STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-R02
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	MAIN EE CTR				003	APR 22/03

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	ATC TRANSPONDER		ALL	ALL

ZONES	ACCESS PANELS
119	119AL

MECH | INSP

MPD ITEM NUMBER

REPLACE THE ATC TRANSPONDER. 34-53-01-4A

THIS CARD IS NOT A SCHEDULED MAINTENANCE TASK. IT IS A COMPONENT CHANGE CARD AND IT IS PROVIDED FOR OPERATOR CONVENIENCE DURING UNSCHEDULED MAINTENANCE ACTIVITIES. SEE APPENDIX A OF THE 767 MAINTENANCE PLANNING DATA (MPD) DOCUMENT,D622T001, FOR A DESCRIPTION OF THE COMPONENT CHANGE CARDS.

AIR TRAFFIC CONTROL (ATC) TRANSPONDER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks. One is for the ATC transponder removal, the other is for the ATC transponder installation.

B. The left M112, and right, M113, ATC transponders are found on the E2 rack in the main equipment center.

2. Remove the ATC Transponder

A. References

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

B. Access

(1) Location Zones
119/120 Main Equipment Center

C. Prepare for Removal

(1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:

MECH | INSP

(a) 11F7, ATC LEFT

(b) ON SAS 150-154 WITH SB 34-82 AND ALL MTH AIRPLANES AND SAS 050-149, 155-999;

11F11, ATC ANT SWITCH

(c) 11F28, ATC RIGHT

D. Procedure

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ATC TRANSPONDER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ATC TRANSPONDER.

(1) Remove the ATC transponder (AMM 20-10-01/401).

(2) Install dust caps on the electrical connectors.

3. Install the ATC Transponder

A. References

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

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

B. Access

(1) Location Zones
119/120 Main Equipment Center

C. Prepare for Installation

(1) Make sure these circuit breakers on the P11 panel are open:

(a) 11F7, ATC LEFT

(b) ON SAS 150-154 WITH SB 34-82 AND ALL MTH AIRPLANES AND SAS 050-149, 155-999;

11F11, ATC ANT SWITCH

(c) 11F28, ATC RIGHT

MECH | INSP

D. Procedure

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTOR ON THE ATC TRANSPONDER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ATC TRANSPONDER.

(1) Remove the dust caps from the electrical connectors.

(2) Install the ATC transponder (AMM 20-10-01/401).

(3) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:

(a) 11F7, ATC LEFT

(b) ON SAS 150-154 WITH SB 34-82 AND ALL MTH AIRPLANES AND SAS 050-149, 155-999

11F11, ATC ANT SWITCH

(c) 11F28, ATC RIGHT

E. ATC Transponder Test

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

(2) Set the transponder select switch on the ATC control panel to the applicable transponder.

(3) Push and hold the TEST switch on the applicable ATC transponder.

(a) Make sure this sequence occurs:

1) All the LEDs come on

2) All the red LEDs go off.

3) The green LED stays on.

(4) Release the TEST switch on the ATC transponder.

NOTE: The green LED will stay on for a while and then will go off.

MECH	INSP

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

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-R04
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	FUSELAGE				013	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	WEATHER RADAR ANTENNA		ALL	ALL

ZONES	ACCESS PANELS
111	111AL

MECH | INSP

MPD ITEM NUMBER

REPLACE THE WEATHER RADAR ANTENNA. 34-43-05-4A

THIS CARD IS NOT A SCHEDULED MAINTENANCE TASK. IT IS A COMPONENT CHANGE CARD AND IT IS PROVIDED FOR OPERATOR CONVENIENCE DURING UNSCHEDULED MAINTENANCE ACTIVITIES. SEE APPENDIX A OF THE 767 MAINTENANCE PLANNING DATA (MPD) DOCUMENT,D622T001, FOR A DESCRIPTION OF THE COMPONENT CHANGE CARDS.

1. General

A. This procedure has five tasks, two removal tasks, two installation tasks, and a test task.

B. The third task installs the planar array on the antenna drive assembly and the fourth task installs the full antenna on the base assembly (either the drive assembly and planar array together, or the drive assembly seperately).

C. The fifth task is a test of the antenna after it is installed on the base assembly.

D. The antenna is found in the nose radome.

E. It is necessary to remove power from the antenna when the antenna is removed or installed. You do this to prevent movement of the planar array.

2. Weather Radar Antenna Removal

A. References

(1) AMM 53-12-01/201, Nose Radome

B. Access

(1) Location Zone
111 Radome

C. Procedure

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

(a) P11 Overhead Circuit Breaker Panel

1) 11F2, WXR RADAR LEFT

2) 11F23, WXR RADAR RIGHT

CAUTION: DO NOT LET THE WORKSTANDS OR EQUIPMENT HIT OR TOUCH THE ANTENNA. THIS CAN CAUSE DAMAGE TO THE ANTENNA.

(2) Open the nose radome and lock it in the open position (AMM 53-12-01/201).

(3) Remove the weather radar antenna:

(a) Remove the electrical cables from the antenna.

(b) Remove the screws and washers from the flanges between waveguide section 1 and the antenna drive assembly.

CAUTION: DO NOT LOOSEN THE BOLTS ON THE CASTING OR THE BASE ASSEMBLY. THESE ARE ALIGNED AT THE FACTORY. IF THE BOLTS ARE ACCIDENTALLY LOOSENED, OR IF THE BASE IS LOOSE OR NOT ALIGNED, SPECIAL ALIGNMENT PROCEDURES MUST BE DONE BY A BOEING SPECIALTY TEAM. CONTACT BOEING SEATTLE A.O.G. OFFICE, TECHNICAL ASSISTANCE TEAM.

(c) Remove the bottom two bolts that hold the antenna to the base assembly.

(d) Loosen the top two bolts that hold the antenna to the base assembly.

WARNING: USE TWO PERSONS AND A SAFELY INSTALLED WORKSTAND TO REMOVE THE ANTENNA. THIS WILL PREVENT INJURY TO YOU OR DAMAGE TO THE ANTENNA.

CAUTION: OBEY THE NO-HANDHOLD PLACARD ON THE DRIVE ASSEMBLY WAVEGUIDE. DAMAGE TO THE ANTENNA WILL OCCUR WHEN THE DRIVE ASSEMBLY WAVEGUIDE IS USED TO HOLD THE ANTENNA.

(e) Lift the antenna up and above the top two bolts that hold the antenna to the base assembly.

(4) Make sure the base assembly is not cracked or damaged (fig. 401).

(5) Put protective dust caps on the electrical connectors and the waveguide flanges.

3. Weather Radar Antenna Planar Array Removal

A. References

(1) AMM 53-12-01/201, Nose Radome

B. Access

(1) Location Zone
111 Radome

C. Procedure

(1) If the antenna drive assembly is installed on the airplane, do the steps that follow:

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

1) P11 Overhead Circuit Breaker Panel

a) 11F2, WXR RADAR LEFT

b) 11F23, WXR RADAR RIGHT

CAUTION: DO NOT LET WORKSTANDS OR EQUIPMENT HIT OR TOUCH THE ANTENNA. THIS CAN CAUSE DAMAGE TO THE ANTENNA.

(b) Open the nose radome and lock it in the open position (AMM 53-12-01/201).

NOTE: If the water such as raindrop remains on the flat plate, transmitting and receiving radio wave become weak, and the radar performance gets worse. Do not open the radome in the rainy condition if possible. If the water remains on the flat plate, wipe off the water completely before the radome is closed.

(2) Remove the planar array from the antenna drive assembly (fig. 402):

(a) Remove the four screws and lockwashers that attach the waveguide flanges of the planar array and the drive assembly.

(b) Remove the eight screws and lockwashers that attach the planar array to the ring mount.

WARNING: USE TWO PERSONS AND A SAFELY INSTALLED WORKSTAND. THIS WILL PREVENT INJURY TO YOU OR DAMAGE TO THE PLANAR ARRAY.

(c) Carefully lift the planar array away from the antenna drive assembly.

(3) Put dust caps on the waveguide flanges between the antenna drive assembly and the antenna planar array.

(4) If it is necessary to remove the antenna drive assembly after you removed the planar array, do the antenna removal task.

4. Weather Radar Planar Array Installation

A. References

(1) AMM 34-43-04/401, Weather Radar Waveguide R/I
AMM 53-12-01/201, Nose Radome

B. Access

(1) Location Zone
111 Radome

C. Procedure

(1) If the antenna drive assembly is installed on the airplane, do the steps that follow:

(a) Make sure these circuit breakers are open:

1) P11 Overhead Circuit Breaker Panel

a) 11F2, WXR RADAR LEFT

b) 11F23, WXR RADAR RIGHT

(b) Open the nose radome and lock it in the open position (AMM 53-12-01/201).

(2) Remove the dust caps from the waveguide flanges on the antenna drive assembly and the antenna planar array.

(3) Install the weather radar planar array (fig. 402):

WARNING: USE TWO PERSONS AND A SAFELY INSTALLED WORKSTAND. THIS WILL PREVENT INJURY TO YOU OR DAMAGE TO THE PLANAR ARRAY.

CAUTION: MAKE SURE A GOOD GASKET IS INSTALLED BETWEEN THE WAVEGUIDE FLANGES. A DAMAGED GASKET OR NO GASKET WILL POSSIBLY CAUSE ANTENNA DAMAGE.

(a) Carefully set the mounting flange of the planar array on the mounting flange of the antenna drive assembly.

NOTE: Make sure the guide pins on the drive assembly mounting flange engage the holes on the planar array mounting flange. Also, make sure the ring clamp on the elevation zero monitor A5 does not block or touch the planar array.

(b) Install eight screws and lockwashers on the ring mount.

(c) Tighten the screws to between 20 to 23 inch-pounds.

(d) Align the waveguide flange on the drive assembly with the waveguide flange on the planar array.

(e) Carefully install the four screws and lockwashers on the waveguide flange.

(f) Tighten the screws to between 20 to 23 inch-pounds.

(4) Make sure the elevation zero monitor continues to show 0 degrees.

5. Weather Radar Antenna Installation

A. Access

(1) Location Zone
111 Radome

B. Procedure

(1) Make sure these circuit breakers are open:

(a) P11 Overhead Circuit Breaker Panel

1) 11F2, WXR RADAR LEFT

2) 11F23, WXR RADAR RIGHT

(2) Remove the dust caps from the electrical connectors and waveguide flanges.

(3) Install the weather radar antenna:

WARNING: USE TWO PERSONS AND A SAFELY INSTALLED WORKSTAND. THIS WILL PREVENT INJURY TO YOU OR DAMAGE TO THE ANTENNA.

CAUTION: OBEY THE NO-HANDHOLD PLACARD ON THE DRIVE ASSEMBLY WAVEGUIDE. DAMAGE TO THE ANTENNA WILL RESULT WHEN THE DRIVE ASSEMBLY WAVEGUIDE IS USED TO HOLD THE ANTENNA.

(a) Put the antenna on the two top boltheads that hold the antenna to the base assembly.

(b) Lower the antenna until it is on the top bolts.

(c) Put the two bottom bolts through the antenna and the base assembly.

(d) Tighten all four bolts that hold the antenna to the base assembly.

(e) Connect waveguide section 1 to the antenna waveguide flanges with the screws and washers.

(f) Connect the electrical connectors to the antenna.

6. Weather Radar Antenna Test

A. References

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

(2) AMM 53-12-01/201, Nose Radome

B. Access

(1) Location Zone
211/212 Control Cabin

C. Procedure

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

WARNING: DO NOT OPERATE THE WEATHER RADAR IN A HANGAR OR WITHIN 50 FEET OF ANY PERSONNEL. THESE CONDITIONS CAN CAUSE INJURY TO PERSONNEL.

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

(a) P11 Overhead Circuit Breaker Panel

1) 11F2, WXR RADAR LEFT

MECH | INSP

2) 11F23, WXR RADAR RIGHT

(3) Make sure these circuit breakers are closed:

(a) P11 Overhead Circuit Breaker Panel

1) 11A7, EFIS DSPL SW L

2) 11E4, EFIS CONT PNL LEFT

3) 11E6, HSI LEFT

4) 11F8, EFIS SYS GEN L

(4) On the WXR control panel, set the switches in the positions that follow:

(a) Put the MODE switch in the WX position.

(b) Put the SYS L/SYS R in the SYS L position.

(c) Put the TILT switch to the 0 degree position.

(d) Set all other controls as necessary.

(5) On the captain's instrument source select panel, set the EFI switch to the NORM position.

(6) On the L-EFIS control panel, set the switches in the positions that follow:

(a) Set the RANGE to 160.

(b) Put the MODE switch in the MAP position.

(c) Put all of the MAP DATA switches to the OFF (out) position.

(d) Push the WXR button to ON.

(7) On the captain's EHSI, make sure weather or ground targets show.

NOTE: Adjust the TILT and the RANGE controls as necessary.

(8) On the captain's EHSI, make sure the WXR FAIL message does not show.

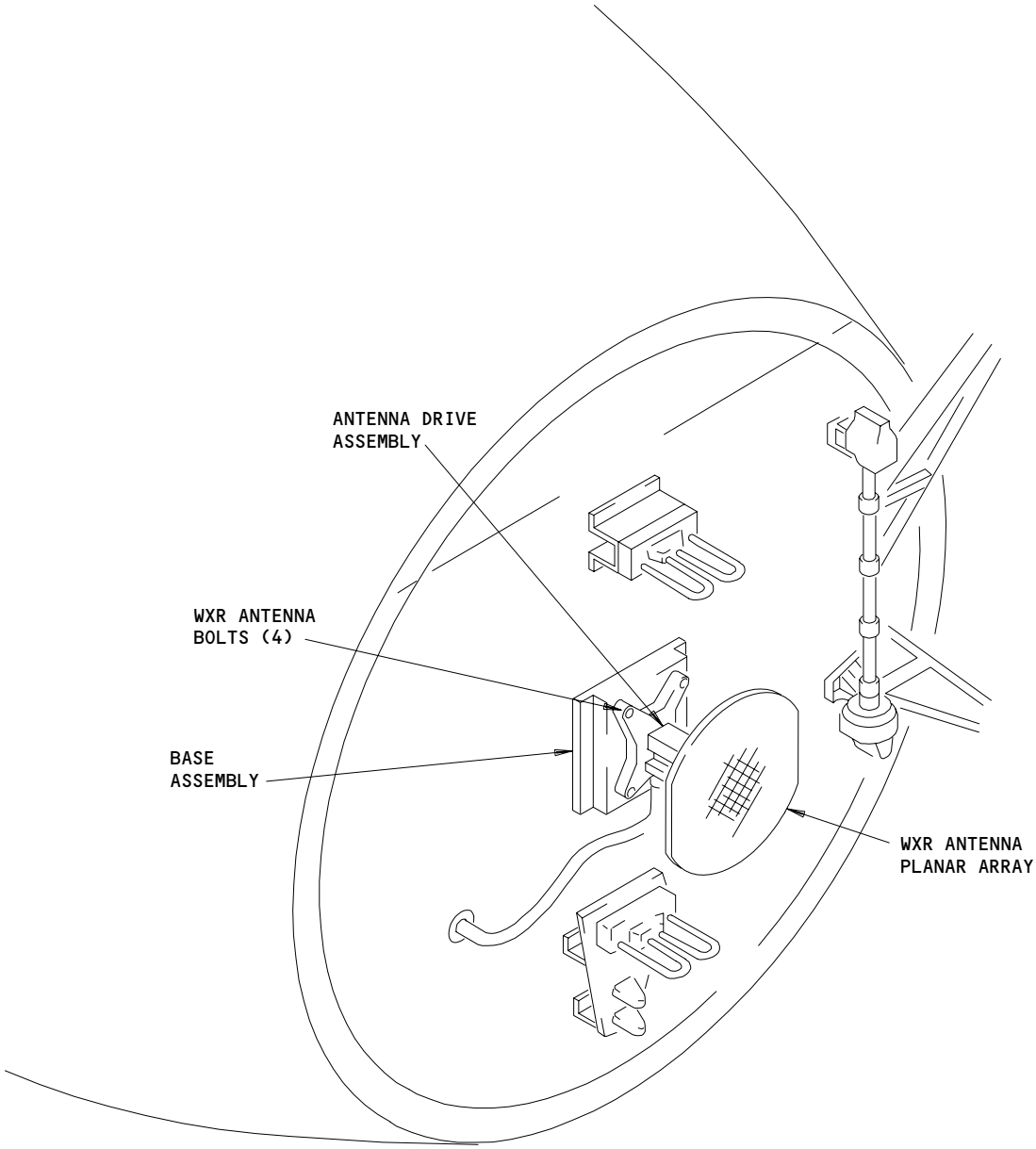
MECH	INSP

D. Put the Airplane Back to Its Usual Condition

(1) On the EFIS control panel, set the WXR switch to the OFF position.

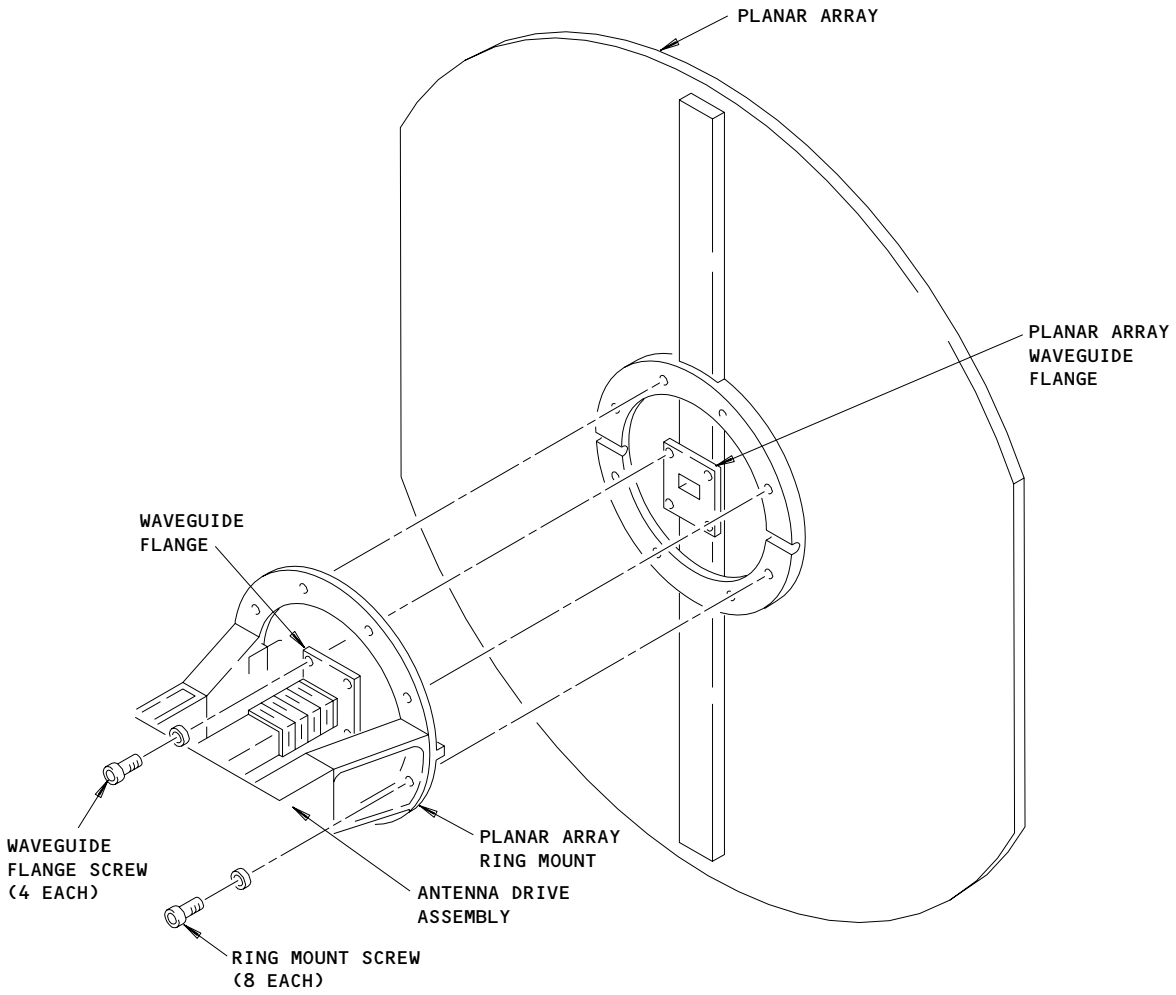
(2) Close the nose radome (AMM 53-12-01/201).

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



Weather Radar Antenna Installation
Figure 401

CAUTION: PLANAR ARRAY IS COUNTERBALANCED BY A TORQUE SPRING. RESTRICT ROTOR ASSEMBLY MOVEMENT WHEN REMOVING PLANAR ARRAY FROM ROTOR ASSEMBLY.



NOTE: TIGHTEN SCREWS TO 20-23 INCH-POUNDS.

Weather Radar Antenna Array Installation
Figure 402

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-001-C1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AIRPL	LWR FUSLAGE		2C	12424	009	DEC 22/03

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
DRAIN	PITOT-STATIC SYSTEMS		ALL	ALL

ZONES	ACCESS PANELS
113 114 117 118 119 121 122 161	113AL 119AL 821 822

MECH	INSP	MPD ITEM NUMBER

DRAIN PITOT-STATIC SYSTEM. 34-11-00-3A 34-11-00-3A
DRAIN ALTERNATE STATIC SYSTEM. 34-11-00-3B 34-11-00-3B
DRAIN AUXILIARY PITOT SYSTEM. 34-11-00-3C 34-11-00-3C
DRAIN AUXILIARY STATIC SYSTEM. 34-11-00-3D 34-11-00-3D

1. Drain the Pitot-Static System

A. General

(1) The pitot-static drains are found in the forward and main equipment centers, and in the forward cargo and bulk cargo compartments.

B. Equipment

(1) Receptacle and/or absorbent cloth to collect the small amount of liquid from each drain.

C. References

(1) 34-11-00/501, Pitot-Static System

D. Procedure

(1) Service the drain assembly as follows (Fig. 301):

(a) Find each drain assembly.

NOTE: If no liquid is seen in the drain sight gage, you do not have to drain the system.

(b) To remove the drain cap, push up and twist to release the cap from the bayonet pins.

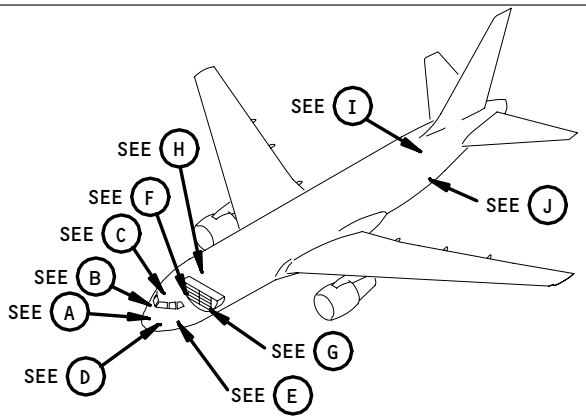
(c) Turn the cap and put the pin in the bottom of the drain body.

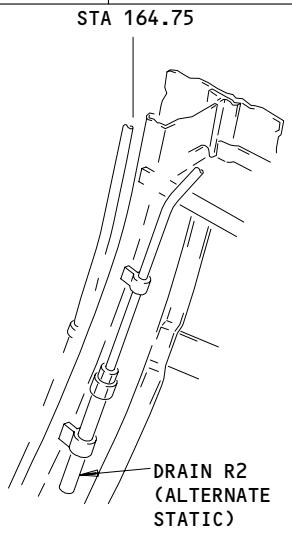
MECH	INSP

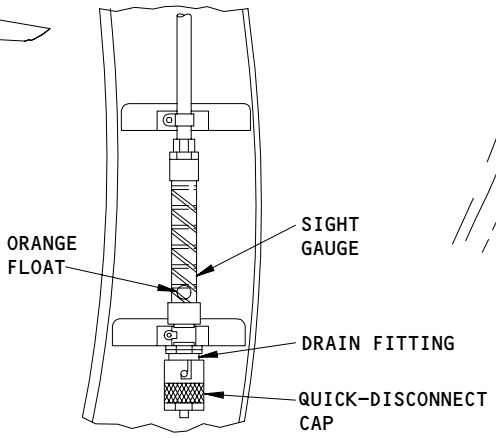
(d) Push the cap into the drain body with hand pressure.

(e) Drain all of the liquid from the sump.

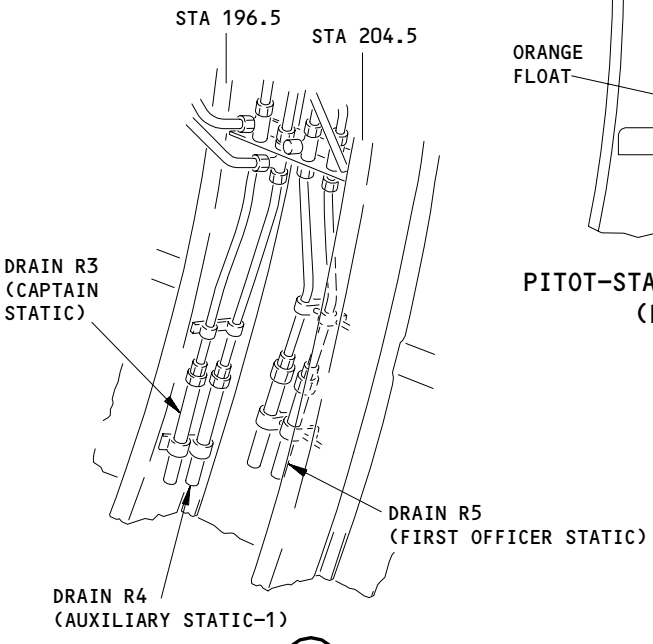
(f) Install the cap on the drain body in its initial position.

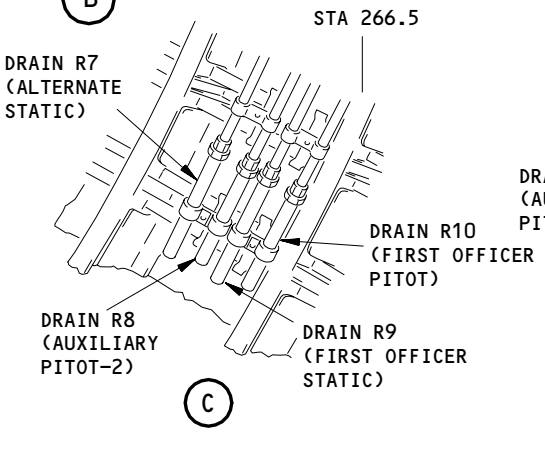


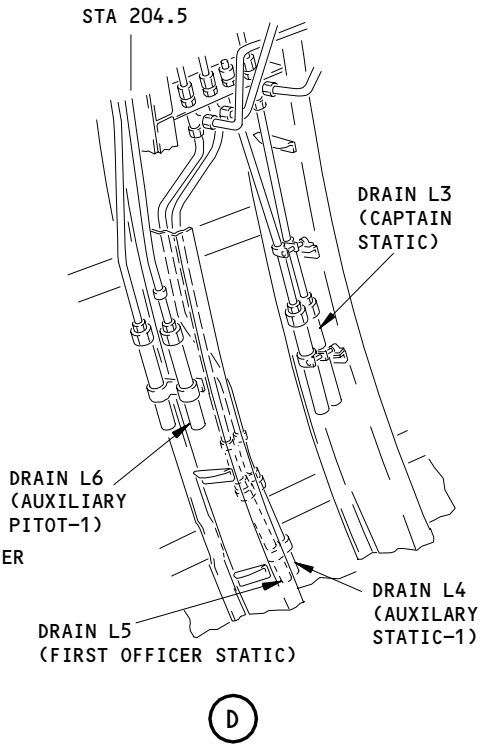




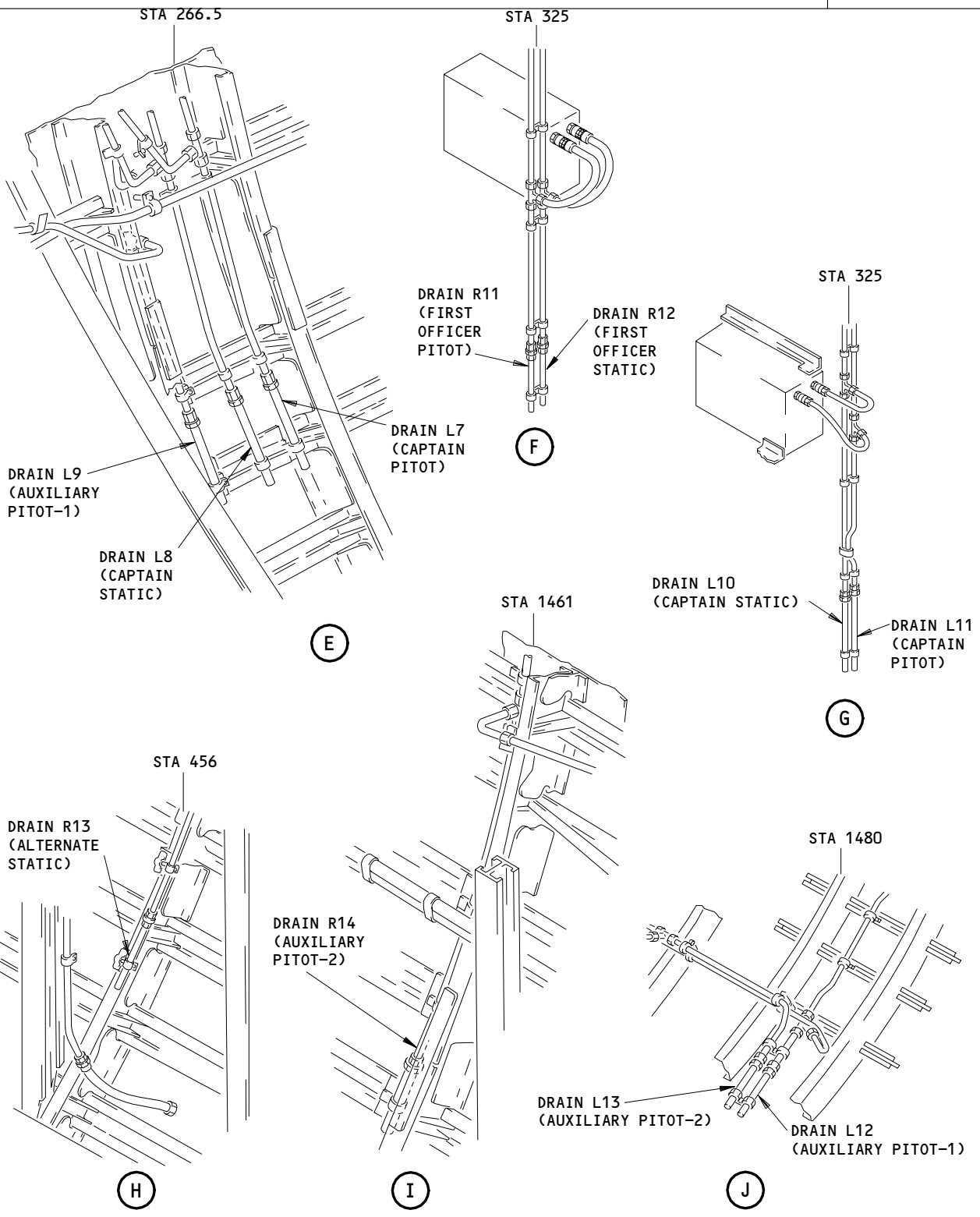
PITOT-STATIC SYSTEM DRAIN
(EXAMPLE)



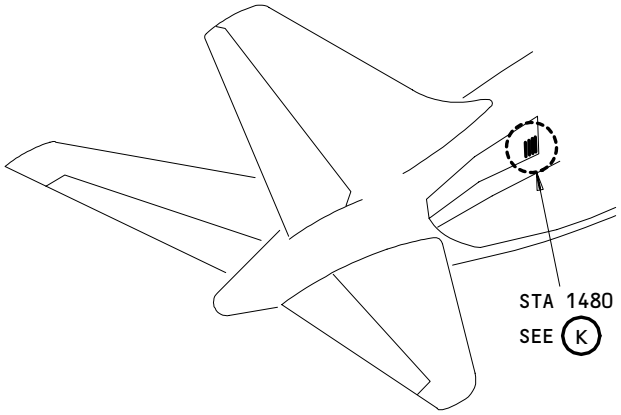




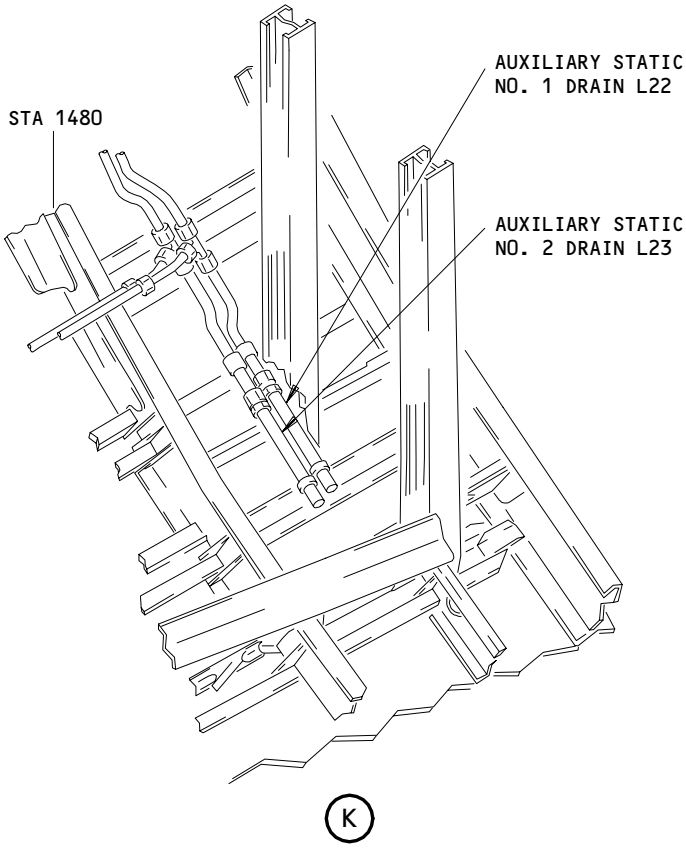
Pitot-Static System Drain Location
Figure 301 (Sheet 1)



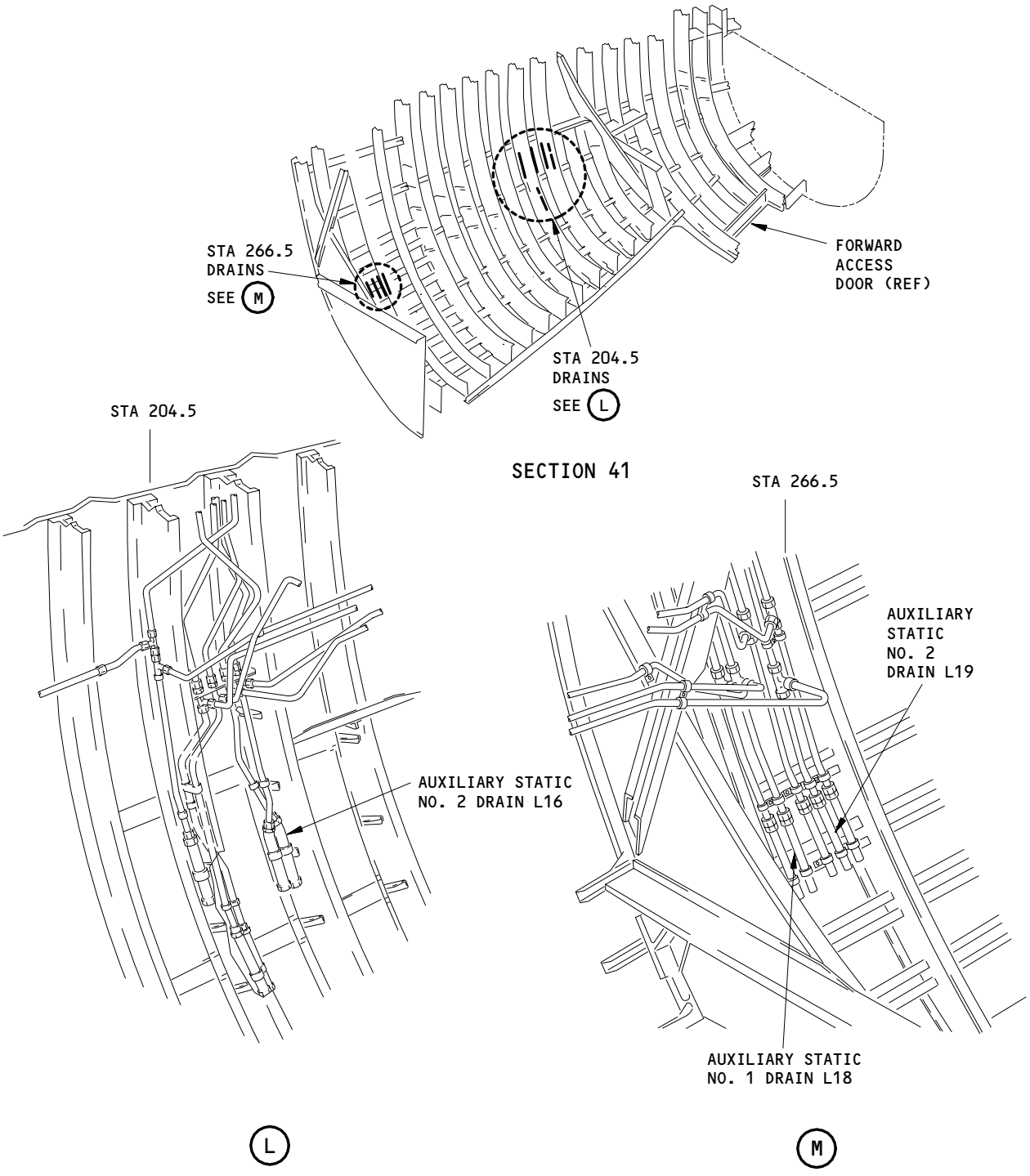
Pitot-Static System Drain Location
Figure 301 (Sheet 2)



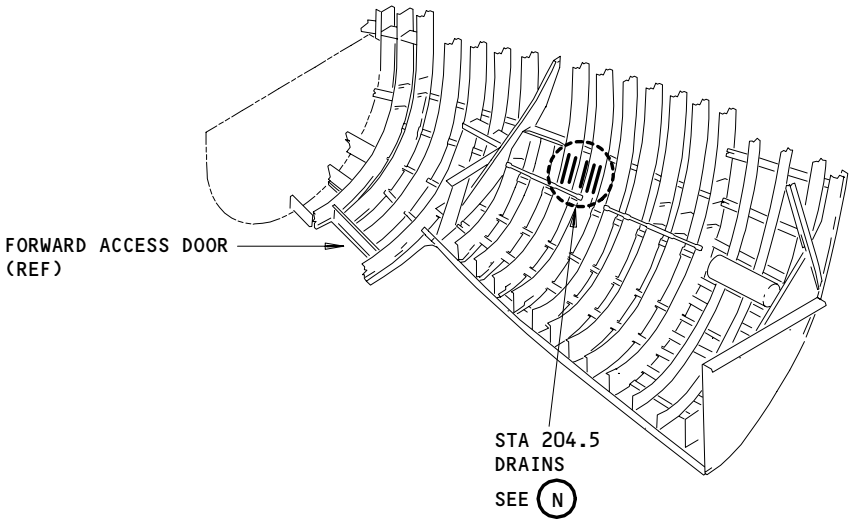
SECTION 46 AND 48



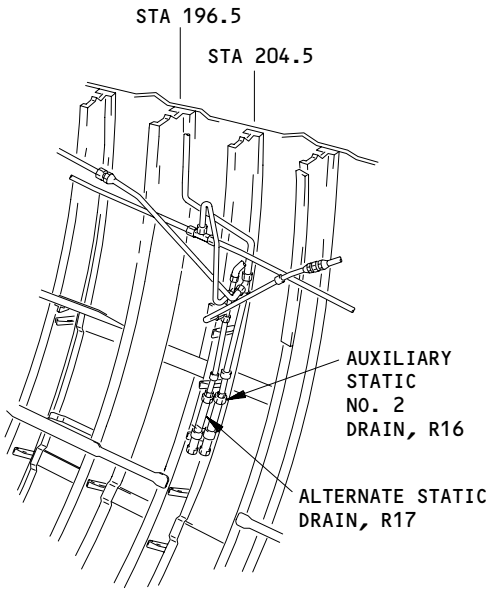
Pitot-Static System Drain Location
Figure 301 (Sheet 3)



Pitot-Static System Drain Location
Figure 301 (Sheet 4)

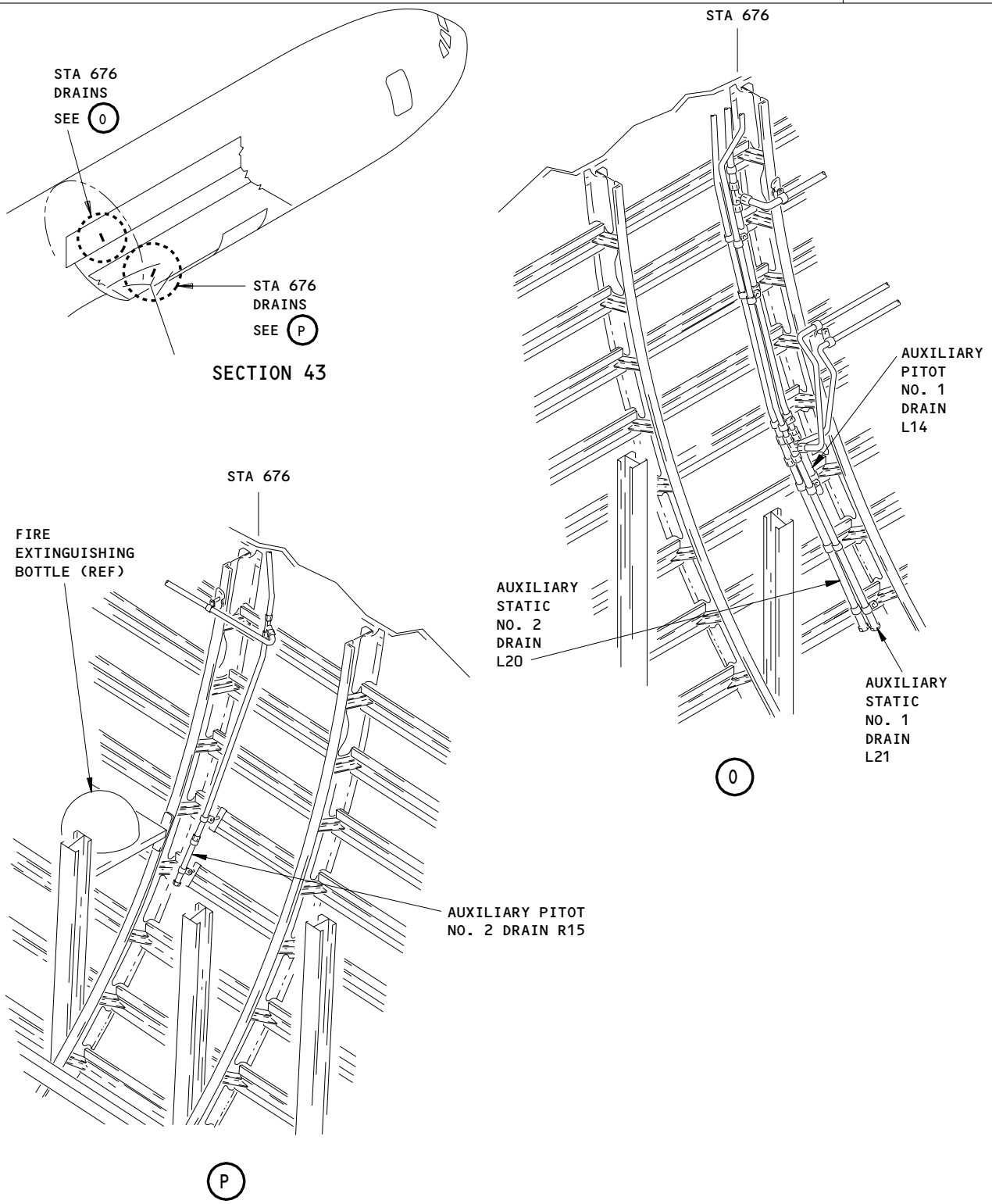


SECTION 41

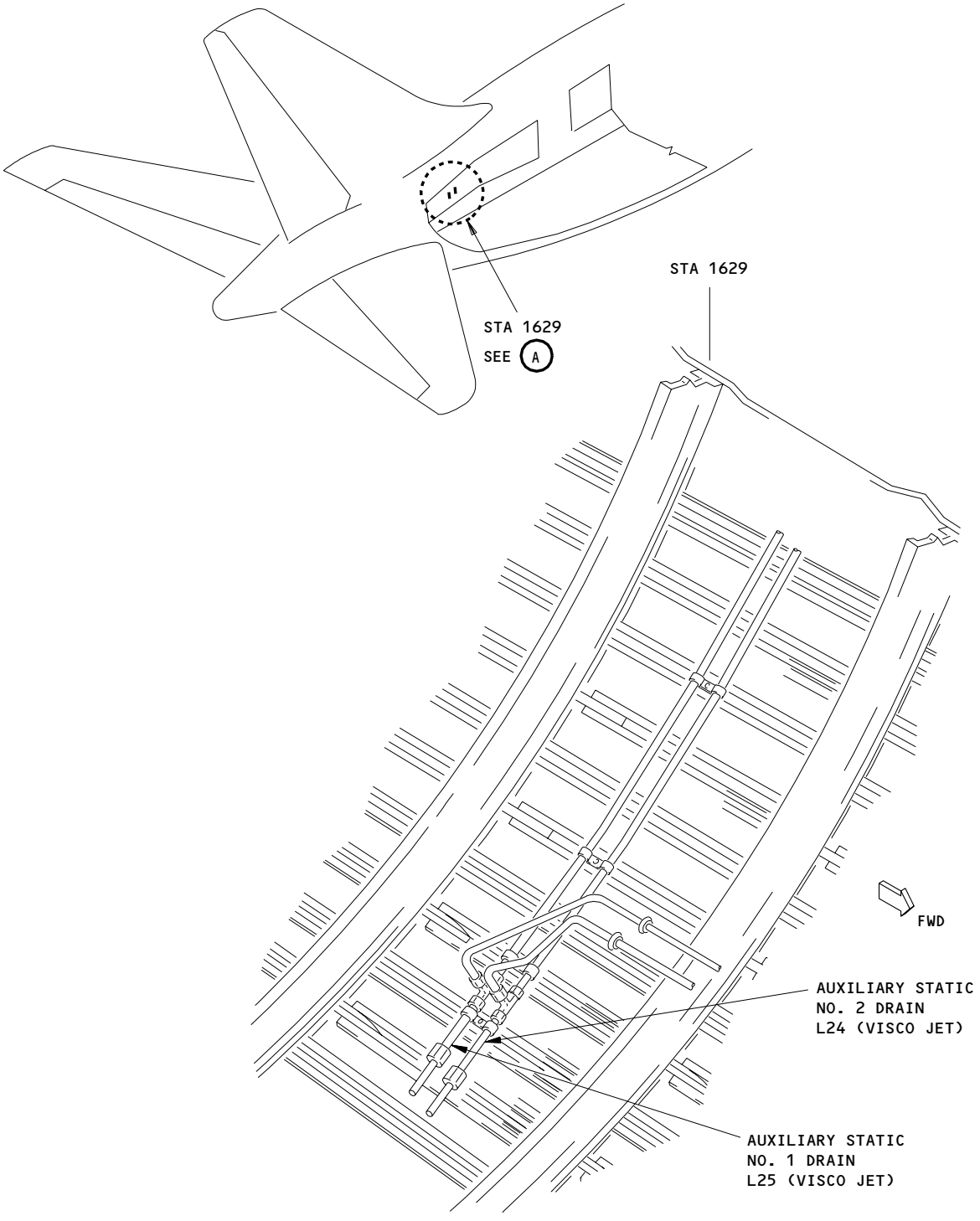


N

Pitot-Static System Drain Location
Figure 301 (Sheet 5)



Pitot-Static System Drain Location
Figure 301 (Sheet 6)



Static System Visco Jet Drain Location
Figure 302

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-004-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	FUSELAGE	A-34-001-C1	2C	12424	013	APR 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	ALTERNATE STATIC LINE LEAK CHECK		ALL	ALL

ZONES	ACCESS PANELS
121 122 212 312	312AR

MECH | INSP

MPD ITEM NUMBER

LEAK CHECK OF STANDBY ALTIMETER/AIRSPEED INDICATOR (ALTERNATE) STATIC LINE. 34-11-00-5A

AIRPLANE NOTE: TASK NOT APPLICABLE IF EQUIPPED WITH ISFD.

NOTE: FAR 91.401 SUBPART B STATES THAT FAR PART 91.411 DOES NOT APPLY TO AIRCRAFT MAINTAINED IN ACCORDANCE WITH A CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM AS PROVIDED UNDER FAR PART 121.

1. System Test - Alternate Static Line

NOTE: This is a scheduled maintenance task.

A. Equipment

(1) Adapters

(a) Pitot-static probe test adapter -
Rosemount Engineering, 884EH
(2 Required)
Rosemount Inc.
14300 Judicial Rd.
Burnsville, MN 55337

(b) Static port adapter -
NAVAIDS, P/N 33410 LH-125-4
NAV-AIDS, LTD
2955 Diab St.
Montreal, Ouebec, Canada H45 1M1

(2) Pneumatic Test Set

(a) Dry air pressure source (1 necessary), 0 to 5 inches of mercury gage.

(b) Vacuum sources (2 necessary), 0 to 20 inches of mercury gage.

(3) Gages

(a) Pitot system test gage - must show a precision of ± 0.16 (readable to ± 0.03) inch of mercury or ± 5 (readable to ± 1) knots.

(b) Static system test gage - must show a precision of ± 0.1 (readable to ± 0.01) inch of mercury or ± 200 (readable to ± 20) feet.

(c) Differential pressure gage - must show 10 inches of mercury differential pressure (minimum) with a precision of ± 0.010 inch of mercury.

(4) Flow restrictors, control valves, cutoff valves and port seals as necessary.

B. Consumable Materials

(1) GO2219 Tape, yellow vinyl adhesive - 3M Scotch brand No. 471, 3 inches wide, BAC 5034-4.

C. Reference

(1) AMM 22-10-00/501, Autopilot (Flight Control) System

D. Prepare for the System Test

WARNING: MAKE SURE THE ATC TRANSPONDERS ARE NOT IN AN ALTITUDE REPORTING MODE WHEN YOU SIMULATE ALTITUDE. IF YOU DO NOT, YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS.

(1) Make sure the ATC transponders are not in an altitude reporting mode.

(2) Remove all power from the autopilot (flight control) system (AMM 22-10-00/501).

(3) Open these circuit breakers on the main power distribution panel, P6, and attach DO-NOT-CLOSE tags:

(a) 6C2, RAM AIR TURBINE AUTO

(b) 6J8, RAM AIR TURBINE PWR

(c) 6K14, PITOT HEAT CAPT ϕA

(d) 6K15, PITOT HEAT CAPT ϕB

(e) 6K16, PITOT HEAT R AUX ϕB

(f) 6K17, PITOT HEAT R AUX ϕC

(g) 6K20, PITOT HEAT L AUX ϕC

(h) 6K21, PITOT HEAT L AUX ϕB

(i) 6K22, PITOT HEAT F/O ϕB

(j) 6K23, PITOT HEAT F/O ϕA

WARNING: MAKE SURE THAT YOU DO NOT APPLY ELECTRICAL POWER TO THE FLIGHT CONTROLS. FLIGHT CONTROL SURFACES CAN MOVE AUTOMATICALLY WHEN YOU PRESSURIZE THE PITOT-STATIC SYSTEM. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Open this circuit breaker and attach a DO-NOT-CLOSE tag:

(a) On the P11 panel open this circuit breaker:

1) 11J13, T/E FLAP LOAD RELIEF

E. Do a Test of the Alternate Static System

(1) Install a flush static port test adapter to the alternate static port on the left side.

MECH | INSP

CAUTION: MAKE SURE THE FLOW RESTRICTORS ARE INSTALLED BETWEEN THE CUTOFF VALVES AND THE PITOT-STATIC SYSTEM. FAILURE TO DO THIS COULD CAUSE DAMAGE TO THE PITOT-STATIC SYSTEM.

(2) Connect these items between the static source on the pneumatic test set and the test adapter.

(a) A control valve

(b) A cutoff valve

(c) A flow restrictor

(d) A static system test gage

(3) Put vinyl adhesive tape on the alternate static port on the right side.

(4) Do a test of the alternate static system for leaks:

(a) Disconnect the alternate static line from the rat airspeed switch (AMM 29-21-24/401).

CAUTION: KEEP THE RATE OF STATIC CHANGE LESS THAN 5000 FEET PER MINUTE. KEEP THE PRESSURE DIFFERENCE BETWEEN THE AUXILIARY PITOT SYSTEM NO. 1 AND THE ALTERNATE STATIC SYSTEMS LESS THAN 10 INCHES OF MERCURY OR 420 KNOTS. FAILURE TO DO THIS CAN CAUSE DAMAGE TO THE INSTRUMENTS OR EQUIPMENT.

CAUTION: KEEP THE RATE OF PITOT PRESSURE CHANGE LESS THAN 300 KNOTS PER MINUTE. FAILURE TO DO THIS CAN CAUSE DAMAGE TO THE INSTRUMENTS OR EQUIPMENT.

MECH | INSP

(b) Supply a vacuum equivalent to ambient pressure (29.92) minus 5.25 (±0.25) inches of mercury or 5,000 (±200) feet altitude to the alternate static system.

CAUTION: CONTINUE TO SUPPLY A VACUUM BEHIND THE CUTOFF VALVE AFTER YOU CLOSE THE CUTOFF VALVE. FAILURE TO DO THIS CAN CAUSE DAMAGE TO THE EQUIPMENT WHEN YOU OPEN THE CUTOFF VALVE.

(c) When the vacuum is stable, close the static cutoff valve.

(d) Read and record the value that shows on the static system test gage.

(e) After 1 minute, make sure the vacuum did not decrease by more than 0.07 inch of mercury or 80 feet.

(f) Slowly release the vacuum on the alternate static systems.

(g) Connect the alternate static line to the rat airspeed switch (AMM 29-21-24/401).

WARNING: FAILURE TO REMOVE VINYL ADHESIVE TAPE FROM STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

1) Remove the test adapter and seals from the alternate static ports.

F. Put the Airplane Back To Its Usual Condition

MECH | INSP

WARNING: FAILURE TO REMOVE VINYL ADHESIVE TAPE FROM STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

CAUTION: MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM EACH STATIC PORT. THE SYSTEM WILL NOT OPERATE CORRECTLY WHEN THE TAPE IS IN ITS POSITION.

(1) Remove all the vinyl adhesive tape and adapters from all pitot-static probes and alternate static ports.

(a) Make sure no unwanted material stays on or adjacent to the alternate static ports or the holes on the pitot-static probes.

(b) Make sure the area on or adjacent to the alternate static ports and the holes on the pitot-static probes is not rough.

(2) Remove all pitot-static test hoses and equipment.

(3) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the main power distribution panel, P6:

(a) 6C2, RAM AIR TURBINE AUTO

(b) 6J8, RAM AIR TURBINE PWR

(c) 6K14, PITOT HEAT CAPT ϕA

(d) 6K15, PITOT HEAT CAPT ϕB

(e) 6K16, PITOT HEAT R AUX ϕB

(f) 6K17, PITOT HEAT R AUX ϕC

(g) 6K20, PITOT HEAT L AUX ϕC

(h) 6K21, PITOT HEAT L AUX ϕB

(i) 6K22, PITOT HEAT F/O ϕB

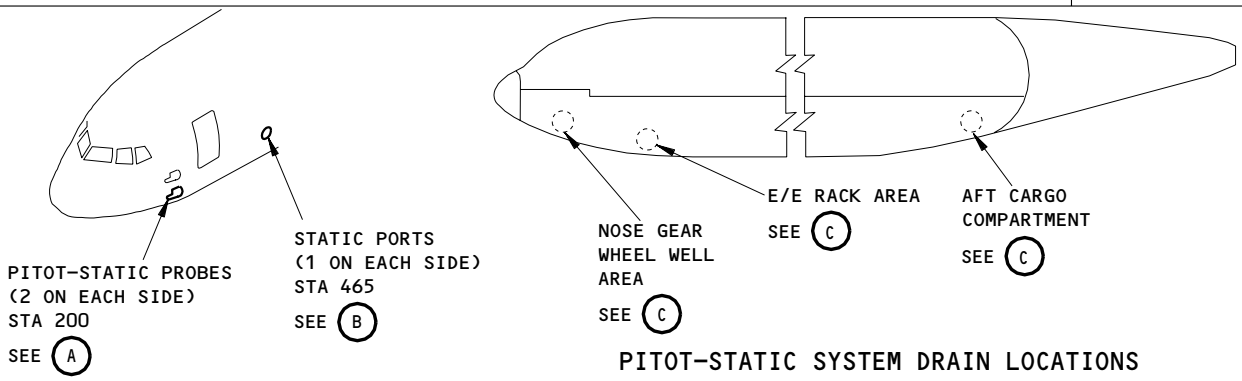
(j) 6K23, PITOT HEAT F/O ϕA

MECH	INSP

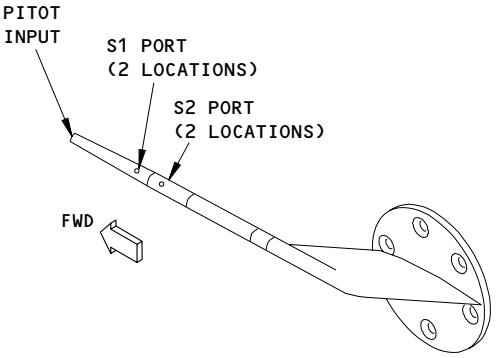
(4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

(a) 11J13, T/E FLAP LOAD RELIEF

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

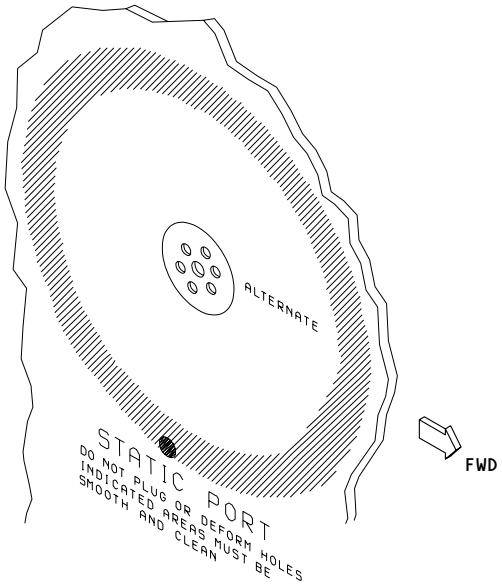


PITOT-STATIC SYSTEM DRAIN LOCATIONS



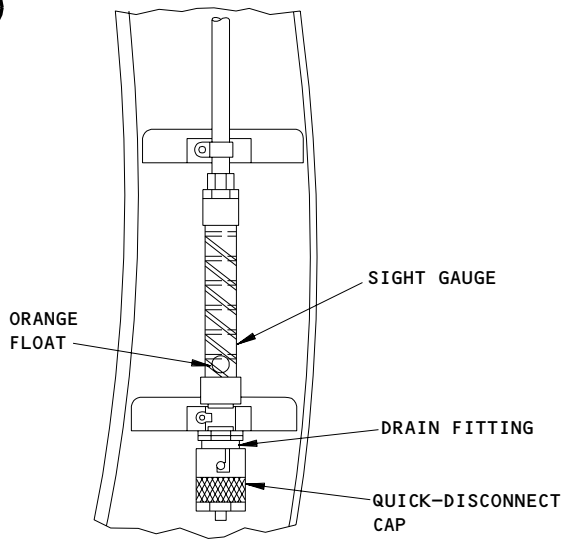
PITOT STATIC PROBE (EXAMPLE)

A



ALTERNATE STATIC PORT

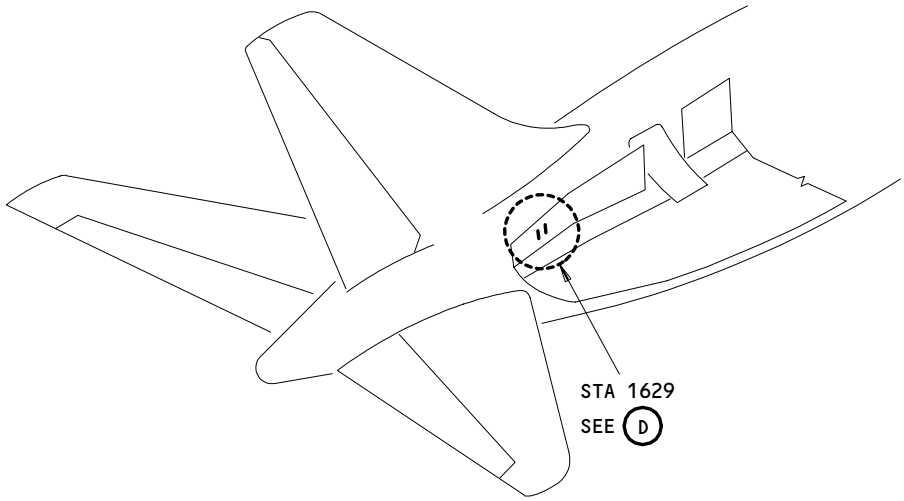
B



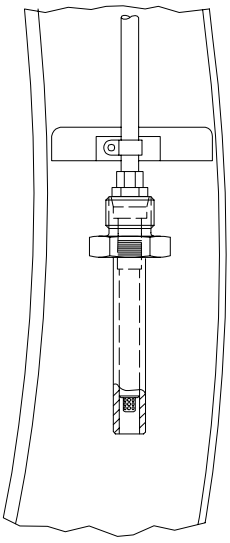
PITOT-STATIC SYSTEM DRAIN

C

Pitot-Static System Component Locations
Figure 501 (Sheet 1)



STATIC SYSTEM VISCO JET DRAIN LOCATIONS



STATIC SYSTEM VISCO JET DRAIN

D

Pitot-Static System Component Locations
Figure 501 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-005-C1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	CREW CABIN		2C	12424	012	DEC 22/00

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	AIR DATA STANDBY INSTRUMENTS		ALL	ALL

ZONES	ACCESS PANELS
121 122 212 312	119AL 312AR

MECH	INSP	MPD ITEM NUMBER

FUNCTIONALLY CHECK THE CALIBRATION OF THE STANDBY ALTIMETER. 34-13-00-5A 34-13-00-5A 34-13-00-5B

FUNCTIONALLY CHECK THE CALIBRATION OF THE STANDBY AIRSPEED INDICATOR. 34-13-00-5B

NOTE: FAR 91.401 SUBPART B STATES THAT FAR PART 91.411 DOES NOT APPLY TO AIRCRAFT MAINTAINED IN ACCORDANCE WITH A CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM AS PROVIDED UNDER FAR PART 121.

1. System Test - Air Data Standby Instruments

A. References

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

(2) AMM 34-11-00/201, Pitot-Static System

(3) AMM 34-11-00/501, Pitot-Static System

B. Access

(1) Location Zones
211/212 Flight Compartment

C. Procedure

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

(2) Make sure these circuit breakers on the P11 panel are closed:

(a) 11A8, STBY ALTM VIB

(b) 11B7, LIGHTS STBY INSTR

(3) Make sure the vibrator in the standby altimeter operates.

NOTE: Feel the standby altimeter casing.

(4) Set BARO scale to 29.92 inches of mercury (1013 millibars).

CAUTION: YOU MUST DISCONNECT THE ELEVATOR FEEL COMPUTER FROM THE PITOT STATIC SYSTEM. YOU CAN CAUSE DAMAGE TO THE ELEVATOR FEEL COMPUTER.

(5) Disconnect the lower left pitot line from the Elevator Feel Computer (AMM 34-11-00/501).

(6) Apply pressures to the pitot-static system for each test point shown in Table 501 (AMM 34-11-00/201).

(7) Add the head correction from Fig. 501, to the standby altimeter indication.

(8) Make sure the value on the standby indicator is less than the tolerance shown in Table 501.

Table 501

TEST POINT	STATIC PRESSURE (In. Hg)	DIFF PRESSURE (In. Hg)	PITOT PRESSURE (In. Hg)	STANDBY ALTIMETER (Feet)	STANDBY ALTIMETER (Meters)	STANDBY AIRSPEED (Knots)
1	29.921	0.695	30.616	0 ±25	0 ±6	120 ±3
2	24.896	1.580	26.476	5000 ±45	1524 ±12	180 ±4
3	20.577	3.100	23.677	10,000 ±60	3048 ±24	250 ±4
4	13.750	3.924	17.674	20,000 ±100	6096 ±40	280 ±5
5	5.538	4.534	10.072	40,000 ±200	12,000 ±70	300 ±5

D. Instrument Leak Test

(1) Close the pitot and static system cutoff valves.

(a) Read and write the values of the altitude and airspeed on the standby altimeter and standby airspeed indicator.

MECH	INSP

(2) Stop for one more minute and read the altitude and airspeed again.

(a) Make sure that the altitude did not decrease by more than 400 feet or 120 meters.

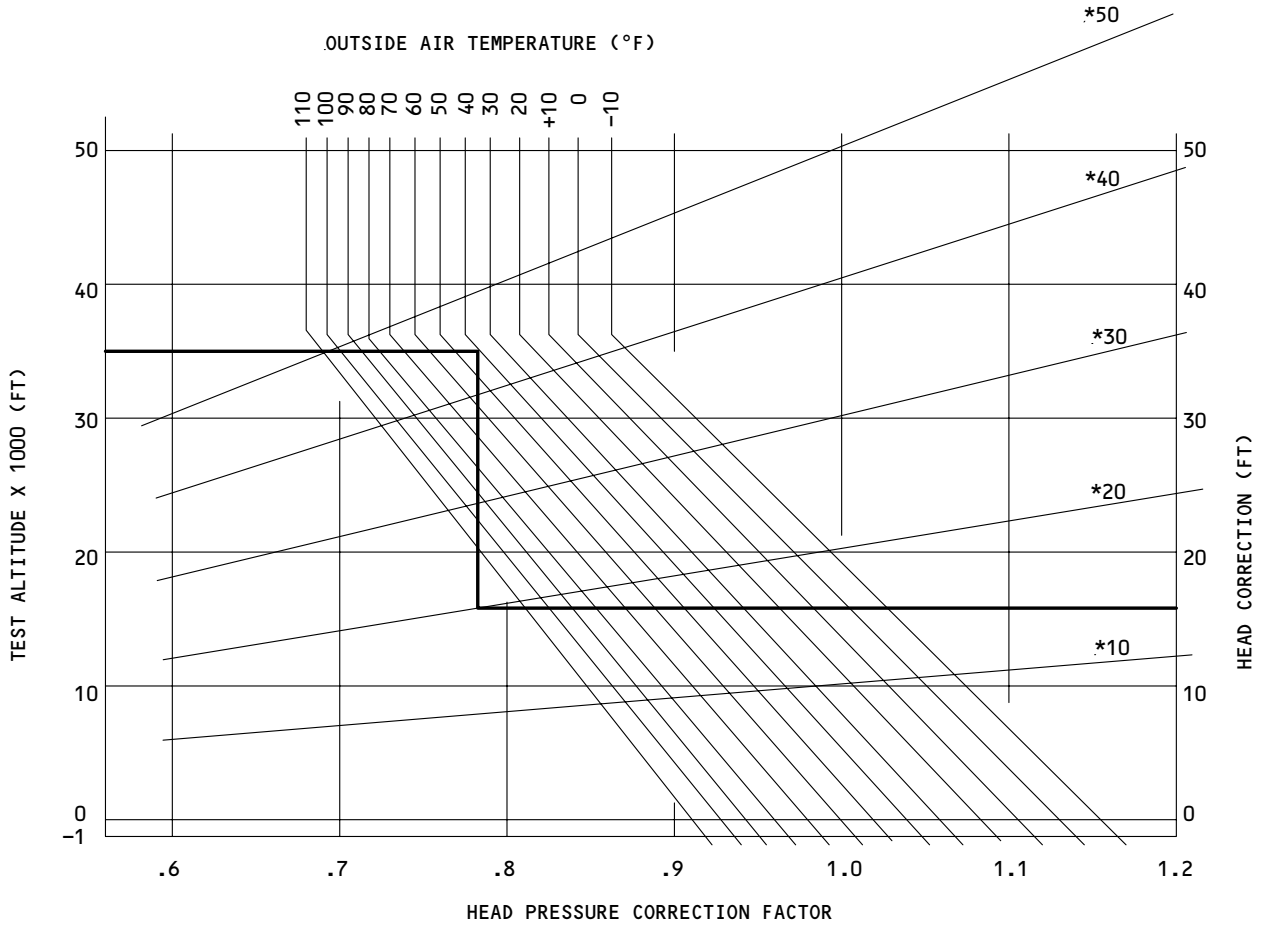
CAUTION: THE PITOT LINE PRESSURE MUST BE EQUAL OR MORE THAN THE STATIC LINE PRESSURE. KEEP THE RATE OF THE PITOT PRESSURE CHANGE LESS THAN 300 KNOTS FOR EACH MINUTE. KEEP THE RATE OF THE STATIC PRESSURE CHANGE LESS THAN 5,000 FEET FOR EACH MINUTE. KEEP THE DIFFERENTIAL PRESSURE BETWEEN 0 AND 9.33 INCHES OF MERCURY. IF YOU DO NOT FOLLOW THE INSTRUCTIONS ABOVE, YOU CAN CAUSE DAMAGE TO THE EQUIPMENT.

(3) Open the pitot and static system cutoff valves.

(4) Put the pitot-static system to the ambient condition (AMM 34-11-00/201).

(5) Connect the lower left pitot line at the Elevator Feel Computer and do the system leak check (AMM 34-11-00/501).

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



*VERTICAL SEPARATION BETWEEN PRESSURE SOURCE AND SENSOR

EXAMPLE: TEST ALTITUDE = 35,000 FEET
OUTSIDE AIR TEMPERATURE = 40°F
VERTICAL SEPARATION = 20 FEET
HEAD PRESSURE CORRECTION = +16 FEET

NOTE: IF THE PRESSURE SOURCE IS ABOVE THE SENSOR, THE CORRECTION FACTOR MUST BE SUBTRACTED FROM THE ALTITUDE.

Head Correction
Figure 501

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-007-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	FUSELAGE	A-34-001-C1	2C	12424	003	AUG 22/06

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	STBY AIRSPEED INDICATOR AUX PITOT		ALL	ALL

ZONES	ACCESS PANELS
117 118 212 312	119AL 312AR

MECH	INSP	MPD ITEM NUMBER

LEAK CHECK OF STANDBY AIRSPEED INDICATOR (AUXILIARY) PITOT (NO. 1) LINE. 34-11-00-5B

AIRPLANE NOTE: TASK NOT APPLICABLE IF EQUIPPED WITH ISFD.

NOTE: FAR 91.401 SUBPART B STATES THAT FAR PART 91.411 DOES NOT APPLY TO AIRCRAFT MAINTAINED IN ACCORDANCE WITH A CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM AS PROVIDED UNDER FAR PART 121.

1. System Test - Pitot-Static System

A. Equipment

(1) Adapters

(a) Pitot-static probe test adapter - Rosemount Engineering, 884EH or equivalent (2 Required)
Rosemount Inc.
14300 Judicial Rd.
Burnsville, MN 55337

(2) Pneumatic Test Set

(a) Dry air pressure source (1 necessary), 0 to 5 inches of mercury gage.

(b) Vacuum sources (2 necessary), 0 to 20 inches of mercury gage.

(3) Gages

MECH | INSP

(a) Pitot system test gage - must show a precision of ± 0.16 (readable to ± 0.03) inch of mercury or ± 5 (readable to ± 1) knots.

(b) Differential pressure gage - must show 10 inches of mercury differential pressure (minimum) with a precision of ± 0.010 inch of mercury.

(4) Flow restrictors, control valves, cutoff valves tape and port seals as necessary. (GO2219 Tape, yellow vinyl adhesive - 3M Scotch brand No. 471, 3 inches wide, BAC 5034-4).

B. References

(1) AMM 22-10-00/501, Autopilot (Flight Control) System

(2) AMM 27-31-19/401, Elevator Feel Computer

(3) AMM 29-21-24/401, Rat Airspeed Switch

(4) AMM 34-13-05/401, Standby Airspeed Indicator

C. Consumables

(1) GO2219 Tape, yellow vinyl adhesive - 3M Scotch brand No. 471, 3 inches wide, BAC 5034-4.

D. Prepare for the System Test

WARNING: MAKE SURE THE ATC TRANSPONDERS ARE NOT IN AN ALTITUDE REPORTING MODE WHEN YOU SIMULATE ALTITUDE. IF YOU DO NOT, YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS.

(1) Make sure the ATC transponders are not in an altitude reporting mode.

(2) Make sure air cannot go into the system when you supply the vacuum.

(3) Remove all power from the autopilot (flight control) system (AMM 22-10-00/501).

MECH | INSP

(4) Open these circuit breakers on the main power distribution panel, P6, and attach DO-NOT-CLOSE tags:

(a) 6C2, RAM AIR TURBINE AUTO

(b) 6J8, RAM AIR TURBINE PWR

(c) 6K14, PITOT HEAT CAPT ϕA

(d) 6K15, PITOT HEAT CAPT ϕB

(e) 6K16, PITOT HEAT R AUX ϕB

(f) 6K17, PITOT HEAT R AUX ϕC

(g) 6K20, PITOT HEAT L AUX ϕC

(h) 6K21, PITOT HEAT L AUX ϕB

(i) 6K22, PITOT HEAT F/O ϕB

(j) 6K23, PITOT HEAT F/O ϕA

WARNING: MAKE SURE THAT YOU DO NOT APPLY ELECTRICAL POWER TO THE FLIGHT CONTROLS. FLIGHT CONTROL SURFACES CAN MOVE AUTOMATICALLY WHEN YOU PRESSURIZE THE PITOT-STATIC SYSTEM. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) Open this circuit breaker and attach a DO-NOT-CLOSE tag:

(a) On the P11 panel open this circuit breaker:

1) 11J13, T/E FLAP LOAD RELIEF

E. Do a Test of the Auxiliary Pitot System No. 1

CAUTION: MAKE SURE THAT YOU FLUSH THE PROBE ADAPTER WITH WATER BEFORE YOU ATTACH THE ADAPTER TO THE PROBE. YOU CAN CAUSE DAMAGE TO THE PROBE OR THE ADAPTER.

(1) Flush the adapter for the pitot-static probe with water before you install it on the probe.

NOTE: Use a solution that has equal parts of ethylene glycol and water in temperatures between 32°F and -40°F.

(2) Put vinyl adhesive tape on the drain hole for the pitot chamber on the bottom left probe.

CAUTION: BE CAREFUL WITH THE TEST HOSES. INSTALL THE TEST ADAPTER AND TEST HOSES SO THAT YOU DO NOT ADD WEIGHT TO THE PROBES. FAILURE TO DO THIS COULD CAUSE DAMAGE TO THE PROBE OR PUT THE PROBES OUT OF THE ALIGNED POSITION.

(3) Install the test adapter on the bottom left pitot-static probe.

CAUTION: MAKE SURE YOU INSTALL THE FLOW RESTRICTORS BETWEEN THE CUTOFF VALVE AND THE PITOT-STATIC SYSTEM. FAILURE TO DO THIS COULD CAUSE DAMAGE TO THE PITOT-STATIC SYSTEM.

(4) Connect these items between the pitot pressure source on the pneumatic test set to the pitot inlet of the test adapter.

(a) A control valve.

(b) A cutoff valve.

(c) A flow restrictor.

(d) A test pitot system gage.

(5) Do a test of the auxiliary pitot system No. 1 for leaks:

(a) Make sure the test equipment is installed correctly.

CAUTION: KEEP THE RATE OF PITOT PRESSURE CHANGE LESS THAN 300 KNOTS PER MINUTE. FAILURE TO DO THIS COULD CAUSE DAMAGE TO THE INSTRUMENTS OR EQUIPMENT.

(b) Pressurize the auxiliary pitot system No. 1 to 1.959 (±0.16) inches of mercury (gage) or 200 (±5) knots. Measure the pressure on the pitot system test gage or on the standby airspeed indicator.

(c) When the pressure is stable, close the pitot cutoff valve.

(d) Read and write the value that shows on the test gage or the standby airspeed indicator.

(e) After 1 minute, make sure the pressure did not decrease by more than 0.03 inch of mercury or 1.5 knots.

(f) Slowly release the pressure in the auxiliary pitot system No. 1.

(g) Remove the test adapter from the pitot-static probe.

1) If you flushed the adapter with the ethylene glycol mixture, clean the probe head with a soft rag.

CAUTION: MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM EACH PITOT-STATIC PROBE. THE SYSTEM WILL NOT OPERATE CORRECTLY WHEN THE TAPE IS IN ITS POSITION.

(h) Remove the vinyl adhesive tape from the drain on the pitot-static probe.

F. Put the Airplane Back To Its Usual Condition

WARNING: FAILURE TO REMOVE VINYL ADHESIVE TAPE FROM STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

(1) Remove all the vinyl adhesive tape and adapters from all pitot-static probes and alternate static ports.

(a) Make sure no unwanted material stays on or adjacent to the alternate static ports or the holes on the pitot-static probes.

MECH | INSP

(b) Make sure the area on or adjacent to the alternate static ports and the holes on the pitot-static probes is not rough.

(2) Remove all pitot-static test hoses and equipment.

(3) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the main power distribution panel, P6:

(a) 6C2, RAM AIR TURBINE AUTO

(b) 6J8, RAM AIR TURBINE PWR

(c) 6K14, PITOT HEAT CAPT ϕA

(d) 6K15, PITOT HEAT CAPT ϕB

(e) 6K16, PITOT HEAT R AUX ϕB

(f) 6K17, PITOT HEAT R AUX ϕC

(g) 6K20, PITOT HEAT L AUX ϕC

(h) 6K21, PITOT HEAT L AUX ϕB

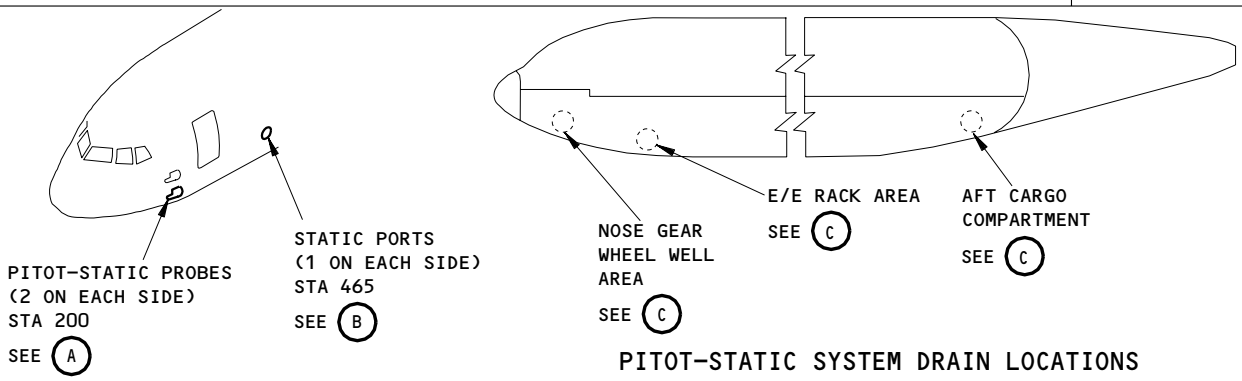
(i) 6K22, PITOT HEAT F/O ϕB

(j) 6K23, PITOT HEAT F/O ϕA

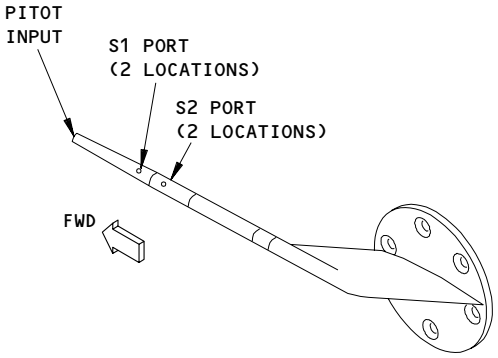
(4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

(a) 11J13, T/E FLAP LOAD RELIEF

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

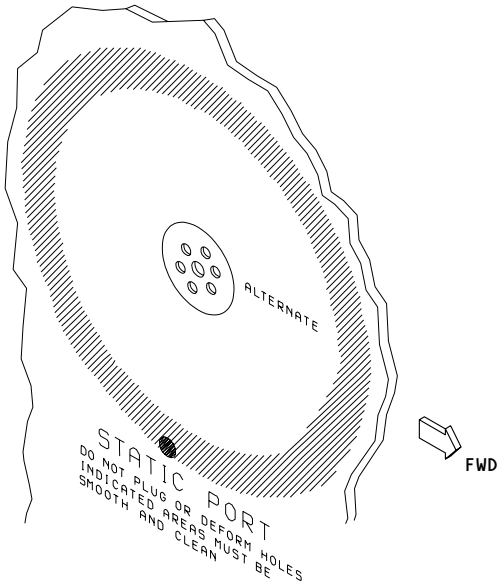


PITOT-STATIC SYSTEM DRAIN LOCATIONS



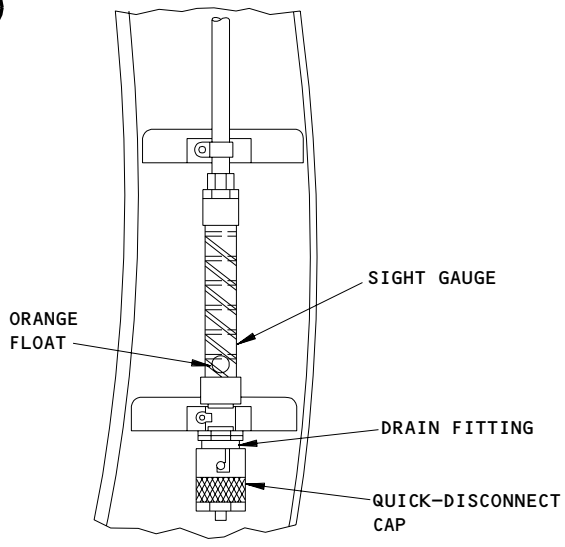
PITOT STATIC PROBE (EXAMPLE)

A



ALTERNATE STATIC PORT

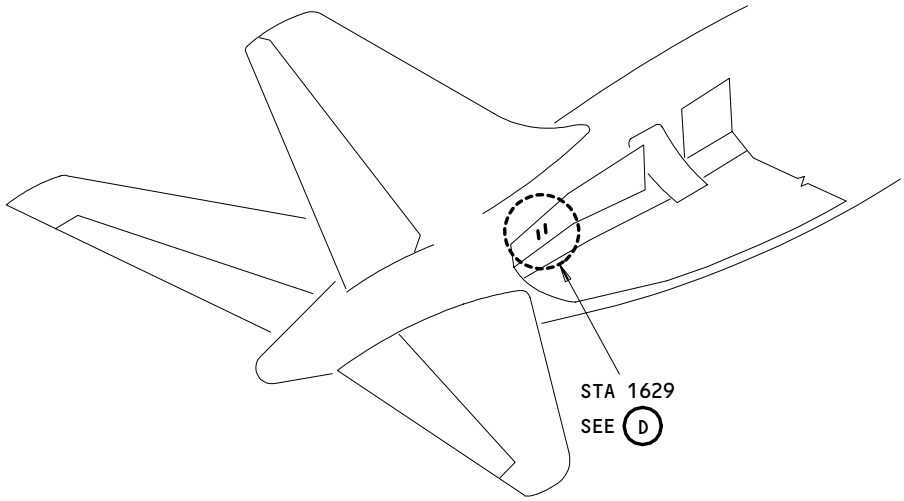
B



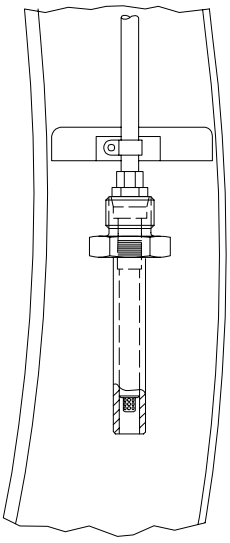
PITOT-STATIC SYSTEM DRAIN

C

Pitot-Static System Component Locations
Figure 501 (Sheet 1)



STATIC SYSTEM VISCO JET DRAIN LOCATIONS



STATIC SYSTEM VISCO JET DRAIN

D

Pitot-Static System Component Locations
Figure 501 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-009-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	CREW CABIN	A-34-010-01	1C	11212	012	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	INSTRUMENT SOURCE SELECT SWITCHING		NOTE	ALL

ZONES	ACCESS PANELS
212	

MECH | INSP

MPD ITEM NUMBER

OPERATIONALLY CHECK INSTRUMENT SOURCE SELECT SWITCHING. 34-22-00-5A

AIRPLANE NOTE:
THIS TASK IS APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER.

1. Instrument Source Select Switching Test

NOTE: This is a scheduled maintenance task.

A. References

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

(2) AMM 34-21-00/201, Inertial Reference System

B. Access

(1) Location Zones
211/212 Flight Compartment

C. Prepare for the Test

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

D. Procedure

(1) Make sure that these P11 panel circuit breakers are open:

(a) 11E9, FMCS CMPTR LEFT

(b) 11E20, FLT CONT CMPTR PWR C

(c) 11E21, FLT CONT CMPTR SERVO C

MECH | INSP

(2) Make sure that these P11 panel circuit breakers are closed:

(a) EICAS (6 locations)

CAUTION: DO NOT OPEN THE AIR DATA CMPTR RIGHT CIRCUIT BREAKER WITH THE PITOT-STATIC SYSTEM PRESSURIZED. THIS CAN CAUSE DAMAGE TO THE EQUIPMENT.

(3) Open this P11 panel circuit breaker:

(a) 11F30, AIR DATA CMPTR RIGHT

(4) On the left and right EFIS control panels, put the HSI MODE switch in the MAP position.

(5) On the AFDS mode control panel, set the two F/D switches to the ON position.

(6) On the IRMP, set the left and right mode switches to the NAV position (AMM 34-21-00/201).

NOTE: Make sure you permit time for the IRUs to align.

(7) On the IRMP, set the center mode switch to the OFF position.

(8) Put the left and right instrument source select switches and controls in the positions that follow:

NOTE: Make sure that the non-rotary switches are illuminated when they are in the ALTN position.

(a) FLT DIR - L position (left panel)/R position (right panel)

(b) NAV - FMC-L (left panel)/FMC-R (right panel)

(c) EFI - NORM (out)

(d) IRS - NORM (out)

(e) AIR DATA - NORM (out)

(9) Make sure that these displays have the indications that follow while in the MAP mode.

MECH | INSP

(a) Look at the left and right EADIs.

1) Make sure that the flight director mode annunciation, FD, shows on the right side.

(b) Look at the left EHSI:

1) Make sure that the top left and right positions are blank.

(c) Look at the right EHSI:

1) Make sure that three horizontal lines and the letters NM show in the top left position.

2) Make sure that six horizontal lines and the letter Z show in the top right position.

(d) Look at the EICAS.

1) Make sure that the EICAS message INSTR SWITCH does not show.

(e) Look at the left altimeter and EADI airspeed tape.

1) Make sure that the failure flags do not show.

(f) Look at the right altimeter and EADI airspeed tape.

1) Make sure that the failure flags show.

(10) Put the left FLT DIR switch in the C position.

NOTE: In the steps that follow, only the display changes that are necessary to make sure of correct switch operation are given.

(a) Look at the left EADI.

1) Make sure that the FD annunciation goes out of view.

2) AIRPLANES WITH -414 EFIS SG AND PREVIOUS;

Make sure that the FD failure flag shows.

(11) Put the right FLT DIR switch in the C position.

(a) Look at the right EADI.

MECH	INSP

1) Make sure that the FD annunciation goes out of view.

2) AIRPLANES WITH -414 EFIS SG AND PREVIOUS;

Make sure that the FD failure flag shows.

(12) Put the left FLT DIR switch in the R position.

(a) Look at the left EADI.

1) Make sure that the FD annunciation shows.

2) AIRPLANES WITH -414 EFIS SG AND PREVIOUS;

Make sure that the FD failure flag does not show.

(13) Put the right FLT DIR switch in the L position.

(a) Look at the right EADI.

1) Make sure that the FD annunciation shows.

2) AIRPLANES WITH -414 EFIS SG AND PREVIOUS;

Make sure that the FD failure flag does not show.

(14) Put the left FLT DIR switch in the L position.

(15) Put the right FLT DIR switch in the R position.

(16) Put the left NAV switch in the FMC-R position.

(17) Put the right NAV switch in the FMC-L position.

(18) Look at the left EHSI.

(a) Make sure the MAP failure flag does not show.

(19) Look at the right EHSI.

(a) Make sure that the MAP failure flag shows.

(20) Remove the DO-NOT-CLOSE tag and close this P11 panel circuit breaker:

(a) 11E9, FMCS CMPTR LEFT

MECH	INSP

(21) Put the left NAV switch to FMC-L and the right NAV switch to FMC-R.

(22) Look at the left and right EHSIs.

(a) Make sure that the MAP failure flags do not show.

(23) On the left EFIS control panel, put the HSI MODE control in the PLAN position.

(a) Look at the left EHSI.

1) Make sure that the PLAN mode shows.

(24) Put the left and right EFI switches in the ALTN position.

(a) Look at the EICAS.

1) Make sure that the EICAS message INSTR SWITCH shows.

(b) Look at the left and right EHSIs.

1) Make sure that the PLAN mode shows.

(25) Put the right EFI switch in the NORM position.

(a) Look at the EICAS.

1) Make sure that the EICAS message INSTR SWITCH does not show.

(b) Look at the right EHSI.

1) Make sure that the MAP mode shows.

(26) Put the right EFI switch in the ALTN position.

(a) Look at the EICAS.

1) Make sure that the EICAS message INSTR SWITCH shows.

(b) Look at the right EHSI.

1) Make sure that the PLAN mode shows.

(27) Put the left EFI switch in the NORM position.

(a) Look at the EICAS.

MECH	INSP

1) Make sure that the message INSTR SWITCH does not show.

(b) Look at the right EHSI.

1) Make sure that the MAP mode shows.

(28) Put the right EFI switch in the NORM position.

(a) Make sure that there are no display changes.

(29) On the left EFIS control panel, put the HSI MODE control in the MAP position.

(a) Look at the left EHSI.

1) Make sure that the MAP mode shows.

(30) Put the left and right IRS switches in the ALTN position.

(a) Look at the left and right EADIs.

1) Make sure that the ATT flags show.

(31) Put the left IRS switch in the NORM position.

(a) Look at the left EADI.

1) Make sure that the ATT flag goes out of view.

(32) Put the right IRS switch in the NORM position.

(a) Look at the right EADI.

1) Make sure that the ATT flag goes out of view.

(33) On the IRMP, set the left and right mode switches to the OFF position.

(34) On the IRMP, set the center mode switch to the ATT position.

(a) Look at the left and right EADIs.

1) Make sure that the ATT flag shows.

(35) Put the left IRS switch in the ALTN position.

(a) Look at the left EADI.

MECH	INSP

1) Make sure that the ATT flag goes out of view.

(36) Put the left IRS switch in the NORM position.

(37) Put the right IRS switch in the ALTN position.

(a) Look at the right EADI.

1) Make sure that the ATT flag goes out of view.

(38) Put the right IRS switch in the NORM position.

(39) Set the left AIR DATA switch to the ALTN position.

(a) Look at the left altimeter.

1) Make sure that the failure flag shows.

(b) Look at the left EADI.

1) Make sure that the SPD flag shows.

(40) Set the right AIR DATA switch to the ALTN position.

(a) Look at the right altimeter.

1) Make sure that the failure flag does not show.

(b) Look at the right EADI.

1) Make sure that the SPD flag does not show.

(41) Set the left and right AIR DATA switches to the NORM position.

(a) Look at the left altimeter.

1) Make sure that the failure flag does not show.

(b) Look at the left EADI.

1) Make sure that the SPD flag does not show.

(c) Look at the right altimeter.

1) Make sure that the failure flag shows.

(d) Look at the right EADI.

MECH	INSP

1) Make sure that the SPD flag shows.

E. Put the Airplane Back to Its Usual Condition

(1) Remove the DO-NOT-CLOSE tags and close these P11 panel circuit breakers:

(a) 11E20, FLT CONT CMPTR PWR C

(b) 11E21, FLT CONT CMPTR SERVO C

(c) 11F30, AIR DATA CMPTR RIGHT

(2) On the IRMP, set the center mode switch to the OFF position.

(3) On the AFDS mode control panel, set the two F/D switches to the OFF position.

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

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-010-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	CREW CABIN	B-34-009-01	1C	11212	012	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	CENTER EFIS SYMBOL GENERATOR		NOTE	ALL

ZONES	ACCESS PANELS
211	

MECH	INSP	MPD ITEM NUMBER

OPERATIONALLY CHECK CENTER EFIS SYMBOL GENERATOR. 34-22-00-5B

AIRPLANE NOTE:
THIS TASK IS APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER.

1. Center EFIS Symbol Generator Test

NOTE: This is a scheduled maintenance task.

A. References

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

B. Access

(1) Location Zones
211/212 Flight Compartment

C. Prepare for Test

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

(2) On the left and right instrument source select panels, put the switches in the positions indicated:

(a) EFI - NORM (out)

(3) On the instrument panel P3, put the HDG REF switch in the NORM position.

(4) On the AFDS mode control panel, set the two F/D switches to the OFF position.

MECH | INSP

(5) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:

(a) 11F2, WX RADAR LEFT

(b) 11F23, WX RADAR RIGHT

(6) Make sure that these P11 panel circuit breakers are closed:

(a) 11U15, AIR/GND SYS 1

D. Procedure

(1) Make sure that these P11 panel circuit breakers are closed:

(a) 11A7, EFIS DSPL SW L

(b) 11E3, ADI LEFT

(c) 11E4, EFIS CONT PNL LEFT

(d) 11E6, HSI LEFT

(e) 11E24, ADI RIGHT

(f) 11E25, EFIS CONT PNL RIGHT

(g) 11E27, HSI RIGHT

(h) 11F8, EFIS SYM GEN L

(i) 11F9, EFIS SYM GEN C

(j) 11F24, EFIS DSPL SW RIGHT

(k) 11F29, EFIS SYM GEN RIGHT

(2) On the right EFIS control panel, put the switches and controls in the positions indicated:

(a) Range Select - 80 NM

(b) HSI Mode Select - MAP

(c) WXR Select - ON

(d) Map Mode Select Switches (4) - ON (in)

MECH	INSP

(e) ADI BRT and HSI BRT - Fully clockwise.

(3) Push and hold the test switch on the overhead light control panel, P5, to start an EFIS self-test.

(a) Make sure that the test pattern shows on the right EADI and EHSI (Fig. 501-MAP mode).

(b) Make sure that the EHSI test pattern has an indicated range of 80 NM.

(4) Release the TEST switch to stop the EFIS self-test.

(5) Open this P11 panel circuit breaker:

(a) 11F29, EFIS SYM GEN RIGHT

(6) Make sure that the right EADI and EHSI displays do not show data.

(7) Put the right EFI instrument source select switch in the ALTN position.

(8) Push and hold the test switch on the overhead light control panel, P5, to start an EFIS self-test.

(a) Make sure that the test pattern shows on the right EADI and EHSI (Fig. 501).

(b) Make sure that the EHSI is in the MAP mode and has an indicated range of 80 NM.

(9) Release the TEST switch to stop the EFIS self-test.

(10) Close this P11 panel circuit breaker:

(a) 11F29, EFIS SYM GEN RIGHT

(11) Put the right EFI instrument source select switch in the NORM position.

(12) Make sure that the right EADI and EHSI displays show data.

(13) On the right EFIS control panel, put the switches and controls in the positions indicated:

(a) WXR Select - Off position

MECH | INSP

(b) Map Mode Select Switches (4) - OFF (out)

(c) ADI BRT and HSI BRT - Fully counterclockwise.

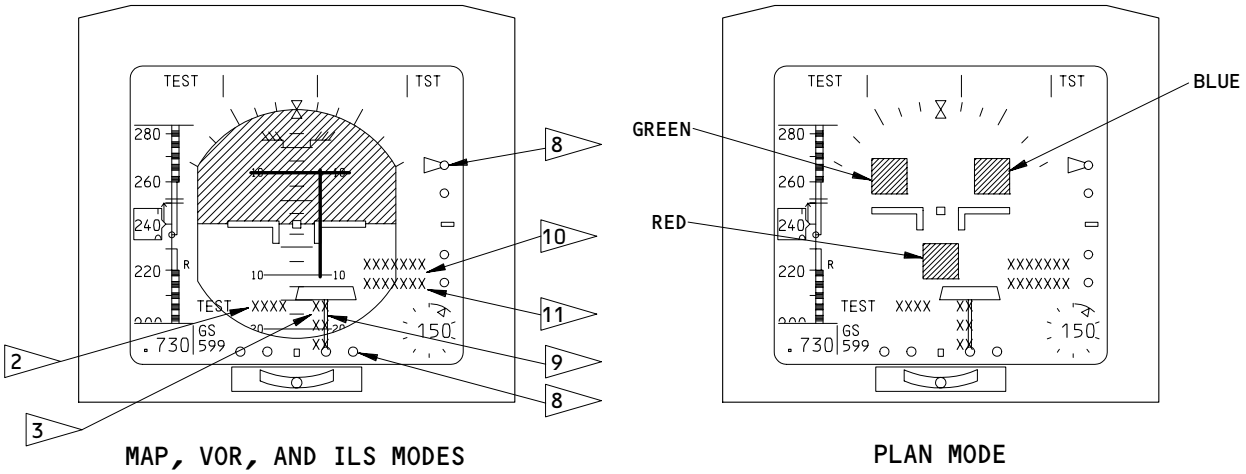
(14) Remove the DO-NOT-CLOSE tags and close these P11 panel circuit breakers:

(a) 11F2, WX RADAR LEFT

(b) 11F23, WX RADAR RIGHT

E. Put the Airplane Back to Its Usual Condition

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



MAP, VOR, AND ILS MODES

PLAN MODE

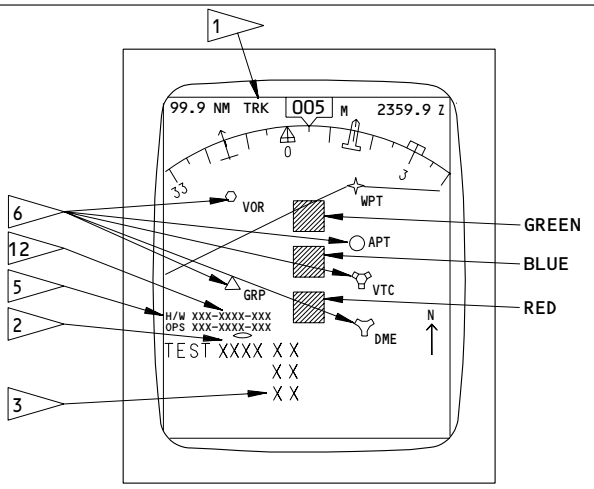
EADI

THIS UNIT IS ELECTROSTATIC SENSITIVE

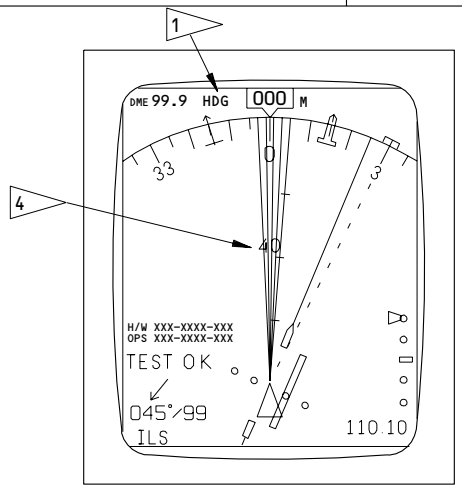
NOTE: SYMBOLOGY COLORS SAME AS FOR NORMAL OPERATION.

1. PRESENTATION IS SET BY THE STATE OF THE PROGRAM PIN AND/OR DIGITAL DISCRETE INPUT
2. TEST MESSAGE "OK" OR "FAIL"
3. FAILURE MESSAGE-CP (CONTROL PANEL); DU (DISPLAY UNIT); AND SG (SYMBOL GENERATOR)
4. NUMERIC VALUE SHOWS THE EFIS CONTROL PANEL RANGE SELECTION
5. SOFTWARE VERSION
6. SHOWS THE HSI MAP DATA SELECTED ON THE EFIS CONTROL PANEL
7. RED-YELLOW-GREEN WXR TEST PATTERN
8. THE G/S AND LOC SCALES AND POINTERS WILL NOT SHOW IF THE FREQUENCY ON THE ILS CONTROL PANEL IS IN THE "PK" POSITION
9. BAR FLASHES FOR ILS DEVIATION WARNING
10. PROGRAM PIN HEX CODES
11. ON AIRPLANES WITH -420 EFIS SYMBOL GENERATORS AND SUBSEQUENT, THERE ARE THREE HEX CODE LINES
12. AIRPLANES WITH -420 EFIS SYMBOL GENERATORS AND SUBSEQUENT; THE HARDWARE PART NUMBER IS ALSO SHOWN

EFIS Test Patterns
Figure 501 (Sheet 1)

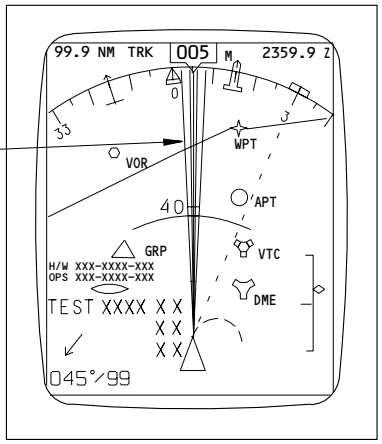


PLAN MODE

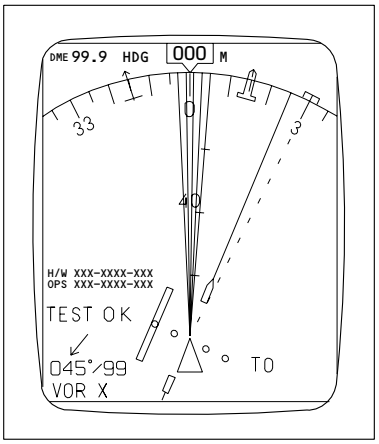


ILS-EXP MODE

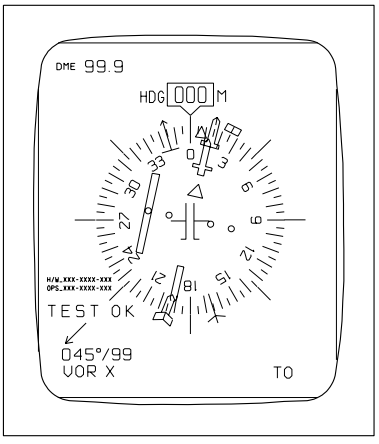
EHSI



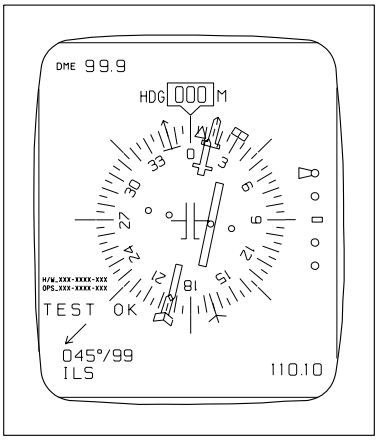
MAP MODE



VOR-EXP MODE



VOR-FULL MODE



ILS-FULL MODE

THIS UNIT IS ELECTROSTATIC SENSITIVE

EFIS Test Patterns
Figure 501 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-011-09
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	CREW CABIN		1C	11212	013	APR 22/05

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	GROUND PROXIMITY WARNING SYSTEM		NOTE	ALL

ZONES	ACCESS PANELS
211	

MECH	INSP	MPD ITEM NUMBER

OPERATIONALLY CHECK THE GROUND PROXIMITY WARNING SYSTEM 34-46-00-5A

AIRPLANE NOTE:
APPLICABLE TO 767-200/300 AIRPLANES EQUIPPED WITH SUNDSTRAND -207 AND ON GPWS COMPUTER SYSTEMS.

A. References

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

(2) 34-21-00/201, Inertial Reference System

B. Prepare for the GPWS Operational Test

(1) Make sure this circuit breaker is closed:

(a) P11 Overhead Circuit Breaker Panel

1) 11F4, GND PROX

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

C. GPWS Operational Test

(1) Energize and align the IRUs (Ref 34-21-00/201).

(2) Push the STATUS switch on the EICAS display select panel.

(3) Set and hold the GND PROX test switch on the miscellaneous test panel for at least 6 seconds.

MECH | INSP

(a) Make sure this sequence of visual and aural indications occurs:

NOTE: The EICAS message, GND PROX SYS, may not show on the bottom display for up to 12 seconds.

AURALS	WARNING LIGHTS	EADI MSG	EICAS MESSAGE	
"GLIDESLOPE"	GND PROX (A)		GND PROX SYS	
"WHOOP WHOOP PULL-UP"	MASTER (R), PULL UP (R)		GND PROX SYS	
SIREN	MASTER, WINDSHEAR (R)	WINDSHEAR (R)	GND PROX SYS	
"WINDSHEAR,	MASTER, WINDSHEAR (R)	WINDSHEAR (R)	GND PROX SYS	
WINDSHEAR,	MASTER, WINDSHEAR (R)	WINDSHEAR (R)	GND PROX SYS	
WINDSHEAR"	MASTER, WINDSHEAR (R)	WINDSHEAR (R)	GND PROX SYS	
		WINDSHEAR (A)	GND PROX SYS	
"SINK RATE"			GND PROX SYS	
"WHOOP WHOOP PULL-UP"			GND PROX SYS	
"TERRAIN"			GND PROX SYS	
"WHOOP WHOOP PULL-UP"			GND PROX SYS	
"DON'T SINK"			GND PROX SYS	
"TOO-LOW TERRAIN"			GND PROX SYS	
"TOO-LOW GEAR"			GND PROX SYS	
"TOO-LOW FLAPS"			GND PROX SYS	
"TOO-LOW TERRAIN"			GND PROX SYS	
"GLIDESLOPE"			GND PROX SYS	
"APPROACHING			GND PROX SYS	SAS
DECISION HEIGHT"			GND PROX SYS	SAS
"MINIMUMS"			GND PROX SYS	SAS
"TWENTY FIVE			GND PROX SYS	SAS
HUNDRED"			GND PROX SYS	SAS
"ONE THOUSAND"			GND PROX SYS	SAS
"FIFTY"			GND PROX SYS	SAS
"FORTY"			GND PROX SYS	SAS
"THIRTY"			GND PROX SYS	SAS
"TWENTY"			GND PROX SYS	SAS
"TEN"			GND PROX SYS	SAS
SIREN			GND PROX SYS	
"WINDSHEAR,			GND PROX SYS	
WINDSHEAR,			GND PROX SYS	
WINDSHEAR"			GND PROX SYS	

MECH	INSP

D. Put the Airplane Back to Its Usual Condition.

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

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-012-05
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	MAIN EE CTR		00002 YRS	11616	009	DEC 22/05

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	AIR TRAFFIC CONTROL SYSTEM (ATC)		NOTE	ALL

ZONES	ACCESS PANELS
119	119AL

MECH	INSP	MPD ITEM NUMBER

FUNCTIONALLY CHECK THE AIR TRAFFIC CONTROL SYSTEM (ATC). 34-53-00-5A
THIS TASK SATISFIES THE INTENT OF FAR 91.413.

AIRPLANE NOTE: AIRPLANES WITH COLLINS NON MODE S AIR TRAFFIC CONTROL SYSTEM.

A. Equipment

(1) Transponder/DME Ramp Test Set - IFR Model ATC600A; Instruments and Flight Research Inc., 10200 West York Street, Wichita, KA 67215.

(2) Angular displacement measuring tool - Boeing A34012-24

B. References

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

(2) 34-12-00/501, Air Data Computing (ADC) System

C. Access

(1) Location Zones

119/120	Main Equipment Center
119/120	Main Equipment Center (Exterior)
211/212	Flight Compartment

D. Prepare for the System Test

(1) Read the offset value found on the trailing edge of the left and right angle of attack (AOA).

MECH | INSP

(2) Set the left AOA VANE to (0 plus offset) degrees and the right AOA VANE to (0 minus offset) degrees.

NOTE: Failure to do this step can give incorrect altitude indication.

CAUTION: DO NOT OPERATE THE TEST SET WHEN ITS ANTENNA IS LESS THAN 15 INCHES FROM THE AIRPLANE ANTENNA. DAMAGE TO THE TEST SET CAN OCCUR.

(3) Adjust the remote test antenna to the same height as the left ATC antenna.

(4) Put the test antenna a specified horizontal distance from the left ATC antenna. The test antenna coax cable shows the necessary distance (about 21 inches).

(5) Put the loose end of the coaxial cable into the flight compartment and connect it to the test set.

(6) Supply electrical power (Ref 24-22-00/201).

(7) Do the ATC System - Operational Test.

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11F28, ATC RIGHT

2) 11F30, AIR DATA CMPTR RIGHT

(9) Set the transponder select switch on the ATC control panel to the L position.

(10) Set the altitude reporting switch on the ATC control panel to the OFF position.

E. The Left ATC System Test

(1) Do a transponder sensitivity test as follows:

(a) On the test set, make sure the % REPLY meter shows 100.

MECH | INSP

(b) Slowly turn the XPDR SIG control clockwise until the % REPLY meter shows 90.

(c) Make sure the XPDR SIG control is between 69 and 77.

(d) Write down the control value. This is the minimum triggering level (MTL) for the transponder system.

(e) Set the mode switch on the test set to the A/C ALT position.

(f) Set the altitude reporting switch on the ATC control panel to the ON position.

(g) Slowly turn the XPDR SIG control clockwise until the % REPLY meter shows 90.

(h) Make sure the XPDR SIG control is between 69 and 77.

(i) Make sure the XPDR SIG control value is not different from the first value by more than 1.

(j) Turn the XPDR SIG control back to the fully counterclockwise position.

(k) Set the mode switch on the test set to the A/C CODE position.

(2) Do the side lobe suppression test as follows:

(a) Adjust the XPDR SIG control on the test set to 3 dB above the MTL. This is the control value from before, minus 3.

NOTE: The transponder's sensitivity can possibly be near the limit of sensitivity. If necessary, move the antennas closer together to get 3 dB above the MTL. At a closer than usual antenna distance, set the control again for the MTL. Adjust the control to 3 dB above the MTL and do the side lobe suppression test.

(b) Set the SLS switch on the test set to 0 dB. Make sure the transponder gives no reply.

(c) Set the SLS switch on the test panel to -9 dB. Make sure the transponder gives a reply of 90% (minimum) to 100% on the % REPLY meter.

MECH | INSP

(d) Turn the XPDR SIG control on the test set to the fully counterclockwise position.

(3) Do the transmitter frequency test as follows:

(a) Set the FREQ/POWER meter switch on the test set to the FREQ position.

(b) On the ATC control panel, do these steps as follows:

1) Set the ATC code switches to 0000.

2) Set the altitude reporting switch to the OFF position.

(c) Adjust the gain control on the test set for a middle value on the FREQ/POWER meter.

(d) Turn the frequency control for a maximum meter value.

(e) Make sure the frequency control value is 0 plus or minus 3.

(4) Do the transponder power output test as follows:

(a) Set the FREQ/POWER meter switch to the POWER position.

(b) Make sure the transponder power output is in the range of 125 watts to 500 watts.

(5) Do the identification test as follows:

(a) In sequence, set the ATC code switches on the ATC control panel to 1275, 1661, 4336, and 5225.

(b) Make sure you receive the ATC codes of 1275, 1661, 4336 and 5225 in sequence at the transponder test set.

(c) Push the IDENT switch on the ATC control panel.

(d) Make sure you receive an identification pulse as a reply.

(e) Set the transponder select switch on the ATC control panel to each of the other two positions.

(f) Make sure there is no reply at the test set for the two positions.

MECH | INSP

(g) Set the transponder select switch on the ATC control panel to its initial position.

(6) Do the altitude reporting test as follows:

(a) Set the altitude reporting switch on the ATC control panel to the ON position.

(b) Make sure the captains's ADC switch on the INSTR SOURCE SEL panel is in the NORM position.

(c) Set and hold the ADC test switch on the miscellaneous test panel, P61, in the L position.

(d) Make sure you receive 10,000 feet in the altitude reply code for 2 seconds at the ATC test set.

(e) Release the ADC test switch.

(f) Make sure the altitudes on the captain's altimeter and the ATC test set are less than 100 feet apart.

F. The Right ATC System Test

(1) Move the remote test antenna to the correct position adjacent to the right ATC antenna.

(2) On the ATC control panel, do these steps as follows:

(a) Set the altitude reporting switch to the OFF position

(b) Set the transponder select switch to the R position.

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11F3, AIR DATA CMPTR RIGHT

2) 11F28, ATC RIGHT

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11A10, AIR DATA CMPTR LEFT

2) 11F7, ATC LEFT

(5) Do the transponder sensitivity test as follows:

(a) On the test set, make sure the % REPLY meter shows 100.

(b) Slowly turn the XPDR SIG control clockwise until the % REPLY meter shows 90.

(c) Make sure the XPDR SIG control is between 69 and 77.

(d) Write down the control value. This is the minimum triggering level (MTL) for the transponder.

(e) Set the mode switch on the test set to the A/C ALT position.

(f) Set the altitude reporting switch on the ATC control panel to the ON position.

(g) Slowly turn the XPDR SIG control clockwise until the % REPLY meter shows 90.

(h) Make sure the XPDR SIG control is between 69 and 77.

(i) Make sure the XPDR SIG control value is not different from the first value by more than 1.

(j) Turn the XPDR SIG control back to the fully counterclockwise position.

(k) Set the mode switch on the test set to the A/C CODE position.

(6) Do the side lobe suppression test as follows:

(a) Adjust the XPDR SIG control on the test set to 3 dB above the MTL. This is the control value from before, minus 3.

NOTE: The transponder's sensitivity can possibly be near the limit of sensitivity. If necessary, move the antennas closer together to get 3 dB above the MTL. At a closer than usual antenna distance, set the control again for the MTL. Adjust the control to 3 dB above the MTL and do the side lobe suppression test.

(b) Set the SLS switch on the test set to 0 dB. Make sure the transponder gives no reply.

MECH | INSP

(c) Set the SLS switch on the test panel to -9 dB. Make sure the transponder gives a reply of 90% (minimum) to 100% on the % REPLY meter.

(d) Turn the XPDR SIG control on the test set to the fully counterclockwise position.

(7) Do the transmitter frequency test as follows:

(a) Set the FREQ/POWER meter switch on the test set to the FREQ position.

(b) On ATC control panel, do these steps as follows:

1) Set the ATC code switches to 0000.

2) Set the altitude reporting switch to the OFF position.

(c) Adjust the gain control on the test set for a middle value on the FREQ/POWER meter.

(d) Turn the frequency control for a maximum meter value.

(e) Make sure the frequency control value is 0 ±3.

(8) Do the transponder power output test as follows:

(a) Set the FREQ/POWER meter switch to the POWER position.

(b) Make sure the transponder power output is in the range of 125 watts to 500 watts.

(9) Do the identification test as follows:

(a) In sequence, set the ATC code switches on the ATC control panel to 1275, 1661, 4336, and 5225.

(b) Make sure you receive the ATC codes of 1275, 1661, 4336, and 5225 in sequence at the transponder test set.

(c) Push the IDENT switch on the ATC control panel.

(d) Make sure you receive an identification pulse as a reply.

(e) Set the transponder select switch on the ATC control panel to each of the other two positions.

MECH | INSP

(f) Make sure there is no reply at the test set for the two positions.

(g) Set the transponder select switch on the ATC control panel to its initial position.

(10) Do the altitude reporting test as follows:

(a) Set the altitude reporting switch on the ATC control panel to the ON position.

(b) Make sure the first officer's ADC switch on the INSTR SOURCE SEL panel is in the NORM position.

(c) Set and hold the ADC test switch on the miscellaneous test panel, P61, in the R position.

(d) Make sure you receive 10,000 feet in the altitude reply code for 2 seconds at the ATC test set.

(e) Release the ADC test switch.

(f) Make sure the altitudes on the first officer's altimeter and the ATC test set are less than 100 feet apart.

G. Put the Airplane Back to Its Usual Condition

(1) Set the first officer's ADC switch on the INSTR SOURCE SEL panel back to the NORM position.

(2) Set the transponder select switch on the ATC control panel to the OFF position.

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11A10, AIR DATA CMPTR LEFT

2) 11F7, ATC LEFT

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

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-012-06
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	MAIN EE CTR		00002 YRS	11616	009	AUG 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	AIR TRAFFIC CONTROL SYSTEM (ATC)		NOTE	ALL

ZONES	ACCESS PANELS
119	119AL

MECH	INSP	MPD ITEM NUMBER

FUNCTIONALLY CHECK THE AIR TRAFFIC CONTROL SYSTEM (ATC). 34-53-00-5A
THIS TASK SATISFIES THE INTENT OF FAR 91.413.

AIRPLANE NOTE: AIRPLANES WITH COLLINS MODE S AIR TRAFFIC CONTROL SYSTEM.

1. ATC System - System Test (With the IFR ATC-601)

A. General

(1) This system test is a more complete check of the ATC system. The system test first does the ATC - Operational Test. Then it uses ground test equipment to examine the left and right ATC systems and a transponder check.

(2) The IFR 601 test set is used to test the functionality of the mode S transponder. All 20 tests can be run automatically in the AUTO mode or individually in single test mode. Results from the last test are shown on each test page. The PASSED/FAILED indication is shown on top of the page. To do a single test, use the select keys to get to the desired test and push the RUN/STOP key.

B. Equipment

(1) ATC Transponder Ramp Test Set IFR ATC-601

C. References

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

(2) AMM 32-09-02/201, Flight Mode Simulation

(3) AMM 34-12-00/501, Air Data Computing (ADC) System

D. Access

(1) Location Zones

119/120	Main Equipment Center
119/120	Main Equipment Center (Exterior)
211/212	Flight Compartment
223/224	Area Above Passenger Cabin Ceiling (Exterior)

E. Prepare for the System Test

CAUTION: DO NOT PLACE THE REMOTE TEST SET ANTENNA CLOSER THAN 15 INCHES (.40 METERS) TO THE AIRCRAFT ANTENNA WITH THE TEST SET ON. THIS WILL CAUSE DAMAGE TO THE TEST SET.

(1) Put the test antenna at a convenient distance from the airplane.

NOTE: The test set antenna must be with in the line of sight of the ATC antennas.

(2) Put the test set antenna in position towards the aircraft antenna.

(3) Connect the coax cable from the remote test set antenna to the test set.

(4) Do the ATC Operational Test.

(a) Make sure the operational test passes.

(5) Set the PWR swtich on the test set to the ON position.

NOTE: The test set is a source of interference for radio and L-band radar equipment operating near the test set. To avoid possible interference set the interrogation rate (PFR) to 50 for Mode S interrogation and turn the test set off as soon as the test is completed or when you must perform other radio checks on the airplane.

(6) Push the SETUP key to enter the SETUP menu.

NOTE: For information regarding the battery test, timing and recharging, refer to the operation section of the test set operators manual.

MECH | INSP

(7) Push the SELF TEST key on the test set.

(8) Push the RUN/STOP key to start the self-test.

(a) Make sure the test set display shows PASSED.

(9) Push the SETUP key on the test set.

(10) Enter the distrancefrom the test set to the aircraft antenna in the RANGE field for the top and bottom antenna.

(11) Enter 24 feet for the HEIGHT field for the TOP antenna and 6 feet for the BOTTOM antenna.

(12) Choose the bottom antenna on the SELECTED field.

(13) Enter the gain listed on the test set antenna into the GAIN_1030 and GAIN_1090 field.

(14) Enter the cable loss listed on the cable in the LOSS field.

(a) Use the SLEW keys to change the values.

(b) Use the SELECT keys to change the items.

(c) Use the SELECT keys to select the antenna which you must test.

WARNING: PERFORM FLIGHT MODE SIMULATION DEACTIVATION PROCEDURE PER AMM 32-09-02/201 PRIOR TO OPENING AIR/GROUND CIRCUIT BREAKERS. OPENING AIR/GROUND CIRCUIT BREAKERS WILL SIMULATE FLIGHT MODE FOR MANY AIRPLANE SYSTEMS AND COULD CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT IF INSTRUCTIONS ARE NOT FOLLOWED.

(15) Perform the flight mode simulation deactivation procedure (AMM 32-09-02/201).

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

MECH | INSP

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

(17) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

F. ATC System Test

(1) Set the code switches on the ATC control panel to a desired ATC ID code.

NOTE: Do not use codes 7500, 7600, and 7700. These are emergency codes.

(2) Set the transponder select switch on the ATC control panel to the left or No. 1 system.

(3) Set the altitude reporting switch on the ATC control panel to the ON position.

(4) Push the AUTO TEST key on the test set.

(5) Use the RUN/STOP key to start or stop individual tests.

(6) Use the SELECT key to select each individual test.

(7) Do a check of the REPLY DELAY TEST.

(a) Make sure the reply delay is 128.00 ±0.25us for mode S.

(b) Make sure the reply delay is 128.00 ±0.50us for ITM.

(c) Make sure the reply delay is 3.00 ±0.50us for ATC A and C.

(8) Do a check of the REPLY JITTER TEST.

(a) Make sure the reply jitter is ≤ 0.08us for mode S.

(b) Make sure the reply jitter is ≤ 0.1us for ITM A and C.

(c) Make sure the reply jitter is ≤ 0.1us for ATC A and C.

(9) Do a check of the ATCRBS REPLY TEST.

MECH | INSP

(a) Make sure the spacing of the F1 to F2 pulse is 20.3 ±0.10us.

(b) Make sure the duration of the F1, F2 pulse is 0.45 ±0.10us.

(10) Do a check of the SLS LEVEL TEST.

(a) Make sure the reply is received when the SLS pulse is -9dB and no reply is received when the SLS pulse is 0dB.

NOTE: Run the SLS level test in less than 95 feet (28.96 meters) of the UUT antenna.

(11) Do a check of the ATC ONLY ALL-CALL TEST.

(a) Make sure the mode S transponder did not reply to the interrogation (PASSED TEST).

(12) Do a check of the MODE S ALL CALL TEST.

(a) Make sure the test set shows PASSED and the airplane mode S address.

(13) Do a check of the INVALID MODE S ADDRESS TEST.

(a) Make sure the mode S transponder did not reply (PASSED TEST).

(14) Do a check of the SPR ON/OFF TEST.

(a) Make sure a reply is receive when SPR is ON and no reply is receive when SPR is OFF.

(15) Do a check of the MODE S UF0 TEST.

(a) Make sure (Down-link format) DF=0, AC=(airplane altitude) and ADDRESS=(airplane mode S address).

NOTE: Make sure the reported altitude is within ± 100 feet of the altitude shown on captain's and first officer's altimeter (applicable for all the altitude reporting checks).

(16) Do a check of the MODE S UF4 TEST.

(a) Make sure DF=4, AC=(airplane altitude) and ADDRESS=(airplane mode address).

MECH	INSP

(17) Do a check of the MODE S UF5 TEST.

(a) Make sure DF=5, ID=(selected ATC ID code on the ATC control panel) and ADDRESS=(airplane mode S address).

(18) Do a check of the MODE S UF11 TEST.

(a) Make sure DF=11 and AA=(airplane address).

(b) Make sure the CA field is not void.

NOTE: The value of the CA field is determined by the manufacturer.

(19) Do a check of the MODE S UF16 TEST.

(a) Make sure DF=16, AC=(airplane altitude) and ADDRESS=(airplane mode S address).

NOTE: No reply to the UF16 test is not a failure of the ATC system.

(20) Do a check of the MODE S UF20 TEST.

(a) Make sure DF=20, AC=(airplane altitude) and ADDRESS=(airplane mode S address).

NOTE: No reply to the UF20 test is not a failure of the ATC system.

(21) Do a check of the MODE S UF21 TEST.

(a) Make sure DF=21, ID=(selected ATC ID code on the ATC control panel) and ADDRESS=(airplane mode S address).

NOTE: No reply to the UF21 test is not a failure of the ATC system.

(22) Do a check of the SQUITTER TEST.

MECH | INSP

(a) Make sure the squitter's period is between 0.8 to 1.2 seconds.

NOTE: If the test set antenna is in line of sight with only one of the ATC antennas, the squitter period will be between 1.6 to 2.4 seconds.

(23) Do a check of the FREQUENCY TEST.

(a) Make sure the reply frequency of the transponder is 1090 ±3 MHz.

(24) Move the test set to less than 50 feet from the top ATC antenna.

NOTE: Make sure the top ATC antenna is not in the line of sight of the test set antenna. Follow the test set operator's quide to reduce multipath errors. Do the test several times with the test set at different locations until you get valid results.

(25) Push the SETUP key on the test set and enter the appropriate range for the top and bottom antenna.

(26) Do a check of the DIVERSITY TEST.

(a) Make sure the power level difference is ≥ 20dB between "on" antenna squitters and "off" antenna squitters.

NOTE: To make sure the dynamic range is ≥ 20dB, a diversity test must be run at a distance of less than 50 feet (15.2 meters) from the airplane antenna.

(27) Do a check of the MTL DIFFERENCE TEST.

(a) Make sure the Minimum Threshold Level (MTL) difference between mode A and mode C is ≤ 1.0dBm.

(28) Push the PWR TEST key on the test set.

(29) Use the SELECT key on the test set and select the bottom antenna.

NOTE: Make sure the top ATC antenna is not in the line of sight of the test set antenna during the POWER TEST.

MECH | INSP

(30) Push the antenna pushbutton switch.

(31) Slowly move the test set antenna 6 feet (1.8 meters) vertically from the ground, at less than 1 FT/SEC (30 CM/SEC).

(32) Push the antenna pushbutton switch a second time to stop the test when the test set antenna is approximately 6 feet high.

(33) Do a check of the POWER TEST.

(a) Make sure the test set shows PASSED.

(34) Insert the antenna shield over the bottom ATC antenna.

(35) Move the test set so that it is in the line of sight of the top ATC antenna.

(36) Push the SETUP key on the test set.

(a) Enter the appropriate range for the top antenna.

(b) Choose the top antenna on the SELECTED field.

(37) Push the PWR TEST key on the test set.

(38) Use the SELECT key on the test set and select the top antenna.

(39) Do a check of the POWER TEST.

(a) Make sure the test set shows PASSED.

(40) Do the system test again for the right or No. 2 ATC system.

NOTE: On the test set, select the other ATC antenna.

G. Put the Airplane Back to Its Usual Condition

(1) Put the safety-sensitive systems back to their initial conditions (AMM 32-09-02/201).

(2) Remove the ATC ramp test set and antenna shield.

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

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

2. ATC System - System Test (With the IFR ATC-601-2)

A. General

(1) This system test is a more complete check of the ATC system. The system test first does the ATC - Operational Test. Then it uses ground test equipment to examine the left and right ATC systems and a transponder check.

(2) Requirements for Elementary Surveillance, Enhanced Surveillance and Extended Squitter require transponder testing be done with the IFR-601 (-2) with software version 3.0 or greater.

(3) For this procedure, IFR-601-2 refers to a IFR ATC-601 with software version 3.0 or greater. The only difference is the software version. The hardware is the same.

(4) The IFR-601-2 test set uses thirty-nine (39) different tests to check the functionality of the ATC transponder. All thirty-nine (39) tests can be run automatically in the AUTO mode, or individually in the single test mode.

(5) Results from the last test are shown on each test page. The PASSED/FAILED indication is shown on top of the page. To do a single test, use the select keys to get to the desired test and push the RUN/STOP key.

(6) The details of individual tests conducted during the AUTO TEST are stored in memory and may be reviewed by using the SELECT keys.

(7) When a individual test is selected, the test may be started by the RUN/STOP key, and will continue to run until the RUN/STOP key is pressed again.

B. Equipment

MECH | INSP

(1) ATC Transponder Ramp Test Set IFR ATC-601

C. References

(1) AMM 22-10-00/501, Autopilot Flight Director System (AFDS)

(2) AMM 24-22-00/201, Manual Control

(3) AMM 32-09-02/201, Flight Mode Simulation

(4) AMM 34-12-00/501, Air Data Computing (ADC) System

(5) AMM 34-21-00/501, Inertial Reference System (IRS)

(6) AMM 34-58-00/501, Global Positioning System (GPS)

(7) AMM 34-61-00/501, Flight Management Computer System (FMCS)

D. Access

(1) Location Zones

119/120	Main Equipment Center
119/120	Main Equipment Center (Exterior)
211/212	Flight Compartment
223/224	Area Above Passenger Cabin Ceiling (Exterior)

E. Prepare for the System Test

CAUTION: DO NOT PLACE THE REMOTE TEST SET ANTENNA CLOSER THAN 15 INCHES (.40 METERS) TO THE AIRCRAFT ANTENNA WITH THE TEST SET ON. THIS WILL CAUSE DAMAGE TO THE TEST SET.

(1) Put the test antenna at a convenient distance from the airplane.

NOTE: The test set antenna must be with in the line of sight of the ATC antennas.

(2) Put the test set antenna in position towards the aircraft antenna.

(3) Connect the coax cable from the remote test set antenna to the test set.

(4) Do the ATC Operational Test.

MECH	INSP

(a) Make sure the operational test passes.

(5) Set the PWR swtich on the test set to the ON position.

NOTE: The test set is a source of interference for radio and L-band radar equipment operating near the test set. To avoid possible interference set the interrogation rate (PFR) to 50 for Mode S interrogation and turn the test set off as soon as the test is completed or when you must perform other radio checks on the airplane.

(a) The Start-Up screen will display.

1) The software version is shown on this screen.

(b) Make sure the software version is 3.0 or greater.

(6) Push the SELF TEST key on the test set.

(7) Push the RUN/STOP key to start the self-test.

(a) Make sure the test set display shows PASSED.

(8) Push the SETUP key on the test set, to enter the setup menu.

(a) Enter the required data into the Setup Menu.

NOTE: Refer to the IFR ATC-601-2 Operation Manual for detailed information.

(9) Enter the distance from the test set to the aircraft antenna in the RANGE field for the top and bottom antenna.

(10) Enter 24 feet for the HEIGHT field for the TOP antenna and 6 feet for the BOTTOM antenna.

(11) Choose the bottom antenna on the SELECTED field.

(12) Enter the gain listed on the test set antenna into the GAIN_1030 and GAIN_1090 field.

(13) Enter the cable loss listed on the cable in the LOSS field.

(a) Use the SLEW keys to change the values.

MECH | INSP

(b) Use the SELECT keys to change the items.

(c) Use the SELECT keys to select the antenna which you must test.

WARNING: PERFORM FLIGHT MODE SIMULATION DEACTIVATION PROCEDURE PER AMM 32-09-02/201 PRIOR TO OPENING AIR/GROUND CIRCUIT BREAKERS. OPENING AIR/GROUND CIRCUIT BREAKERS WILL SIMULATE FLIGHT MODE FOR MANY AIRPLANE SYSTEMS AND COULD CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT IF INSTRUCTIONS ARE NOT FOLLOWED.

(14) Perform the flight mode simulation deactivation procedure (AMM 32-09-02/201).

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

(16) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

F. ATC System Test

(1) Set the code switches on the ATC control panel to a desired ATC ID code.

NOTE: Do not use codes 7500, 7600, and 7700. These are emergency codes.

(2) Set the transponder select switch on the ATC control panel to the left or No. 1 system.

(3) Set the altitude reporting switch on the ATC control panel to the ON position.

MECH | INSP

(4) Push the AUTO TEST key on the test set.

(5) Use the RUN/STOP key to start or stop testing.

(a) The AUTO test will run until it is finished. The results are stored in the tester memory for review.

NOTE: Refer to the IFR ATC-601-2 Operation Manual for detailed information.

(6) To run individual tests, use the SELECT key to select each individual test.

(a) Use the RUN/STOP key to start or stop the individual tests.

(7) Review the test results screens.

(8) Do a check of the REPLY DELAY TEST.

(a) Make sure the reply delay is 128.00 ±0.25us for mode S.

(b) Make sure the reply delay is 128.00 ±0.50us for ITM.

(c) Make sure the reply delay is 3.00 ±0.50us for ATC A and C.

(9) Do a check of the REPLY JITTER TEST.

(a) Make sure the reply jitter is ≤ 0.08us for mode S.

(b) Make sure the reply jitter is ≤ 0.1us for ITM A and C.

(c) Make sure the reply jitter is ≤ 0.1us for ATC A and C.

(10) Do a check of the ATCRBS REPLY TEST.

(a) Make sure the spacing of the F1 to F2 pulse is 20.3 ±0.10us.

(b) Make sure the duration of the F1, F2 pulse is 0.45 ±0.10us.

(11) Do a check of the SLS LEVEL TEST.

MECH | INSP

(a) Make sure the reply is received when the SLS pulse is -9dB and no reply is received when the SLS pulse is 0dB.

NOTE: Run the SLS level test in less than 95 feet (28.96 meters) of the UUT antenna.

(12) Do a check of the ATC ONLY ALL-CALL TEST.

(a) Make sure the mode S transponder did not reply to the interrogation (PASSED TEST).

(13) Do a check of the MODE S ALL CALL TEST.

(a) Make sure the test set shows PASSED and the airplane mode S address.

(14) Do a check of the INVALID MODE S ADDRESS TEST.

(a) Make sure the mode S transponder did not reply (PASSED TEST).

(15) Do a check of the SPR ON/OFF TEST.

(a) Make sure a reply is receive when SPR is ON and no reply is receive when SPR is OFF.

(16) Do a check of the MODE S UF0 TEST.

(a) Make sure (Down-link format) DF=0, AC=(airplane altitude) and ADDRESS=(airplane mode S address).

NOTE: Make sure the reported altitude is within ± 100 feet of the altitude shown on captain's and first officer's altimeter (applicable for all the altitude reporting checks).

(17) Do a check of the MODE S UF4 TEST.

(a) Make sure DF=4, AC=(airplane altitude) and ADDRESS=(airplane mode address).

(18) Do a check of the MODE S UF5 TEST.

(a) Make sure DF=5, ID=(selected ATC ID code on the ATC control panel) and ADDRESS=(airplane mode S address).

MECH | INSP

(19) Do a check of the MODE S UF11 TEST.

(a) Make sure DF=11 and AA=(airplane address).

(b) Make sure the CA field is not void.

NOTE: The value of the CA field is determined by the manufacturer.

(20) Do a check of the MODE S UF16 TEST.

(a) Make sure DF=16, AC=(airplane altitude) and ADDRESS=(airplane mode S address).

NOTE: No reply to the UF16 test is not a failure of the ATC system.

(21) Do a check of the MODE S UF20 TEST.

(a) Make sure DF=20, AC=(airplane altitude) and ADDRESS=(airplane mode S address).

NOTE: No reply to the UF20 test is not a failure of the ATC system.

(22) Do a check of the MODE S UF21 TEST.

(a) Make sure DF=21, ID=(selected ATC ID code on the ATC control panel) and ADDRESS=(airplane mode S address).

NOTE: No reply to the UF21 test is not a failure of the ATC system.

(23) Do a check of the SQUITTER TEST.

(a) Make sure the squitter period is between 0.8 to 1.2 seconds.

NOTE: If the test set antenna is in line of sight with only one of the ATC antennas, the squitter period will be between 1.6 to 2.4 seconds.

(24) Do a check of the FREQUENCY TEST.

MECH | INSP

(a) Make sure the reply frequency of the transponder is 1090 ±3 MHz.

(25) Do a check of the FLIGHT ID TEST.

(26) Push the SETUP key on the test set and enter the appropriate range for the top and bottom antenna.

(27) Do a check of the DIVERSITY TEST.

(a) Make sure the power level difference is ≥ 20dB between "on" antenna squitters and "off" antenna squitters.

NOTE: To make sure the dynamic range is ≥ 20dB, a diversity test must be run at a distance of less than 50 feet (15.2 meters) from the airplane antenna.

(28) Do a check of the MTL DIFFERENCE TEST.

(a) Make sure the Minimum Threshold Level (MTL) difference between mode A and mode C is ≤ 1.0dBm.

(29) Push the PWR TEST key on the test set.

(30) Use the SELECT key on the test set and select the bottom antenna.

NOTE: Make sure the top ATC antenna is not in the line of sight of the test set antenna during the POWER TEST.

(31) Push the antenna pushbutton switch.

(32) Slowly move the test set antenna 6 feet (1.8 meters) vertically from the ground, at less than 1 FT/SEC (30 CM/SEC).

(33) Push the antenna pushbutton switch a second time to stop the test when the test set antenna is approximately 6 feet high.

(34) Do a check of the POWER TEST.

(a) Make sure the test set shows PASSED.

(35) Insert the antenna shield over the bottom ATC antenna.

(36) Move the test set so that it is in the line of sight of the top ATC antenna.

MECH | INSP

(37) Push the SETUP key on the test set.

(a) Enter the appropriate range for the top antenna.

(b) Choose the top antenna on the SELECTED field.

(38) Push the PWR TEST key on the test set.

(39) Use the SELECT key on the test set and select the top antenna.

(40) Do a check of the POWER TEST.

(a) Make sure the test set shows PASSED.

(41) Do a check of the other test results for Elementary Surveillance, Enhanced Surveillance,and Extended Squitter functions.

NOTE: Refer to the IFR-601-2 Operations Manual for details of these tests.

(42) Do the identification test.

NOTE: For the IFR-601-2, use the ATCRBS individual test. Refer to the IFR ATC-601-2 Operation Manual for detailed information.

(43) Do the system test again for the right or No. 2 ATC system.

NOTE: On the test set, select the other ATC antenna.

G. Put the Airplane Back to Its Usual Condition

(1) Put the safety-sensitive systems back to their initial conditions (AMM 32-09-02/201).

(2) Remove the ATC ramp test set and antenna shield.

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

MECH | INSP

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

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

3. System Test - ATC System (With the TIC T-48 or T-49)

A. General

(1) This system test uses the TIC T-48 or T-49 test set to test the functions of the ATC transponder. The test set can do all the tests automatically or each test by itself. Each test shows while it is done. If a test fails, the test sequence stops and a fail message shows. All data will show at the end of the test if the test is satisfactory. You must do the diversity test and either the automatic test or the individual tests to completely test the ATC system.

(2) Operation with the antenna coupler, TAP-115, TAP-118, or TAP 125 used with the applicable test set, is necessary when the test is to do a check of the output power, receiver, sensitivity and radio frequency. For mode S diversity channel isolation check, the TAP 125 is necessary.

B. Equipment

(1) ATC Transponder Ramp Test Set TIC T-48 or T-49

(2) RF through-line wattmeter with type 500J element, Bird Model 43P or Model 4314B, Bird Electronic Corporation, 30303 Aurora Rd., Cleveland, OH 44139

C. References

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

(2) AMM 32-09-02/201, Flight Mode Simulation

(3) AMM 34-12-00/501, Air Data Computing (ADC) System

D. Access

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(1) Location Zones

119/120	Main Equipment Center
119/120	Main Equipment Center (Exterior)
211/212	Flight Compartment
223/224	Area Above Passenger Cabin Ceiling (Exterior)

E. Prepare for the System Test

(1) Do the ATC Operational Test.

(a) Make sure the operational test passes.

(2) Prepare to tests the ATC System:

(a) Install the Antenna Test Equipmment.

1) Pull the pull-ring to separate the spring-loaded clamp.

(b) Insert the antenna coupler over the lower ATC antenna.

1) If test set has TAP 125 option and access to top ATC antenna is available, insert TAP125-10 coupler over the bottom antenna.

NOTE: Make sure the orientation of the antenna coupler setup is correct.

2) Center the couplers over the antennas and compress the EMI gasket.

3) Use the coupler with the long lead to test the upper antenna.

(c) Connect the antenna coupler connector to the test set antenna connector.

(d) Supply power to the test set and follow procedures to operate.

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

WARNING: PREPARE THE SAFETY-SENSITIVE SYSTEMS FOR THE AIR MODE BEFORE YOU OPEN THE AIR/GROUND CIRCUIT BREAKERS. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(f) Prepare the safety-sensitive systems for air mode simulation (AMM 32-09-02/201).

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

1) P11 Overhead Circuit Breaker Panel:

a) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

b) 11U15, AIR/GND SYS 1

c) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

d) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

(h) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

F. ATC System Test

(1) On the ATC control panel, set the code switches to a desired ATC ID code.

NOTE: Do not use codes 7500, 7600, and 7700. These are emergency codes.

(2) Put the ATC system on standby.

(3) Push the INTERROGATE switch.

(a) Test set display will initially be as follows:

NOTE: This is a momentary display, to read, hold the switch.

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(b) After the tester has determined the type of transponder under test (Mode S, Mode A, Mode C, etc.) the display will change to "no reply from xpdr".

NOTE: The test set will automatically turn itself off after 2 minutes of inactivity.

(4) Set the transponder select switch on the ATC control panel to the left or No. 1 system.

(5) Set the altitude reporting switch on the ATC control panel to the ON position.

(6) Close these circuit breakers.

(a) P11, Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

(7) Push the INTERROGATE switch.

(a) Make sure the test set shows "no reply from xpdr".

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

(a) P11, Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

(9) Push the INTERROGATE switch.

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(a) Make sure the test set shows the correct transponder type.

NOTE: If the test set shows "no reply from xpdr", do a check on the test antenna connections. Also, make sure the ATC system is operational.

(10) Push the INTERROGATE switch again and the test set will initiate and run a sequence of tests on the transponder.

NOTE: It will stop at any failed test. To continue push the TEST button.

(a) When the tests are completed the test display should be as follows:

CCCC XXXXXX YYYYY'
ZZZ W mmm dbm nnn MHZ

1) CCCC is code selected.

2) XXXXXX is aircraft identifier.

3) YYYYY is aircraft altitude in feet (must be ± 125 feet of Capt's and F/O's altimeter.

4) ZZZ is the transmitter power output (must be > 125 and < 500 W).

5) mmm is the receiver sensitivity (must be between -77 and -71 dbm).

6) nnn is the frequency deviation (± 1 MHz max allowed).

(11) Do the steps that follow to do the DIVERSITY CHECK:

(a) For a test set with the TAP 125 option, push the TEST button on the test set until you get to the DIVERSITY CHECK.

1) Make sure to pause between each push of the test button to allow the test set to execute that test step.

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2) Make sure the test set shows DIVERSITY and then either PASS or FAIL.

NOTE: The test may initially fail due to strong local radiation. This is usually a temporary situation. Repeat the test. Any PASS indicates a good system.

(b) For a test set without the TAP 125 option, do the Mode S Diversity Channel Isolation Test as follows:

1) Disconnect the antenna cable at the antenna switch connector and connect the RF through-line wattmeter in its place.

2) Make a note of the maximum power output and the minimum power output measured by the RF through-line wattmeter during Mode S squitter transmission period.

a) Make sure the minimum power output is 100 times or 20 db lower than the maximum power output.

3) Disconnect the RF through-line wattmeter.

4) Connect the antenna cable to the antenna switch connector.

(12) Do the steps that follow to do the MAX TRUE AIRSPEED TEST:

(a) Push the TEST button on the test set until you get to the MAX TRUE AIRSPEED TEST.

1) Be sure to pause between each push of the test button to allow the tester to execute that test step.

(b) Make sure the Test set shows the max true airspeed that is pin-programmed in each transponder.

1) The tester display must be:

MAX TRUE AIRSPEED
GT300 & LE 600 Kts

(13) Do the steps that follow for the IDENT BUTTON CHECK:

(a) On the ATC control panel:

1) Set the Code Select switch to a desired ATC ID code.

NOTE: Do not use codes 7500, 7600, and 7700. These are emergency codes.

2) Set the transponder select switch to L or No. 1.

3) Set the transponder switch to XPDR.

(b) Make sure the test set shows the desired ATC ID code.

(c) Turn the test set off.

(d) Wait a moment, then push INTERROGATE.

1) Allow the tester to acquire and determine the type of transponder under test.

(e) Simultaneously push the control panel IDENT button and the test set TEST button.

(f) Make sure that the message IDENT is shown on the tester.

(14) Do the test again as necessary for the right system:

(a) To test the right system put the control panel switch to the R or 2 position.

(15) If all the tests passed, do the "Put the Airplane Back to its Usual Condition" steps at the end of this task.

G. Manual ATC System Test

NOTE: If the automatic system test passed, the manual test is not required.

(a) Change the ATC ID code on the ATC control panel to its compliment.

NOTE: The compliment of the code is 7777 minus the code.

EXAMPLE: If the code is 0340, its compliment is:

7777 - 0340 = 7437 compliment.

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(b) Push the identification switch on the ATC control panel.

(c) Push the TEST switch on the test set to run ATCRBS/A test.

1) Make sure the test set shows the IDENT indication, the ATC ID code selected on the ATC control panel, and a %REPLY greater than 90%.

(d) Push the TEST switch on the test set to run the ATCRBS/C test.

1) Make sure the test set shows the airplane altitude and %REPLY greater than 90%.

(e) Set the altitude reporting switch on the ATC control panel to the OFF position.

(f) Push the STORE switch on the test set to run the ATCRBS/C test again.

1) Make sure the test set shows no altitude data and %REPLY greater than 90%.

(g) Set the altitude reporting switch on the ATC control panel to the ON position.

(h) Push the TEST switch on the test set to run the ATCRBS/A Mode S ALL test.

1) Make sure the test set shows the airplane mode S address, and %REPLY greater than 90%.

(i) Push the TEST switch on the test set to run the ATCRBS/C Mode S ALL test.

1) Make sure the test set shows the airplane mode S address, and %REPLY greater than 90%.

(j) Push the TEST switch on the test set to run the ATCRBS/A only test.

1) Make sure the test set shows "no reply from XPDR".

(k) Push the TEST switch on the test set to run the ATCRBS/C only test.

1) Make sure the test set shows "no reply from XPDR".

(l) Push the TEST switch on the test set to run the Mode S Surv (Identity/Altitude/Short) test.

1) Make sure the test set shows the airplane mode S address, the airplane altitude, and %REPLY greater than 90%.

(m) Push the TEST switch on the test set to run the Mode S Comm (Identity/Altitude/Short) test.

NOTE: The test set will not do the Mode S Comm Test (Identity, Altitude, Short) if the transponder does not have Mode S comm C capability.

1) Make sure the test set shows the airplane mode S address, the airplane altitude, and %REPLY greater than 99%.

NOTE: Failure to reply by the transponder is not a failure of the ATC system. Contact the transponder vendor about the capability of the transponder.

(n) Push the TEST switch on the test set to run the Undesired replies test.

1) Make sure the test set shows No Replies.

(o) Push the TEST switch on the test set to run the Squitter test.

1) Make sure the test set shows PASS.

(1) For test set with the TAP 125 option, push the TEST switch on the test set to run the Mode S Diversity Channel Isolation Test.

NOTE: The test set should show the Diversity test page.

(a) Make sure the test set shows PASS.

(2) For test set without the TAP 125 option, do the Mode S Diversity Channel Isolation Test as follows:

(a) Disconnect the antenna cable at the top antenna switch connector, D2191, and connect the RF through-line wattmeter in its place.

(b) Make a note of the maximum power output and the minimum power output measured by the RF throught-line wattmeter during mode S squitter transmission period.

1) Make sure the minumum power output is 100 times or 20 db lower than the maximum power output.

(c) Disconnect the RF through-line wattmeter.

(d) Connect the antenna cable at the top antenna switch connector, D2191.

(3) Remove the antenna coupler from the lower ATC antenna and insert it to the top ATC antenna.

NOTE: Make sure the orientation of antenna coupler setup is correct.

(4) Do the system test again for the right or No. 2 ATC system.

NOTE: Use the other ATC antenna.

H. Put the Airplane Back to its Usual Condition

(1) Put the safety-sensitive systems back to their initial conditions (AMM 32-09-02/201).

(2) Remove the antenna coupler and the test set.

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

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

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4. System Test - ATC System (With the TIC TR-220)

A. General

(1) The test set can perform all the tests automatically, or each test individually. Each test is shown as it is being performed. If a test has failed, the test sequence will abort, and a failed message is displayed. All data will be shown at the end of the test, if the test is successful.

(2) When conducting tests in the MANUAL sequence, you initialize the sequence by toggling the AUTO/TEST/MANUAL switch to the MANUAL position. The Test Set runs a series of tests, and displays the individual results of each test, ending in the POWER, RECEIVER EFFICIENCY and FREQUENCY page.

(3) After each test is completed, you must toggle the MANUAL switch to advance to the next test in the series.

(4) Operation with the antenna coupler TAP-135 used with the test set, reduces Radio Frequency emissions from the transponder being tested. It is not necessary to use the coupler to perform these tests.

(5) If it is necessary to simulate the aircraft being tested as being at altitude, notify the local ATC that the transponder testing is in progress.

B. Equipment

(1) ATC Transponder Ramp Test Set TIC TR-220

C. References

(1) AMM 22-10-00/501, Autopilot Flight Director System (AFDS)

(2) AMM 24-22-00/201, Manual Control

(3) AMM 31-41-00/501, Engine Indication And Crew Alerting System (EICAS)

(4) AMM 32-09-02/201, Flight Mode Simulation

(5) AMM 34-12-00/501, Air Data Computing (ADC) System

D. Access

MECH | INSP

(1) Location Zones

119/120	Main Equipment Center
119/120	Main Equipment Center (Exterior)
211/212	Flight Compartment
223/224	Area Above Passenger Cabin Ceiling (Exterior)

E. Prepare for the System Test

(1) Do the ATC Operational Test.

(a) Make sure the operational test passes.

(2) Prepare to test the ATC System:

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

WARNING: PREPARE THE SAFETY-SENSITIVE SYSTEMS FOR THE AIR MODE BEFORE YOU OPEN THE AIR/GROUND CIRCUIT BREAKERS. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(b) Prepare the safety-sensitive systems for air mode simulation (AMM 32-09-02/201).

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

1) P11 Overhead Circuit Breaker Panel:

a) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

b) 11U15, AIR/GND SYS 1

c) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

d) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

(d) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

F. ATC System Test

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(1) On the ATC control panel, set the code switches to a desired ATC ID code.

NOTE: Do not use codes 7500, 7600, and 7700. These are emergency codes.

(2) Put the ATC system on standby.

(3) Put the TEST SET switch in the ON position.

(a) The test set will display a start-up screen, then do a self-test.

(b) If the self-test passes, the display will indicate SELF TEST PASS.

(4) Set the transponder select switch on the ATC control panel to the left or No. 1 system.

(5) Set the altitude reporting switch on the ATC control panel to the ON position.

(6) Turn the UUT FUNCTION switch on the test set to the XPDR position.

(a) The test set will determine the transponder type and display the correct Start Page.

(b) Make sure the test set shows the correct transponder type.

NOTE: If the test set shows "no reply from xpdr", do a check on the test antenna connections. Also, make sure the ATC system is operational.

(7) Press the AUTO/TEST/MANUAL switch to the AUTO position and the test set will start and run a sequence of tests on the transponder.

NOTE: It will stop at any failed test. To continue push the AUTO/TEST/MALUAL switch to the AUTO position.

(a) To repeat a failed test, push the AUTO/TEST/MANUAL switch to the MANUAL position.

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(b) When the tests are completed, the test set display will alternate between two screens. The screens displayed depend on which type of transponder was found and tested by the test set.

NOTE: Refer to the TR-220 Operating Manual for detailed information.

(8) Do the steps that follow for the IDENT BUTTON CHECK:

NOTE: The IDENT test must be run in the Manual Mode on the test set.

(a) Select either the MODE A, or the MC Test on the test set.

(b) Allow the test set to complete the test.

(c) Press the IDENT switch on the transponder control panel.

(d) Make sure that the message IDENT is displayed on the tester.

(9) Do the test again as necessary for the right system:

(a) To test the right system put the control panel switch to the R or 2 position.

(10) If all the tests passed, do the "Put the Airplane Back to its Usual Condition" steps at the end of this task.

G. Put the Airplane Back to its Usual Condition

(1) Put the safety-sensitive systems back to their initial conditions (AMM 32-09-02/201).

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

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

5. System Test - ATC System (With the IFR-6000)

A. General

(1) This system test is a full check of the ATC system. The system test first does the ATC - Operational Test and then uses the IFR-6000 ramp test set to examine the left and right ATC systems.

(2) The XPDR Mode of the IFR-6000 ramp test set, provides flight line test capability for ATCRBS and Mode S transponders using an Auto Test. The XPDR Auto Test contains one main screen (the Auto Test Screen) and up to 17 additional test screens. The Auto Test can complete a full FAR Part 43, Appendix F Test, providing decode and display of Elementary and Enhanced surveillance GICB extracted DAPs (Downlinked Aircraft Parameters).

(3) All data normally required to verify transponder operation in accordance with FAR 91.413, Part 43, Appendix F, is shown on the Auto Test Screen. Details of individual tests conducted during the AUTO TEST are stored in memory in the Test Sets TEST LIST. Tests in the TEST LIST can be reviewed or run individually by use of DATA keys and SELECT soft keys.

(4) Different classes of transponders are tested to built-in test limits by selection of configuration files. If the class of transponder is unknown, generic configuration files are provided for ATCRBS and Mode S transponders that apply the widest system limits.

(5) Mode S transponder level is automatically determined when running a test.

(6) The IFR-6000 is also capable of testing ADS-B functions. The ADS-B tests are not included with the AUTO TEST and have separate setup and test screens.

(7) The test is applicable to the left and the right ATC system. Set the transponder select switch on the ATC control panel to the applicable position to do a test of that system.

B. Equipment

(1) ATC Transponder Ramp Test Set IFR-6000

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C. References

(1) AMM 22-10-00/501, Autopilot Flight Director System (AFDS)

(2) AMM 24-22-00/201, Manual Control

(3) AMM 31-41-00/501, Engine Indication And Crew Alerting System (EICAS)

(4) AMM 32-09-02/201, Flight Mode Simulation

(5) AMM 34-12-00/501, Air Data Computing (ADC) System

(6) AMM 34-21-00/501, Inertial Reference System (IRS)

(7) AMM 34-58-00/501, Global Positioning System (GPS)

(8) AMM 34-61-00/501, Flight Management Computer System (FMCS)

D. Access

(1) Location Zones

119/120	Main Equipment Center
119/120	Main Equipment Center (Exterior)
211/212	Flight Compartment
223/224	Area Above Passenger Cabin Ceiling (Exterior)

E. Prepare for the System Test

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

(2) Do the ATC Operational Test.

(a) Make sure the operational test passes.

(3) Prepare to test the ATC System:

(a) On the ATC control panel, set the code switches to a desired ATC ID code.

NOTE: Do not use codes 7500, 7600, and 7700. These are emergency codes.

(b) Put the ATC system on standby.

(c) Set the altitude reporting switch on the ATC control panel to the ON position.

(d) AIRPLANES WITH ELEMENTARY AND ENHANCED SURVEILLANCE;
Do the following steps:

1) Enter a flight ID number at the FMC CDU.

a) Select the RTE function key on the FMC CDU.

b) Make sure that page 1 is shown.

NOTE: If needed, push the next page function key on the FMC CDU until page 1 is shown.

c) Enter BOE123 in the FMC CDU scratchpad.

d) Select line select key 2R on the FMC CDU.

2) Set a Selected Altitude.

a) Set a desired altitude in the AFDS MCP ALT window.

3) Make sure that the Inertial Reference System is aligned in the NAV MODE (AMM 34-21-00/201 or AMM 34-26-00/201).

WARNING: PREPARE THE SAFETY-SENSITIVE SYSTEMS FOR THE AIR MODE BEFORE YOU OPEN THE AIR/GROUND CIRCUIT BREAKERS. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(e) Prepare the safety-sensitive systems for air mode simulation (AMM 32-09-02/201).

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

1) P11 Overhead Circuit Breaker Panel:

a) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

b) 11U15, AIR/GND SYS 1

c) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

d) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

(4) Prepare the IFR-6000 ramp test set for the ATC system test.

NOTE: There are several manufacturers of transponder ramp test sets. The operating instructions for those ramp test sets can vary by the manufacturer model and date, level of hardware/software installed, internal ramp test set modifications and custom programming/sequence of ramp test set "soft" keys. Most ramp test sets have an "auto test" function which checks more parameters of the transponder under test, than are required by FAR 43, Appendix F. Ramp test set operating instructions may provide charts, distance limitations or required airplane antenna configurations for acceptable ramp test set results. It is recommended that the ramp test set operator have the most current operating instructions for the ramp test set that is being used and be familiar with the operation when determining the acceptability of transponder results and compliance with FAR 43, Appendix F.

(a) Mount the Directional Antenna on the Test Sets friction hinge and connect the Directional Antenna ANT Connector to the Test Set ANT Connector via the 12-inch coaxial cable.

NOTE: You can use the direct cable connection procedure to perform this test. If you do the direct cable connection, follow the instructions in the ramp test set operations manual.

(b) Push the POWER key to energize the Test Set On.

NOTE: The IFR-6000 is equipped with a Self Test for quick performance evaluation. An abbreviated Self Test is run at Power-Up. The full Self Test is initiated manually. Refer to the IFR-6000 Operations Manual for the full Self Test procedure.

(c) Push the SETUP control key to show the setup screens. Continue pushing the SETUP control key to cycle to the SETUP-GENERAL screen. Use the NEXT PARAM and PREV PARAM soft keys to set each parameter.

NOTE: Refer the IFR-6000 Operting Manual for detailed information on setup.

(d) Push the SETUP control key to show the setup screens. Continue pushing the SETUP control key to cycle to the SETUP-XPDR screen. Use the NEXT PARAM and PREV PARAM soft keys to set each parameter.

NOTE: Setup XPDR screen contains parameters which determine operational characteristics of the XPDR functional mode. Unless otherwise stated, last used values are retained on power-up.

1) Select ANTENNA. Set to TOP or BOTTOM depending on which aircraft antenna is under test.

2) Select RF PORT. Set to ANTENNA.

3) Select ANT RANGE. Set to setup range from IFR-6000 antenna to the Unit Under Test (UUT) antenna.

4) Select ANT HEIGHT. Set to setup height from IFR-6000 antenna to the UUT antenna.

5) Select ANT CABLE LOSS. Set to cable loss found on cable.

6) Select ANT GAIN (dBi). Set 1.03 and 1.09 GHz antenna gain to figures marked on supplied directional antenna.

7) Select UUT ADDRESS. Set to AUTO (defaults to AUTO on power-up). AUTO selection Mode S address is obtained via ATCRBS/Mode S All Call (FAR Part 43, appendix F approved method).

NOTE: Refer to the IFR-6000 Operations Manual for more detailed information on UUT address selection.

8) Select DIVERSITY. Set to ON.

NOTE: If Diversity Isolation Test is enabled, make sure the antenna shield is installed to the top or bottom UUT antenna prior to running the test. Refer to IFR-6000 Operations Manual for the Antenna Shield mounting procedure.

NOTE: For the DIVERSITY test, the test set must be at a distance of less than 50 feet (15.2 meters) from the airplane antenna.

9) Select CHECK CAP. Set to YES.

10) Select PWR LIM. Set to FAR 43

CAUTION: DO NOT OPERATE THE TEST SET WHEN ITS ANTENNA IS LESS THAN 15 INCHES (381 MM) FROM THE AIRPLANE ANTENNA. DAMAGE TO THE TEST SET CAN OCCUR.

(e) Position the Test Set ≤ 50 feet from and in line of sight with the UUT antenna.

(f) Insert the antenna shield over the ATC antenna not under test.

NOTE: Refer to the IFR-6000 ramp test set Operations Manual for the antenna shield mounting procedure.

NOTE: When testing the bottom antenna and shielding the top antenna is not possible or practical, move the test set so that it is not in the line of sight of the top ATC antenna.

F. ATC System Test

(1) Do the ATC System Test:

NOTE: When first powered up, the test set displays blank data fields. The last test results are displayed while test set remains powered on.

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(a) Push the XPDR mode key on the IFR-6000 ramp test set to return to XPDR auto test screen.

(b) Push the CONFIG soft key to show the XPDR CONFIG screen. Use the data keys to select the desired configuration file. Push the RETURN soft key to confirm the selection.

NOTE: Eight predefined configurations are provided to determine the PASS/FAIL limits applied to ERP, Frequency and MTL measurements. Configurations are named by class and option. Refer to the IFR-6000 ramp test set for predefined configuration details.

If the transponder class is not known, select the GNERIC ATCRBS or GENERIC MODE S configuration file.

(c) To do the Auto Test, push the RUN TEST soft key. When the Auto Test completes, a PASS or FAIL indication is shown at the top of the Auto Test screen.

NOTE: The Auto Test screen is the primary test screen and displays most UUT parameters requiring user verification.

NOTE: Refer to the IFR-6000 ramp test set for detailed information on test screens and interpreting results of the tests.

(d) Push the TEST LIST soft key to show the complete Auto Test List. Tests may be reviewed or run individually by use of the DATA and SELECT keys.

NOTE: When a Mode S configuration is selected, the test list is displayed over two screens. When an ATCRBS configuration is selected, the test list is displayed on one screen.

(e) To do the tests individually in the Test List, do these steps:

1) Use the DATA keys to select desired test. Push the SELECT TEST soft key to show the selected test.

2) Push the RUN TEST soft key to the start test.

NOTE: The test runs until stopped. Each pass through the test sequence updates the PASS/FAIL indication.

3) Push the STOP TEST soft key to the stop test.

4) Push the NEXT TEST soft key to show the next test.

5) Push the PREV TEST soft key to show the previous test.

6) Push the RETURN soft key to show the test list and select desired test.

7) Push the RETURN soft key to return to the XPDR auto test screen.

(2) AIRPLANES WITH ADS-B;
To do the tests for ADS-B, do the following:

(a) Do the ADS-B test setup.

NOTE: Refer to the IFR-6000 Operating Manual for detailed information on ADS-B test setup.

1) Push the SETUP key until the SETUP-XPDR screen is shown.

2) Push the ADS-B SETUP soft key.

3) Set the parameters by pushing the NEXT PARAM soft key. Push the PREV PARAM to select the field. Use DATA keys to slew the data.

a) Select POS DECODE: Set to LOCAL.

b) Select LAT: Set the local latitude position.

NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites, if not, use the IRS position.

c) Select LONG: Set the local longitude position.

NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites, if not, use the IRS position.

d) Select ADS-B MON: Set to DF17.

e) Select GICB: Set to DF20.

(b) Do the ADS-B tests.

NOTE: Refer to the IFR-6000 Operating Manual for detailed information on test screens and interpreting results of the tests.

1) Push the XPDR mode key twice to show the ADS-B/GICB main menu.

2) Push the ADS-B MON soft key to show the ADS-B MON list screen.

a) The ADS-B MON list screen will show the following extended squitter BDSs:

1. 0.5 AIRBORNE POS

2. 0.6 SURFACE POS

3. 0.8 IDENT & CAT

4. 0.9 AIRBORNE VEL

5. 6.1 A/C STATUS

6. 6.2 TARG STATE

7. 6.3 A/C OP STATUS

3) Push the RUN TEST soft key to start the test. When a specific extended squitter BDS is captured, AVAIL will be shown to the right of the BDS name.

NOTE: The test will continue to run until the STOP TEST soft key is pushed.

NOTE: Airplane must be in the Ground Mode to capture the 0.6 SURFACE POS BDS. Only the top ATC antenna will transmit the 0.6 SURFACE POS BDS.

4) You can use the data keys to select a specific BDS and push the BDS DATA soft key to show the selected BDS screen.

NOTE: To show the next or previous BDS screen, push the NEXT TEST or PREV TEST soft keys.

5) Push the RETURN soft key to return to the ADS-B MON list screen.

(c) Do a check of the ADS-B test results.

NOTE: The test results that follow satisfy the EASA AMC 20-24 requirements for ADS-B.

1) Do a check of the Airborne Position.

a) Select the 0,5 BDS with the BDS Data soft key.

b) Make sure that the LAT and LONG fields show the position data entered in the ADS-B setup screen.

2) Do a check of the Pressure Altitude.

a) Select the 0,5 BDS with the BDS Data soft key.

b) Make sure that the BARO PRESS ALT field shows the airplane Barometric Pressure Altitude +/- 125 ft.

3) Do a check of the Aircraft Identity.

a) Select the 0,8 BDS with the BDS Data soft key.

b) Make sure that the correct data is shown in the following fields:

1. The AA (aircraft address) field shows the Mode S Address (WDM 34-53-13 and WDM 34-53-23).

2. The FLIGHT ID field shows the same Flight ID entered into the FMC.

4) Do a check of the Emergency Status.

a) Notify local ATC facilities that transponder testing of the Emergency Status will be performed.

b) Select the 6,2 BDS with the BDS Data sofy key.

c) Set the code switches on the ATC control panel to 7600.

d) Make sure that the EMERG/PRIOR CODE field shows NO COMM.

e) Set the code switches on the ATC control panel back to original code.

5) Do a check of the Quality Indicator.

a) Select the 6,3 BDS with the BDS Data soft key.

b) Make sure that the TYPE field does not show 0.

6) Do a check of the Special Position Indicator (SPI).

a) Select the 6,3 BDS with the BDS Data soft key.

b) Push the IDENT switch on the ATC control panel.

c) Make sure that the IDENT field shows YES.

7) Do a check of the version number (VER NBR).

a) Select the 6,3 BDS with the BDS Data soft key.

b) Make sure that the VER NBR field shows DO-260/DO-242 or DO-260A/DO-242A.

G. Repeat ATC System Tests

(1) Repeat the Sysem Test for the other antenna.

(2) Do the system test again for the right or No. 2 ATC system on the upper and lower antennas.

NOTE: To meet FAR requirements, both the left and right systems must be tested on both upper and lower antennas.

H. Put the Airplane Back to Its Usual Condition

(1) Set the mode switch on the ATC control panel to the STBY position.

(2) Remove the IFR-6000 test set.

(3) Put the safety-sensitive systems back to their initial conditions (AMM 32-09-02/201).

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

(a) P11 Overhead Circuit Breaker Panel:

1) 11C29, LANDING GEAR POSITION AIR/GND SYS 2 ALT

2) 11U15, AIR/GND SYS 1

3) 767-300 AIRPLANES;
11U23, LDG GR POS AIR/GND SYS 2

4) 767-200 AIRPLANES;
11U24, LDG GR POS AIR/GND SYS 2

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

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-013-02
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AIRPL	FUSELAGE		00003 YRS	12424	013	APR 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	PITOT-STATIC SYSTEM PROBES (RVSM)		NOTE	ALL

ZONES	ACCESS PANELS
100 200	

MECH	INSP	MPD ITEM NUMBER

REPLACE PITOT-STATIC PROBES THAT ARE NOT NICKEL PLATED (BOEING PART NUMBERS S233T912-1 AND -2 ARE NOT NICKEL PLATED; ALL OTHER DASH NUMBERS GREATER THAN -2 ARE PLATED AND DO NOT NEED REPLACING). 34-11-01-4A

NOTE: SERVICE BULLETIN 767-53-0068 AND SERVICE LETTER 767-SL-02-011 ARE RELATED TO THIS TASK

AIRPLANE NOTE: 767 AIRPLANES BEING OPERATED IN AIRSPACE WHERE REDUCED VERTICAL SEPARATION MINIMUM (RVSM) IS APPLIED.

PITOT-STATIC PROBE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks. The first task removes the pitot-static probes. The second task installs the pitot-static probes.

NOTE: This is a scheduled maintenance task for airplanes with non-nickel plated pitot/static probes.

2. Pitot-Static Probe Removal (Fig. 401 or Fig. 401A)

A. Reference

(1) AMM 51-31-01/201, Seals and Sealing

B. Access

MECH | INSP

(1) Location Zones
117/118 Area Outboard and Above NLG Wheel Well

C. Procedure

WARNING: IF THE HEATER POWER HAS BEEN ON, DO NOT TOUCH THE PROBE UNTIL IT IS NOT HOT. THIS CAN CAUSE INJURY TO PERSONNEL.

(1) Open these circuit breakers on the main power distribution panel, P6, and attach DO-NOT-CLOSE tags:

(a) 6K14, PITOT HEAT CAPT ϕA

(b) 6K15, PITOT HEAT CAPT ϕB

(c) 6K16, PITOT HEAT R AUX ϕB

(d) 6K17, PITOT HEAT R AUX ϕC

(e) 6K20, PITOT HEAT L AUX ϕC

(f) 6K21, PITOT HEAT L AUX ϕB

(g) 6K22, PITOT HEAT F/O ϕB

(h) 6K23, PITOT HEAT F/O ϕA

CAUTION: BE CAREFUL WHEN YOU MOVE OR TOUCH THE PITOT-STATIC PROBES. THEY ARE EASILY DAMAGED. THE ALIGNMENT OF THE PROBES IS ALSO VERY IMPORTANT. DO NOT PUT EXTRA WEIGHT ON THE PROBES.

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.

(2) If there is sealant around the bottom of the probe, remove the sealant with sealant removal tool (AMM 51-31-01/201).

(3) Remove the probe mounting screws from the probe mounting flange.

MECH | INSP

(4) Hold the probe strut and loosen the gasket.

(5) AIRPLANES WITHOUT SB 34-0440;

Hold the probe strut and loosen the gasket.

(6) AIRPLANES WITH SB 34-0440

Hold the probe strut and loosen the ground plate and gasket.

(7) Carefully pull the probe out from the airplane skin until the electric connector and hose fittings on the bottom of the probe are in view.

(8) AIRPLANES WITH SB 34-0440;

Hold the probe and strut and remove the screw from the grounding plate and gasket from the nutplate.

(9) Move the probe as necessary to get access to the hose fittings and electrical connector.

(10) SAS 050, 051, 150-157, 162-167, 275-281 PRE-SB 34-234;

Disconnect the pitot-static hose fittings as follows:

CAUTION: USE WRENCHES ON EACH SIDE OF THE FITTING. APPLY COUNTER FORCE DURING THE DISASSEMBLY OF HOSE TO TUBE TO PREVENT TUBE DAMAGE.

(a) Unscrew the pitot-static hose fittings.

(11) SAS 050, 051, 150-157, 162-167, 275-281 POST-SB 34-234;
SAS 052-149, 158-161, 168-274, 282-999;

Disconnect the pitot-static hose at the quick-disconnects.

(12) Disconnect the electrical cable from the connector and remove the probe. (Restrain the cable and hoses so that they do not fall back inside the fuselage.)

(13) Put protective caps on both probe and the disconnected hose fittings and electric connector to keep out unwanted material unless a probe is immediately replaced.

(14) Remove and discard the gasket.

3. Pitot-Static Probe Installation (Fig. 401 or Fig. 401A)

A. Equipment

(1) Resistance measuring bridge or milliohm/bonding meter which can measure 0.010 ohm with an accuracy of ±0.001 ohm

B. Consumable Materials

(1) A00247 Compound, Sealing - BMS 5-95 (Preferred)

A00091 Compound, Sealing - Dow Corning 93-006 (Alternate)

(2) B00184 Solvent - BMS 11-7

(3) G00009 Compound, Corrosion Inhibiting - BMS 3-23

C. References

(1) AMM 20-10-22/701, Metal Surfaces

(2) AMM 30-31-00/501, Pitot Static Probe Heat

(3) AMM 34-11-01/501, Pitot-Static Probe

(4) AMM 51-31-01/201, Seals and Sealing

(5) SRM 51-20-01

D. Access

(1) Location Zones
117/118 Area Outboard and Above NLG Wheel Well

E. Procedure

NOTE: To prevent contamination of the system, make sure there is no unwanted material in the pitot-static probe.

(1) Clean the surface and sides of the hole where the probe is installed (AMM 20-10-22/701).

MECH | INSP

(2) Clean the surface of the alignment pins on the bottom of the probe.

(3) Apply a thin layer of corrosion inhibiting compound to the surface of the alignment pins (SRM 51-20-01).

(4) AIRPLANES WITH SB 34-0440

Put the bonding jumper through the new gasket.

Install the screw, washer, nut and the bounding jumper to the nutplate.

(5) Remove the protective caps from both probe and the disconnected hose fittings and electric connector.

(6) Set the new gasket in its correct position.

(7) AIRPLANES WITHOUT SB 34-0440

Set the new gasket in its correct position.

(8) AIRPLANES WITH SB 34-0440;

Set the new gasket and grounding plate in its correct position.

(9) SAS 050, 051, 150-157, 162-167, 275-281 PRE-SB 34-234;

Connect the probe hose fittings as follows:

CAUTION: USE WRENCHES ON EACH SIDE OF THE FITTING. APPLY COUNTER FORCE DURING THE ASSEMBLY OF HOSE TO TUBE TO PREVENT TUBE DAMAGE.

(a) Point the probe in the airplane's forward direction and attach the hose fittings to the bottom of the probe hose to tube fittings.

NOTE: Hose fittings are three different sizes so you cannot connect them incorrectly.

(b) Tighten the fittings to the values shown in the table that follows:

LINE	FITTING SIZE (INCHES)	TORQUE (POUND-INCHES)
PITOT LINE	1/4	110
S1 STATIC LINE	5/16	140
S2 STATIC LINE	3/8	170

(10) SAS 050, 051, 150-157, 162-167, 275-281 POST-SB 34-234;
SAS 052-149, 158-161, 168-274, 282-999;

Connect the probe quick-disconnects as follows:

(a) Point the probe in the airplane's forward direction and attach the hose quick-disconnects to the probe quick-disconnects.

NOTE: Hose quick-disconnects are three different sizes so you cannot connect them incorrectly.

(b) Do a visual inspection of the quick-disconnect fittings that you connected.

1) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

(c) If you are not sure the quick-disconnect is correct, do the low-range leakage test of the pitot-static probe (AMM 34-11-01/501).

(11) Connect the electrical cable connector to the probe.

CAUTION: DO NOT BEND OR TWIST THE PROBE TO ENGAGE THE ALIGNMENT PINS. THIS CAN CAUSE DAMAGE TO THE PROBE.

(12) Coat probe alignment pins and alignment pin holes with BMS 5-95 sealant.

(13) Hold the probe at the bottom and carefully put the pneumatic hose and electrical cable into the hole in the support plate so that the probe bottom alignment pins align with the alignment pin holes and fits in the airplane skin cutout.

(14) Make sure that the probe bottom makes a continuous surface contact with the airplane skin.

(15) Install the probe mounting screws in the probe mounting flange and tighten them to 32-39 pound-inches.

(16) Measure the resistance between the strut of the pitot-static probe and the airplane skin with an ohmmeter.

(17) If the resistance is more than 0.010 ohm, do these steps:

(a) Remove the pitot-static probe.

(b) Clean the bonding surfaces, including the countersunk holes in the pitot-static probe (SWPM 20-20-00).

(c) Replace the existing screws with new screws.

(d) Re-install the pitot-static probe.

(e) Measure the resistance between the strut of the pitot-static probe and the airplane skin with an ohmmeter.

(f) If the resistance is more than 0.010 ohm, do these steps:

1) Remove the pitot-static probe.

2) Replace the nutplates and rivets that attach the pitot-static probe (SRM 51-40-02).

3) Re-install the pitot-static probe and make sure the bonding resistance is not more than 0.010 ohm.

F. Pitot-Static Probe Test

CAUTION: REMOVE THE PROTECTIVE COVER ON THE PITOT-STATIC PROBE, IF THERE IS ONE. THIS WILL PREVENT DAMAGE TO THE PROBE WHEN YOU APPLY PROBE HEATER POWER.

MECH | INSP

(1) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P6 panel:

(a) 6K14, PITOT HEAT CAPT ϕA

(b) 6K15, PITOT HEAT CAPT ϕB

(c) 6K16, PITOT HEAT R AUX ϕB

(d) 6K17, PITOT HEAT R AUX ϕC

(e) 6K20, PITOT HEAT L AUX ϕC

(f) 6K21, PITOT HEAT L AUX ϕB

(g) 6K22, PITOT HEAT F/O ϕB

(h) 6K23, PITOT HEAT F/O ϕA

(2) Do a test of the probe heater circuit (AMM 30-31-00/501).

(3) Do the low-range leak test for the pitot-static probe (AMM 34-11-01/501).

NOTE: This test is requred on probes with none quick-disconnect fittings.

(4) AIRPLANES WITH 233T9121-5 GASKET;

Fill the gap between the bottom of the probe and the airplane skin with (BMS 5-95) sealant.

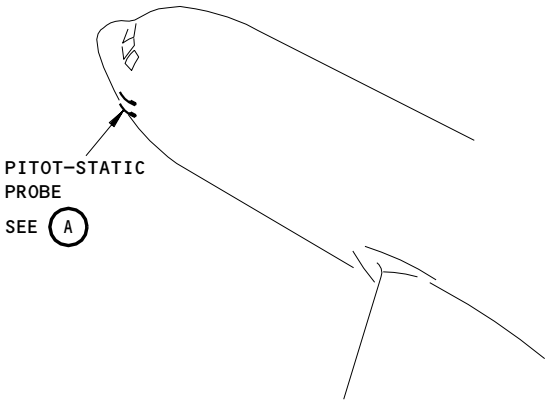
NOTE: It is not neccessary to apply the sealant immediately, if the cure time will cause a flight delay. But, you must apply the sealant as soon as possible to keep moisture out of the area between the probe and airplane skin.

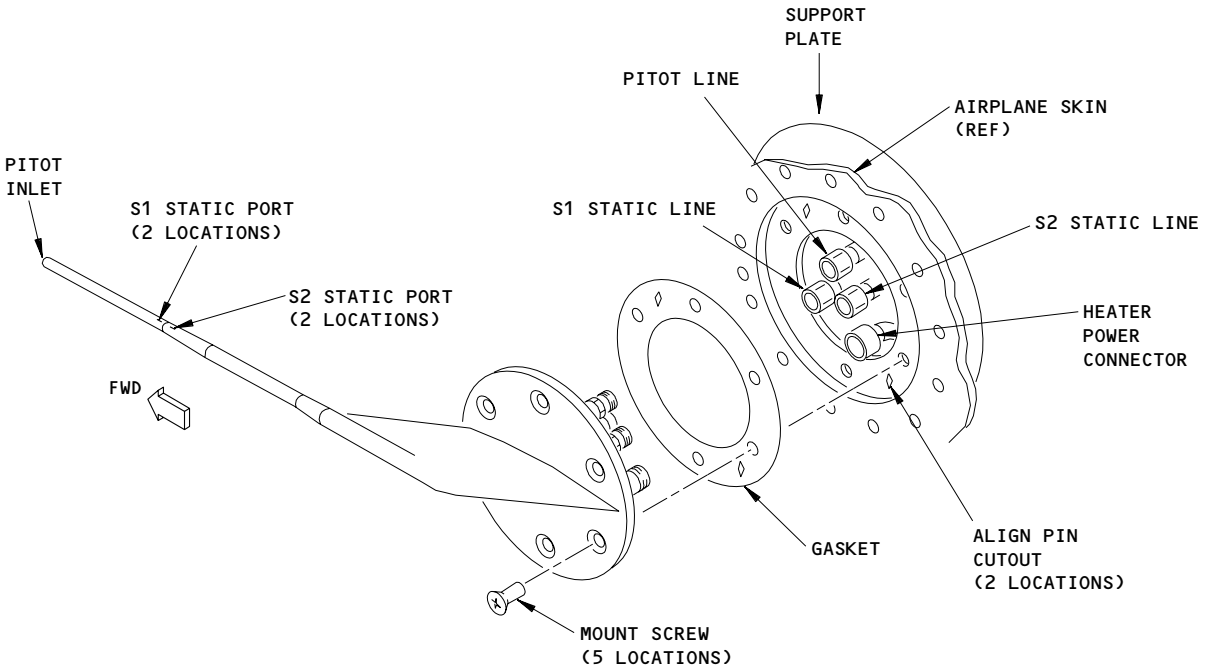
(a) Cure the sealant until the sealant is hard.

NOTE: You can apply heat to decrease the cure time (AMM 51-31-01/201).

MECH	INSP

(5) From inside the airplane, apply a layer of (BMS 5-95) sealant on the inboard surface of the airplane skin over the alignment pin locations.

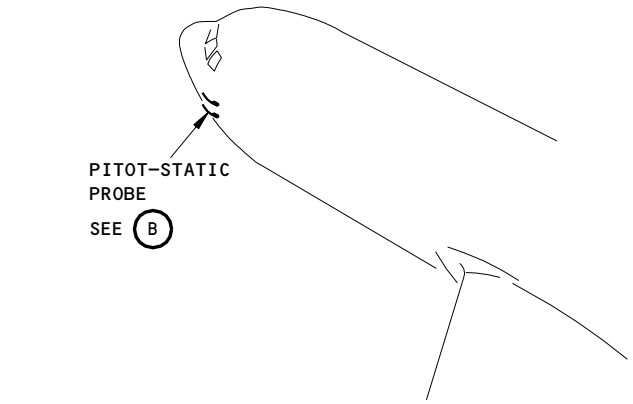


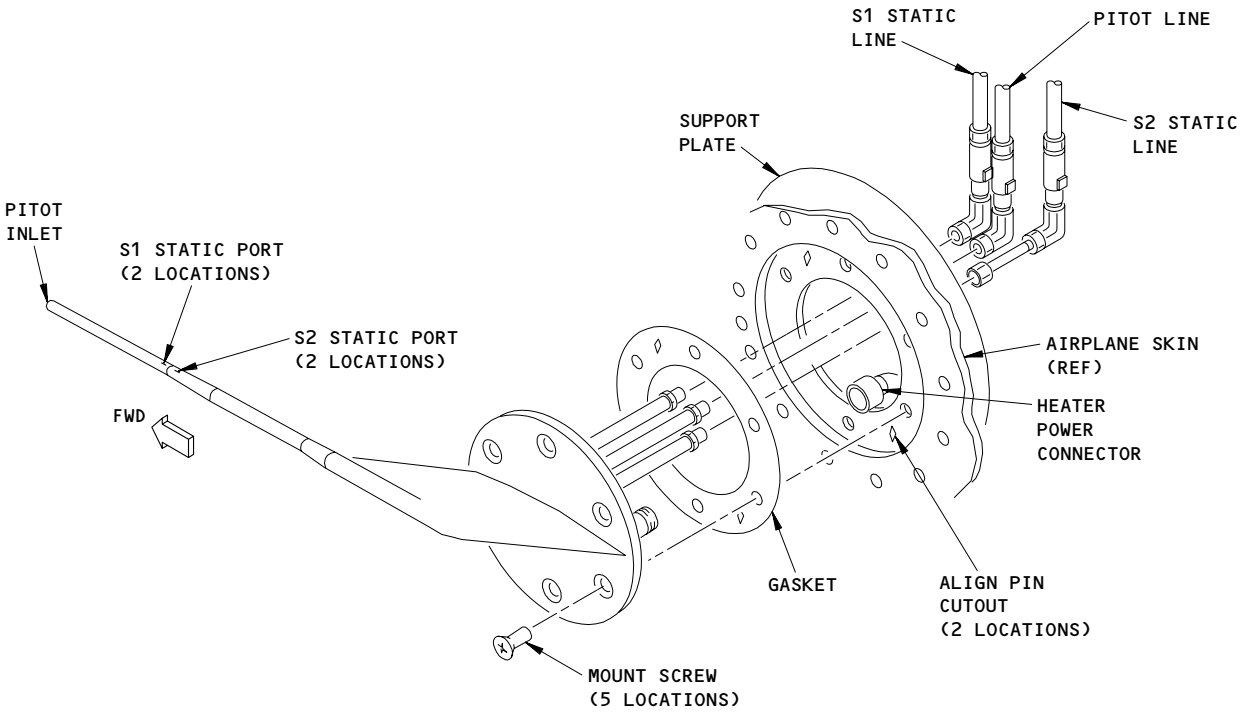


PITOT-STATIC PROBE
(EXAMPLE)

A

Pitot-Static Probe Installation
Figure 401 (Sheet 1)

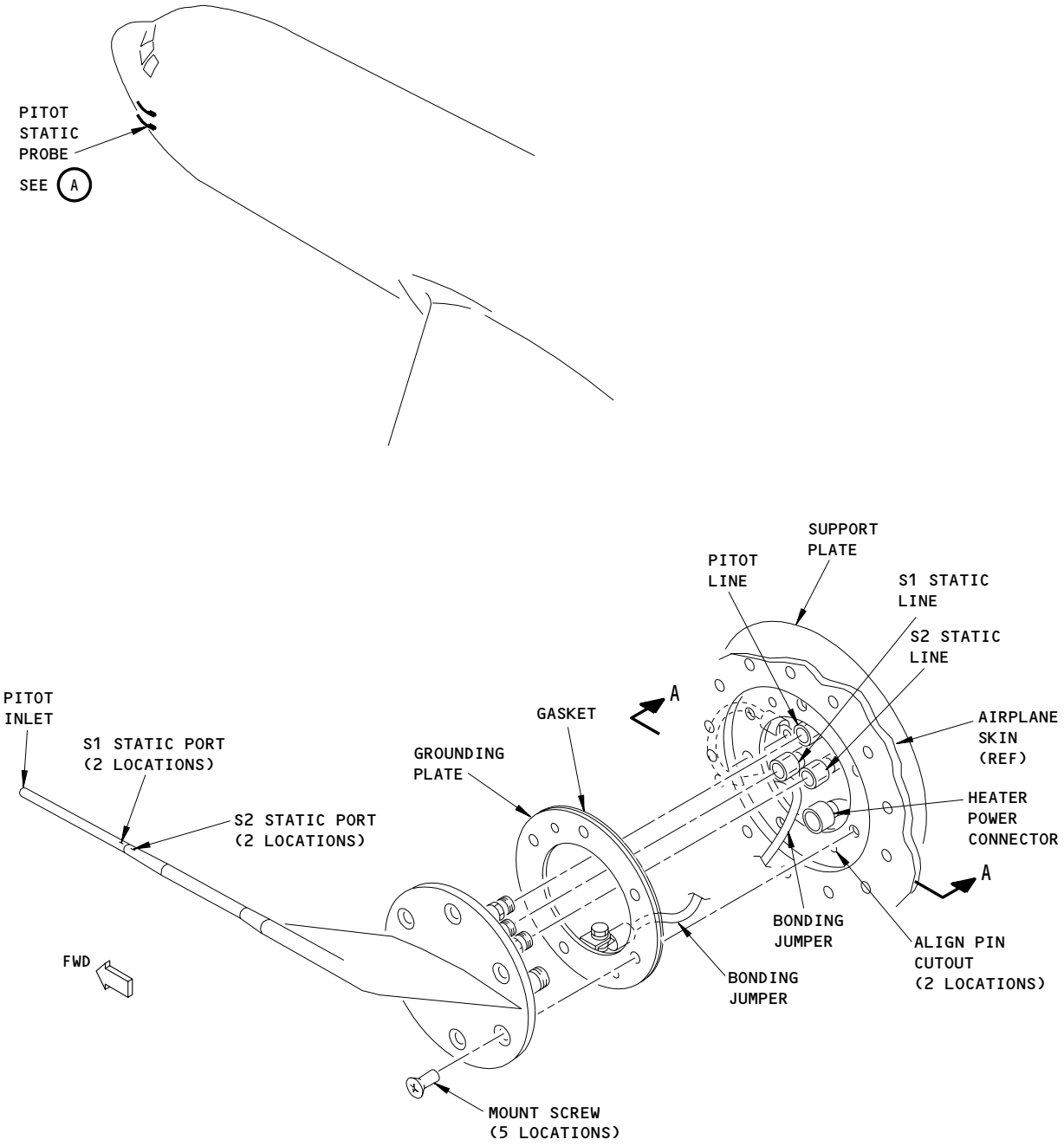




PITOT-STATIC PROBE
(EXAMPLE)

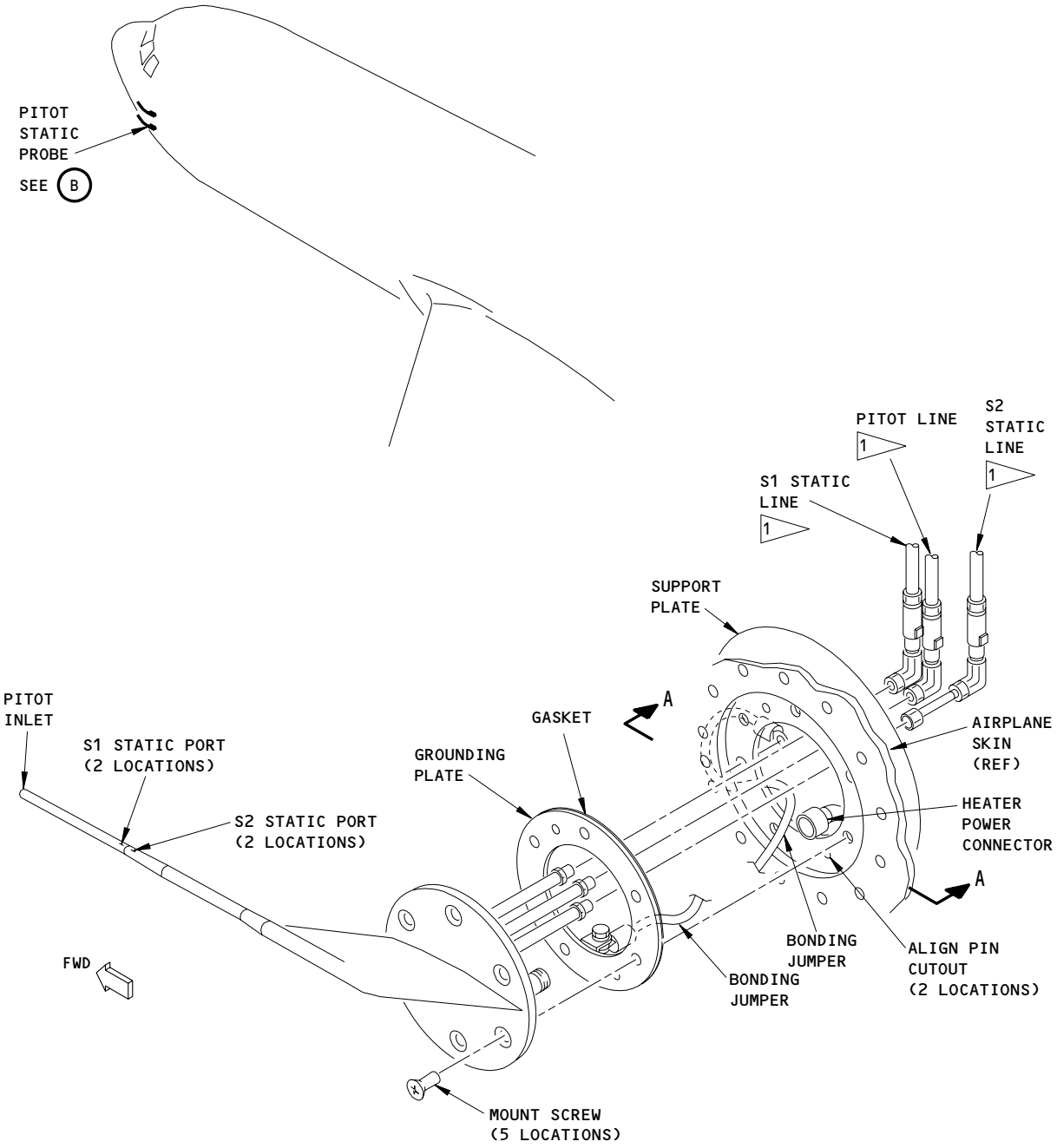
B

Pitot-Static Probe Installation
Figure 401 (Sheet 2)

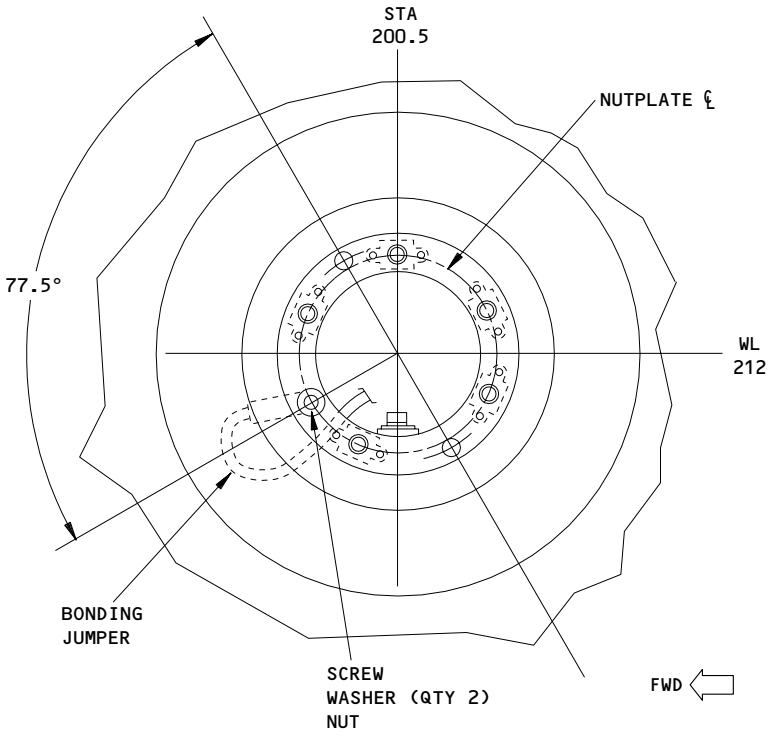


PITOT-STATIC PROBE
(EXAMPLE)
A

Pitot-Static Probe Installation
Figure 401A (Sheet 1)



Pitot-Static Probe Installation
Figure 401A (Sheet 2)



A-A

Pitot-Static Probe Installation
Figure 401A (Sheet 3)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-013-51
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	CREW CABIN		4A	10404	012	APR 22/05

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	AIR DATA COMPUTER		NOTE	ALL

ZONES	ACCESS PANELS
212	

MECH	INSP	MPD ITEM NUMBER

OPERATIONALLY CHECK THE AIR DATA COMPUTER FOR CORRECT OPERATION, ISOLATION AND OVERSPEED ANNUNCIATION INCLUDING AURAL WARNINGS. 34-12-00-6A

AIRPLANE NOTE:
THIS TASK IS APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER.

AIR DATA COMPUTING SYSTEM - INSPECTION/CHECK

1. General

   A. The Air Data Computing System Inspection/Check procedure has several tasks, these tasks are checks for the:

      (1) air data computer (ADC) operation and isolation

      (2) overspeed annunciation

      (3) altimeter

      (4) EADI

2. Air Data Computer Check (Fig. 601)

   A. References

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

   B. Access

      (1) Location Zones
          119/120 Main Equipment Center
          211/212 Flight Compartment

MECH | INSP

C. Prepare for the Check

(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) 11A7, EFIS DSPL SW L

(b) 11A10, AIR DATA CMPTR L

(c) 11A11, AIR DATA AOA SENSOR L

(d) 11A12, AIR DATA BARO CORRECT L

(e) 11A35, IND LIGHTS 3

(f) 11B16, AURAL WARN SPKR L

(g) 11B18, WARN ELEX B

(h) 11E2, ALTM LEFT

(i) 11E3, ADI LEFT

(j) 11E4, EFIS CONT PNL LEFT

(k) 11E23, ALTM RIGHT

(l) 11E24, ADI RIGHT

(m) 11E25, EFIS CONT PNL RIGHT

(n) 11F8, EFIS SYM GEN L

(o) 11F9, EFIS SYM GEN C

(p) 11F24, EFIS DSPL SW RIGHT

(q) 11F29, EFIS SYM GEN RIGHT

(r) 11F30, AIR DATA CMPTR RIGHT

(s) 11F31, AIR DATA AOA SENSOR RIGHT

(t) 11F32, AIR DATA BARO CORRECT RIGHT

MECH | INSP

(u) 11H35, AURAL WARN SPKR R

(v) 11J34, WARN ELEX A

(w) 11R30, RIGHT IND LTS 3

D. Procedure

(1) On the miscellaneous test panel, P61, set the AIR DATA COMPTR test switch to the L position and hold it there.

(a) Make sure an aural warning sounds and the left half of the OVSP (overspeed) light comes on for approximately 2 seconds.

(b) Make sure the capt's altimeter start to slew up-scale.

(c) Make sure the airspeed indication on the capt's EADI start to slew up-scale.

(2) On the miscellaneous test panel, release the AIR DATA COMPTR test switch.

(3) On the miscellaneous test panel, P61, set the AIR DATA COMPTR test switch to the R position and hold it there.

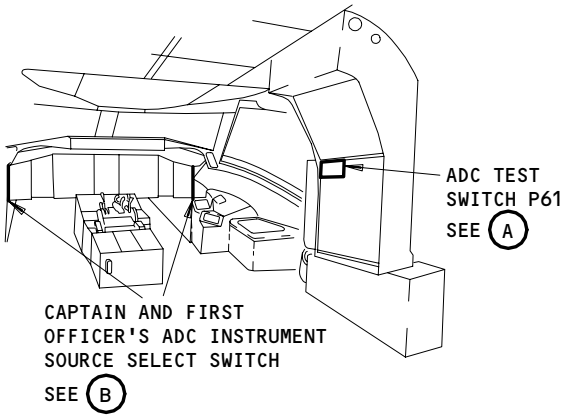
(a) Make sure an aural warning sounds and the right half of the OVSP (overspeed) light comes on for approximately 2 seconds.

(b) Make sure the F/O's altimeter start to slew up-scale.

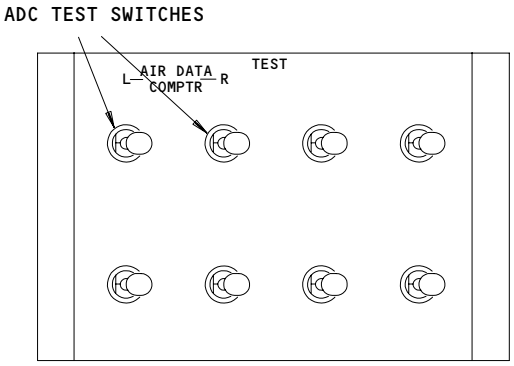
(c) Make sure the airspeed indication on the F/O's EADI start to slew up-scale.

E. Put the Airplane Back to Its Usual Condition

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

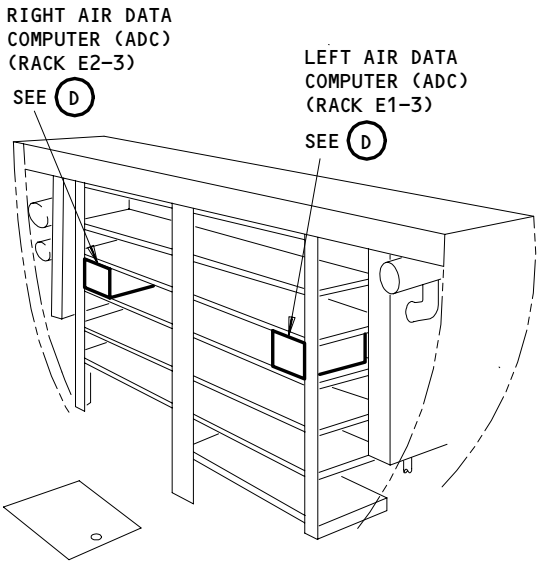


FLIGHT COMPARTMENT



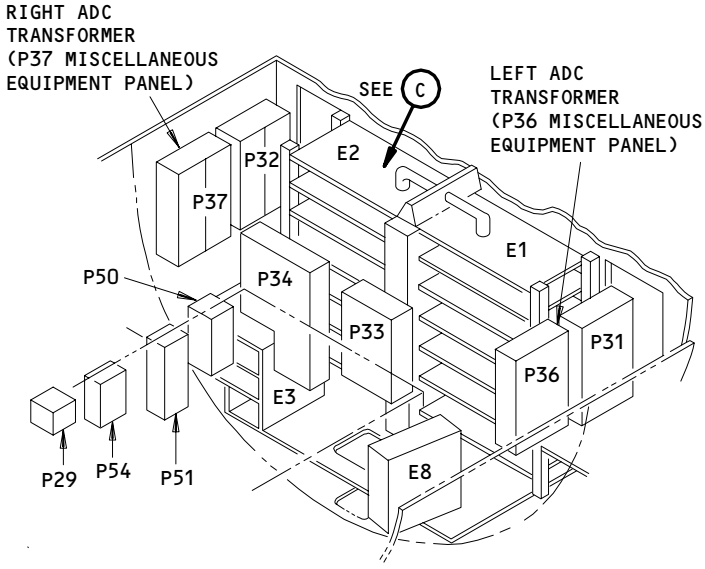
MISCELLANEOUS TEST PANEL

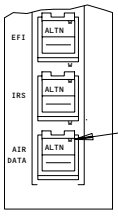
A



MAIN EQUIPMENT CENTER

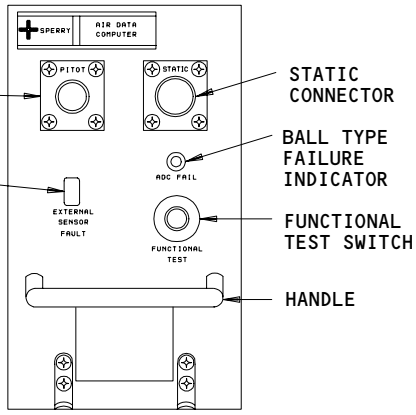
C





INSTRUMENT SOURCE
SELECT PANEL

B



AIR DATA COMPUTER

D

Air Data Computing System Component
Figure 601

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-016-07
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	CREW CABIN		NOTE	99XXX	013	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
SERVICE	FLIGHT MANAGEMENT COMPUTER DATA BASE		NOTE	ALL

ZONES	ACCESS PANELS
212	

MECH	INSP	MPD ITEM NUMBER

CHANGE NAVIGATION DATA BASE IN FLIGHT MANAGEMENT COMPUTER. 34-61-00-2A

INTERVAL NOTE: ESTABLISHED BY EACH AIRLINE.

AIRPLANE NOTE: AIRPLANES WITH DISC PORTABLE DATA LOADER.

1. General

   A. The flight management computer system is made up of two complete systems. Each has a flight management computer (FMC) and a control display unit (CDU). Each FMC contains a bubble memory for the operational program, performance database, and navigation database.

   B. The navigation database has nav aid data, geographic data, and also two different company route data sets. The company route data sets give arrival, departure, and route data valid for a specific four week period. One data set becomes out of date as the other data set starts to be used.

   C. These are four procedures to load the FMC data in the flight management computer system:

      (1) Load the Navigation Database With the Airborne Data Loader (ADL).

      (2) Crossload the Navigation Database From one FMC to the Other FMC.

      (3) Change the Drag Factor and Fuel Flow Factor.

2. Load the Navigation Database With the Airborne Data Loader (ADL)

   A. General

MECH | INSP

(1) All control of data movement is automatically done by the ADL.

NOTE: The performance factors are set to their default values when you load a new navigation database. You can change the performance factors of the FMC after you load a new database if necessary.

(2) The LED indicators on the front panel of the ADL give the status during data transfer. The LED indicators are as follows:

(a) PROG(Progress) - Indicates the data transfer is in progress.

(b) CHNG(Change) - Indicates you must change the diskette when the CHNG indicator comes on.

(c) COMP(Complete) - Indicates the data transfer is complete.

(d) RDY(Ready) - Indicates the ADL is ready for operation.

(e) XFER(Transfer) - Indicates the data transfer has failed.

(f) R/W(Read/Write)- Indicates the ADL cannot read or write the data on the diskette.

(g) HRDW(Hardware) - Indicates the ADL has failed its self-test.

(3) To read about software installation times and data loaders, do this task: On-Airplane Software Installation (AMM 20-15-11/201).

B. Equipment

(1) Current navigation database diskette.

C. References

(1) AMM 20-15-11/201, On-Airplane Software Installation

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

D. Prepare to Load the Navigation Database

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

(2) Make sure the FMC NAV Source Select switch on the P1 panel is in the FMC-L position.

MECH | INSP

(3) Make sure the FMC NAV Source Select switch on the P3 panel is in the FMC-R position.

(4) Close these circuit breakers on the P11 overhead panel:

(a) 11E8, FMCS CDU LEFT

(b) 11E29, FMCS CDU RIGHT

(5) FMC Navigation Database Input Procedure

(a) Make sure these circuit breakers are open on the P11 panel:

1) 11E9, FMCS CMPTR LEFT

2) 11E30, FMCS CMPTR RIGHT

(b) Open this circuit breaker on the P11 panel:

1) 11G24, FMC DATA LOADER

(c) At the P61 panel, set the data load selection switch to the NORMAL position on the data loader control panel (DLCP).

(d) Open the disk drive access door on the ADL which is directly below the DLCP switch on the P61 panel.

(e) Close the circuit breaker 11E9 LEFT FMCS CMPTR (11E30 RIGHT FMCS CMPTR). Make sure the circuit breaker for the other FMC is open.

(f) Close this circuit breaker on the P11 panel:

1) 11G24, FMC DATA LOADER

(g) Make sure the LED indicators on the ADL flash on and off until self-test is complete.

(h) Set the DLCP switch on the P61 panel to the position for the FMC that you will load the navigation database.

(i) Put the navigation database diskette into the disk drive.

(j) Make sure the RDY indicator comes on after the diskette has been put into the ADL.

(k) Make sure this sequence occurs:

MECH | INSP

(l) Make sure the PROG indicator comes on after the RDY indicator comes on. The two indicators should be on at the same time.

NOTE: The time before the PROG indicator comes on is not always constant because the data can be different.

(m) If the RDY indicator goes off and the CHNG indicator comes on, do these steps:

NOTE: The CHNG indicator shows that there are more diskettes and you must put in the next diskette.

1) Push the eject button and remove the first diskette. Make sure the CHNG indicator goes off and the PROG indicator comes on.

2) Put in each subsequent diskette until completed. Make sure that the RDY and PROG indicators come on.

(n) The COMP indicator comes on and the RDY and PROG indicators go off when the navigation database load is complete.

(o) Push the eject button and remove the diskette.

(p) If it is necessary to load the navigation database into the other FMC, repeat the Load the Navigation Database with the Airborne Data Loader (ADL) for that FMC.

(q) Set the DLCP switch on the P61 panel to the NORMAL position.

(r) Open this circuit breaker on the P11 panel:

1) 11G24, FMC DATA LOADER

(6) Approval of Data Input

(a) Make sure the MENU page shows on the left (Right) CDU.

(b) Make sure the <FMC prompt shows on the MENU page of the left (Right) CDU.

(c) If the <FMC prompt does not show on the MENU page, do this procedure: Load the Operational Software with the ADL.

MECH | INSP

(d) Push the line select key (LSK) adjacent to the <FMC prompt to get the IDENT page on the left (Right) CDU.

(e) Make sure the part number of the NAV DATA on the Left (Right) CDU is correct.

NOTE: Get the correct NAV DATA part number from the approved airline department.

(f) If the NAV DATA CROSSLOAD page shows on the left CDU, do one of these procedures:

NOTE: The NAV DATA CROSSLOAD page shows because the two FMCs have different navigation databases. If this occurs, you must crossload the correct navigation database into the FMC that has the incorrect one.

1) Crossload the Navigation Database From one FMC to the Other FMC

2) Load the Navigation Database With the Airborne Data Loader (ADL).

NOTE: The procedure must be done with the DLCP switch position set to the FMC that will be receiving the new database because it is incorrect.

(g) Look at and note the NAV DATA part number on the left and right CDU.

(h) Put the correct navigation database into the two FMCs, if one of these conditions occurs:

1) The NAV DATA part number does not show.

2) The NAV DATA part number shows but is not correct.

3) Today's date is not in the range between the two dates that are directly under ACTIVE or between the two dates on the third line.

4) If today's date is in between the two dates on the third line. Do a Company Data Set Interchange as follows:

NOTE: Operation of a new NAV DATA base will erase all flight plan data that was put in for the two active and inactive flight plans before the change of dates.

a) Push the 3R LSK on the CDU.

b) Make sure the data on the third line of the CDU shows on the bottom line of the CDU.

c) Push the 2R LSK on the CDU.

d) Make sure the dates on the two lines have changed positions with each other.

(i) The MODEL and ENGINES show the correct airplane configuration on the CDUs.

(j) Close this circuit breaker on the P11 panel:

1) 11G24, FMC DATA LOADER

E. Put the Airplane Back to Its Usual Condition

(1) Remove electrical power if it is not necessary (Ref 24-22-00).

3. Nav Data Crossload

A. General

(1) The flight management computer (FMC) system can transfer the complete navigation database from one FMC to the other FMC . A Nav Data Crossload can be done only when the airplane is on the ground and when the navigation databases are different.

B. References

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

C. Access

MECH | INSP

(1) Location Zones
211/212 Flight Compartment

D. Prepare to Crossload the Data

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

(2) Follow airline procedures and identify FMC with correct nav data base.

NOTE: Throughout this procedure, the FMC with the correct nav data base is referred to as the FMC that transmits. The FMC with the nav data base that is to be changed is referred to as the FMC that receives.

(3) Set the FMC NAV Source Select switch to the FMC-L position on the P1 panel and to the FMC-R position on the P3 panel.

(4) Close these P11 panel circuit breakers:

(a) 11E8, FMCS CDU LEFT

(b) 11E29, FMCS CDU RIGHT

(5) Open these P11 panel circuit breakers:

(a) 11E9, FMCS CMPTR LEFT

(b) 11E30, FMCS CMPTR RIGHT

(6) Close FMCS CMPTR circuit breaker for the FMC that transmits.

(7) Let that FMC start to operate and then close the FMCS CMPTR circuit breaker for the FMC that receives.

(8) Make sure the CDU for the FMC that transmits shows the IDENT page.

(9) Make sure the CDU for the FMC that receives shows the NAV DATA CROSSLOAD page.

E. Do a Crossload of the Navigation DataBase

(1) Do these actions on CDU for the FMC that transmits:

MECH | INSP

(a) Push the LSK adjacent to the <INDEX prompt on the lower left side of the CDU display.

(b) Make sure the CDU page title is INIT/REF INDEX.

(c) Push the LSK adjacent to the MAINT> prompt on the lower right side of the CDU display.

(d) Make sure the CDU page title is MAINTENANCE INDEX.

(e) Push the LSK adjacent to the <CROSS LOAD prompt on top left side of CDU display.

(f) Make sure the display is as shown below.

```
  NAV DATA CROSSLOAD 1/1


 <TRANSMIT       RECEIVE>




 <INDEX              ---
  SINGLE FMC OPERATION
```

(2) Push the CLR key on the two CDUs (removes the message).

(3) Use the CDU keyboard to put in the word ARM on the two CDUs.

(4) Make sure the word ARM shows on the bottom line of the two CDUs.

(5) Push the bottom LSK on the right side of the two CDUs.

(6) Make sure the word ARM shows on the bottom line of the two CDUs adjacent to the LSKs that were pushed.

CAUTION: THE TRANSMIT AND RECEIVE LINE SELECT KEYS MUST BE USED CAREFULLY TO MAKE SURE NAVIGATION DATA BASE MOVEMENT GOES INTO THE APPLICABLE FMC. THE TWO FMCs WILL NEED THE INITIAL DATA BASE LOADED INTO THEM IF THE INCORRECT DIRECTION IS USED.

MECH | INSP

(7) Push the LSK adjacent to the <TRANSMIT prompt on the left side of the CDU display for the FMC that is to transmit.

(8) Push the LSK adjacent to the RECEIVE> prompt on the right side of the CDU display for the FMC that is to receive.

(9) Make sure TRANSFER IN PROGRESS shows on the CDU for the FMC that transmits.

NOTE: It takes approximately 15 minutes to crossload the navigation database. If the cross load is interrupted, the FMC can get into a mode where it will no longer accept a crossload or even a direct load using the data loader. You should power off both FMCs for approximately 10 seconds and power them up again. Leave FMCs powered without interruption for approximately 30 minutes and then do the data load again, either crossload or direct load.

(a) The TRANSFER COMPLETE replaces TRANSFER IN PROGRESS on the CDU when the data movement is done.

(b) A failure to complete data transfer causes the TRANSFER IN PROGRESS to be replaced by TRANSFER ABORTED on the CDU.

F. Data Crossload Check

(1) If the message RESYNCING FMC shows, do no actions to the FMCS and wait until the message goes out.

(2) Push the LSK adjacent to the <INDEX prompt on the CDU display.

(3) Make sure the MAINTENANCE INDEX page shows.

(4) Push the LSK adjacent to the <INDEX prompt on the CDU display.

(5) Make sure the INIT REF INDEX page shows.

(6) Push the LSK adjacent to the <IDENT prompt on the CDU display.

(7) Make sure the IDENT page shows.

(8) Make sure the data on the two CDUs are the same.

(9) The data to compare are shown below:

(a) MODEL and ENGINES show the correct airplane configuration.

MECH | INSP

(b) NAV DATA is the same for the two CDUs.

(c) Today's date is in the range between the two dates that are directly under ACTIVE.

(d) If today's date is in between the two dates on the third line. Do a Company Data Set Interchange as follows:

1) Push the third LSK on the right side of CDU.

(e) Make sure the data on the third line of the CDU shows on the bottom line of the CDU.

1) Push the second LSK on the right side of CDU.

(f) Make sure the dates on the two lines have changed positions with each other.

(g) Do these steps:

1) Make sure the part number of the OP PROGRAM on the two CDUs is correct.

NOTE: Get the correct OP PROGRAM part number from the approved airline department.

2) If the OP PROGRAM part number is incorrect , do this procedure: Load the Operational Program With the ADL.

(h) Program identification must be the same on the two CDUs.

(i) Make sure the NAV data base is the last applicable data base released .

(j) Make sure the values for the performance factors are correct.

(k) If performance factors are incorrect, do this procedure: Change the Drag Factor and Fuel Flow Factor.

G. Put the Airplane Back to Its Usual Condition.

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

4. Drag Factor/Fuel Flow Factor Modification Procedure

A. General

MECH | INSP

(1) This procedure provides instructions to change the drag factor and the fuel flow factor. The drag factor and fuel flow factor go to the default values when new Operational Program Software (OPS) is put in. If other than the default values are used, then they must be put in again. When the two FMCs are on, the factors are changed in the two FMCs at the same time. The new values are kept in the FMC when power is removed.

B. References

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

C. Procedure

(1) Close these circuit breakers on the P11 panel:

(a) 11E8, FMCS CDU LEFT

(b) 11E9, FMCS CMPTR LEFT

(c) 11E29, FMCS CDU RIGHT

(d) 11E30, FMCS CMPTR RIGHT

(2) Do these steps to change the drag factor and the fuel flow factor:

(a) Make sure the IDENT page shows on the CDU.

(b) Push the alphanumeric keys A, R, M, and ARM will show in the scratchpad area.

(c) Push the LSK for the DRAG and FUEL FLOW FACTORS line.

(d) Make sure ARM shows below the DRAG/FF line on the CDU.

(e) You can put the drag factor and the fuel flow factor in at the same time, or you can put them in one at a time. If you put them in at the same time, you must put them in this order: drag factor/fuel flow factor. You must put the slash (/) between the two numbers. If you put them in one at a time, you must put a slash after the drag factor. (Include the negative sign (-) if necessary, and decimal sign if a decimal number is put in.) If no value is entered, these defaults will be o.

(f) After you put in the number, push the applicable LSK on the CDU to move the number into the FMC.

MECH	INSP

(3) Push the LSK adjacent to the DRAG/FF prompt.

(4) Open these circuit breakers on the P11 panel for 15 seconds and then close them:

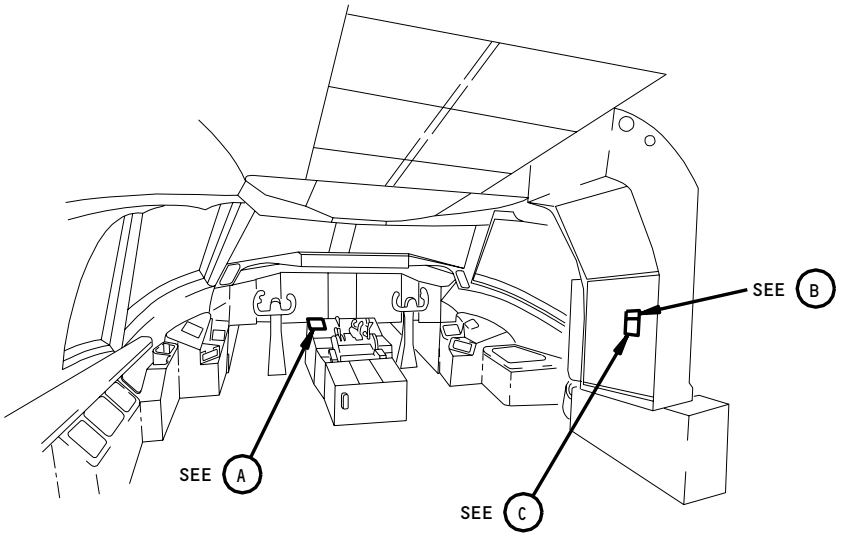
(a) 11E9, FMCS CMPTR LEFT

(b) 11E30, FMCS CMPTR RIGHT

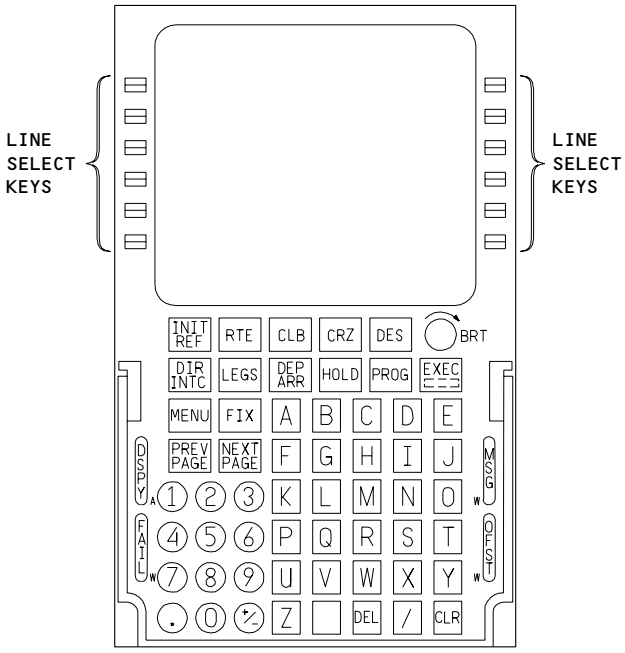
(5) Make sure the CDU IDENT page shows the value that you put in.

D. Put the Airplane Back to Its Usual Condition.

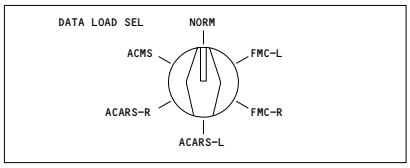
(1) Remove electrical power if it is not necessary (Ref 24-22-00).



FLIGHT COMPARTMENT

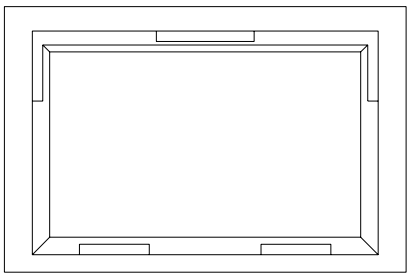


A



DATA LOADER CONTROL PANEL

B



AIRBORNE DATA LOADER

C

FMC Data Loading
Figure 201

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	34-016-10
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AVION	CREW CABIN		NOTE	99XXX	013	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
SERVICE	FLIGHT MANAGEMENT COMPUTER DATA BASE		NOTE	ALL

ZONES	ACCESS PANELS
212	

MECH	INSP	MPD ITEM NUMBER

CHANGE NAVIGATION DATA BASE IN FLIGHT MANAGEMENT COMPUTER. 34-61-00-2A

INTERVAL NOTE: ESTABLISHED BY EACH AIRLINE.

AIRPLANE NOTE: AIRPLANES WITH DISC AIRBORNE DATA LOADER.

FLIGHT MANAGEMENT COMPUTER SYSTEM - MAINTENANCE PRACTICES

1. General

A. The flight management computer system is made up of two complete systems. Each has a flight management computer (FMC) and a control display unit (CDU). Each FMC contains the memory for the operational program software, the navigation database, the operational program configuration, the airline modification information, and the flight information and data output files.

(1) The Operational Program Software (OPS) is the application software resident in the FMC. This software is required for normal operation and to implement the features in the FMC.

(2) The navigation database has nav aid data, geographic data, and two different company route data sets. The company route data sets give arrival, departure, and route data for a specific twenty eight day period. When the current data set is out of date, the other data set becomes active for the FMC to use.

(3) The Operational Program Configuration (OPC) is used to enable the features in the FMC. The OPC contains the FMC features that are one to one correlated to the features in the OPS.

(4) The Airlines Modification Information (AMI) software contains the airplane parameters and the datalink tables according to the airline policies and airplane characteristics.

MECH | INSP

(5) The Flight Information and Data Output (FIDO) file defines the specific FMC data that outputs on the dedicated ARINC 429 data bus for recording and analysis purposes.

B. There are two procedures to load the software into the FMC.

(1) Load the FMC software with the Airborne Data Loader (ADL)

(2) Crossload the software from one FMC to the other FMC.

C. The Drag Factor and Fuel Flow Factor Modification procedure provides instruction to change the drag factor and the fuel flow factor. These values are usually set to zero as default.

2. Load the FMC Software with the Airborne Data Loader

A. General

(1) The FMC software consists of the operational program software, the navigational database, the operational program configuration, the airline modification information, and the flight information and data output. You can load each of the software separately as necessary. The FMC requires all five software to operate correctly.

(2) You can use the Airborne Data Loader (ADL) to load the software from the diskette into the FMC memory.

(3) The indicators on the front panel of the ADL give the status of the ADL during data load. The indicators are as follows:

(a) PROG(Progress) - Indicates the data transfer is in progress.

(b) CHNG(Change) - Indicates that you must change the diskette when the CHNG indicator comes on.

(c) COMP(Complete) - Indicates the data transfer is complete.

(d) RDY(Ready) - Indicates the ADL is ready for operation.

(e) RDY(Flashing Ready) - Indicates the ADL is in standby operation mode and the data is approved.

(f) XFER(Transfer) - Indicates the data transfer has failed.

(g) R/W(Read/Write)- Indicates the ADL cannot read or write the data on the diskette.

MECH | INSP

(h) HRDW(Hardware) - Indicates the ADL has failed its self-test.

(4) To read about software installation times and data loaders, do this task: On-Airplane Software Installation (AMM 20-15-11/201).

B. Equipment

(1) The most up-to-date data diskettes.

C. References

(1) AMM 20-15-11/201, On-Airplane Software Installation

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

D. Prepare to Load the Software

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

(2) Make sure the FMC NAV Source Select switches on panels P1 and P3 are in the FMC-L and FMC-R position.

(3) Close these circuit breakers on the overhead panel P11:

(a) 11E8, FMCS CDU LEFT

(b) 11E29, FMCS CDU RIGHT

(4) Open these circuit breakers on the overhead panel P11:

(a) 11E9, FMCS CMPTR LEFT

(b) 11E30, FMCS CMPTR RIGHT

(c) 11G24, DATA LOADER

(5) Do these steps to load the software into the left FMC:

(a) Set the DLCP switch on the P61 panel to the NORMAL position.

(b) Close this circuit breaker on the overhead panel P11:

1) 11E9, FMCS CMPTR LEFT

(c) Make sure this circuit breaker on the overhead panel, P11, is open:

1) 11E30, FMCS CMPTR RIGHT

(d) Open the disk drive access door of the ADL on the P61 panel.

(e) Close this circuit breaker on the overhead panel, P11:

1) 11G24, DATA LOADER

(f) Make sure the indicators on the ADL flash on and off until the self-test is complete.

(g) Set the DLCP switch on the P61 panel to the FMC-L position.

(h) Make sure the MENU page shows on the left CDU.

(i) Make sure the <FMC prompt does not show on the left CDU.

CAUTION: BEFORE YOU INSTALL THE DISKETTE INTO THE ADL, MAKE SURE THE SOFTWARE PART NUMBER IS CORRECT.

(j) Put the first data diskette into the disk drive.

NOTE: If you install a complete set of the FMC software , you must install the OPS first. Loading the OPS will clear any loaded OPC, NDB, FIDO and AMI, therefore, these programs need to be reloaded.

(k) Make sure the RDY indicator comes on after you insert the diskette into the ADL.

(l) Make sure the PROG indicator comes on after the RDY indicator goes on. The two indicators should be on at the same time.

(m) If the RDY indicator goes off and the CHNG indicator comes on, do these steps:

NOTE: The CHNG indicator shows that there are more than one diskette and you must insert the next diskette. If the loader indicates the load is complete after only 1 disk, this indicates the software is already installed and no further disks need to be loaded.

1) Push the eject button and remove the first diskette. Make sure the CHNG indicator goes off and the PROG indicator comes on.

2) Put in each subsequent diskette until you finish. Make sure the RDY and PROG indicators come on during data transfer.

(n) When the software load is complete, the COMP indicator comes on and the RDY and PROG indicators go off.

(o) Set the DLCP switch on the P61 panel to the NORMAL position.

(p) Open this circuit breaker on the overhead panel, P11:

1) 11G24, DATA LOADER

(6) Approval of Data Input

(a) Make sure the MENU page shows on the left CDU.

(b) Make sure the <FMC prompt shows on the MENU page of the left CDU.

(c) Push the line select key (LSK) adjacent to the <FMC prompt.

(d) Make sure the IDENT page shows on the left CDU.

(e) Make sure the OPS, OPC, and the NAV DATA sotware part numbers on the IDENT PAGE that show on the left CDU are correct.

(f) Make sure the AMI and FIDO software part numbers on the CROSSLOAD PAGE that show on the left CDU are correct.

(g) Close these circuit breakers on the overhead panel, P11:

1) 11E30, FMCS CMPTR RIGHT

2) 11G24, DATA LOADER

(h) After you close the circuit breaker of the left and right FMCs, If the FMC detects a difference in the software between the two FMCs, the FMC CROSSLOAD page will shown on the CDU. You must do the data crossload procedure or repeat the FMC data load procedure (AMM 34-61-00/201) to load the data into the FMC that has the incorrect databases.

(i) Make sure the NAV DATA, the OP PROGRAM, and the OPC part numbers that show on the L and R CDUs are correct.

E. Put the Airplane Back to Its Usual Condition

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

3. FMC Data Crossload

A. General

(1) The flight management computer (FMC) data can be crossloaded from one FMC to the other FMC. A FMC Data Crossload can be done only when the airplane is on the ground and when there are differences between the two FMC software.

(2) During the FMC self-test, if the FMC detects a condition that the software part numbers of the two FMCs are different, the FMC CROSSLOAD pages will show and lock on the CDUs. You must do the data crossload procedure or do the software load procedure to correct this condition.

B. References

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

C. Access

(1) Location Zones
211/212 Flight Compartment

D. Data Crossload Procedure

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

(2) Set the FMC NAV Source Select switches on the P1 panel to the FMC-L position and on the P3 panel to the FMC-R postion.

(3) Close these circuit breakers on the overhead panel, P11:

(a) 11E8, FMCS CDU LEFT

(b) 11E29, FMCS CDU RIGHT

(c) 11E9, FMCS CMPTR LEFT

MECH | INSP

(d) 11E30, FMCS CMPTR RIGHT

(4) After the FMC self-test is complete, if the FMC detects a condition that the software part numbers do not match, the FMC CROSSLOAD pages show on the two CDUs.

NOTE: If the FMC CROSSLOAD page does not show on the CDU, you do not need to do the data crossload.

(5) Make sure the FMC CROSSLOAD page show on the CDU.

(6) Make sure the ARM> prompt shows adjacent to the software part numbers.

NOTE: The ARM> prompt only shows adjacent to the software part number that does not match between the two CDUs and you must do the datab crossload to correct this condition .

(7) Identify the FMC that has the correct software. This FMC will be the transmit FMC and refer to as the FMC/CDU that transmits.

(8) Do these steps to transmit the data from one FMC to another FMC:

(a) Push the LSK adjacent to the ARM> prompt on the FMC/CDU that transmits.

NOTE: You can arm more than one softwares that you want to crossload at the same time.

(b) Make sure the ARM> prompt changes to ARMED on the FMC/CDU that transmits.

(c) Make sure the TRANSMIT> prompt shows adjacent to the LSK 6R on the FMC/CDU that transmits.

(d) Push the LSK adjacent to the TRANSMIT> prompt on the FMC/CDU that transmits.

MECH | INSP

(e) Make sure the TRANSFER IN PROGRESS shows on the FMC/CDU that transmits.

NOTE: It takes approximately 15 minutes to crossload a navigation database. If the crossload is interrupted, the FMC can get into a mode where it will no longer accept a crossload or even a direct load using the data loader. You should power off both FMCs for approximately 10 seconds and power them up again. Leave the FMCs powered without interruption for approximately 30 minutes and then do the data load again, either crossload or direct load.

(f) Make sure the MENU page shows on the FMC/CDU that recieves.

(g) Make sure the FMC> prompt does not show on the FMC/CDU that receives.

(h) After the data transfer is complete, the TRANSFER COMPLETE will replace the TRANSFER IN PROGRESS on the FMC/CDU that transmits.

(i) Failure to complete the data transfer, the TRANSFER ABORTED will replace the TRANSFER IN PROGRESS on the FMC/CDU that transmits.

(9) Do these steps to do the data crossload check:

(a) After the data transfer is complete, make sure the IDENT page shows on the FMC/CDU that receives.

(b) Push the INIT REF function key on the FMC/CDU that transmits.

(c) Push the LSK adjacent to the <INDEX prompt on the FMC/CDU that transmits.

(d) Make sure the INIT/REF INDEX page shows on the FMC/CDU that transmits.

(e) Push the LSK adjacent to the <IDENT prompt on the FMC/CDU that transmits.

(f) Make sure the IDENT page shows on the FMC/CDU that transmits.

(g) Make sure the OPS, OPC, and the NAV DATA software part numbers on the IDENT PAGE that show on CDU's are correct.

(h) Make sure the AMI and FIDO software part numbers on the CROSSLOAD PAGE that show on CDU's are correct.

(i) Make sure the drag factor and the fuel flow factor values are correct. If not, do the Drag Factor/Fuel Flow Factor Modification procedure to correct it.

E. Put the Airplane Back to Its Usual Condition.

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

4. Drag Factor/Fuel Flow Factor Modification Procedure

A. General

(1) This procedure provides instructions to change the drag factor and the fuel flow factor. If other than the standard values are used, you need to change the values. When the two FMCs are on, the factors are changed in the two FMCs at the same time. The new values are kept in the FMC when power is removed.

B. References

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

C. Procedure

(1) Close these circuit breakers on the P11 panel:

(a) 11E8, FMCS CDU LEFT

(b) 11E9, FMCS CMPTR LEFT

(c) 11E29, FMCS CDU RIGHT

(d) 11E30, FMCS CMPTR RIGHT

(2) Do these steps to change the drag factor and the fuel flow factor:

(a) Make sure the IDENT page shows on the CDU.

(b) Push the alphanumeric keys A, R, M, and ARM will show in the scratchpad area.

(c) Push the LSK for the DRAG and FUEL FLOW FACTORS line.

(d) Make sure ARM shows to the left of the DRAG/FF line on the CDU.

MECH | INSP

(e) You can put the drag factor and the fuel flow factor in at the same time, or you can put them in one at a time. If you put them in at the same time, you must put them in this order: drag factor/fuel flow factor. You must put the slash (/) between the two numbers. If you put them in one at a time, you must put a slash after the drag factor. (Include the negative sign (-) if necessary, and decimal sign if a decimal number is put in.) . If no value is entered, these defaults will be 0.

(f) After you put in the number, push the applicable LSK on the CDU to move the number into the FMC.

(3) Open these circuit breakers on the P11 panel for 15 seconds and then close them:

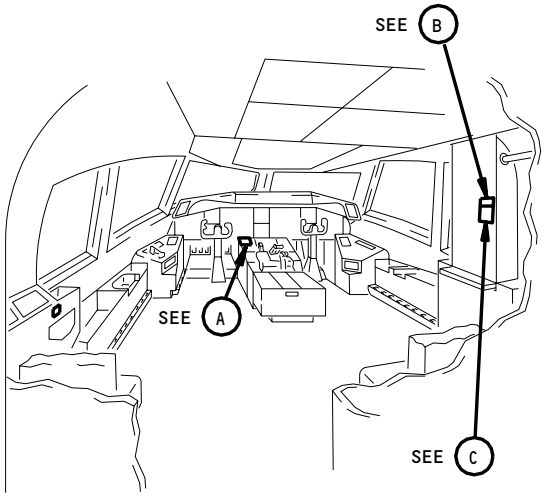
(a) 11E9, FMCS CMPTR LEFT

(b) 11E30, FMCS CMPTR RIGHT

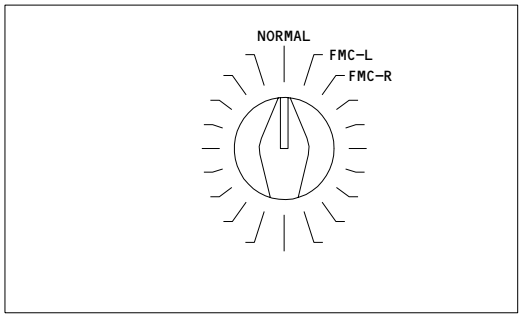
(4) Make sure the CDU IDENT page shows the value that you put in.

D. Put the Airplane Back to Its Usual Condition

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

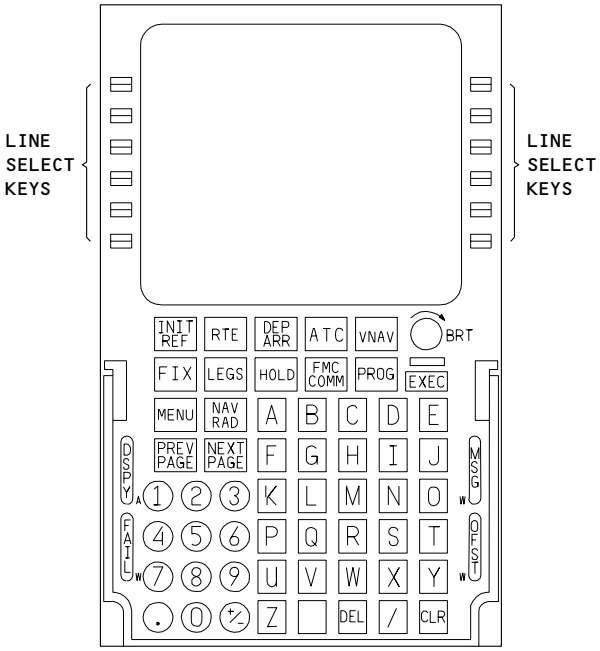


FLIGHT COMPARTMENT

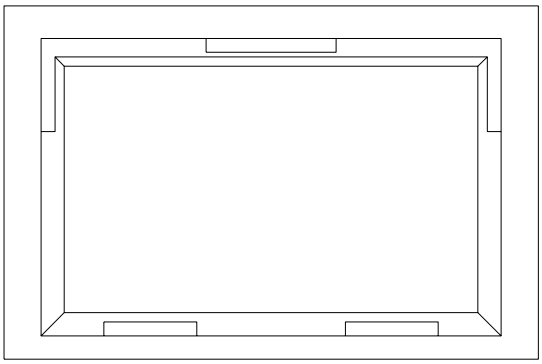


DATA LOADER CONTROL PANEL

B



A



AIRBORNE DATA LOADER

C

FMC Data Loading
Figure 201