

GPA Group plc

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CHAPTER 55 - STABILIZERS

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STABILIZERS - DESCRIPTION AND OPERATION

1. General

A. Stabilizers are aerodynamic control structures in the tail section of the airplane. Stabilizers include a horizontal stabilizer, elevators, a vertical stabilizer (fin), and a rudder. The vertical stabilizer does not move. The horizontal stabilizer pivots on two hinges on the center section rear spar and operates by mechanical or electrical controls. The elevators are hinged to the rear spar of the horizontal stabilizer. Moving the pilots' control columns forward and back operates the elevators to control the pitch of the airplane. The rudder is hinged to the rear spar of the vertical stabilizer and controls the yaw of the airplane. The rudder is normally controlled automatically, however, the pilots' rudder pedals will manually operate the rudder.

2. Horizontal Stabilizer (Fig. 1)

A. Structure

- (1) The horizontal stabilizer has identical but opposite outboard sections and a center section in the fuselage. The outboard sections have the following components, listed forward to aft; a leading edge, a forward torque box, a main torque box, a trailing edge, and an elevator.
- (2) The removable leading edge mounts to the auxiliary spar and is made of aluminum alloy sheets. The forward torque box consists of the auxiliary and forward spars connected by aluminum ribs. The main torque box consists of the forward and rear spars with aluminum stringers and ribs. The fixed trailing edge has stiffened, aluminum alloy ribs covered with skin panels made of a kevlar/graphite composite and a honeycomb core. On some airplanes the skin panels on the fixed trailing edge are made of fiberglass. The stabilizer tip is made of a honeycomb core covered with multiple kevlar plies and an outer fiberglass ply. On some airplanes the stabilizer tip is made of fiberglass and an aluminum leading edge nose former. The elevators are graphite/epoxy honeycomb panels and ribs. Three actuators move each elevator attached by eight hinges. For complete description of the elevator controls, refer to 27-31-00, Elevator Control System. The center section is part of the main torque box. Two pivot points attach to the rear spar and a jackscrew fitting mounts to the front spar. Operating the jackscrew pivots the horizontal stabilizer up and down. For complete description of the horizontal stabilizer controls, refer to 27-41-00, Horizontal Stabilizer Trim Control System.

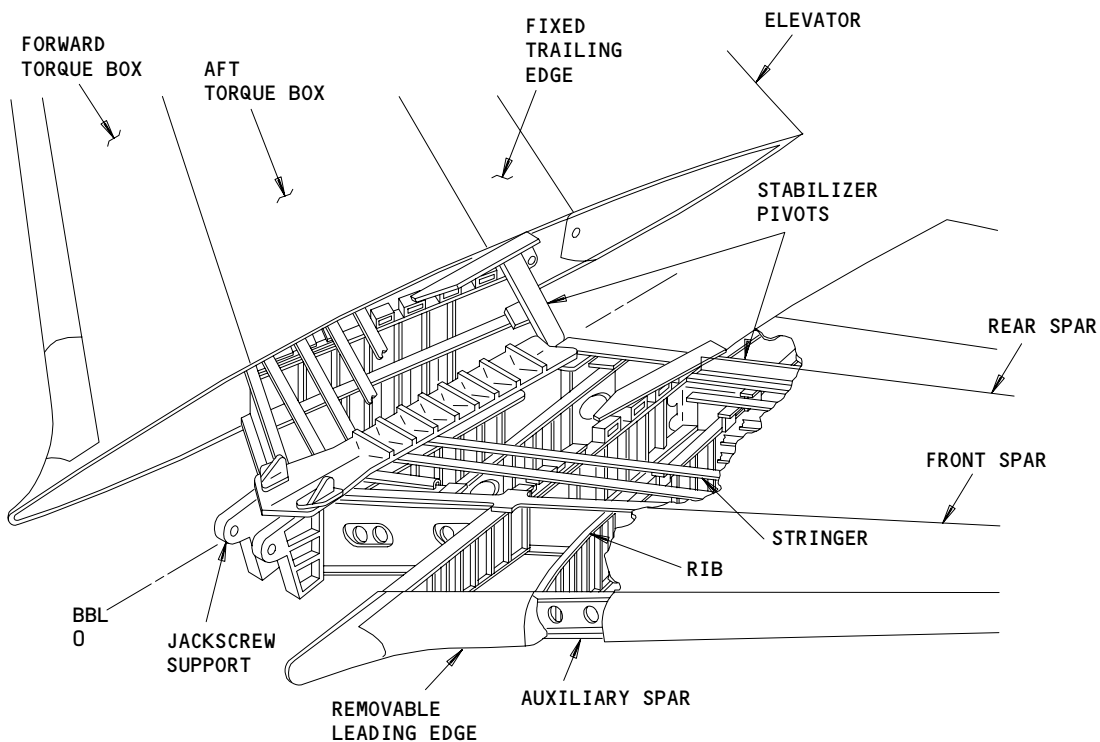
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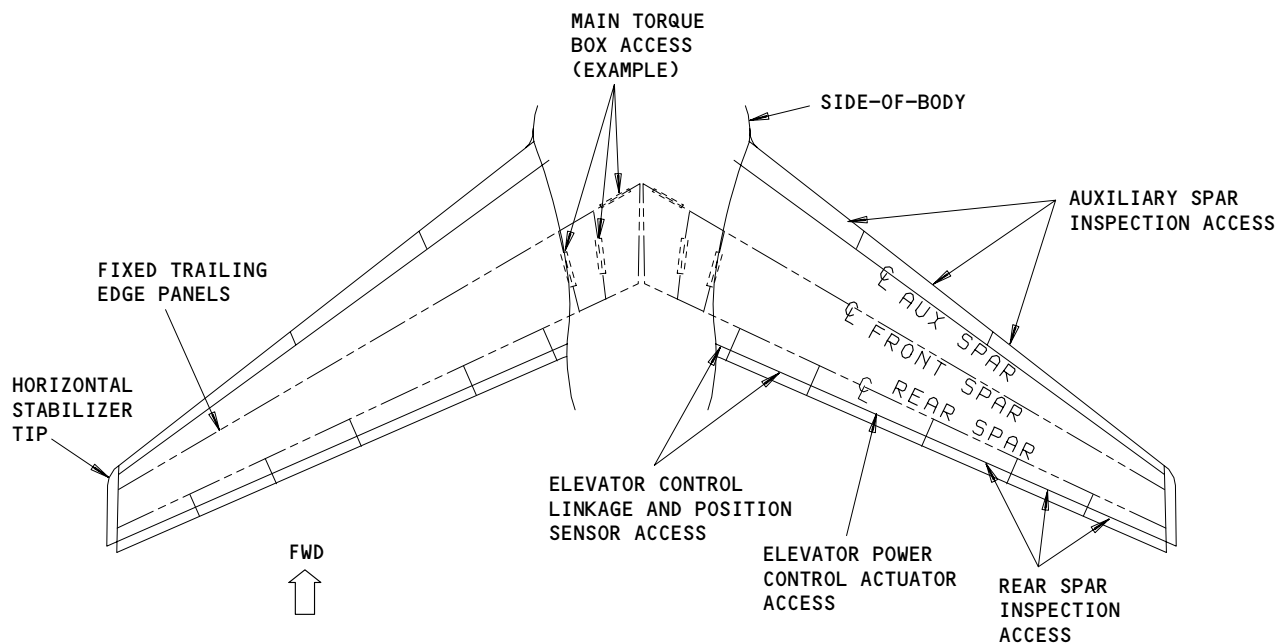
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HORIZONTAL STABILIZER STRUCTURE



HORIZONTAL STABILIZER ACCESS (BOTTOM VIEW)

**Horizontal Stabilizer
Figure 1**

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55-00-00

B. Access

- (1) The center section of the front spar has a closeout panel between each rib. Closeout panels are only to be removed for structural repairs. Each closeout panel has two inspection holes. Inspection of the outboard, main torque box is through holes in the rear spar. The bottom side of the trailing edge has hinged doors and removable panels for access to elevator hinges, actuators, control linkage, hydraulic lines, and wire bundles. Behind the removable leading edge, there are inspection holes in the auxiliary spar. The stabilizer tip is removable to expose the tip rib. The tip rib has inspection holes to view the outboard ends of the horizontal stabilizer.

3. Vertical Stabilizer (Fig. 2)

A. Structure

- (1) The vertical stabilizer or fin is a stationary structure which supports the movable rudder. The structural components of the fin include; a removable leading edge, forward and aft torque boxes, a trailing edge, a fin tip, a dorsal fin, and a rudder.
- (2) The dorsal fin fairs the leading edge to the fuselage. The leading edge and dorsal fin have aluminum ribs covered with aluminum skin panels. The forward torque box is between the auxiliary and front spar and the aft torque box is between the front and rear spar. The auxiliary, front, and rear spars are made of aluminum chord extrusions and clad sheet webs. Aluminum ribs connect the spars. Aluminum stringers reinforce the aft torque box. The fixed trailing edge attaches to the rear spar. Aluminum ribs covered with kevlar/graphite skin panels compose the trailing edge. Skin panels on both sides of the torque boxes are made of aluminum. The fin tip has an aluminum structure with aluminum and kevlar skin panels. On some airplanes the fin tip has fiberglass skin panels. The rudder has graphite/epoxy panels and ribs with an aluminum casting, trailing edge and kevlar tip. Three actuators move the rudder attached by eight hinges. For detailed description of the rudder controls, refer to 27-21-00, Rudder and Rudder Trim Control System.

B. Attachment

- (1) The vertical stabilizer attaches to the top of the fuselage with the fin to body attachment, front spar attachment and rear spar attachment. Tension bolts and shear fasteners fasten the fin to the attach points. The attachment areas are strengthened by splice plates and stringers.

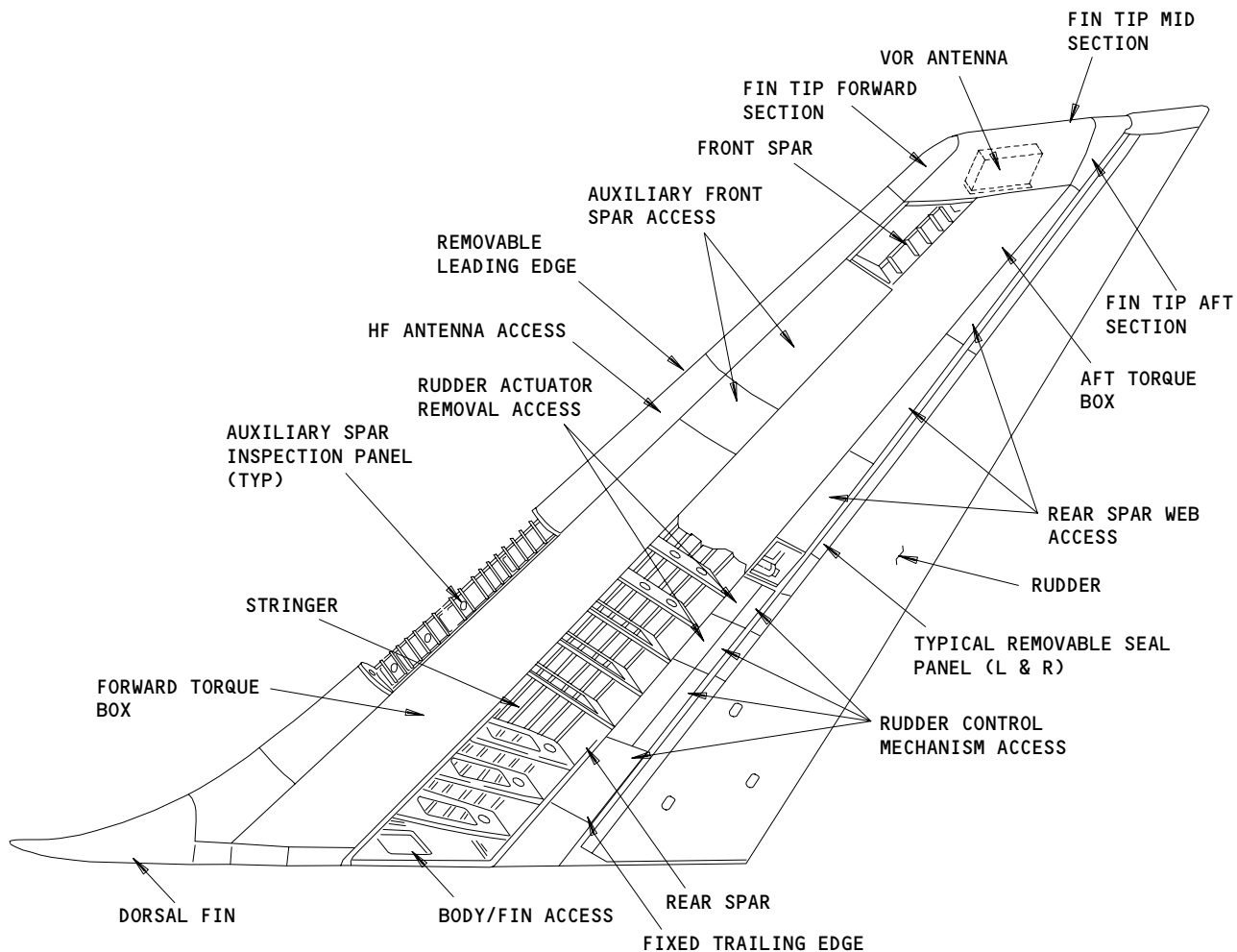
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Vertical Stabilizer
Figure 2

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C. Access

- (1) Access to inside the vertical stabilizer is through access doors or removable panels. Entry through the fuselage is through the body/fin access panel. Above the body/fin access panel, the ribs have access holes to allow a person to crawl inside the lower portion of the aft torque box. Ribs in the forward torque box also have removable panels. Removing sections of the leading edge gives access to inspection holes in the auxiliary spar. Upper skin panels on the forward torque box are removable for access to the HF antenna system coupler, auxiliary spar, and front spar. Removable panels in the front and rear spar give access to structural inspection of the aft torque box. The trailing edge has removable skin panels for access to the rear spar, rudder hinges, and actuators. The fin tip is removable to gain access to the VOR antenna.

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STABILIZER-TO-BODY SEAL - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is the removal of the stabilizer-to-body seal. The second task is the installation of the stabilizer-to-body seal.

TASK 55-10-01-004-001

2. Remove the Stabilizer-To-Body Seal

A. Equipment

- (1) Attach Lanyard - Wing/Horizontal Stabilizer Safety Harness, B20001-5

B. References

- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle
(2) 24-22-00/201, Electrical Power - Control
(3) 29-11-00/201, Main Hydraulic Systems
(4) IPC 55-10-51 Fig. 2

C. Access

- (1) Location Zone
330/340 Horizontal Stabilizer and Elevator

D. Procedure

S 044-002

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE HORIZONTAL STABILIZER. EQUIPMENT AND MATERIALS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE.

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE DEACTIVATION PROCEDURE FOR THE TRIM CONTROL SYSTEM OF THE HORIZONTAL STABILIZER. THE HORIZONTAL STABILIZER CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (1) Do the deactivation procedure for the trim control system of the horizontal stabilizer:
(a) Supply electrical power (Ref 24-22-00).
(b) Put these switches that are on quadrant stand panel, P10, to the CUTOUT position and attach DO-NOT-OPERATE tags:
1) R STAB TRIM SHUTOFF

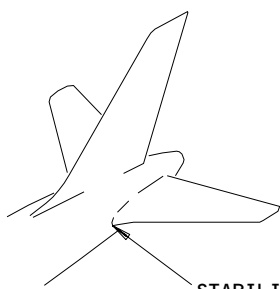
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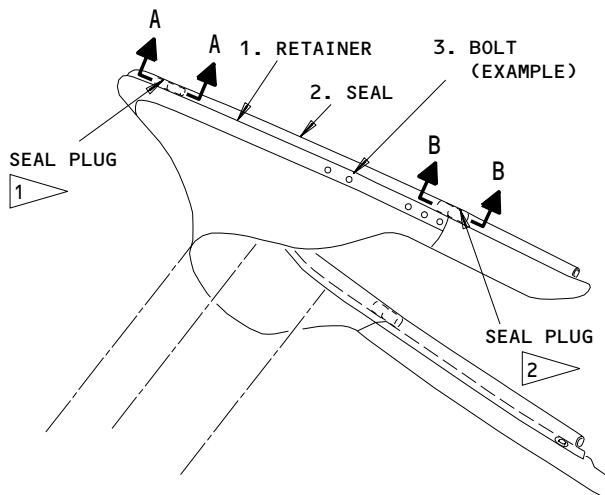
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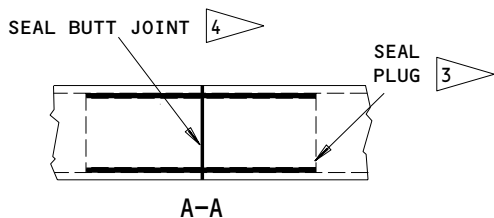
STABILIZER-TO-BODY SEAL

SEE (A)

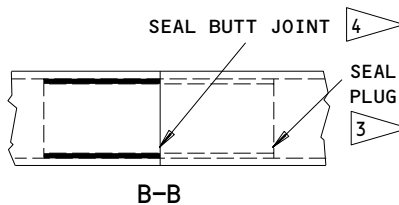


STABILIZER-TO-BODY SEAL

(A)



A-A



B-B

1 THE UPPER FORWARD SEAL PLUG IS SHOWN. THE LOWER FORWARD SEAL PLUG IS THE SAME.
SEE VIEW A-A FOR INSTRUCTIONS TO BOND.

2 THE UPPER AFT SEAL PLUG IS SHOWN. THE LOWER AFT SEAL PLUG IS THE SAME.
SEE VIEW B-B FOR INSTRUCTIONS TO BOND.

3 APPLY THE ADHESIVE TO THE AREAS SHOWN BY THE DARK LINES

4 THE FLUSHNESS OF THE BUTT JOINT MUST BE ± 0.03 INCH

Stabilizer-To-Body Seal
Figure 401

EFFECTIVITY

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- 2) C STAB TRIM SHUTOFF
- (c) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11C12, STAB TRIM SHUTOFF LEFT
 - 2) 11C13, STAB TRIM SHUTOFF RIGHT

S 494-018

WARNING: ATTACH A SAFETY HARNESS WHEN YOU DO WORK ON TOP OF THE HORIZONTAL STABILIZER. FAILURE TO OBEY CAN CAUSE INJURY OR DAMAGE.

- (2) Attach a safety harness (Ref 20-10-27).

S 024-003

CAUTION: BE CAREFUL WHEN YOU REMOVE THE STABILIZER-TO-BODY SEAL. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGES CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (3) Remove the bolts (3) that are attached to the seal retainer (1).

S 024-004

- (4) Remove the seal (2).

TASK 55-10-01-404-005

3. Install the Stabilizer-To-Body Seal

A. Equipment

- (1) Attach Lanyard - Wing/Horizontal Stabilizer Safety Harness, B20001-5

B. Consumable Materials

- (1) C00308 Compound - Corrosion Preventive, MIL-C-11796, Class 3
- (2) A00553 Adhesive - BAC5010, Type 68

C. Parts

MM		NOMENCLATURE	IPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Retainer	55-10-51	02	
	2	Seal			
	3	Bolt			

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D. References

- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle
- (2) 24-22-00/201, Electrical Power - Control
- (3) 29-11-00/201, Main Hydraulic Systems

E. Access

- (1) Location Zone
330/340 Horizontal Stabilizer and Elevator

F. Procedure

S 424-006

CAUTION: BE CAREFUL WHEN YOU INSTALL THE STABILIZER-TO-BODY SEAL. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGES CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (1) Put the seal (2) into its position.

S 394-007

- (2) Apply the adhesive on the clearance that is between the seal and the stabilizer.

S 424-008

- (3) Put the seal retainer (1) into position.

S 394-009

- (4) Apply the corrosion preventive compound to the bolts.

S 424-010

- (5) Install the bolts (3).

S 444-011

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE ACTIVATION PROCEDURE FOR THE TRIM CONTROL SYSTEM OF THE HORIZONTAL STABILIZER. THE HORIZONTAL STABILIZER CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (6) Do the activation procedure for the trim control system of the horizontal stabilizer:
 - (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11C12, STAB TRIM SHUTOFF LEFT
 - 2) 11C13, STAB TRIM SHUTOFF RIGHT
 - (b) Remove the DO-NOT-OPERATE tags and put these switches that are on the P10 panel to the NORM position:
 - 1) R STAB TRIM SHUTOFF
 - 2) C STAB TRIM SHUTOFF

S 864-012

- (7) Supply hydraulic power (Ref 29-11-00).

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- S 714-013
(8) Operate the horizontal stabilizer through its full range of travel.
- S 214-014
(9) Make sure the seal rubs against the body but moves easily.
- S 094-015
(10) Remove the safety harness if it is not necessary (Ref 20-10-27).
- S 864-016
(11) Remove the hydraulic power if it is not necessary (Ref 29-11-00).
- S 864-017
(12) Remove the electrical power if it is not necessary (Ref 24-22-00).

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HORIZONTAL STABILIZER TIP FAIRING – REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks:

- (1) The first task is the removal of the horizontal stabilizer tip fairing.
- (2) The second task is the installation of the horizontal stabilizer tip fairing.

TASK 55-11-01-004-001

2. Remove the Horizontal Stabilizer Tip Fairing

A. Equipment

- (1) Attach Lanyard – Wing/Horizontal Stabilizer Safety Harness, B20001-5
- (2) Milliohm meter – 0-100 milliohm range – commercially available

B. References

- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle
- (2) 24-22-00/201, Electrical Power – Control
- (3) IPC 55-11-51 Fig. 1

C. Access

- (1) Location Zone
337/347 Horizontal Stabilizer – Tip

D. Procedure

S 044-002

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE HORIZONTAL STABILIZER. EQUIPMENT AND MATERIALS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE.

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE DEACTIVATION PROCEDURE FOR THE ELEVATOR/RUDDER CONTROL SYSTEM. THE ELEVATOR/RUDDER SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

(1) Do the deactivation procedure for the rudder/elevator control system:

- (a) Supply electrical power (Ref 24-22-00).
- (b) Put these switches that are on the right side panel, P61, to the OFF position and attach DO-NOT-OPERATE tags:
 - 1) L FLT CONT SHUTOFF

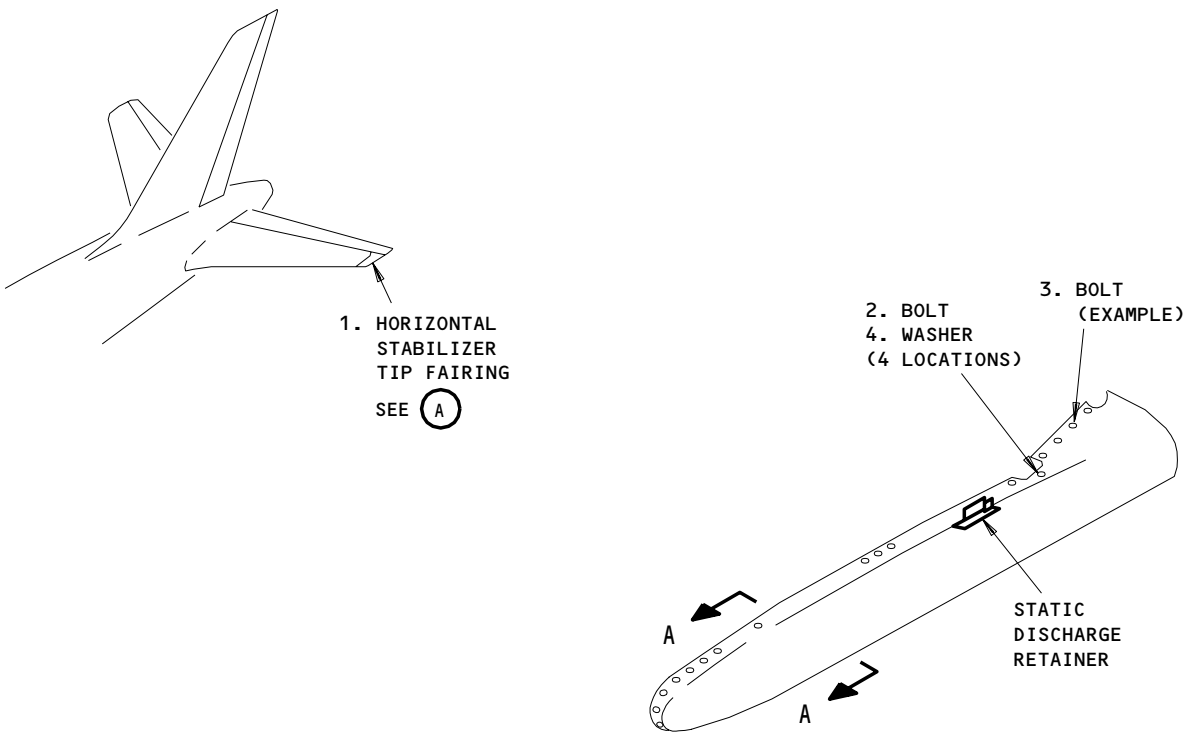
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HORIZONTAL STABILIZER TIP FAIRING

(A)



A-A

1 FILL THE CLEARANCE WITH SEALANT

Horizontal Stabilizer Tip Fairing
Figure 401

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- 2) C FLT CONT SHUTOFF
- 3) R FLT CONT SHUTOFF
- (c) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT

S 494-003

WARNING: ATTACH A SAFETY HARNESS WHEN YOU DO WORK ON TOP OF THE HORIZONTAL STABILIZER. FAILURE TO OBEY CAN CAUSE INJURY OR DAMAGE.

- (2) Attach a safety harness (Ref 20-10-27).

S 024-004

CAUTION: BE CAREFUL WHEN YOU REMOVE THE HORIZONTAL STABILIZER TIP FAIRING. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGES CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (3) Remove the bolts (2 and 3) and washers (4) from the stabilizer tip fairing (1).

S 024-005

- (4) Remove the stabilizer tip fairing (1).

TASK 55-11-01-404-006

3. Install the Horizontal Stabilizer Tip Fairing

A. Equipment

- (1) Attach Lanyard - Wing/Horizontal Stabilizer Safety Harness, B20001-5
- (2) Milliohmmeter - 0-100 milliohm range - commercially available

B. Consumable Materials

- (1) C00308 Compound - Corrosion Preventive, MIL-C-11796, Class 3
- (2) A00247 Sealant - Chromate Type, BMS 5-95

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C. Parts

MM		NOMENCLATURE	IPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Tip-Assembly (LH) (Horiz. Stab. Tip Fairing)	55-11-51	01	10
	1	Tip-Assembly (RH) (Horiz. Stab. Tip Fairing)			15
	2	Bolts			22
	3	Bolts			20
	4	Washers			25

D. References

- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle
- (2) 24-22-00/201, Electrical Power - Control
- (3) 51-31-01/201, Seals and Sealing

E. Access

- (1) Location Zone
337/347 Horizontal Stabilizer - Tip

F. Procedure

S 394-007

- (1) Apply the corrosion preventive compound on the bolts.

S 424-013

CAUTION: BE CAREFUL WHEN YOU INSTALL THE HORIZONTAL STABILIZER TIP FAIRING. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGES CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (2) Put the stabilizer tip fairing (1) into position and install the washers (4), bolts (2) and (3).

S 394-008

- (3) Fill the clearance that is between the tip fairing and the stabilizer skin panels with the sealant (Ref 51-31-01).

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S 764-009

- (4) Measure the resistance between the stabilizer tip and the outboard bonding jumper.

NOTE: The maximum permitted resistance is 100 milliohms.

S 094-010

- (5) Remove the safety harness if it is not necessary (Ref 20-10-27).

S 444-011

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE ACTIVATION PROCEDURE FOR THE ELEVATOR/RUDDER CONTROL SYSTEM. THE ELEVATOR/RUDDER SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (6) Do the activation procedure for the rudder/elevator control system:
- (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT
 - (b) Remove the DO-NOT-OPERATE tags and put these switches that are on the P61 panel to the ON position.
 - 1) L FLT CONT SHUTOFF
 - 2) C FLT CONT SHUTOFF
 - 3) R FLT CONT SHUTOFF

S 864-012

- (7) Remove the electrical power if it is not necessary.

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HORIZONTAL STABILIZER LEADING EDGE – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
- (1) The first task is the removal of the leading edge panels from the horizontal stabilizer.
 - (2) The second task is the installation of the leading edge panels on the horizontal stabilizer.

TASK 55-15-01-004-001

2. Remove the Horizontal Stabilizer Leading Edge Panels

- A. Equipment
- (1) Attach Lanyard, Wing/Horizontal Stabilizer Safety Harness – B20001-5
- B. References
- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle
 - (2) 24-22-00/201, Electrical Power – Control
 - (3) 51-31-01/201, Seals and Sealing
 - (4) IPC 55-10-52 Fig. 1
- C. Access
- (1) Location Zone
332/342 Removable Leading Edge
- D. Procedure

S 044-002

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE HORIZONTAL STABILIZER. EQUIPMENT AND MATERIALS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE.

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE DEACTIVATION PROCEDURE FOR THE TRIM CONTROL SYSTEM OF THE HORIZONTAL STABILIZER. THE HORIZONTAL STABILIZER CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (1) Do the deactivation procedure for the trim control system of the horizontal stabilizer:
 - (a) Supply electrical power (Ref 24-22-00).
 - (b) Put these switches that are on the quadrant stand panel, P10, to the CUTOUT position and attach DO-NOT-OPERATE tags:
 - 1) R STAB TRIM SHUTOFF

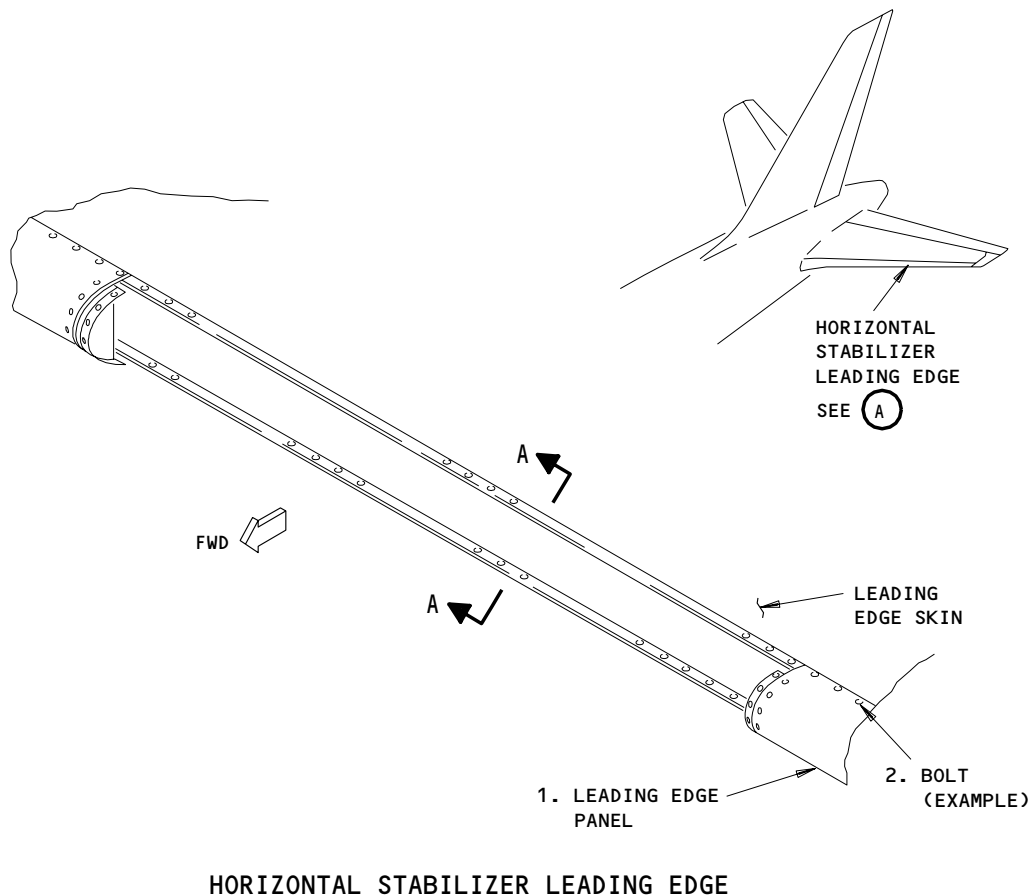
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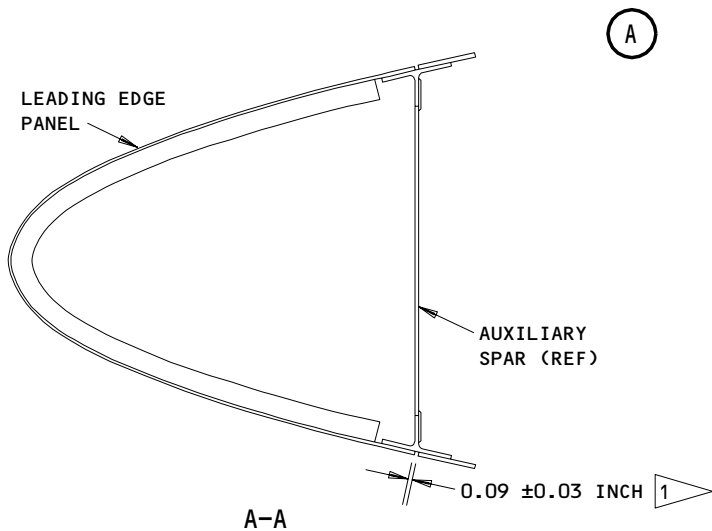
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HORIZONTAL STABILIZER LEADING EDGE



1 FILL THE CLEARANCE WITH SEALANT

Horizontal Stabilizer Leading Edge
Figure 401

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- 2) C STAB TRIM SHUTOFF
- (c) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11C12, STAB TRIM SHUTOFF LEFT
 - 2) 11C13, STAB TRIM SHUTOFF RIGHT

S 494-003

WARNING: ATTACH A SAFETY HARNESS WHEN YOU DO WORK ON TOP OF THE HORIZONTAL STABILIZER. FAILURE TO OBEY CAN CAUSE INJURY OR DAMAGE.

- (2) Attach a safety harness (Ref 20-10-27).

S 024-004

CAUTION: BE CAREFUL WHEN YOU REMOVE THE LEADING EDGE PANELS FROM THE HORIZONTAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (3) Remove the bolts (2) from the panel (1) (Fig. 401).

S 024-005

- (4) Remove the panel (1).

TASK 55-15-01-404-006

3. Install the Horizontal Stabilizer Leading Edge Panel

A. Equipment

- (1) Attach Lanyard, Wing/Horizontal Stabilizer Safety Harness - B20001-5

B. Consumable Materials

- (1) C00308 Compound - Corrosion Preventive, MIL-C-11796 Class 3
- (2) A00247 Sealant - Chromate Type, BMS 5-95

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C. Parts

MM		NOMENCLATURE	IPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Leading Edge Assembly (LH) (Leading Edge Panel)	55-10-52	01	65 75 85
	1	Leading Edge Assembly (RH) (Leading Edge Panel)			70 80 90
	2	Bolts			40

D. References

- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle
- (2) 24-22-00/201, Electrical Power - Control
- (3) 51-31-01/201, Seals and Sealing

E. Access

- (1) Location Zone
332/342 Removable Leading Edge

F. Procedure

S 494-007

- (1) Attach a safety harness (Ref 20-10-27).

S 394-008

- (2) Apply the corrosion preventive compound to the bolts.

S 424-013

CAUTION: BE CAREFUL WHEN YOU INSTALL THE LEADING EDGE PANELS ON THE HORIZONTAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (3) Put the panel (1) in position.

S 024-009

- (4) Install the bolts (2).

NOTE: You can install as much as 10 percent of the fasteners with Tinnerman (dimpled countersunk) washers to repair the loose fastener holes.

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S 394-010

- (5) Apply sealant on the clearance that is between the leading edge panel and the horizontal stabilizer skin (Ref 51-31-01).

S 094-011

- (6) Remove the safety harness if it is not necessary (Ref 20-10-27).

S 444-012

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE ACTIVATION PROCEDURE FOR THE HORIZONTAL STABILIZER TRIM CONTROL SYSTEM. THE HORIZONTAL STABILIZER CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (7) Do the activation procedure for the trim control system of the horizontal stabilizer:
- (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11C12, STAB RIM SHUTOFF LEFT
 - 2) 11C13, STAB TRIM SHUTOFF RIGHT
 - (b) Remove the DO-NOT-OPERATE tags and put these switches that are on the P10 panel to the NORM position:
 - 1) R STAB TRIM SHUTOFF
 - 2) C STAB TRIM SHUTOFF

S 864-014

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

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HORIZONTAL STABILIZER LOWER TRAILING EDGE PANELS – REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks:

- (1) The first task is the removal of the lower trailing edge panels from the horizontal stabilizer.
- (2) The second task is the installation of the lower trailing edge panels on the horizontal stabilizer.

TASK 55-16-01-004-009

2. Remove the Horizontal Stabilizer Lower Trailing Edge Panels

A. References

- (1) 24-22-00/201, Electrical Power – Control
- (2) IPC 55-16-53 Fig. 1

B. Access

- (1) Location Zone
330/340 Horizontal Stabilizer and Elevator

C. Procedure

S 044-001

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE HORIZONTAL STABILIZER. EQUIPMENT AND MATERIALS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE.

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE DEACTIVATION PROCEDURE FOR THE ELEVATOR/RUDDER CONTROL SYSTEM. THE ELEVATOR/RUDDER SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (1) Do the deactivation procedure for the elevator/rudder control systems:
 - (a) Supply electrical power (Ref 24-22-00).
 - (b) Put these switches that are on the right side panel, P61, to the OFF position and attach DO-NOT-OPERATE tags:
 - 1) L FLT CONT SHUTOFF
 - 2) C FLT CONT SHUTOFF
 - 3) R FLT CONT SHUTOFF
 - (c) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT

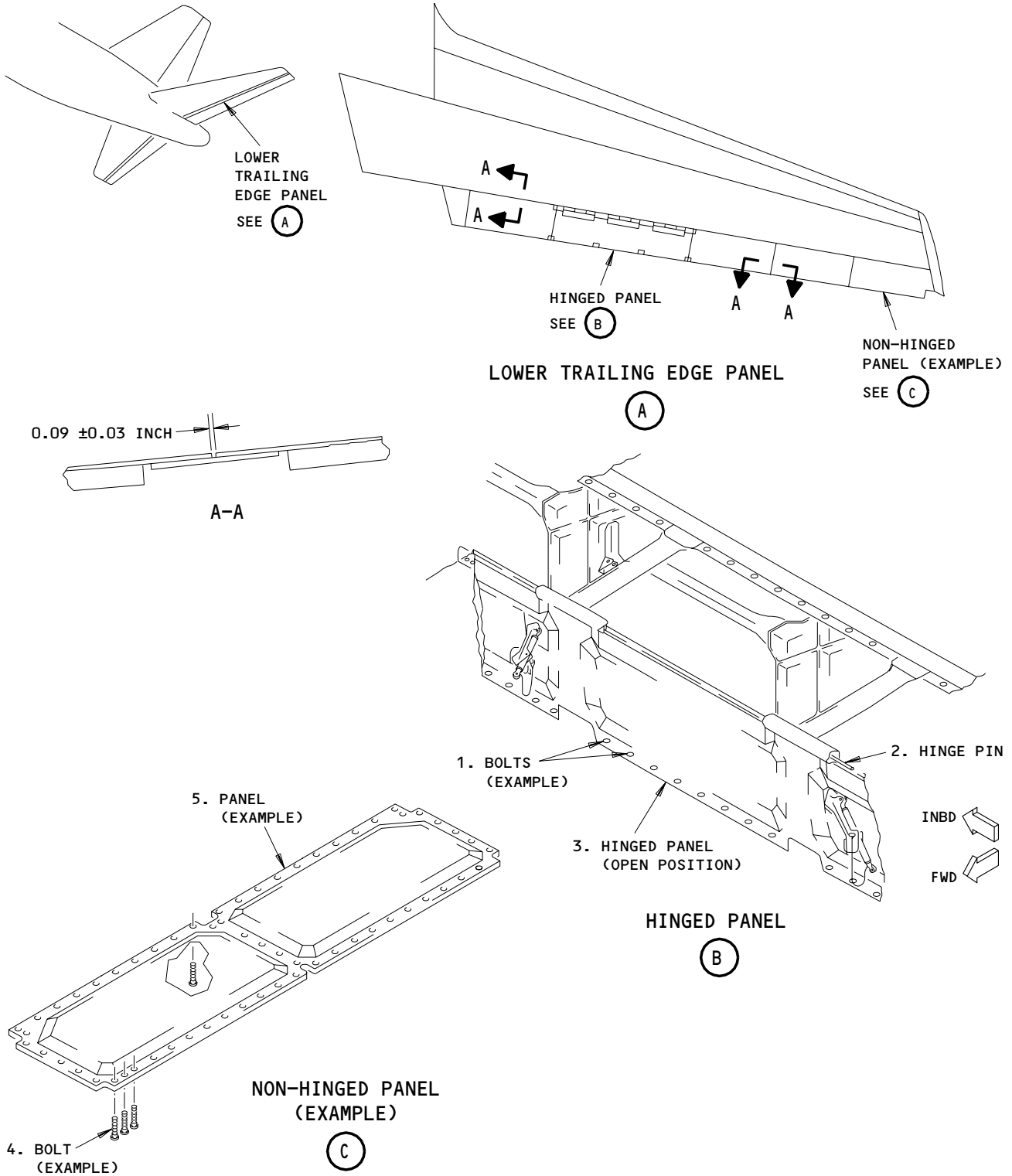
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Horizontal Stabilizer Trailing Edge Panels
Figure 401

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S 024-010

CAUTION: BE CAREFUL WHEN YOU REMOVE THE LOWER TRAILING EDGE PANELS FROM THE HORIZONTAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE SURFACE.

- (2) For non-hinged panels, do these steps (Fig. 401):
 - (a) Remove the bolts (4) that are attached to the panel (5).
 - (b) Remove the panel (5).

S 024-003

- (3) For hinged panels, do these steps (Fig. 401):
 - (a) Remove the bolts (1) from the aft, inboard, and outboard sides of the panel.
 - (b) Lower the panel (3) to the open position.
 - (c) Remove the hinge pin (2) from the panel (3).
 - (d) Remove the panel (3).

TASK 55-16-01-404-004

3. Install the Horizontal Stabilizer Lower Trailing Edge Panels

A. Consumable Materials

- (1) C00308 Compound - Corrosion Preventive,
MIL-C-11796, Class 3

B. Parts

MM		NOMENCLATURE	IPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Bolts	55-16-53	01	110
					115
	2	Pin (Hinged Pin)			120
					125
					130
	3	Panel Assembly (Hinged Panel)(LH)			100
3	Panel Assembly (Hinged Panel)(RH)	105			
4	Bolts (Example)				
5	Panels (Example)				

C. References

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

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D. Access

- (1) Location Zone
330/340 Horizontal Stabilizer and Elevator

E. Procedure

S 424-005

CAUTION: BE CAREFUL WHEN YOU INSTALL THE LOWER TRAILING EDGE PANELS ON THE HORIZONTAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE SURFACE.

- (1) For non-hinged panels, do these steps (Fig. 401):

NOTE: You can install as much as 10 percent of the fasteners with Tinnerman (dimpled countersunk) washers to repair the loose fastener holes.

- (a) Apply the corrosion preventive compound to the bolts.
- (b) Put the panel (5) in its position.
- (c) Install the bolts (4).

S 424-006

- (2) For hinged panels, do these steps (Fig. 401):

NOTE: You can install as much as 10 percent of the fasteners with Tinnerman (dimpled countersunk) washers to repair the loose fastener holes.

- (a) Apply the corrosion preventive compound to the bolts.
- (b) Put the panel (3) in its position.
- (c) Install the hinge pin (2).
- (d) Put the panel to the closed position.
- (e) Install the bolts (1).

S 444-007

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE ACTIVATION PROCEDURE FOR THE ELEVATOR/RUDDER CONTROL SYSTEM. THE ELEVATOR/RUDDER SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (3) Do the activation procedure for the elevator/rudder control system:
- (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT
 - (b) Remove DO-NOT-OPERATE tags and put these switches that are on P61 panel to the ON position:
 - 1) L FLT CONT SHUTOFF

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- 2) C FLT CONT SHUTOFF
- 3) R FLT CONT SHUTOFF

S 864-008

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

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HORIZONTAL STABILIZER TRAILING EDGE SEALS – REMOVAL/INSTALLATION

1. General

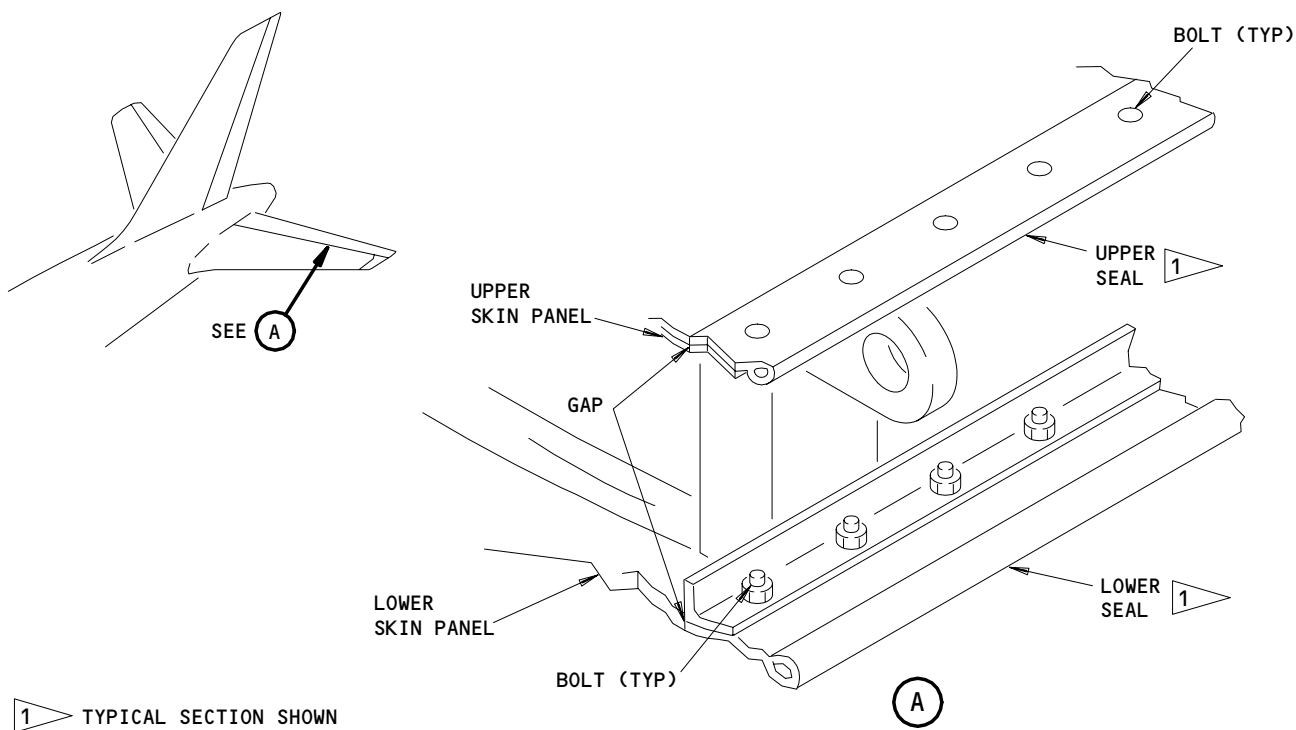
- A. This procedure contains two tasks:
 - (1) The first task is the removal of the trailing edge seals from the horizontal stabilizer.
 - (2) The second task is the installation of the trailing edge seals on the horizontal stabilizer.
- B. The removal and installation procedures for the upper and lower trailing edge seals are equivalent.

TASK 55-16-05-004-001

2. Remove the Horizontal Stabilizer Trailing Edge Seals

A. Equipment

- (1) Attach Lanyard – Wing/Horizontal Stabilizer Safety Harness, B20001-5



Horizontal Stabilizer Trailing Edge Seals Installation
Figure 401

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B. References

- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle.
- (2) 24-22-00/201, Electrical Power - Control

C. Access

- (1) Location Zone
330/340 Left and Right Horizontal Stabilizer and Elevator

D. Procedure

S 044-002

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE HORIZONTAL STABILIZER. EQUIPMENT AND MATERIALS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE.

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE DEACTIVATION PROCEDURE FOR THE RUDDER/ELEVATOR CONTROL SYSTEM. THE RUDDER/ELEVATOR SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (1) Do the deactivation procedure for the rudder/elevator control system:
 - (a) Supply electrical power (Ref 24-22-00).
 - (b) Put these switches that are on the right side panel, P61, to the OFF position and attach DO-NOT-OPERATE tags.
 - 1) L FLT CONT SHUTOFF
 - 2) C FLT CONT SHUTOFF
 - 3) R FLT CONT SHUTOFF
 - (c) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags.
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT

S 494-003

WARNING: ATTACH A SAFETY HARNESS WHEN YOU DO WORK ON TOP OF THE HORIZONTAL STABILIZER. FAILURE TO OBEY CAN CAUSE INJURY OR DAMAGE.

- (2) Attach a safety harness (Ref 20-10-27).

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S 024-004

CAUTION: BE CAREFUL WHEN YOU REMOVE THE TRAILING EDGE SEALS FROM THE HORIZONTAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (3) Remove the bolts that hold the damaged part of the seal.

S 024-005

- (4) Remove the damaged seal.

TASK 55-16-05-404-006

3. Install the Horizontal Stabilizer Trailing Edge Seals

A. Equipment

- (1) Attach Lanyard - Wing/Horizontal Stabilizer Safety Harness, B20001-5

B. Consumable Materials

- (1) C00308 Compound - Corrosion Preventive, MIL-C-11796, Class 3
- (2) A00247 Sealant - Chromate Type, BMS 5-95

C. References

- (1) 20-10-27/201, Flight Controls Safety Harness Receptacle.
- (2) 24-22-00/201, Electrical Power - Control
- (3) 29-11-00/201, Main Hydraulic Systems
- (4) 51-31-01/201, Seals and Sealing

D. Access

- (1) Location Zone
330/340 Left and Right Horizontal Stabilizer and Elevator

E. Procedure

S 104-007

- (1) Remove the remaining sealant from the clearance that is between the seal and the skin panel.

S 354-008

- (2) Cut the length of the seal, as it is necessary, to replace the damaged seal.

S 394-009

- (3) Apply the corrosion preventive compound on the bolts.

S 424-010

CAUTION: BE CAREFUL WHEN YOU INSTALL THE TRAILING EDGE SEALS ON THE HORIZONTAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (4) Put the seal into position and install the bolts.

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S 394-011

- (5) Fill the clearance that is between the trailing edge seals and the trailing edge skin panels with the sealant (Ref 51-31-01).

S 444-012

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE ACTIVATION PROCEDURE FOR THE RUDDER/ELEVATOR CONTROL SYSTEM. THE RUDDER/ELEVATOR SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (6) Do the activation procedure for the rudder/elevator control system:
- (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT
 - (b) Remove the DO-NOT-OPERATE tags and put these switches that are on the, P61, panel to the ON position.
 - 1) L FLT CONT SHUTOFF
 - 2) C FLT CONT SHUTOFF
 - 3) R FLT CONT SHUTOFF

S 864-013

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM ALL CONTROL SURFACES WHEN HYDRAULIC POWER IS SUPPLIED. AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, AND STABILIZERS ARE FULLY POWERED SURFACES. INJURY OR DAMAGE CAN OCCUR WHEN HYDRAULIC POWER IS SUPPLIED.

- (7) Supply hydraulic power (Ref 29-11-00).

S 714-014

- (8) Operate the elevator through its full range of travel.

S 214-015

- (9) Make sure the trailing edge is on the elevator leading edge, but does not bind during elevator operation.

S 094-016

- (10) Remove the safety harness if it is not necessary (Ref 20-10-27).

S 864-017

- (11) Remove the hydraulic power if it is not necessary.

S 864-018

- (12) Remove the electrical power if it is not necessary.

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HORIZONTAL STABILIZER PIVOT FITTINGS – REMOVAL/INSTALLATION

1. General

- A. This procedure contains four tasks:
 - (1) The first task is the removal of the pivot pin.
 - (2) The second task is the installation of the pivot pin.
 - (3) The third task is the removal of the pivot bearing.
 - (4) The fourth task is the installation of the pivot bearing.
- B. Removal and installation procedures of the pivot pins and the pivot bearings for the left and right sides are the same. Remove and install only one pin or bearing at a time.

TASK 55-17-51-004-014

2. Remove the Inner Pin Only (Fig. 401)

A. Equipment

- (1) Horizontal Stabilizer Support Equipment – B55002-15
 - (a) Horizontal Stabilizer Support Assembly (Left) – B55002-16
 - (b) Horizontal Stabilizer Support Assembly (Right) – B55002-17
- (2) Horizontal Stabilizer Hinge Bearing Tool Set – B55003-27
 - (a) Retaining Nut Wrench – B55003-26
 - (b) Outer Pin Wrench – B55003-28
 - (c) Inner Pin Puller – B55003-22

B. References

- (1) AMM 06-42-00/201, Empennage Access Doors and Panels
- (2) AMM 12-21-05/301, Horizontal Stabilizer Trim Control System
- (3) AMM 24-22-00/201, Electrical Power – Control
- (4) AIPC 55-10-51, Fig. 1

C. Access

- (1) Location Zones
 - 330/340 Horizontal Stabilizer and Elevator
- (2) Access Panels
 - 311AL Service Access Door

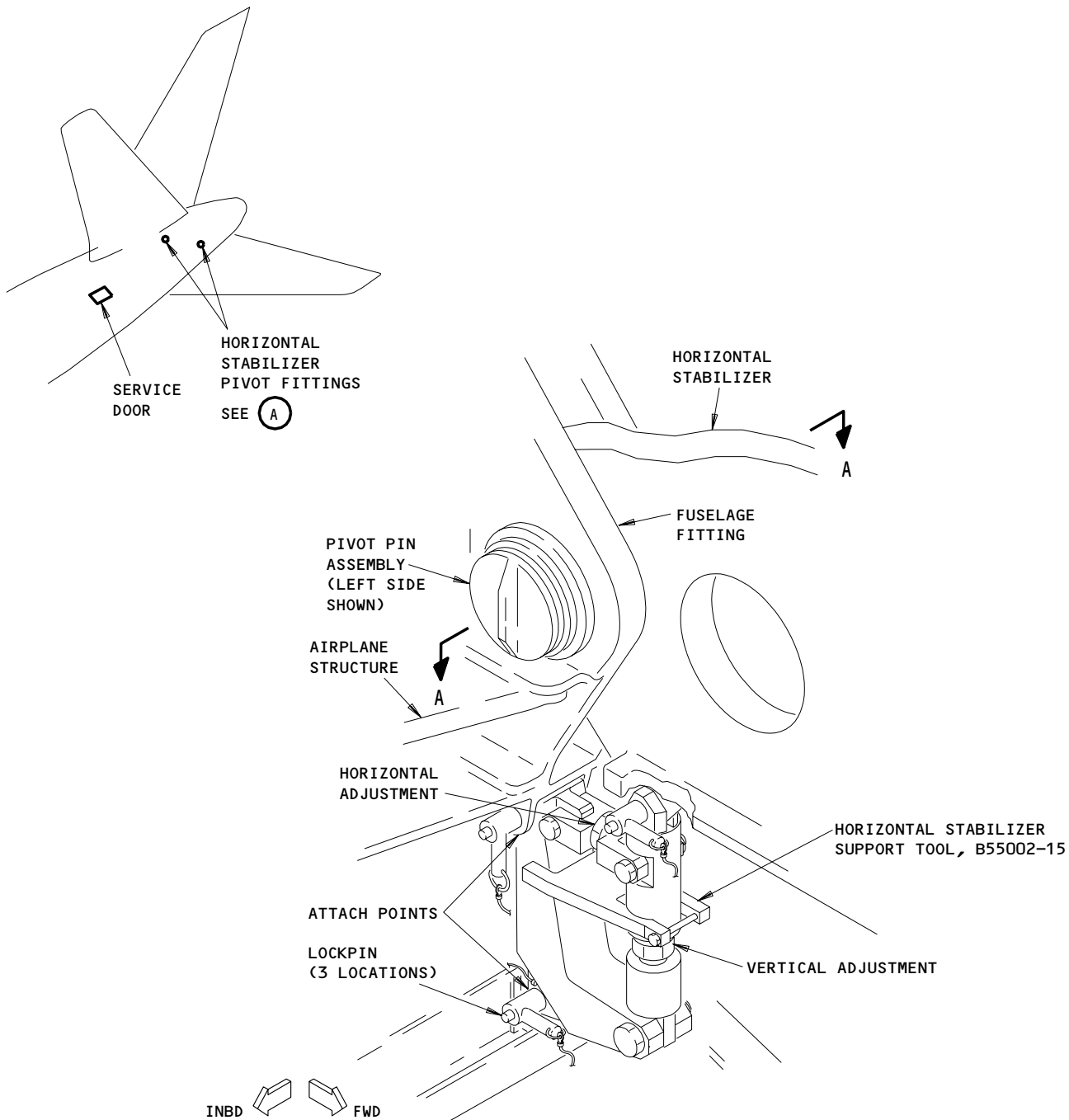
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HORIZONTAL STABILIZER PIVOT FITTINGS

(A)

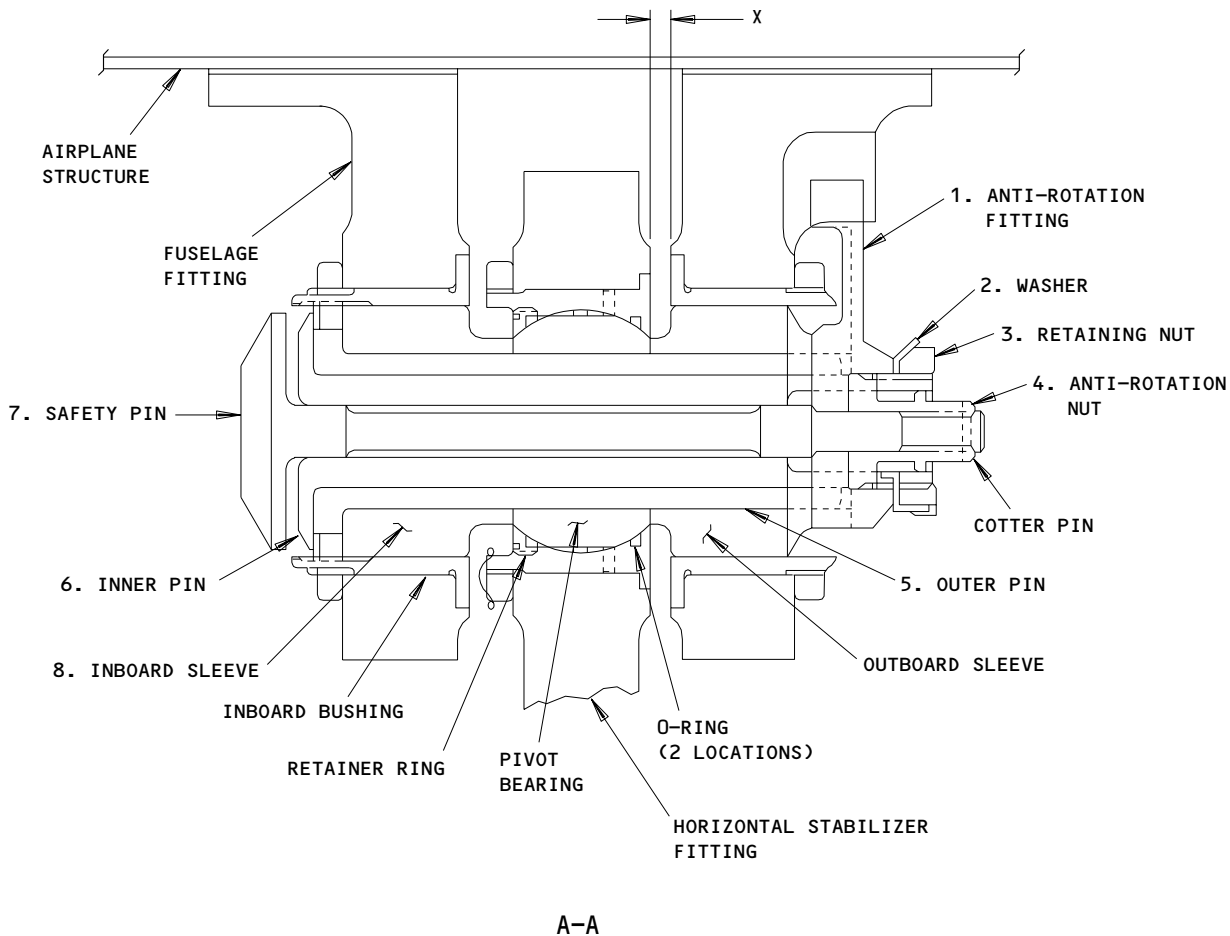
Horizontal Stabilizer Pivot Fittings
Figure 401 (Sheet 1)

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Horizontal Stabilizer Pivot Fittings Installation
Figure 401 (Sheet 2)

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D. Procedure

S 864-015

WARNING: DO NOT OPERATE THE RUDDER, ELEVATOR, AND HORIZONTAL STABILIZER TRIM CONTROL SYSTEMS. ACCIDENTAL MOVEMENT OF THE RUDDER, ELEVATOR, AND HORIZONTAL STABILIZER COULD CAUSE INJURY OR DAMAGE.

- (1) Do the deactivation procedure for the stabilizer trim jackscrew:
 - (a) Supply electrical power (AMM 24-22-00/201).
 - (b) Put the L, R, and C FLT CONTROL SHUTOFF switches, on the sidewall panel P61, to the OFF position.
 - (c) Put the R and C STAB TRIM shutoff valve switches, on the quadrant stand panel P10, to the CUTOUT position.
 - (d) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT

S 014-046

WARNING: STAY OFF THE THE SERVICE ACCESS DOOR, 311AL, AND THE ACCESS DOOR FOR THE CONTROLS BAY, 313AL. YOUR WEIGHT CAN CAUSE THE SPRING-LOADED LATCHES TO RELEASE. IF YOU FALL THROUGH THE DOOR, INJURY CAN OCCUR.

- (2) Open the service access door 311AL on the left side of the empennage to get access to the pivot pins (AMM 06-42-00/201).

S 414-016

- (3) Install the support equipment for the horizontal stabilizer at the structural locations near the pivot pin (Fig. 401).

S 944-017

- (4) Do the steps that follow to adjust the support tool to release the stabilizer weight from the pivot pin:

NOTE: The two dial indicators measure the vertical and horizontal movement of the horizontal stabilizer. The dial indicator will help you determine the correct adjustment of the support tool. When correctly adjusted, the load is removed from the pivot pin and the pivot pin is easier to remove.

- (a) Attach a dial indicator to measure the forward and aft (horizontal) movement of the horizontal stabilizer.

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- (b) Attach the other dial indicator to measure the vertical movement of horizontal stabilizer.
- (c) Set the two dial indicators to zero.
- (d) Carefully turn the horizontal adjustment screw on the support tool until the pivot pin is at the forward limit of adjustment.

NOTE: The torque necessary to turn the adjustment screw increases at the forward limit of adjustment.

- (e) Read the dial indicator value.
- (f) Turn the horizontal adjustment screw until one half of the previous dial indicator value is shown.
- (g) Make sure the dial indicator value for the vertical adjustment is set to zero.
- (h) Carefully turn the vertical adjustment screw on the support tool until the pivot pin is at the vertical limit of adjustment.

NOTE: The torque necessary to turn the adjustment screw increases at the vertical limit of adjustment.

- (i) Read the dial indicator value.
- (j) Turn the vertical adjustment screw until one half of the previous dial indicator value is shown.
- (k) Continue to make small adjustments on the vertical and horizontal adjustment screws until you can remove the pivot pin.

S 034-018

- (5) Remove the cotter pin from the end of the safety pin (7).

S 034-050

- (6) Remove the safety pin (7).

NOTE: To remove the safety pin (7), turn and remove it from the anti-rotation nut (4).

S 034-020

- (7) Bend up the tangs on the retaining nut lock washer.

S 034-021

- (8) Remove the retaining nut (3) with the retaining nut wrench.

S 034-022

- (9) Remove the retaining nut lock washer (2) , the anti-rotation nut (4), and the anti-rotation fitting (1).

S 034-023

- (10) Remove the inner pin (6) with the inner pin puller.

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TASK 55-17-51-004-066

3. Remove Both Pins (Inner and Outer) (Fig. 401)

A. Equipment

- (1) Horizontal Stabilizer Support Equipment - B55002-15
 - (a) Horizontal Stabilizer Support Assembly (Left) - B55002-16
 - (b) Horizontal Stabilizer Support Assembly (Right) - B55002-17
- (2) Horizontal Stabilizer Hinge Bearing Tool Set - B55003-27
 - (a) Retaining Nut Wrench - B55003-26
 - (b) Outer Pin Wrench - B55003-28
 - (c) Inner Pin Puller - B55003-22

B. References

- (1) AMM 06-42-00/201, Empennage Access Doors and Panels
- (2) AMM 12-21-05/301, Horizontal Stabilizer Trim Control System
- (3) AMM 24-22-00/201, Electrical Power - Control
- (4) AIPC 55-10-51, Fig. 1

C. Access

- (1) Location Zones
 - 330/340 Horizontal Stabilizer and Elevator
- (2) Access Panels
 - 311AL Service Access Door

D. Procedure

S 864-067

WARNING: DO NOT OPERATE THE RUDDER, ELEVATOR, AND HORIZONTAL STABILIZER TRIM CONTROL SYSTEMS. ACCIDENTAL MOVEMENT OF THE RUDDER, ELEVATOR, AND HORIZONTAL STABILIZER COULD CAUSE INJURY OR DAMAGE.

- (1) Do this task: Removal of Inner Pin

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S 034-078

- (2) Remove the outer pin (5) with the pin wrench.

TASK 55-17-51-404-026

4. Install Both Pins (Inner and Outer)

A. Equipment

- (1) Dial Indicator - Commercially available
- (2) Horizontal Stabilizer Support Equipment - B55002-15
 - (a) Horizontal Stabilizer Support Assembly (Left) - B55002-16
 - (b) Horizontal Stabilizer Support Assembly (Right) - B55002-17
- (3) Horizontal Stabilizer Hinge Bearing Tool Set - B55003-27
 - (a) Retaining Nut Wrench - B55003-26
 - (b) Outer Pin Wrench - B55003-28
 - (c) Inner Pin Puller - B55003-22

B. Consumable Materials

- (1) D00633 Grease - BMS 3-33 (Preferred)
- (2) D00015 Grease - BMS 3-24 (Alternate)

C. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Anti-Rotation Fitting	55-10-51	01	52
	2	Washer (Retaining Nut Lock Washer)			45
	3	Nut (Retaining Nut)			40
	4	Anti-Rotation Nut			53
	5	Outer Pin			65
	6	Inner Pin			70
	7	Safety Pin			75

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D. References

- (1) AMM 06-42-00/201, Empennage Access Doors and Panels
- (2) AMM 12-21-05/301, Horizontal Stabilizer Trim Control System
- (3) AMM 24-22-00/201, Electrical Power - Control

E. Access

- (1) Location Zones
 - 330 Left Horizontal Stabilizer and Elevator
 - 340 Right Horizontal Stabilizer and Elevator

- (2) Access Panels

- 311AL Service Access Door

F. Procedure

S 644-027

- (1) Apply grease to the surfaces of all pins and bushings before installation.

S 484-028

- (2) Install the dial indicator to measure the change in dimension "X".

S 434-029

- (3) Insert the outer pin (5) through the pivot bearing (9) and the outboard sleeve.

S 434-030

- (4) Use the outer pin wrench to turn the outer pin into the inboard bushing until the dial indicator shows that the inboard sleeve has touched the pivot bearing.

NOTE: A small change in the dial indicator value will show that the inboard sleeve has touched the pivot bearing.

S 864-031

- (5) Write the dial indicator value on paper.

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S 434-032

- (6) Align the slots in the outer pin and the outboard sleeve with a 0.75-inch slot in the body hinge fitting. Use the anti-rotation fitting to align the slots.

S 034-033

- (7) If the dial indicator change is more than 0.002 inch (dimension "X" decreases), loosen the outer pin to align it with the nearest slot.

S 434-085

- (8) Install the inner pin (6), the anti-rotation fitting (1), and the anti-rotation nut (4).

S 434-086

- (9) Install the retaining nut lock washer (2), the inboard tang will engage in the slot of the inner pin.

S 434-087

- (10) Tighten the retaining nut (3) to 500-700 pound-inches with the retaining nut wrench.

NOTE: When you tighten the retaining nut, align a groove in the retaining nut with a tang on the lock washer.

S 434-088

- (11) Bend down the tangs to lock the retaining nut.

S 434-089

- (12) Thread the safety pin (7) in the anti-rotation nut (4) and turn until it is tight.

S 434-090

- (13) Align the holes in the safety pin with the holes in the anti-rotation nut and install the cotter pin.

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S 084-040

- (14) Remove the dial indicator.

S 094-041

- (15) Remove the support equipment for the horizontal stabilizer.

S 644-042

- (16) Lubricate the pivot pin at the lubrication fitting (Ref 12-21-05).

S 864-043

- (17) Do the activation procedure for the stabilizer trim jackscrew:
- (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT
 - (b) Put the R and C STAB TRIM shutoff valve switches on the P10 panel to the NORM position.
 - (c) Put the L, R, and C FLT CONTROL SHUTOFF switches on the P61 panel to the ON position.

S 414-044

- (18) Close the service door 311AL.

S 864-045

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

TASK 55-17-51-404-052

5. Install the Inner Pin Only

A. Equipment

- (1) Dial Indicator - Commercially available
- (2) Horizontal Stabilizer Support Equipment - B55002-15
 - (a) Horizontal Stabilizer Support Assembly (Left) - B55002-16
 - (b) Horizontal Stabilizer Support Assembly (Right) - B55002-17
- (3) Horizontal Stabilizer Hinge Bearing Tool Set - B55003-27
 - (a) Retaining Nut Wrench - B55003-26
 - (b) Outer Pin Wrench - B55003-28

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(c) Inner Pin Puller - B55003-22

B. Consumable Materials

- (1) D00633 Grease - BMS 3-33 (Preferred)
- (2) D00015 Grease - BMS 3-24 (Alternate)

C. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Anti-Rotation Fitting	55-10-51	01	52
	2	Washer (Retaining Nut Lock Washer)			45
	3	Nut (Retaining Nut)			40
	4	Anti-Rotation Nut			53
	5	Outer Pin			65
	6	Inner Pin			70
	7	Safety Pin			75

D. References

- (1) AMM 06-42-00/201, Empennage Access Doors and Panels
- (2) AMM 12-21-05/301, Horizontal Stabilizer Trim Control System
- (3) AMM 24-22-00/201, Electrical Power - Control

E. Access

- (1) Location Zones
 - 330 Left Horizontal Stabilizer and Elevator
 - 340 Right Horizontal Stabilizer and Elevator

(2) Access Panels

- 311AL Service Access Door

F. Procedure

S 644-053

- (1) Apply grease to the surfaces of all pins and bushings before installation.

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- S 484-054
(2) Install the dial indicator to measure the change in dimension "X".

- S 434-079
(3) Install the inner pin (6), the anti-rotation fitting (1), and the anti-rotation nut (4).

- S 434-080
(4) Install the retaining nut lock washer (2), the inboard tang will engage in the slot of the inner pin.

- S 434-081
(5) Tighten the retaining nut (3) to 500-700 pound-inches with the retaining nut wrench.

NOTE: When you tighten the retaining nut, align a groove in the retaining nut with a tang on the lock washer.

- S 434-082
(6) Bend down the tangs to lock the retaining nut.

- S 434-083
(7) Thread the safety pin (7) in the anti-rotation nut (4) and turn until it is tight.

- S 434-084
(8) Align the holes in the safety pin with the holes in the anti-rotation nut and install the cotter pin.

- S 084-060
(9) Remove the dial indicator.

- S 094-061
(10) Remove the support equipment for the horizontal stabilizer.

- S 644-062
(11) Lubricate the pivot pin at the lubrication fitting (Ref 12-21-05).

- S 864-063
(12) Do the activation procedure for the stabilizer trim jackscrew:
(a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
1) 11H17, FLT CONT SHUTOFF TAIL LEFT

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- 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
- 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT
- (b) Put the R and C STAB TRIM shutoff valve switches on the P10 panel to the NORM position.
- (c) Put the L, R, and C FLT CONTROL SHUTOFF switches on the P61 panel to the ON position.

S 414-064

- (13) Close the service door 311AL.

S 864-065

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

TASK 55-17-51-004-001

6. Remove the Pivot Bearing (Fig. 401)

A. References

- (1) AMM 06-42-00/201, Empennage Access Doors and Panels
- (2) AMM 12-21-05/301, Horizontal Stabilizer Trim Control System
- (3) AMM 24-22-00/201, Electrical Power - Control
- (4) AIPC 55-17-51, Fig. 1

B. Access

- (1) Location Zones
 - 330 Left Horizontal Stabilizer and Elevator
 - 340 Right Horizontal Stabilizer and Elevator

- (2) Access Panels

- 311AL Service Access Door

C. Procedure

S 034-002

- (1) Do the Remove the Pivot Pin procedure.

S 034-003

- (2) Remove the inboard sleeve (8)

S 034-004

- (3) Remove the retainer ring and the inboard O-ring.

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S 034-005

- (4) Remove the pivot bearing (9) through the slots in the bearing race.

TASK 55-17-51-404-049

7. Install the Pivot Bearing (Fig. 401)

A. Consumable Materials

- (1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00015 Grease - BMS 3-24 (Alternate)

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	8	Inboard Sleeve	55-10-51	01	60
	9	Bearing Assembly (Pivot Bearing)	55-17-51	01	135

C. References

- (1) AMM 06-42-00/201, Empennage Access Doors and Panels
(2) AMM 12-21-05/301, Horizontal Stabilizer Trim Control System
(3) AMM 24-22-00/201, Electrical Power - Control

D. Access

- (1) Location Zones
330 Left Horizontal Stabilizer and Elevator
340 Right Horizontal Stabilizer and Elevator

(2) Access Panels

311AL Service Access Door

E. Procedure

S 214-006

- (1) Examine the O-rings for damage or wear. Replace with new O-rings if it is necessary.

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- S 644-007
- (2) Apply grease to the surfaces of the pivot bearing and bushings.
- S 434-008
- (3) Install the pivot bearing (9) in the bearing race.
- S 434-009
- (4) Install the inboard O-ring.
- S 434-010
- (5) Install the retainer ring.
- S 434-011
- (6) Install the inboard sleeve (8) on the outer pin.
- S 434-012
- (7) Fully engage the tangs, on the inboard sleeve, in the slots on the outer pin.
- S 434-013
- (8) Do the Install the Pivot Pin procedure.

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HORIZONTAL STABILIZER PIVOT FITTING FREE-PLAY - INSPECTION/CHECK

1. General

- A. This procedure contains one task. The task gives instructions to measure the free play in the pivot fittings of the horizontal stabilizer.
- B. To do the inspection/check you must remove the pivot fittings of the horizontal stabilizer.

TASK 55-17-51-706-005

2. Examine Pivot Fittings of the Horizontal Stabilizer for Wear

A. References

- (1) 55-17-51/401, Horizontal Stabilizer Pivot Fittings

B. Access

- (1) Location Zone

330 Horizontal Stabilizer and Elevator, LH
340 Horizontal Stabilizer and Elevator, RH

C. Procedure (Fig. 601)

S 026-002

- (1) Remove the pivot fittings of the horizontal stabilizer (Ref 55-17-51/401).

S 226-003

- (2) Do a check of the wear limits of the pivot fittings (Fig. 601).
 - (a) Measure the parts as necessary and compare the measured dimensions to the limit dimensions.
 - (b) If the part is not within tolerance, repair or replace as necessary.

S 426-004

- (3) Install the pivot fittings of the horizontal stabilizer (Ref AMM 55-17-51/401).

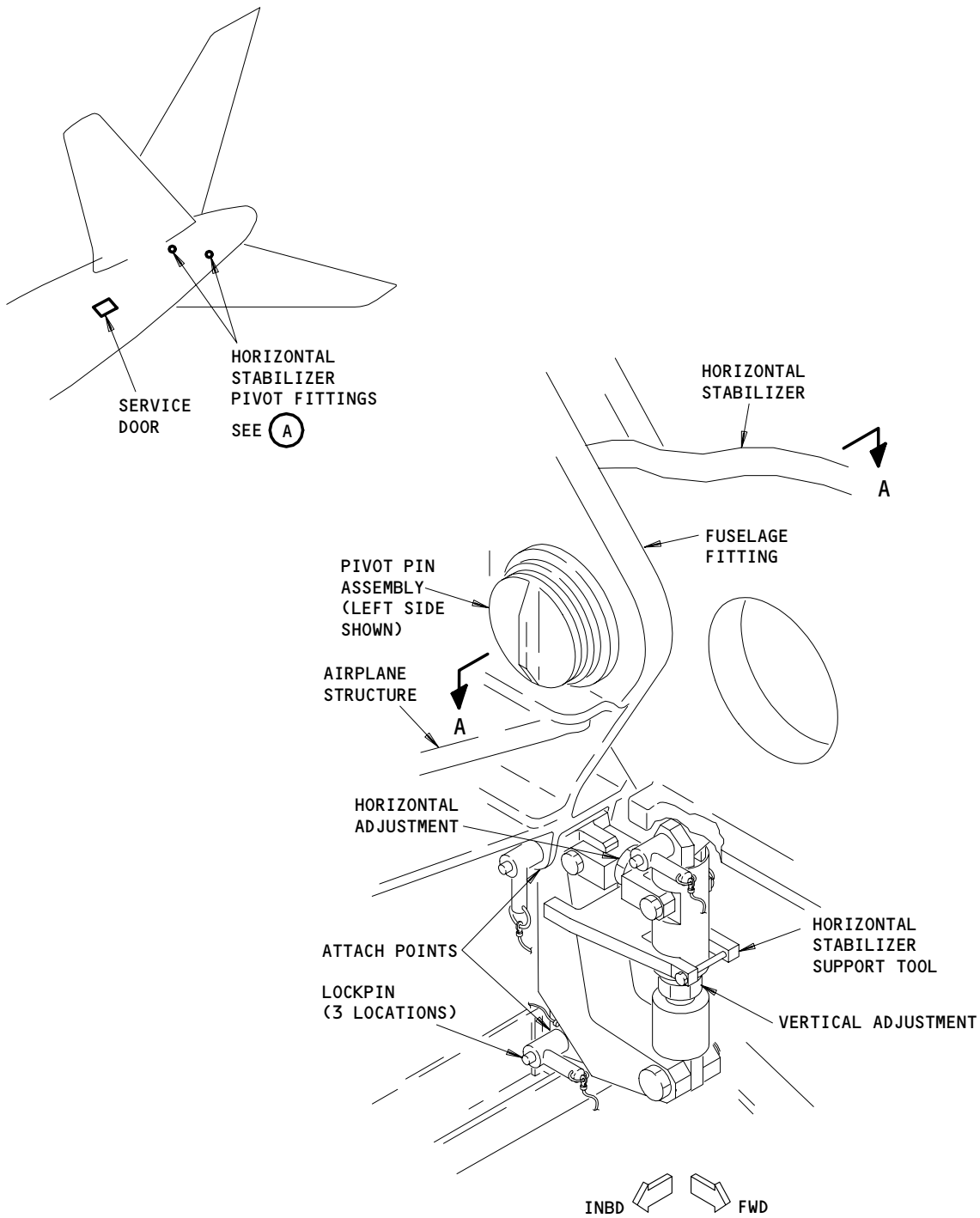
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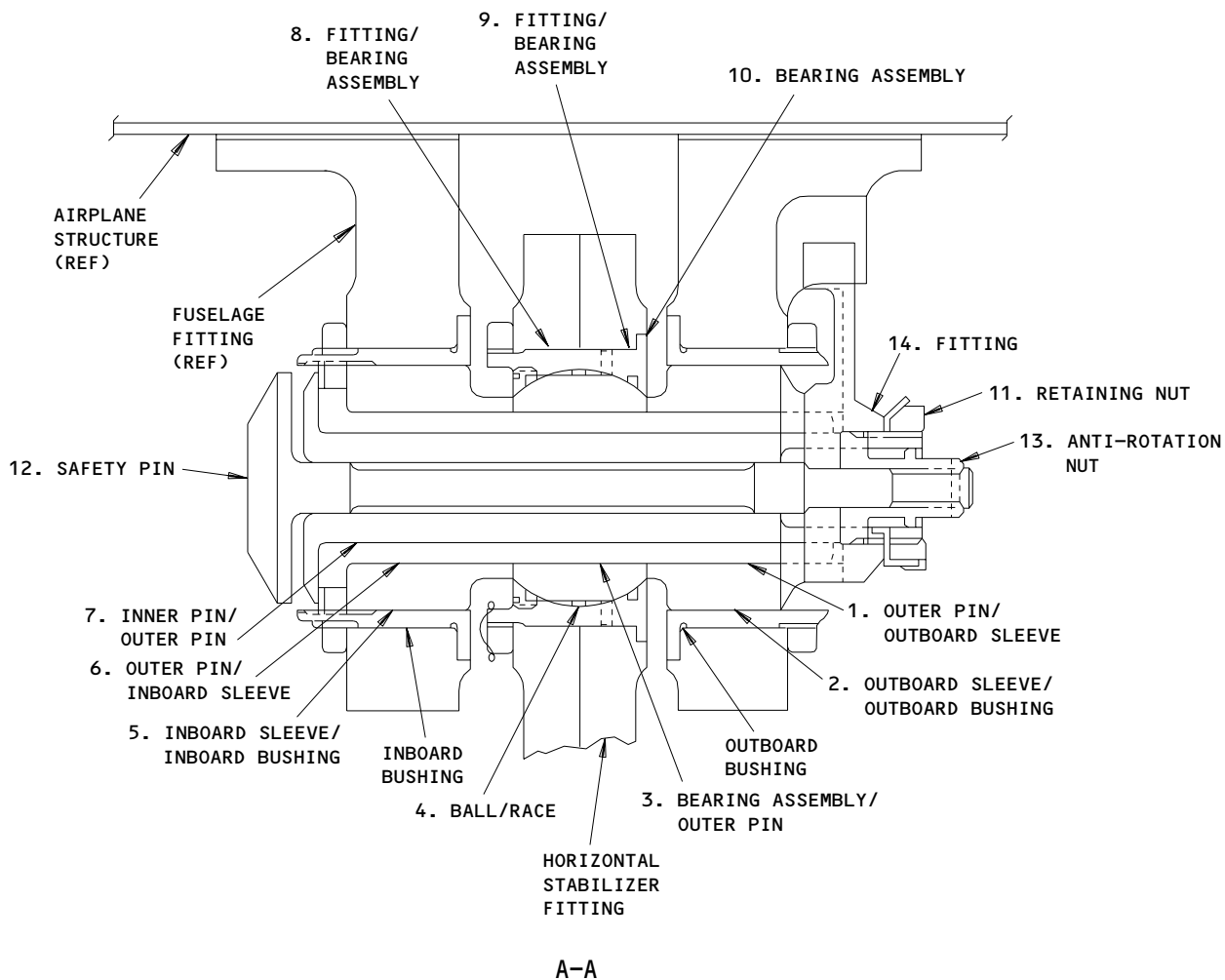
HORIZONTAL STABILIZER PIVOT FITTINGS

(A)

Horizontal Stabilizer Pivot Fittings
Figure 601 (Sheet 1)

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Horizontal Stabilizer Pivot Fittings Installation
Figure 601 (Sheet 2)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PERMITTED WEAR DIM.	MAX DIA CLEARANCE			
			MIN	MAX					
1	OUTBOARD SLEEVE	ID	1.6255	1.6270	1.6310	0.0075	X		
	OUTER PIN	OD	1.6220	1.6235	1.6195				
2	OUTBOARD BUSHING	ID	2.6970	2.6985	---	0.010			
	OUTBOARD SLEEVE	OD	2.6935	2.6950	2.6885				
3	BEARING ASSEMBLY	ID	1.6255	1.6270	1.6285	0.0050			
	OUTER PIN	OD	1.6220	1.6235	1.6195				
4	RACE	ID	2.5025	2.5045	2.5075	0.0075	X		
	BALL	OD	2.4995	2.5000	2.4970		X		
5	INBOARD BUSHING	ID	2.6970	2.6985	---	0.010			
	INBOARD SLEEVE	OD	2.6935	2.6950	2.6885				
6	INBOARD SLEEVE	ID	1.6255	1.6270	1.6310	0.0075	X		
	OUTER PIN	OD	1.6220	1.6235	1.6195				2
7	OUTER PIN	ID	1.2000	1.2005	1.2010	0.0020	X		
	INNER PIN	OD	1.1985	1.1990	1.1985		X		
8	FITTING	ID	3.0000	3.0016	3.0050	0.0050	X		
	BEARING ASSEMBLY	OD	2.999	3.0000	2.9966		X		
9	FITTING	ID	3.0000	3.0016	3.0050	0.0050	X		
	BEARING ASSEMBLY	OD	2.9990	3.0000	2.9966		X		
10	BEARING ASSEMBLY 1	--	0.115	0.135	---		X		
11	RETAINING NUT	--	---	---	---		X		3
12	SAFETY PIN								3
13	ANTI-ROTATION NUT								3
14	FITTING								3

- 1 THICKNESS OF FLANGE OR LUG
- 2 REPAIR OR REPLACE AS NECESSARY. REFER TO THE OVERHAUL MANUAL FOR THE REPAIR PROCEDURE.
- 3 EXAMINE FOR CORROSION ON ALL MATING SURFACES. REPLACE THE PARTS IF CORROSION HAS DAMAGED THOSE PARTS AND YOU CANNOT CLEAN THE CORROSION LIGHTLY WITH SANDPAPER.

Horizontal Stabilizer Pivot Fittings Wear Limits
Figure 601 (Sheet 3)

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HORIZONTAL STABILIZER JACKSCREW SUPPORT FITTING - INSPECTION/CHECK

1. General

- A. This procedure contains one task. The task gives instructions to measure the free-play of the jackscrew support fittings of the horizontal stabilizer.
- B. To do the inspection/check you must remove the the jackscrew support fitting from the jackscrew upper gimbal.

TASK 55-18-51-706-004

2. Examine the Support Fittings at the Upper Gimbal for Wear

- A. References
 - (1) AMM 06-42-00/201, Empennage Access Panels and Doors
 - (2) AMM 27-41-10/401, Stabilizer Ball Screw Actuator Removal & Install
- B. Access
 - (1) Location Zone
 - 311 Area Aft of Pressure Bulkhead to BS 1787.45 (Left)
 - (2) Access Panels
 - 311AL Horizontal Stabilizer Access Door
- C. Inspect the Stabilizer Upper Gimbal (Fig 601).

S 016-005

WARNING: STAY OFF SERVICE ACCESS-DOOR 311AL AND CONTROLS BAY ACCESS-DOOR, 313AL. THE WEIGHT OF A PERSON CAN CAUSE THE SPRING LOADED LATCHES TO RELEASE. A PERSON CAN BE INJURED IF HE FALLS THROUGH THE DOOR.

- (1) Open the horizontal stabilizer access door, 311AL (Ref 06-42-00).

S 036-003

- (2) Remove the upper gimbal from the stabilizer and the jackscrew attach points (AMM 27-41-10/401).

S 226-002

- (3) Do a check of the wear limits of the components listed in Figure 601.
 - (a) Measure the parts as necessary and compare the measured dimensions to the limit dimensions listed in the Wear Limit Table.
 - (b) If the part is not within tolerance, repair or replace as necessary.

S 426-003

- (4) Install the upper gimbal in the stabilizer-to-jackscrew attach points (AMM 27-41-10/401).

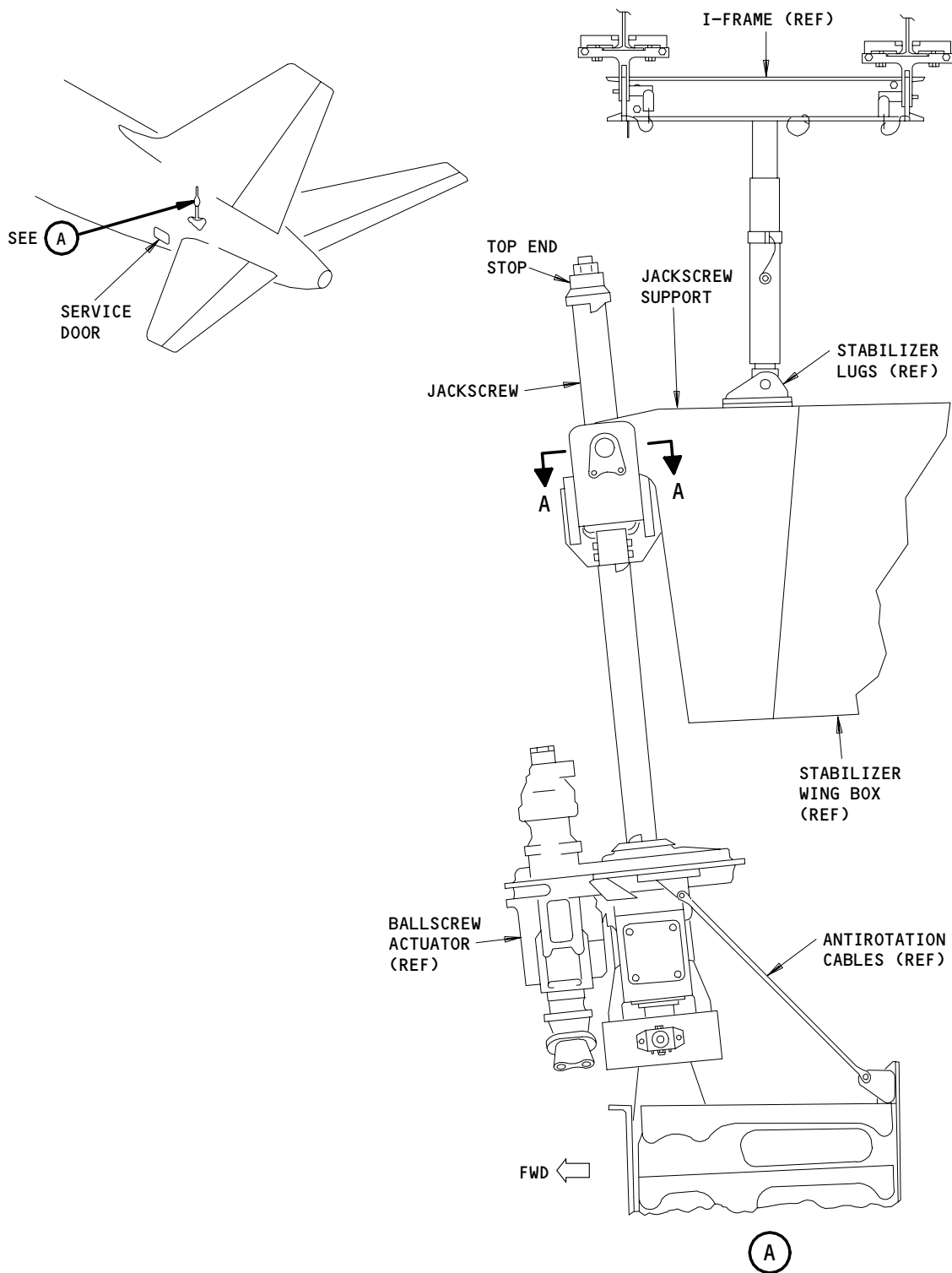
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Horizontal Stabilizer Jackscrew Support Fitting Inspection
Figure 601 (Sheet 1)

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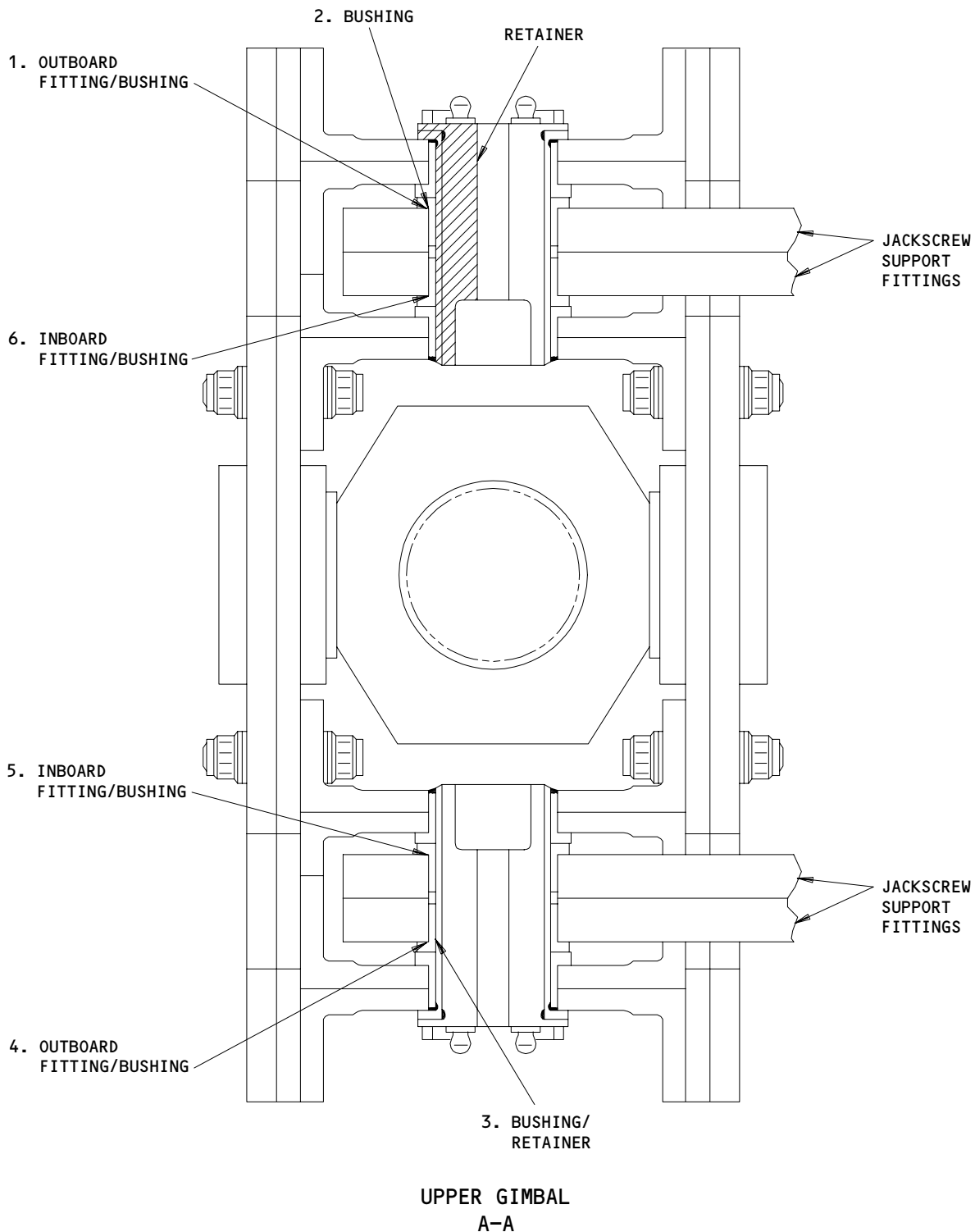
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Horizontal Stabilizer JackscREW Support Fitting Inspection
Figure 601 (Sheet 2)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR.
			DIAMETER		PERMITTED WEAR DIM.	MAX DIAM CLEARANCE			
			MIN	MAX					
1	OUTBOARD FITTING	ID	1.5625	1.5633	---	---			1
	BUSHING	OD	1.5643	1.5652	---		X 4		
2	BUSHING 2	ID	0.131	0.136	---	---	X 3		
3	BUSHING	ID	1.3120	1.3130	1.3160	0.0050	X 4		
	RETAINER	OD	1.310	1.311	---				
4	OUTBOARD FITTING	ID	1.5625	1.5633	---	---			1
	BUSHING	OD	1.5643	1.5652	---		X 4		
5	INBOARD FITTING	ID	1.5625	1.5633	---	---			1
	BUSHING	OD	1.5643	1.5652	---		X 4		
6	INBOARD FITTING	ID	1.5625	1.5633	---	---			1
	BUSHING	OD	1.5643	1.5652	---		X 4		

WEAR LIMIT TABLE

- 1 THE REWORK LIMITS OF THE FITTING HOLE DIMENSION MUST NOT BE MORE THAN THE MAXIMUM FITTING DIAMETER (IN TABLE) +0.060 INCH.
- 2 THICKNESS DIMENSION ACROSS THE FLANGE OR LUG.
- 3 NO REPAIR OR REWORK TO THE BUSHING IS ALLOWED TO REMOVE CORROSION. REPLACE WITH A NEW BUSHING.
- 4 NO REPAIR OR REWORK IS PERMITTED. REPLACE WITH A NEW BUSHING.

Horizontal Stabilizer Jackscrew Support Fitting Inspection
Figure 601 (Sheet 3)

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VERTICAL STABILIZER TIP – REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks:

- (1) The first task is the removal of the vertical stabilizer tip.
- (2) The second task is the installation of the vertical stabilizer tip.

TASK 55-31-01-004-001

2. Remove the Vertical Stabilizer Tip

A. References

- (1) AMM 24-22-00/201, Control (Supply Power) – Maintenance Practices
- (2) IPC 55-31-01 Fig. 1

B. Access

- (1) Location Zone
326 Vertical Stabilizer – Tip

C. Procedure

S 044-002

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE VERTICAL STABILIZER. EQUIPMENT AND MATERIALS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE.

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE DEACTIVATION PROCEDURE FOR THE RUDDER/ELEVATOR CONTROL SYSTEM. THE RUDDER/ELEVATOR SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

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

- (1) Do the deactivation procedure for the rudder/elevator control system:
 - (a) Supply electrical power (AMM 24-22-00/201).
 - (b) Put these switches that are on right side panel, P61, to the OFF position and attach DO-NOT-OPERATE tags.
 - 1) L FLT CONT SHUTOFF
 - 2) C FLT CONT SHUTOFF

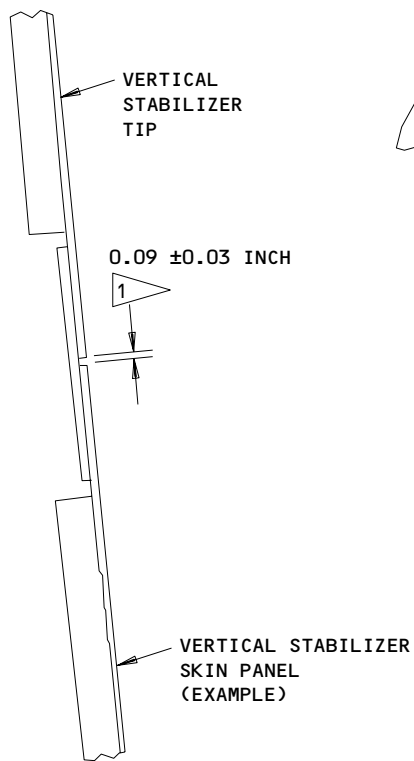
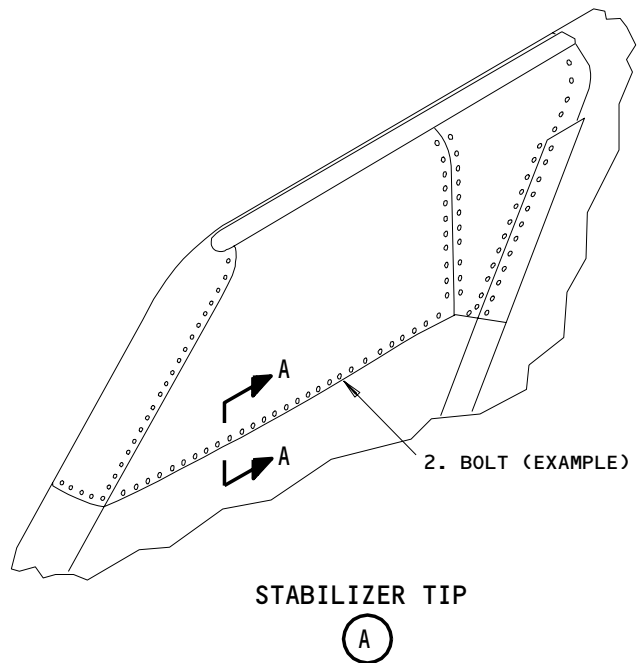
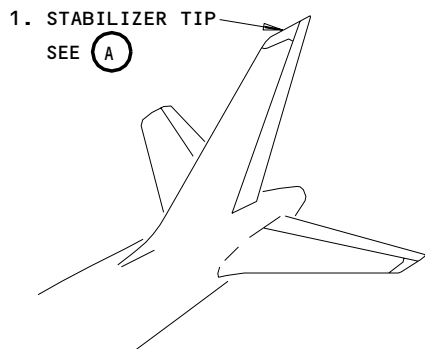
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A-A

1 FILL THE CLEARANCE WITH SEALANT

Vertical Stabilizer Tip
Figure 401

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- 3) R FLT CONT SHUTOFF
- (c) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT

S 024-003

CAUTION: BE CAREFUL WHEN YOU REMOVE THE VERTICAL STABILIZER TIP. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (2) Remove the bolts (2) from the stabilizer tip (1).

S 024-005

- (3) Remove the vertical stabilizer tip (1).

TASK 55-31-01-404-006

3. Install the Vertical Stabilizer Tip

A. Equipment

- (1) Milliohm meter - 0-100 milliohm range - commercially available

B. Consumable Materials

- (1) B00308 Compound - Corrosion Preventive, MIL-C-11796, Class 3
- (2) A00247 Sealant - Chromate Type, BMS 5-95
- (3) B00148 Solvent - Methyl Ethyl Ketone, TT-M-261

C. Parts

MM		NOMENCLATURE	IPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Stabilizer Tip	55-31-51	01	5
	2	Bolt	55-31-01	01	

D. References

- (1) AMM 24-22-00/201, Control (Supply Power) - Maintenance Practices
- (2) AMM 29-11-00/201, Main Hydraulic Systems - Maintenance Practices
- (3) AMM 51-31-01/201, Seals and Sealing - Maintenance Practices

E. Access

- (1) Location Zone
326 Vertical Stabilizer - Tip

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F. Procedure

S 764-007

- (1) Use the milliohmmeter to make sure the resistance between the lightning diverter strap and the fin tip substructure is less than 100 milliohms. If the resistance is more than 100 milliohms, do these steps:
 - (a) Remove the fasteners hold the diverter strap.
 - (b) Clean the countersunk holes with a soft cloth that is moist with solvent, Series 91 (AMM/SOPM 20-30-91).
 - (c) Replace the fasteners.
 - (d) Use the milliohmmeter to measure the resistance again.

S 394-008

- (2) Apply the corrosion preventive compound to the bolts.

S 424-017

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

CAUTION: BE CAREFUL WHEN YOU INSTALL THE VERTICAL STABILIZER TIP. IF YOU ARE NOT CAREFUL, SCRATCHES OR OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (3) Put the stabilizer tip (1) into position and install the bolts (2).

S 394-010

- (4) Fill the clearance that is around the edge of the stabilizer tip with the sealant (BMS 5-95).

S 444-011

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE ACTIVATION PROCEDURE FOR THE RUDDER/ELEVATOR CONTROL SYSTEM. THE RUDDER/ELEVATOR SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (5) Do the activation procedure for the rudder/elevator control system:
 - (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT
 - (b) Remove the DO-NOT-OPERATE tags and put these switches that are on the P61 panel to the ON position.
 - 1) L FLT CONT SHUTOFF
 - 2) C FLT CONT SHUTOFF

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3) R FLT CONT SHUTOFF

S 864-012

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM ALL CONTROL SURFACES WHEN HYDRAULIC POWER IS SUPPLIED. AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS AND STABILIZERS ARE FULLY POWERED SURFACES. INJURY OR DAMAGE CAN OCCUR WHEN HYDRAULIC POWER IS SUPPLIED.

(6) Supply hydraulic power (AMM 29-11-00/201).

S 714-013

(7) Operate the rudder through its full range of travel.

S 214-014

(8) Make sure the stabilizer tip does not prevent the rudder travel.

S 864-015

(9) Remove the hydraulic power if it is not necessary.

S 864-016

(10) Remove the electrical power if it is not necessary.

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VERTICAL STABILIZER LEADING EDGE PANELS – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
- (1) The first task is the removal of the leading edge panels from the vertical stabilizer.
 - (2) The second task is the installation of the leading edge panels to the vertical stabilizer.

TASK 55-35-01-004-001

2. Remove the Vertical Stabilizer Leading Edge Panel

A. References

- (1) IPC 55-35-01 Fig. 1

B. Equipment

- (1) Access Panel Leverage Adapter, B20004-21

C. Access

- (1) Location Zone
321 Vertical Stabilizer – Leading Edge

D. Procedure

S 864-023

- (1) AIRPLANES WITH HF ANTENNA IN THE VERTICAL STABILIZER;
Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - (a) 11G8, HF COMM LEFT
 - (b) AIRPLANES WITH DUAL HF SYSTEMS;
11G34, HF COMM RIGHT

S 014-020

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE VERTICAL STABILIZER. OBJECTS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE WHEN YOU REMOVE THE LEADING EDGE PANELS FROM THE VERTICAL STABILIZER.

CAUTION: BE CAREFUL WHEN YOU REMOVE THE LEADING EDGE PANELS FROM THE VERTICAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES AND OTHER DAMAGES CAN OCCUR TO THE AIRPLANE STRUCTURE.

CAUTION: WHEN REMOVING PANEL FASTENERS, MAKE SURE THAT THE DRIVER BIT IS IN LINE WITH A FASTENER. THIS WILL PREVENT DRIVER BIT WOBBLE WHICH CAN CAUSE DAMAGE TO THE FASTENER RECESSES AND THREADS.

- (2) When you remove the bolts from the leading edge panels, the following information can help:
 - (a) A leverage adapter, B20004-21,

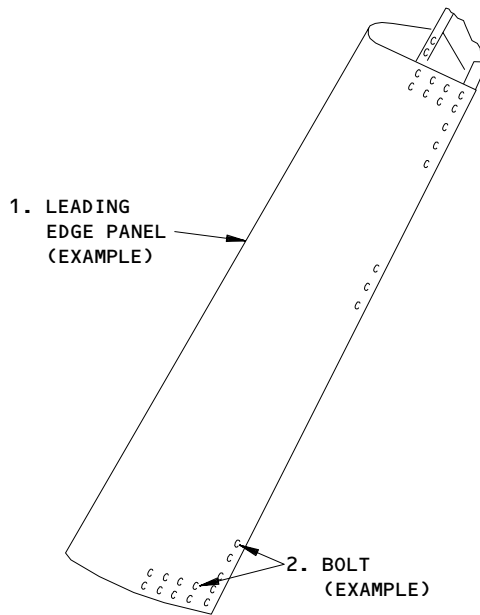
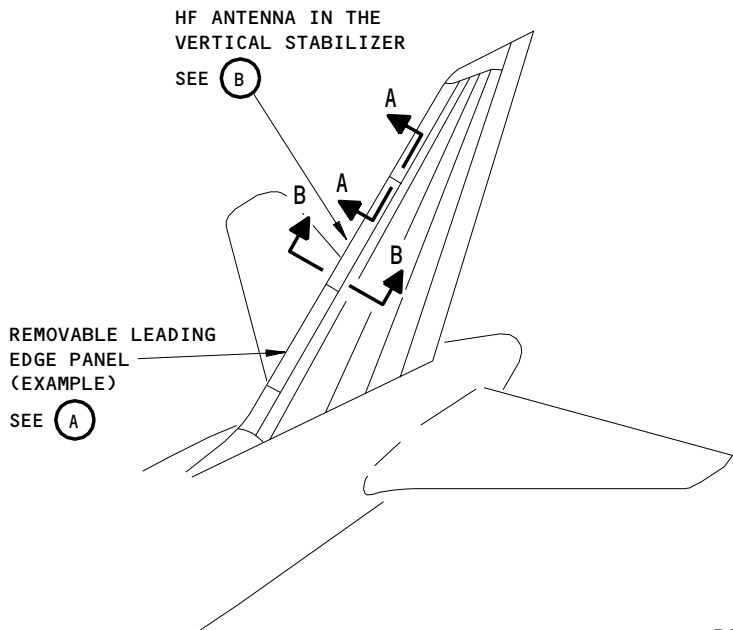
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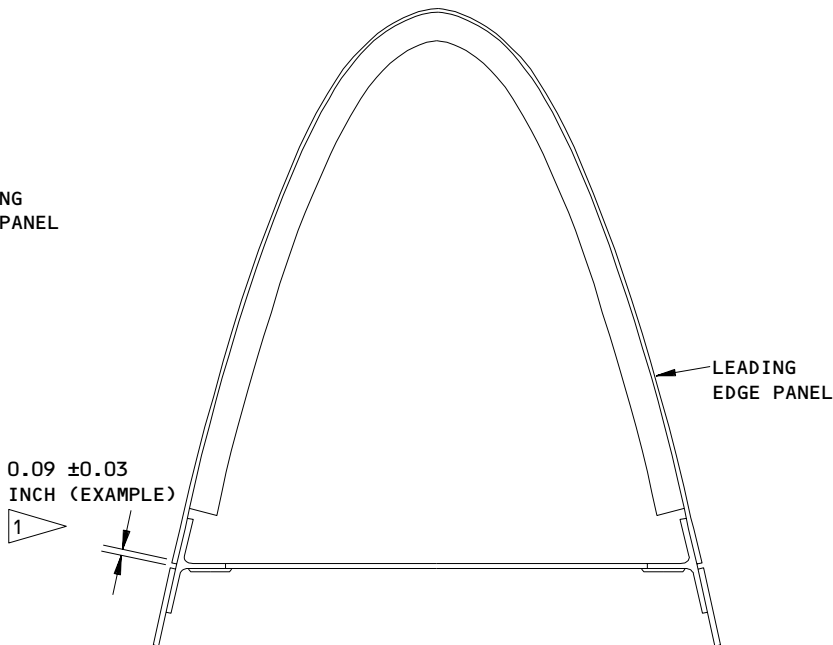
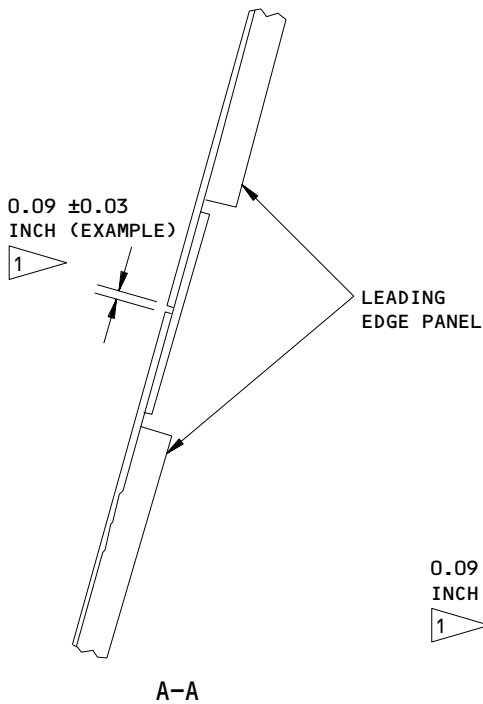
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REMOVABLE LEADING EDGE PANEL (EXAMPLE)

(A)

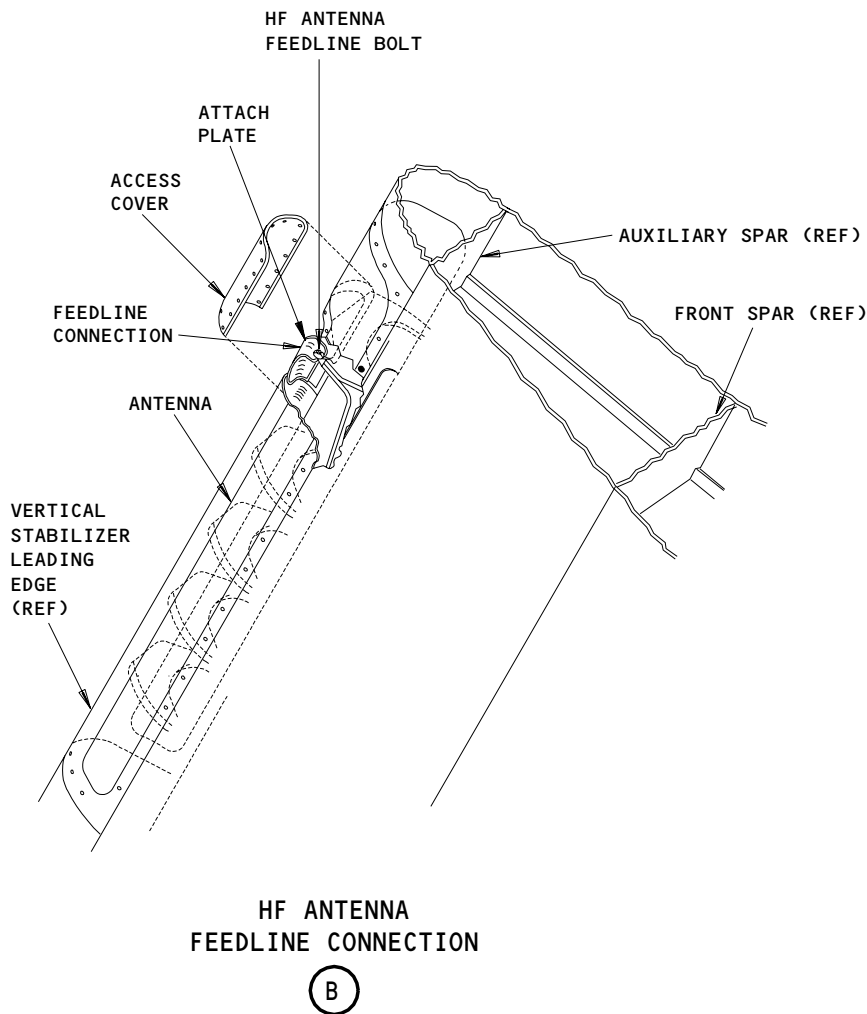


1 FILL THE CLEARANCES WITH SEALANT.

Vertical Stabilizer Leading Edge Panels
Figure 401 (Sheet 1)

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Vertical Stabilizer Leading Edge Panels
Figure 401 (Sheet 2)

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(b) A removal anti cam-out ribbed (ACR) bit,

NOTE: The bit should have a hardness of 56-58 RC.

NOTE: A combination removal/installation ACR bit is not recommended.

CAUTION: ONLY APPLY FASTENER REMOVAL COMPOUND TO THE BIT IF NEEDED. CLEAN THE BIT AFTER EACH USE. DO NOT APPLY FASTENER REMOVAL COMPOUND TO THE FASTENER RECESSES, HOLES, OR THREADS. THIS CAN CAUSE DAMAGE TO THE FASTENERS.

(c) Apply a fastener removal compound on the driver bit if a fastener is difficult to remove.

S 034-014

WARNING: DO NOT OPERATE THE HF SYSTEMS. THE ACCIDENTAL HF TRANSMISSION CAN CAUSE AN ELECTRICAL SHOCK AND INJURY TO PERSONS.

(3) Remove the HF feedline access cover.

S 034-012

(4) Remove the bolt from the feedline connection.

S 024-014

(5) Remove all the bolts (2) from the leading edge panel (1) (Fig. 401).

S 024-003

(6) Remove the leading edge panel (1) from the vertical stabilizer.

TASK 55-35-01-404-004

3. Install the Vertical Stabilizer Leading Edge Panel

A. Consumable Materials

(1) A00308 Compound - Corrosion Preventive, MIL-C-11796 Class 3

(2) A00247 Sealant - Chromate Type, BMS 5-95

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B. Parts

MM		NOMENCLATURE	IPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Panel Assembly (Leading Edge Panel)	55-35-01	01	5
	2	Bolt	55-35-01	01	10 15

C. References

- (1) AMM 20-11-00/201, Standard Torques
- (2) 23-11-00/501, HF Communication System
- (3) 51-31-01/201, Seals and Sealing

D. Equipment

- (1) Access Panel Leverage Adapter, B20004-21
- (2) Ohmeter - Electrical Bonding (Model T477W)

E. Access

- (1) Location Zone
 321 Vertical Stabilizer - Leading Edge

F. Procedure

S 014-021

CAUTION: WHEN INSTALLING FASTENERS, MAKE SURE THAT THE DRIVER BIT IS IN LINE WITH A FASTENER. THIS WILL PREVENT DRIVER BIT WOBBLE WHICH CAN CAUSE DAMAGE TO THE FASTENER RECESSES AND THREADS.

- (1) The following can help install the bolts:

NOTE: These suggestions are to make sure that the bolts can be removed freely later and are not damaged when you install them.

- (a) Use an access panel leverage adapter, B20004-21 to install the bolts.

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- (b) Make sure that the fasteners have correct grip length, undamaged threads, and undamaged recesses.

NOTE: If any fasteners need to be replaced, it is recommended that K-coated titanium bolts with cadmium plated Cres nut-plates be installed where applicable.

- (c) Remove any excess paint or debris on fastener recesses.
(d) Lubricate the threads of the fasteners with corrosion preventive compound.
(e) Install bolts with a fastener tool and an installation anti cam-out (ACR) driver bit.

NOTE: Use decreased lubricated fastener torques, (AMM 20-11-00/201).

NOTE: A combination removal/installation ACR bit is not recommended. The bit should have a hardness of 56-58 RC.

S 424-025

CAUTION: BE CAREFUL WHEN YOU INSTALL THE LEADING EDGE PANELS ON THE VERTICAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES AND OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (2) Do the steps that follow to install the part of the leading edge that contains the HF antenna:
- (a) Clean the mating surfaces between the attach plates and the antenna feedlines with 180-grit abrasive paper.
 - (b) Clean the surfaces again with a clean cheesecloth moist with solvent.
 - (c) Apply alodine 1000 to the cleaned surfaces (Ref 51-21-04/701).
 - (d) Put the part of the leading edge that contains the HF antenna in the correct position.

NOTE: While you put it in the correct position, make sure the attach plate is below the antenna feedlines.

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- (e) Attach the antenna feedlines to the attach plates.
- (f) Use an electrical bonding ohmmeter to do a resistance check between the antenna feedline and attach plate (Ref 20-10-21/401).

NOTE: The maximum resistance permitted is 0.0025 ohm.

- (g) If the resistance between the antenna feedline and attach plate is more than 0.0025 ohm, clean the antenna feedline again.

S 424-010

CAUTION: BE CAREFUL WHEN YOU INSTALL THE LEADING EDGE PANELS ON THE VERTICAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES AND OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (3) Put the leading edge panel (1) in position.

S 434-007

- (4) Install the bolt for the HF feedline connection.

NOTE: Make sure that the bolt is tight because a loose bolt can cause problems with the autopilot and faulty EICAS message displays.

S 624-015

- (5) Apply the corrosion preventive compound to the bolts.

S 424-007

- (6) Install the bolts (2) for the leading edge panel (1).

S 414-008

- (7) Install the access cover.

S 434-012

- (8) Install the bolts to the access cover.

S 214-008

- (9) Make sure the head of the bolts are smooth to 0.003 inch with the airplane surface.

S 394-009

- (10) Apply the sealant to the clearances between the leading edge panels and the vertical stabilizer skin (Ref 51-31-01).

S 864-009

- (11) Close all circuit breakers and remove the DO-NOT-OPERATE tags from the P11 panel.

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S 734-016
(12) Do the system test - HF Communication System (Ref 23-11-00/501).

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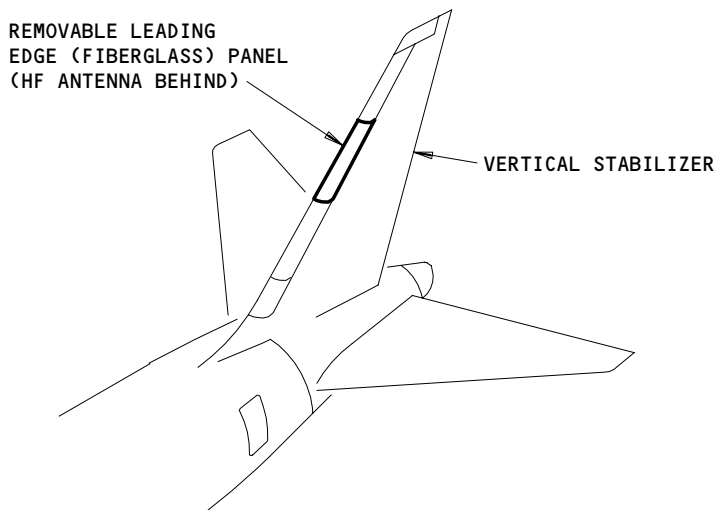
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VERTICAL STABILIZER REMOVABLE LEADING EDGE – APPROVED REPAIRS

1. General

- A. This procedure contains one task. The task gives instructions to repair with tape the fiberglass leading edge section which is the HF antenna cover.
- B. If the rain erosion-resistant layer is worn away, you can apply tape over the fiberglass section. It is best if you replace the rain erosion-resistant layer. Do not use antistatic coatings.

NOTE: Antistatic rain erosion-resistant coatings are not allowed for use on the fiberglass leading edge HF antenna cover. If you use the antistatic rain erosion-resistant coating, HF radio performance will badly decrease. Radio transmissions will cause the deterioration of the antistatic layer.



Fiberglass Panel on Vertical Stabilizer
Figure 801

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TASK 55-35-01-308-001

2. Repair the Vertical Stabilizer Removable Leading Edge (Fig. 801)

A. Equipment

- (1) Brush - Commercially available
- (2) Felt tip marker - Commercially available
- (3) Hot air blower - Commercially available
- (4) Rubber applicator (squeegee) - Commercially available
- (5) Rubber roller - Commercially available

B. Consumable Materials

- (1) B00340 Abrasive paper - 240 grit (minimum grit number)
- (2) G00033 Cheesecloth - BMS 15-5
- (3) B00571, Coating, BAC 5710, Type 41 Sealer
- (4) Solvents

NOTE: Use one of these solvents:

- (a) B00178 Acetone - O-A-51
- (b) B00148 Methyl Ethyl Ketone - TT-M-261
- (c) B00090 1,1,1 Trichloroethane - MIL-T-81533A
- (5) Tape, 3M Polyurethane Outdoor, 8671
- (6) B00541 Detergent, General Purpose, P-D-220A

C. References

- (1) Standard Overhaul Practices Manual, OHM 20-44-03, Application of Polyurethane Rain Erosion Resistant Coatings

D. Access

- (1) Location Zone
321 Vertical Stabilizer - Removable Leading Edge

E. Procedure

S 118-013

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (1) Clean the surface that you will repair with a cheesecloth that is soaked with solvent, Series 91 (AMM/SOPM 20-30-91).

S 118-003

- (2) Dry the surface with a clean cheesecloth.

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S 348-004

CAUTION: DO NOT RUB THE SURFACE WITH THE ABRASIVE PAPER FOR TOO MUCH TIME OR WITH TOO MUCH PRESSURE. IF YOU ARE NOT CAREFUL, DAMAGE TO THE FIBERS CAN OCCUR. THE DAMAGE TO THE FIBERS WILL DECREASE THE STRENGTH OF THE PART.

(3) Lightly rub the surface with the abrasive paper.

S 118-005

(4) Clean the area with a clean cheesecloth that is moist with solvent , Series 91 (AMM/SOPM 20-30-91) .

S 118-006

(5) Dry the surface with a clean, dry cheesecloth.

S 348-007

(6) Prepare the tape as follows:

(a) Measure and cut the tape to have a length that is 1 inch more than the eroded area.

NOTE: As an example, for an eroded area of 1 inch, it is necessary to have a 2-inch length of tape.

(b) Cut the tape to a width of 6 inches.

S 348-008

(7) Make a mark, with a felt tip marker, at the edge of the area where you will apply the tape.

S 348-009

(8) Apply the tape as follows:

NOTE: Use Method A or Method B.

(a) Method A

1) Remove the paper backing for approximately 1 inch along the length of the tape.

2) Push the tape in position as you continuously remove the paper backing.

(b) Method B

1) Mix fully 4 drops of liquid detergent B00541 (not soap) in a pint (1/2 Liter) solution of 25% isopropyl alcohol and 75% water.

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2) Make the surface wet with the soap and water solution.

NOTE: The wet surface lets you adjust the tape before it bonds fully.

- 3) Remove the paper backing from the tape.
- 4) Find the highest area on the fin that has erosion. Apply the tape first in that area.
- 5) Push on all of the tape until it is satisfactorily attached to the surface. Make sure you do not make too many air bubbles below the tape.
- 6) Start at the centerline of the tape, and remove all the detergent solution and the air bubbles with a rubber squeegee.
- 7) Rub the tape with a clean cheesecloth or a small rubber roller.
- 8) Remove all the caught air bubbles with a small pin and rub the tape again.

S 358-010

(9) Fully dry the surface with a hot air blower.

S 398-011

(10) Apply the edge sealer with a brush to make an overlap of 3/8 inch on each side of the tape edge.

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VERTICAL STABILIZER TRAILING EDGE SEALS – REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
 - (1) The first task is the removal of the trailing edge seals from the vertical stabilizer.
 - (2) The second task is the installation of the trailing edge seals on the vertical stabilizer.
- B. The removal and installation procedures for the left and right trailing edge seals are almost the same.

TASK 55-36-02-004-001

2. Remove the Vertical Stabilizer Trailing Edge Seals

A. References

- (1) 24-22-00/201, Electrical Power – Control
- (2) 29-11-00/201, Main Hydraulic Systems
- (3) 51-31-01/201, Seals and Sealing
- (4) IPC 55-36-53 Fig. 1

B. Access

- (1) Location Zone
324 Vertical Stabilizer – Rear Spar to Trailing Edge

C. Procedure

S 044-002

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE AREA THAT IS BELOW THE VERTICAL STABILIZER. EQUIPMENT AND MATERIALS CAN ACCIDENTALLY FALL AND CAUSE INJURY OR DAMAGE.

WARNING: MAKE SURE THE AREA IS CLEAR WHEN YOU DO THE DEACTIVATION PROCEDURE FOR THE RUDDER/ELEVATOR CONTROL SYSTEM. THE RUDDER/ELEVATOR SYSTEM CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (1) Do the deactivation procedure for the rudder/elevator control system:
 - (a) Supply electrical power (Ref 24-22-00).
 - (b) Put these switches on the right side panel, P61, to the OFF position and attach DO-NOT-OPERATE tags:
 - 1) L FLT CONT SHUTOFF

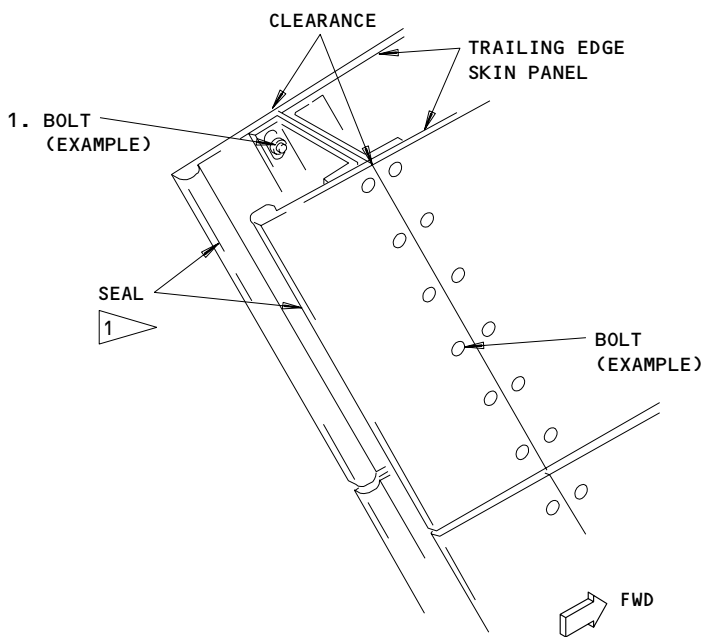
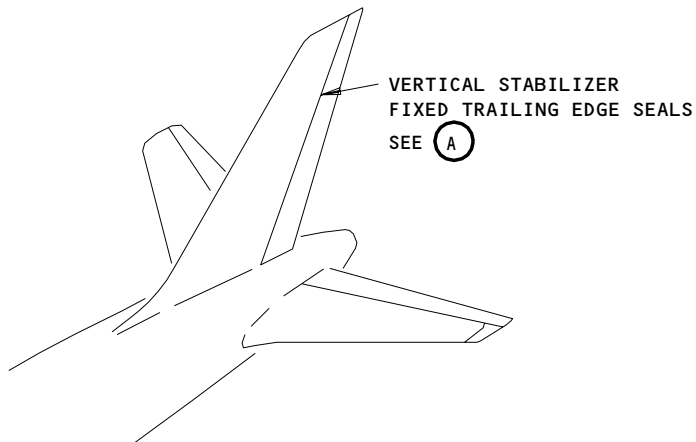
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VERTICAL STABILIZER
FIXED TRAILING EDGE SEALS

(A)

1 THIS IS AN EXAMPLE OF A PART OF THE SEAL

Vertical Stabilizer Fixed Trailing Edge Seals
Figure 401

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- 2) C FLT CONT SHUTOFF
- 3) R FLT CONT SHUTOFF
- (c) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT

S 024-019

CAUTION: BE CAREFUL WHEN YOU REMOVE THE TRAILING EDGE SEAL FROM THE VERTICAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES AND OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (2) Remove the bolts (1) that are attached to the damaged part of the seal.

S 024-005

- (3) Remove the damaged seal.

TASK 55-36-02-404-006

3. Install the Vertical Stabilizer Trailing Edge Seals

A. Consumable Materials

- (1) C00308 Compound - Corrosion Preventive, MIL-C-11796, Class 3
- (2) A00247 Sealant - Chromate Type, BMS 5-95

B. Parts

MM		NOMENCLATURE	IPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Bolt	55-36-53	01	

C. References

- (1) 24-22-00/201, Electrical Power - Control
- (2) 29-11-00/201, Main Hydraulic Systems
- (3) 51-31-01/201, Seals and Sealing

D. Access

- (1) Location Zone
324 Vertical Stabilizer - Rear Spar to Trailing Edge

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E. Procedure

S 104-007

- (1) Remove the remaining sealant from the clearance that is between the seal and the skin panel.

S 354-008

- (2) Cut the necessary length of the seal to replace the damaged seal.

S 394-009

- (3) Apply the corrosion preventive compound on the bolts.

S 424-018

CAUTION: BE CAREFUL WHEN YOU INSTALL THE TRAILING EDGE SEAL ON THE VERTICAL STABILIZER. IF YOU ARE NOT CAREFUL, SCRATCHES AND OTHER DAMAGE CAN OCCUR TO THE AIRPLANE STRUCTURE.

- (4) Put the seal in position and install the bolts (1).

S 394-011

- (5) Fill the clearances that are between the trailing edge seals and the trailing edge skin panel with the sealant (Ref 51-31-01).

S 444-012

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE RUDDER AND ELEVATORS WHEN YOU DO THE ACTIVATION PROCEDURE. THE RUDDER AND ELEVATORS CAN ACCIDENTALLY MOVE AND CAUSE INJURY OR DAMAGE.

- (6) Do the activation procedure for the rudder/elevator control system:
 - (a) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
 - 1) 11H17, FLT CONT SHUTOFF TAIL LEFT
 - 2) 11H18, FLT CONT SHUTOFF TAIL CENTER
 - 3) 11H28, FLT CONT SHUTOFF TAIL RIGHT
 - (b) Remove the DO-NOT-OPERATE tags and put these switches, on the P61 panel, to the ON position:
 - 1) L FLT CONT SHUTOFF
 - 2) C FLT CONT SHUTOFF

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3) R FLT CONT SHUTOFF

S 864-013

- (7) Supply the hydraulic power (Ref 29-11-00).

S 714-014

- (8) Operate the rudder through its full range of travel.

S 214-015

- (9) Make sure the trailing edge seals are on the rudder leading edge and are free to move during the rudder operation.

S 864-016

- (10) Remove the hydraulic power if it is not necessary (Ref 29-11-00).

S 864-017

- (11) Remove the electrical power if it is not necessary (Ref 24-22-00).

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