUTION: LET THE VTR AUTOMATICALLY WORK THE CASSETTE, WHEN YOU PUT IT IN. IF YOU USE FORCE, YOU CAN CAUSE DAMAGE TO THE VTR OR TO THE CASSETTE.

- (a) Put a tape cassette into the VTR.
(b) Push the PLAY button on the VTR.

S 865-115

- (2) Operate the system control unit (SCU) to remotely control the VTR and to route video to all monitors:
(a) Push the CONT symbol.
(b) Touch ZONE A, ZONE B, ZONE C, and ZONE D.
(c) Touch VIDEO 1.
(d) Touch PA.
(e) Push the ENTER PREV switch.
(f) Touch VIDEO 1.
(g) Touch the REW symbol.

NOTE: Let the tape wind back to the start.

- (h) Touch the PLAY symbol.
(i) Push the EXEC switch.

S 715-009

- (3) Make sure the video system operates:
(a) Make sure the VTR plays the video tape.
(b) Make sure the SCU remotely operates the VTR and routes video to the monitors.
(c) Make sure the preview monitor shows the video tape.
(d) Make sure the picture on each monitor in the passenger compartment is clear and bright.

- (e) Listen for clear VTR sound:
 - 1) Connect a headset into the monitor jack on the control unit.
 - 2) Make sure the VTR sound is clear and that it relates to the picture shown on the video monitor.
- F. Put the Airplane Back to Its Usual Condition

S 865-018

- (1) Remove power from the units in the video control center:
 - (a) Push the STOP, then the EJECT buttons on the VTR, and remove the tape cassette.

S 865-012

- (2) Put the PES(IFE) switch to OFF at the forward attendant panel, P21.

S 865-025

- (3) Remove electrical power, if it is not necessary (Ref 24-22-00/201).

TASK 23-32-00-735-001

3. System Test - Passenger Entertainment (Video) System

A. General

- (1) The system test does these tests:
 - (a) System Control Unit Test
 - (b) Video Monitors Test
 - (c) Passenger Control Unit Test
 - (d) Decompression Mode Test
 - (e) VTR Random Access Function Test

B. References

- (1) 23-31-00/501, Passenger Address
- (2) 23-34-00/501, Passenger Entertainment (Audio)
- (3) 24-22-00/201, Electrical Power - Control

C. Access

- (1) Location Zone
 - 200 Upper Half of Fuselage

EFFECTIVITY
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23-32-00

D. Prepare for the System Test

S 865-002

- (1) Supply electrical power (Ref 24-22-00/201).

E. System Control Unit Test

S 735-005

- (1) Do these steps to do a test of the VTR sound.
 - (a) Turn the PES (IFE) switch on the forward attendant panel, P21, to the ON position.
 - (b) Do these steps at the control distribution unit (referred to as the CDU) in the video control center:
 - 1) Push the POWER switch to the on position.
 - a) Make sure the ON light above the switch comes on.

F. Video Monitors Test

S 735-031

- (1) Do these steps at the tuner-monitor in the video control center:
 - (a) Push the POWER switch to the on position.
 - (b) Push the PL 1 switch.

S 735-032

- (2) Do these steps at video tape reproducer 1 (referred to as VTR-1) in the video control center:
 - (a) Put in a video cassette tape.
 - (b) After the video cassette tape has threaded, push the PLAY switch.
 - 1) Make sure a clear video picture shows on the tuner-monitor (adjust the FIX control on the VTR if necessary).

S 735-034

- (3) Make sure a clear video picture shows on each video monitor in the passenger cabin.

S 735-035

- (4) Do these steps at any passenger seat:
 - (a) Connect a headphone to the armrest jack.

- (b) Make sure clear video audio with sufficient volume is heard on channels 1 and 2 on the passenger control unit.

G. Passenger Control Unit Test

S 865-036

- (1) Do the steps that follow to do a test of passenger control unit:
 - (a) Do these steps at the video control center:
 - 1) Push the STOP switch on VTR-1.
 - 2) Push the EJECT switch on VTR-1 and remove the video cassette tape.
 - 3) Put the video cassette tape in VTR-2.
 - 4) After the video cassette tape has threaded, push the PLAY switch on VTR-2.
 - 5) Push the PL 2 switch on the tuner-monitor.
 - a) Make sure a clear video picture shows on the tuner-monitor (adjust the FIX control on VTR-2 if necessary).
 - 6) Push the PLYR 2 switch on the CDU for ZONE A, B, and C.
 - (b) Make sure a clear video picture shows on each video monitor in the passenger cabin.
 - (c) Do these steps at any passenger seat:
 - 1) Connect a headphone to the armrest jack.
 - 2) Make sure clear video audio with sufficient volume is heard on channels 1 and 2 on the passenger control unit.
 - (d) Do these steps on the CDU at the video control center:
 - 1) Push the PA switch to the on position.
 - 2) Push the CH 1 switch.
 - 3) Turn the VOLUME control clockwise to the middle position.
 - a) Make sure clear video audio is heard over the PA system speakers.
 - b) Make sure the volume level changes as the VOLUME switch on the CDU is turned.
 - c) Make sure clear video audio is still heard on the PA system speakers.

H. Decompression Mode Test

S 735-008

- (1) Do these steps to do a test of the decompression mode:
 - (a) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11A21 or 11A23, PASSENGER OXYGEN LEFT

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MAINTENANCE MANUAL

- 2) 11A23 or 11A24, PASSENGER OXYGEN RIGHT
 - (b) Lift the guard and push the PASS OXY switch on the pilots' overhead panel, P5.
 - 1) Make sure the light in the PASS OXY switch comes on.
 - 2) Make sure the video system goes off.
 - (c) Open and then close this circuit breaker on the overhead circuit breaker panel, P11:
 - 1) 11A24 or 11A25, PASSENGER OXYGEN CONTROL
 - 2) Make sure the light in the PASS OXY switch goes off.
 - (d) Remove the DO-NOT-CLOSE tag and close these circuit breakers on the overhead circuit breaker panel, P11:
 - 1) 11A21 or 11A23, PASSENGER OXYGEN LEFT
 - 2) 11A23 or 11A24, PASSENGER OXYGEN RIGHT
 - (e) Push the POWER switch on the CDU to the off position and then to the on position.
 - 1) Make sure the ON light above the POWER switch comes on.
- I. Put the Airplane Back to Its Usual Condition

S 865-053

- (1) Turn the PES (IFE) switch on the forward attendant panel, P21, to the OFF position.

S 865-054

- (2) Remove electrical power, if it is not necessary (Ref 24-22-00/201).

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RETRACTABLE VIDEO MONITOR – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes the retractable video monitor. The second task installs the monitor and does a test of the installation.
- B. Video monitor No. 1 (referred to as the retractable video monitor) hangs from the ceiling near the forward entry doors. This monitor retracts into the ceiling when not in use.
- C. The video monitor is heavy. Use two persons to remove it. If you remove the monitor without help, you can cause damage to it.

TASK 23-32-01-024-001

2. Retractable Video Monitor Removal (Fig. 401)

A. Equipment

- (1) AIRPLANES WITHOUT SB 23-34;
Spacer-locking bar,
locally made (two necessary).
Refer to Figure 401 for dimensions.

B. References

- (1) AMM 25-22-02/401, Lowered Ceiling Panels

C. Access

- (1) Location Zones
 - 221/222 Passenger Cabin – section 41
 - 223/224 Area above ceiling, passenger cabin – section 41

D. Prepare for the Removal

S 864-022

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 - (a) 11H30, VIDEO SYS DC

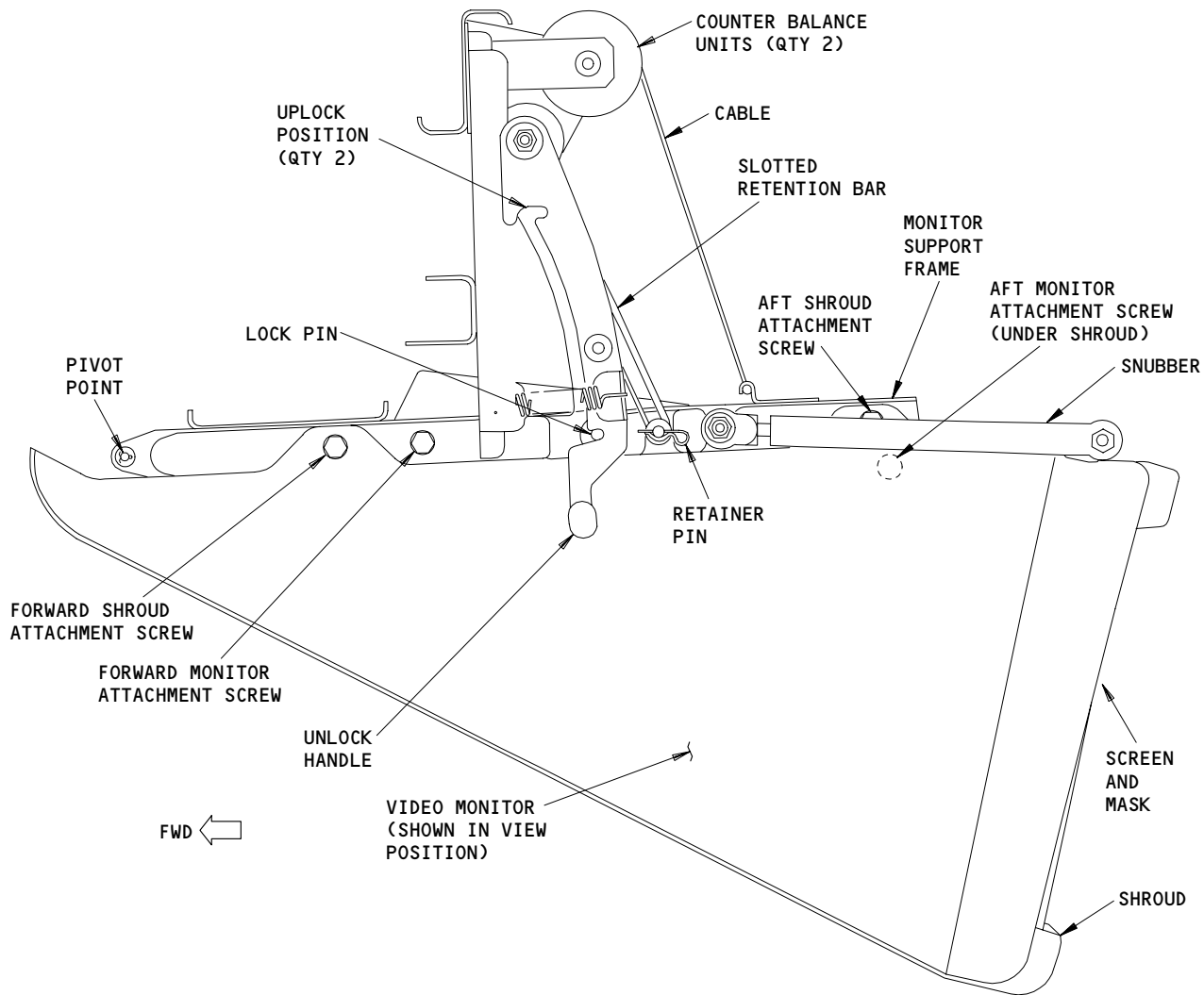
S 864-025

- (2) Open these circuit breakers on the right miscellaneous electrical equipment panel, P37, and attach DO-NOT-CLOSE tags:
 - (a) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD

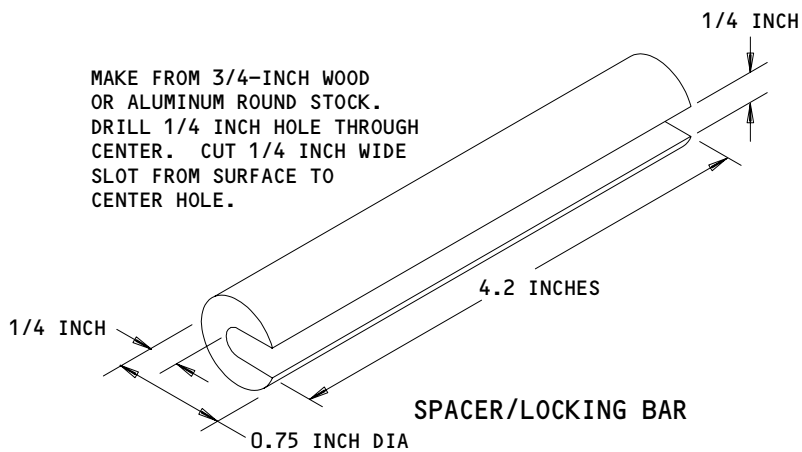
EFFECTIVITY

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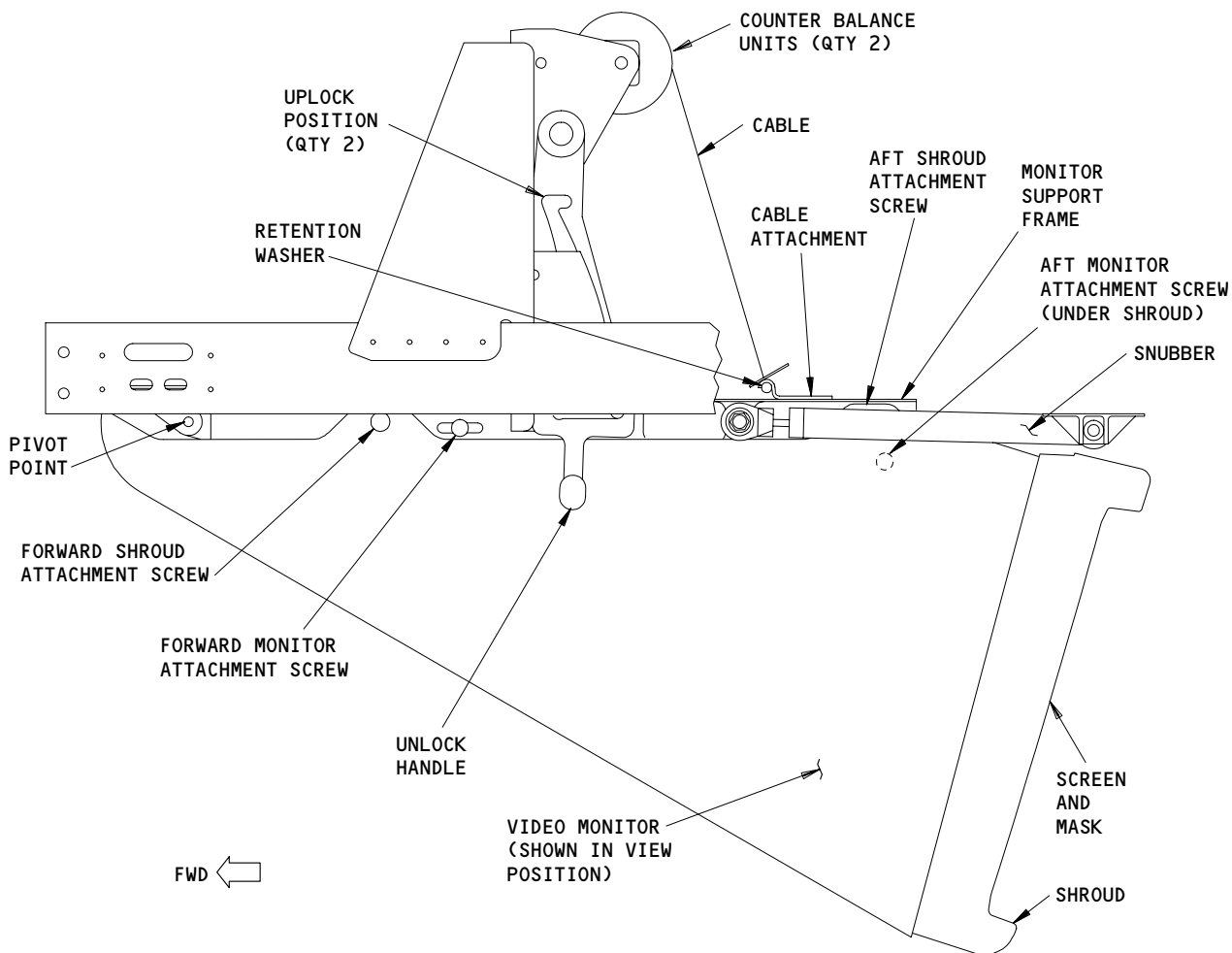
INSTALLATION DETAILS AND RETRACTION MECHANISM



Retractable Video Monitor Installation
Figure 401 (Sheet 1)

EFFECTIVITY
AIRPLANES WITHOUT SB 23-34

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INSTALLATION DETAILS AND RETRACTION MECHANISM

Retractable Video Monitor Installation
Figure 401 (Sheet 2)

EFFECTIVITY
AIRPLANES WITH SB 23-34

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- (b) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
- (c) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
- (d) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
- (e) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
- (f) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

S 014-002

- (3) Remove or lower the ceiling panels adjacent to the retractable video monitor (AMM 25-22-02/401).

E. AIRPLANES PRE-SB 23-34;
Retractable Video Monitor Removal

S 864-003

- (1) Pull the unlock handles aft, and lower the retractable video monitor to the view position.

S 014-004

- (2) Do these steps to remove the monitor shroud:
 - (a) On each side of the shroud remove the bolts (forward and aft) that attach the shroud.
 - (b) Move the shroud aft, off from the monitor.
 - (c) Remove the mask from the front of the monitor.

S 024-008

- (3) Remove the video monitor from the monitor support frame:
 - (a) Remove the retainer pin and washer from the bottom of the slotted retention bar on each side of the assembly.
 - (b) Move the retention bars off from the pins.
 - (c) Pull the unlock handles aft, and lower the monitor to the full length of the snubber.

CAUTION: INSTALL BOTH SPACER-LOCKING BARS. IF YOU USE ONLY ONE BAR, THE FRAME THAT HOLDS THE MONITOR CAN BEND.

- (d) Install a spacer-locking bar on each snubber to prevent retraction of the snubber.
- (e) Disconnect the electrical connectors from the rear of the monitor.

CAUTION: PREPARE TO HOLD THE WEIGHT OF THE MONITOR. IF YOU ARE NOT PREPARED, YOU WILL DROP IT.

- (f) Remove the screws (forward and aft) that attach the video monitor.

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(g) Remove the video monitor from the frame.

S 864-014

(4) Let the monitor support frame retract against the spacer-locking bars.

F. AIRPLANES POST-SB 23-34;
Retractable Video Monitor Removal

S 864-015

(1) Pull the unlock handles aft, and lower the retractable video monitor to the view position.

S 014-016

(2) Do these steps to remove the monitor shroud:

(a) On each side of the shroud remove the bolts (forward and aft) that attach the shroud.

(b) Move the shroud aft, off from the monitor.

(c) Remove the mask from the front of the monitor.

S 024-019

(3) Remove the video monitor from the monitor support frame:

(a) Disconnect the counter balance cables from the monitor support frame to release the tension on the support frame.

(b) Disconnect the electrical connectors from the rear of the monitor.

CAUTION: PREPARE TO HOLD THE WEIGHT OF THE MONITOR. IF YOU ARE NOT PREPARED, YOU WILL DROP IT.

(c) Remove the screws (forward and aft) that attach the video monitor.

(d) Remove the video monitor from the support frame.

TASK 23-32-01-424-007

3. Retractable Video Monitor Installation (Fig. 401)

A. References

(1) AMM 23-32-00/501, Passenger Entertainment (Video) System

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- (2) AMM 25-22-02/401, Lowered Ceiling Panels
- B. Access
 - (1) Location Zones
 - 221/222 Passenger Cabin - section 41
 - 223/224 Area above ceiling, passenger cabin - section 41
- C. Video Monitor Installation (WITHOUT SB 23-34)
 - S 424-010
 - (1) Install the retractable video monitor into the monitor support frame:
 - (a) Put the video monitor into the support frame.
 - (b) Install the screws (forward and aft) that attach both sides of the video monitor to the frame.
 - (c) Connect the electrical connectors behind the monitor.
 - (d) Remove the spacer-locking bar from each snubber.
 - (e) Lift the monitor up to the "view" position.
 - (f) Put the slotted retention bar on the pin at each side of the assembly.
 - (g) Install the retainer pin and washer on each side of the assembly.
 - (h) Set the unlock handles so the video monitor is in the "view" position.
 - S 414-017
 - (2) Attach the shroud to the monitor:
 - (a) Put the mask onto the front of the monitor.
 - (b) Hold the shroud in position over the retractable video monitor.
 - (c) On both sides of the shroud install the screws that attach the shroud (2 forward and 2 aft).
 - S 414-018
 - (3) Install (or close) the lower ceiling panels adjacent to the retractable video monitor (AMM 25-22-02/401).
- D. AIRPLANES POST-SB 23-34;
Video Monitor Installation
 - S 424-043
 - (1) Install the retractable video monitor into the monitor support frame:
 - (a) Put the video monitor into the support frame.

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- (b) Install the screws (forward and aft) that attach both sides of the video monitor to the frame.
- (c) Connect the electrical connectors behind the monitor.
- (d) Attach the counter balance cables to the cable attachments on the support frame.

S 414-011

- (2) Attach the shroud to the monitor:
 - (a) Put the mask onto the front of the monitor.
 - (b) Hold the shroud in position over the retractable video monitor.
 - (c) On both sides of the shroud install the screws that attach the shroud (2 forward and 2 aft).

S 414-012

- (3) Install (or close) the lower ceiling panels adjacent to the retractable video monitor (AMM 25-22-02/401).

E. Installation Test

S 864-026

- (1) Remove the DO-NOT-CLOSE tag, and close this circuit breaker on the P11 panel:
 - (a) 11H30, VIDEO SYS DC

S 864-030

- (2) Remove the DO-NOT-CLOSE tags, and close these circuit breakers on the P37 panel:
 - (a) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - (b) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - (c) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
 - (d) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - (e) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - (f) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

S 714-021

- (3) Do an operational test of the video system (AMM 23-32-00/501).
 - (a) Make sure the installed monitor operates.

EFFECTIVITY

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FIXED VIDEO MONITOR – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes a fixed video monitor. The second task installs the monitor and does a test of the installation.
- B. Video monitors No. 2 thru No. 8 (referred to as the fixed video monitors) hang from the ceiling panels above the main aisle. The fixed monitors install with a non-retractable (stable) attachment. The removal and installation procedures are the same for all fixed monitors.

TASK 23-32-02-024-001

2. Video Monitor Removal

A. Access

- (1) Location Zone
200 Upper Half of Fuselage

B. Prepare for the Removal

S 864-025

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 - (a) 11H30, VIDEO SYS DC

S 864-029

- (2) Open these circuit breakers on the right miscellaneous electrical equipment panel, P37, and attach DO-NOT-CLOSE tags:
 - (a) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - (b) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - (c) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
 - (d) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - (e) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - (f) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

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C. Video Monitor Removal

S 014-004

- (1) Do these steps to remove the monitor shroud:
 - (a) Remove the fasteners from each side of the shroud.
 - (b) Remove the shroud.

S 024-008

CAUTION: THE VIDEO MONITOR IS HEAVY. USE TWO PERSONS TO REMOVE IT. IF YOU REMOVE THE MONITOR WITHOUT HELP, YOU CAN CAUSE DAMAGE TO IT.

- (2) Do these steps to remove the video monitor:
 - (a) Remove the electrical connectors from the rear of the video monitor.

CAUTION: PREPARE TO HOLD THE WEIGHT OF THE MONITOR (APPROXIMATELY 30 POUNDS, 13 KILOGRAMS). IF YOU ARE NOT PREPARED, YOU WILL DROP IT.

- (b) Hold the monitor stable, while you remove the bolts that attach it (2 on each side).
- (c) Lower the monitor.
- (d) Remove and keep any shims for the installation.
- (e) Remove the video monitor.

TASK 23-32-02-424-006

3. Install the Video Monitor

A. References

- (1) 23-32-00/501, Passenger Entertainment (Video) System

B. Access

- (1) Location Zone
200 Upper Half of Fuselage

C. Video Monitor Installation

S 424-007

- (1) Do these steps to install the video monitor:
 - (a) Install the shims if it is necessary.
 - (b) Lift the video monitor to the correct position.
 - (c) Hold the video monitor stable, while you install the bolts that attach it (2 on each side).
 - (d) Attach the electrical connectors to the rear of the monitor.
 - (e) At the rear of the monitor, make sure the MON PWR switch is on.

S 414-008

- (2) Do these steps to install the monitor shroud:
 - (a) Hold the shroud in position over the video monitor.
 - (b) Install the fasteners on each side of the shroud.

D. Monitor Installation Test

S 864-021

- (1) Remove the DO-NOT-CLOSE tag, and close this circuit breaker on the P11 panel:
 - (a) 11H30, VIDEO SYS DC

S 864-022

- (2) Remove the DO-NOT-CLOSE tags, and close these circuit breakers on the P37 panel:
 - (a) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - (b) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - (c) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
 - (d) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - (e) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - (f) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

EFFECTIVITY
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23-32-02

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S 714-010

- (3) Do an operational test of the video system (Ref 23-32-00/501).
 - (a) Make sure the installed monitor operates.

EFFECTIVITY
GUI 115

23-32-02

07

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SYSTEM CONTROL UNIT – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes the system control unit. The second task installs the unit and does a test of the installation.
- B. The system control unit is in the video control center. It attaches to the support pallet in the control center by an adapter plate on the bottom of the unit.

TASK 23-32-03-024-002

2. System Control Unit (SCU) Removal (Fig. 401)

NOTE: The System Control Unit is also referred to as the Control Distribution Unit (CDU), or the Control Unit.

A. References

- (1) 20-10-01/401, E/E Rack-Mounted Components

B. Access

- (1) Location Zone
252 Passenger Cabin – section 46 (Right)

C. Prepare for the Removal

S 864-003

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
 - (a) 11H30, VIDEO SYS DC

S 864-004

- (2) Open these circuit breakers on the right miscellaneous electrical equipment panel, P37, and attach DO-NOT-CLOSE tags:
 - (a) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - (b) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - (c) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
 - (d) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - (e) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - (f) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

EFFECTIVITY
GUI 115

23-32-03

D. System Control Unit Removal

S 024-119

- (1) Remove the system control unit (Ref 20-10-01/401).

EFFECTIVITY
GUI 115

23-32-03

TASK 23-32-03-424-093

3. System Control Unit (SCU) Installation (Fig. 401)

NOTE: The System Control Unit is also referred to as the Control Distribution Unit (CDU), or the Control Unit.

A. References

- (1) 20-10-01/401, E/E Rack-Mounted Components
- (2) 23-32-00/501, Passenger Entertainment (Video) System

B. Access

- (1) Location Zone
252 Passenger Cabin - section 46 (Right)

C. System Control Unit Installation

S 424-095

- (1) Install the system control unit (AMM 20-10-01/401).

D. System Control Unit Installation Test

S 864-058

- (1) Remove D0-NOT-CLOSE tag, and close this circuit breaker on the overhead circuit breaker panel, P11.
 - (a) 11H30, VIDEO SYS DC

S 864-059

- (2) Remove D0-NOT-CLOSE tags, and close these circuit breakers on the P37 panel:
 - (a) 37B8, MULTIPLEXER
 - (b) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - (c) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - (d) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
 - (e) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - (f) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - (g) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

S 714-094

- (3) Do an operational test of the video system (Ref 23-32-00/501).
 - (a) Make sure the installed unit operates.

EFFECTIVITY
GUI 115

23-32-03

VIDEO TAPE REPRODUCER – REMOVAL/INSTALLATION

1. General

- A. This procedure contains:
 - (1) A task to remove the video tape reproducer (VTR).
 - (2) A task to install the video tape reproducer (VTR) and does a test of the installation.
- B. The video tape reproducer(s) is in the video control center. It attaches to the support pallet in the control center by an adapter plate on the bottom of the unit.

TASK 23-32-04-024-001

2. Video Tape Reproducer Removal

- A. References
 - (1) 20-10-01/401, E/E Rack-Mounted Components
- B. Access
 - (1) Location Zones
 - 200 Upper Half of Fuselage
 - 211 Control Cabin Left
 - 212 Control Cabin Right
- C. Prepare for the Removal

S 864-002

- (1) Open these circuit breakers and attach DO-NOT-CLOSE tags:
 - (a) On the overhead panel, P11:
 - 1) 11H29 or 11H30 or 11H32, VIDEO SYS DC or VIDEO SYSTEM DC or VIDEO SYSTEM CONT-DC or ENT VID CONT CTR-DC
 - (b) On the right miscellaneous electrical equipment panel, P37:
 - 1) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - 2) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - 3) 37A8, VIDEO SYSTEM (MAIN BUS) AC
 - 4) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - 5) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - 6) 37C8, VIDEO SYSTEM (UTIL BUS) AC

D. Video Tape Reproducer Removal

S 024-086

- (1) Remove the video tape reproducer (AMM 20-10-01/401).

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23-32-04

TASK 23-32-04-424-130

3. Video Tape Reproducer Installation

A. References

- (1) 20-10-01/401, E/E Rack-Mounted Components

B. Access

- (1) Location Zones
- | | |
|-----|------------------------|
| 200 | Upper Half of Fuselage |
| 211 | Control Cabin Left |
| 212 | Control Cabin Right |

C. Prepare for Installation

S 864-165

- (1) Make sure these circuit breakers are open and DO-NOT-CLOSE tags are attached:

(a) On the overhead panel, P11:

- 1) 11H29 or 11H30 or 11H32, VIDEO SYS DC or
VIDEO SYSTEM DC or
VIDEO SYSTEM CONT-DC or
ENT VID CONT CTR-DC

(b) On the right miscellaneous electrical equipment panel, P37:

- 1) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
2) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
3) 37A8, VIDEO SYSTEM (MAIN BUS) AC
4) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
5) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
6) 37C8, VIDEO SYSTEM (UTIL BUS) AC

D. Video Tape Reproducer Installation

S 424-090

- (1) Install the video tape reproducer (Ref 20-10-01/401).

E. Video Tape Reproducer Installation Test

S 864-045

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-168

- (2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) On the overhead panel, P11:

- 1) 11H29 or 11H30 or 11H32, VIDEO SYS DC or
VIDEO SYSTEM DC or
VIDEO SYSTEM CONT-DC or
ENT VID CONT CTR-DC

(b) On the right miscellaneous electrical equipment panel, P37:

- 1) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
2) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
3) 37A8, VIDEO SYSTEM (MAIN BUS) AC
4) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
5) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
6) 37C8, VIDEO SYSTEM (UTIL BUS) AC

EFFECTIVITY
GUI 115

23-32-04

- S 714-089
- (3) Do an operational test of the video system (AMM 23-32-00/501).
(a) Make sure the installed unit operates.
- S 864-063
- (4) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY
GUI 115

23-32-04

COUNTER BALANCE UNIT – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes a counter balance unit. The second task installs the counter balance unit and does a test of the installation.
- B. The retractor assembly has two counter balance units with complementary construction, one for the right and one for the left. A tab with one bolt attaches each unit to the retractor assembly frame. A tube between the two units gives support for a rigid construction.

TASK 23-32-11-024-002

2. Counter Balance Unit Removal (Fig. 401)

A. References

- (1) AMM 23-32-01/401, Retractable Video Monitor

B. Access

- (1) Location Zones
 - 221/222 Passenger Cabin – section 41
 - 223/224 Area above ceiling, Passenger Cabin – section 41

C. AIRPLANES PRE-23-34;

Procedure

S 024-003

- (1) Remove the retractable video monitor (AMM 23-32-01/401).

S 024-004

CAUTION: DO NOT LET THE CABLE WIND INTO THE COUNTER BALNCE UNIT. THIS INSTALLATION HAS NOTHING TO RETAIN THE DISCONNECTED CABLE. IF THE CABLE WINDS INTO THE COUNTER BALANCE UNIT, THE UNIT BECOMES UNSERVICEABLE.

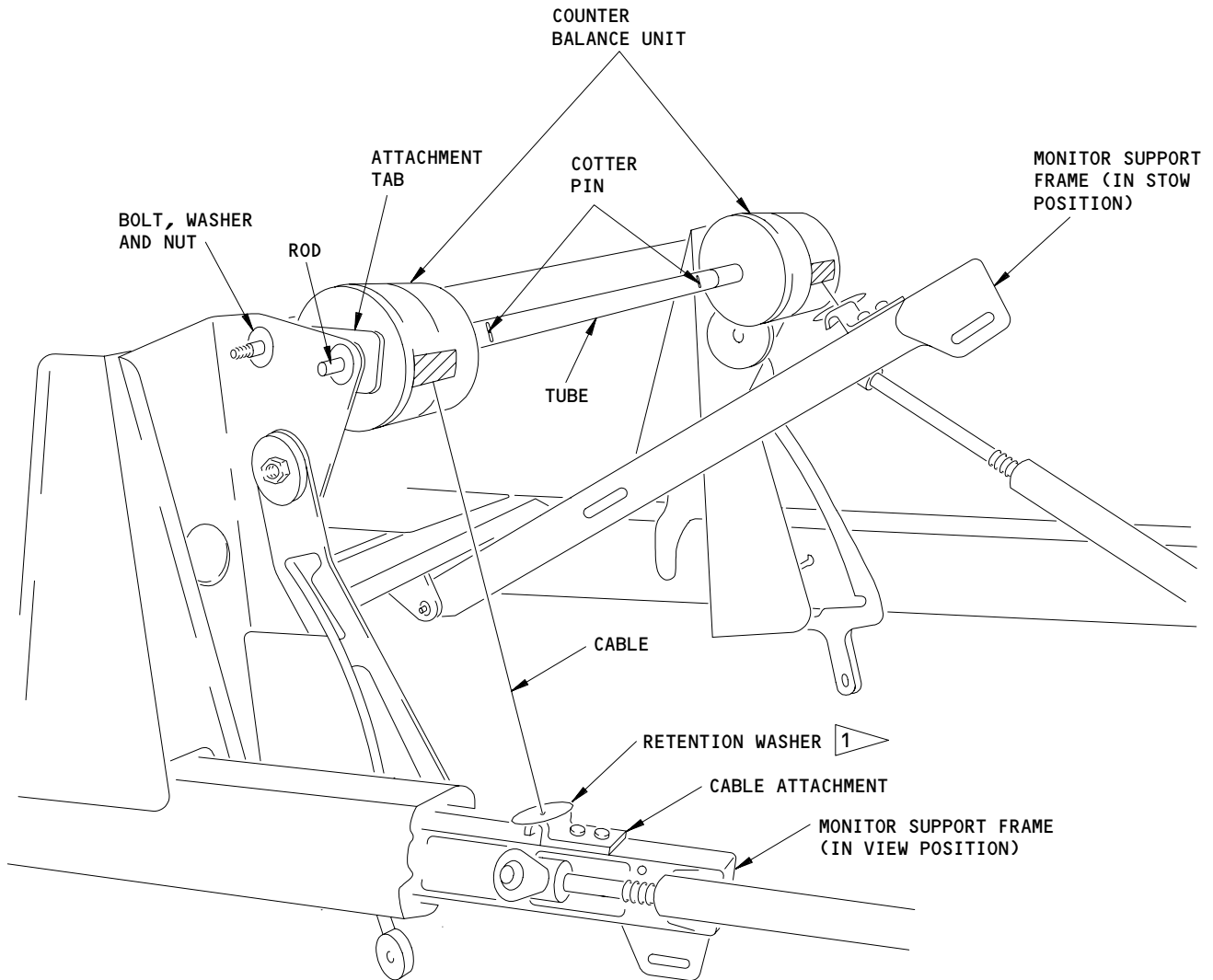
- (2) Carefully disconnect the cable from the cable attachment on the support frame:
 - (a) Use an applicable retention device on the cable to make sure the disconnected cable does not wind into the counter balance unit.
 - (b) Disconnect the cable from the cable attachment on the support frame.

S 024-005

- (3) Remove the rod from the center of the unserviceable counter balance unit:
 - (a) Remove and discard the applicable cotter pin from the tube which connects the center rods of the two counter balance units.

EFFECTIVITY
AIRPLANES WITH VIDEO ENTERTAINMENT

23-32-11



1 AIRPLANES WITH SB 23-34

Counter Balance Unit Installation
Figure 401

EFFECTIVITY
AIRPLANES WITH VIDEO ENTERTAINMENT

23-32-11

(b) Remove the rod from the center of the counter balance unit, and keep it for the installation.

S 024-006

(4) Remove the bolt, washer, and nut from the attachment tab on the counter balance unit, and keep the hardware for the installation.

S 024-007

(5) Remove the counter balance unit.

D. AIRPLANES POST-SB 23-34;
Procedure

S 024-015

(1) Remove the retractable video monitor (AMM 23-32-01/401).

S 024-020

(2) Carefully disconnect the cable from the cable attachment on the support frame.

S 024-017

(3) Remove the rod from the center of the unserviceable counter balance unit:

(a) Remove and discard the applicable cotter pin from the tube which connects the center rods of the two counter balance units.

(b) Remove the rod from the center of the counter balance unit, and keep it for the installation.

S 024-018

(4) Remove the bolt, washer, and nut from the attachment tab on the counter balance unit, and keep the hardware for the installation.

S 024-019

(5) Remove the counter balance unit.

TASK 23-32-11-424-008

3. Counter Balance Unit Installation (Fig. 401)

A. References

(1) AMM 23-32-01/401, Retractable Video Monitor

B. Access

(1) Location Zones

221/222 Passenger Cabin - section 41

223/224 Area above ceiling, Passenger Cabin - section 41

C. AIRPLANES PRE-SB 23-34;
Procedure

S 864-010

- (1) Put the counter balance unit into the usual position on the retractor assembly frame with the attachment tab aligned.

S 424-009

- (2) Install the bolt, washer, and nut to attach the counter balance unit to the frame.

S 424-011

- (3) Install the center rod for the counter balance unit:
 - (a) Put the rod into the counter balance unit with its small hole aligned with the cotter pin hole in the tube.
 - (b) Install a cotter pin into the hole through the rod and the tube.

S 424-012

CAUTION: DO NOT LET THE CABLE WIND INTO THE COUNTER BALNCE UNIT. THIS INSTALLATION HAS NOTHING TO RETAIN THE DISCONNECTED CABLE. IF THE CABLE WINDS INTO THE COUNTER BALANCE UNIT, THE UNIT BECOMES UNSERVICEABLE.

- (4) Carefully attach the cable to the cable attachment on the monitor support frame:
 - (a) Attach the cable to the cable attachment on the monitor frame.
 - (b) Remove any retention device used on the cable.

S 424-013

- (5) Install the retractable video monitor (AMM 23-32-01/401).

D. AIRPLANES POST-SB 23-34;
Procedure

S 864-021

- (1) Put the counter balance unit into the usual position on the retractor assembly frame with the attachment tab aligned.

S 424-022

- (2) Install the bolt, washer, and nut to attach the counter balance unit to the frame.

S 424-023

- (3) Install the center rod for the counter balance unit:
 - (a) Put the rod into the counter balance unit with its small hole aligned with the cotter pin hole in the tube.

(b) Install a cotter pin into the hole through the rod and the tube.

S 424-026

(4) Attach the cable to the cable attachment on the monitor support frame.

S 414-025

(5) Install the retractable video monitor (AMM 23-32-01/401).

E. Counter Balance Unit Installation Test

S 714-014

(1) Operate the forward video monitor retractor mechanism between the "stow" and "view" positions.

(a) Make sure the mechanism operates freely.

ZONE INTERFACE BOX – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes a zone interface box (ZIB). The second task installs the ZIB and does a test of the installation.
- B. Each ZIB attaches to a stringer above the ceiling panels near one of the video monitors.

TASK 23-32-12-024-001

2. Zone Interface Box Removal

A. References

- (1) AMM 25-22-01/401, Sculptured Ceiling Panels

B. Access

- (1) Location Zones

120	Main Equipment Center (RH Side)
200	Upper Half of Fuselage

- (2) Access Panel

119BL	Main Equipment Center
-------	-----------------------

C. Prepare for the Removal

S 864-002

- (1) Open these circuit breakers on the right miscellaneous electrical equipment panel, P37, and attach DO-NOT-CLOSE tags:
 - (a) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
 - (b) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
 - (c) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
 - (d) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
 - (e) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
 - (f) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

D. Zone Interface Box Removal

S 014-003

- (1) Remove the sculptured ceiling panels near the zone interface box for access (AMM 25-22-01/401).

S 024-004

- (2) Disconnect the electrical connectors from the ZIB.

S 024-005

- (3) Remove the four screws and washers that attach the ZIB, and keep them for the installation.

S 024-006

- (4) Remove the ZIB from the monitor support structure.

TASK 23-32-12-424-007

3. Zone Interface Box Installation

A. References

- (1) AMM 23-32-00/501, Passenger Entertainment (Video) System
- (2) AMM 25-22-01/401, Sculptured Ceiling Panels

B. Access

(1) Location Zones

- 120 Main Equipment Center (RH Side)
- 200 Upper Half of Fuselage

(2) Access Panel

- 119BL Main Equipment Center

EFFECTIVITY
AIRPLANES WITH VIDEO ENTERTAINMENT

23-32-12

C. Zone Interface Box Installation

S 424-008

- (1) Put the ZIB in its usual position on the monitor support structure.

S 424-009

- (2) Install the four screws and washers to attach the ZIB.

S 424-010

- (3) Connect the electrical connectors to the ZIB.

S 414-011

- (4) Install the sculptured ceiling panel (AMM 25-22-01/401).

D. Zone Interface Box Installation Test

S 864-012

- (1) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the right miscellaneous electrical equipment panel, P37:

- (a) 37A6, VIDEO SYSTEM (MAIN BUS) MONITOR FWD
- (b) 37A7, VIDEO SYSTEM (MAIN BUS) MONITOR AFT
- (c) 37A8, VIDEO SYSTEM (MAIN BUS) SYSTEM AC
- (d) 37C6, VIDEO SYSTEM (UTIL BUS) MONITOR FWD
- (e) 37C7, VIDEO SYSTEM (UTIL BUS) MONITOR AFT
- (f) 37C8, VIDEO SYSTEM (UTIL BUS) SYSTEM AC

S 714-013

- (2) Do an operational test of the video system (AMM 23-32-00/501).
- (a) Make sure video shows on the monitors connected to the installed ZIB.

PASSENGER ENTERTAINMENT SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The passenger entertainment system supplies entertainment audio to the passenger seats.
- B. The system has these components:
 - (1) Main multiplexer
 - (2) Passenger control units (PCU).

NOTE: The Passenger control units can also be referred to as the Digital Passenger Control Unit (DPCU).

- (3) Seat electronics boxes (SEB)
- (4) Entertainment Control Switch
- (5) Entertainment tape reproducer
- (6) Entertainment Control Switch
- C. Audio signals from the entertainment tape reproducer are digitized and multiplexed by the main multiplexer. The main multiplexer routes the audio data to the SEBs. The SEBs demultiplex and demodulate the audio data and provide it to the PCUs.
- D. The system gets power from the 115v ac utility bus through circuit breakers on the miscellaneous electrical equipment panel. The power relays get power from the 28v dc battery bus through a circuit breaker on the overhead circuit breaker panel.

2. Component Details (Fig. 1)

A. Entertainment Tape Reproducer

- (1) The entertainment tape reproducer is installed on shelf 4 of the main equipment center rack E4 (E4-4).
- (2) The tape reproducer supplies 12 audio channels to the main multiplexer. Four of these audio channels are also supplied to the PA amplifier for boarding music (Ref 23-31-00).
- (3) The tape reproducer contains six cassettes, each played back by its own tape transport assembly. Each tape transport assembly consists of a capstan motor, reel motor, and a 4-channel head. The cassettes are labeled 1A, 1B, 2A, 2B, 3A and 3B. Each A cassette contains the first half of a program and the B cassette contains the second half. The cassettes must be loaded in the correct position, with the correct side facing out for proper operation.
- (4) The cassettes are loaded into the tape reproducer via access doors on each side of the unit. There are no external controls on the tape reproducer.

B. Main Multiplexer

- (1) The main multiplexer is installed on shelf 4 of the main equipment center rack E4 (E4-4).
- (2) The main multiplexer accepts 12 analog audio channels from the entertainment tape reproducer and one analog audio channel from the PA amplifier. The main multiplexer converts the analog audio to digital form and then multiplexes (combines) the digital data into a single data stream. The data stream is output to the four columns of SEBs.

EFFECTIVITY

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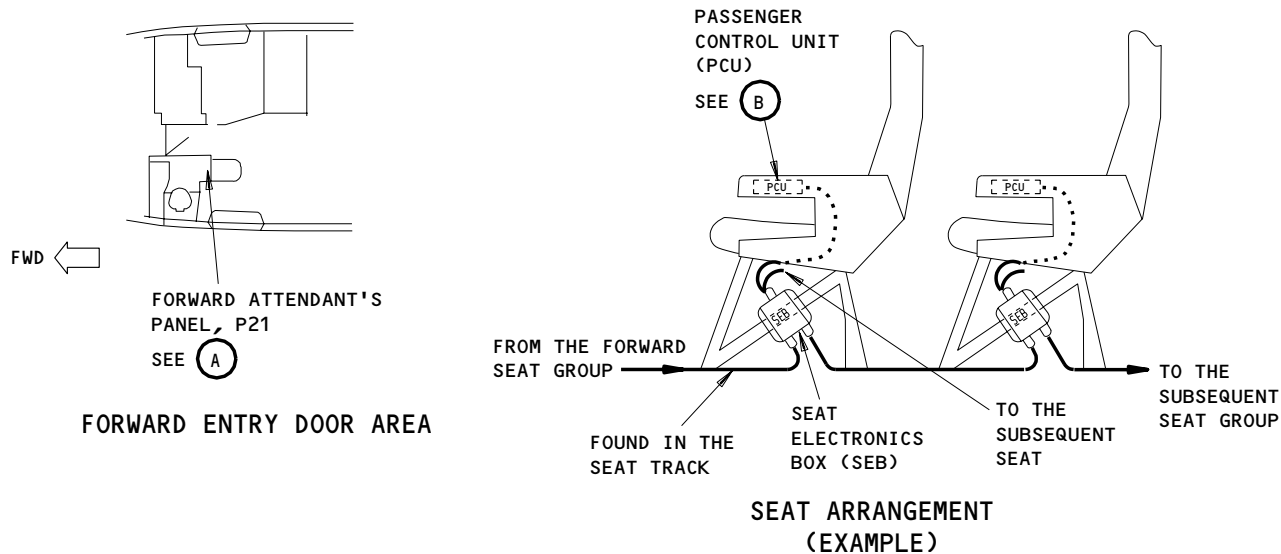
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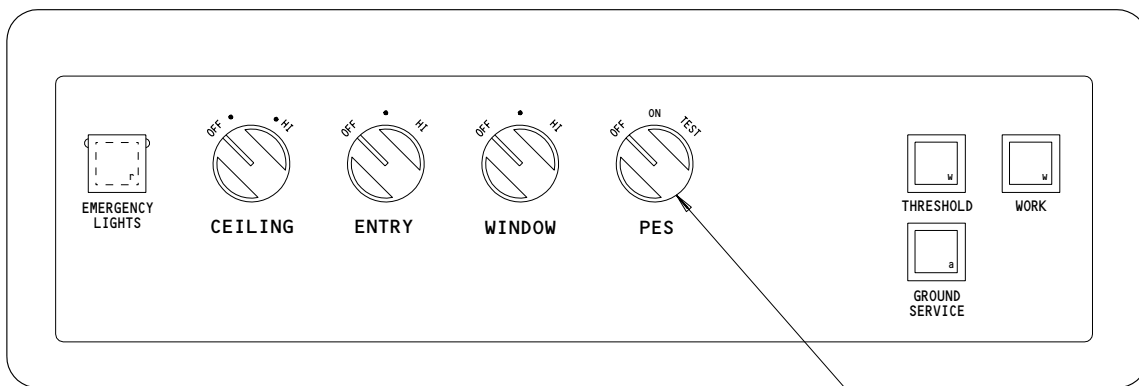
BOEING

757 MAINTENANCE MANUAL



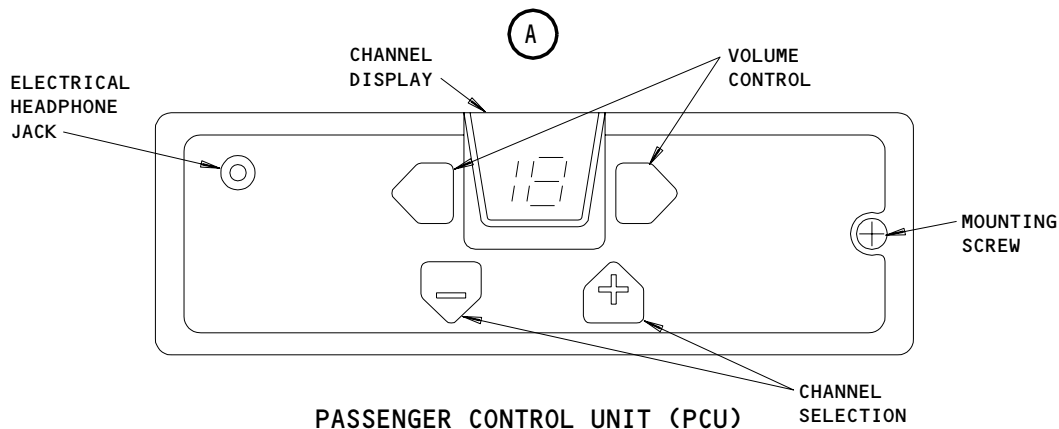
FORWARD ENTRY DOOR AREA

SEAT ARRANGEMENT
(EXAMPLE)



FORWARD ATTENDANT'S PANEL, P21

ENTERTAINMENT CONTROL SWITCH



PASSENGER CONTROL UNIT (PCU)

Passenger Entertainment System Component Location
Figure 1 (Sheet 1)

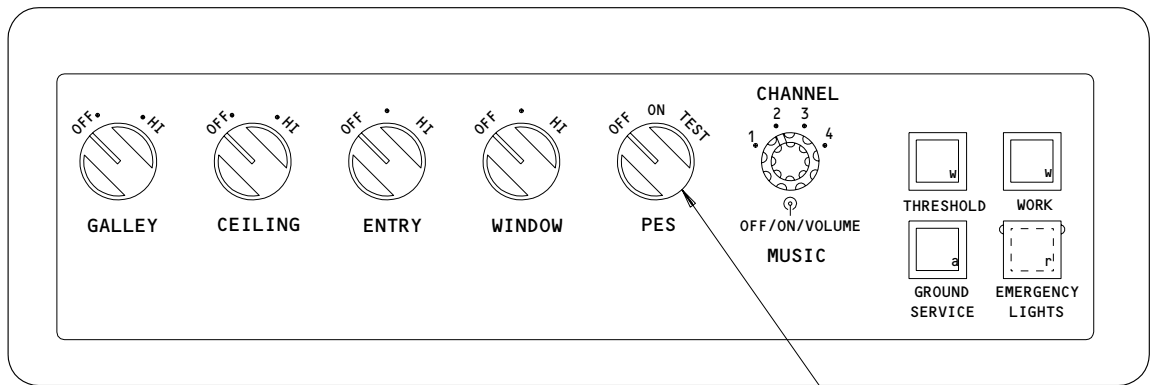
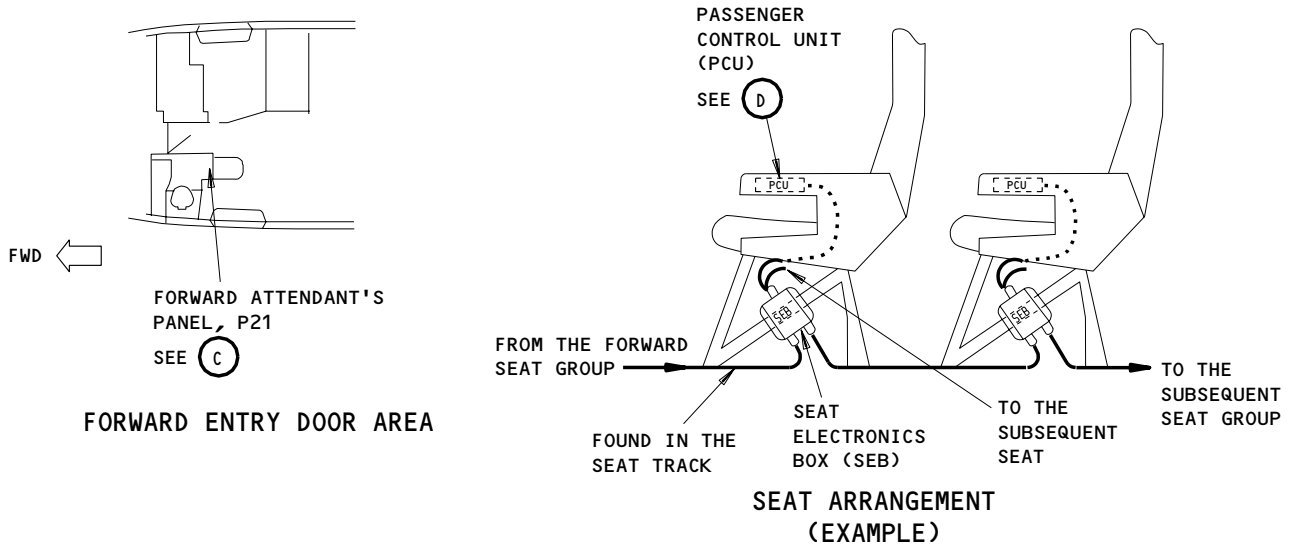
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GUI 001-099

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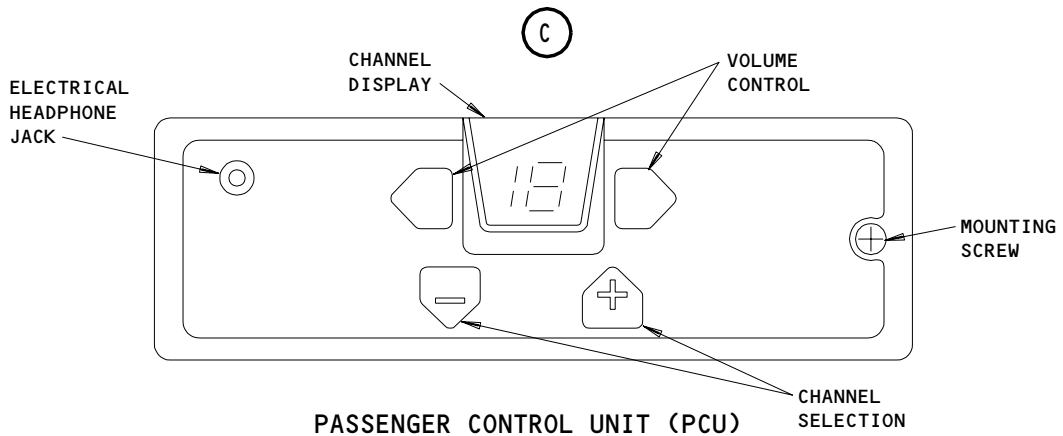
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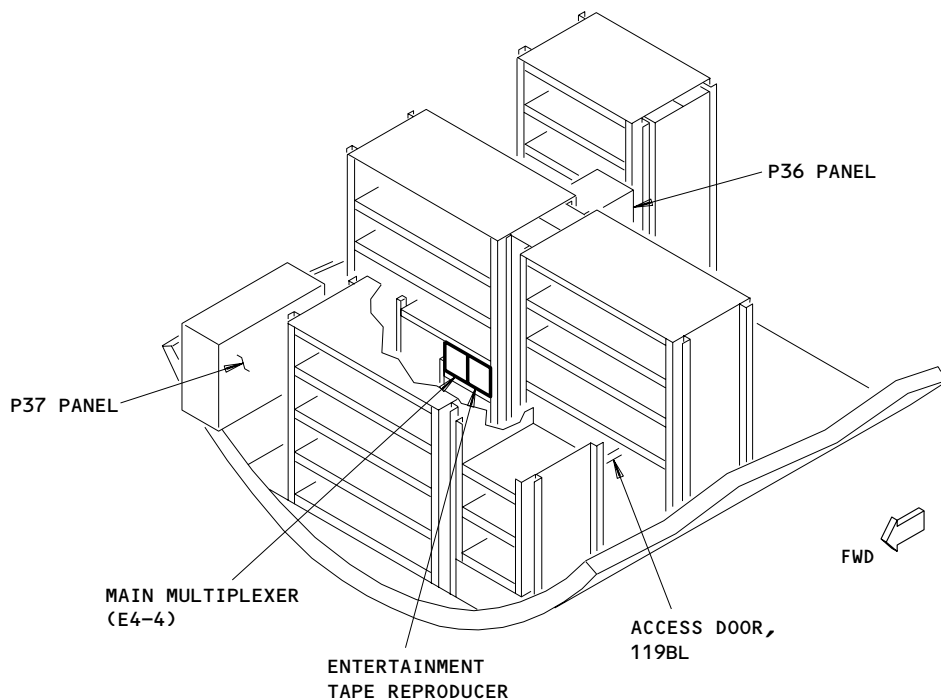
FORWARD ATTENDANT'S PANEL, P21
ENTERTAINMENT CONTROL SWITCH



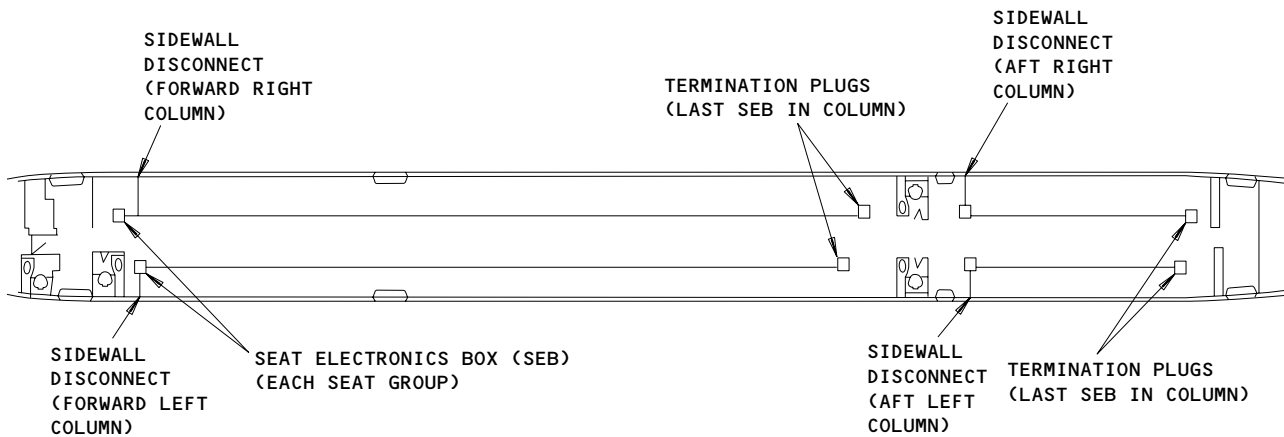
**Passenger Entertainment System Component Location
Figure 1 (Sheet 2)**

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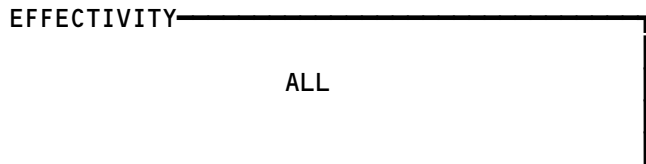


MAIN EQUIPMENT CENTER



SEAT ELECTRONICS BOX (SEB) COLUMN LOCATION

**Passenger Entertainment System Component Location
Figure 1 (Sheet 3)**



23-34-00

- (3) The main multiplexer consists of an isolation amplifier for each audio input, analog-to-digital convertor circuits, multiplexing circuits and four line drivers (one for each column of SEBs). The main multiplexer also supplies fused 35v ac power to the SEBs. Circuit breakers for each column of SEBs are located on the front panel of the main multiplexer.
- (4) Stereo/mono switches are located on the main circuit board of the multiplexer. The switches are set to the proper position before the installation.

C. Seat Electronics Box (SEB)

- (1) A seat electronics box (SEB) is installed on the inboard seat of each seat group. The SEB is mounted to the seat frame by four pull-type plastic fasteners.
- (2) The SEB receives the data stream from the main multiplexer. The SEB demultiplexes the data and converts it from digital form back to its original analog form. The analog audio then goes to each PCU in the seat group.
- (3) The two D-type jacks on one end are the column connectors; they are interchangeable. The telephone jacks on the other end connect to the PCUs. Cables connect the SEBs in each column of seats in series. The last SEB in a column has a termination plug installed on one of its column connector jacks.
- (4) The SEB contains integrated circuits which perform the demultiplexing and digital-to-analog conversion. Three stereo audio amplifiers, each with its own electronic volume control, provide audio for the PCUs.

D. Passenger Control Unit (PCU)

- (1) A passenger control unit (PCU) is installed in the armrest of each passenger seat. The PCU attaches to the armrest by a single screw on the front panel.
- (2) The PCU buttons provide channel selection and volume control. A two-digit, seven-segment display indicates the channel selected and is also used as a status indicator during the self-test. A jack for a passenger headset is provided.
- (3) A cable with a connector on the end is provided to connect the PCU to the seat harness running to the SEB. A jack on the rear of the PCU provides an output for an electrical-to-acoustic transducer, allowing a pneumatic headset jack to be mounted in the armrest adjacent to the PCU.

3. Operation (Fig. 2)

A. Functional Description

- (1) The passenger entertainment system is activated by rotating the PES switch to ON. The switch is located on the forward attendant's panel, P21. The PES switch supplies a ground to energize the mux power relay. The contacts in this relay close to supply grounds for the entertainment tape reproducer and main multiplexer. The ground supplied to these units will cause them to power up. The main multiplexer supplies 35v ac power for the SEBs, which in turn supply 5.6v dc for the PCUs.

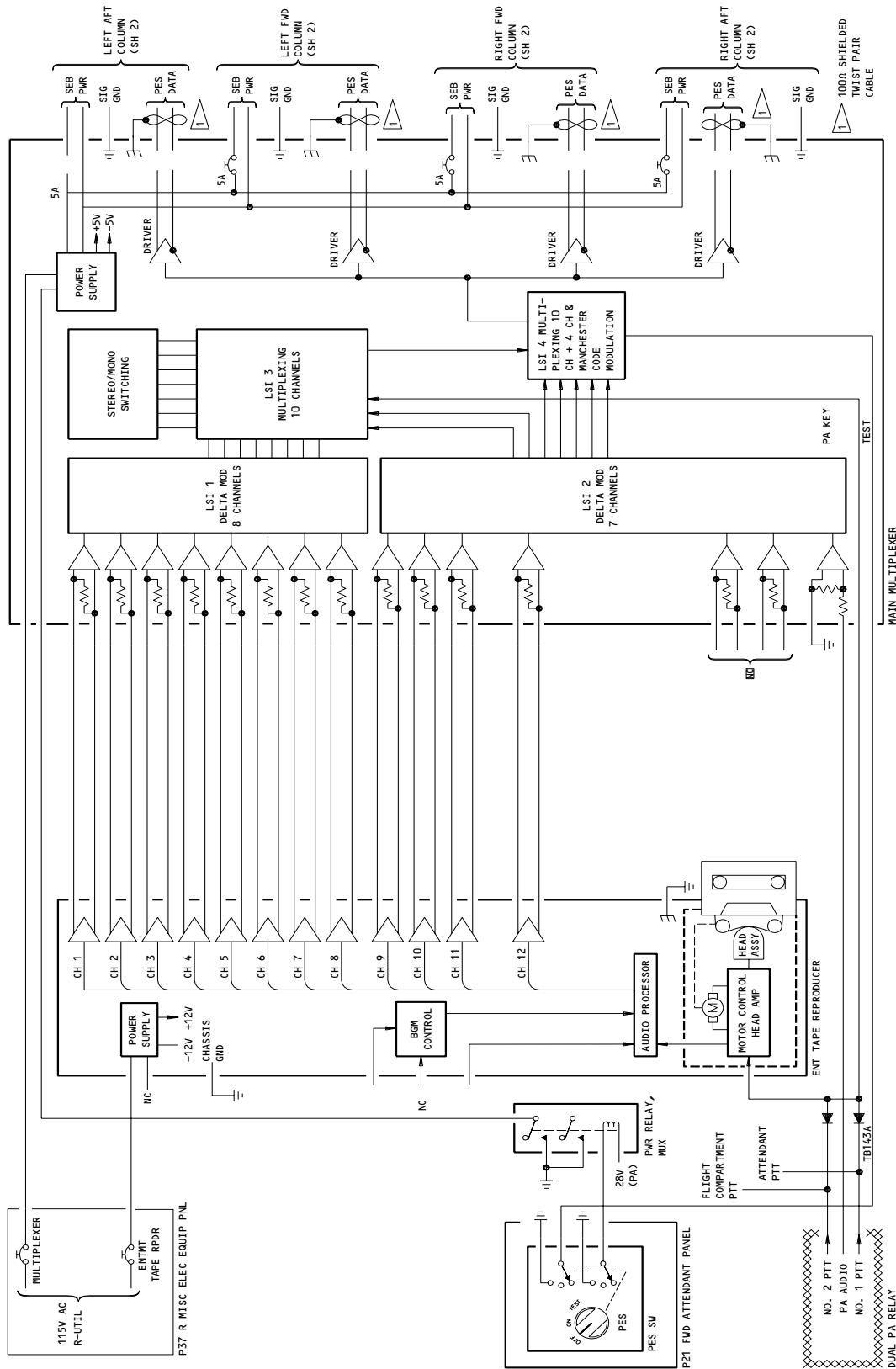
EFFECTIVITY

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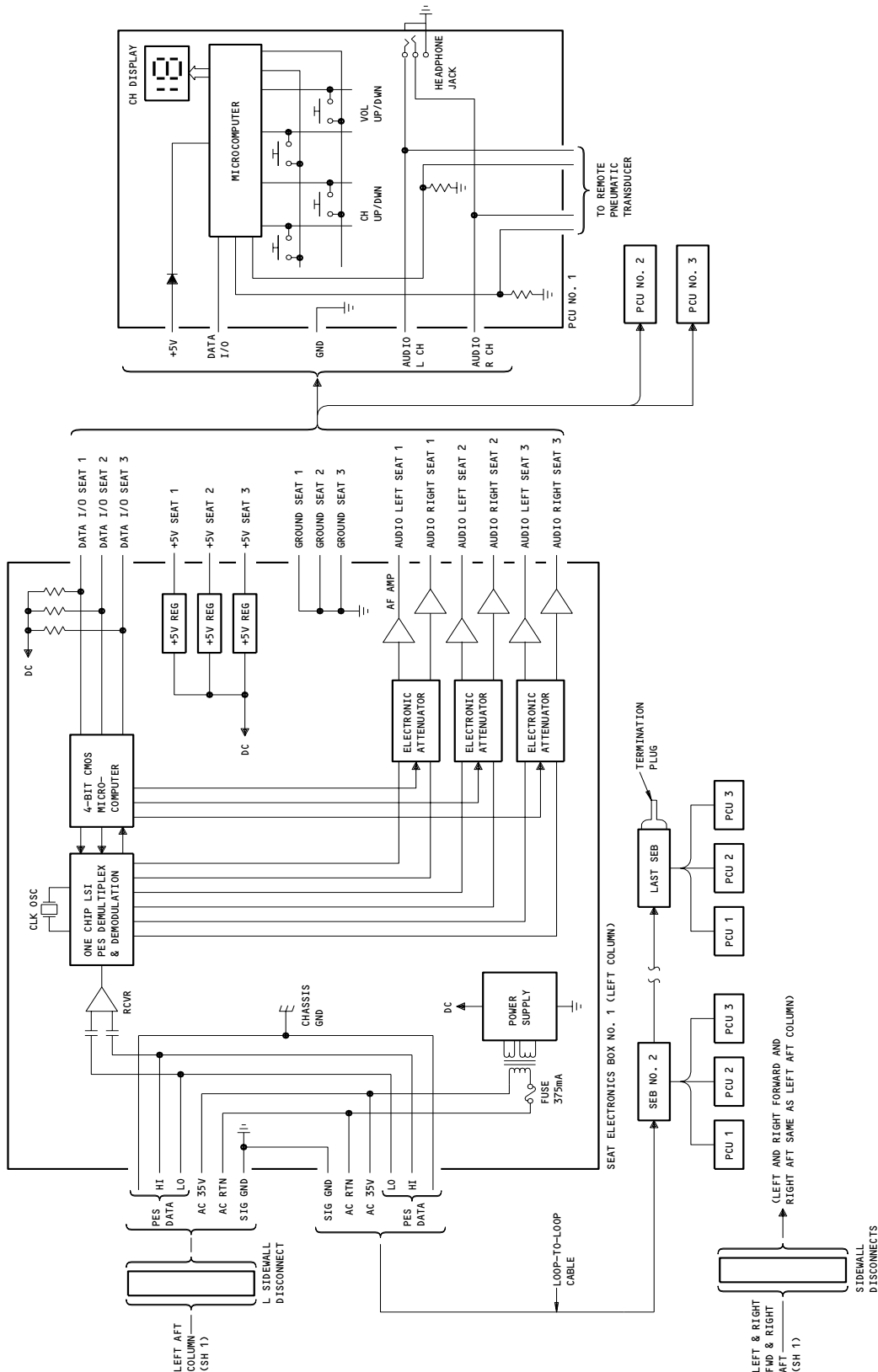
Passenger Entertainment Schematic
Figure 2 (Sheet 1)

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Passenger Entertainment Schematic
Figure 2 (Sheet 2)

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- (2) Power-up of the entertainment tape reproducer will cause the 1A, 2A and 3A tape transports to enter the play mode. The 1B, 2B and 3B tape transports will rewind to the beginning-of-tape cue point and enter a standby mode. When the end-of-tape cue is detected by an A transport, the corresponding B transport will enter play mode. The A transport will then rewind to the beginning-of-tape cue point and enter a standby mode. The A transport will begin to play when the B transport senses the end-of-tape cue. This process repeats until power is removed or a PA announcement is made.
- (3) If a short power interruption (less than 15 seconds) occurs the entertainment tape reproducer will begin to play at the point of interruption when the power is restored.
- (4) When a PA PTT is initiated, a ground is provided to the entertainment tape reproducer PA keyline causing the tape reproducer to enter a pause mode. Releasing the PA PTT removes the ground, and the tape reproducer restarts at the point of interruption.
- (5) The audio information magnetically encoded on the audio tapes is detected and converted to an electrical waveform by the entertainment tape reproducer heads. The three active heads each supply 4 channels of audio. Twelve audio amplifiers (one for each channel) output the audio signal from the tape reproducer to the main multiplexer.
- (6) The main multiplexer receives the audio channels from the entertainment tape reproducer, and from the PA amplifier. The main multiplexer converts the signals to digital pulses, and combines the information into a single data stream. The data stream goes out to the SEBs.
- (7) The main multiplexer performs the analog-to-digital conversion of the audio waveform by sampling to determine if the wave is rising, falling or constant. For each sample an appropriate digital bit goes into the data stream.
- (8) The data stream is made up of frames of digital pulses. Within each frame is a bit for one sample of each of the 12 audio waveforms. The frame also contains a sync pulse to signal the beginning of a frame, and a command bit with stereo/mono switch information.
- (9) When a PA PTT is initiated, a ground is provided to the main multiplexer PA keyline. The PA announcement audio is converted to digital form and transmitted on all channels.
- (10) The SEB receives the data stream from the main multiplexer and converts it into analog audio signals for the PCUs.
- (11) The SEB extracts the system command bits from the data stream and uses the information to pair stereo channels selected by the stereo/mono switches in the main multiplexer. The command bits are also used to initiate a self-test when the PES switch is in the TEST position.
- (12) A serial data line provides PCU volume and channel select information to the SEB. Activating a PCU channel select switch sends four bits of data to the SEB. The SEB will demultiplex and demodulate this channel (or channels for a stereo pair).

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- (13) The SEB contains three 2-channel audio amplifiers, each with a 16-step electronic volume control unit. Pressing an up or down volume control switch sends two bits of data to the SEB, causing the electronic volume control to increment or decrement one step.
- (14) The PCU receives the audio waveform from the SEB and makes the signal available at the electrical headset jack. Plugging a headset into the jack allows the electrical impulses to travel to the headset transducers (speakers), which convert the electrical signal to sound waves which are audible in the passenger's ear.
- (15) The PCU can also supply the electrical impulses to a remote transducer which performs the electrical-to-acoustic conversion using speakers mounted in a box. Plugging a pneumatic headset into the jacks depresses spring loaded plungers allowing the sound waves to travel to the earpieces and be heard by the passenger.

B. Self-Test

- (1) Turn the PES switch to TEST on the forward attendant's panel, P21.
- (2) At each PCU, make sure the right-hand horizontal piece " -" of the digital display is on.
- (3) Make sure all other pieces of the display are off.
- (4) Turn the PES switch to OFF.

C. Control

- (1) Supply electrical power (AMM 24-22-00/201).
- (2) Make sure the PASS ADRS AMPL circuit breaker is closed on the overhead circuit breaker panel, P11.
- (3) Make sure the MULTIPLEXER and ENT TAPE RPDR circuit breakers are closed on the right miscellaneous electrical equipment panel, P37.
- (4) Turn the PES switch to ON, on the forward attendant's panel, P21.

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FAULT ISOLATION/MAINT MANUAL

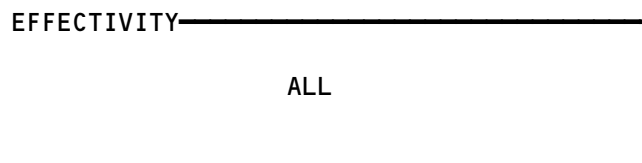
PASSENGER ENTERTAINMENT SYSTEM (PES)

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
AMPLIFIER - (23-31-00/101) PASSENGER ADDRESS, M177, M10782				
BOX - SEAT ELECTRONICS	2,3	1	EACH PASS. SEAT GROUP	
CIRCUIT BREAKERS -	1		FLT COMPT, P11	
ENTMT DC, C4434		1	11H34	*
PASSENGER ADDRESS, C548		1	11C22	*
CIRCUIT BREAKERS -	1		119BL, MAIN EQUIP CTR, P37	
ENT TAPE RPDR, C4426 1		1	37B7	*
MULTIPLEXER, C4403		1	37B8	*
TAPE RPDR, C4028 2		1	37E2	*
CONTROL - (33-22-00/101) 2				
BOARDING MUSIC, S10179				
MULTIPLEXER - MAIN, M10733	1	1	119BL, MAIN EQUIP CTR, E4-4	23-34-01
PANEL - (33-22-00/101) FWD ATTENDANT, P21				
RELAYS - (31-01-36/101)				
AUDIO PRIORITY CONTROL, K10641				
MUX PWR, K10599				
TAPE REP PWR, K10600 2				
REPRODUCER - ENTERTAINMENT TAPE, M130	1	1	119BL, MAIN EQUIP CTR, E4-4	23-34-03
SWITCH - ENTERTAINMENT CONTROL, S10479	2,3	1	PASS. CABIN P21 PANEL	*
UNIT - PASSENGER CONTROL	2,3	1	EACH PASSENGER SEAT	23-34-05
UNIT - (23-42-00/101) 1				
AUDIO ACCESSORY, M108				

* SEE THE WDM EQUIPMENT LIST

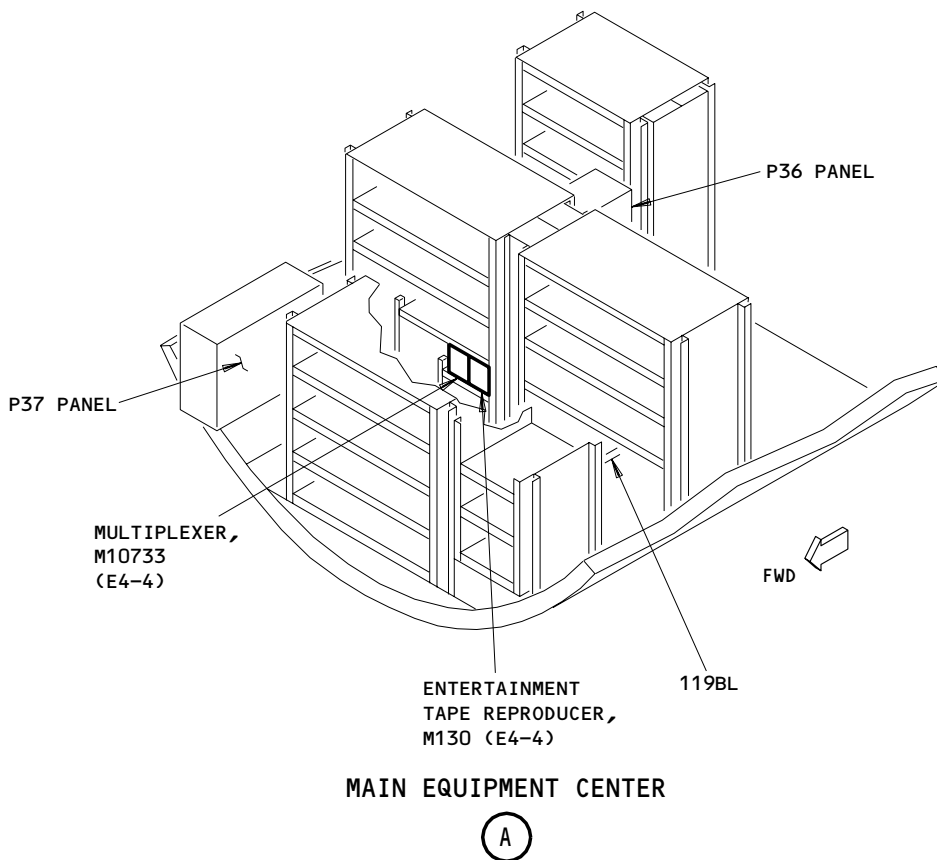
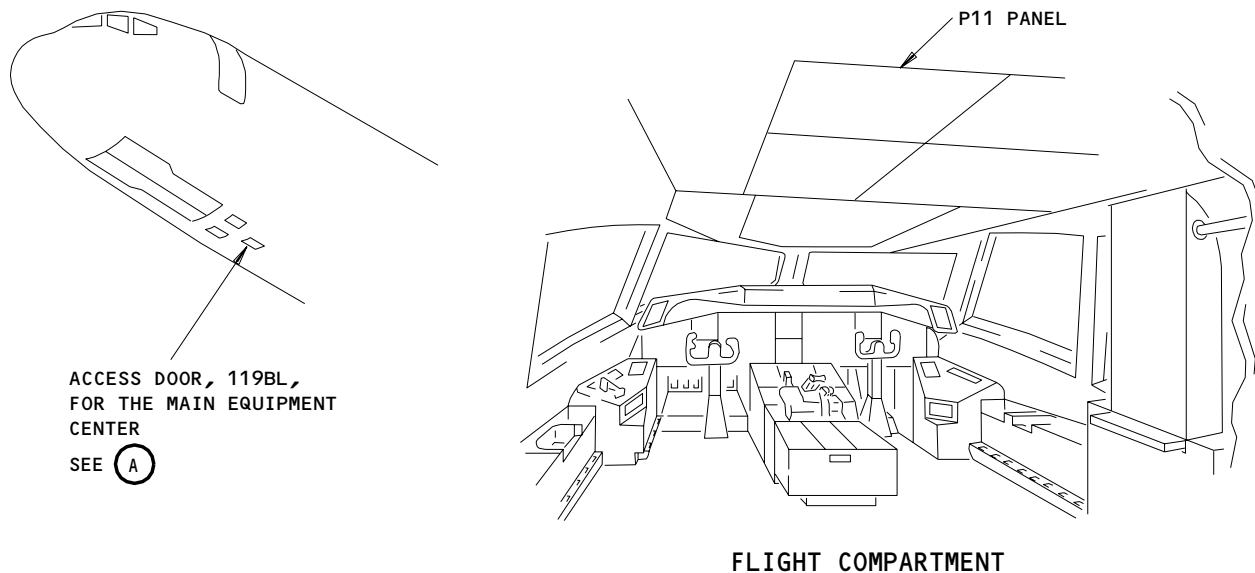
- 1 GUI 009-099
- 2 GUI 115

Passenger Entertainment System (PES) - Component Index
Figure 101



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FAULT ISOLATION/MAINT MANUAL

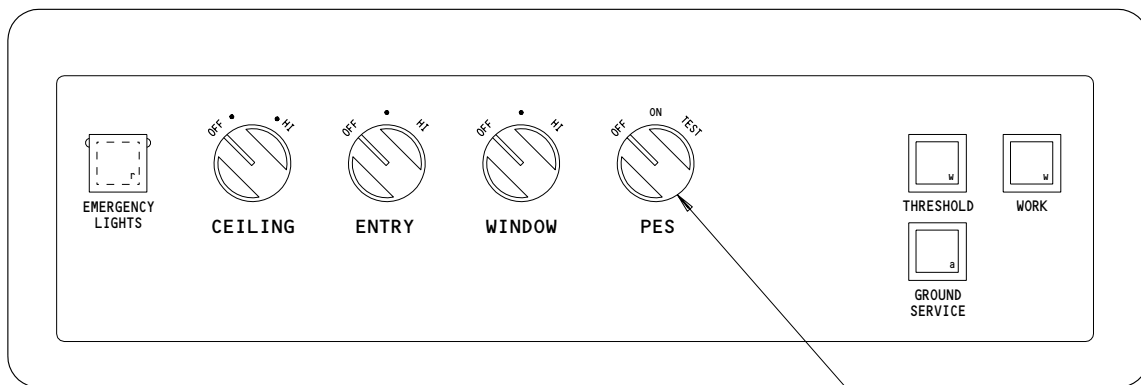
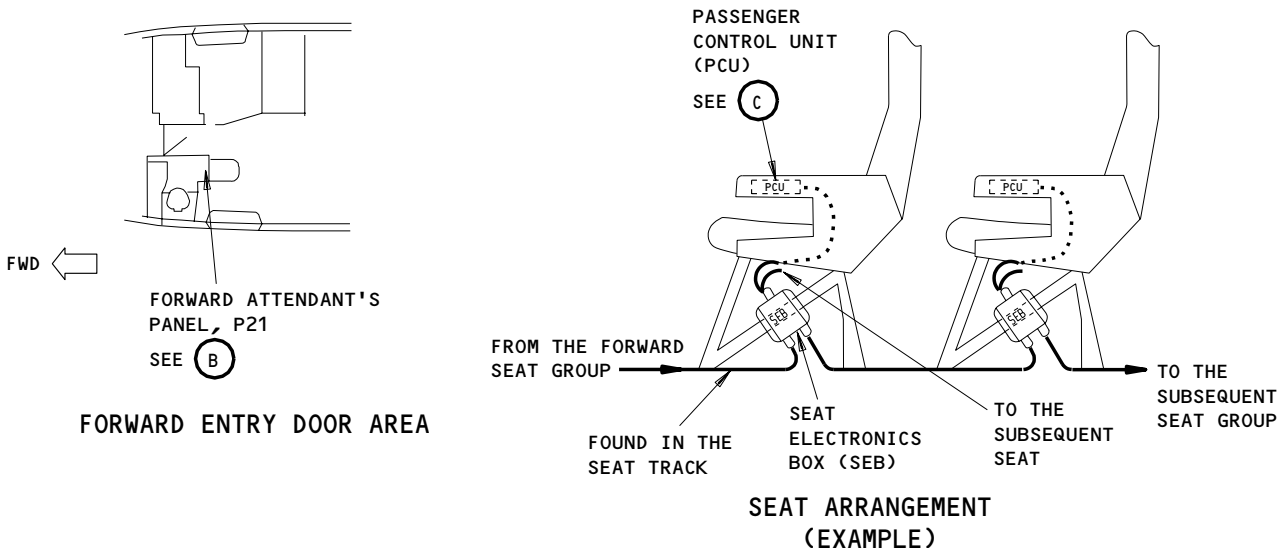


Passenger Entertainment System - Component Location
 Figure 102 (Sheet 1)

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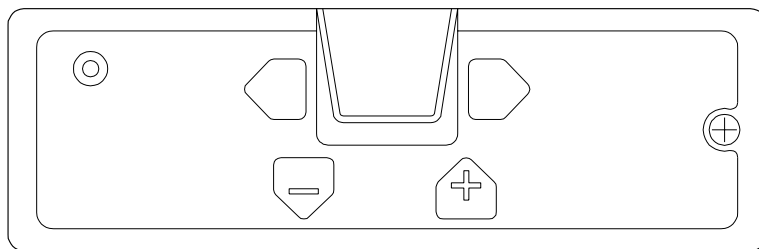
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FAULT ISOLATION/MAINT MANUAL



FORWARD ATTENDANT'S PANEL, P21

(B)

ENTERTAINMENT CONTROL SWITCH, S10479



PASSENGER CONTROL UNIT (PCU)

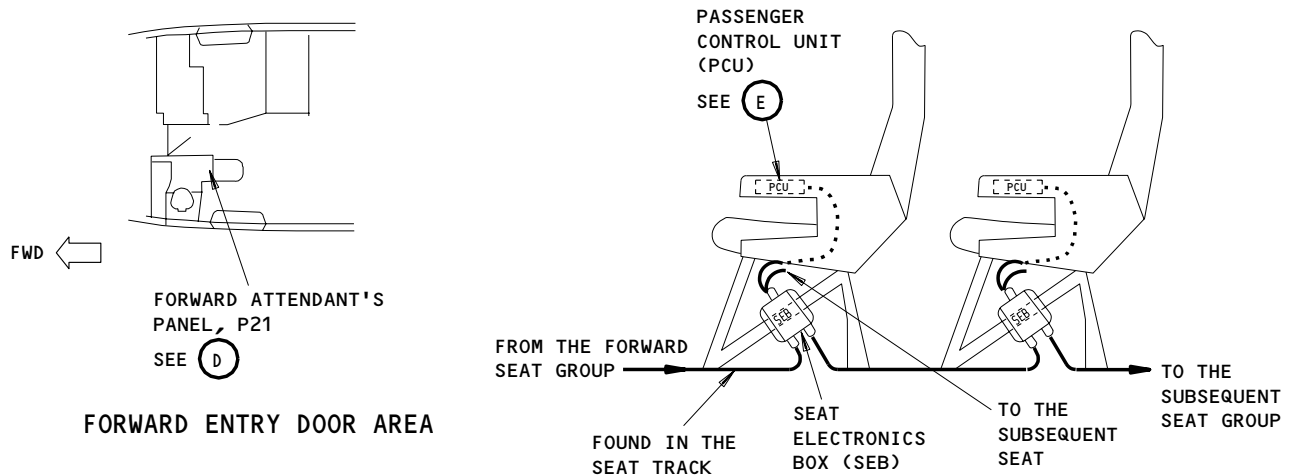
(C)

Passenger Entertainment System - Component Location
Figure 102 (Sheet 2)

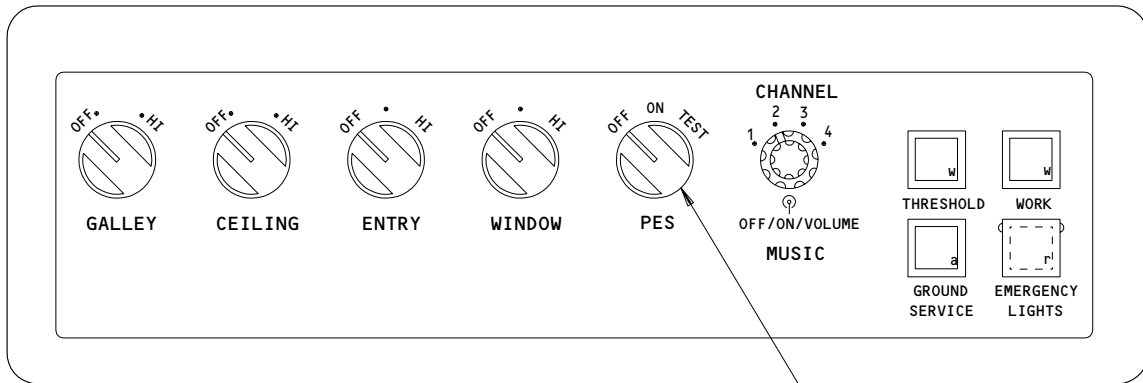
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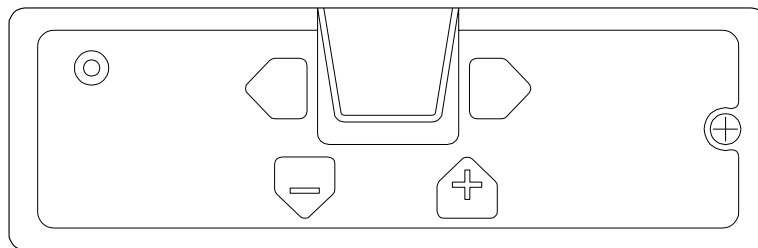
**SEAT ARRANGEMENT
(EXAMPLE)**



ENTERTAINMENT CONTROL SWITCH, S10479

FORWARD ATTENDANT'S PANEL, P21

(D)



PASSENGER CONTROL UNIT (PCU)

(E)

Passenger Entertainment System - Component Location
Figure 102 (Sheet 3)

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PASSENGER ENTERTAINMENT SYSTEM – ADJUSTMENT/TEST

1. General

- A. This procedure has one task. The task is the operational test of the passenger entertainment system.
- B. To do this procedure these other systems must operate:
 Passenger address (AMM 23-31-00)
 Cabin interphone (AMM 23-42-00)
 Flight interphone (AMM 23-51-00).
- C. The entertainment tape reproducer connects to the main multiplexer to make the PCU channel assignments shown in Table 501.

PCU Channel Assignments Table 501		
PCU CHANNEL	AUDIO TYPE	TAPE TRACK ASSIGNMENT
1	MONO	SPARE
2	MONO	SPARE
3	MONO	10
4	MONO	12
5	MONO	1
6	MONO	3
7	MONO	2
8	MONO	4
9	MONO	5
10	MONO	7
11	MONO	6
12	MONO	8

TASK 23-34-00-715-001

2. Operational Test

A. General

- (1) This task contains procedures to do a self-test and audio test of the passenger entertainment system. These tests are for correct operation of the passenger entertainment system in a minimum of time. Only equipment installed on the airplane is used.

B. References

- (1) AMM 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zone
 200 Upper Half of Fuselage

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D. BITE Test Procedure

S 865-073

- (1) Supply electrical power (AMM 24-22-00/201).

S 865-009

- (2) Turn the PES switch to TEST, on the forward attendant panel P21.

S 715-074

- (3) Examine the display on each PCU for a good BITE test indication:
(a) Make sure the center horizontal piece of the right number of the display is on (-).
(b) Make sure all other pieces of the display are off.

E. Put the Airplane Back to Its Usual Condition

S 865-042

- (1) Turn the PES switch to OFF.

S 865-063

- (2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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MAIN MULTIPLEXER – REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks. The first task removes the main multiplexer. The second task installs the multiplexer and does a test of the installation.
- B. Main multiplexer M10733 is on shelf 4 of the main equipment center rack E4 (E4-4).

TASK 23-34-01-004-002

2. Remove the Main Multiplexer (Fig. 401)

A. References

- (1) 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) 20-10-01/401, E/E Rack-Mounted Components
- (3) 20-41-01/201, Electrostatic Discharge Sensitive Devices

B. Access

- (1) Location Zone
119/120 Main Equipment Center
- (2) Access Panel
119BL Main Equipment Center

C. Prepare for Removal

S 014-018

- (1) Open the access door, 119BL, for the main multiplexer (Ref 06-41-00/201).

S 864-003

- (2) Open this circuit breaker on the right miscellaneous electrical equipment panel, P37, and attach a DO-NOT-CLOSE tag:
 - (a) 37B8, MULTIPLEXER

D. Procedure

S 914-019

CAUTION: DO NOT TOUCH THE MAIN MULTIPLEXER BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE MAIN MULTIPLEXER.

- (1) Do the procedure for devices that are sensitive to electrostatic discharge (Ref 20-41-01/201).

S 024-027

- (2) Remove the main multiplexer (Ref 20-10-01/401).

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TASK 23-34-01-404-006

3. Install the Main Multiplexer (Fig. 401)

A. References

- (1) 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) 20-10-01/401, E/E Rack-Mounted Components
- (3) 20-41-01/201, Electrostatic Discharge Sensitive Devices
- (4) 24-22-00/201, Electrical Power - Control

B. Access

- (1) Location Zones
 - 119/120 Main Equipment Center
 - 211/212 Flight Compartment
 - 221/222 Passenger Compartment

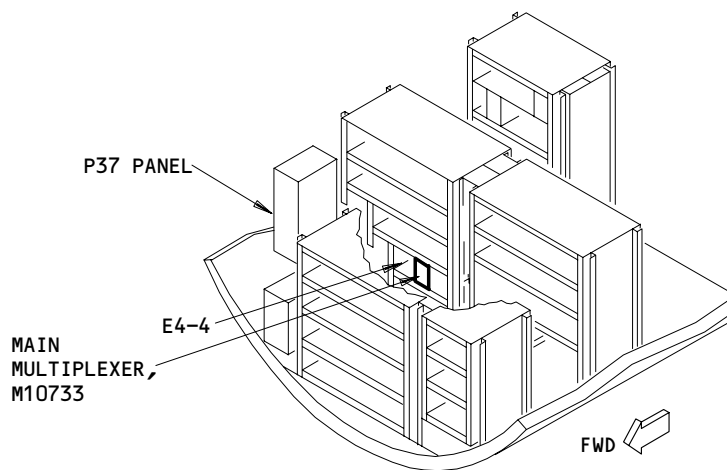
(2) Access Panel

- 119BL Main Equipment Center

C. Procedure

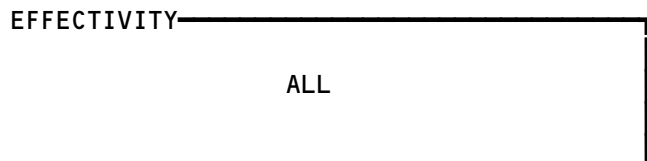
S 864-040

- (1) Make sure this circuit breaker on the right miscellaneous electrical equipment panel, P37, is open and a DO-NOT-CLOSE tag is attached:
 - (a) 37B8, MULTIPLEXER



MAIN EQUIPMENT CENTER

Main Multiplexer - Installation
Figure 401



23-34-01

S 914-020

CAUTION: DO NOT TOUCH THE MAIN MULTIPLEXER BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE MAIN MULTIPLEXER.

- (2) Do the procedure for devices that are sensitive to electrostatic discharge (Ref 20-41-01/201).

S 014-036

- (3) Remove the cover from the multiplexer.

S 864-057

- (4) Set the switches on the main circuit card as follows:

<u>SWITCH NUMBER</u>	(GUI 001-114) <u>POSITION</u>	(GUI 115) <u>POSITION</u>
S1	OFF	ON
S2	OFF	ON
S3	OFF	ON
S4	OFF	ON
S5	OFF	OFF
S6	OFF	OFF
S7	OFF	OFF

S 434-039

- (5) Install the cover on the main multiplexer.

S 414-042

- (6) Install the cover onto the main multiplexer.

S 424-016

- (7) Install the main multiplexer (Ref 20-10-01/401).

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D. Main Multiplexer Installation Test

S 864-044

- (1) Supply electrical power (Ref 24-22-00/201).

S 864-052

- (2) Remove the DO-NOT-CLOSE tag, and close this circuit breaker on the right miscellaneous electrical equipment panel, P37:
 - (a) 37B8, MULTIPLEXER

S 864-018

- (3) Turn the PES switch to ON, at the forward attendant panel P21.

S 714-032

- (4) Make sure you hear clear entertainment sound at a passenger control unit (PCU).

E. Put the Airplane Back to Its Usual Condition

S 864-048

- (1) Turn the PES switch to OFF.

S 414-027

- (2) Close the access door, 119BL (Ref 06-41-00/201).

S 864-063

- (3) Remove electrical power if it is not necessary (Ref 24-22-00/201).

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ENTERTAINMENT TAPE REPRODUCER – MAINTENANCE PRACTICES

1. General

- A. This procedure has these tasks:
 - (1) Entertainment Tape Reproducer Removal
 - (2) Entertainment Tape Reproducer Installation
 - (3) Cassette Tape Removal
 - (4) Cassette Tape Installation
- B. The entertainment tape reproducer is on shelf 4 of the main equipment center rack E4 (E4-4).

TASK 23-34-03-002-071

2. Entertainment Tape Reproducer Removal

- A. References
 - (1) AMM 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
 - (2) AMM 20-10-01/401, E/E Rack-Mounted Components

B. Access

- (1) Location Zone
120 Main Equipment Center (RH side)
- (2) Access Panel
119BL Main Equipment Center

C. Procedure

- S 012-072
 - (1) Open the access door, 119BL, for the entertainment tape reproducer (AMM 06-41-00/201).
- S 862-073
 - (2) Open this circuit breaker on the right miscellaneous electrical equipment panel, P37, and attach a DO-NOT-CLOSE tag:
 - (a) 37B7, ENT TAPE RPDR
- S 022-074
 - (3) Remove the entertainment tape reproducer (AMM 20-10-01/401).

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TASK 23-34-03-402-075

3. Entertainment Tape Reproducer Installation

A. References

- (1) AMM 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) AMM 20-10-01/401, E/E Rack-Mounted Components
- (3) AMM 24-22-00/201, Electrical Power - Control

B. Access

- (1) Location Zones
 - 119/120 Main Equipment Center
 - 211/212 Flight Compartment
 - 221/222 Passenger Compartment
- (2) Access Panel
 - 119BL Main Equipment Center

C. Procedure

S 212-003

- (1) Make sure the cassette tapes are installed.

S 422-005

- (2) Install the entertainment tape reproducer (AMM 20-10-01/401).

D. Entertainment Tape Reproducer Installation Test

S 862-007

- (1) Supply electrical power (AMM 24-22-00/201).

S 862-009

- (2) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P37 panel:
 - (a) 37B7, ENT TAPE RPDR

S 862-019

- (3) Turn the PES switch to ON, on the forward attendant's panel P21.

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- S 712-087
- (4) Make sure you hear clear entertainment audio on channels 3 and 4 at a passenger control unit (PCU).
- S 862-021
- (5) Turn the PES switch to OFF.
- E. Put the Airplane Back to Its Usual Condition
 - S 412-077
 - (1) Close the access door, 119BL (AMM 06-41-00/201).
 - S 862-022
 - (2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 23-34-03-002-078

4. Cassette Tape Removal

- A. References
 - (1) AMM 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
 - (2) AMM 20-10-01/401, E/E Rack-Mounted Components
- B. Access
 - (1) Location Zone
119/120 Main Equipment Center
 - (2) Access Panel
119BL Main Equipment Center
- C. Cassette Tape Removal
 - S 012-025
 - (1) Remove the entertainment tape reproducer (AMM 23-34-03/201).
 - S 012-027
 - (2) Open the access door on the side panel of the tape reproducer.

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S 022-089

- (3) Lift and remove the cassette tape from the tape reproducer.

NOTE: The tape positions show below the access door.

TASK 23-34-03-402-080

5. Cassette Tape Installation

A. References

- (1) AMM 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
- (2) AMM 20-10-01/401, E/E Rack-Mounted Components
- (3) AMM 24-22-00/201, Electrical Power - Control

B. Access

(1) Location Zones

119/120	Main Equipment Center
211/212	Flight Compartment
221/222	Passenger Compartment

(2) Access Panel

119BL	Main Equipment Center
-------	-----------------------

C. Cassette Tape Installation

S 422-041

- (1) Install the cassette tape in the cassette tape tray.

NOTE: Push the cassette tape until it sets into the tray.

S 412-043

- (2) Close and latch the access door on the side panel of the tape reproducer.

S 412-097

- (3) Install the entertainment tape reproducer (AMM 23-34-03/201).

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PASSENGER CONTROL UNIT - REMOVAL/INSTALLATION

1. General

- A. A passenger control unit (PCU) is in the arm-rest of each passenger seat. The removal and installation procedures are almost the same for all units.

TASK 23-34-05-004-044

2. Remove the Passenger Control Unit (PCU) (Fig. 401)

A. Access

- (1) Location Zone
200 Upper Half of Fuselage

B. Procedure

S 864-005

- (1) Turn the PES switch to OFF on the forward attendant's panel, P21, and attach a DO-NOT-OPERATE tag.

S 034-008

- (2) Remove the attachment screw from the PCU.

S 024-009

- (3) Remove the PCU from the seat armrest.

S 034-011

- (4) Disconnect the electrical connectors from the PCU.

TASK 23-34-05-404-045

3. Install the Passenger Control Unit (PCU) (Fig. 401)

A. References

- (1) 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
(2) 24-22-00/201, Electrical Power - Control

B. Access

- (1) Location Zones
119/120 Main Equipment Center
200 Upper Half of Fuselage

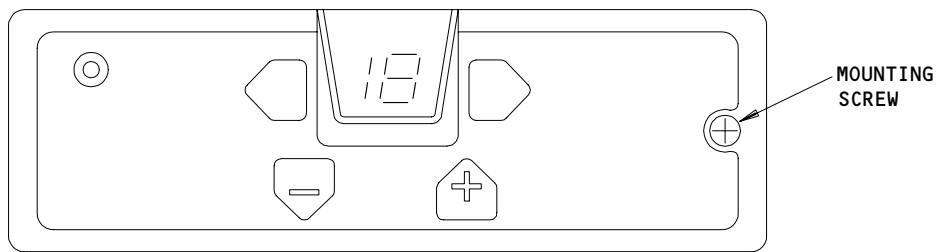
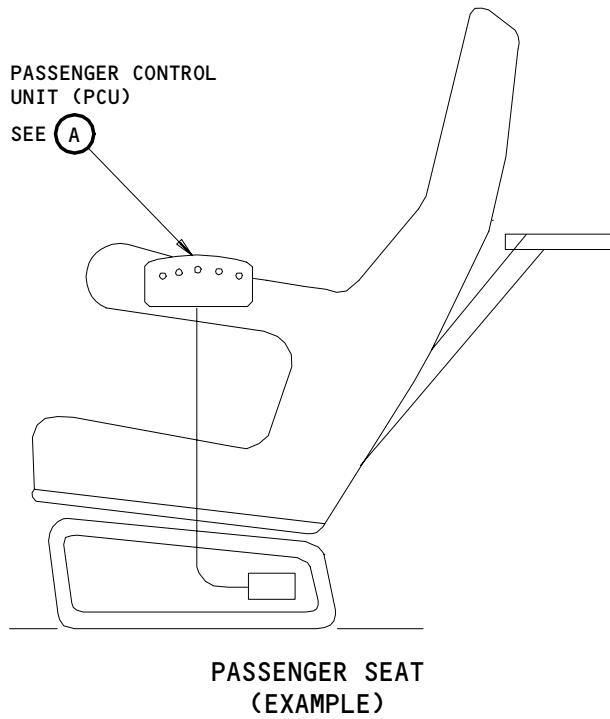
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PASSENGER CONTROL UNIT (PCU)
(EXAMPLE)

(A)

Passenger Control Unit - Installation
Figure 401

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- (2) Access Panel
119BL Main Equipment Center

C. Procedure

S 434-014

- (1) Connect the electrical connectors to the PCU.

S 424-047

- (2) Install the PCU in the seat armrest.

S 434-049

- (3) Install the attachment screw.

D. Passenger Control Unit (PCU) Installation Test

S 864-020

- (1) Supply electrical power (Ref 24-22-00).

S 014-051

- (2) Open the access door, 119BL, for the right miscellaneous electrical equipment panel P37 (Ref 06-41-00).

S 864-052

- (3) Make sure these circuit breakers are closed on the P37 panel:
 - (a) 37B7, ENT TAPE RPDR
 - (b) 37B8, MULTIPLEXER

S 864-031

- (4) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
 - (a) 11C22, PASS ADRS AMPL

S 864-038

- (5) Remove the DO-NOT-OPERATE tag, and turn the PES switch to ON, at the forward attendant panel P21.

S 714-067

- (6) Make sure you hear clear entertainment audio on channels 3 thru 12 at the PCU.

S 714-069

- (7) Make sure the VOLUME switches on the PCU change the sound level.

S 864-042

- (8) Turn the PES switch to OFF.

E. Put the Airplane Back to Its Usual Condition

S 414-064

- (1) Close the access door, 119BL (AMM 06-41-00/201).

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- S 864-043
(2) Remove electrical power if it is not necessary (Ref 24-22-00/201).

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SEAT ELECTRONICS BOX – REMOVAL/INSTALLATION

1. General

- A. A seat electronics box (SEB) is on the seat frame of each seat group.
The removal and installation procedures are the same for each SEB.

TASK 23-34-06-004-028

2. Remove the Seat Electronics Box (SEB)

A. Access

- (1) Location Zone
200 Upper Half of Fuselage

B. Procedure

S 864-031

- (1) Turn the PES switch to OFF on the forward attendant's panel, P21,
and attach a DO-NOT-OPERATE tag.

S 864-005

- (2) Make a note of the position of the electrical connectors on the SEB.

S 014-052

- (3) Loosen SEB cover fasteners.

S 014-053

- (4) Remove SEB covers.

S 034-007

- (5) Disconnect the electrical connectors from the SEB.

S 024-008

- (6) Pull the plastic fasteners (4 locations) to remove the SEB from the
seat frame.

TASK 23-34-06-404-032

3. Install the Seat Electronics Box (SEB)

A. References

- (1) AMM 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors
and Panels
(2) AMM 24-22-00/201, Electrical Power – Control

B. Access

- (1) Location Zones
119/120 Main Equipment Center
200 Upper Half of Fuselage

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- (2) Access Panel
119BL Main Equipment Center

C. Procedure

S 424-010

- (1) To install the SEB on the seat frame, push the fasteners (4 locations) into the holes of the mounting bracket.

S 414-054

- (2) Install SEB covers.

S 414-055

- (3) Tighten SEB cover fasteners.

S 434-012

- (4) Connect the electrical connectors to the SEB in the same positions as before.

D. Seat Electronics Box (SEB) Installation Test

S 864-013

- (1) Supply electrical power (Ref 24-22-00).

S 014-033

- (2) Open the access door, 119BL, for the right miscellaneous electrical equipment panel P37 (Ref 06-41-00).

S 864-034

- (3) Make sure these circuit breakers are closed on the P37 panel:
 - (a) 37B7, ENT TAPE RPDR
 - (b) 37B8, MULTIPLEXER

S 864-017

- (4) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
 - (a) 11C22, PASS ADRS AMPL

S 864-035

- (5) Remove the DO-NOT-OPERATE tag and turn the PES switch to TEST, on the forward attendant's panel P21.

S 714-036

- (6) At the seat group where the SEB was replaced:
 - (a) Make sure each passenger control unit (PCU) has the center horizontal piece of the right number on.
 - 1) All other pieces of the display must be off.

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S 864-021

(7) Turn the PES switch to OFF.

E. Put the Airplane Back to Its Usual Condition

S 414-041

(1) Close the access door, 119BL (AMM 06-41-00/201).

S 864-027

(2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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SERVICE INTERPHONE SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The service interphone system provides facilities for interphone communication between servicing stations during ground operations. In addition, communication is extended to the flight compartment and attendant stations.
- B. The service interphone system includes phone jacks located at convenient service locations around the airplane. The system also includes amplifiers and mixing circuits that are housed inside the audio accessory unit. It is located on shelf E4 of the main equipment center. The SERV INTPH switch activates the system and is located on the right sidewall panel, P61.
- C. The system gets power from the 28v dc battery bus, through a circuit breaker on overhead panel P11.

2. Component Details (Fig. 1)

A. Audio Amplifier

- (1) Two identical audio amplifiers with parallel inputs are located in the audio accessory unit on shelf E4-3 in the main equipment center. The amplifiers are used by both the service interphone and the cabin interphone systems. A placard on the audio accessory unit identifies and locates the two amplifiers. There are two outputs from each amplifier. One output goes to the cabin interphone audio on the audio selector panels. The other output goes to the cabin interphone handsets and service interphone jacks. The amplifiers have internal adjustments preset for normal compression, squelch, and volume.

B. Service Interphone Switch

- (1) The SERV INTPH switch is located on right sidewall panel P61. In the ON position, the switch connects the microphone lines from the service interphone jacks to the input of the interphone amplifiers. The OFF position disconnects the microphone lines to isolate the service interphone jacks during flight.

3. Operation

A. Functional Description

- (1) The INTERPHONE CABIN SERVICE circuit breaker on overhead panel P11 controls power to the system.
- (2) The SERV INTPH switch on panel P61 connects the mic lines from the phone jacks to the input of the interphone amplifiers. This switch activates the service interphone system. Then the interphone amplifiers distribute the amplified audio to the audio selector panels in the flight compartment, as well as to the cabin handsets, and to the audio line of the service interphone jacks located at convenient service locations. All microphone inputs from the handsets and from the audio selector panels mixes with that of the service interphone jacks onto a single-party system.

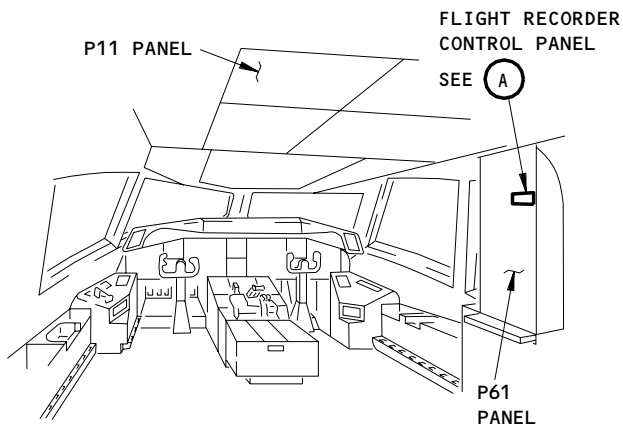
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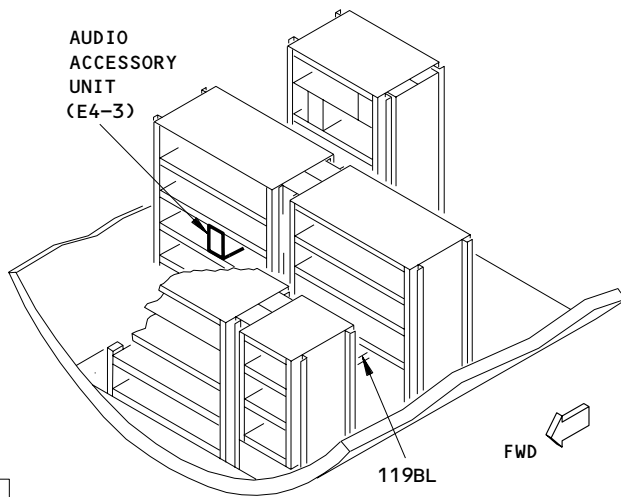
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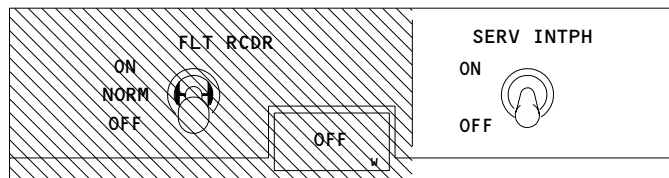
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FLIGHT COMPARTMENT

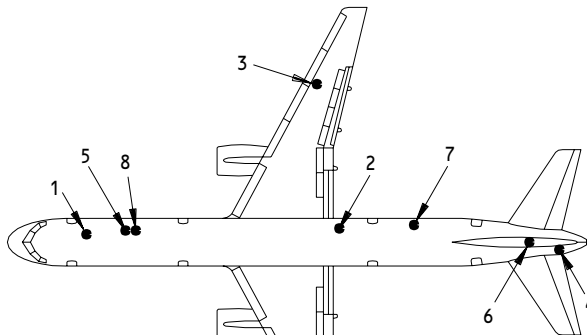


MAIN EQUIPMENT CENTER



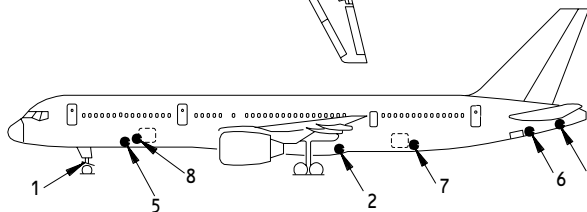
FLIGHT RECORDER CONTROL PANEL

(A)



SERVICE INTERPHONE JACK LOCATIONS

1. NOSE GEAR INTERPHONE PANEL (RIGHT SIDE), P62
2. RIGHT MAIN WHEEL WELL SERVICE PANEL, P72
3. RIGHT WING FUELING PANEL, P28
4. APU COMPARTMENT PANEL
5. MAIN EQUIPMENT CENTER
6. HORIZONTAL STABILIZER PANEL
7. AFT EQUIPMENT CENTER (STA 1351), P6-1
8. E5 RACK



SERVICE INTERPHONE JACK LOCATIONS

Service Interphone System - Component Location
Figure 1

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- (3) The flight crew talks with the service interphone stations by pushing the MIC SELECTOR labeled CAB on the audio selector panels. This switch, along with the SERV INTPH switch on panel P61, connects a flight crew headset to the service interphone system. On the audio selector panel, the CAB switch is a push-on/push-off type and is lighted when on. The same knob also turns a volume control for that particular station.
- (4) Personnel at the cabin attendant stations use the service interphone system by picking up the attendant handset and talking.
- (5) Personnel at service locations use the service interphone system by plugging a headset into the phone jack and talking. First, the SERV INTPH switch must be set to ON.

B. Control

- (1) To place the system in operation, supply electrical power (Ref 24-22-00/201).
- (2) On overhead panel P11, make sure the INTERPHONE CABIN SERVICE circuit breaker is closed.
- (3) On right sidewall panel P61, make sure the SERV INTPH switch is on.

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SERVICE INTERPHONE SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
CIRCUIT BREAKER	---		FLT COMPT, P11	
INTERPHONE CABIN SERVICE, C551		1	11C23	*
JACK - SERVICE INTPH, D00413	---	1	315AL, 316AR, APU SHROUD	*
JACK - SERVICE INTPH, D00415	---	1	822, AFT CARGO DOOR, AFT EQUIP- MENT CENTER	*
JACK - SERVICE INTPH, D00417	---	1	R WING FUELING PANEL, P28	*
JACK - SERVICE INTPH, D00423	---	1	119BL, MAIN EQUIP CTR	*
JACK - SERVICE INTPH, D00425	---	1	NOSE LANDING GEAR, P62	*
JACK - SERVICE INTPH, D00427	---	1	R MAIN WHEEL WELL	*
JACK - SERVICE INTPH, D00429	---	1	FUSELAGE, HORIZONTAL STAB ACCESS PANEL	*
JACK - SERVICE INTPH, D00843	---	1	821, FWD CARGO DOOR, E5, EQUIP RACK	*
PANEL - (REF 31-31-00, FIG. 101) FLIGHT RECORDER CONTROL, M33				
SWITCH - SERVICE INTPH, (S2)	---	1	FLT COMPT, P61, FLT RCDR CONT PNL, M33	*
UNIT - (REF 23-42-00, FIG. 101) AUDIO ACCESSORY, M108				

* SEE THE WDM EQUIPMENT LIST

Service Interphone System - Component Index
Figure 101

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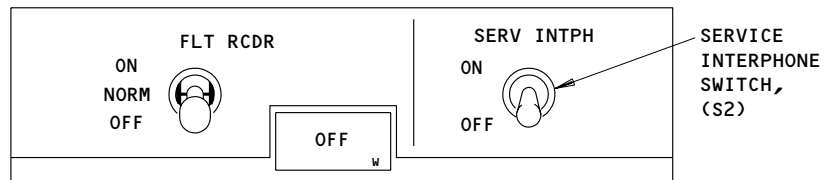
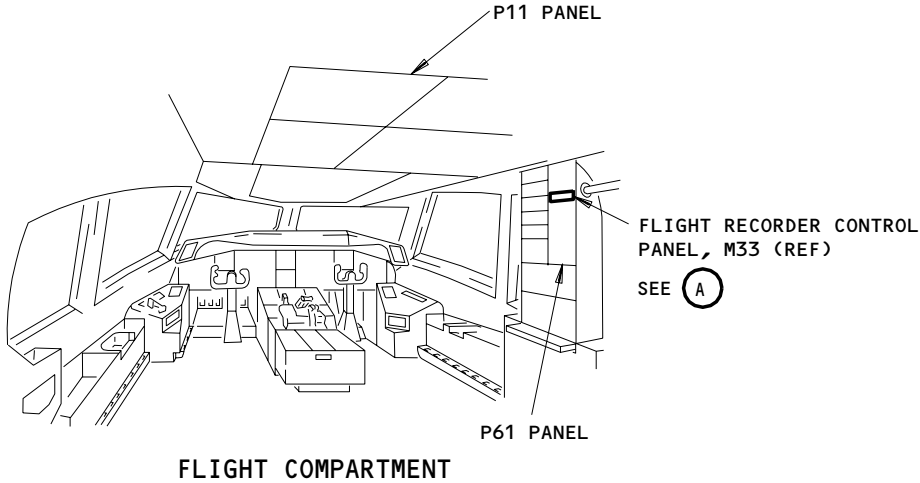
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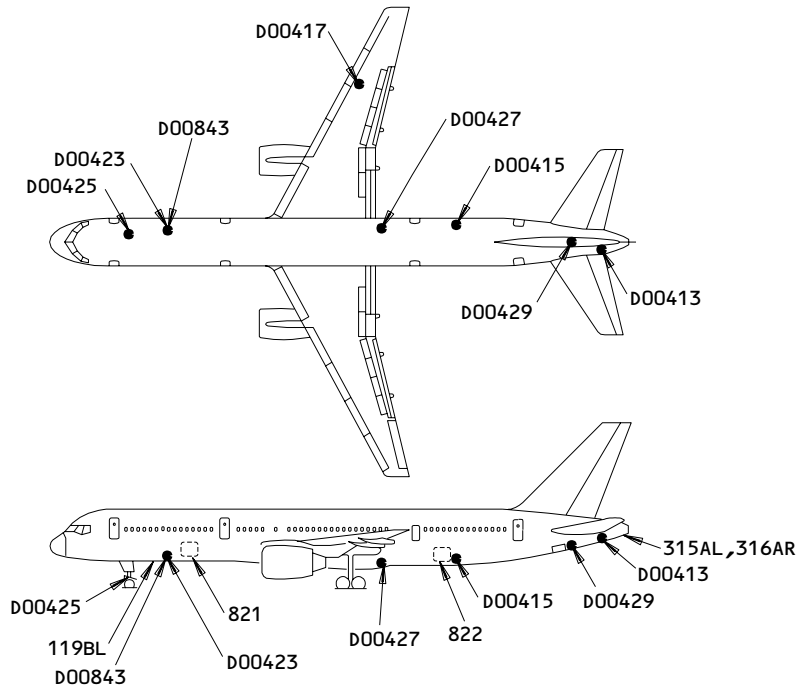
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BOEING
757
FAULT ISOLATION/MAINT MANUAL



FLIGHT RECORDER CONTROL PANEL, M33 (REF)

(A)



SERVICE INTERPHONE JACK LOCATIONS

Service Interphone System - Component Location
Figure 102

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23-41-00

SERVICE INTERPHONE SYSTEM - ADJUSTMENT/TEST

TASK 23-41-00-715-001

1. Operational Test - Service Interphone System

A. General

- (1) This procedure contains a task that gives the operational test for the service interphone system.

B. References

- (1) AMM 24-22-00/201, Electrical Power - Control

C. Equipment

- (1) Boom mic headset or handset

D. Access

(1) Location Zones

119/120	Main equipment center (LH/RH side)
144	Main landing gear wheel well (RH side)
211/212	Control cabin - sect 41 (LH/RH side)
315/316	APU compartment (LH/RH side)
331	Horizontal stabilizer, center section (LH side)
711	Nose landing gear (NLG)

(2) Access Panel

621GB	Fueling Station (RH side)
-------	---------------------------

E. Prepare for Test

S 865-002

- (1) Supply electrical power (AMM 24-22-00/201).

F. Service Interphone System Test

S 985-005

- (1) Set the SERV INTPH switch on the right side panel P61 to ON.

S 985-006

- (2) Use headsets to do a check for clear voice communications between D425 (service interphone jack on the nose landing gear control panel) and the jacks at these locations:
(a) D427 Right main wheel well service panel.

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MAINTENANCE MANUAL

- (b) D423 Main E/E Bay.
- (c) D843 E5 Rack.
- (d) D417 Right wing fueling panel (P28).
- (e) D413 APU compartment.
- (f) D429 Horizontal Stabilizer.
- (g) D415 Aft equipment center rack.

S 985-007

- (3) Set SERV INTPH switch to OFF (P61).

S 985-008

- (4) Use headsets to make sure that communication between D425 and any other service interphone jack is not possible.

S 865-009

- (5) Remove electrical power if is not necessary (AMM 24-22-00/201).

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CABIN INTERPHONE SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The cabin interphone system provides facilities for interphone communication among cabin attendants, and between the flight compartment crewmembers and attendants. The cabin interphone system microphone circuits can be switched to the input of the passenger address (PA) system to permit announcements.
- B. ALL EXCEPT GUI 115;
The cabin interphone system includes: cabin attendant handsets, attendant call lights, the pilots' call panel, and associated amplifiers and mixing circuits located in the audio accessory unit.
- C. GUI 115;
The cabin interphone system includes: cabin attendant handsets, bell chime modules, attendant call lights, the pilots' call panel, and related amplifiers and mixing circuits located in the audio accessory unit.
- D. The system gets power from the 28v dc battery bus, through a circuit breaker on overhead panel P11.

2. Component Details (Fig. 1)

A. Audio Accessory Unit

- (1) Two identical audio amplifiers with parallel inputs are located in the audio accessory unit on shelf E4-3 in the main equipment center. The amplifiers are used by both the service interphone and the cabin interphone systems. A placard on the audio accessory unit identifies and locates the two amplifiers. There are two outputs from each amplifier. One output goes to the cabin interphone audio on the audio selector panels. The other output goes to the cabin interphone handsets and to the service interphone jacks. The amplifiers have internal adjustments preset for compression, squelch, and volume.
- (2) The audio accessory unit contains: the interphone power supply card, the main logic input/output card, the call interface card, and three dual-handset interface cards. To adjust the audio level for the handsets, a potentiometer is located on the PA control card. All interphone control functions occur in the audio accessory unit automatically, when it receives tones from the tone encoder circuits in the handsets and the pilots' call panel.

B. Cabin Interphone Handset(s)

- (1) Each attendant station has a handset. Each handset has the following components: a noise-canceling microphone to decrease the input of airplane noise, a small speaker to listen, buttons to operate the handset, and a magnet-operated hook switch to disconnect the handset from the system when the attendant places the handset back on the hook.

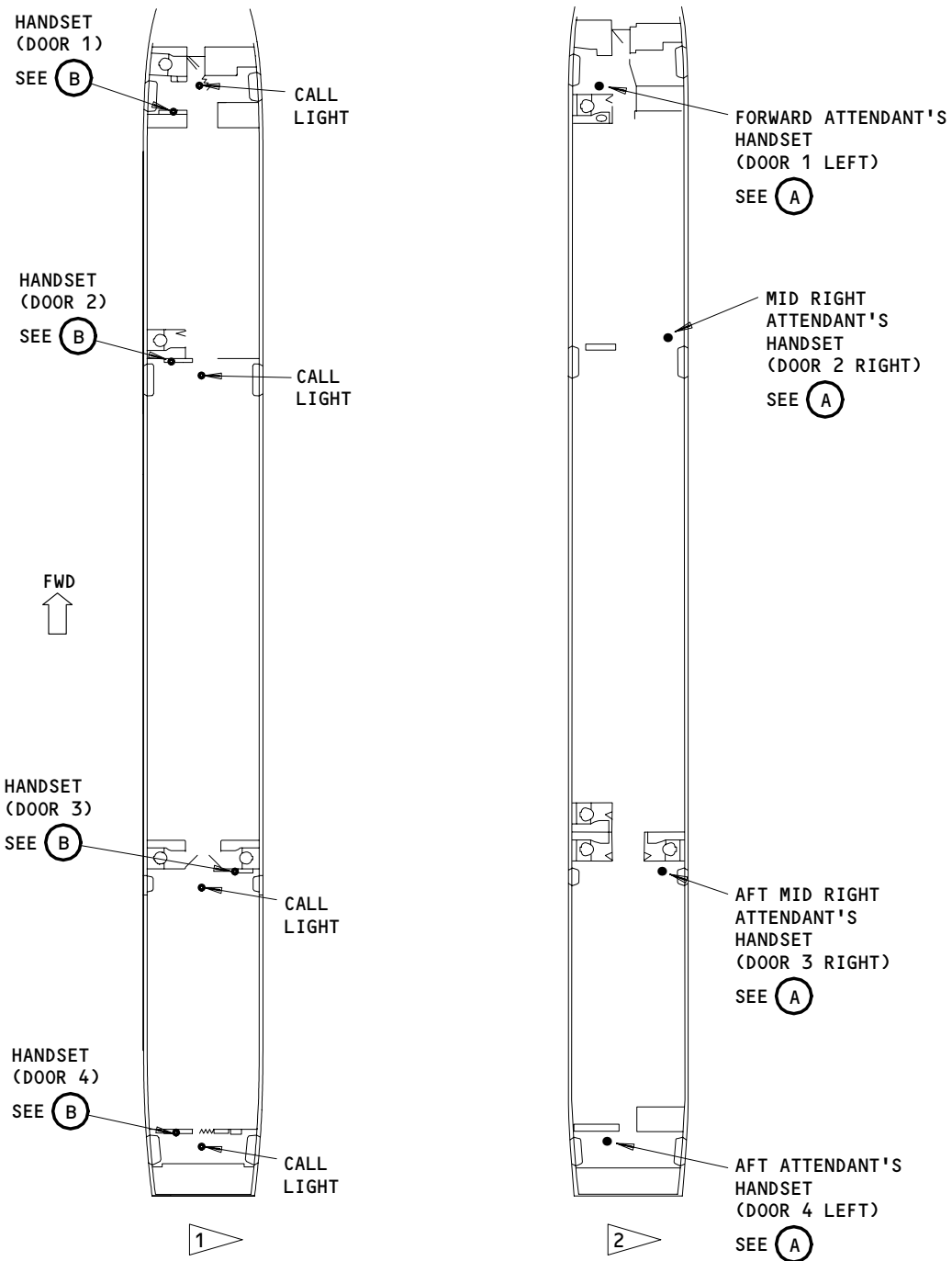
EFFECTIVITY

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23-42-00

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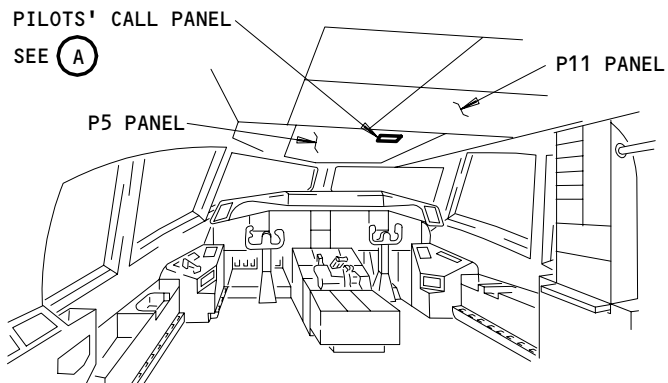
HANDSET LOCATIONS

- 1 ALL EXCEPT GUI 115
- 2 GUI 115

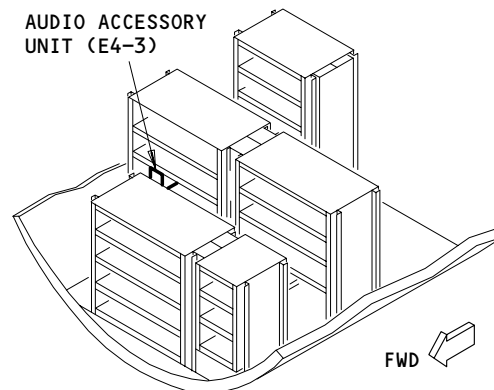
Cabin Interphone System - Component Location
Figure 1 (Sheet 1)

EFFECTIVITY	
	ALL

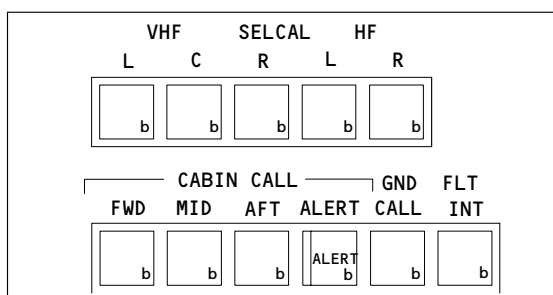
23-42-00



FLIGHT COMPARTMENT

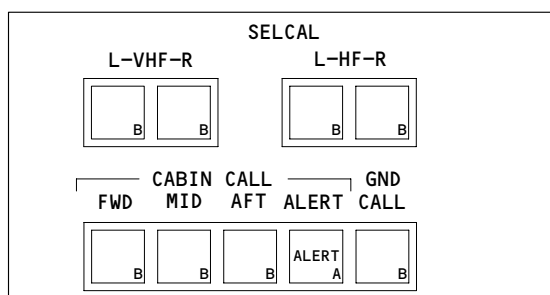


MAIN EQUIPMENT CENTER



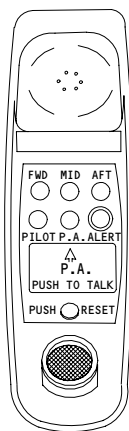
PILOTS' CALL PANEL

(A) 1

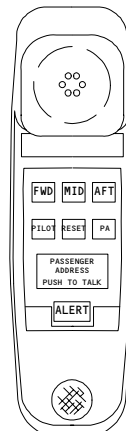


PILOTS' CALL PANEL

(A) 2



PUSHBUTTON
KEYBOARD



SOFT-TOUCH
KEYBOARD

HANDSET
(EXAMPLE)

(B)

- 1 ALL EXCEPT GUI 115
- 2 GUI 115

Cabin Interphone System - Component Location
Figure 1 (Sheet 2)

EFFECTIVITY

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- (2) In operation, 4 of the handset buttons call specific stations (FWD, MID, AFT, PILOT). The P.A. button connects the handset to the passenger address speakers to make announcements. The RESET button permits the attendant to make more calls without the need to put the handset back on the hook after each call. The button operates the same as when the handset is put on the hook. The ALERT button connects the handset to all stations at the same time. The P.A. PUSH TO TALK switch momentarily connects the microphone to transmit voice during passenger announcements.

C. Pilots' Call Panel

- (1) The pilots' call panel is on overhead panel P5. The cabin interphone system connects to the pilots' call panel through three blue lighted call switches which indicate an attendant call (FWD, MID, AFT), and one blue lighted call switch that indicates an alert call (ALERT).
- (2) The call switches (FWD, MID, AFT) are used to signal the related attendant station. The ALERT call switch is used to make an alert call.

D. GUI 115;

Electronic Chime Module

- (1) Each attendant station has a related electronic chime module. The module makes chime sounds, which are heard only in the area adjacent to the attendant station.

3. Operation

A. Functional Description

- (1) ALL EXCEPT GUI 115;
Cabin interphone calling from one station to another is done by single-digit dialing. Pressing a call switch on a handset activates the system by sending two tones to the audio accessory unit. The tones are processed in the accessory unit and a signal is provided to the called station to turn on the call light. A signal is also sent to the PA system to generate a hi/lo chime for attendant calls or to the aural warning system to generate a hi chime in the flight compartment for pilot calls.
- (2) GUI 115;
Cabin interphone calling from one station to another is done by single-digit dialing. Pressing a call switch on a handset activates the system by sending two tones to the audio accessory unit. The tones are processed in the accessory unit and a signal is provided to the called station to turn on the call light. A signal is also sent to the electronic chime module to generate a hi/lo chime for attendant calls or to the aural warning system to generate a hi chime in the flight compartment for pilot calls.
- (3) The FWD, MID, AFT, and ALERT call switches on the pilots' call panel make it possible for the pilot to make and receive cabin interphone calls. The light in each call switch comes on when there is an incoming call and goes off when the pilot pushes the switch. Power failures will automatically connect the microphones of the cabin interphone handsets to the PA system.

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- (4) ALL EXCEPT GUI 115;
The controller in the audio accessory unit monitors busy stations, and prevents incoming calls when a called station is busy. The controller also activates the PA hi/lo chime output, and causes the lamp driver to turn on the attendant call light. Attendant to attendant calling can be accomplished except under the following conditions:
- (5) GUI 115;
The controller in the audio accessory unit monitors busy stations, and prevents incoming calls when a called station is busy. The controller also activates the electronic chime module hi/lo output, and causes the lamp driver to turn on the attendant call light. Attendant to attendant calling can be accomplished except under the following conditions:
 - (a) Any station that has a handset off hook cannot be called.
 - (b) No station can call another station that has been called but not answered; however, the station that placed the call can repeat the call.
 - (c) Only one call can be made from a handset without first performing a reset.
- (6) Any attendant can call the pilot. Multiple calls by attendants to the pilot are possible. After a call, the attendant must put the handset back on the hook (cradle) or push the RESET switch to reset the unit. When the attendant at the called station removes the handset from the hook, a magnetic switch closes and connects the microphone to the system.
- (7) Any handset can be used to make an alert call. To make an alert call the attendant pushes the guarded ALERT call switch on the handset. The pilot can also make an alert call with the ALERT button on the call panel. When an alert call is made, it has priority over all other functions of the cabin interphone system.
- (8) For attendant stations, when an alert call occurs, stations with handset on the hook will receive a flashing pink attendant call light and three hi/lo chimes through the PA system. If the handset is off the hook, the station will receive the three hi/lo chimes only.

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- (9) In the flight compartment, when a alert call occurs, the ALERT light on the pilots call panel comes on, and the high chime sounds once, regardless of the handset being on or off the hook.
- (10) The stations reset as they respond to the alert call by putting the handset back on the hook, or by pressing the RESET button on the handsets. The alert call is also reset when the caller's handset is put back on the hook. Alert calls placed from the pilots call panel cannot be reset.
- (11) ALL EXCEPT GUI 115;
When the pilot or attendant calls an attendant, the pink call light at the attendant station comes on. A hi/lo chime through the PA system is also activated. When the called station responds by lifting the handset off-hook, the pink call light goes off and two-way communication takes place.
- (12) GUI 115;
When the pilot or attendant calls an attendant, the pink call light at the attendant station comes on. A hi/lo chime from the electronic chime module is also activated. When the called station responds by lifting the handset off-hook, the pink call light goes off and two-way communication takes place.
- (13) When an attendant calls the pilot, the blue attendant call light on the pilots' call panel comes on and a single hi chime is heard in the flight compartment.
- (14) The pilots' call panel permits the pilot to make a call to any attendant station. He pushes an attendant call switch (FWD, MID, or AFT) to connect the related attendant station and to signal the attendant to answer. The pilot must also push the CAB microphone-selector-switch on the audio selector panel to connect the microphone to the cabin interphone system. The pilot can then use the hand-held or the boom microphone to talk to the attendant stations.
- (15) On the pilots' call panel, the attendant call lights (FWD, MID, and AFT) come on when the attendants call the pilot. A call light does not come on while the pilot makes a call to its related station. The pilot's call to an attendant station cannot be reset from the call panel, the call can only be reset from the attendant station. The system makes it possible for the pilot to make multiple calls to the attendant stations. The pilot must push the attendant call switch again to make a new call.

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07.101

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- B. For more details on the Cabin Interphone System, refer to these wiring diagrams and functional schematics:
- WDM 23-42-11: Cabin Interphone System
 - WDM 23-42-12: Cabin Interphone System - Electric Chime
 - SSM 23-42-01: Cabin Interphone
- C. Control
- (1) To place the system in operation, supply electrical power (Ref 24-22-00/201).
 - (2) On overhead panel P11, make sure the INTERPHONE CABIN SERVICE circuit breaker is closed.

EFFECTIVITY

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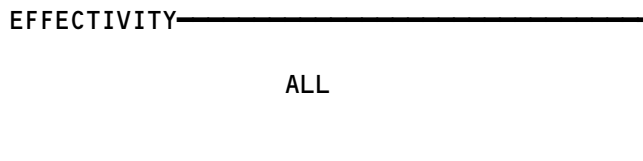
BOEING
757
FAULT ISOLATION/MAINT MANUAL

CABIN INTERPHONE SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
AMPLIFIER - (FIM 23-31-00/101) PASSENGER ADDRESS, M177				
CIRCUIT BREAKER - INTERPHONE CABIN SERVICE, C551	2	1	FLT COMPT, P11 11C23	*
HANDSET - ATTENDANT, B61	2	4	PASSENGER CABIN	*
LIGHT - (FIM 33-25-00/101) FWD ATTEND CALL, L324				
MODULE - (FIM 31-51-00/101) BELL CHIME AURAL WARNING, M1000				
MODULE - (FIM 33-25-00/101) EMER EXIT LOCATOR, M10253 THRU M10255 1				
EMER EXIT LOCATOR, M10253, M10680, M10255 2				
PANEL - PILOTS' CALL, M51	1	1	FLT COMPT, P5	23-42-02
UNIT - AUDIO ACCESSORY, M108 * SEE THE WDM EQUIPMENT LIST	1	1	119BL, MAIN EQUIP CTR, E4-3	23-42-01

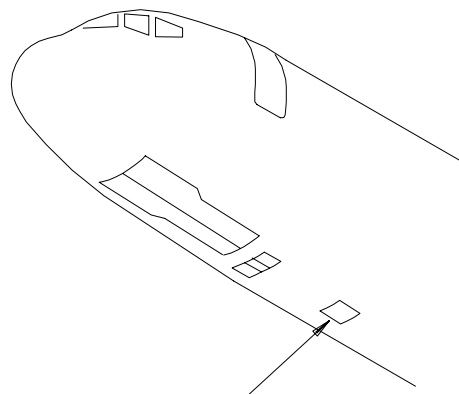
- 1 ALL EXCEPT GUI 115
- 2 GUI 115

Cabin Interphone System - Component Index
Figure 101

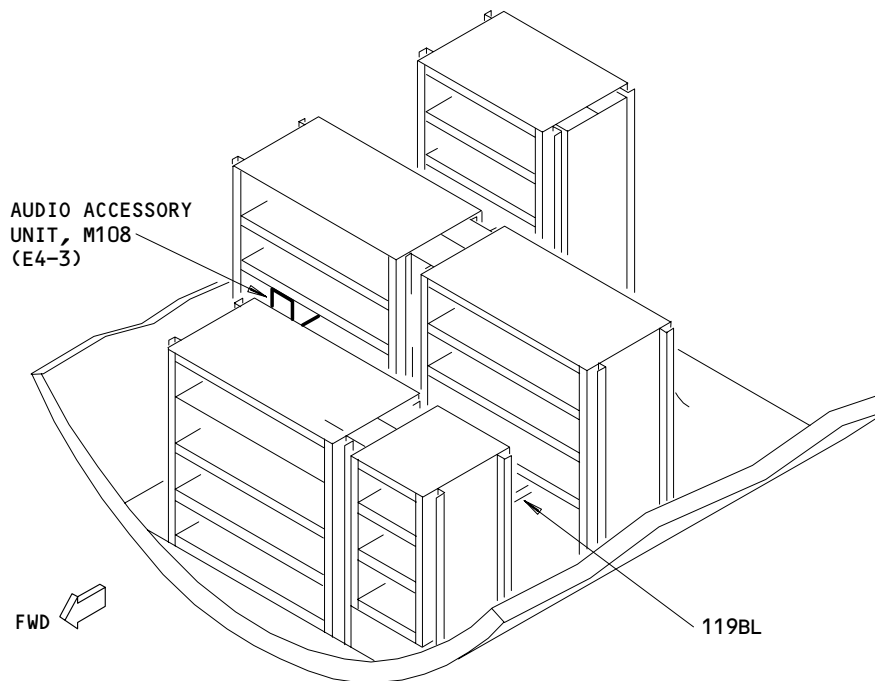


23-42-00

BOEING
 757
 FAULT ISOLATION/MAINT MANUAL



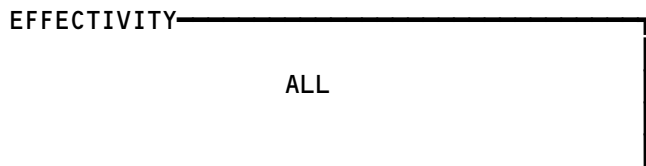
MAIN EQUIPMENT
 CENTER ACCESS
 DOOR, 119BL
 SEE (A)



MAIN EQUIPMENT CENTER

(A)

Cabin Interphone System - Component Location
 Figure 102 (Sheet 1)



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23-42-00

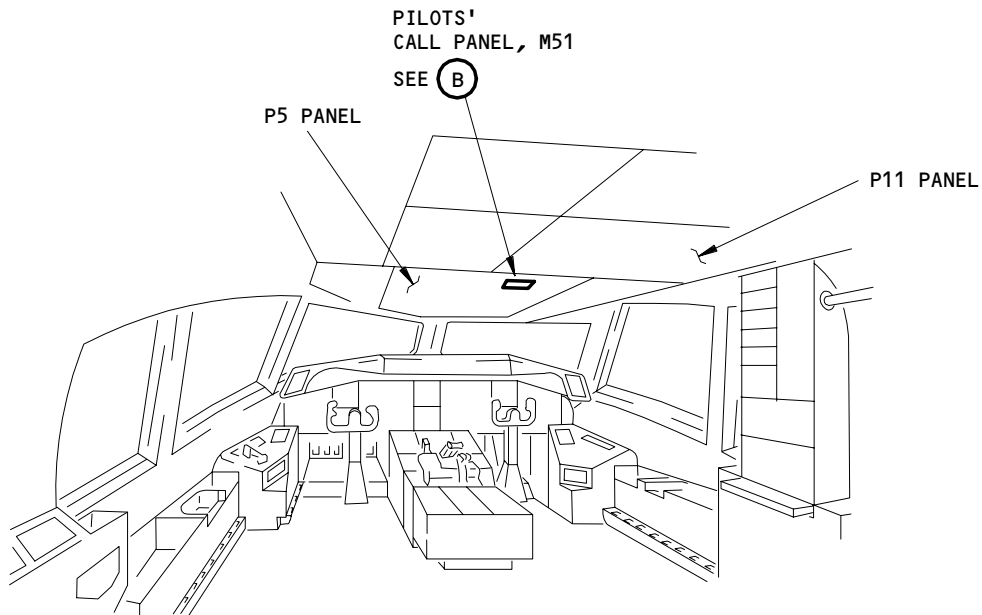
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Page 102
 Mar 20/94

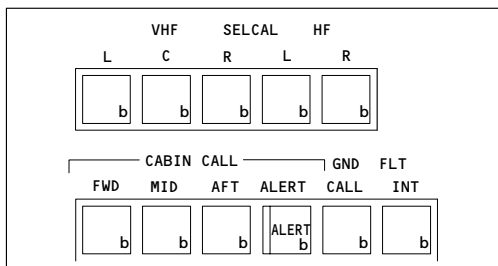
BOEING

757

FAULT ISOLATION/MAINT MANUAL

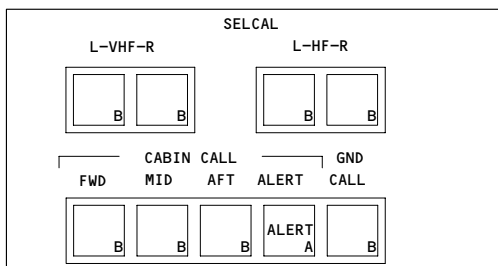


FLIGHT COMPARTMENT



PILOTS' CALL PANEL, M51

(B) 1



PILOTS' CALL PANEL, M51

(B) 2

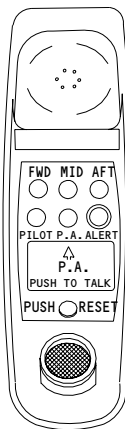
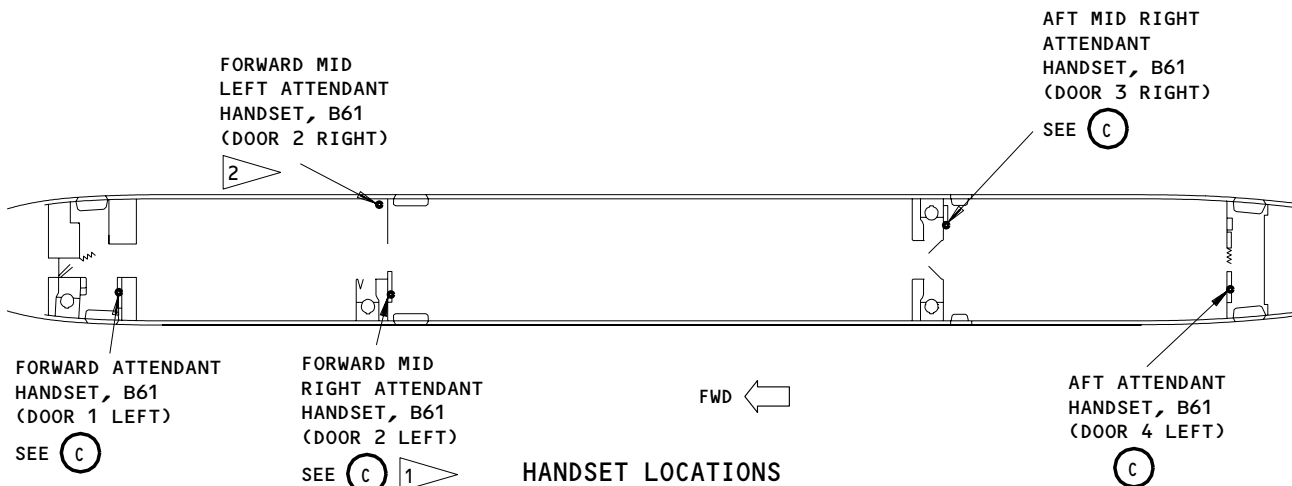
- 1 ALL EXCEPT GUI 115
- 2 GUI 115

Cabin Interphone System - Component Location
Figure 102 (Sheet 2)

EFFECTIVITY	ALL
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23-42-00

BOEING
757
FAULT ISOLATION/MAINT MANUAL

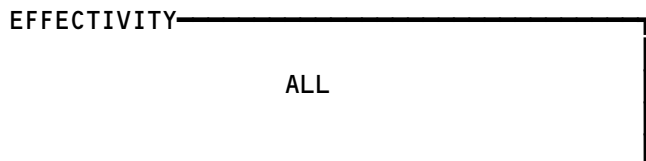


**HANDSET, B61
(EXAMPLE)**

(C)

- 1 ▷ ALL EXCEPT GUI 115
- 2 ▷ GUI 115

**Cabin Interphone System - Component Location
Figure 102 (Sheet 3)**



23-42-00

CABIN INTERPHONE SYSTEM – ADJUSTMENT/TEST

TASK 23-42-00-735-001

1. System Test – The Cabin Interphone System

A. General

- (1) This procedure contains a task which gives the operational test for the cabin interphone system. Do this to make sure the pilots' call panel and the attendant handsets are serviceable.

B. References

- (1) 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
200 Upper Half of the Fuselage

D. Prepare for the System Test

S 865-002

- (1) Supply electrical power (Ref 24-22-00).

S 865-004

- (2) Make sure all handsets are on the hook.

E. The Test of the Pilots' Call Panel

S 735-008

- (1) Do these steps to do a test of the pilots' call panel:
- (a) Push the FWD switch on the pilots' call panel on the overhead panel, P5.
 - (b) ALL EXCEPT GUI 115;
Make sure a Hi/Lo chime is heard from the PA speakers.
 - (c) GUI 115;
Make sure a Hi/Lo chime is heard at the forward attendant station.
 - (d) Make sure the attendant call light at the forward attendant station is on.
 - (e) Remove the forward attendant handset from the holder.

EFFECTIVITY

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- (f) Make sure the attendant call light goes off.
- (g) Put the attendant handset in the holder.
- (h) Push the MID call switch on the pilots' call panel, P5.
- (i) ALL EXCEPT GUI 115;
Make sure a Hi/Lo chime is heard from the PA speakers.
- (j) GUI 115;
Make sure a Hi/Lo chime is heard at the mid attendant station.
- (k) Make sure the attendant call light at door 2 comes on.
- (l) Remove one of the two mid attendant handsets from the holder.
- (m) Put the attendant handset in the holder.
- (n) Push the AFT call switch on the pilots' call panel, P5.
- (o) ALL EXCEPT GUI 115;
Make sure a Hi/Lo chime is heard from the PA speakers.
- (p) GUI 115;
Make sure a Hi/Lo chime is heard at the aft attendant station.
- (q) Make sure the attendant call light at the aft attendant station is on.
- (r) Remove the aft attendant handset from the holder.
- (s) Make sure the attendant call light goes off.
- (t) Put the attendant handset in the holder.
- (u) Push the ALERT call switch on the pilot's call panel, P5.
- (v) ALL EXCEPT GUI 115;
Make sure you hear a Hi/Lo chime three times from the PA and attendant speakers.
- (w) GUI 115;
Make sure a Hi/Lo chime is heard three times from the PA speakers.
- (x) Make sure the forward, mid, and aft attendant call lights at each attendant station flash on and off.
- (y) Remove the forward, one of the two mid, and the aft attendant handsets from the holder.
- (z) Make sure all of the attendant call lights go off.

F. The Test of the Attendant Handset

S 735-009

- (1) Do these steps to do a test of the attendant handsets:
 - (a) At the forward attendant station, push the call switch to call a different attendant station.

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- (b) ALL EXCEPT GUI 115;
Make sure you hear a Hi/Lo chime from the PA system.
- (c) GUI 115;
Make sure a Hi/Lo chime is heard at the applicable attendant station.
- (d) Make sure the call light at the applicable attendant station comes on.

NOTE: For the MID call switch, the attendant call light only near door 2 comes on.

- (e) Speak into the handset at the forward attendant station.
- (f) Make sure you hear clear voice through both handsets.

NOTE: For the MID call switch, one of the two mid attendant handsets can be used (door 2 or door 3).

- (g) Push the RESET switch on the forward attendant handset.
- (h) Push the other attendant call switches on the forward attendant handset.
- (i) ALL EXCEPT GUI 115;
Make sure a Hi/Lo chime is heard from the PA speakers.
- (j) GUI 115;
Make sure a Hi/Lo chime is heard at the applicable attendant station.
- (k) Make sure the call light at the applicable attendant station comes on.

NOTE: For the MID call switch, the attendant call light only near door 2 comes on.

- (l) Speak into the handset at the forward attendant station.
- (m) Make sure you hear clear voice through both handsets.

NOTE: For the MID call switch, one of the two mid attendant handsets can be used (door 2 or door 3).

- (n) Push the RESET switch on the forward attendant handset.
- (o) Push the call switch related to the station you are at.
- (p) Make sure the attendant call light does not come on and the chime does not make a sound.
- (q) At the forward attendant station, push the PA switch on the forward attendant handset.
- (r) At the forward attendant station, push and hold the PTT switch.
- (s) Speak into the handset.
- (t) Make sure you hear the voice from the PA speakers.
- (u) Put the handset in the holder.

S 735-025

- (2) Do the procedure, The Test of the Attendant Handset, for the aft and the two mid attendant handsets.

EFFECTIVITY

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G. The Test of the Attendant Handset and Pilots' Call Panel Interface.

S 735-011

- (1) Do these steps to do a test of the interface:
 - (a) At the forward attendant station, push the PILOT switch on the attendant handset.
 - (b) Make sure you hear a Hi chime in the flight compartment.
 - (c) Make sure the applicable call light on the pilots' call panel comes on.
 - (d) Push the RESET switch on the forward attendants handset.
 - (e) Make sure the call light on the pilots' call panel goes off.
 - (f) At the forward attendant station, push the ALERT switch on the attendant handset.
 - (g) Make sure a Hi chime is heard in the flight compartment and three Hi/Lo chimes are heard in the passenger compartment.
 - (h) Make sure all of the attendant call lights (other than the forward attendant call lights) flash.

NOTE: For an ALERT call made from one of the mid attendant handsets, the two mid attendant call lights will not come on.

- (i) Make sure the ALERT light on the pilots' call panel is on.
- (j) Put the forward attendant handset on the holder.
- (k) Make sure the ALERT light on the pilots' call panel and attendant call lights are off.

S 735-022

- (2) Do the procedure, The Test of the Attendant Handset and the Pilots' Call Panel Interface, at the aft and the two mid attendant handsets.

H. The Lamp Reset Test of the Pilots' Call Panel

S 735-012

- (1) Do these steps to do the lamp reset test on the pilots' call panel:
 - (a) At the forward attendant station, push PILOT switch on the attendant handset.
 - (b) With the forward attendants handset removed from the holder, push the applicable call light on the pilots' call panel.
 - (c) Make sure the call light goes off.
 - (d) At the forward attendant handset, push the ALERT switch.
 - (e) With the forward attendants handset removed from the holder, push the ALERT light on the pilots' call panel.
 - (f) Make sure the ALERT light goes off.
 - (g) Put the forward attendant handset on the holder.

EFFECTIVITY

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S 735-019

- (2) Do the procedure, The Lamp Reset Test of the Pilots' Call Panel, at the mid and the aft attendant handsets without the steps for the ALERT switch.

NOTE: The Lamp Reset Test of the Pilots' Call Panel paragraph must only be done from one of the mid attendant handsets.

I. The Test of the Voice Quality

S 735-013

- (1) Do these steps to do a test of the voice quality:
 - (a) Push the CAB MIC SELECTOR switch on the captain's audio selector panel.
 - (b) Push and hold the PTT switch on the captain's audio selector panel.
 - (c) Speak into the pilot's boom microphone.
 - (d) Make sure the voice can be heard clearly from all of attendant handsets.

S 735-015

- (2) Do the procedure, The Test of the Voice Quality, with the first officer's and the first observer's audio selector panels.

S 865-014

- (3) Remove electrical power if it is not necessary (Ref 24-22-00).

EFFECTIVITY

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23-42-00

AUDIO ACCESSORY UNIT – REMOVAL/INSTALLATION

1. General

- A. The audio accessory unit, M108, is on rack E4-3 in the main equipment center.
- B. This procedure contains two tasks. The first task removes the audio accessory unit. The second task installs the audio accessory unit and does a test of the installation.

TASK 23-42-01-004-001

2. Remove the Audio Accessory Unit

- A. References
 - (1) AMM 20-10-01/401, E/E Rack Mounted Components
- B. Access
 - (1) Location Zones
 - 119/120 Main Equipment Center
 - 211/212 Flight Compartment
 - (2) Access Panel
 - 119BL Main Equipment Center
- C. Remove the Audio Accessory Unit

S 864-002

- (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11C22, PASS ADRS AMPL
 - (b) 11C23, INTERPHONE CABIN SERVICE
 - (c) 11C25, INTERPHONE CAPT FLT AMPL
 - (d) 11C26, INTERPHONE F/O OBS
 - (e) 11G29, INTERPHONE CAPT FLT AMPL
 - (f) 11G30, INTERPHONE F/O OBS

S 024-005

- (2) Remove the audio accessory unit (AMM 20-10-01/401).

TASK 23-42-01-404-006

3. Install the Audio Accessory Unit

- A. References
 - (1) AMM 20-10-01/401, E/E Rack Mounted Components

EFFECTIVITY

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- (2) AMM 24-22-00/201, Electrical Power - Control
B. Access

- (1) Location Zones
119/120 Main Equipment Center
211/212 Flight Compartment
221/222 Passenger Cabin - Section 41

- (2) Access Panel
119BL Main Equipment Center

C. Install the Audio Accessory Unit

S 424-007

- (1) Install the audio accessory unit (AMM 20-10-01/401).

S 864-008

- (2) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11C22, PASS ADRS AMPL
(b) 11C23, INTERPHONE CABIN SERVICE
(c) 11C25, INTERPHONE CAPT FLT AMPL
(d) 11C26, INTERPHONE F/O OBS
(e) 11G29, INTERPHONE CAPT FLT AMPL
(f) 11G30, INTERPHONE F/O OBS

D. The Test of the Audio Accessory Unit

S 864-011

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-013

- (2) Push the PILOT switch on the forward attendant handset.
(a) Make sure the light in the FWD switch on the pilots' call panel, P5, comes on.

S 864-015

- (3) Push the FWD switch.
(a) Make sure the light in the FWD switch goes off.

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- S 864-017
(4) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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23-42-01

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PILOTS' CALL PANEL - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task removes the pilots' call panel from the overhead panel. The second task installs the pilots' call panel on the overhead panel.
- B. The pilots' call panel M51 is installed on the pilots' overhead panel P5.

TASK 23-42-02-004-001

2. Remove the Pilots' Call Panel

A. General

- (1) This task gives the instructions to remove the pilots' call panel from the overhead panel as a single unit.

B. References

- (1) 24-22-00/201, Electrical Power - Control

C. Access

- (1) Location Zone
211/212 Flight Compartment

D. Procedure

S 864-002

- (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11A32, INDICATOR LIGHTS 1
 - (b) 11C23, INTERPHONE CABIN SERVICE
 - (c) 11H31, GND CALL

S 024-003

- (2) Remove the pilots' call panel.

TASK 23-42-02-404-004

3. Install the Pilots' Call Panel

A. General

- (1) This task gives the instructions to install the pilots' call panel to the overhead panel as a single unit.

B. References

- (1) 24-22-00/201, Electrical Power - Control

EFFECTIVITY

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C. Access

- (1) Location Zone
211/212 Flight Compartment

D. Procedure

S 424-005

- (1) Install the pilots' call panel.

S 864-006

- (2) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
- (a) 11A32, INDICATOR LIGHTS 1
 - (b) 11C23, INTERPHONE CABIN SERVICE
 - (c) 11H31, GND CALL

E. Pilots' Call Panel Installation Test

S 714-007

- (1) Do this test to make sure that the pilots' call panel is installed correctly:
- (a) Supply electrical power (Ref 24-22-00).
 - (b) Momentarily push the PILOT switch on the handset installed at the left forward attendant station.
 - 1) Make sure that the FWD switch-light on the pilots' call panel comes on.
 - (c) Push the FWD switch.
 - 1) Make sure that the FWD switch-light goes off.

S 864-008

- (2) Remove electrical power if it is not necessary (Ref 24-22-00).

EFFECTIVITY

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CABIN INTERPHONE HANDSET ON-HOOK MAGNET – APPROVED REPAIRS

1. General

- A. This procedure contains a task that gives the instructions to repair the handset on-hook magnet.
- B. A magnet on the aft side of the attendant handset cradle does the handset on-hook function. If the magnet assembly disengages from the cradle assembly, do the task that follows:

TASK 23-42-03-308-001

2. Repair the Handset On-Hook Magnet (Fig. 801)

- A. References
 - (1) 23-42-00/501, Cabin Interphone – Adjustment/Test
- B. Consumable Materials
 - (1) Adhesive (BMS5-105 TYPE 5) URALANE-5774-A-C (CPN4128503)
 - (2) B00130 Solvent Spec. TT-I-735 Isopropyl Alcohol
 - (3) B00102 Fine-grain abrasive
 - (4) G00034 Clean cloth
- C. Access
 - (1) Location Zone
200 Passenger Cabin
- D. Repair the Handset On-Hook Magnet

S 308-003

- (1) Do these steps to repair the magnet:
 - (a) Get to the aft side of the cradle assembly.
 - (b) Make sure that the magnet assembly is loose or fell off from the recess.
 - (c) Remove the old adhesive from the flange of the magnet assembly and recess at the rear of the cradle assembly.
 - (d) Lightly sand the two surfaces and rub with a clean cloth made moist with isopropyl alcohol.

NOTE: Correct preparation of the faying surfaces is necessary for correct adhesion.

- (e) Make sure that the red dot is identified on the end of the magnet assembly that looks for north.
- (f) Make sure that the flange of the magnet assembly is installed in the center of the recess.
- (g) Apply a thin layer of Uralane-5774-A-C (CPN 4128503) adhesive (BMS5-105 Type 5) to each faying surface.
- (h) Put magnet assembly into the recess with the red dot mark at the end as shown on Fig. 801.

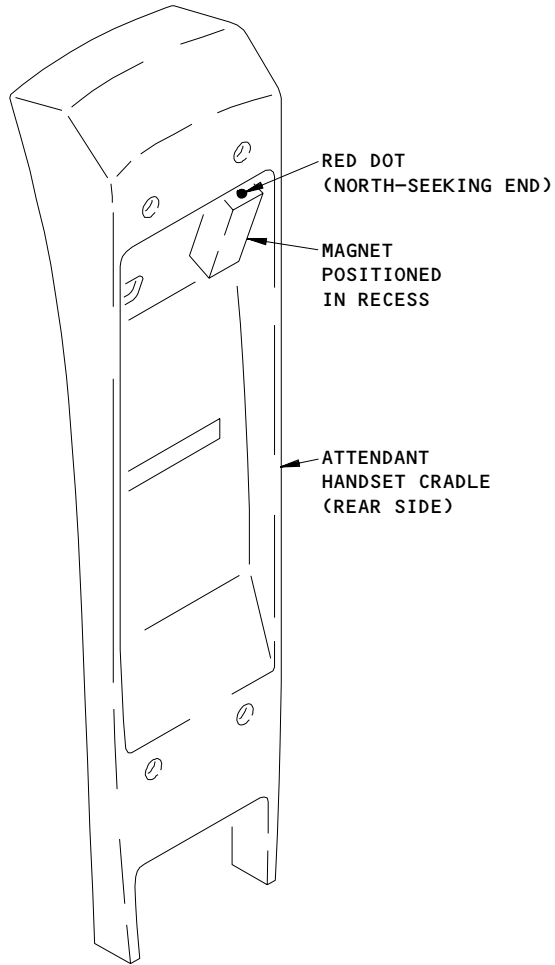
EFFECTIVITY

ALL

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Cabin Interphone Handset On-Hook Magnet - Location
Figure 801

EFFECTIVITY

ALL

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H56018

- (i) Apply pressure to magnet during the time necessary to dry. Apply a continuous line of adhesive around the two surfaces that touch.

NOTE: Assemble immediately after you apply the adhesive to the faying surfaces. Adhesive 5774-A-C requires 6 hours minimum to cure at temperature 60-80°F, 4 hours minimum to cure at 110-130°F. Heat may be applied to speed up the cure rate but make sure the temperature does not exceed 140°F.

S 718-005

- (2) Do the operational test of the Attendant Handset on the applicable handset (AMM 23-42-00/501).

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ELECTRONIC CHIME – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task removes the electronic chimes from the attendant areas. The second task installs the electronic chimes back to their locations.
- B. The electronic chimes for the attendant areas are installed in the cabin ceiling and non-acoustical panels. The chimes are to be found at these locations:
 - (1) Fwd – STA 363 adjacent to the forward entry light.
 - (2) Mid Fwd – STA 685 near left door 2.
 - (3) Mid Aft – STA 1315 near mid lavatories.
 - (4) Aft – STA 1637 in aft galley.

TASK 23-42-04-024-001

2. Remove Electronic Chime

A. General

- (1) This task gives the instructions to remove the electronic chime(s) in the attendant area(s) throughout the aircraft.

B. References

- (1) AMM 24-22-00/201, Electrical Power – Control

C. Access

(1) Location Zones

- (a) 223 Area above ceiling, passenger cabin – sect 41 (LH side)
- (b) 224 Area above ceiling, passenger cabin – sect 41 (RH side)
- (c) 233 Area above ceiling, passenger cabin – sect 43 (LH side)
- (d) 234 Area above ceiling, passenger cabin – sect 43 (RH side)
- (e) 243 Area above ceiling, passenger cabin – sect 44 (LH side)
- (f) 244 Area above ceiling, passenger cabin – sect 44 (RH side)
- (g) 253 Area above ceiling, passenger cabin – sect 46 (LH side)
- (h) 254 Area above ceiling, passenger cabin – sect 46 (RH side)

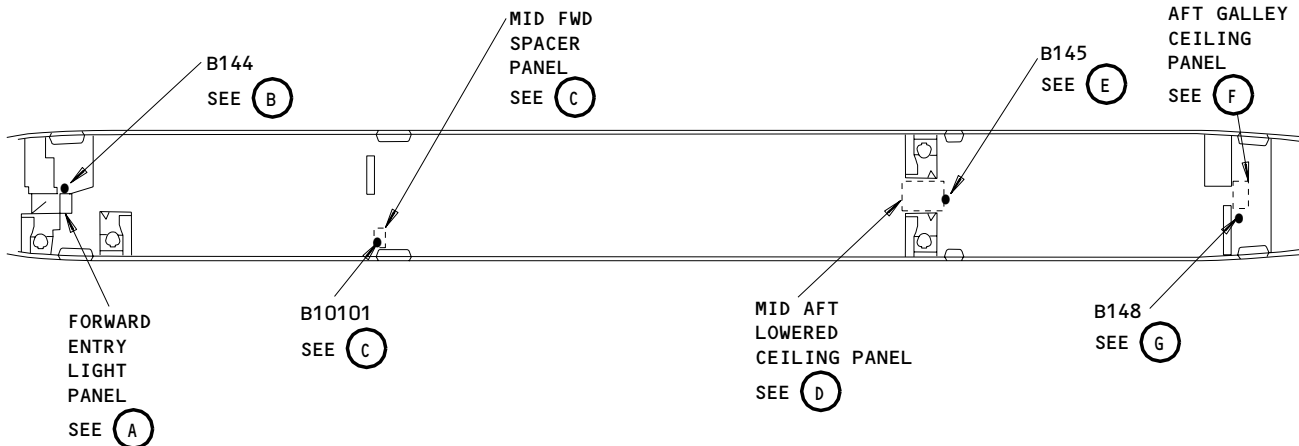
D. Remove Electronic Chime(s)

S 024-021

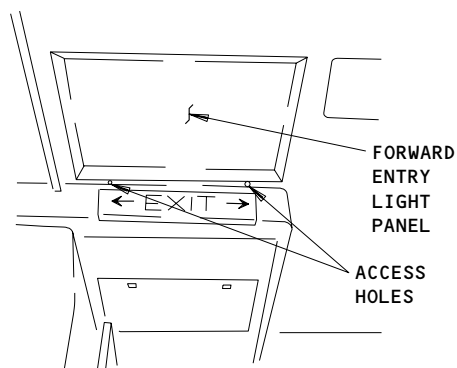
- (1) Do these steps to remove the Forward Electronic Chime:
 - (a) Open this circuit-breaker on the overhead panel, P11, and attach the DO-NOT-CLOSE tag:
 - 1) 11C23, INTERPHONE CABIN SERVICE
 - (b) Open this circuit-breaker on the right miscellaneous electrical equipment panel, P37, and attach DO-NOT-CLOSE tag:
 - 1) 37G4, LIGHT ENTRY & GALLEY
 - (c) Hold the forward entry light panel with hand and put a small screwdriver or other applicable tool in both the access holes found on each side of the panel.

EFFECTIVITY
GUI XA-MMX

23-42-04



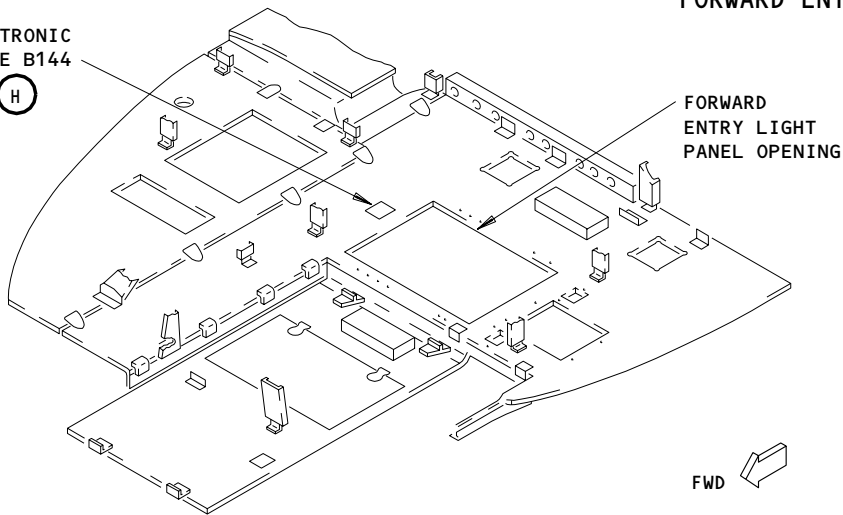
ELECTRONIC CHIME LOCATIONS



FORWARD ENTRY LIGHT PANEL

(A)

ELECTRONIC CHIME B144
SEE (H)



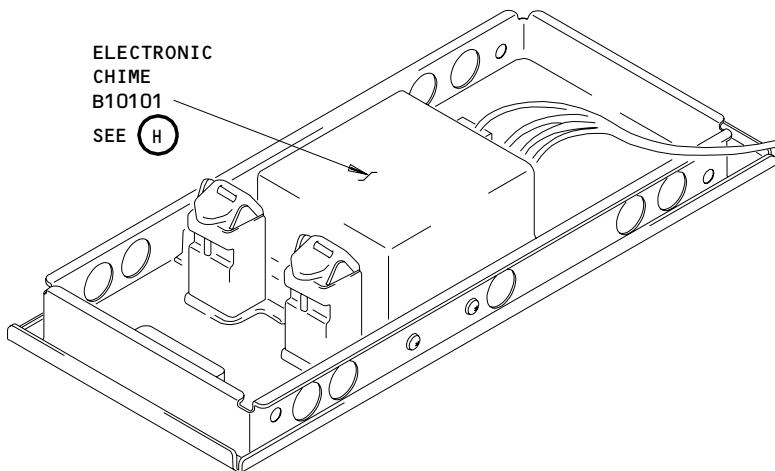
FWD CHIME (B144) LOCATION

(B)

**Electronic Chime Installation
Figure 401 (Sheet 1)**

EFFECTIVITY
GUI XA-MMX

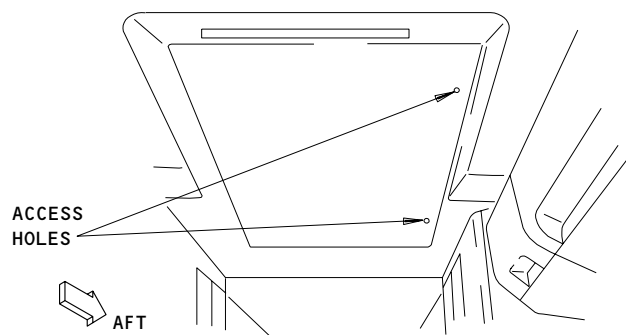
23-42-04



ELECTRONIC
CHIME
B10101
SEE (H)

MID FWD SPACER PANEL
(MID FWD CHIME (B10101) LOCATION)

(C)

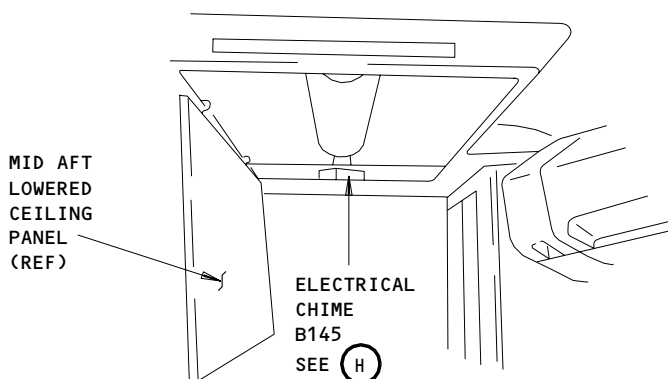


ACCESS
HOLES

AFT

MID AFT LOWERED CEILING PANEL

(D)



MID AFT
LOWERED
CEILING
PANEL
(REF)

ELECTRICAL
CHIME
B145
SEE (H)

MID AFT CHIME (B145) LOCATION

(E)

Electronic Chime Installation
Figure 401 (Sheet 2)

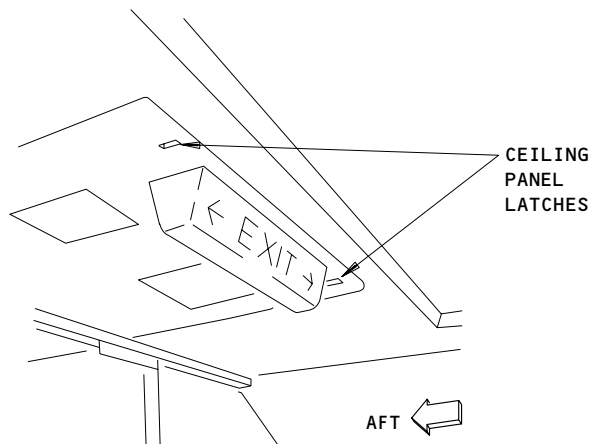
EFFECTIVITY
GUI XA-MMX

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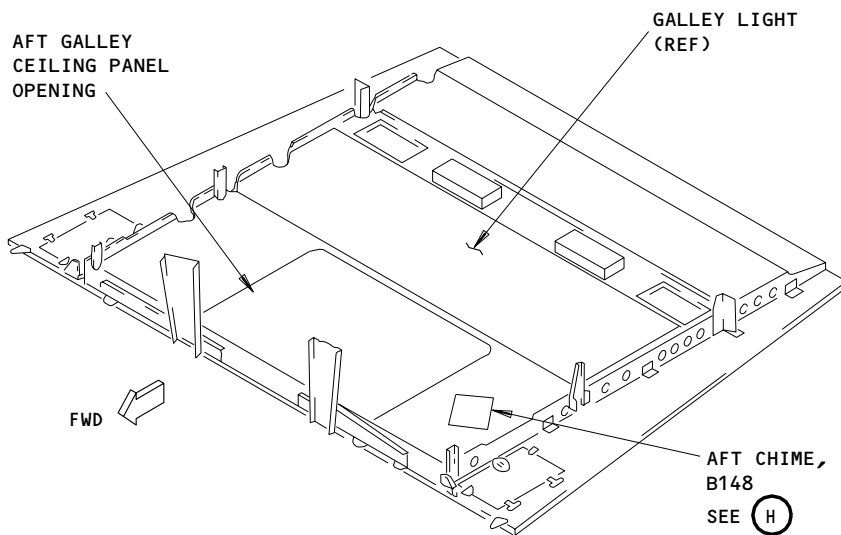
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322337



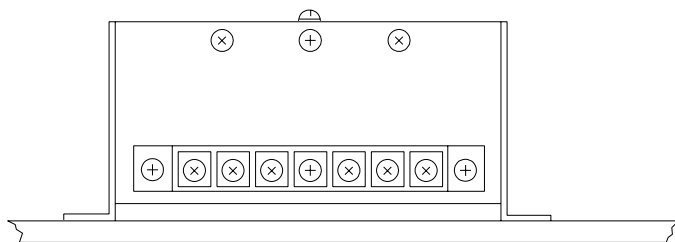
AFT GALLEY CEILING PANEL

(F)



AFT ELECTRONIC CHIME (B148) LOCATION

(G)



ELECTRONIC CHIME (TYP)

(H)

Electronic Chime Installation
Figure 401 (Sheet 3)

EFFECTIVITY
GUI XA-MMX

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322343

- (d) Lower the panel to the end of the first lanyard.
- (e) Take off the first lanyard and lower the entry light panel to the end of the second lanyard.
- (f) Find the electronic chime B144 that is adjacent to the entry light opening in the ceiling (Fig. 401).
- (g) Identify the locations and colors of the four wires that are connected to the chime terminals for installation.
- (h) Remove the four wires from the terminals on the electronic chime.
- (i) Remove the four screws and washers that hold the electronic chime.
- (j) Remove the electronic chime.

S 024-005

- (2) Do these steps to remove Mid Forward Electronic Chime:
 - (a) Open this circuit-breaker on the overhead panel, P11, and attach the DO-NOT-CLOSE tag:
 - 1) 11C23, INTERPHONE CABIN SERVICE
 - (b) Hold the mid forward spacer panel adjacent to the left passenger door 2 with hand and put a small screwdriver or other applicable tool in both the access holes found on each side of the panel.
 - (c) Lower the spacer panel.
 - (d) Find the electronic chime B10101 on the spacer panel (Fig. 401).
 - (e) Identify the locations and colors of the four wires that are connected to the chime terminals for installation.
 - (f) Remove the four wires from the terminals on the electronic chime.
 - (g) Release electronic chime from the clips that hold it.
 - (h) Remove the electronic chime.

S 024-008

- (3) Do these steps to remove Mid Aft Electronic Chime:
 - (a) Open this circuit-breaker on the overhead panel, P11, and attach the DO-NOT-CLOSE tag:
 - 1) 11C23, INTERPHONE CABIN SERVICE
 - (b) Hold the mid aft lowered ceiling panel with hand and put a small screwdriver or other applicable tool in both access holes found on each side of the panel.
 - (c) Lower mid aft ceiling panel.
 - (d) Find the electronic chime B145 that is adjacent to the panel opening in the ceiling (Fig. 401).
 - (e) Identify the locations and colors of the four wires that are connected to the chime terminals for installation.
 - (f) Remove the four wires from the terminals on the electronic chime.

EFFECTIVITY
GUI XA-MMX

23-42-04

- (g) Remove the four screws and washers that hold the electronic chime.
- (h) Remove the electronic chime.

S 024-007

- (4) Do these steps to remove Aft Electronic Chime:
 - (a) Open these circuit-breakers on the overhead panel, P11, and attach the DO-NOT-CLOSE tags:
 - 1) 11C22, PASS ADRS
 - 2) 11C23, INTERPHONE CABIN SERVICE
 - (b) Take off the lanyard and lower the aft galley ceiling panel.
 - (c) Find the electronic chime B148 that is adjacent to the panel opening in the ceiling (Fig. 401).
 - (d) Identify the locations and colors of the four wires that are connected to the chime terminals for installation.
 - (e) Remove the four wires from the terminals on the electronic chime.
 - (f) Remove the four screws and washers that hold the electronic chime.
 - (g) Remove the electronic chime.

TASK 23-42-04-424-003

3. Install Electronic Chimes

A. General

- (1) This task gives the instructions to install the electronic chime(s) in the attendant areas throughout the aircraft.

B. References

- (1) AMM 24-22-00/201, Electrical Power - Control

C. Access

(1) Location Zones

- (a) 223 Area above ceiling, passenger cabin - sect 41 (LH side)
- (b) 224 Area above ceiling, passenger cabin - sect 41 (RH side)
- (c) 233 Area above ceiling, passenger cabin - sect 43 (LH side)
- (d) 234 Area above ceiling, passenger cabin - sect 43 (RH side)
- (e) 243 Area above ceiling, passenger cabin - sect 44 (LH side)
- (f) 244 Area above ceiling, passenger cabin - sect 44 (RH side)
- (g) 253 Area above ceiling, passenger cabin - sect 46 (LH side)
- (h) 254 Area above ceiling, passenger cabin - sect 46 (RH side)

EFFECTIVITY
GUI XA-MMX

23-42-04

D. Install Electronic Chime(s)

S 424-009

- (1) Do these steps to install the Forward Electronic Chime:
 - (a) Install the electronic chime and attach into position with four screws and washers.
 - (b) Connect the four wires that were disconnected during removal to the terminals on the electronic chime.
 - (c) Lift the forward entry light panel and connect to the hook on the first lanyard.
 - (d) Lift the forward entry light panel fully and make sure that both latches are latched.
 - (e) Remove the DO-NOT-CLOSE tag and close this circuit-breaker on the P11 panel:
 - 1) 11C23, INTERPHONE CABIN SERVICE
 - (f) Remove the DO-NOT-CLOSE tag and close this circuit-breaker on the P37 panel:
 - 1) 37G4, LIGHT ENTRY & GALLEY
 - (g) Do a test of the electronic chime installation:
 - 1) Supply electrical power (AMM 24-22-00/201).
 - 2) Remove the mid attendant handset from the cradle and push the FWD call button on the handset.
 - 3) Make sure that a sound of a Hi/Lo chime is given by the electronic chime installed at the attendant station.
 - 4) Put back the mid attendant handset to its cradle.
 - 5) Remove electrical power if it is not necessary (AMM 24-22-00/201).

S 424-011

- (2) Do these steps to install the Mid Forward Electronic Chime:
 - (a) Install the electronic chime and attach into position with clips.
 - (b) Connect the four wires that were disconnected during removal to the terminals on the electronic chime.
 - (c) Lift the mid forward spacer panel fully and make sure that both latches are latched.
 - (d) Remove the DO-NOT-CLOSE tag and close this circuit-breaker on the P11 panel:
 - 1) 11C23, INTERPHONE CABIN SERVICE
 - (e) Do a test of the electronic chime installation:
 - 1) Supply electrical power (AMM 24-22-00/201).
 - 2) Remove the forward attendant handset from the cradle and push the MID call button on the handset.
 - 3) Make sure that a sound of a Hi/Lo chime is given by the electronic chime that is installed adjacent to the left passenger door 2.
 - 4) Put back the forward attendant handset to its cradle.
 - 5) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY
GUI XA-MMX

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S 424-013

- (3) Do these steps to install Mid Aft Electronic Chime:
- (a) Install the electronic chime and attach into position with four screws and washers.
 - (b) Connect the four wires that were disconnected during removal to the terminals on the electronic chime.
 - (c) Lift the mid aft ceiling panel fully and make sure that both latches are latched.
 - (d) Remove the DO-NOT-CLOSE tag and close this circuit-breaker on the P11 panel:
 - 1) 11C23, INTERPHONE CABIN SERVICE
 - (e) Do a test of the electronic chime installation:
 - 1) Supply electrical power (AMM 24-22-00/201).
 - 2) Remove the aft attendant headset from the cradle and push the MID call button on the handset.
 - 3) Make sure that a sound of a Hi/Lo chime is given by the electronic chime that is installed adjacent to the mid aft ceiling panel.
 - 4) Put back the aft attendant headset to its cradle.
 - 5) Remove electrical power if it is not necessary (AMM 24-22-00/201).

S 424-014

- (4) Do these steps to install Aft Electronic Chime:
- (a) Install the electronic chime and attach into position with four screws and washers.
 - (b) Connect the four wires that were disconnected during removal to the terminals on the electronic chime.
 - (c) Lift the aft galley ceiling panel and connect to the lanyard.
 - (d) Lift the aft galley ceiling panel fully and make sure that both latches are latched.
 - (e) Remove the DO-NOT-CLOSE tags and close these circuit-breakers on the P11 panel:
 - 1) 11C22, PASS ADRS
 - 2) 11C23, INTERPHONE CABIN SERVICE
 - (f) Do a test of the electronic chime installation:
 - 1) Supply electrical power (AMM 24-22-00/201).
 - 2) Remove the mid attendant headset from the cradle and push the AFT call button on the handset.
 - 3) Make sure that a sound of a Hi/Lo chime is given by the electronic chime that is installed in the aft galley.
 - 4) Put back the mid attendant headset to its cradle.
 - 5) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY
GUI XA-MMX

23-42-04

CABIN INTERPHONE HANDSET – REMOVAL/INSTALLATION

1. General

- A. A handset is located at each attendant's station in the cabin.
- B. The handset assembly consists of handset and cord. When you replace a handset, you should replace the entire assembly.

TASK 23-42-07-304-001

2. Handset Removal

A. Access

- (1) Location Zone
200 Upper Half of Fuselage

B. Procedure

S 864-002

- (1) Open this circuit breaker on the overhead panel, P11, and attach DO-NOT-CLOSE tag:
 - (a) 11C22 or 11C23 or 11C24, CABIN/SERVICE INTERPHONE

S 304-003

- (2) Disconnect handset plug at the bulkhead connector and remove handset from holder.

NOTE: It may be necessary to remove portions of the attendant's seat to gain access to the connector.

TASK 23-42-07-304-004

3. Handset Installation

A. References

- (1) AMM 24-22-00/201, Control (Supply Power) – Maintenance Practices

B. Access

- (1) Location Zone
200 Upper Half of Fuselage

C. Procedure

S 304-005

- (1) Connect handset plug at the bulkhead.

S 864-006

- (2) Provide electrical power (AMM 24-22-00/201).

S 864-007

- (3) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the overhead panel, P11:
 - (a) 11C22 or 11C23 or 11C24, CABIN/SERVICE INTERPHONE

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- S 864-008
- (4) Lift handset from holder and check that communication with another cabin interphone position is possible.
- S 864-009
- (5) Remove electrical power if no longer required (AMM 24-22-00/201).

EFFECTIVITY

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CABIN INTERPHONE HANDSET CRADLE – REMOVAL/INSTALLATION

TASK 23-42-08-304-001

1. Handset Cradle Removal

A. General

- (1) This procedure has two tasks.
 - (a) The first task removes the handset cradle.
 - (b) The second task installs the handset cradle.

B. Access

- (1) Location Zone
200 Upper Half of Fuselage

C. Procedure

S 864-020

- (1) Open these circuit breakers on the overhead circuit breaker panel P11, and attach DO-NOT-CLOSE tags:
 - (a) GUI 115-199;
11C23, CABIN SERVICE INTERPHONE
 - (b) GUI 001-099;
11C24, CABIN SERVICE INTERPHONE

S 024-018

- (2) Do these steps to remove the handset cradle:
 - (a) Remove the four screws from the handset cradle.
 - (b) Pull the handset cradle out to get access to the connector(s).
 - (c) Disconnect the connector(s).
 - (d) Remove the handset cradle.

TASK 23-42-08-304-006

2. Handset Cradle Installation

A. References

- (1) 23-42-00/501, Cabin Interphone – Adjustment/Test

B. Access

- (1) Location Zone
200 Upper Half of Fuselage

C. Procedure

S 424-017

- (1) Do these steps to install the handset cradle:
 - (a) Connect the handset cradle connector(s).
 - (b) Put the handset cradle on its mounting area.
 - (c) Install the four screws that attach the handset cradle to its mounting area.

EFFECTIVITY

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- S 864-031
- (2) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
- (a) 11C23, CABIN SERVICE INTERPHONE
 - (b) GUI 115-199;
11C23, CABIN SERVICE INTERPHONE
 - (c) GUI 001-099;
11C24, CABIN SERVICE INTERPHONE
- S 714-019
- (3) Do the operational test of the Attendant Handset on the applicable handset (AMM 23-42-00/501).

EFFECTIVITY

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23-42-08

GROUND CREW CALL SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The ground crew call system allows personnel in the flight compartment and ground servicing personnel to gain each others attention so they may communicate using one of the interphone systems. The system uses 28v dc power obtained from a circuit breaker on the overhead panel P11.
- B. The ground crew call system provides a signaling capability between the flight compartment and nose landing gear area.
- C. The attention of personnel outside the airplane is gained by pressing the GND CALL switch on the pilots' call panel. The ground crew call horn will sound when this is done.
- D. From the nose landing gear, the attention of personnel in the flight deck is gained from outside the airplane by pressing the FLIGHT DECK CALL SW button on the P62 CONTROL PANEL. The GND CALL light on the pilots' call panel comes on, and a single high chime sounds in the flight compartment.
- E. The ground crew call horn will also sound when the equipment cooling system fails, or when an inertial reference unit (IRU) is left to operate on dc battery power.

2. Component Details (Fig. 1)

A. Ground Call Switch

- (1) The GND CALL switch is on the pilots' call panel, which is on overhead panel P5. The call horn operates as long as the pilot pushes the switch. Inside the GND CALL switch, a lamp comes on when ground crew pushes the FLIGHT DECK CALL SW button at the nose wheel.

B. Flight Deck Call Switch

- (1) The FLIGHT DECK CALL SW button is on the P62 CONTROL PANEL. To call the flight compartment from the nose wheel, ground crew personnel push the button. This step makes the GND CALL light come on at the pilots' call panel and sounds the chime in the flight compartment. A related circuit keeps the light on for 30 seconds.
- (2) The chime sound comes from the bell chime module, M1000. It is in the warning electronics unit P51, which is located in the main equipment center. The bell chime module has a chime generator and amplifiers to energize the aural warning loudspeakers.

C. Ground Crew Call Horn

- (1) The attention of personnel outside the airplane is gained by pressing the GND CALL switch. The ground crew call horn in the nose wheel well, will sound when the GND CALL switch is pressed. The crew call horn produces a continuous tone, and operates at 28v dc.

3. Operation

A. Functional Description

- (1) The GND CALL circuit breaker on overhead panel P11 controls power to the system. Power from the circuit breaker is routed to the ground crew call relay located in the pilots' call panel and to the FLIGHT DECK CALL SW and GND CALL switches.

EFFECTIVITY

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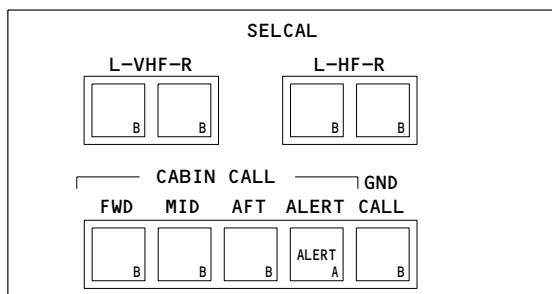
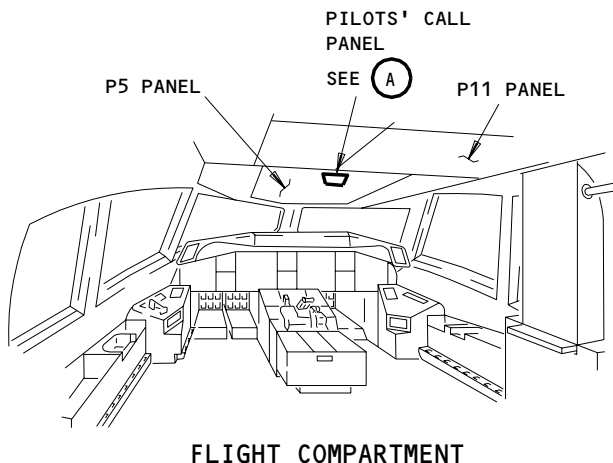
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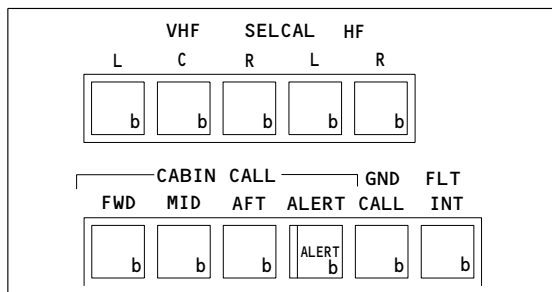
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PILOTS' CALL PANEL

A 1



PILOTS' CALL PANEL

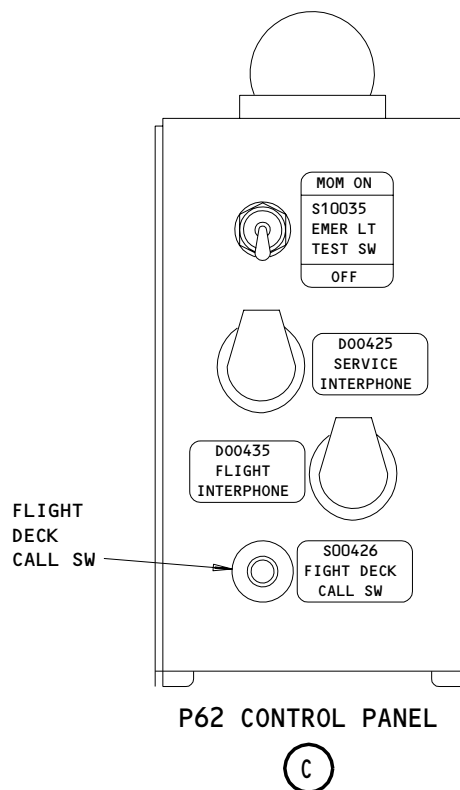
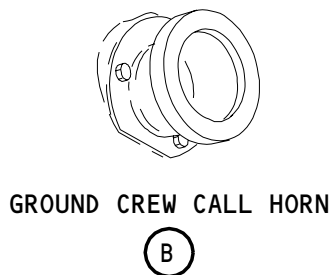
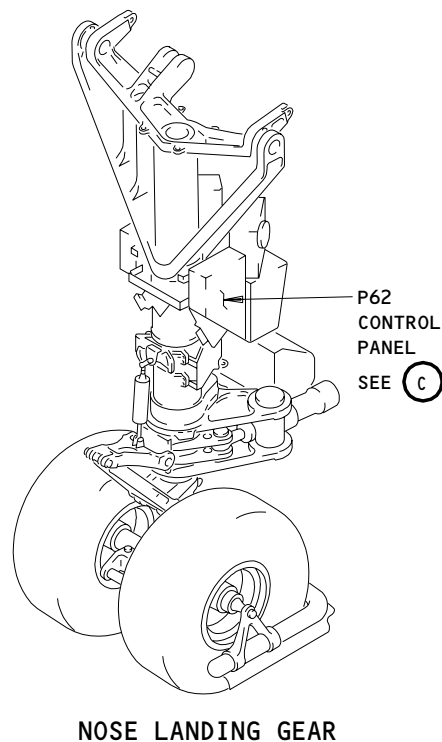
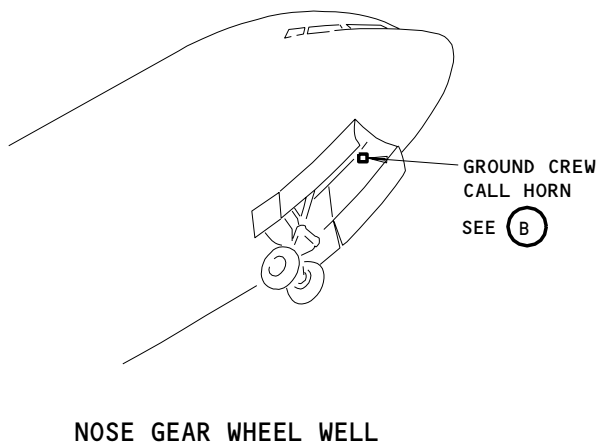
A 2

- 1 GUI 115
- 2 ALL EXCEPT GUI 115

**Ground Crew Call System Component Location
Figure 1 (Sheet 1)**

EFFECTIVITY	ALL
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Ground Crew Call System Component Location
Figure 1 (Sheet 2)

EFFECTIVITY	ALL
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- (2) Flight compartment calling from the P62 CONTROL PANEL is controlled by the FLIGHT DECK CALL SW button and the ground crew call relay. When the FLIGHT DECK CALL SW button is pressed, a hold-in circuit keeps the ground crew call relay energized for 30 seconds. The ground crew call relay, when energized, lights the pilots' call panel GND CALL light and generates a single chime over the aural warning speakers.
- (3) When the GND CALL switch is pressed, power is applied to the ground crew call horn through the de-energized contact of the IRS warning relay. The ground crew call horn will sound for as long as the GND CALL switch is pressed.
- (4) The IRS warning relay can be energized by a control signal from the equipment cooling system (Ref 21-58-00/001). The ground crew call horn will sound to indicate equipment cooling failures.

B. Control

- (1) To place the system in operation, supply electrical power (Ref 24-22-00/201).
- (2) On overhead panel P11, make sure the GND CALL circuit breaker is closed.

C. For more details on the Ground Crew Call System, refer to these wiring diagrams and functional schematics:

- WDM 23-43-11: Ground Crew Call System
- SSM 23-43-01: Ground Crew Call.

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23-43-00

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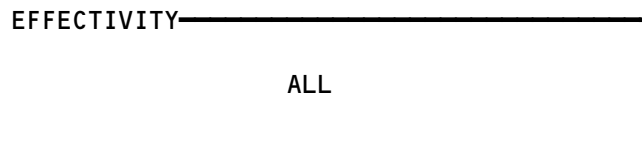
BOEING
757
FAULT ISOLATION/MAINT MANUAL

GROUND CREW CALL SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CIRCUIT BREAKER - GND CALL, C560	--	1	FLT COMPT, P11 11H31	*
HORN - GROUND CREW CALL, B60	--	1	714, NOSE WHEEL WELL	23-43-01
MODULE - (FIM 31-51-00/101)				
BELL CHIME AURAL WARNING, M1000				
PANEL - (FIM 23-42-00/101)				
PILOTS' CALL, M51				
RELAY - (FIM 21-58-00/101)				
HORN, K10080				
SWITCH - FLIGHT DECK CALL, S426	--	1	NOSE LANDING GEAR, NOSE GEAR INTPH PANEL, P62	*

* SEE THE WDM EQUIPMENT LIST

Ground Crew Call System - Component Index
Figure 101

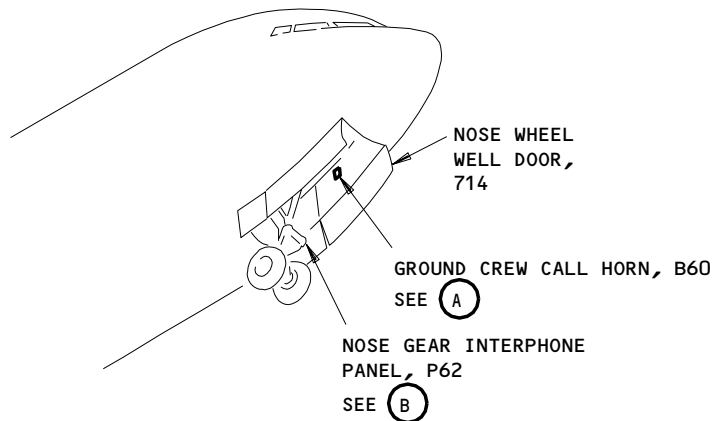


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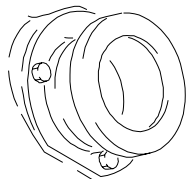
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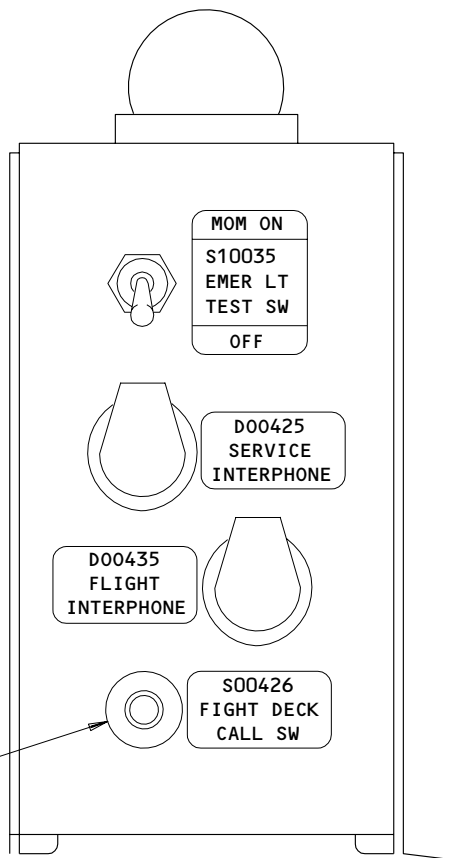


NOSE GEAR WHEEL WELL



GROUND CREW CALL HORN, B60

(A)



FLIGHT DECK
CALL SWITCH,
S426

NOSE GEAR INTERPHONE
PANEL, P62 (REF)

(B)

Ground Crew Call System - Component Location
Figure 102

EFFECTIVITY	ALL

23-43-00

GROUND CREW CALL SYSTEM – ADJUSTMENT/TEST

TASK 23-43-00-715-001

1. Operational Test – Ground Crew Call

A. General

- (1) This procedure contains a task which gives the operational test for the ground crew call system. For a satisfactory result, make sure the call signals between the nose gear wheel well and the flight compartment operate.

B. References

- (1) AMM 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones

211/212	Flight Compartment – Sect 41
711	Nose Landing Gear

D. Prepare for the Operational Test

S 865-002

- (1) Supply electrical power (AMM 24-22-00/201).

E. Do the Ground Crew Call System Operational Test

S 865-004

- (1) Momentarily push the FLIGHT DECK CALL button on the nose gear panel (P62) on the nose landing gear.
- (a) Make sure you hear one chime in the flight compartment.
 - (b) Make sure the GND CALL switch-light on the pilots' call panel (M51) comes on.
 - (c) Make sure the blue GND CALL switch-light stays on for 30 (±5) seconds then goes off.

S 865-005

- (2) Momentarily push the GND CALL switch-light.
- (a) Make sure you hear the horn in the wheel well of the nose landing gear while you push the GND CALL switch-light.

S 865-006

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

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GROUND CREW CALL HORN – REMOVAL/INSTALLATION

1. General

- A. The ground crew call horn is installed on the forward left side of the nose gear wheel well.
- B. This procedure contains two tasks. The first task removes the ground crew call horn from the left side of the nose gear wheel well. The second task installs the ground crew call horn to the left side of the nose gear wheel well.

TASK 23-43-01-004-001

2. Remove the Ground Crew Call Horn (Fig. 401)

A. General

- (1) This task gives the instructions to remove the ground crew call horn from the nose gear wheel well.

B. References

- (1) 23-42-02/401, Pilots' Call Panel
- (2) 32-00-15/201, Landing Gear Door Lock
- (3) 32-00-20/201, Landing Gear Downlocks

C. Access

- (1) Location Zones
 - 211/212 Flight Compartment
 - 710 Nose Landing Gear and Doors

D. Prepare for Removal

S 864-002

- (1) Make sure that the landing gear downlocks are installed (Ref 32-00-20).

S 014-003

- (2) Open the nose gear doors.

S 494-021

- (3) Install the door locks (Ref 32-00-15).

S 864-022

- (4) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11A32, INDICATOR LIGHTS 1
 - (b) 11C23, INTERPHONE CABIN SERVICE
 - (c) 11H31, GND CALL

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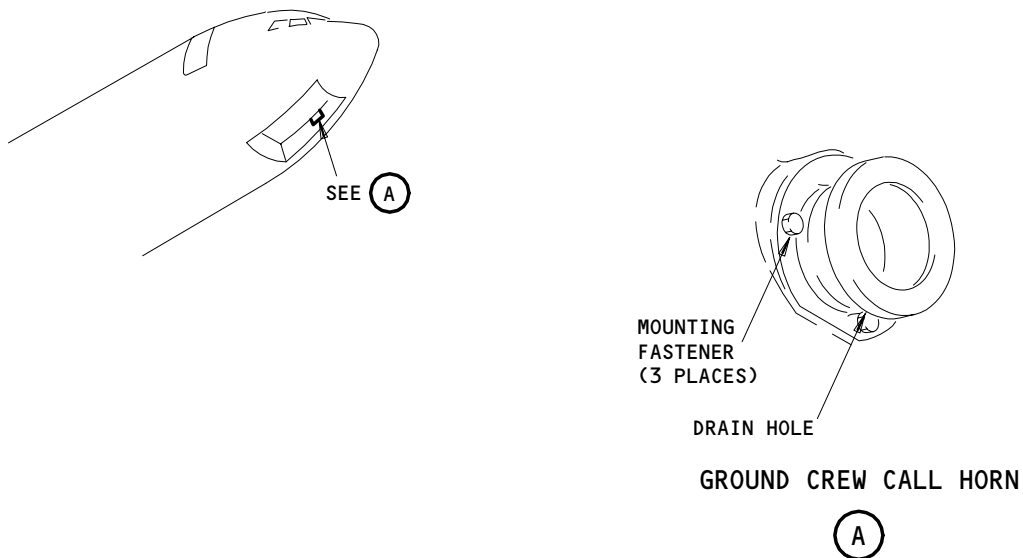
S 034-009

CAUTION: WHEN THE AURAL WARNING IS REMOVED, MAKE SURE THAT THE EQUIPMENT COOLING SYSTEM OPERATES CORRECTLY. MAKE CHECKS FOR EQUIPMENT COOLING FAILURE MESSAGES ON THE EICAS SCREENS EVERY 15 MINUTES. COOLING FAILURES CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION: IF THE AIRPLANE IS ON BATTERY POWER, MAKE SURE THAT THE IRS MODE SELECT SWITCHES ARE SET TO OFF. FAILURE TO DO THIS CHECK CAN CAUSE A DECREASE IN BATTERY POWER.

(5) Remove the pilots' call panel (M51) (Ref 23-42-02).

NOTE: The equipment cooling and inertial reference systems can cause the ground crew call horn to operate unless prevented by the removal of the pilots' call panel.



Ground Crew Call Horn Installation
Figure 401

EFFECTIVITY	
	ALL

23-43-01

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E. Remove the Ground Crew Call Horn

S 034-006

- (1) Remove the three screws that hold the horn.

S 034-007

- (2) Remove the electrical leads from the horn terminals.
(a) Identify the leads and terminals for installation.

S 024-008

- (3) Remove the ground crew call horn.

TASK 23-43-01-404-010

3. Install the Ground Crew Call Horn (Fig. 401)

A. General

- (1) This task gives the instructions to install the ground crew call horn to the left side of the nose gear wheel well.

B. Consumable Materials

- (1) B00316 Solvent - Aliphatic Naphtha, TT-N-95
(2) Potting Compound - BMS 8-68, Type II (AMM 20-30-01)

C. References

- (1) 23-42-02/401, Pilots' Call Panel
(2) 24-22-00/201, Electrical Power - Control
(3) 32-00-15/201, Landing Gear Door Lock
(4) 32-00-20/201, Landing Gear Downlocks

D. Access

- (1) Location Zones
211/212 Flight Compartment
710 Nose Landing Gear and Doors

E. Install the Ground Crew Call Horn

S 114-011

- (1) Clean the horn terminals and the electrical leads with solvent.

S 434-012

- (2) Connect the electrical leads to the horn terminals.

S 394-014

- (3) Apply layers of potting compound to the electrical leads and the horn terminals.

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- S 424-013
(4) Use three screws to install the ground crew call horn with the drain hole to the bottom.

- S 434-015
(5) Install the pilots' call panel (Ref 23-42-02).

- S 864-016
(6) Remove DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11A32, INDICATOR LIGHTS 1
(b) 11C23, INTERPHONE CABIN SERVICE
(c) 11H31, GND CALL

F. Ground Crew Call Horn Installation Test

- S 864-018
(1) Supply electrical power (Ref 24-22-00).

- S 984-029
(2) Push the GND CALL switch on the pilots' call panel (M51).

- S 284-030
(3) Make sure you hear the horn.

G. Put the Airplane Back to Its Usual Condition

S 014-031

WARNING: USE THE PROCEDURE IN 32-00-15 TO REMOVE THE DOOR LOCKS. THE DOORS OPEN AND CLOSE QUICKLY AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove the door locks from the nose gear doors and close the doors (Ref 32-00-15).

- S 864-019
(2) Remove electrical power if it is not necessary (Ref 24-22-00).

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FLIGHT INTERPHONE SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The flight interphone system provides facilities for interphone communication among flight compartment crewmembers and provides the means for them to key, transmit, and receive on airplane radio systems and receive on airplane navigation systems.
- B. The flight interphone system extends communication to ground personnel at the nose gear interphone station, and allows flight compartment crewmembers to make passenger address announcements and communicate.
- C. The flight interphone system includes amplifiers and mixing circuits in the audio accessory unit, audio selector panels, cockpit speakers, microphone/headphone jacks and push-to-talk (PTT) switches.
- D. The captain's and the first officer's flight interphone components include the following: audio selector panel; headset, headphone, and handmic jacks; audio selector panel and control wheel push-to-talk (PTT) switches; and cockpit speakers.
- E. The observer's flight interphone components include the following: audio selector panel; headset, headphone and handmic jacks; and audio selector panel PTT switch.
- F. The flight interphone system receives power from the dual power source of 28v dc battery bus and 28v dc right bus, through circuit breakers on overhead panel P11.

2. Component Details (Fig. 1)

A. Audio Accessory Unit

- (1) The flight interphone amplifier is located in the audio accessory unit (E4 rack in the main equipment center). The amplifier is a printed circuit card which receives microphone inputs and provides audio to all flight interphone stations. The amplifier has preset internal adjustments for compression squelch and volume. Adjustments to the unit are not accessible.

B. Audio Selector Panel

- (1) Audio selector panels are located in the flight compartment. Two audio selector panels are on the P8 control stand, and one is on the first observer's P17 sidewall console. Each panel contains microphone selector switches which connect microphone circuits to the interphone systems, to the radio communication systems, or to the passenger address system. The push-to-talk (PTT) switch on the panel keys the flight compartment microphones. Volume control is provided by switches on the panel.

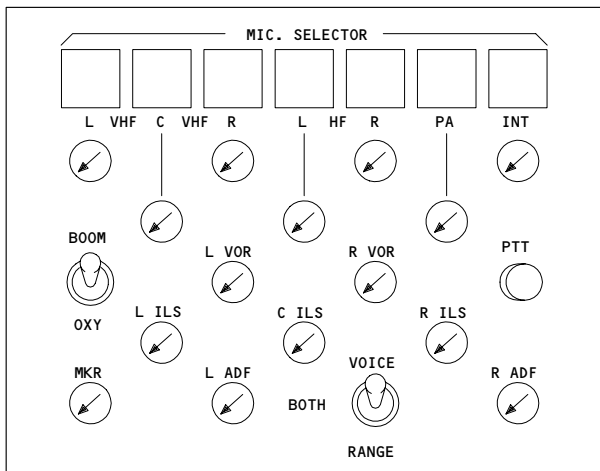
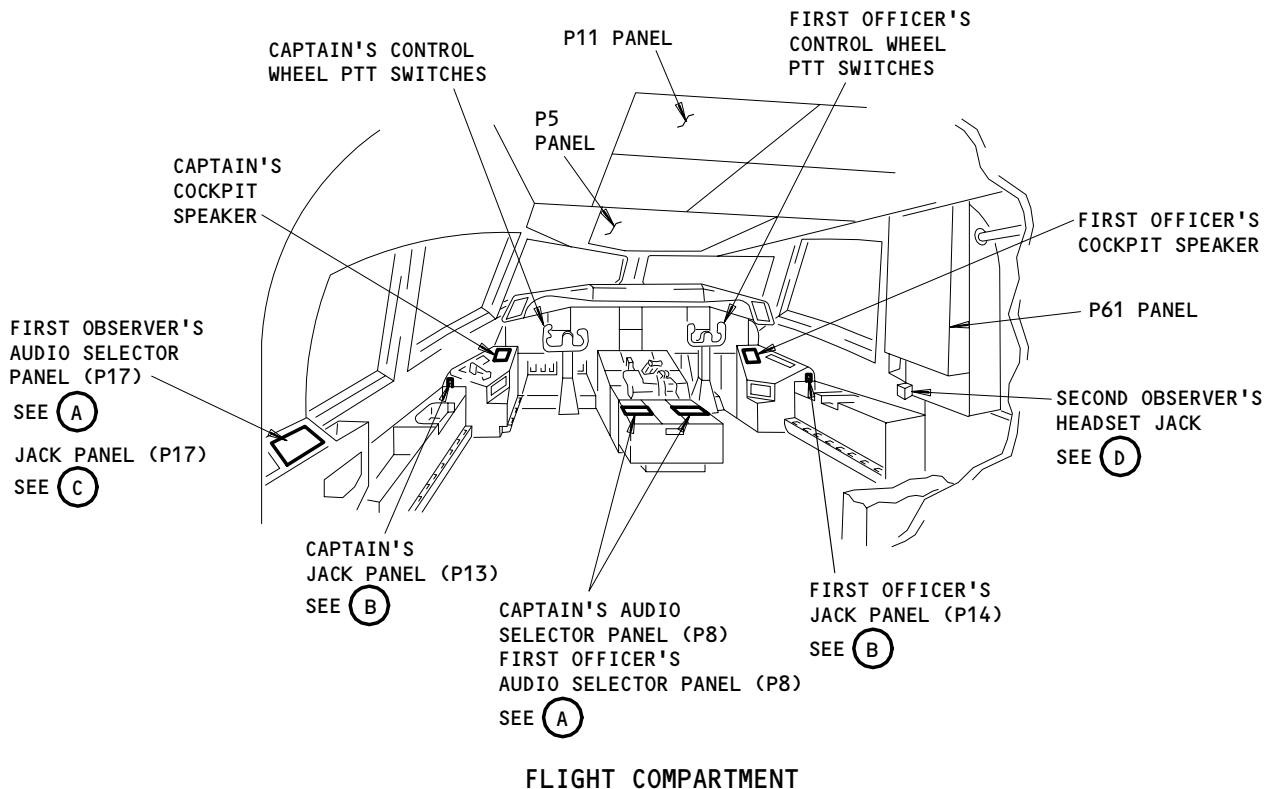
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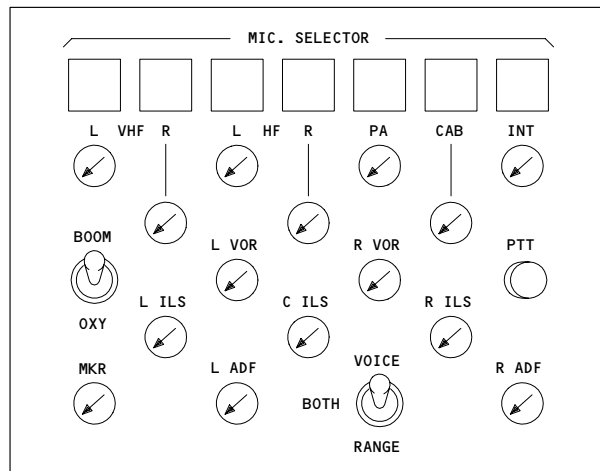
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AUDIO SELECTOR PANEL

(A) 1



AUDIO SELECTOR PANEL

(A) 2

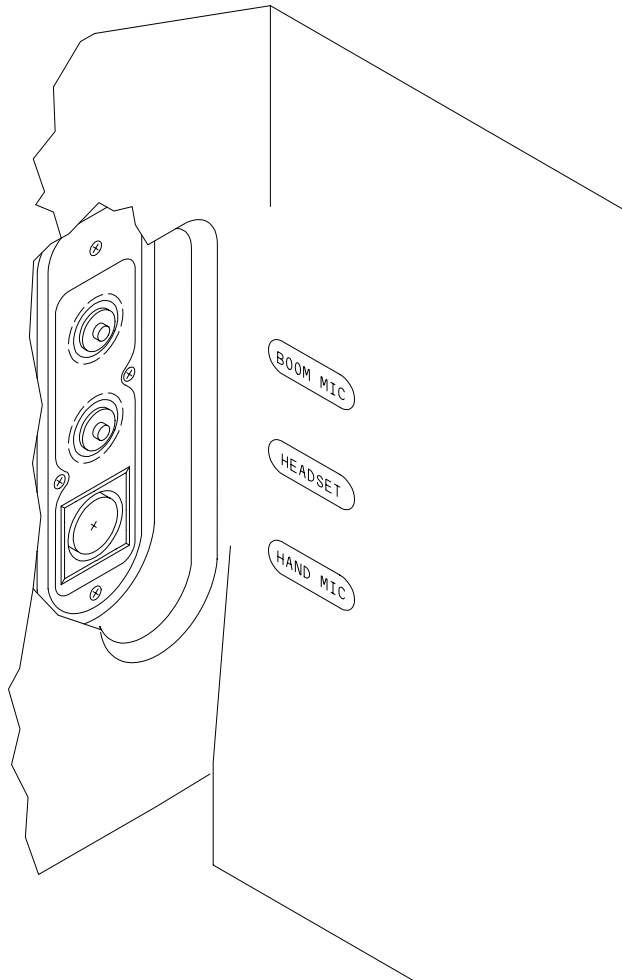
- 1 GUI 001-099
- 2 GUI 115

**Flight Interphone System - Component Location
Figure 1 (Sheet 1)**

EFFECTIVITY

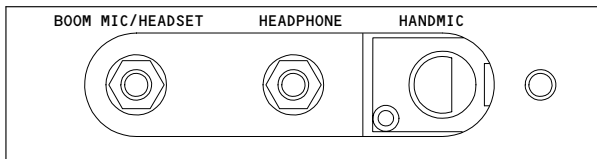
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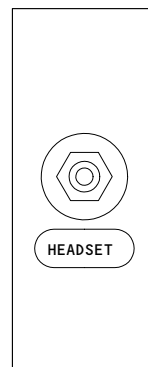
CAPTAIN'S AND FIRST OFFICER'S
JACK PANEL (EXAMPLE)

(B)



FIRST OBSERVER'S JACK PANEL (EXAMPLE)

(C)



SECOND OBSERVER'S
HEADSET JACK (EXAMPLE)

(D)

Flight Interphone System - Component Location
Figure 1 (Sheet 2)

EFFECTIVITY

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C. Cockpit Speakers

(1) Two cockpit speakers are in the flight compartment. The captain's speaker is on the P13 sidewall panel and the first officer's speaker is on the P14 sidewall panel. The unit contains a loudspeaker, amplifier, muting circuits, and a volume control. The speakers receive all audio signals provided to the audio selector panels. The speakers are muted whenever a PTT switch is pushed at the captain's or first officer's station. Volume is adjusted by a knob in the center of the speaker.

D. Flight Interphone Jack Panels

(1) The captain, first officer, and observer each have a jack panel for a boom mic, headset and handmic.

(2) A headset jack for a second observer is located at the P61 panel.

E. Push-To-Talk (PTT) Switch

(1) Push-to-talk (PTT) switches are located at all flight interphone stations. The handmic, control wheel, and audio selector panels all have PTT switches. The switch must be pushed before messages are begun or no transmission can take place. Audio and control circuits to the audio selector panel are completed when the PTT switch is pushed.

3. Operation

A. Functional Description

(1) The flight interphone system is the communication link between flight compartment crewmembers. The system provides common microphone circuits for the communications systems and common headphone and speaker circuits for the communications and navigation systems.

(2) The captain's and first officer's flight interphone components and operation are the same.

(3) The observer's flight interphone components and operation are the same as the captain's except for the absence of a control wheel push-to-talk switch and cockpit speaker.

(4) The flight interphone components, which include microphones and audio amplifiers, provide the connecting link between airplane communication systems, navigation receivers, and flight compartment crewmembers. Audio selector panels enable crewmembers to transmit and receive over the radio systems, or receive over the navigation systems. Microphone PTT switches on the audio selector panels enable flight compartment crewmembers to send messages using the various microphones (boom, hand, and oxygen mask). These messages are transmitted over the flight and cabin/service interphone systems, radio systems, and passenger address system. The interphone, radio communication, and navigation systems audio outputs are sent to the cockpit speakers, headsets and voice recorder.

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- (5) The audio selector panel microphone select switches are used with the microphones and PTT switches to transmit over any radio system or the flight interphone system. The push-to-talk switch energizes the microphone circuit selected by the microphone select switches and also keys transmitter circuits if radio systems are selected. Amplifiers, summing networks, and filters in the audio selector panel provide audio signals from the interphone and radio communication systems to the headphones and speakers. Audio signals from the navigation receivers are also monitored through the headphones and speakers. Reception of all audio signals is controlled by the volume switches. The captain's INT microphone switch is lighted when on. The switch is interlocked with the other microphone switches so that they can only be pushed one at a time.
 - (6) The navigation systems (ADF, VOR, ILS, MKR) audio is controlled by switches on the audio selector panel. The left, center, or right (L, C, R) switches control selection and volume of the desired receiver. The VOICE-BOTH-RANGE switch is a filter control that separates voice signals and range signals. The filter switch can also combine both voice and range signals. All radio communication, interphone, and navigation outputs are received and recorded by the voice recorder.
 - (7) To apply microphone audio to the radio communication, interphone, or passenger address system:
 - (a) Push the microphone select switch on the audio selector panel to select communication system.
 - (b) If a handheld microphone is used, push the PTT switch on the microphone and talk.
 - (c) If a boom microphone or oxygen mask microphone is used, select BOOM or OXY with the toggle switch on the audio selector panel and push the audio selector panel or control wheel PTT switch and talk.
 - (8) To listen to navigation and communication systems audio, complete the following:
 - (a) For communications systems, adjust the volume control switch on the audio selector panel and listen to headset.
 - (b) For navigation systems audio, select desired L-C-R (left-center-right) and filter (VOICE-BOTH-RANGE) positions on audio selector panel, adjust volume control switch and listen to headset.
 - (c) The captain's and the first officer's cockpit speakers can be used to listen to navigation and communication system audio. A knob in the center of the cockpit speaker adjusts speaker volume as desired.
 - (d) The P62 Nose Gear Interphone panel has an interphone jack for monitoring flight interphone communication.
- B. Control
- (1) Supply electrical power (AMM 24-22-00/201).
 - (2) Make sure that INTERPHONE CAPT FLT AMPL (2 places), and INTERPHONE F/O OBS (2 places) circuit breakers on overhead panel P11 are closed.

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C. For more details on the Flight Interphone System, refer to these wiring diagrams and functional schematics:

- WDM 23-51-11: Flight Interphone Capt
- WDM 23-51-12: Flight Interphone F/O
- WDM 23-51-13: Flight Interphone NAV Radios
- WDM 23-51-14: Flight Interphone CAPT HF - Left and HF Right
- WDM 23-51-15: Flight Interphone PA (if installed)
- WDM 23-51-16: Flight Interphone CAPT VHF (if installed)
- WDM 23-51-17: Flight Interphone SATCOM (if installed)
- WDM 23-51-21: Flight Interphone F/O
- WDM 23-51-41: Flight Interphone OBS
- WDM 23-51-61: Flight Interphone STAFF Workstation (if Installed)
- SSM 23-51-01: Flight Interphone System.

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FLIGHT INTERPHONE SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
AMPLIFIER - (REF 23-31-00, FIG. 101) PASSENGER ADDRESS, M177				
CIRCUIT BREAKERS -	1		FLT COMPT, P11	
INTERPHONE - CAPT FLT AMPL, C552,C554		2	11C25,11G29	*
INTERPHONE - F/O OBS FLT AMP, C553,C557		2	11C26,11G30	*
DIODE -	1		FLT COMPT,TB113, BEHIND P5	
R58		1	A10	*
R59		1	A7	*
R60		1	A9	*
R61		1	A8	*
INTERROGATOR - (REF 34-55-00, FIG. 101) LEFT DME, M123 RIGHT DME, M124				
JACK -	1		FLT COMPT	
CAPT BOOM MIC, D543		1	P13	*
CAPT HAND MIC, D539		1	P13	*
CAPT HEADSET, D541		1	P13	*
F/O BOOM MIC, D533		1	P14	*
F/O HAND MIC, D529		1	P14	*
F/O HEADSET, D531		1	P14	*
OBS BOOM MIC, D525		1	P17	*
OBS HAND MIC, D521		1	P17	*
OBS HEADSET, D523		1	P17	*
SEC OBS HEADSET, D551		1	P61	*
JACK - FLT INTPH, D435	2	1	NOSE LANDING GEAR, NOSE GEAR INTPH PNL, P62	*
PANEL - CAPT AUDIO SELECTOR, M70	1	1	FLT COMPT, P8	23-51-01
PANEL - F/O AUDIO SELECTOR, M71	1	1	FLT COMPT, P8	23-51-01
PANEL - OBS AUDIO SELECTOR, M98	1	1	FLT COMPT, P17	23-51-01
PANEL - (REF 34-51-00, FIG. 101) LEFT DME/VOR, M91 RIGHT DME/VOR, M92				
RECEIVER - (REF 34-31-00, FIG. 101) CENTER ILS, M157 LEFT ILS, M156 RIGHT ILS, M158				
RECEIVER - (REF 34-51-00, FIG. 101) LEFT VOR, M186 RIGHT VOR, M187				
RECEIVER - (REF 34-57-00, FIG. 101) LEFT ADF, M215 RIGHT ADF, M216				

* SEE THE WDM EQUIPMENT LIST

Flight Interphone System - Component Index
Figure 101 (Sheet 1)

EFFECTIVITY

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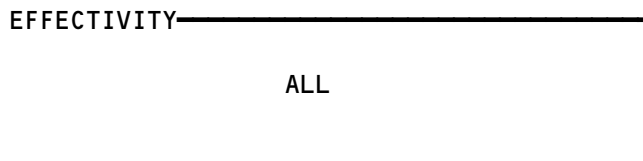
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 757
 FAULT ISOLATION/MAINT MANUAL

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
RESISTOR - R10233	2	1	MAIN EQUIP CTR, E4-3, TB141	*
R10234		1		*
SPEAKER - CAPT COCKPIT, B1	1	1	FLT COMPT	23-51-02
SPEAKER - F/O COCKPIT, B2	1	1	FLT COMPT	23-51-02
SWITCH - CAPT PTT INTPH CONT, S549	1	1	FLT COMPT, CAPT CONTROL WHEEL	23-51-03
SWITCH - CAPT RT/PTT MIC CONT, S550	1	1	FLT COMPT, CAPT CONTROL WHEEL	23-51-03
UNIT - (REF 23-42-00, FIG. 101) AUDIO ACCESSORY, M108				
XCVR - (REF 23-11-00, FIG. 101) LEFT HF, M152				
RIGHT HF, M153				
XCVR - (REF 23-12-00, FIG. 101) CENTER VHF, M190				
LEFT VHF, M188				
RIGHT VHF, M189				

* SEE THE WDM EQUIPMENT LIST

Flight Interphone System - Component Index
Figure 101 (Sheet 2)

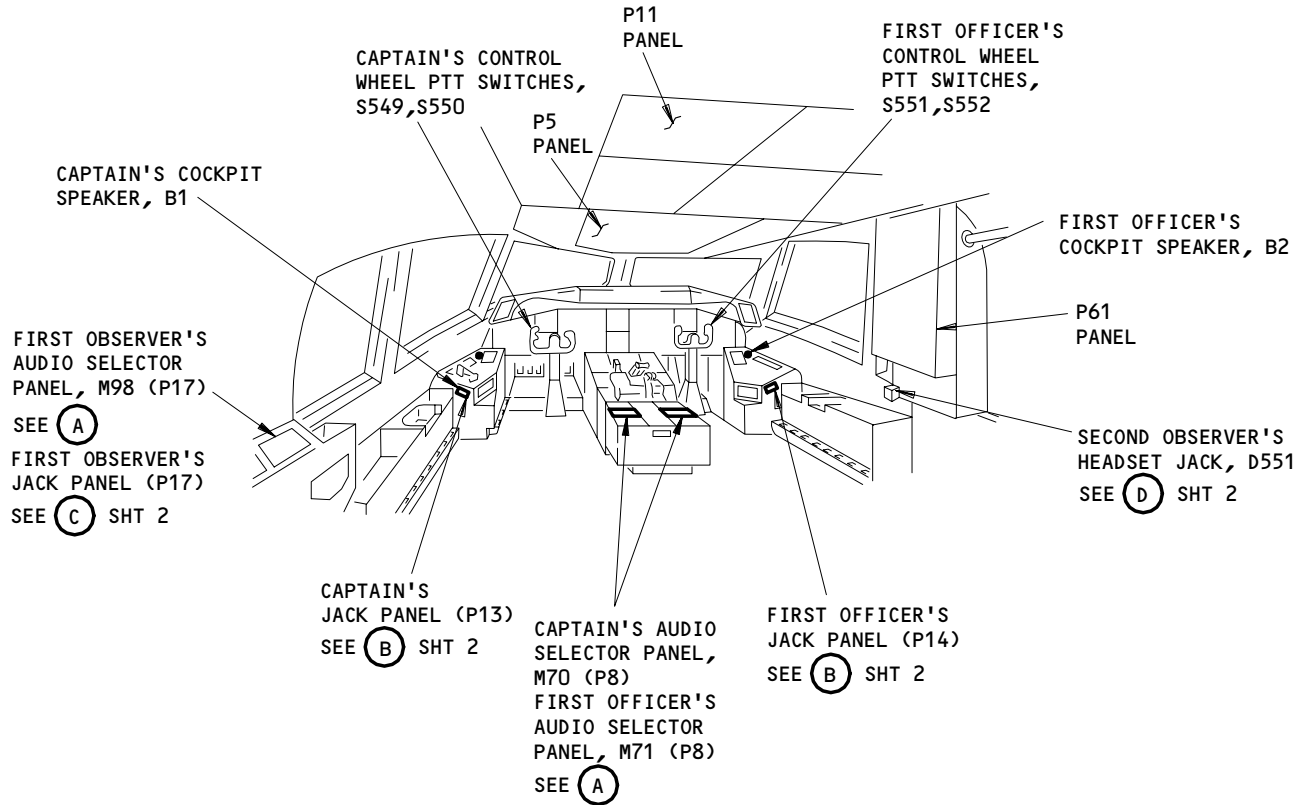


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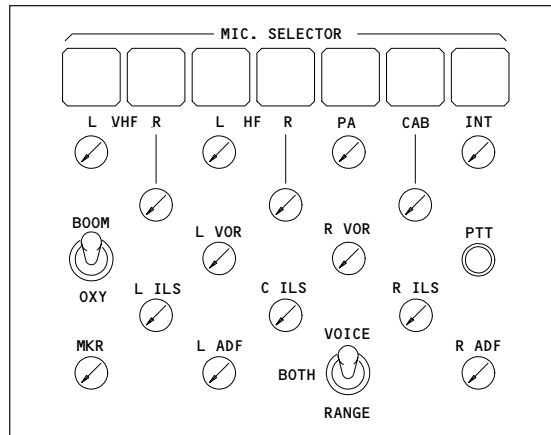
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FAULT ISOLATION/MAINT MANUAL



FLIGHT COMPARTMENT



AUDIO SELECTOR PANEL, M70, M71, M98

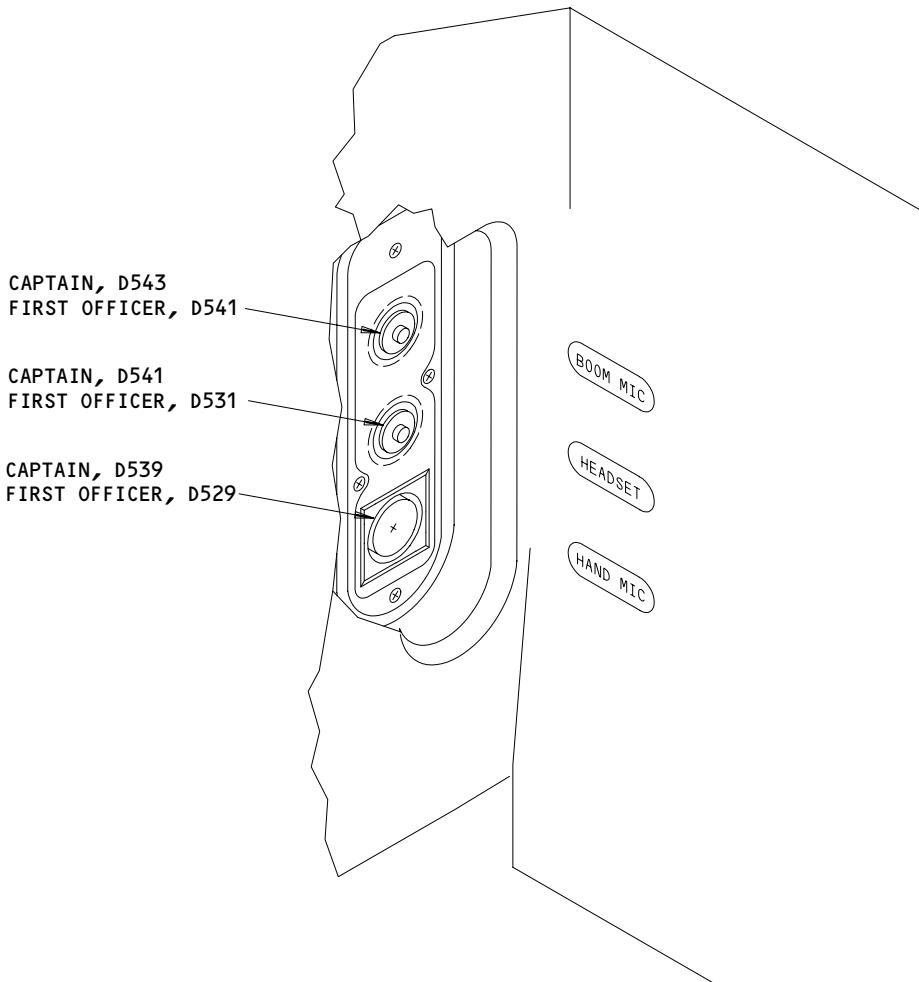
(A)

Flight Interphone System - Component Location
Figure 102 (Sheet 1)

EFFECTIVITY

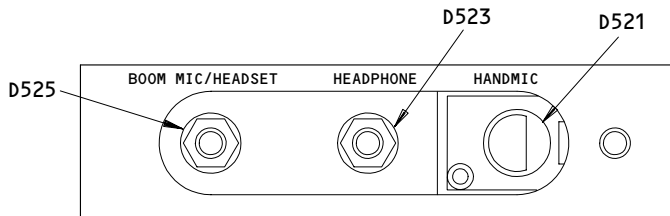
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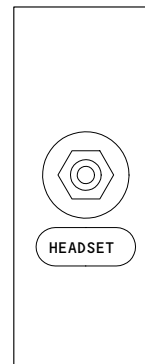
CAPTAIN'S AND FIRST OFFICER'S JACK PANEL
(EXAMPLE)

(B)



FIRST OBSERVER'S JACK PANEL
(EXAMPLE)

(C)



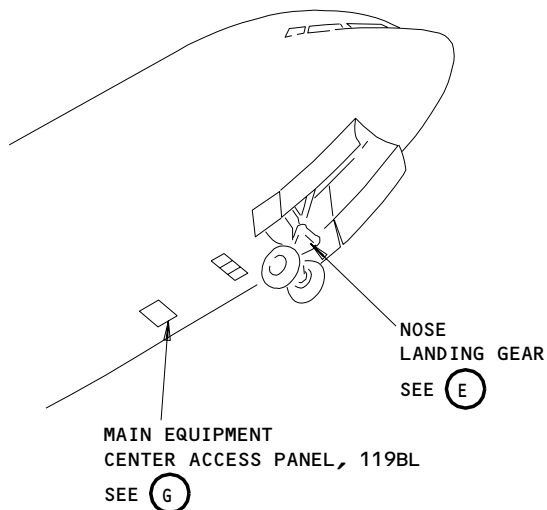
SECOND OBSERVER'S
HEADSET JACK, D551
(EXAMPLE)

(D)

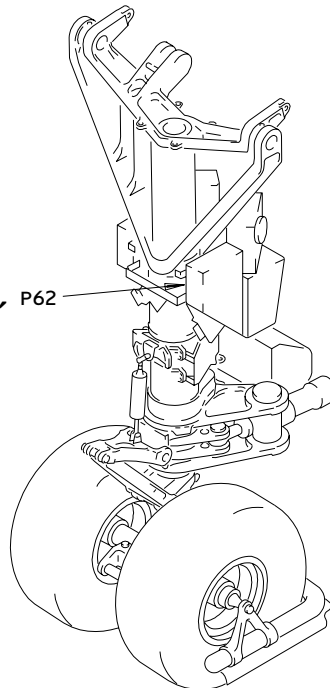
Flight Interphone System - Component Location (Details from Sht 1)
Figure 102 (Sheet 2)

EFFECTIVITY	
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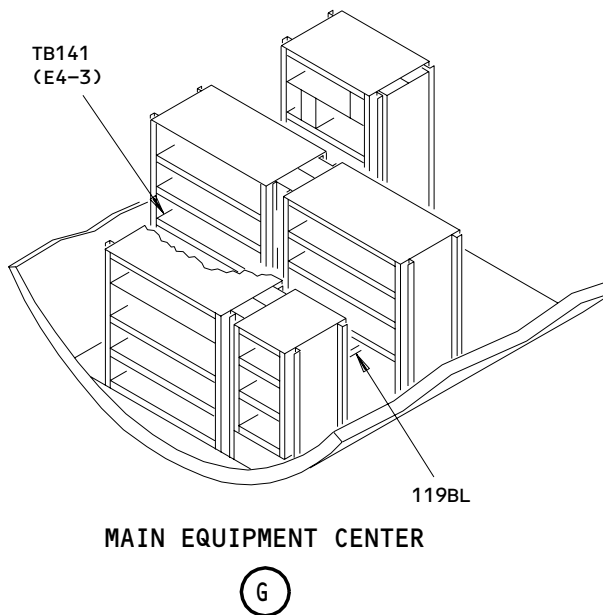
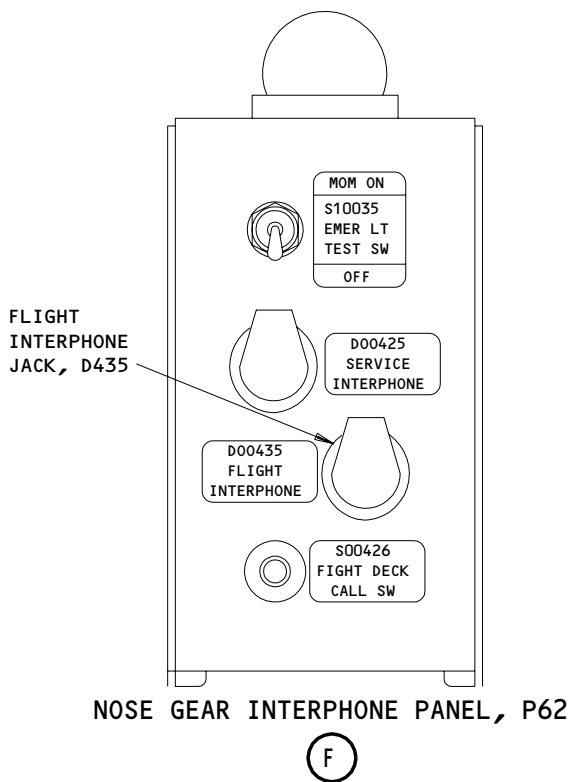


NOSE GEAR INTERPHONE PANEL, P62
SEE (F)



NOSE LANDING GEAR

(E)



Flight Interphone System - Component Location
Figure 102 (Sheet 3)

EFFECTIVITY

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23-51-00

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FLIGHT INTERPHONE SYSTEM – ADJUSTMENT/TEST

TASK 23-51-00-735-001

1. System Test – Flight Interphone System

A. General

- (1) This procedure contains a task that gives the system test for the flight interphone system. This task makes sure that the flight interphone system operates correctly and is ready for use.

B. References

- (1) 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
 - (a) 211/212 Flight Compartment – sect 41
 - (b) 711 Nose Landing Gear (NLG)

D. Prepare for Test

S 865-002

- (1) Supply electrical power (Ref 24-22-00).
 - (a) Turn the volume control knob on the captain's and the first officer's flight interphone speaker counterclockwise to off.
 - (b) Set the Audio Selector Panel (ASP) at each flight crew station to these conditions:
 - 1) BOOM/OXY switch to BOOM position.
 - 2) all the volume controls off except INT which should be on with the volume at mid point.

E. Audio Selector Panel and Jack Panel Test

S 735-006

- (1) Do the test that follows:
 - (a) Push the INT MIC SELECTOR switch on the ASP at each flight crew station.
 - (b) Make sure that the light in the switch comes on.
 - (c) Use the boom microphones, headphones and the audio selector panel PTT switches to make a voice communication between the captain and the first officer stations.

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- (d) Make sure you hear clear audio.
- (e) Use the boom microphones, headphones and the control wheel PTT switches to make a voice communication between the captain and the first officer stations.
- (f) Make sure you hear clear audio.
- (g) Use the boom microphones, headphones and the audio selector panel PTT switches to make a voice communication between the captain and the first observer stations.
- (h) Make sure you hear clear audio.
- (i) Use the hand microphones and the headphones to make a voice communication between the captain and the first officer stations.
- (j) Make sure you hear clear audio.
- (k) Make sure the INT volume control on the audio selector panels changes the volume level smoothly.
- (l) Use the hand microphones and the headphones to make a voice communication between the captain and the first observer stations.
- (m) Make sure you hear clear audio.
- (n) Make sure the INT volume control on the first observer's audio selector panel changes the volume level smoothly.
- (o) Set each audio selector panel (captain's, first officer's, first observer's) BOOM/OXY microphone switch to OXY.
- (p) Use the hand microphones and the headphones to make a voice communication between each crew station.
- (q) Make sure you hear clear audio.
- (r) Set all the BOOM/OXY switches back to the BOOM position.

F. Cockpit Speaker Test.

S 735-007

- (1) Do the test that follows:
 - (a) Set the volume control knob on the captain's cockpit speaker to the middle position.
 - (b) Make a flight interphone voice transmission from the first observer station.

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- (c) Make sure you hear clear audio through the captain's cockpit speaker.
- (d) Make sure the audio selector panel, control wheel MIC, and hand mic PTT switches at the captain's station will mute the captain's speaker.
- (e) Set the BOOM/OXY switch on the captain's and the first officer's audio selector panels to the OXY position.
- (f) Make sure that the hand mic PTT switches at each station will mute the captain's speaker.
- (g) Set the BOOM/OXY switch back to the BOOM position.
- (h) Set the volume control knob on the captain's cockpit speaker to off.
- (i) Make sure the speaker is off.
- (j) Set the volume control knob on the first officer's cockpit speaker to the middle position.
- (k) Make a flight interphone voice transmission from the first observer station.
- (l) Make sure you hear clear audio through the first officer's cockpit speaker.
- (m) Make sure the audio selector panel, control wheel MIC, and hand mic PTT switches at the first officer's station will mute the first officer's speaker.
- (n) Set the BOOM/OXY switch on the captain's and the first officer's audio selector panels to the OXY position.
- (o) Make sure the hand mic PTT switches at the first officer's station will mute the first officer's speaker.
- (p) Set the volume control knob on the first officer's cockpit speaker to off.
- (q) Make sure the speaker is off.

G. Oxygen Mask Microphone Test

S 735-008

- (1) Do the test that follows:
 - (a) At the captain, first officer, and first observer audio selector panels, set the BOOM/OXY switch to the OXY position.
 - (b) Use the captain's and the first officer's oxygen mask microphones and headphones to make a voice communication between their stations.
 - (c) Make sure you hear clear audio through the headphones.
 - (d) Use the captain's and the first observer's oxygen mask microphones and headphones to make a voice communication between their stations.
 - (e) Make sure you hear clear audio through the headphones.
 - (f) Make a voice communication between the captain station and the flight interphone jack on P62.
 - (g) Make sure you hear clear audio.

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H. Interphone Dual Power Source Test

S 735-010

- (1) Do the test that follows:
 - (a) Open these circuit breakers on the P11 panel:
 - 1) 11C25, INTERPHONE CAPT FLT AMPL
 - (b) Make a voice communication between the captain's station and the first officer's station.
 - (c) Make sure you hear clear audio.
 - (d) Close these circuit breakers on the P11 panel:
 - 1) 11C25, INTERPHONE CAPT FLT AMPL
 - (e) Open these circuit breakers on the P11 panel:
 - 1) 11G29, INTERPHONE CAPT FLT AMPL
 - (f) Make a voice communication between the captain's station and the first officer's station.
 - (g) Make sure you hear clear audio.
 - (h) Close these circuit breakers on the P11 panel:
 - 1) 11G29, INTERPHONE CAPT FLT AMPL
 - (i) Open these circuit breakers on the P11 panel:
 - 1) 11C26, INTERPHONE F/O OBS
 - (j) Make a voice communication between the captain's station and the first officer's station.
 - (k) Make sure you hear clear audio.
 - (l) Close these circuit breakers on the P11 panel:
 - 1) 11C26, INTERPHONE F/O OBS
 - (m) Open these circuit breakers on the P11 panel:
 - 1) 11G30, INTERPHONE F/O OBS
 - (n) Make a voice communication between the captain's station and the first officer's station.
 - (o) Make sure you hear clear audio.
 - (p) Close these circuit breakers on the P11 panel:
 - 1) 11G30, INTERPHONE F/O OBS

S 865-011

- (2) Remove electrical power if it is not necessary (Ref 24-22-00).

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AUDIO SELECTOR PANEL – REMOVAL/INSTALLATION

1. General

- A. The captain's audio selector panel (M70) and the first officer's audio selector panel (M71) are installed on the pilots' aft control stand (P8). The first observer's audio selector panel (M98) is installed on the first observer's panel (P17). The removal and installation procedure is the same for all panels.
- B. This procedure contains two tasks. The first task removes the audio selector panel from the flight compartment. The second task installs the audio selector panel to the flight compartment.

TASK 23-51-01-004-001

2. Remove Audio Selector Panel

A. General

- (1) This task gives the instructions to remove the audio selector panel from the flight compartment.

B. References

- (1) AMM 20-41-01/201, Electrostatic Sensitive Discharge Devices – Maintenance Practices

C. Access

- (1) Location Zones
211/212 Flight Compartment

D. Procedure

S 864-002

- (1) For the captain's audio selector panel, open these circuit breakers on the overhead panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11C25, INTERPHONE CAPT FLT AMPL
 - (b) 11G29, INTERPHONE CAPT FLT AMPL

S 864-006

- (2) For the F/O and the observer audio selector panels, open these circuit breakers on the overhead panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11C26, INTERPHONE F/O OBS

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(b) 11G30, INTERPHONE F/O OBS

S 014-011

(3) For the first observer's audio selector panel, pull out the oxygen mask stowage-box to get access to the connectors behind the audio selector panel.

(a) Do not disconnect the box from the structure.

S 914-012

CAUTION: DO NOT TOUCH THE AUDIO SELECTOR PANEL BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE AUDIO SELECTOR PANEL.

(4) Do the procedure for devices that are sensitive to electrostatic discharge (AMM 20-41-01/201).

S 024-013

(5) Remove the audio selector panel.

TASK 23-51-01-404-014

3. Install Audio Selector Panel

A. General

(1) This task gives the instructions to install the audio selector panel in the flight compartment.

B. References

(1) AMM 20-41-01/201, Electrostatic Sensitive Discharge Devices - Maintenance Practices

(2) AMM 24-22-00/201, Electrical Power - Control

C. Access

(1) Location Zones

(a) 211/212 Flight Compartment - sect 41

D. Procedure

S 914-015

CAUTION: DO NOT TOUCH THE AUDIO SELECTOR PANEL BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE AUDIO SELECTOR PANEL.

(1) Do the procedure for devices that are sensitive to electrostatic discharge (AMM 20-41-01/201).

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- S 424-016
- (2) Install the audio selector panel.
- S 414-017
- (3) For the first observer's audio selector panel, install the oxygen mask stowage-box.
- S 864-019
- (4) For the captain's audio selector panel, remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
- (a) 11C25, INTERPHONE CAPT FLT AMPL
 - (b) 11G29, INTERPHONE CAPT FLT AMPL
- S 864-022
- (5) For the F/O and the observer audio selector panels, remove DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
- (a) 11C26, INTERPHONE F/O OBS
 - (b) 11G30, INTERPHONE F/O OBS
- S 714-027
- (6) Audio Selector Panel Installation Test
- S 864-028
- (7) Supply electrical power (AMM 24-22-00/201).
- (a) Push the passenger address (PA) microphone select switch on the audio selector panel.
 - 1) Make sure that the light in the switch comes on.
 - (b) Make a PA announcement.
 - 1) Make sure that you hear clear audio through the passenger address speakers.
- S 864-029
- (8) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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INTERPHONE SPEAKER – REMOVAL/INSTALLATION

1. General

- A. Two interphone speakers are installed in the flight compartment. The captain's speaker is installed on the captain's forward console. The first officer's speaker is installed on the first officer's forward console. The removal/installation procedure is the same for both speakers.
- B. This procedure contains two tasks. The first task removes the interphone speakers from the captain's and the first officer's forward consoles. The second task installs the interphone speakers to the forward consoles.

TASK 23-51-02-004-001

2. Remove Interphone Speaker (Fig. 401)

A. General

- (1) This task gives the instructions to remove the interphone speaker from the forward console.

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Procedure

S 864-003

- (1) Open these circuit breakers on the overhead panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11C25, INTERPHONE CAPT FLT AMPL
 - (b) 11C26, INTERPHONE F/O OBS
 - (c) 11G29, INTERPHONE CAPT FLT AMPL
 - (d) 11G30, INTERPHONE F/O OBS

S 014-006

- (2) Remove the access panel.

S 014-007

- (3) Remove the oxygen stowage box for more access.

S 034-008

- (4) Remove the connector from the rear of the speaker.

S 024-009

- (5) Remove the speaker.
 - (a) Lift the interphone speaker through the access opening.

TASK 23-51-02-404-011

3. Install Interphone Speaker (Fig. 401)

A. General

- (1) This task gives the instructions to install the interphone speaker in the forward console.

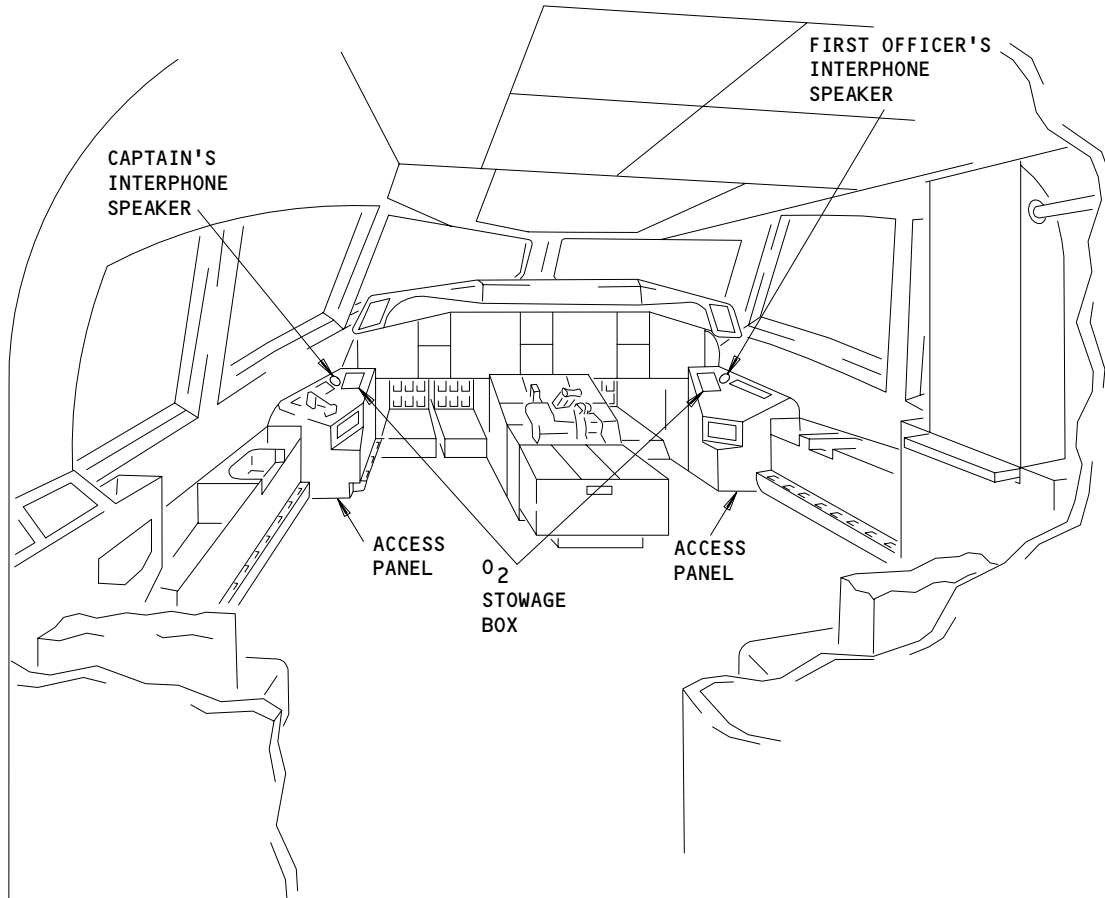
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Interphone Speaker Installation
Figure 401

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B. References

- (1) 24-22-00/201, Electrical Power - Control

C. Access

- (1) Location Zones
211/212 Flight Compartment

D. Procedure

S 424-012

- (1) Install the interphone speaker.

S 434-013

- (2) Install the connector to the rear of the speaker.

S 434-014

- (3) Install the oxygen stowage box.

S 414-015

- (4) Install the access panel.

S 864-017

- (5) Remove DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:

- (a) 11C25, INTERPHONE CAPT FLT AMPL
(b) 11C26, INTERPHONE F/O OBS
(c) 11G29, INTERPHONE CAPT FLT AMPL
(d) 11G30, INTERPHONE F/O OBS

S 714-020

- (6) Interphone Speaker Installation Test

S 864-021

- (7) Supply electrical power (Ref 24-22-00).
(a) Turn the volume knob on the applicable interphone speaker to the middle position.
(b) Make a flight interphone voice communication from the first observer's station.
(c) Make sure you hear clear audio through the interphone speakers.

S 864-022

- (8) Remove electrical power if it is not necessary (Ref 24-22-00).

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CONTROL WHEEL PUSH-TO-TALK SWITCH - REMOVAL/INSTALLATION

1. General

- A. A push-to-talk (PTT) switch is installed in each pilot's control wheel. The switch permits the pilot to use the PTT functions with two hands on the control wheel.

TASK 23-51-03-004-001

2. Remove the PTT Switch (Fig. 401)

A. Equipment

- (1) Insertion and Extraction Tool (Duetch
No. M15570-20)

B. Consumable Materials

- (1) G00628 30 inch length of copper wire (No. 18 to
22 gauge) - without insulation if possible

C. Access

- (1) Location Zone
211/212 Flight Compartment

D. Prepare to Remove the PTT Switch

S 864-004

- (1) For the Captain's PTT switch, open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11C25, INTERPHONE CAPT FLT AMPL
(b) 11G29, INTERPHONE CAPT FLT AMPL

S 864-006

- (2) For the F/O PTT switch, open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11C26, INTERPHONE F/O OBS
(b) 11G30, INTERPHONE F/O OBS

E. Remove the PTT Switch

S 014-058

- (1) Remove the medallion screw to remove the medallion and the chart holder.

S 034-010

- (2) Remove the cap-nut.

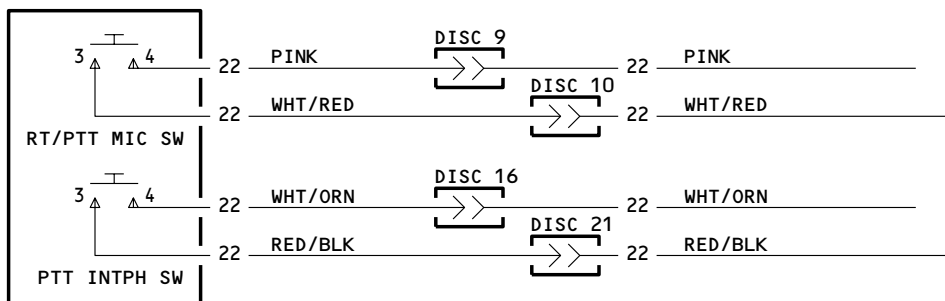
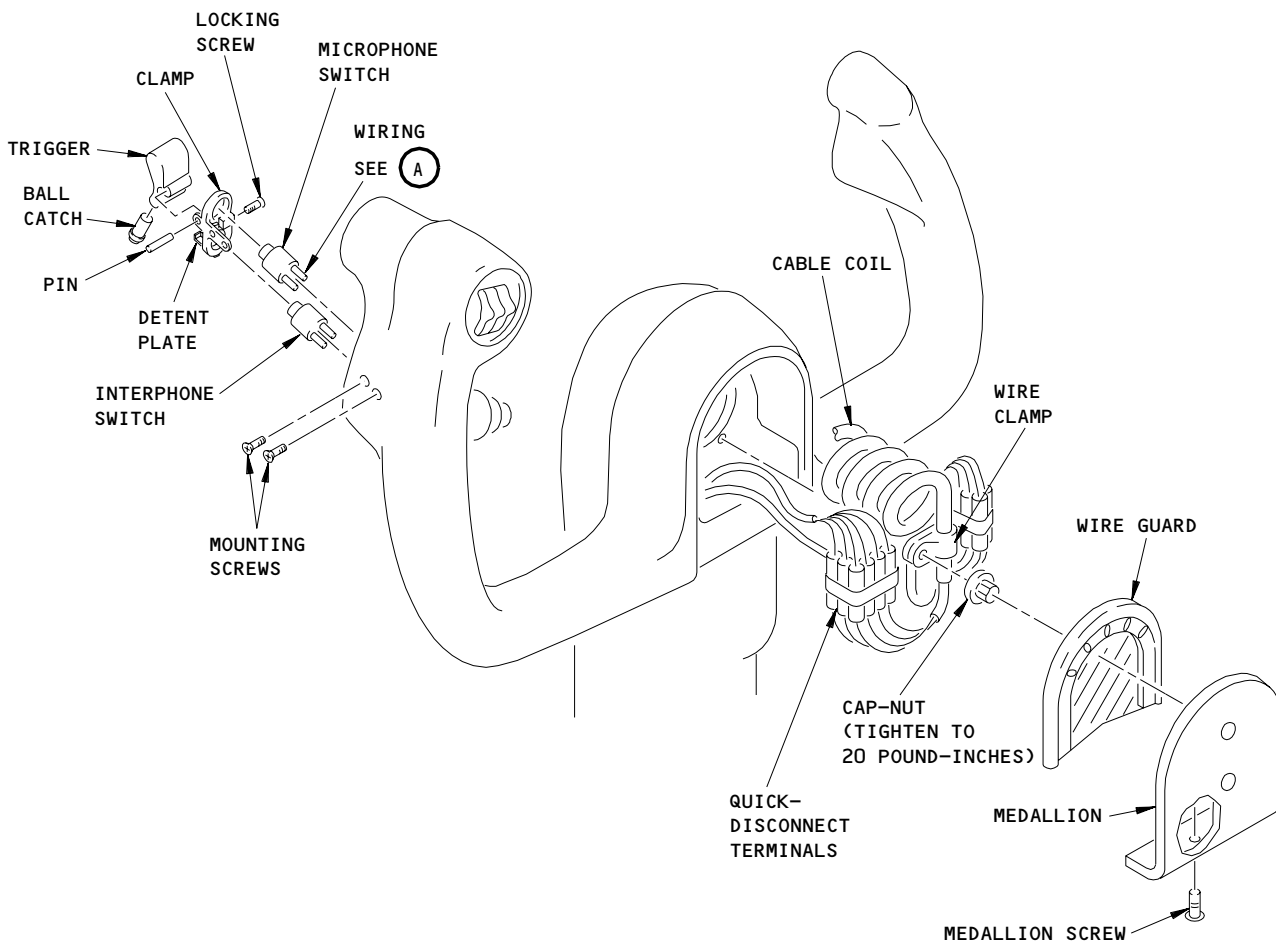
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WIRING

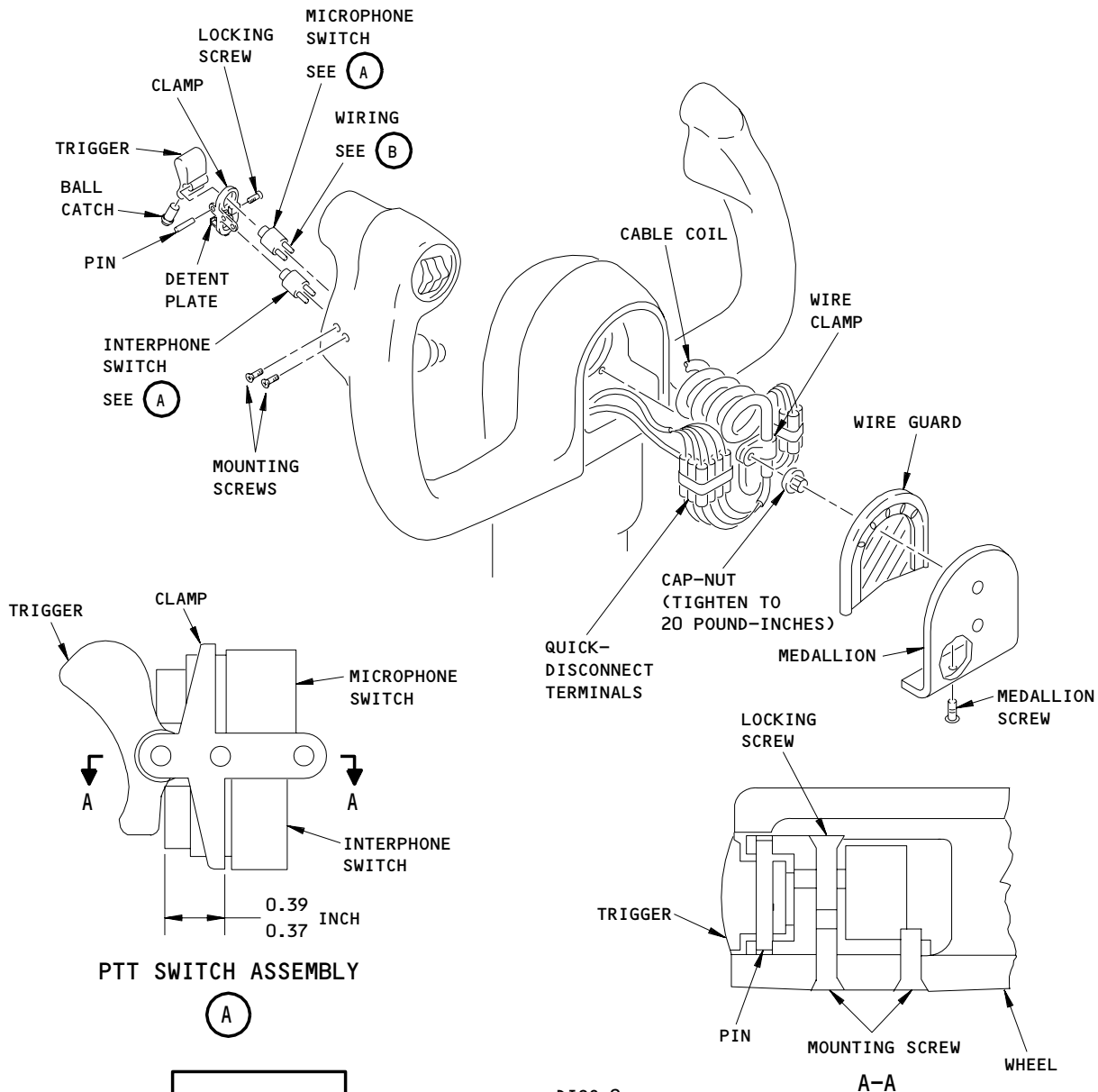
(A)

NOTE: THE CHART HOLDER IS REMOVED FOR CLARITY.

Control Wheel PTT Switch - Installation
Figure 401 (Sheet 1)

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GUI 001, 009, 115

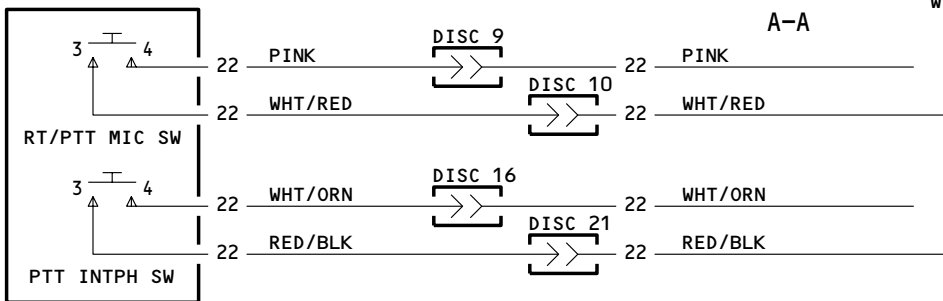
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PTT SWITCH ASSEMBLY

(A)

A-A



WIRING

(B)

NOTE: THE CHART HOLDER IS REMOVED FOR CLARITY.

Control Wheel PTT Switch - Installation
Figure 401 (Sheet 2)

EFFECTIVITY
GUI 002-008

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- S 034-054
- (3) Pull out the wire bundle to get access to the quick-disconnect terminals.
- S 034-011
- (4) Use an extraction tool to disconnect these wires from the quick-disconnect terminals:
- (a) To remove the microphone switch, disconnect the PINK and WHITE/RED wires from the terminals.
- (b) To remove the interphone switch, disconnect the WHITE/ORANGE and RED/BLACK wires from the terminals.
- S 494-012
- (5) Connect one end of the 30 inch length of copper wire around the two wires connected to the switch.
- S 034-013
- (6) Remove the two mounting screws.
- S 034-049
- (7) Remove the switch assembly.
- S 034-057
- (8) Pull the switch wires through the PTT switch hole.
- NOTE:** Pull approximately 3 or 4 inches of the copper wire out of the hole for the PTT switch.
- S 094-014
- (9) Disconnect the copper wire from the switch wires.
- S 034-015
- (10) Remove the locking screw.
- S 024-055
- (11) Remove the switch from the clamp.
- S 014-016
- (12) Remove the terminal lugs from the switch.

TASK 23-51-03-404-017

3. Install the PTT Switch (Fig. 401)

A. Equipment

- (1) Insertion and Extraction Tool (Duetch No. M15570-20)

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B. Consumable Material

- (1) G00628 30 inch length of copper wire (No. 18 to 22 gauge) - without insulation if possible

C. References

- (1) AMM 24-22-00/201, Electrical Power - Control

D. Access

- (1) Location Zone
211/212 Flight Compartment

E. Install the PTT Switch

S 424-073

- (1) GUI 001, 009, 115;

Do the steps that follow:

- (a) Install the terminal lugs on the switch wires to the switch terminals (Fig. 401).
- (b) Install the microphone switch in the clamp.
- (c) Install the interphone switch in the clamp until the switch touches the trigger.
- (d) Adjust the interphone switch $1/4 \pm 1/8$ of a turn to give a load to the switch.
- (e) Tighten the locking screw on the clamp.
- (f) Adjust the ball-catch to make sure that the trigger latches when you push the lower part of the trigger.
- (g) Make sure that the detent plate holds the switch in the INT position.
- (h) Put the switch in the off (center) position.

S 424-064

- (2) GUI 002-008;

Do the steps that follow:

- (a) Install the terminal lugs on the switch wires to the switch terminals (Fig. 401).
- (b) Install the interphone switch in the clamp as shown in Fig. 401, detail B.

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- (c) Make sure that the interphone switch does not turn in the clamp.
- (d) Install the microphone switch in the clamp until the switch touches the trigger.
- (e) Adjust the microphone switch $1/4 \pm 1/8$ of a turn to give a load to the switch.
- (f) Install the locking screw in the clamp.

S 494-031

- (3) Connect the copper wire (the end that comes out of the PTT switch hole) to the switch wires.

S 434-052

- (4) Pull the switch wires through the PTT switch hole with the other end of the copper wire.

S 094-032

- (5) Disconnect the copper wire from the switch wires.

S 434-033

- (6) Use the insertion tool to connect the switch wires to the quick-disconnect terminals (see Fig. 401, detail B).

S 864-067

- (7) GUI 001, 009, 115;
Use the insertion tool to connect the switch wires to the quick-disconnect terminals (see Fig. 401, detail A).

S 434-065

- (8) GUI 002-008;
Use the insertion tool to connect the switch wires to the quick-disconnect terminals (see Fig. 401, detail B).

S 434-037

CAUTION: MAKE SURE THE WIRE CLAMP AND THE CENTER CABLE COIL IN THE HUB OF THE CONTROL WHEEL ARE INSTALLED AT THE POSITION SHOWN IN FIG. 401. FAILURE TO INSTALL THE COIL IN THE CENTER CAN RESULT IN TOO MUCH FRICTION AND CAUSE DAMAGE TO EQUIPMENT.

- (9) Install the quick-disconnect terminals bundle in the control wheel with the cap-nut.

NOTE: Set the wire clamp to make sure that the cable coil is in the center of the control wheel.

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S 824-053

- (10) Tighten the cap-nut to 20 inch pounds.

S 434-078

CAUTION: ENSURE THAT WIRE GAURD ASSEMBLY SLIDES SMOOTHLY IN GROOVE OF WHEEL ASSEMBLY DURING INSTALLATION. KEEP ALL WIRES AND CONNECTORS CLEAR OF PLANE OF GROOVE TO PREVENT POSSIBLE WIRE INSULATION DAMAGE DURING ASSEMBLY.

- (11) Install wire guard assembly. Insert lower end of wire guard assembly inside base of wheel. Firmly press upper edge of seal until guard is below medallion groove.

S 414-038

- (12) Install the medallion in the center of the control wheel.

S 424-039

- (13) Install the switch assembly in the mounting recess with the two mounting screws.

F. Do a Test of the PTT Switch

S 864-040

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-042

- (2) For the Captain's PTT switch, remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11C25, INTERPHONE CAPT FLT AMPL
(b) 11G29, INTERPHONE CAPT FLT AMPL

S 864-044

- (3) For the F/O PTT switch, remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11C26, INTERPHONE F/O OBS
(b) 11G30, INTERPHONE F/O OBS

S 714-047

- (4) Do a test of the PTT switch as follows:
(a) At the applicable pilot's audio selector panel, push a microphone selector switch (but not the INT MIC SELECTOR switch).
(b) Set the applicable volume control to the necessary level.
(c) Set and hold the PTT switch on the control wheel in the INT position.
1) GUI G-000U;
When you release the PTT switch, it will stay in the INT position, until it is set in the off position.

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- (d) Make sure you can hear and speak from the interphone.
- (e) At the applicable pilot's audio selector panel, push the INT MIC SELECTOR switch.
- (f) Set the volume control to the necessary level.
- (g) Set and hold the PTT switch on the control wheel in the MIC position.
- (h) Make sure you can hear and speak from the interphone.
- (i) Make sure that the PTT switch goes back to the off position when you release it.

S 864-048

- (5) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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STATIC DISCHARGING - DESCRIPTION AND OPERATION

1. General

- A. Static dischargers are installed along the outboard trailing edges and tips of the wings, the horizontal and vertical stabilizers.
- B. Static dischargers reduce radio receiver interference. This interference is caused by corona discharge from airplane surfaces due to precipitation static and engine charging. The static dischargers prevent coupling of static into radio receiver antennas by releasing static at points that are a critical length from airplane extremities. At these points, there is little coupling of static into radio receiver antennas.

2. Component Details (Fig. 1)

- A. The static dischargers installed along the trailing edges of the wing and tail surfaces are 9-5/16 inches long. Each includes a resistive discharger rod with a carbon-based molded tip. A setscrew in the discharger holds it to the discharger base. Wing tip and stabilizer tip discharger rods are similarly constructed, but are only five inches long.
- B. Aluminum discharger bases are used on sheet metal or Thorstrand aluminized fiberglass surfaces. Titanium discharger bases are used on graphite composite surfaces. Composite trailing edge surfaces within 18 inches of tip areas are covered with Thorstrand aluminized fiberglass. These areas use aluminum discharger bases. A mounting adapter is installed between the discharger base and the composite trailing edge where it is too thin to be adequately riveted. The discharger base is riveted to the adapter. Fasteners for the adapter are two screws forward in the thicker area and two rivets at the trailing edge.
- C. Tip-type discharger bases have curved mounting surfaces, and are made of aluminum. The setscrew is in the discharger base. Graphite composite tip areas within 18 inches of the edges are covered with Thorstrand aluminized fiberglass.

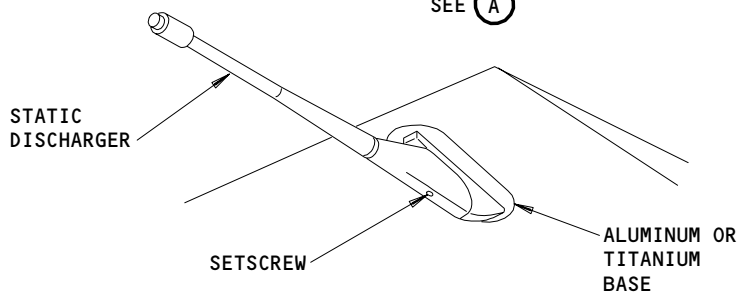
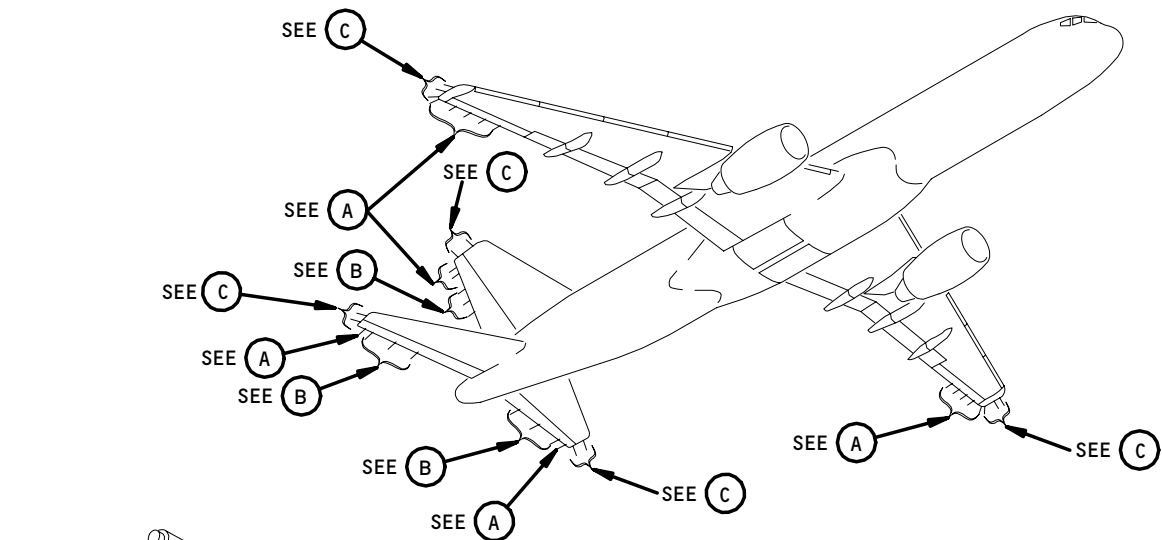
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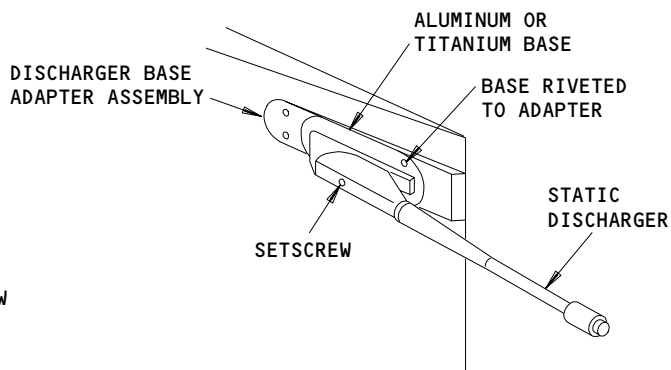
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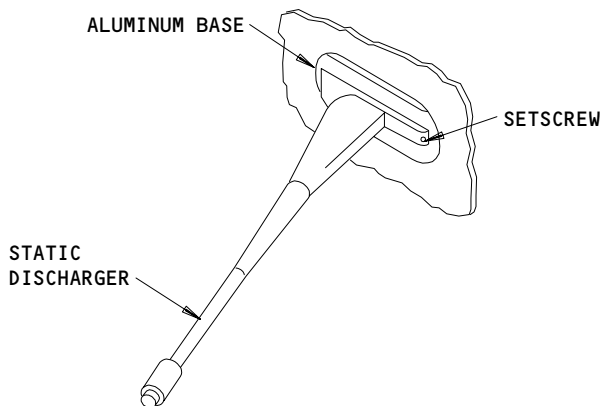
EXAMPLE TRAILING EDGE SURFACE INSTALLATION

(A)



EXAMPLE TRAILING EDGE SURFACE INSTALLATION WITH ADAPTER ASSEMBLY

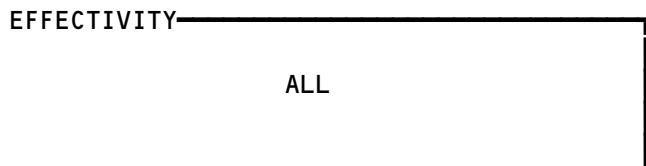
(B)



EXAMPLE STABILIZER TIP, WING TIP AND FIN CAP INSTALLATION

(C)

Static Discharger Locations
Figure 1



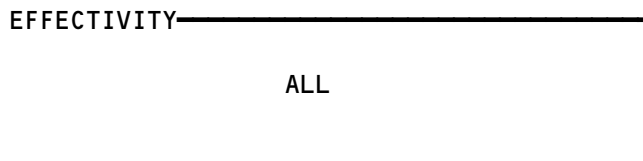
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 FAULT ISOLATION/MAINT MANUAL

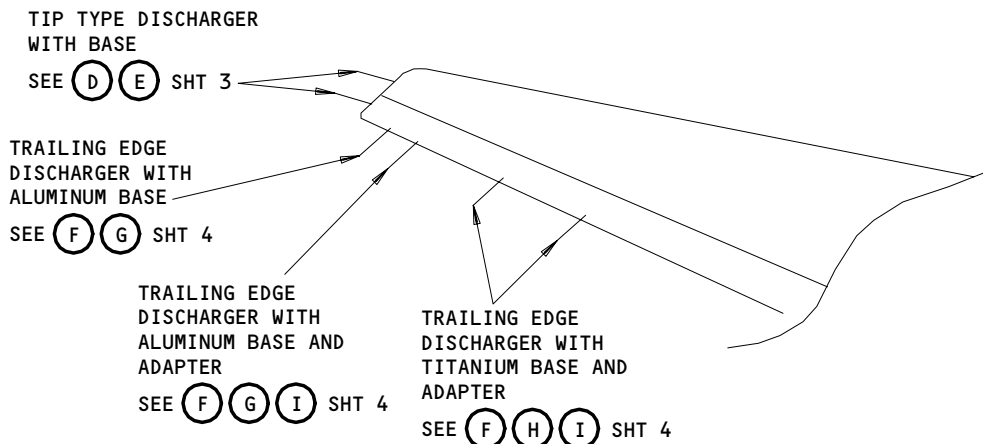
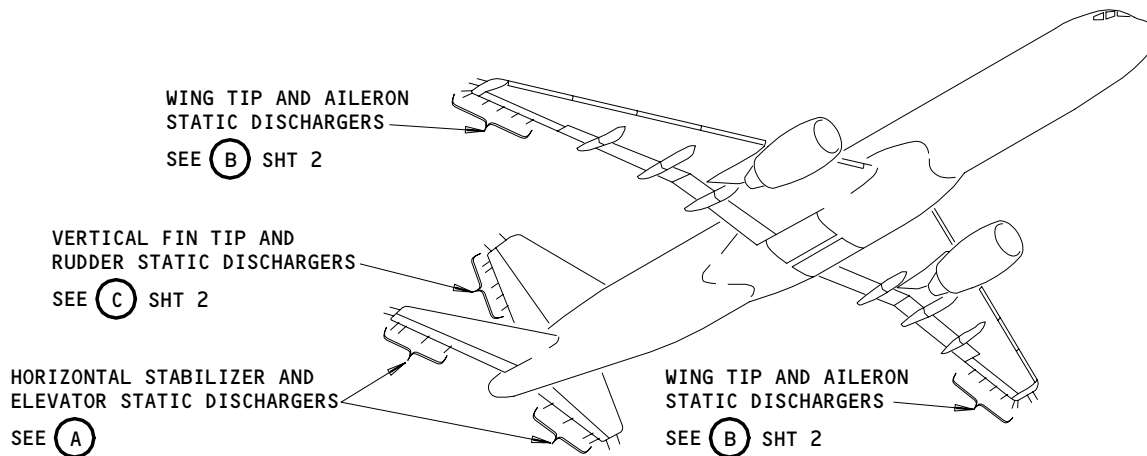
STATIC DISCHARGERS

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ADAPTER - ALUMINUM STATIC DISCHARGER BASE, ASSY	1 2	2 1	ELEVATORS RUDDER	23-61-00 23-61-00
ADAPTER - TITANIUM STATIC DISCHARGER BASE, ASSY	1 2	4 2	ELEVATORS RUDDER	23-61-00 23-61-00
BASE - ALUMINUM STATIC DISCHARGER, TRAILING EDGE TYPE	1 2 2	4 3 2	ELEVATORS RUDDER WINGTIPS	23-61-01 23-61-01 23-61-01
BASE - FLAT SURFACE STATIC DISCHARGER, TIP TYPE	1	2	HORIZ STABILIZER TIPS	23-61-01
BASE - LARGE RADIUS SURFACE STATIC DISCHARGER, TIP TYPE	2 2	1 4	VERTICAL STABILIZER TIP WINGTIPS	23-61-01 23-61-01
BASE - SMALL RADIUS SURFACE STATIC DISCHARGER, TIP TYPE	2 1	1 2	VERTICAL STABILIZER TIP HORIZ STABILIZER TIPS	23-61-01 23-61-01
BASE - TITANIUM STATIC DISCHARGER, TRAILING EDGE TYPE	2 1 2	10 4 2	OUTBD AILERONS ELEVATORS RUDDER	23-61-01 23-61-01 23-61-01
DISCHARGER - TIP TYPE STATIC	1 2 2 2	4 1 1 4	HORIZ STABILIZER TIPS RUDDER VERTICAL STABILIZER TIP WINGTIPS	23-61-01 23-61-01 23-61-01 23-61-01
DISCHARGER - TRAILING EDGE TYPE STATIC	2 1 2 2	10 8 5 2	OUTBD AILERONS ELEVATORS RUDDER WINGTIPS	23-61-01 23-61-01 23-61-01 23-61-01

Static Dischargers - Component Index
Figure 101



23-61-00



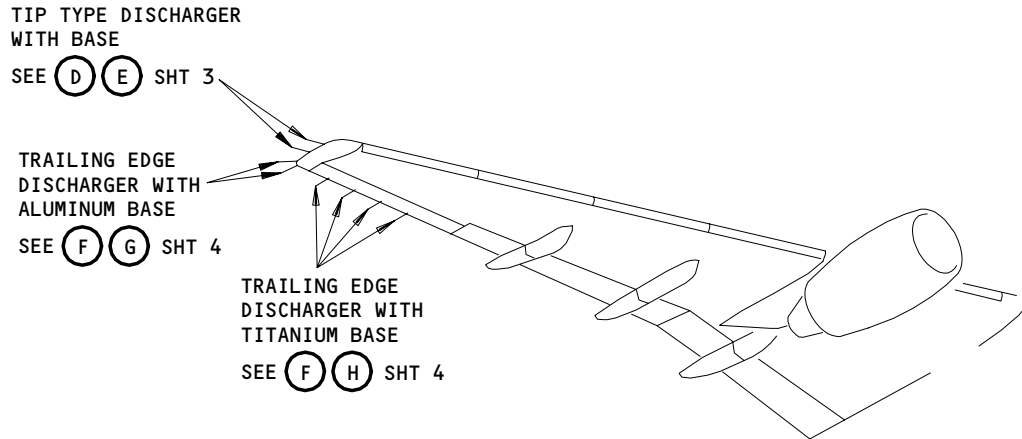
HORIZONTAL STABILIZER AND ELEVATOR STATIC DISCHARGERS (EXAMPLE)

(A)

Static Dischargers - Component Location
Figure 102 (Sheet 1)

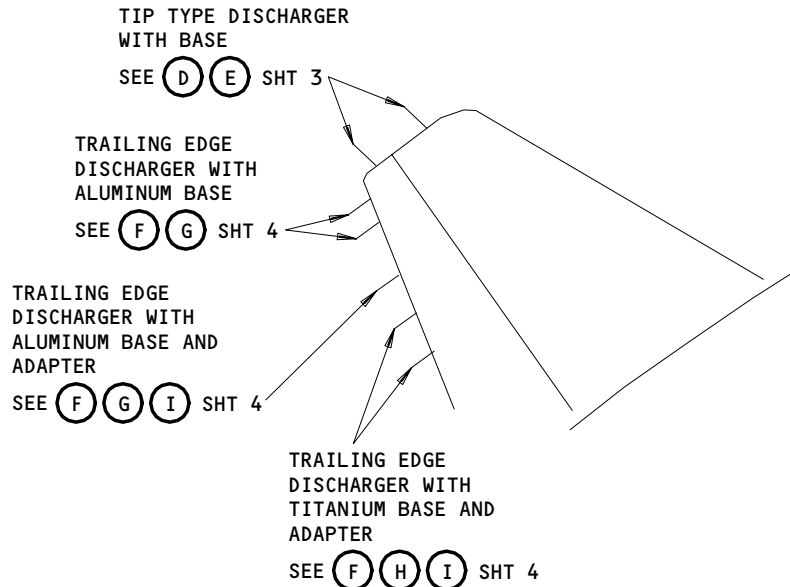
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WING TIP AND AILERON STATIC DISCHARGERS (EXAMPLE)

(B)



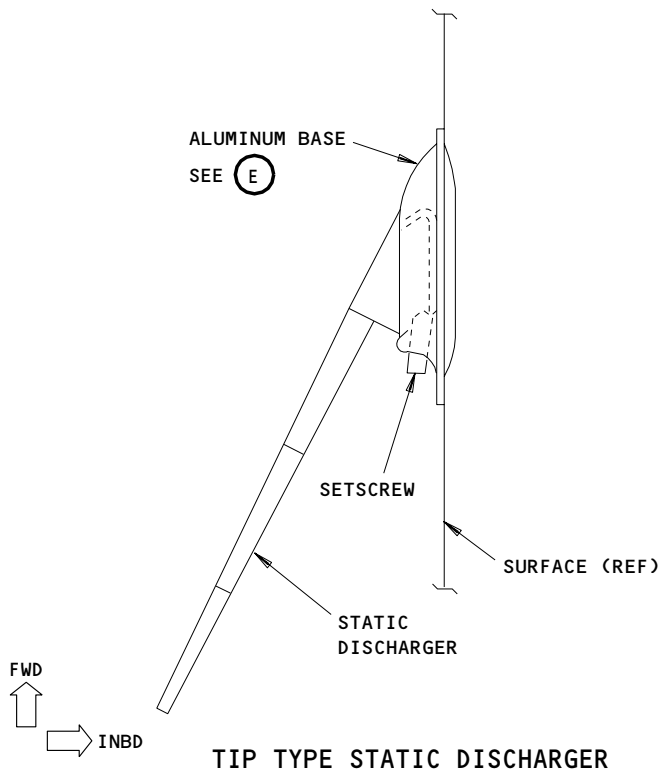
VERTICAL FIN TIP AND RUDDER STATIC DISCHARGERS

(C)

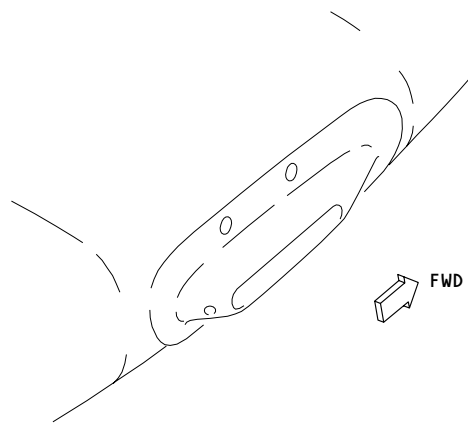
Static Dischargers - Component Location (Details from Sht 1)
Figure 102 (Sheet 2)

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(D) FROM SHT 1 AND 2



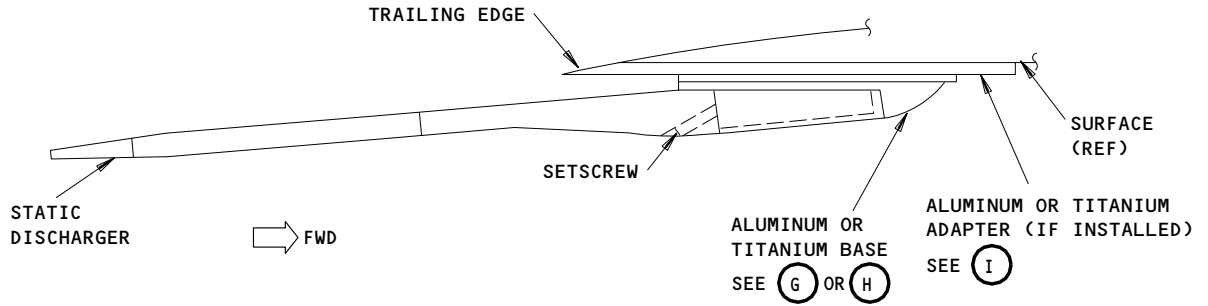
**TIP TYPE STATIC DISCHARGER BASE
(ALUMINUM - FLAT OR CURVED SURFACE)**

(E)

Static Dischargers - Component Location
Figure 102 (Sheet 3)

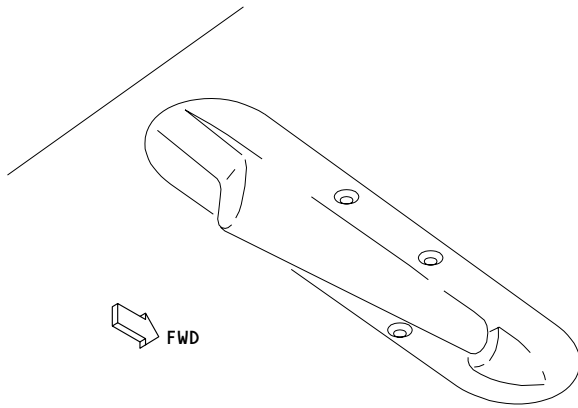
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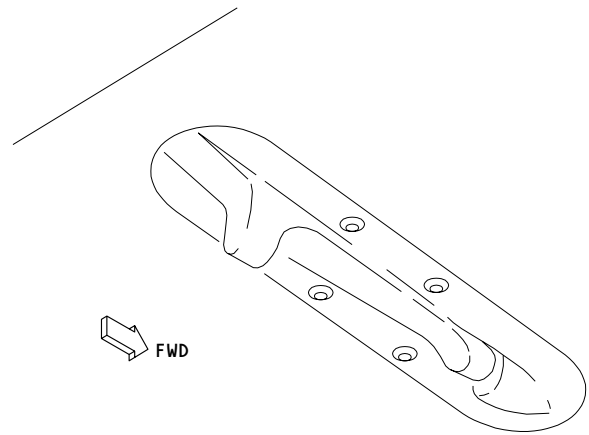
TRAILING EDGE TYPE STATIC DISCHARGER

(F) FROM SHT 1 AND 2



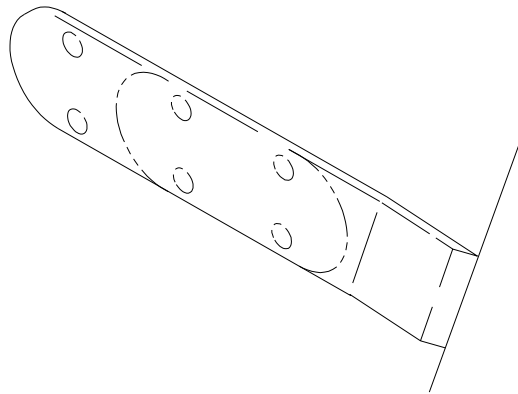
TRAILING EDGE TYPE STATIC DISCHARGER BASE (ALUMINUM)

(G)



TRAILING EDGE TYPE STATIC DISCHARGER BASE (TITANIUM)

(H)



STATIC DISCHARGER BASE ADAPTER ASSEMBLY (ALUMINUM OR TITANIUM)

(I)

**Static Dischargers - Component Location
Figure 102 (Sheet 4)**

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STATIC DISCHARGERS – MAINTENANCE PRACTICES

1. General

- A. Static dischargers are on the trailing edges and tips of the wings and tail surfaces. Each discharger is held by a setscrew, on a base which is on the airplane surface.
- B. This procedure contains the following tasks:
 - (1) An inspection/check of the static discharger.
 - (2) An inspection/check of the static discharger base.
 - (3) A removal of the static discharger.
 - (4) An installation of the static discharger.
 - (5) A removal of the static discharger base.
 - (6) An installation of the static discharger base.

TASK 23-61-01-202-001

2. Static Discharger Inspection/Check (Fig. 201)

- A. General
 - (1) This task makes sure there is a minimum amount of radio reception interference. This task also makes sure the electrical energy acquired in flight is discharged.
- B. References
 - (1) AMM 24-22-00/201, Manual Control
 - (2) AMM 29-11-00/201, Main (Left, Right, Center) Hydraulic Systems
- C. Equipment
 - (1) 1863 Megohmmeter (or equivalent)
Quadtech Inc. (Vendor Code OPK96)
100 Nickerson Ave., Marlborough, MA 01752
- D. Consumable Materials
 - (1) G00034 Process cleaning absorbant wiper
- E. Access
 - (1) Location Zones
 - 500/600 Left Wing/Right Wing
 - 300 Empennage and Body Section 48
- F. Prepare for Static Discharger Inspection/Check

S 862-076

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEM. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove the pressure and power from the main hydraulic system (AMM 29-11-00/201).

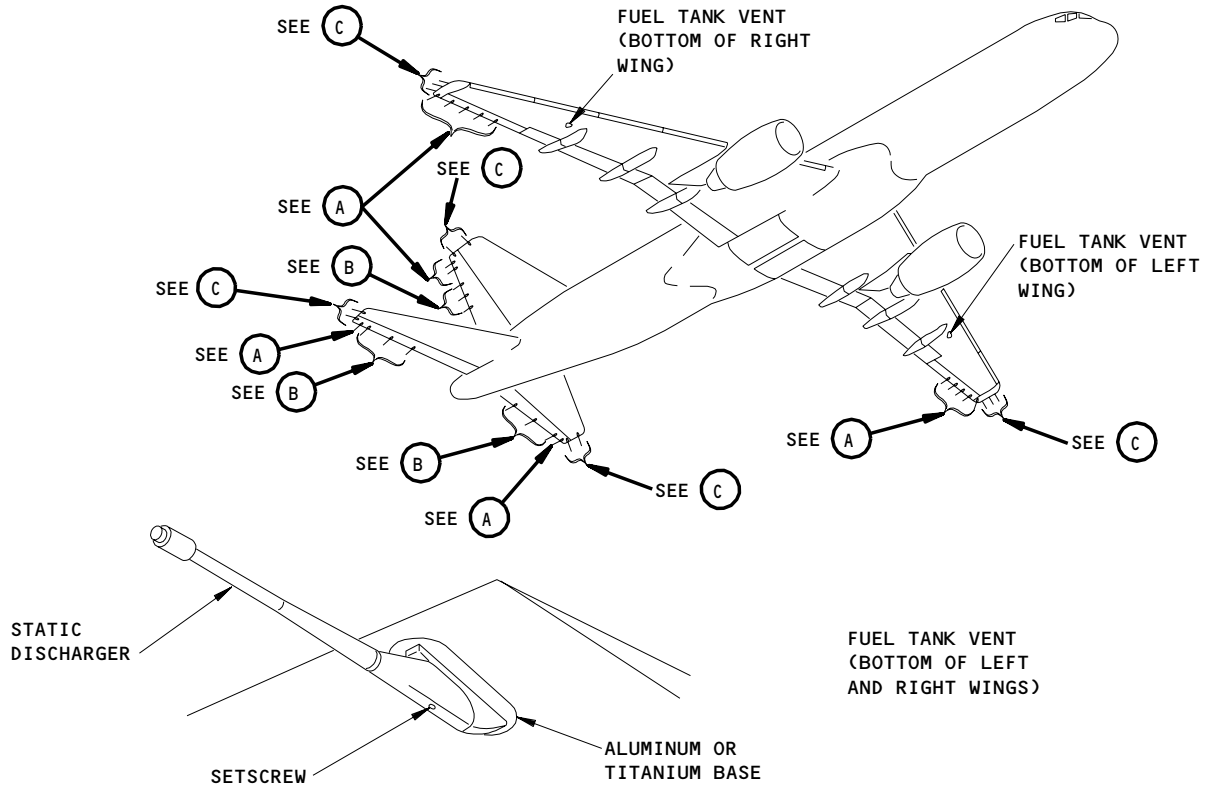
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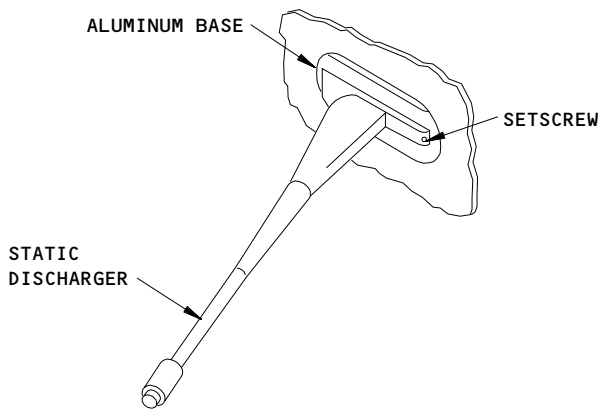
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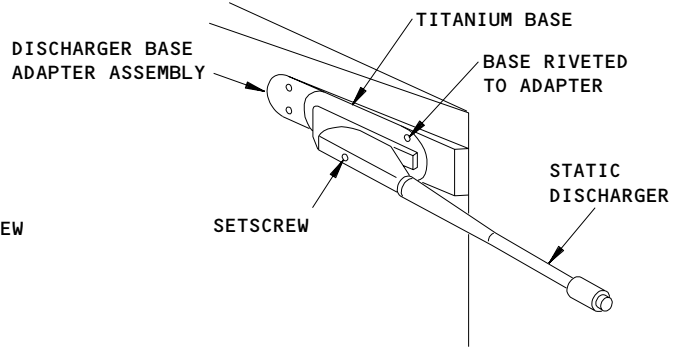
EXAMPLE TRAILING EDGE SURFACE INSTALLATION

(A)



EXAMPLE STABILIZER TIP, WING TIP AND FIN CAP INSTALLATION

(C)



EXAMPLE TRAILING EDGE SURFACE INSTALLATION WITH ADAPTER ASSEMBLY

(B)

Static Discharger Installation
Figure 201

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S 862-077

- (2) Remove the power from the electrical system (AMM 24-22-00/201).

G. Inspect the Static Dischargers:

S 212-002

- (1) Visually inspect all the dischargers to make sure the dischargers are not broken and are on their bases.

S 212-003

- (2) Inspect the dischargers for lightning damage, shown by burned or pitted discharger base. Replace the discharger or the base as necessary.

S 212-004

- (3) Inspect the dischargers for broken, bent, or missing tips. If repair is not possible replace the discharger.

S 862-065

WARNING: USE THE PRECAUTIONS THAT FOLLOW WHEN YOU USE A MEGOHMMETER. IF YOU DO NOT USE PRECAUTIONS, THEN IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (4) Use these precautions for possible fuel vapors when you use a megohmmeter:

- (a) Use the Quadtech 1863 megohmmeter or equivalent meter with a 500 VDC test voltage and a maximum 5 milliampere short circuit current.
- (b) Do not use a megohmmeter at these locations:
 - 1) Area adjacent to or below a wing fuel tank vent, five foot (1.524 meters) diameter column, from vent to ground.
 - 2) Zero to 18 inches (457 mm) above the ground in the area around the airplane.
- (c) Make sure that:
 - 1) Area is well ventilated.
 - 2) Metal workstands are grounded.
 - 3) Megohmmeter is plugged into a grounded receptacle.
 - 4) Megohmmeter is insulated from metal work stands.

S 862-074

- (5) Set the megohmmeter to 500 VDC test voltage.

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S 222-005

- (6) Measure the resistance between the discharger tip and the base for all the dischargers. Make a sponge, cotton cloth, or paper towel wet with tap water, and push against the tip of the discharger. Put the megohmmeter leads on the base and on the wet cloth. Examine resistance readings as follows:

NOTE: It is important to have good contact between the wet cloth and the flat area of the discharger tip end. It is not sufficient to clip the megohmmeter lead directly to the tip.

S 222-066

- (7) Make sure that the measured resistance is between 6-100 megohms.

S 862-006

- (8) Replace the dischargers that do not read the correct resistance.
H. Put the Airplane Back to Its Usual Condition

S 862-093

- (1) If it is necessary, put the airplane to its usual condition (AMM 29-11-00/201).

TASK 23-61-01-202-071

3. Static Discharger Base Inspection/Check

A. References

- (1) AMM 24-22-00/201, Manual Control
(2) AMM 29-11-00/201, Main (Left, Right, Center) Hydraulic Systems
(3) AMM 51-21-10/701, Decorative Exterior Finishes

B. Equipment

- (1) Bonding meter (SWPM 20-20-00)

C. Access

- (1) Location Zones
500/600 Left Wing/Right Wing
300 Empennage and Body Section 48

D. Prepare for Static Discharger Base Inspection/Check

S 862-078

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEM. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove the pressure and power from the main hydraulic system (AMM 29-11-00/201).

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S 862-079

- (2) Remove the power from the electrical system (AMM 24-22-00/201).

E. Procedure

S 222-067

WARNING: MAKE SURE THAT THE BONDING METER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAN AN EXPLOSION OR FIRE CAN OCCUR.

- (1) Use a bonding meter (SWPM 20-20-00) to do a check of the static discharger bond between the discharger bases and airplane surface.

S 222-072

- (2) Use method 1 or method 2 to measure the bond resistance.
 - (a) Method 1 – Use a bonding meter (SWPM 20-20-00) to measure the dc resistance between the static discharger base and the bonded airplane surface.

NOTE: This resistance measurement is for in-service bonds and static discharger bases. You will get a different measurement value for a newly installed bond and static discharger base.

Make sure both leads touch bare metal. When a surface is coated with paint, scrape off a small amount of paint or use a sharp probe to penetrate the paint.

- 1) Do the test as follow:
 - a) Put one meter lead on the discharger base.
 - b) Put one meter lead on the airplane surface.
- 2) ALUMINUM DISCHARGER BASE INSTALLED ON ALUMINUM SKIN;
Make sure the resistance is not more than 0.5 ohms.
- 3) ALUMINUM DISCHARGER BASE INSTALLED ON THORSTRAND SURFACE;
Make sure the resistance value is not more than 0.05 ohms.

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CAUTION: CAREFULLY CLEAN THE SURFACE ONLY UNTIL THE BRIGHT ALUMINUM COMES INTO VIEW. DAMAGE TO THE ALUMINUM COATING AND THE GLASS FIBERS CAN OCCUR.

- a) If necessary, clean the Thorstrand surface by hand.
Apply Scotch Brite to make a small area rough.
 - 4) TITANIUM DISCHARGER BASE INSTALLED ON A CARBON COMPOSITE SURFACE;
Make sure the resistance value is not more than 5.0 ohm.
 - 5) ALUMINUM DISCHARGER BASE INSTALLED ON A KEVLAR SURFACE (HORIZONTAL STABILIZER TIP);
Make sure the resistance value is not more than 0.5 ohms.
 - 6) Paint the area where paint was removed for the airplane surface resistance test (AMM 51-21-10/701).
- (b) Method 2 - Use a bonding meter (SWPM 20-20-00) to do a check of the bond resistance between two adjacent discharger bases.

NOTE: This resistance measurement is for in-service bonds and static discharger bases. You will get a different measurement value for a newly installed bond and static discharger base.

Make sure both leads touch bare metal. When a surface is coated with paint, scrape off a small amount of paint or use a sharp probe to penetrate the paint.

- 1) Do the test as follow:
 - a) Put one meter lead on the discharger base.
 - b) Put one meter lead on the adjacent discharger base.
- 2) ALUMINUM DISCHARGER BASE INSTALLED ON ALUMINUM SKIN;
Make sure the resistance is not more than 1.0 ohm.
- 3) ALUMINUM DISCHARGER BASE INSTALLED ON THORSTRAND SURFACE;
Make sure the resistance value is not more than 0.10 ohms.
- 4) TITANIUM DISCHARGER BASE INSTALLED ON A CARBON COMPOSITE SURFACE;
Make sure the resistance value is not more than 10.0 ohms.

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- 5) ALUMINUM DISCHARGER BASE INSTALLED ON A KEVLAR SURFACE (HORIZONTAL STABILIZER TIP);
Make sure the resistance value is not more than 1.0 ohms.

S 102-056

- (3) For discharger bases that do not read the correct resistance, do the steps that follow:
- (a) Remove the base.
 - (b) Clean the bonding surfaces.
 - (c) Install or replace the discharger base. Refer to the Static Discharger Base Removal/Installation section.

F. Put the Airplane Back to Its Usual Condition

S 862-089

- (1) If it is necessary, put the airplane to its usual condition (AMM 29-11-00/201).

TASK 23-61-01-002-009

4. Static Discharger Removal (Fig. 201)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 29-11-00/201, Main (Left, Right, Center) Hydraulic Systems

B. Access

- (1) Location Zones
 - 500/600 Left Wing/Right Wing
 - 300 Empennage and Body Section 48

C. Prepare for Static Discharger Removal

S 862-080

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEM. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove the pressure and power from the main hydraulic system (AMM 29-11-00/201).

S 862-084

- (2) Remove the power from the electrical system (AMM 24-22-00/201).

D. Removal of Trailing Edge Type Static Discharger:

S 032-010

- (1) Loosen the setscrew four or five turns on the discharger.

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S 022-011

- (2) Put a thin-bladed screwdriver or putty knife into the junction between the discharger casting and the discharger base.
 - (a) Pry on the discharger and pull out on the sides of the discharger casting to remove the discharger from the base.

E. Removal of Tip Type Static Discharger

S 032-013

- (1) Loosen the setscrew three or four turns on the rear of the discharger base.

S 022-014

- (2) Put a small screwdriver blade between the end of the discharger casting and the base.
 - (a) Pry on the discharger and pull on the rod as near as possible to the base.

F. Put the Airplane Back to Its Usual Condition

S 862-090

- (1) If it is necessary, put the airplane to its usual condition (AMM 29-11-00/201).

TASK 23-61-01-402-012

5. Static Discharger Installation (Fig. 201)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 29-11-00/201, Main (Left, Right, Center) Hydraulic Systems

B. Access

- (1) Location Zones
 - 500/600 Left Wing/Right Wing
 - 300 Empennage and Body Section 48

C. Equipment

- (1) 1863 Megohmmeter (or equivalent)
Quadtech Inc. (Vendor Code OPK96)
100 Nickerson Ave., Marlborough, MA 01752

D. Consumable Materials

- (1) A00417 Loctite (Threadlocker 242), CPN 5685422

E. Prepare for Static Discharger Installation

S 862-081

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEM. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove the pressure and power from the main hydraulic system (AMM 29-11-00/201).

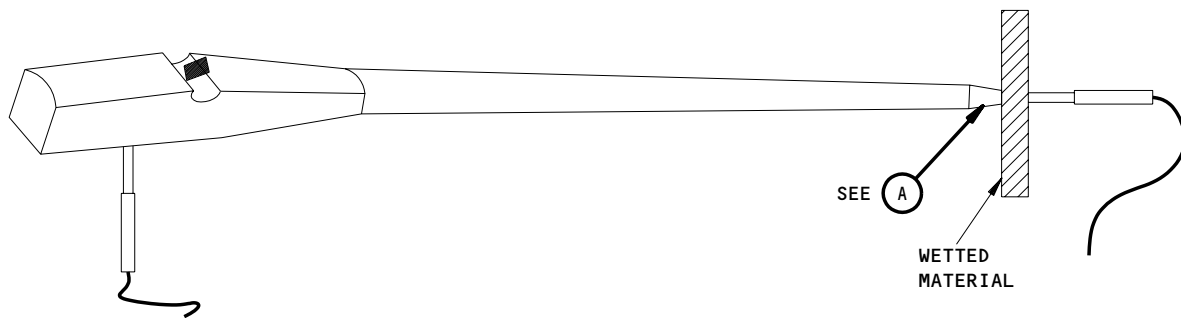
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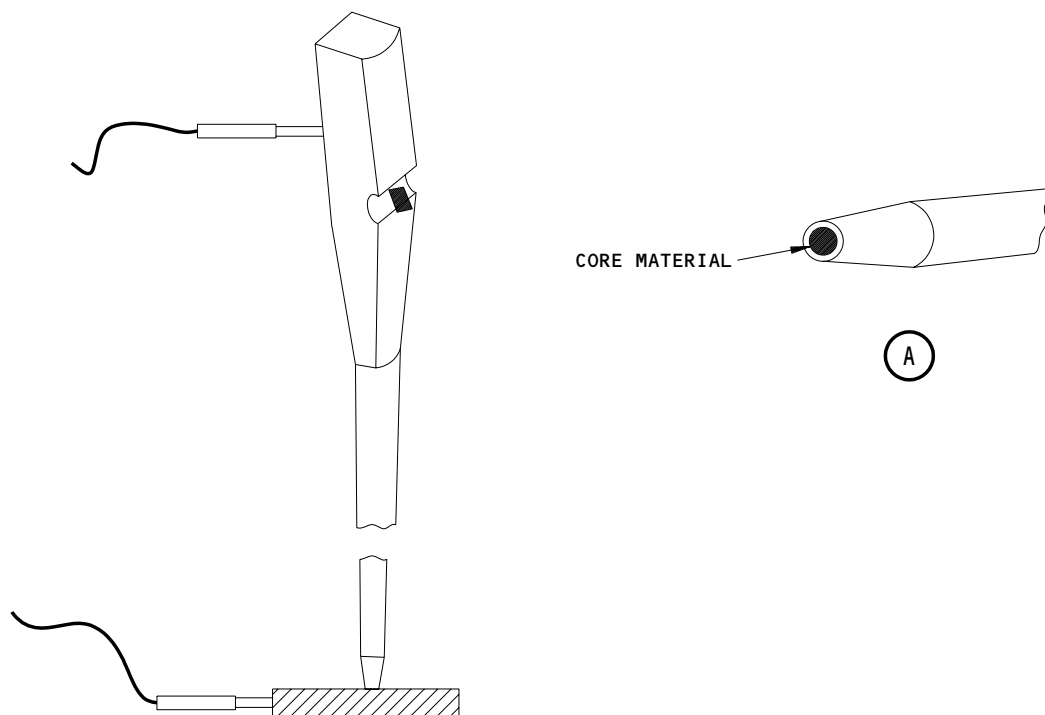
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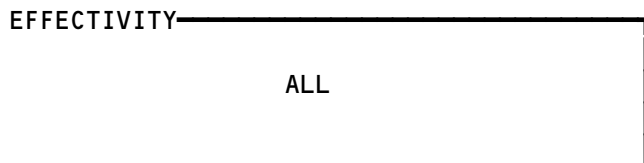
ON WING DISCHARGER RESISTANCE TEST



ALTERNATE (OFF WING) DISCHARGER RESISTANCE TEST

NOTE: TEST PROCEDURES FOR THE TRAILING EDGE AND WING TIP DISCHARGERS ARE THE SAME.

Static Discharger Resistance Test
Figure 201A



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S 862-085

- (2) Remove the power from the electrical system (AMM 24-22-00/201).

F. Installation of Trailing Edge Type Static Discharger:

S 022-039

- (1) Remove the setscrew from the static discharger.

S 392-040

- (2) Apply a thin layer of loctite (thread locker 242) to the setscrew threads.

S 432-015

- (3) Install and adjust the setscrew on the static discharger until aligned in the static discharger casting.

S 422-016

- (4) Apply equal pressure on discharger casting until discharger is correctly in position on the discharger base.

(a) Tighten the static discharger setscrew to the value that follows:

- 1) FOR AIRPLANES WITH 2-14SC1, 2-16SC1, 740001, 740007, 80-1746-2, AND 80-1828-2 STATIC DISCHARGERS INSTALLED; Torque the setscrew to 6 to 9 inch-pounds.
- 2) FOR AIRPLANES WITH 10-900-21 AND 10-900-25 STATIC DISCHARGERS INSTALLED; Torque the setscrew to 2.5 inch-pounds.

(b) Make sure there is no movement between the static discharger and the discharger base.

G. Installation of Tip Type Static Discharger:

S 022-041

- (1) Remove the setscrew from the static discharger base.

S 392-042

- (2) Apply a thin layer of loctite (thread locker 242) to the setscrew threads.

S 432-017

- (3) Install and adjust the setscrew in the discharger base until aligned in the discharger base.

S 422-018

- (4) Insert the discharger casting in the discharger base.

(a) Tighten the static discharger setscrew to the value that follows:

- 1) FOR AIRPLANES WITH 2-14SC1, 2-16SC1, 740001, 740007, 80-1746-2, AND 80-1828-2 STATIC DISCHARGERS INSTALLED; Torque the setscrew to 6 to 9 inch-pounds.

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2) FOR AIRPLANES WITH 10-900-21 AND 10-900-25 STATIC DISCHARGERS INSTALLED; Torque the setscrew to 2.5 inch-pounds.

(b) Make sure there is no movement between the static discharger and the discharger base.

H. Static Discharger Installation Test

S 862-068

WARNING: USE THE PRECAUTIONS THAT FOLLOW WHEN YOU USE A MEGOHMMETER. IF YOU DO NOT USE PRECAUTIONS, THEN IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

(1) Use these precautions for possible fuel vapors when you use a megohmmeter:

(a) Use the Quadtech 1863 megohmmeter or equivalent meter with a 500 VDC test voltage and a maximum 5 milliampere short circuit current.

(b) Do not use a megohmmeter at these locations:

- 1) Area adjacent to or below a wing fuel tank vent, five foot (1.524 meters) diameter column, from vent to ground.
- 2) Zero to 18 inches (457 mm) above the ground in the area around the airplane.

(c) Make sure that:

- 1) Area is well ventilated.
- 2) Metal workstands are grounded.
- 3) Megohmmeter is plugged into a grounded receptacle.
- 4) Megohmmeter is insulated from metal work stands.

S 862-075

(2) Set the megohmmeter to 500 VDC test voltage.

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S 222-069

- (3) Measure the resistance between the discharger tip and the base for all the dischargers. Make a sponge, cotton cloth, or paper towel wet with tap water, and push against the tip of the discharger. Put the megohmmeter leads on the base and on the wet cloth. Examine resistance readings as follows:

NOTE: It is important to have good contact between the cloth and the flat area of the discharger tip end. It is not sufficient to clip the megohmmeter lead directly to the tip. If you are testing 80-1746-2 or 80-1828-2 Static Dischargers, DO NOT wrap the wetted material around the tip of the discharger. Wrapping the wetted material around the tip of discharger can cause erroneous resistance readings resulting in the unnecessary removal of a serviceable static discharger. Place the wetted material between the tip of the discharger and the megger probe. If resistance is not within limits, remove wetted material and place megger probe directly onto tip of discharger core material and repeat test. Refer to Figure 201A, "ON WING DISCHARGER RESISTANCE TEST". If you are using the alternate discharger test method, connect the megger probe to the edge of the wetted material as shown in Figure 201A, "ALTERNATE (OFF WING) DISCHARGER RESISTANCE TEST".

S 222-070

- (4) Make sure that the measured resistance is between 6-100 megohms.
- I. Put the Airplane Back to Its Usual Condition

S 862-088

- (1) If it is necessary, put the airplane to its usual condition (AMM 29-11-00/201).

TASK 23-61-01-002-019

6. Static Discharger Base Removal (Fig. 202)

A. General

- (1) Three types of discharger bases are installed on the wings and stabilizers. Installation on the left and right wings and the horizontal stabilizers are almost the same. Bases installed on the rudder are on the left and right sides for aerodynamic balance.
- (2) Tip-type static-discharger bases are aluminum with a rounded surface riveted to the sheet metal. Curvature of the surface gives the part number.
- (3) Trailing-edge type static-discharger bases are aluminum or titanium. Aluminum bases are riveted to sheet metal, or are installed on Thorstrand aluminized fiberglass with an aluminum adapter.
- (4) Titanium bases are used on graphite composite surfaces.

B. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 29-11-00/201, Main (Left, Right, Center) Hydraulic Systems

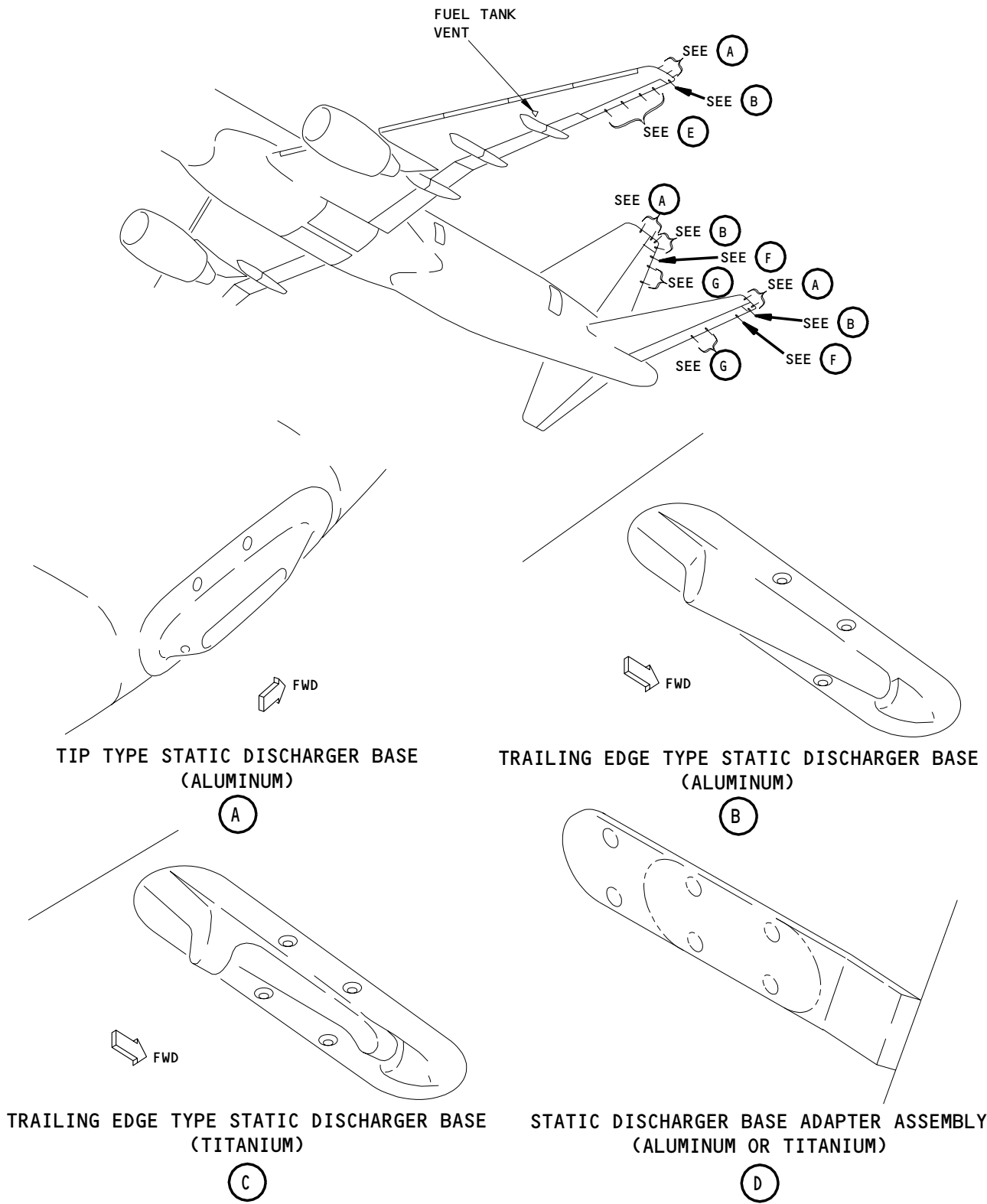
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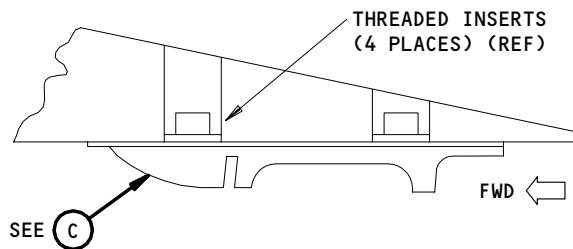


Static Discharger Base Installations
Figure 202 (Sheet 1)

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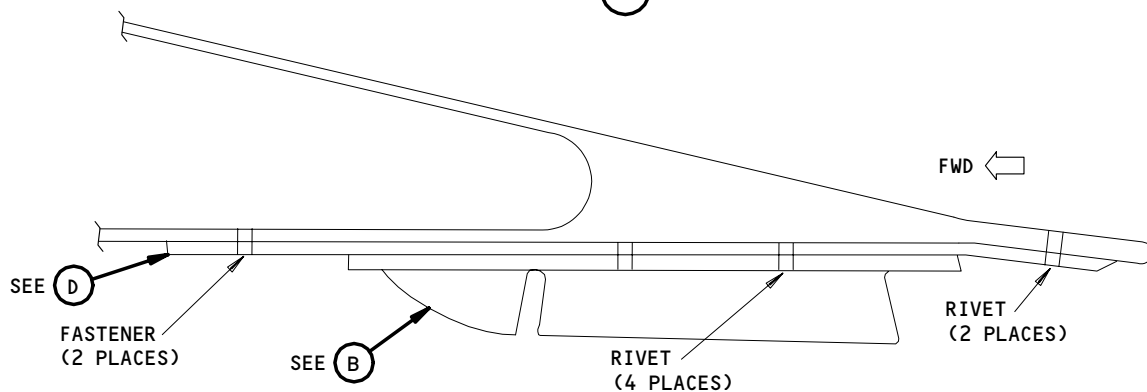
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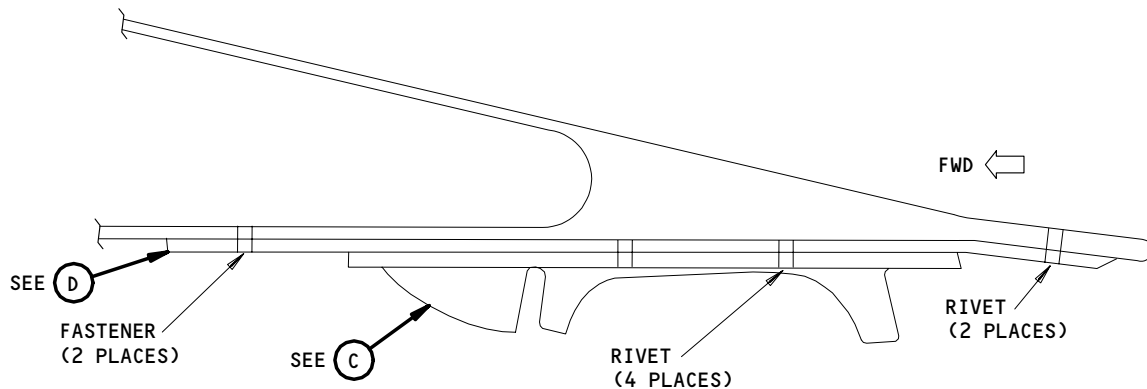
**AILERON STATIC DISCHARGER BASE INSTALLATION
(TITANIUM)**

(E)



**TRAILING EDGE TYPE DISCHARGER BASE WITH ADAPTER
(ALUMINUM)**

(F)



**TRAILING EDGE TYPE DISCHARGER BASE WITH ADAPTER
(TITANIUM)**

(G)

**Static Discharger Base Installations
Figure 202 (Sheet 2)**

EFFECTIVITY	ALL
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23-61-01

- (3) SRM 51-20-01
- C. Equipment
 - (1) Sealing compound cutting tool - hardwood or plexiglass - commercially available
 - (2) Spatula - commercially available
- D. Access
 - (1) Location Zones
 - 500/600 Left Wing/Right Wing
 - 300 Empennage and Body Section 48
- E. Prepare to Remove the Discharger Base

S 862-082

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEM. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove the pressure and power from the hydraulic system (AMM 29-11-00/201).

S 862-086

- (2) Remove the power from the electrical system (AMM 24-22-00/201).

S 862-020

- (3) Find the discharger base to be removed.

S 012-057

CAUTION: BE CAREFUL WHEN YOU REMOVE AND INSTALL THE DISCHARGER. THE THREADS AND RECESSED HEAD OF THE SETSCREW CAN BE DAMAGED.

- (4) Loosen the discharger setscrew and remove the discharger from the base.

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F. Remove the Static Discharger Base from Aluminum Skin or Kevlar Surface (Horiz. Stab. Tip):

S 012-037

CAUTION: BE CAREFUL NOT TO DAMAGE THE AIRPLANE SURFACE.

- (1) Use the sealing compound cutting tool to remove the weather/aerodynamic fillet seal around the edge of the base.

S 032-023

- (2) Remove the four rivets from the base. Refer to the Structural Repair Manual.

S 032-024

- (3) Put a sharp broad-based knife below the edge of the base and remove the base from the airplane skin.

G. Remove the Static Discharger Base from the Aileron:

S 032-036

CAUTION: BE CAREFUL NOT TO DAMAGE THE AILERON SURFACE.

- (1) Use the sealing compound cutting tool to remove the weather/aerodynamic fillet seal around the edge of the base.

S 032-026

- (2) Remove the four screws from the static discharger base.

S 022-027

- (3) Put a sharp broad-based knife below the edge of the base and remove the base from the airplane skin.

H. Remove the Static Discharger Base from the Adapter Assembly:

S 032-038

CAUTION: BE CAREFUL NOT TO DAMAGE THE ADAPTER ASSEMBLY AND FLIGHT CONTROL SURFACE.

- (1) Use the sealing compound cutting tool to remove the weather/aerodynamic fillet seal around the edge of the base.

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- S 032-030
- (2) Remove the four rivets from the base. Refer to the Structural Repair Manual.

- S 022-031
- (3) Put a sharp broad-based knife below the edge of the base and remove the base from the adapter assembly.

I. Put the Airplane Back to Its Usual Condition

- S 862-092
- (1) If it is necessary, put the airplane to its usual condition (AMM 29-11-00/201).

TASK 23-61-01-402-028

7. Static Discharger Base Installation (Fig. 202)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 29-11-00/201, Main (Left, Right, Center) Hydraulic Systems
- (3) SRM 51-20-01

B. Equipment

- (1) Bonding meter (SWPM 20-20-00)
- (2) Sealing gun - 6 inch length cartridge - Commercially available
- (3) Varnish brush - 1 or 2 inch - Commercially available
- (4) Sealing compound cutting tool - hardwood or plexiglass - Commercially available

C. Consumable Material

- (1) B00136 Naphta TT-N-95A, Aliphatic
- (2) B00193 Sealant - Chromate type BMS 5-95
- (3) A00247 Cheesecloth - BMS 15-5 (Ref 20-30-07)
- (4) G00033 Scotch Brite Type A - 3M Company
- (5) G02124 Sandpaper - 250 Grit

D. Access

- (1) Location Zones
 - 500/600 Left Wing/Right Wing
 - 300 Empennage and Body Section 48

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E. Prepare to Install the Discharger Base:

S 862-083

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEM. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove the pressure and power from the main hydraulic system (AMM 29-11-00/201).

S 862-087

- (2) Remove the power from the electrical system (AMM 24-22-00/201).

S 032-032

- (3) Remove sealant from bonding area (skin surface or adapter assembly) use the sealing compound cutting tool.

S 002-033

- (4) Remove the static discharger base from the container. Make sure the discharger mounting surface is correct for the installation.

S 122-034

- (5) Make the graphite and titanium bonding surfaces rough with 250 grit sandpaper until black dust shows.

S 112-035

WARNING: KEEP SOLVENTS AWAY FROM OPEN FIRE. DO NOT GET THE SOLVENTS IN YOUR MOUTH, OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE SOLVENTS. SOLVENTS CAN BE POISONOUS AND FLAMMABLE AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (6) Clean and remove grease from the bonding areas. Use a clean wiper soaked with a clean solvent. Continue to use the clean wipers until there is no unwanted material.

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F. Install the Aileron Static Discharger Base:

S 842-037

- (1) Refer to the instructions on the container to mix the sealant.

NOTE: Apply the sealant only when the temperature of the structure is at 50°F or above.

S 422-038

- (2) Apply the base to the aileron surface. Make sure the base is aligned with the slip stream. Make sure the holes in the base are aligned with the screw retainers in the aileron.

S 642-040

- (3) Apply the sealant to four mounting screws.

S 432-039

- (4) Install the mounting screws wet.

S 402-041

- (5) Fill any holes with the sealant.
(a) Make sure there are no cracks.

S 402-042

- (6) Apply the sealant around the edge of the base to make a fillet seal.

S 402-043

- (7) Permit the sealant to cure.

S 412-044

- (8) Install the static discharger. Refer to the Static Discharger Installation section.

G. Install the Static Discharger Base to Aluminum Skin, Kevlar Surface or Adapter Assembly:

S 842-045

- (1) Refer to the instructions on the container to mix the sealant.

NOTE: Apply the sealant only when the temperature of the structure is at 50°F or above.

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S 802-046

- (2) Do the step that follows in less than 5 minutes after the surfaces are cleaned.
 - (a) Apply a thin coat of sealant to the mounting surfaces of the base and airplane or adapter. Make sure the concave surfaces are filled with sealant and that there are no holes.

S 422-047

- (3) Apply the base to the airplane surface (skin or adapter). Twist with light pressure to move out unwanted sealant.
 - (a) Make sure the base is aligned with the slip stream.
 - (b) Clean away any unwanted sealant.

S 402-048

- (4) Fill any holes with the sealant.
 - (a) Make sure there are no cracks.

S 432-049

- (5) Rivet the base to the airplane (aluminum, Kevlar or adapter). Refer to Structural Repair Manual.

S 402-050

- (6) Apply the sealant around the edge of the base to make a fillet seal.

S 402-051

- (7) Permit the sealant to cure.

S 432-052

- (8) Install the static discharger. Refer to the Static Discharger Installation section.

H. Static Discharger Base Installation Test:

S 212-053

- (1) When the sealant is fully cured, make sure there are no cracks in the sealant fillet.

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S 222-073

WARNING: MAKE SURE THAT THE BONDING METER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAN AN EXPLOSION OR FIRE CAN OCCUR.

- (2) Use a bonding meter (SWPM 20-20-00) to measure the dc resistance between the static discharger base and the bonded airplane surface.

NOTE: This resistance measurement is for a newly installed retainer and a new bond. The resistance measurement is different for an in-service bond and retainer.

- (a) ALUMINUM DISCHARGER BASE INSTALLED ON THE ALUMINUM SKIN;
Make sure the resistance is not more than 0.1 ohms.
- (b) ALUMINUM DISCHARGER BASE INSTALLED ON THE THORSTRAND SURFACE;
Make sure the resistance is not more than 0.01 ohms.

CAUTION: CAREFULLY CLEAN THE SURFACE ONLY UNTIL THE BRIGHT ALUMINUM COMES INTO VIEW. DAMAGE TO THE ALUMINUM COATING AND GLASS FIBERS CAN OCCUR.

- 1) If it is necessary, clean the Thorstrand surface by hand.
Apply Scotch Brite to make a small area rough.

- (c) TITANIUM DISCHARGER BASE INSTALLED ON THE CARBON COMPOSITE SURFACE;
Make sure the resistance is not more than 1.0 ohm.
- (d) ALUMINUM DISCAHRGER BASE INSTALLED ON THE KELVAR SURFACE (HORIZONTAL STABILIZER TIP);
Make sure the resistance is not more than 0.1 ohms.

I. Put the Airplane Back to Its Usual Condition

S 862-091

- (1) If it is necessary, put the airplane to its usual condition (AMM 29-11-00/201).

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VOICE RECORDER SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The voice recorder system preserves a continuing record of the latest 30 minutes of flight crew communications and conversations. The four track tape receives inputs from the captain, first officer, observer and an area microphone on the flight deck.
- B. The voice recorder system consists of a tape recorder located in the aft passenger cabin ceiling and a control panel with area microphone located in the flight compartment on overhead panel P5.
- C. Power to the system is 115 vac from the right main ac bus. The VOICE RECORDER circuit breaker is located on the overhead panel P11.

2. Component Details (Fig. 1)

A. Voice Recorder Control Panel

- (1) The voice recorder control panel is located on the overhead panel P5. The control panel contains an area microphone, TEST pushswitch, ERASE pushswitch, test meter, and monitor phone jack. The microphone and its preamplifier pick up flight deck conversations which are recorded by the voice recorder.
- (2) Pressing the TEST switch will activate test circuits within the voice recorder. A 600-Hz tone is sequenced for 0.8 seconds to each channel of the voice recorder. System operation is monitored by a single pulse deflection of the test meter and a 600 Hz tone from the HEADSET jack.
- (3) Pressing the ERASE switch for more than two seconds will cause the voice recorder tape to be completely erased. Bulk erasure is possible only when the airplane is on the ground with the parking brake set.

B. Voice Recorder

- (1) The voice recorder is installed in an equipment rack in the aft passenger cabin ceiling. The recorder is a thermally insulated, impact resistant, 4 MCU unit weighing approximately 24 pounds and international orange in color. The unit contains a tape transport which includes the tape, tape drive, four recording heads, erase head, monitor head, and bulk erase coil. The unit also contains four recording amplifiers, a monitor amplifier, 65-KHz bias generator, 600-Hz test circuits and power supply.

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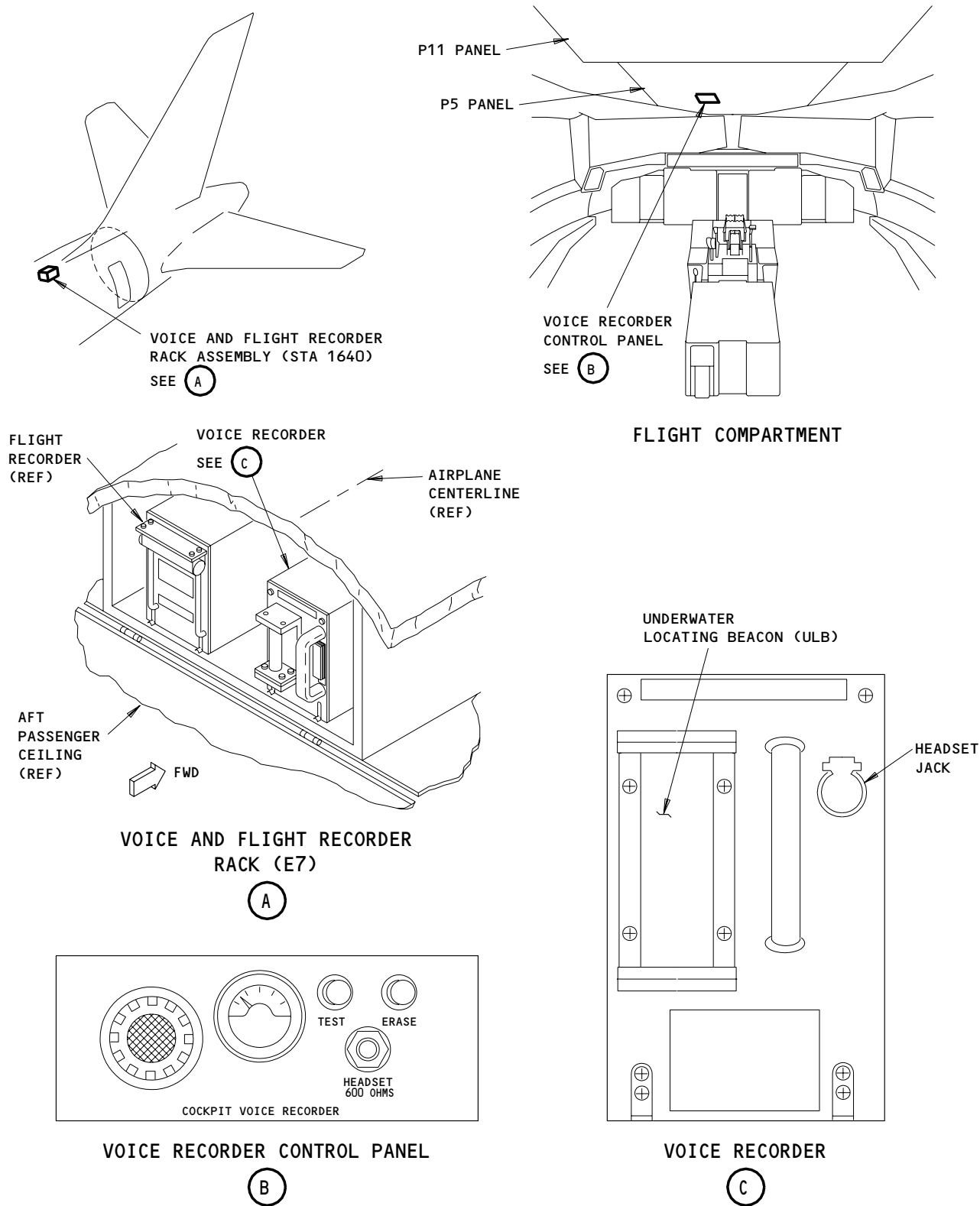
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CONFIG 1

02

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Voice Recorder System - Component Location
Figure 1

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GUI 009,115

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CONFIG 1

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- (2) The recording tape is 308 feet long, 1/4 inch wide in a continuous endless loop. The four track tape runs at 1 7/8 IPS providing 30 minutes of recording time.
- (3) The recorder front panel contains a headphone jack and an ultrasonic underwater locator beacon (ULB). The monitor jack provides a slightly delayed means of monitoring all four tracks being recorded. The ULB is attached to the front panel and is a self-contained device. The ULB will emit a 37.5-kHz signal when its water activated switch is closed. The ULB contains a dated label to indicate when the battery requires replacement.

C. Functional Description

- (1) The voice recorder automatically records the latest 30 minutes of communications and conversations in the flight deck. Tape tracks 1 thru 3 of the voice recorder receive inputs from the first observer, first officer and captain audio selector panels, respectively. The area microphone on the voice recorder control panel provides input to tape track No. 4.

D. Control

- (1) Turn-On Procedure
 - (a) Apply electrical power (Ref 24-22-00)
 - (b) Check that the VOICE RECORDER circuit breaker is closed on overhead panel P11.
- (2) Access for monitoring recorded audio and test tones.
 - (a) Connect a 600 ohm headset at the HEADSET jack on the voice recorder control panel or at the front of the voice recorder.

3. Operation (Fig. 2)

- A. The voice recorder system receives 115 VAC power from the right main AC bus. Power to the system is controlled by the VOICE RECORDER circuit breaker located on overhead panel P11.
 - (1) The voice recorder is powered directly from the 115v ac R bus. The power supply in the voice recorder supplies + 30v dc used within the recorder and +18v dc used in the voice recorder control panel.
 - (2) The four track endless tape runs at 1 7/8 IPS on a single sided reel. The 1/4 in ch wide is 308 feet long providing for 30 minutes of recording time. The tape comes off the reel in a continuous loop first passing the erase head, then the four record heads, then the play head and then back onto the reel.
 - (3) The 65-kHz bias generator signal is applied to the erase head to erase the tape. The 65-kHz signal also shifts the audio band upwards of the record amplifiers to improve their linearity. The 65-kHz is also mixed and removed in the monitor amplifier.
 - (4) Under certain conditions, pressing the ERASE switch on the control panel will cause the entire tape to be erased. Bulk erasure requires that the ERASE switch be pressed for a minimum of two seconds when the plane is on the ground with the parking brake set. When the ERASE switch is released after being pressed for two seconds, 115VAC, 400 Hz is applied to the bulk erase coil for five seconds. During the five seconds while the erasure occurs, a 400-Hz can be monitored at the HEADSET jacks.

B. TEST

- (1) The play head and monitor amplifier are used to monitor test signals recorded on all tracks of the tape. Audio outputs are monitored at the HEADSET jack on the control panel and the jack on the recorder front panel. A 600-Hz detector monitors the test signals on each track and sends a 30v dc pulse to cause the monitor meter on the control panel to deflect.
- (2) When the TEST switch on the control panel is pressed, a 600Hz tone is generated in the voice recorder unit. A ring counter sequentially switches the 600Hz test tone for 0.8 seconds to each of the four record amplifiers. A good test will cause a meter deflection into the green band accompanied by a 600-Hz tone from the HEADSET jack.

C. For more details on the Voice Recorder System, refer to these wiring diagrams and functional schematics:

- WDM 23-71-11: Voice Recorder System
- SSM 23-71-01: Voice Recorder
- SSM 23-71-02: Voice Recorder Power Relay Control.

VOICE RECORDER SYSTEM – DESCRIPTION AND OPERATION

1. General

- A. The voice recorder system preserves a continuing record of the latest 30 minutes of flight crew communications and conversations. The four track tape receives inputs from the captain, first officer, first observer and an area microphone on the flight deck.
- B. The voice recorder system consists of a voice recorder located in the aft passenger cabin ceiling and a control panel with area microphone located in the flight compartment on overhead panel P5.
- C. The voice recorder system receives 115 VAC power from the right main ac bus. Power to the system is controlled by the VOICE RECORDER circuit breaker located on overhead panel P11.

2. Component Details (Fig. 1)

A. Voice Recorder Control Panel

- (1) The voice recorder control panel is located on overhead panel P5. It contains an area microphone with preamplifier and filter circuits, a phone jack to monitor system recording through headsets, a test switch to initiate the functional self test, a monitor meter to provide an indication of self test success or failure, and an erase switch.
- (2) Pushing the TEST switch will activate test circuits within the voice recorder. A 400 Hz tone is applied to all four heads. A 400 Hz tone via a headset connected to the jack, accompanied by a meter deflection into the white area indicates one pair of the tape tracks are recording properly. A second 400 Hz tone in the headset accompanied by a meter deflection into the white area indicates the other pair of tape tracks are recording properly. The test is complete after 3.5 seconds.
- (3) Pushing the ERASE switch will cause the voice recorder tape to be completely erased. Bulk erasure is possible only when the airplane is on the ground with the parking brake set.

B. Voice Recorder

- (1) The voice recorder is installed in an equipment rack in the aft passenger cabin ceiling. The recorder is a thermally insulated, impact resistant, 4 MCU unit, weighting approximately 24 pounds and international orange in color. The unit contains a tape transport which includes the tape, tape drive, two four-track recording heads, two erase heads, two monitor heads, and a bulk erase coil. The unit also contains four recording amplifiers, a monitor amplifier, 45-KHz bias generator, 400 Hz test circuits, motor controls, and power supply.
- (2) The recording tape is a 1/4 inch wide polyimide tape 230 feet long. The four-track tape runs at 2.75 IPS totaling 30 minutes of recording time in both the fwd and reverse directions.

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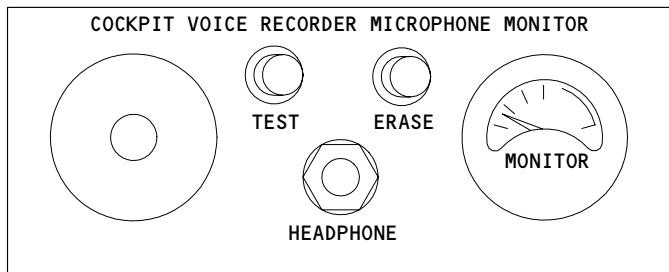
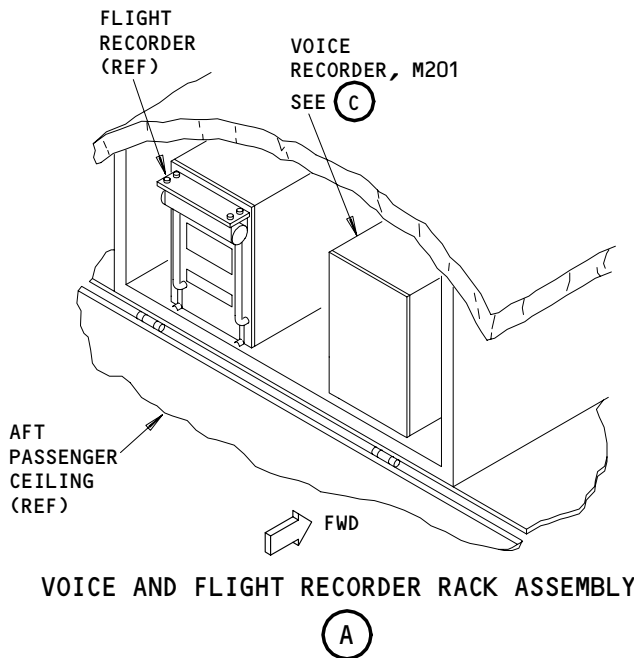
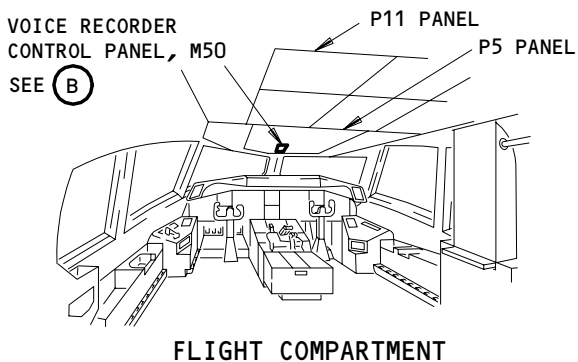
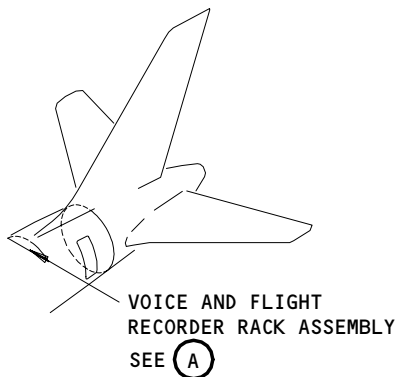
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CONFIG 2

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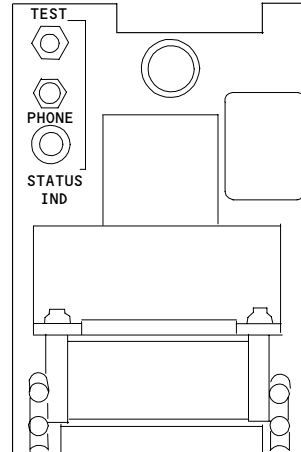
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VOICE RECORDER CONTROL PANEL, M50

(B)



VOICE RECORDER, M201

(C)

Voice Recorder System - Component Location
Figure 1

EFFECTIVITY
GUI 001-008,010-013

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CONFIG 2

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- (3) The front panel contains a TEST switch, headphone jack, STATUS light (green) and an ultrasonic underwater locator beacon (ULB).
 - (a) Pushing the TEST switch initiates a test of all tape tracks in both the record and monitor capabilities.
 - (b) A headset inserted into the headphone jack will monitor all tape tracks slightly delayed after they are recorded.
 - (c) The STATUS IND light comes on during tests, indicating that the pair of tape tracks being monitored are recorded at an adequate level.
 - (d) The ULB is attached to the front panel and is a self-contained device. The ULB will emit a 37.5-KHz signal when its water activated switch is closed. The ULB contains a dated label to indicate when the battery required periodic replacement.

3. Operation

A. Functional Description

- (1) The voice recorder automatically records the latest 30 minutes of communications and conversations in the flight deck. Tape tracks 1 thru 3 of the voice recorder receive inputs from the first observer, first officer and captain audio selector panels, respectively. The area microphone on the voice recorder control panel provides the input to tape track No. 4.
- (2) The voice recorder is powered directly from the 115 VAC R bus. The power supply in the voice recorder supplies +15 and +24 VDC used within the recorder and +18 VDC used in the voice recorder control panel.
- (3) The 1/4-inch wide tape runs at 2.75 IPS in the fwd direction for 15 minutes until it reaches the "end of tape". Then the motor controls reverse and the tape runs for 15 minutes until it reaches the "beginning of tape" and so on. As the tape comes off the reel, it first passes the erase head where the 45 KHz erase signal is applied to all four tracks. The tape then passes the four-track record heads where recorded audio plus the 45 KHz bias signals are applied onto the tape. The 45 KHz bias shifts the audio band upwards to improve the linearity of the record amplifiers. Then the tape passes the monitor head from which the audio on all four tracks can be monitored. The tape continues onto the takeup reel until the appropriate "sensor" causes the tape to reverse and then the same sequence occurs utilizing the other heads, etc.

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- (4) Under certain conditions, pushing the ERASE switch on the control panel will cause the entire tape to be erased. Bulk erasure requires that the ERASE switch be pushed when the airplane is on the ground with the parking brake set. When the ERASE switch is pushed in, 155 VAC, 400 Hz is applied to the bulk erase coil via the bulk erase relay. The bulk erase relay also removes dc power from the record, playback, and test circuits. The ERASE push-switch must be pushed for at least 14 seconds for complete erasure. This is the time required for one revolution of the tape reel. When the ERASE switch is released, the system returns to normal operation.

B. TEST

- (1) The self-test mode is initiated by pressing the TEST switch on the voice recorder or control panel. A 400 Hz test tone is inserted, recorded, monitored, and detected to functionally test the system. The MONITOR indicator on the control panel and the status indicator on the voice recorder comes on two times for a successful test. The 400 Hz test tone can be monitored at the phone jack.
- (2) Pushing the TEST switch causes the 200 msec pulse generator to energize the test relay which applies 400 Hz into each record amplifier for 200 msec. The 2 sec pulse generator also activates the monitor meter during the self-test. Because the odd and even numbered record heads are spaced apart, one pair of tracks are monitored for 200 msec and then after 300 msec, the other tracks are monitored for 200 msec. The monitor head provides the two 200 msec inputs to the audio driver which inputs to the phone jacks. The audio driver also outputs to the level detector which operates the green STATUS IND on the voice recorder and the MONITOR indicator on the control panel displaying the two 200 msec tones. The test automatically terminates after 3.5 seconds.
- (3) The area microphone and audio selector panels (ASPs) can be used to test the voice recorder system. With the area microphone covered, audio which inputs to each audio selector panel one at a time, can be monitored at the headphone jack on the voice recorder control panel. With all audio inputs removed from the ASPs, inputs to the area microphone on the control panel can be monitored in the same fashion.

C. Control

- (1) Power-On Procedure
 - (a) Supply electrical power (AMM 24-22-00)
 - (b) Make sure that the VOICE RECORDER circuit breaker is closed on overhead panel P11.
- (2) Access for monitoring recorded audio and test tones.
 - (a) Connect a 600 ohm headset at the HEADSET jack on the voice recorder control panel or at the front of the voice recorder.

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 **BOEING**
757
MAINTENANCE MANUAL

- D. For more details on the Voice Recorder System, refer to these wiring diagrams and functional schematics:
- WDM 23-71-11: Voice Recorder System
 - SSM 23-71-01: Voice Recorder
 - SSM 23-71-02: Voice Recorder Power Relay Control.

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BOEING
 757
 FAULT ISOLATION/MAINT MANUAL
VOICE RECORDER SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
BEACON - UNDERWATER LOCATOR	--	1	AFT PASSENGER CABIN CEILING	23-71-03
CIRCUIT BREAKER	--	1	FLT COMPT, P11	*
VOICE RECORDER, C532	--	1	11H33	
PANEL - (REF 23-51-00, FIG. 101)				
CAPT AUDIO SELECTOR, M70				
F/O AUDIO SELECTOR, M71				
1ST OBS AUDIO SELECTOR, M98				
PANEL - VOICE RECORDER CONTROL, M50	--	1	FLT COMPT, P5	23-71-02
RECORDER - VOICE, M201	--	1	AFT PASS CABIN CEILING	23-71-01
RELAY - (REF 31-01-36, FIG. 101)				
AIR/GND, K135				
PARKING BRAKE, K419				

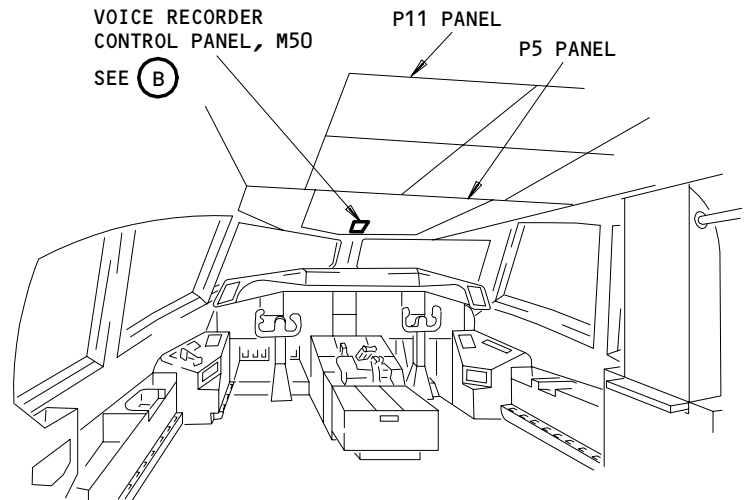
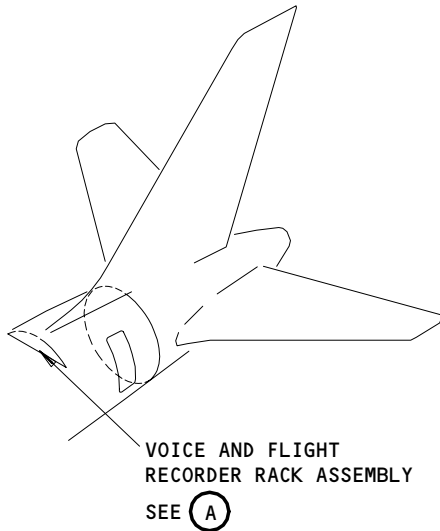
* SEE THE WDM EQUIPMENT LIST

Voice Recorder System - Component Index
Figure 101

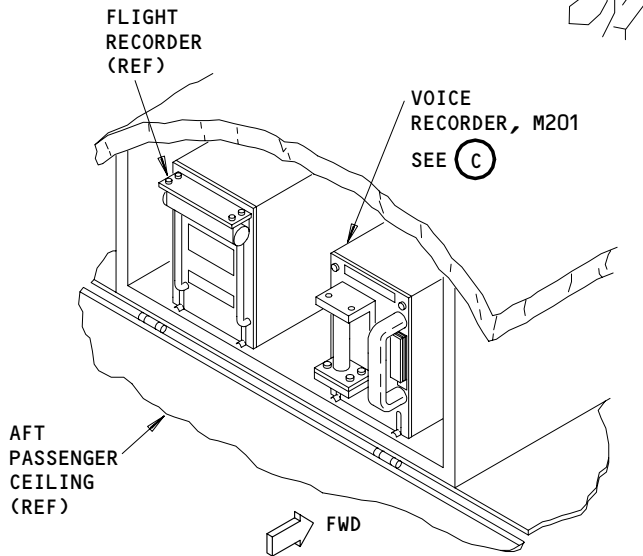
EFFECTIVITY
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02

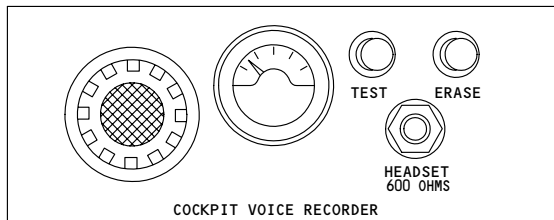


FLIGHT COMPARTMENT



VOICE AND FLIGHT RECORDER RACK ASSEMBLY

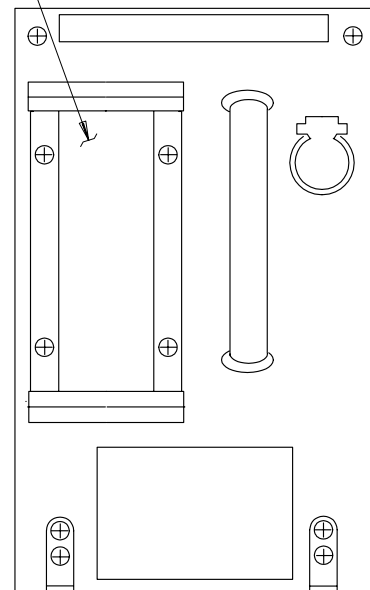
(A)



VOICE RECORDER CONTROL PANEL, M50

(B)

UNDERWATER LOCATOR BEACON



VOICE RECORDER, M201

(C)

Voice Recorder System - Component Location
Figure 102

EFFECTIVITY
GUI 009,115

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CONFIG 1

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02


BOEING
 757
 FAULT ISOLATION/MAINT MANUAL
VOICE RECORDER SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
BEACON - UNDERWATER LOCATOR	--	1	AFT PASSENGER CABIN CEILING	23-71-03
CIRCUIT BREAKER	--	1	FLT COMPT, P11	*
VOICE RECORDER, C532	--	1	11H33	
PANEL - (REF 23-51-00, FIG. 101)				
CAPT AUDIO SELECTOR, M70				
F/O AUDIO SELECTOR, M71				
1ST OBS AUDIO SELECTOR, M98				
PANEL - VOICE RECORDER CONTROL, M50	--	1	FLT COMPT, P5	23-71-02
RECORDER - VOICE, M201	--	1	AFT PASS CABIN CEILING	23-71-01
RELAY - (REF 31-01-36, FIG. 101)				
AIR/GND, K135				
PARKING BRAKE, K419				

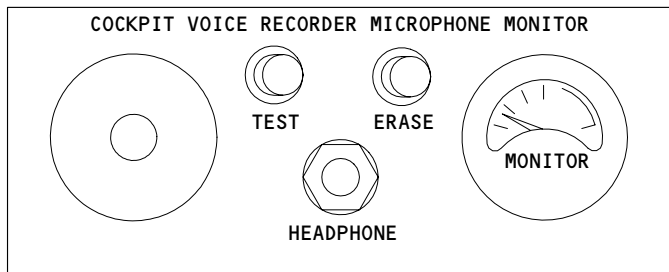
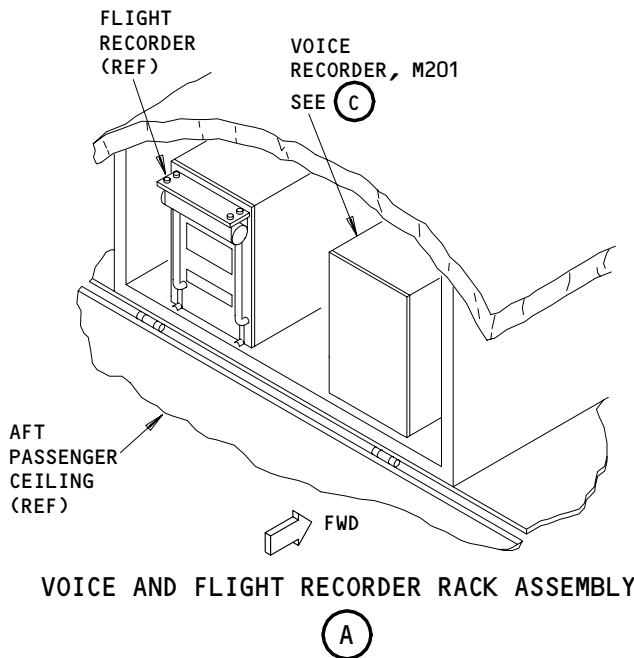
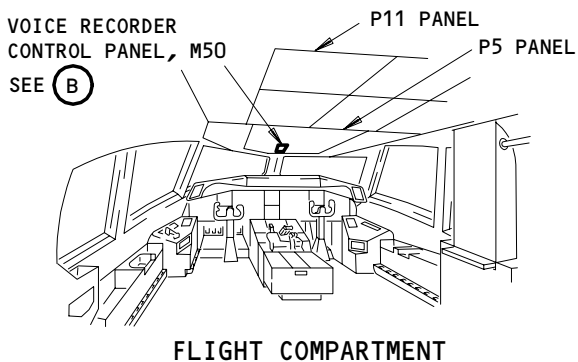
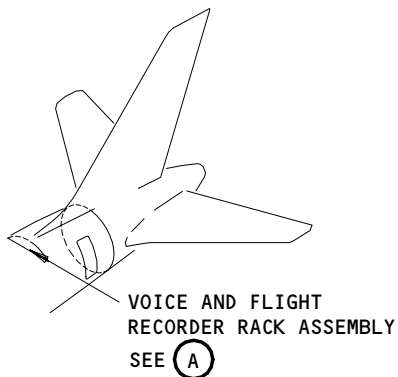
* SEE THE WDM EQUIPMENT LIST

Voice Recorder System - Component Index
Figure 101

EFFECTIVITY
GUI 001-008,010-013

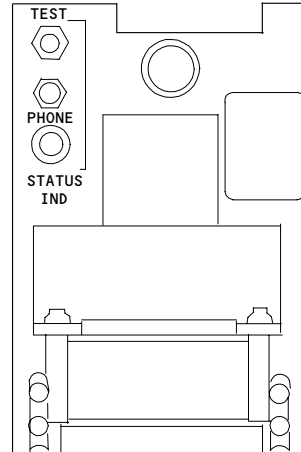
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VOICE RECORDER CONTROL PANEL, M50

(B)



VOICE RECORDER, M201

(C)

Voice Recorder System - Component Location
Figure 102

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GUI 001-008,010-013

B72720

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02

VOICE RECORDER SYSTEM – ADJUSTMENT/TEST

1. General

- A. This procedure contains four tasks. The four tasks are as follows:
- (1) Operational Test
 - (2) Voice Recorder Front Panel Operational Test
 - (3) System Test
 - (4) Bulk Erasure Test

TASK 23-71-00-715-001

2. Operational Test – Voice Recorder Control Panel

A. General

- (1) This adjustment/test procedure is an operational test of the voice recorder control panel.

B. References

- (1) 24-22-00/201, Electrical Power – Control

C. Access

- (1) Location Zones
211/212 Flight Compartment

D. Prepare for Test

S 865-067

- (1) Supply electrical power (AMM 24-22-00).

S 865-068

- (2) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
 - (a) 11H33, VOICE RECORDER

E. Voice Recorder Control Panel Test

S 865-059

- (1) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).

S 715-062

- (2) LORAL/FAIRCHILD VOICE RECORDER CONTROL PANEL WITH MONITOR METER; Do the steps that follow for the voice recorder control panel operational test.
 - (a) Push and hold the TEST switch on the voice-recorder control panel for five seconds.
 - (b) Make sure that you hear a modulated sound in the headphone while the TEST switch is pushed.
 - (c) Make sure that the meter needle on the voice-recorder control panel reads in the green area.

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- S 715-063
- (3) AIRPLANES WITH ALLIED SIGNAL/SUNDSTRAND VOICE RECORDER;
Do the steps that follow for the voice recorder control panel operational test.
- (a) Push and hold the TEST switch on the voice-recorder control panel.
 - (b) Make sure that the monitor meter reads a minimum of 3/4 scale two times after approximately one second.
 - (c) Make sure that you hear two modulated sounds in the headphone.
- S 865-008
- (4) Disconnect the headphone from the voice-recorder control panel.
- S 865-120
- (5) Remove electrical power if it is not necessary (AMM 24-22-00).

TASK 23-71-00-735-003

3. System Test - Voice Recorder System

A. General

- (1) This system test procedure is a four channel test of the system with flight crew microphones.

B. References

- (1) 23-51-00/501, Flight Interphone
- (2) 24-22-00/201, Electrical Power - Control

C. Access

- (1) Location Zones
211/212 Flight Compartment

D. Prepare for Test

- S 865-004
- (1) Supply electrical power (AMM 24-22-00).
- S 715-000
- (2) Make sure that the Flight Interphone system operates correctly (AMM 23-51-00/501).
- S 865-005
- (3) Make sure that this circuit breaker on the main power distribution panel P6 is closed:
- (a) 6F4, LANDING GEAR PARKING BRAKE VLV

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S 865-007

- (4) Make sure that these circuit breakers on the overhead circuit breaker panel, P11, are closed:
 - (a) 11H33, VOICE RECORDER
 - (b) 11S15, AIR/GND SYS 1

E. Four Channel Microphone Test

S 865-009

- (1) Connect the 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel M50 (P5).

S 865-010

- (2) Connect the boom microphone to the captain's jack panel (P13) (AMM 23-51-00).

S 865-122

- (3) Set the BOOM/OXY switch on the captain's audio-selector panel (P8) to the BOOM position.

S 865-123

- (4) Put a cover on the area microphone at the voice-recorder control panel.

S 865-134

- (5) Speak into the boom microphone.
 - (a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak. When you test the analog or tape based voice recorder you will hear your voice in the headset after approximately a 0.5 second delay.

S 865-124

- (6) Disconnect the boom microphone from the captain's jack panel (P13).

S 865-136

- (7) Connect the boom microphone into the first-officer's jack panel (P14).

S 865-125

- (8) Set the BOOM/OXY switch on the first-officer's audio-selector panel (P8) to the BOOM position.

S 865-126

- (9) Put a cover on the area microphone at the voice-recorder control panel.

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S 865-137

- (10) Speak into the boom microphone.
(a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak. When you test the analog or tape based voice recorder you will hear your voice in the headset after approximately a 0.5 second delay.

S 865-024

- (11) Disconnect the boom microphone from first-officer's jack panel.

S 865-025

- (12) Connect a microphone to the observer's jack panel.

S 865-027

- (13) Put a cover on the area microphone at the control panel.

S 865-016

- (14) Push the observer's PTT switch to speak into the microphone.
(a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak. When you test the analog or tape based voice recorder you will hear your voice in the headset after approximately a 0.5 second delay.

S 865-034

- (15) Disconnect the microphone from the captain, the first officer and the first-observer (or the supernumerary) jack panels.

S 865-082

- (16) Remove the cover from the area microphone on the voice recorder control panel.

S 865-035

- (17) Move approximately three feet away from the area microphone on the voice recorder control panel.

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S 705-036

- (18) Speak in a usual voice.
(a) Make sure that you hear your voice through the headphone at the control panel.

NOTE: When you test the digital or solid state voice recorder you will hear your voice in the headset as you speak. When you test the analog or tape based voice recorder you will hear your voice in the headset after approximately a 0.5 second delay.

S 865-038

- (19) Put the boom microphones and the audio selector panels back in the usual condition.

S 865-040

- (20) Disconnect the headset from the voice-recorder control panel.

S 865-041

- (21) Remove electrical power if it is not necessary (AMM 24-22-00).

TASK 23-71-00-755-069

4. Bulk Erasure Test - Voice Recorder System

A. References

- (1) 10-11-01/201, Normal Parking
(2) 24-22-00/201, Electrical Power - Control
(3) 32-09-02/201, Air/Ground Relays

B. Access

- (1) Location Zones
211/212 Flight Compartment

C. Prepare for Test

S 865-070

- (1) Supply electrical power (AMM 24-22-00).

S 865-071

- (2) Make sure that the circuit breakers on the main power distribution panel P6, and the overhead circuit breaker panel P11 are closed:
(a) 6F4, LANDING GEAR PARKING BRAKE VLV
(b) 11S15, AIR/GND SYS 1

D. Erasure Tests

S 865-043

- (1) Make sure that the parking brake is set (AMM 10-11-01).

S 865-042

- (2) Supply electrical power (AMM 24-22-00).

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S 865-047

- (3) Connect a 600 ohm headphone to the HEADSET or HEADPHONE jack on the voice recorder control panel (P5).

S 865-172

- (4) Push and hold the ERASE switch for approximately one second and then release.
(a) Make sure you hear a modulated sound in the headphone.

S 865-044

- (5) Open this circuit breaker on the main power distribution panel P6 and attach DO-NOT-CLOSE tag:
(a) 6F4, LANDING GEAR PARKING BRAKE VLV

S 865-046

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS. THE SPOILERS CAN RETRACT QUICKLY AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (6) Do the deactivation procedure for the spoilers (AMM 27-61-00) or move all persons and equipment away from the spoilers.

S 865-077

WARNING: MAKE SURE YOU DO THE FLIGHT MODE SIMULATION CORRECTLY. IF THE PROCEDURE IS NOT DONE CORRECTLY, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (7) Do the Flight Mode Simulation procedure for the No. 1 air/ground system (AMM 32-09-02).

S 865-048

- (8) Push the ERASE button on the voice-recorder control panel.
(a) Make sure that you do not hear a modulated sound in the headphone.

S 865-050

- (9) Remove DO-NOT-CLOSE tag and close this circuit breaker on the P6 panel:
(a) 6F4, LANDING GEAR PARKING BRAKE VLV

S 865-051

- (10) Push the ERASE button on the control panel.
(a) Make sure that you do not hear a modulated sound in the headphone.

S 865-053

- (11) Put the airplane back to the ground mode (AMM 32-09-02).

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S 865-054

- (12) Do the activation procedure for the spoilers if you did the deactivation procedure (AMM 27-61-00).

S 865-146

CAUTION: DO NOT OPERATE BULK ERASE TEST FOR FIVE MINUTES ON TAPE BASED UNIT. PERMIT EQUIPMENT TO COOL.

- (13) AIRPLANES WITH LORAL/FAIRCHILD TAPE BASED VOICE RECORDER;
Push and hold the ERASE switch on the voice recorder control panel for 3 seconds.
(a) Make sure that you hear a modulated sound in the headphone for approximately 5 to 10 seconds.

S 865-147

CAUTION: DO NOT OPERATE BULK ERASE TEST FOR FIVE MINUTES ON TAPE BASED UNIT. PERMIT EQUIPMENT TO COOL.

- (14) AIRPLANES WITH ALLIED SIGNAL/SUNDSTRAND TAPE BASED VOICE RECORDER;
push and hold the ERASE switch on the voice-recorder control panel for 17 seconds.
(a) Make sure that you hear a modulated sound in the headset while the ERASE switch is pushed to show unit bulk erases.

S 865-133

- (15) Disconnect the headset from the voice-recorder control panel.

S 865-074

- (16) Remove electrical power if it is not necessary (AMM 24-22-00).

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23-71-00

VOICE RECORDER – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is to remove the voice recorder. The second task is to install the voice recorder.

TASK 23-71-01-004-001

2. Remove the Voice Recorder Unit

A. General

- (1) The M201 voice recorder is in the E7 equipment rack in the aft passenger cabin ceiling, forward of the aft galley. Electrical connections are made through a single connector at the rear of the unit.

B. References

- (1) 20-10-01/401, E/E Rack Mounted Components
(2) 25-22-02/401, Lowered Ceiling Panels

C. Access

- (1) Location Zone
253/254 Area above passenger cabin ceiling – section 46

D. Procedure

S 864-013

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
(a) 11H33, VOICE RECORDER

S 014-014

- (2) Do this task: "Remove the Lowered Ceiling Panels", (AMM 25-22-02/401), to get access to the voice recorder above the No. 1 aft ceiling panel.

S 024-015

- (3) Remove the voice recorder unit (AMM 20-10-01).

S 024-021

- (4) Remove the Underwater Locator Beacon (ULB) and install it on the new voice recorder if it does not come with a ULB already installed.

TASK 23-71-01-404-002

3. Install Voice Recorder Unit

A. References

- (1) 20-10-01/401, E/E Rack Mounted Components

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- (2) 25-22-02/401, Lowered Ceiling Panels
- B. Access
 - (1) Location Zones
 - 253/254 Area above passenger cabin ceiling - section 46
- C. Procedure
 - S 424-022
 - (1) Install the ULB if the new voice recorder does not have a ULB installed.

NOTE: An underwater locator beacon (ULB) must be installed on the voice recorder when the voice recorder is installed on the airplane.
 - S 424-018
 - (2) Install the voice recorder unit (AMM 20-10-01).
 - S 414-019
 - (3) Do this task: "Install the Lowered Ceiling Panels", (AMM 25-22-02/401), to install the No. 1 aft ceiling panel.
 - S 864-020
 - (4) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
 - (a) 11H33, VOICE RECORDER
- D. Voice recorder installation test.
 - S 864-003
 - (1) Supply electrical power (AMM 24-22-00).
 - S 864-031
 - (2) Connect the 600 ohm headset at the voice-recorder control panel or at the voice recorder front panel.
 - S 704-006
 - (3) Push and hold the TEST switch on the voice-recorder control panel (P5).

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- S 204-023
- (4) AIRPLANES WITH A LORAL/FAIRCHILD TAPE BASED VOICE RECORDER;
Make sure that you hear a series of modulated sound in the headset,
and at the same time the meter needle reads in the green area.
- S 204-026
- (5) AIRPLANES WITH ALLIED SIGNAL/SUNDSTRAND TAPE BASED VOICE RECORDER;
Make sure this occurs:
- (a) You hear four consecutive modulated sounds through the
headphone.
 - (b) The MONITOR meter needle moves two times (at a minimum of 3/4
scale) on the control panel during the last two sounds; or
 - (c) The green STATUS IND light on the voice recorder front panel
comes on two times.
- S 864-010
- (6) Release the TEST switch.
- S 864-032
- (7) Disconnect the headset at the voice recorder control panel or at the
voice recorder front panel.
- S 864-012
- (8) Remove electrical power if it is not necessary (AMM 24-22-00).

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VOICE RECORDER CONTROL PANEL – REMOVAL/INSTALLATION

1. General

- A. The voice-recorder control panel M50 is on the pilots' overhead panel P5.

TASK 23-71-02-004-001

2. Remove Voice Recorder Control Panel

A. Access

- (1) Location Zone
211/212 Control Cabin

B. Procedure

S 864-012

- (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tag:
(a) 11H33, VOICE RECORDER

S 024-013

- (2) Remove the voice-recorder control panel.

TASK 23-71-02-424-002

3. Install Voice Recorder Control Panel

A. References

- (1) 24-22-00/201, Electrical Power – Control

B. Access

- (1) Location Zone
211/212 Control Cabin

C. Procedure

S 424-014

- (1) Install the voice-recorder control panel.

S 864-015

- (2) Remove DO-NOT-CLOSE tag and close this circuit breaker on the overhead circuit breaker panel, P11:
(a) 11H33, VOICE RECORDER

D. Voice Recorder Control Panel Installation Test:

S 864-003

- (1) Supply electrical power (AMM 24-22-00).

S 864-004

- (2) Connect the 600 ohm headset to the HEADSET or HEADPHONE jack on the voice recorder control panel (P5).

S 704-005

- (3) Push and hold the TEST switch on the voice-recorder control panel.

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- S 204-037
- (4) CONTROL PANEL WITH MONITOR METER (LORAL/FAIRCHILD CVR);
Look at the monitor meter on the voice-recorder control panel for five seconds. Make sure that the needle moves into the green band.
- (a) AIRPLANES WITH A TAPE BASED VOICE RECORDER;
Make sure that you hear a modulated sound in the headset.
- S 204-029
- (5) CONTROL PANEL WITH "MONITOR" METER (ALLIED SIGNAL/SUNDSTRAND CVR);
Make sure this occurs:
- (a) The meter needle reads a minimum of 3/4 scale 2 times for approximately 1 second.
- (b) You hear two modulated sounds in the headphone.
- S 864-008
- (6) Release the TEST switch.
- S 864-009
- (7) Remove the headset from the control panel.
- S 864-010
- (8) Remove electrical power if it is not necessary (AMM 24-22-00).

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UNDERWATER LOCATOR BEACON – MAINTENANCE PRACTICES

1. General

- A. This procedure has these tasks.
 - (1) A removal of the underwater locator beacon (ULB).
 - (2) A replacement of the ULB battery.
 - (3) An operational test of the ULB.
 - (4) An installation of the ULB.
- B. The underwater locator beacon (ULB) is attached to the front of the voice recorder.
- C. The voice recorder is installed on the E7 rack in the aft overhead passenger compartment.

TASK 23-71-03-002-013

2. Underwater Locator Beacon Removal (Fig. 201)

- A. General
 - (1) The ULB has a battery as the power source. The ULB has no external electrical connections.
- B. References
 - (1) AMM 23-71-01/401, Voice Recorder
 - (2) AMM 25-22-02/401, Lowered Ceiling Panels
- C. Access
 - (1) Location Zones
 - 253 Area Above Passenger Compartment Ceiling, Left – Section 46
 - 253 Area Above Passenger Compartment Ceiling, Right – Section 46
- D. Removal Procedure
 - S 012-014
 - (1) Open the ceiling panel (AMM 25-22-02/401) in the aft passenger compartment to get access to the voice recorder.
 - S 022-058
 - (2) Do this task: Voice Recorder Unit Removal (AMM 23-71-01/401).
 - S 022-055
 - (3) LORAL/FAIRCHILD VOICE RECORDER;
Remove the underwater locator beacon from the voice recorder:
 - (a) Remove the four screws from the coverplate on the ULB cradle.
 - (b) Remove the coverplate.
 - (c) Pull the ULB from the ULB cradle.

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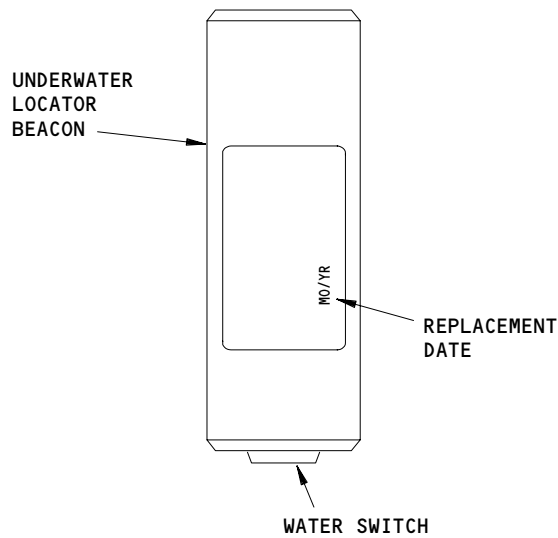
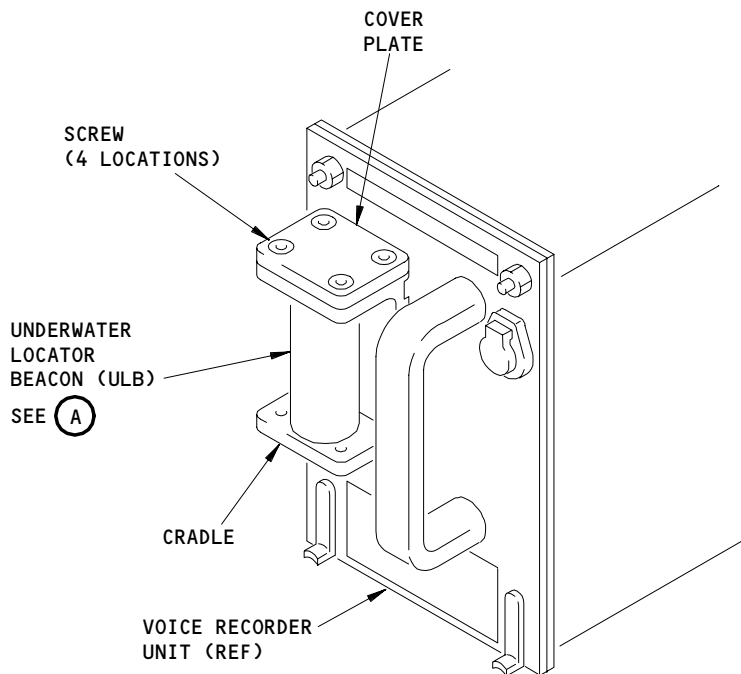
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UNDERWATER LOCATOR BEACON

(A)

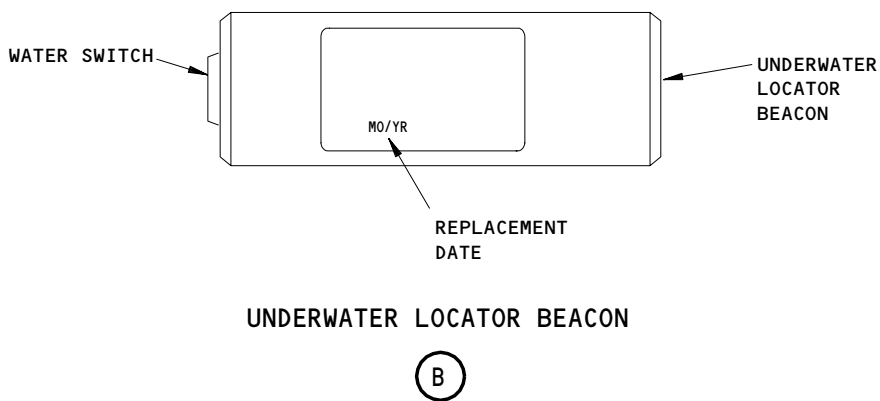
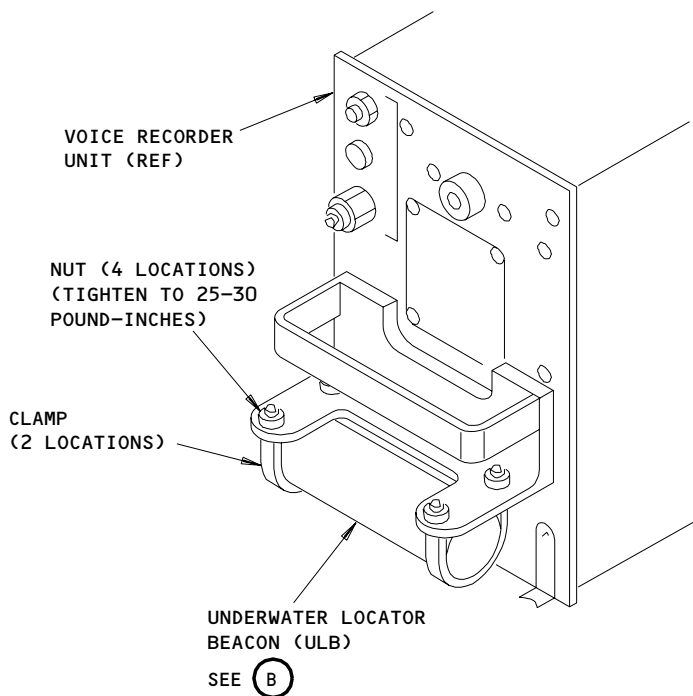
Underwater Locator Beacon Installation
Figure 201 (Sheet 1)

EFFECTIVITY
LORAL/FAIRCHILD VOICE RECORDER
MODEL: A100A TAPE BASED

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Underwater Locator Beacon Installation
Figure 201 (Sheet 2)

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ALLIED SIGNAL/SUNDSTRAND VOICE RECORDER
MODEL: TAPE BASED

23-71-03

(d) Keep the coverplate and screws.

S 022-026

- (4) ALLIED SIGNAL/SUNDSTRAND TAPE BASED VOICE RECORDER;
Remove the underwater locator beacon from the voice recorder:
- (a) Loosen the four nuts that hold the ULB.
 - (b) Remove the two nuts and the clamp from one end of the ULB.
 - (c) Remove the ULB.
 - (d) Keep the two nuts and the clamp.

TASK 23-71-03-962-003

3. VOICE RECORDERS WITH DUKANE ULBs;

Underwater Locator Beacon Battery Replacement (Fig. 202)

A. General

- (1) Do not replace the battery in the DK100 underwater locator beacon (ULB). On or before the expired date, send the DK100 to the manufacturer for servicing.

B. Equipment

- (1) 810-325 Spanner Wrench
Dukane Corporation
2900 Dukane Drive
St. Charles, IL 60174
- (2) Split Radiator Hose
1-1/4-inch diameter, 5 inches in length

C. Consumable Materials

- (1) D00318 Lubricant, Dukane 810-346
- (2) G02440 Battery, Dukane 810-2007K
- (3) G00751 O-ring, Dukane 810-342
- (4) G01523 Lubricated O-ring, Datasonics 2-022

D. Removal Procedure

S 512-053

WARNING: DO NOT REMOVE THE BATTERY FROM THE DK100 ULB. DO NOT CAUSE DAMAGE TO THE DK100 ULB. DO NOT DISCARD THE DK100 ULB. THE MANUFACTURER HAS A REPLACEMENT PROGRAM FOR EXPIRED ULBs. ON OR BEFORE THE EXPIRED DATE, SEND THE DK100 ULB TO THE MANUFACTURER FOR SERVICING. THE BATTERY CONTAINS DANGEROUS CHEMICAL MATERIALS WHICH CAN CAUSE INJURIES TO PERSONNEL.

- (1) If you have a DK100 ULB, send the ULB to the manufacturer for servicing.

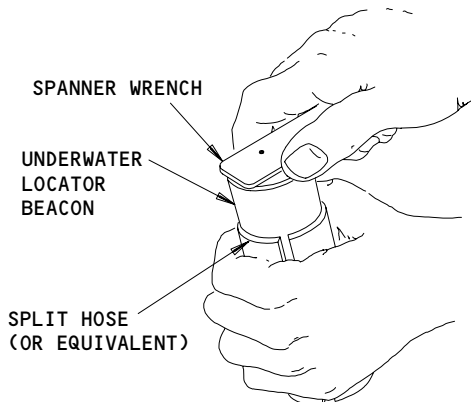
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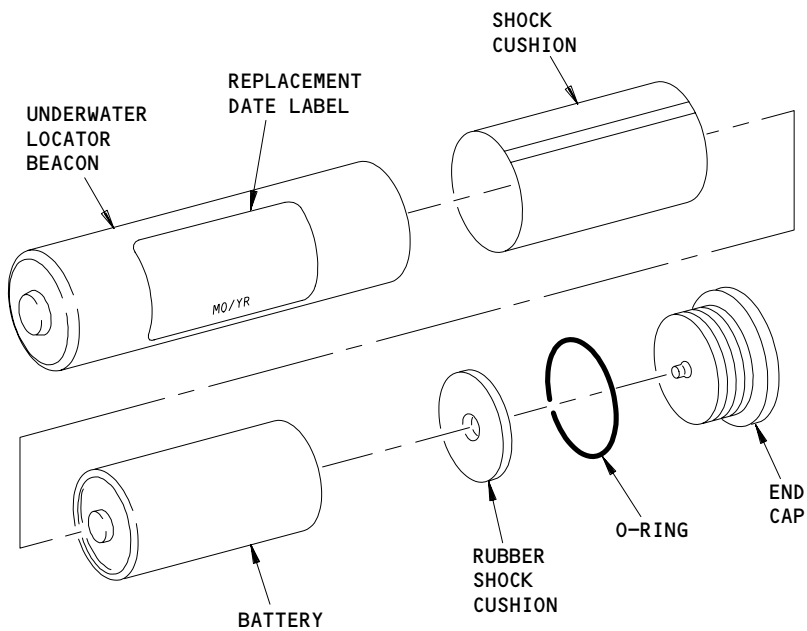
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ULB DISASSEMBLY (BATTERY ACCESS)



BATTERY INSTALLATION

Underwater Locator Beacon Battery Replacement
Figure 202

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S 022-019

- (2) If you do not have a DK100 ULB, remove the ULB battery:

CAUTION: DO NOT HOLD THE UNDERWATER LOCATOR BEACON WITH A VISE.
THIS CAN CAUSE DAMAGE TO THE UNDERWATER LOCATOR BEACON.

- (a) Hold the ULB body with a split radiator hose.
- (b) Use a spanner wrench to remove the end cap that is identified BATTERY ACCESS.
- (c) Remove the rubber shock cushion from the battery end if it is not removed with the cap.
- (d) Hit the ULB body lightly to remove the battery.

E. Installation Procedure

S 422-005

- (1) Install the ULB battery.

NOTE: The Dukane 810-2007K battery is a 6 year lithium battery used in the Dukane model DK120 ULB.

- (a) Put a new battery replacement date label on the ULB body.
- (b) On the date label, write the next scheduled replacement date for the new ULB battery that you installed.

NOTE: The date label is blank so you can write in a replacement date based on your maintenance schedule.

- (c) Make sure that the shock cushion is in the ULB body.

CAUTION: INSTALL THE ULB BATTERY CORRECTLY. INCORRECT POLARITY WILL CAUSE PERMANENT DAMAGE TO THE ULB.

- (d) Put the new battery in the ULB with the end identified INSERT THIS END first.
- (e) Remove and discard the used O-ring from the end cap.

CAUTION: DIRT OR OTHER UNWANTED MATERIALS CAN CAUSE DAMAGE TO THE THREADS AND THE O-RING SEAL. THIS CAN PERMIT WATER LEAKAGE.

- (f) Clean the threads and the O-ring groove in the ULB body.
- (g) Apply a thin layer of lubricant to the O-ring, O-ring groove, and threads.
- (h) Install a new O-ring on the end cap.

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- (i) Put the rubber shock cushion smoothly on the end cap.
- (j) Put the end cap into the body.
- (k) Tighten the end cap until the cap flange touches the ULB body.

NOTE: Only use hand force on the spanner wrench.

S 712-070

- (2) Do this task: Underwater Locator Beacon - Test.
 - (a) AIRPLANES WITH DUKANE DK100 ULB CONFIGURATION;
To do a test of the ULB use the TS100 Test Set.

TASK 23-71-03-962-050

4. VOICE RECORDERS WITH DATASONICS ULBs;

Underwater Locator Beacon Battery Replacement (Fig. 202)

A. General

- (1) Do not replace the battery in a series S underwater locator beacon (ULB). If the serial number on the ULB starts with an S, on or before the expired date, send the ULB to the manufacturer for servicing.

B. Equipment

- (1) Spanner Wrench
- (2) Split Radiator Hose
1-1/4-inch diameter, 5 inches in length

C. Consumable Materials

- (1) G01524 Battery, Datasonics B362-04270
- (2) G01523 Lubricated O-ring, Datasonics 2-022

D. Removal Procedure

S 512-054

WARNING: DO NOT REMOVE THE BATTERY FROM A SERIES S ULB. DO NOT DISCARD THE ULB. THE MANUFACTURER HAS A REPLACEMENT PROGRAM FOR EXPIRED ULBs. ON OR BEFORE THE EXPIRED DATE, SEND THE ULB TO THE MANUFACTURER FOR SERVICING. THE BATTERY CONTAINS DANGEROUS CHEMICAL MATERIALS WHICH CAN CAUSE INJURIES TO PERSONNEL.

- (1) If you have a series S ULB, send the ULB to the manufacturer for servicing.

S 022-052

- (2) If you don't have a series S ULB, remove the ULB battery:

CAUTION: DO NOT HOLD THE UNDERWATER LOCATOR BEACON WITH A VISE. THIS CAN CAUSE DAMAGE TO THE UNDERWATER LOCATOR BEACON.

- (a) Hold the ULB body with a split radiator hose.
- (b) Use a spanner wrench to remove the end cap that is identified BATTERY ACCESS.
- (c) Remove the rubber shock cushion from the battery end if it is not removed with the cap.

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- (d) Hit the ULB body lightly to remove the battery.
- (e) Discard the battery.

NOTE: Refer to local instructions when you discard the battery.

E. Installation Procedure

S 422-052

- (1) Install the ULB battery:

NOTE: The Datasonics B362-04270 battery is a six year battery.

- (a) Put a new battery replacement label on the ULB body.
- (b) On the date label, write the next scheduled replacement date for the new ULB battery that you installed.

NOTE: The date label is blank so you can write in a replacement date based on your maintenance schedule.

- (c) Make sure that the shock cushion is in the ULB body.

CAUTION: INSTALL THE ULB BATTERY CORRECTLY. INCORRECT POLARITY WILL CAUSE PERMANENT DAMAGE TO THE ULB.

- (d) Put the new battery in the ULB with the end identified by INSERT THIS END in first.
- (e) Remove and discard the used O-ring from the end cap.

CAUTION: DIRT OR OTHER UNWANTED MATERIAL CAN CAUSE DAMAGE TO THE THREADS AND THE O-RING SEAL. THIS CAN PERMIT WATER LEAKAGE

- (f) Clean the threads and the O-ring groove in the ULB body.
- (g) Install a new lubricated O-ring on the end cap.
- (h) Put the rubber shock cushion smoothly on the end cap.
- (i) Put the end cap into the body.
- (j) Tighten the end cap until the cap flange touches the ULB body.

NOTE: Only use hand force on the spanner wrench.

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S 712-071

- (2) Do this task: Underwater Locator Beacon - Test.
 - (a) AIRPLANES WITH DATASONICS SERIES S ULB CONFIGURATION;
To do a test of the ULB use the TS100 Test Set.

TASK 23-71-03-702-034

5. Underwater Locator Beacon - Operational Test

A. Equipment

- (1) 42A12 Series Ultrasonic Test Set (alternative)
Dukane Corporation
2900 Dukane Drive
St. Charles, IL 60174
- (2) PL1 Ultrasonic Test Set (alternative)
Dukane Corporation
2900 Dukane Drive
St. Charles, IL 60174
- (3) PL3 Ultrasonic Test Set (alternative)
Dukane Corporation
2900 Dukane Drive
St. Charles, IL 60174
- (4) ATS-260 Acoustic Test Set (alternative)
Datasonics INC.
1400 Route 28A
Cataumet, MA 02534
- (5) TS200 Ultrasonic Test Set (alternative)
Dukane Corporation
2900 Dukane Drive
St. Charles, IL 60174
- (6) TS100 Ultrasonic Test Set (alternative)
Dukane Corporation
2900 Dukane Drive
St. Charles, IL 60174

B. Procedure

S 712-035

- (1) If you have a 42A12 Series test set, do this test of the ULB:

NOTE: 42A12 can do a test for all Dukane and Teledyne Benthos ULBs.

- (a) Put the ultrasonic test set approximately 3 feet from the ULB.
- (b) Set the ON-OFF-GAIN control on the test set to the middle position.
 - 1) Make sure that you hear sounds through the earphone on the test set.
- (c) Set the TUNING CONTROL to 37.5 ± 1 kHz.
- (d) Set the INPUT SELECTOR switch to the INT position.

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- (e) Make sure that the test set operates correctly.
 - 1) Rub your thumb and fingers together in front of the microphone to make sure that it operates.

NOTE: This will produce a rushing noise from the speaker.

- a) Make sure that you hear sounds through the test set earphone.
- (f) Use tape to attach a piece of wire or other conductive material to the ULB case and the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB.

- 1) Make sure you hear a pulsed tone at 1-second intervals.
- (g) Remove the piece of wire or other conductive material from the ULB case and the center of the water switch.
 - 1) Make sure that you do not hear a pulsed tone.
- (h) Set the ON-OFF-GAIN control switch to the OFF position.
- (i) Make sure that the water switch on the ULB has no grease or dirt.
 - 1) If necessary, clean the switch with water and detergent.
 - 2) Dry the switch with a clean cloth.

S 712-036

- (2) If you have a PL1 test set, do this test of the ULB:

NOTE: PL1 can only do a test for the DK100 ULB.

- (a) Use tape to attach a piece of wire or other conductive material to the ULB case and the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB.

- (b) Put the end of the test set against the ULB, approximately one inch from the water switch.
- (c) Push and hold the operation switch on the test set.
 - 1) Make sure the BEACON ACTIVE WHEN FLASHING light flashes.
 - 2) Remove the piece of wire or other conductive material from the ULB case and center of the water switch.
 - 3) Make sure that the BEACON ACTIVE WHEN FLASHING light does not come on and off.
- (d) Release the operation switch on the test set.
- (e) Remove the test set.
- (f) Make sure that the water switch on the ULB has no grease or dirt.
 - 1) If necessary, clean the switch with water and detergent.

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2) Dry the switch with a clean cloth.

S 712-061

(3) If you have a PL3 test set, do this test:

NOTE: PL3 can only do a test for the DK100 and DK120 ULBs.

- (a) Push and hold the test set against the ULB water switch.
 - 1) Make sure that you hear a pulse sound.
 - 2) Make sure that you see the LED light comes on and off.
- (b) Remove the test set from the ULB.
- (c) Make sure that the water switch on the ULB has no grease or dirt.
 - 1) If necessary, clean the switch with water and detergent.
 - 2) Dry the switch with a clean cloth.

S 712-053

(4) If you have an ATS-260 test set, do this test of ULB:

NOTE: ATS-260 can only do a test for the ELP-362D ULB.

- (a) Put the test set clip on the ULB.
- (b) Push and hold the PUSH TO TEST button.
- (c) Put the test set probe on the ULB water switch.
 - 1) Make sure that a green LED shows.
 - 2) Make sure that you can hear sounds from the test set.
 - 3) Make sure that the amber LED comes on and off.
- (d) Release the PUSH TO TEST button.
- (e) Remove the test set.

S 712-083

(5) If you have a TS200 test set, do this test of ULB:

NOTE: TS200 can do a test for all Dukane ULBs.

- (a) Attach the test probe clip to the beacon case.
- (b) Place the tip of the probe in contact with the silver pad at the end of the beacon.
- (c) Examine the battery replacement label to find the battery code.

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- (d) Refer to the applicable battery code for the permitted range of the beacon battery voltage:
 - 1) Code A - 3.55 Volts
 - 2) Code B - 2.97 Volts
 - 3) Code C - 2.97 Volts
 - 4) Code D - 2.97 Volts
- (e) Press the red button on the TS200.
 - 1) Make sure that you can hear the pinging sound from the test set.

NOTE: High levels of background noise can interfere with this test.

- (f) Remove the test probe clip from the beacon case.

S 712-084

- (6) If you have a TS100 test set, do this test of the ULB:

NOTE: TS100 can only do a test for the DK100 and DK120 ULBs.

- (a) Connect the probe head of the tester to the ULB in its mount.
- (b) Slide the switch on the side of the tester housing to ON.
 - 1) Make sure the LCD display shows TESTING.
- (c) Press the button in the center of the tester to start a retest.
 - 1) Make sure the LCD display shows TESTING.
- (d) Within a few seconds, the LCD will change to show one of these Pass/Fault messages:

LCD MESSAGE	EXPLANATION
Beacon Passed	Beacon is operating properly
Battery Fault	Beacon is NOT operating properly
No Pulse Output	Beacon is NOT operating properly
Pulse Fault	Beacon is NOT operating properly
Free-Run Fault	Beacon is NOT operating properly
Test Set Fault	Test Set batteries must be replaced
Need Service	Beacon is NOT operating properly
Open Probe/Batt.	Probe head is not properly attached or the beacon battery is dead.

- 1) Make sure that the LCD shows Beacon Passed.

NOTE: The pass/fault message will show for approximately 10 seconds before returning to Ready For Test.

- (e) Remove the tester.
- (f) Make sure that the water switch end of the ULB has no grease or dirt.

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TASK 23-71-03-402-019

6. Underwater Locator Beacon Installation (Fig. 201)

A. References

- (1) AMM 23-71-01/401, Voice Recorder

B. Consumable Materials

- (1) B00541 Detergent, General Purpose

C. Access

- (1) Location Zones

253 Area Above Passenger Compartment Ceiling, Left - Section 46

253 Area Above Passenger Compartment Ceiling, Right - Section 46

D. Installation Procedure

S 422-058

- (1) LORAL/FAIRCHILD VOICE RECORDER;

Install the underwater locator beacon on the voice recorder:

- (a) Make sure that the water switch on the ULB has no grease or dirt.
1) Clean the water switch with a weak detergent.
(b) Turn the ULB until the water switch points down.
(c) Install the ULB with the water switch end down.
(d) Put the ULB into the cradle on the voice recorder.
(e) Make sure that you can read the replacement date on the ULB.
(f) Tighten the coverplate with the four screws.
(g) Tighten the screws until the coverplate touches the frame of the cradle in the area of the screws.

S 422-042

- (2) ALLIED SIGNAL/SUNDSTRAND TAPE BASED VOICE RECORDER;

Install the underwater locator beacon on the voice recorder:

- (a) Make sure that the water switch on the ULB has no grease or dirt.
1) Clean the water switch with a weak detergent.
(b) Put the ULB into its bracket.
(c) Install the clamp on the end of the ULB with the two nuts.
(d) Make sure you can read the replacement date on the ULB.
(e) Tighten the four nuts.

S 422-059

- (3) Do this task: Voice Recorder Unit Installation (AMM 23-71-01/401).

S 412-038

- (4) Close the ceiling panel (AMM 25-22-02/401) in the aft passenger compartment.

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