Scandinavian Airlines System

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CHAPTER 55 – STABILIZERS

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CHAPTER 55 - STABILIZERS

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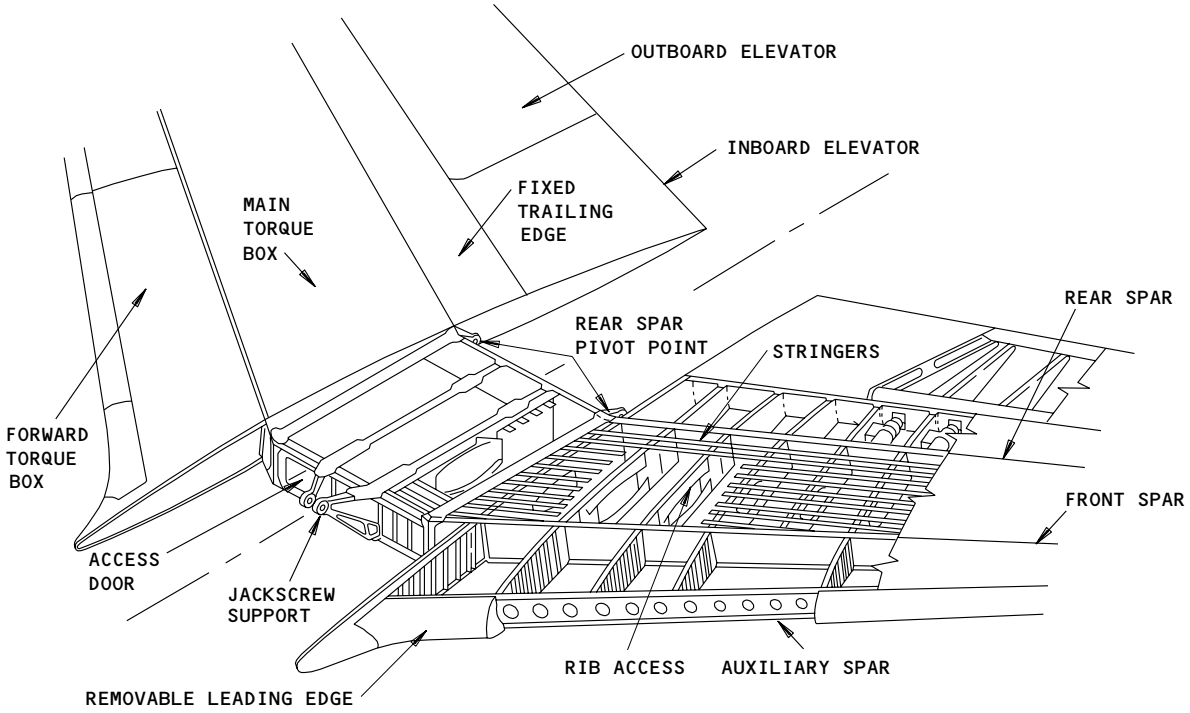
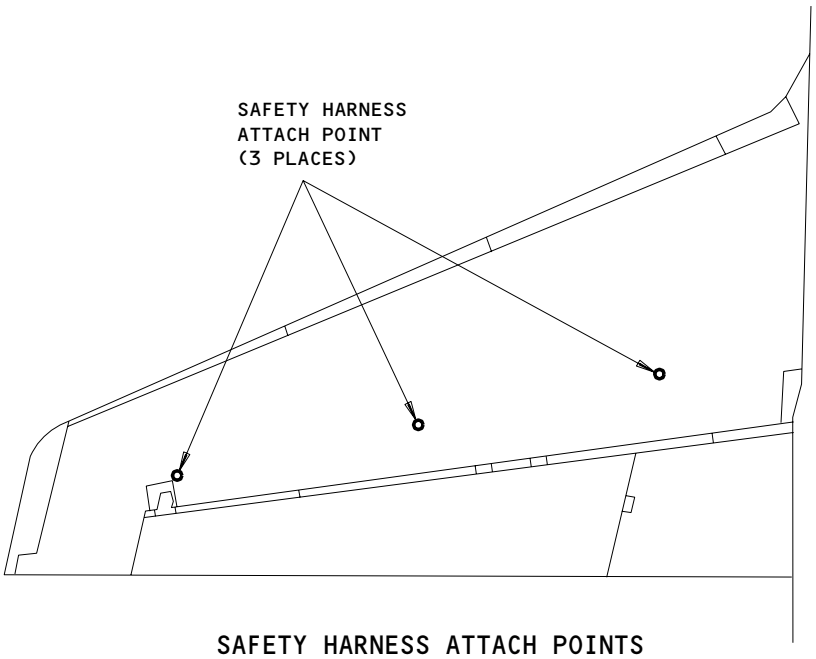
STABILIZERS - DESCRIPTION AND OPERATION

1. General
   A. The horizontal and vertical stabilizers are control structures in the tail section of the airplane. The vertical stabilizer does not move, but the horizontal stabilizer moves up and down. The rudder hinges to the trailing edge of the vertical stabilizer. The elevators hinge to the trailing edge of the horizontal stabilizer. The dorsal fin fairs the vertical stabilizer to the fuselage.
2. Horizontal Stabilizer Structure (Fig. 1)
   A. The horizontal stabilizer has left and right outboard sections that are the same. These sections are attached to a center section. In the outboard and center sections, the main torque box is between the front and rear spars. The front and rear spars have aluminum chords and webs that are machined. Aluminum ribs attach to the front and rear spars. Upper and lower aluminum skin panels attach to aluminum stringers. The outboard forward torque boxes are between the auxiliary and front spars. The auxiliary spar has aluminum extruded chords and clad sheet webs. Aluminum ribs attach to the auxiliary and front spars. Upper and lower skin panels are aluminum sheets attached to an aluminum honeycomb core.
   B. The fixed trailing edge is made of stiffened ribs covered with skin panels. The ribs are aluminum alloy, and the panels are fiberglass with a honeycomb core. An aerodynamic seal extends aft from each fixed trailing edge to the elevators. The removable leading edge is made of aluminum honeycomb. The horizontal stabilizer-to-body sealing doors are between the fuselage and inboard side of the horizontal stabilizer. The sealing doors are fiberglass panels supported by aluminum alloy ribs.
   C. The horizontal stabilizer is attached to fuselage structure at two pivot bearings at the center section rear spar. It is attached to a jackscrew mechanism at the jackscrew support on the center section front spar. The jackscrew mechanism pivots the entire stabilizer up or down at the two pivot bearings.
   D. Three safety harness attach points are located on the upper surface of the horizontal stabilizer.
3. Horizontal Stabilizer Access
   A. You can access the center main torque box through a door in the center section front spar. From inside the main box, ribs have openings for access to the outboard main torque box. The fixed trailing edge has removable access panels on the lower surface. The rear spar has service access openings to inspect the outboard main torque box. You can remove the leading edge in four sections. You can remove the stabilizer tip to look at the tip rib. The tip rib has inspection holes so you can see the outboard end of the horizontal stabilizer.

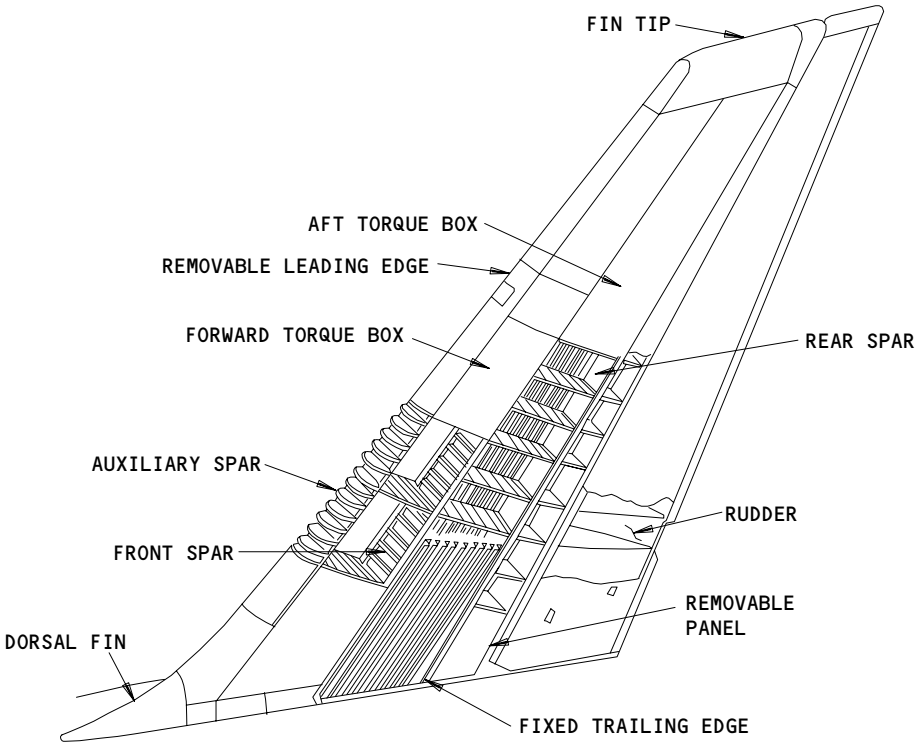




SAFETY HARNESS ATTACH POINTS
(LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE)

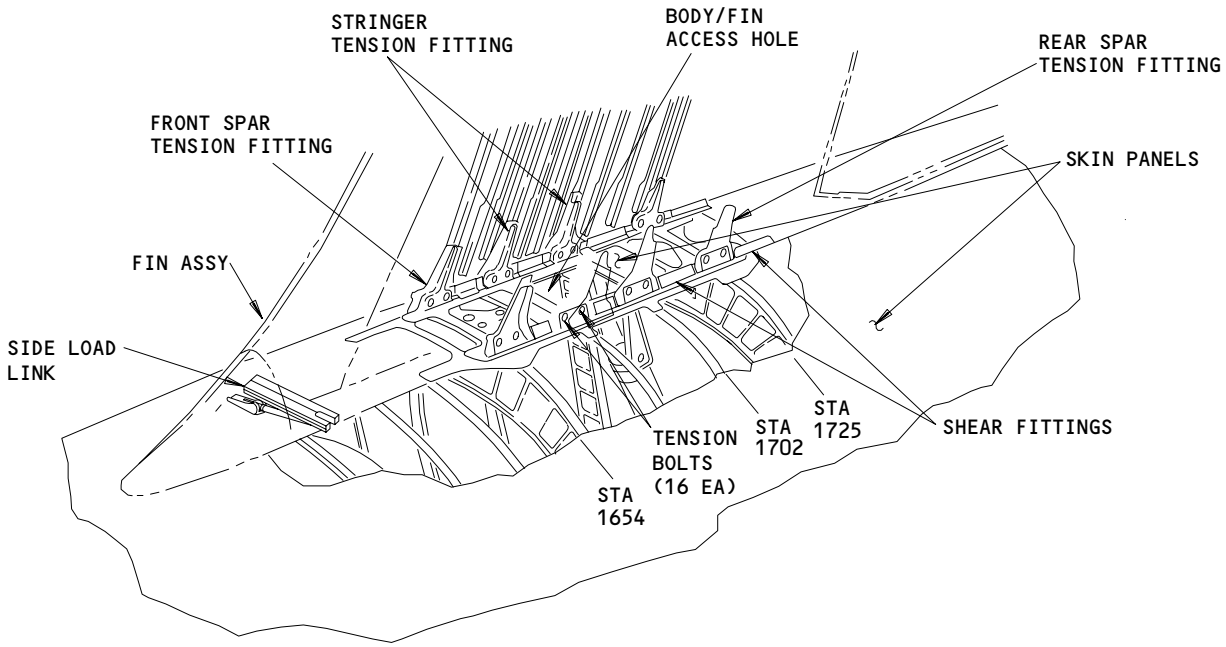
Horizontal Stabilizer Structure
Figure 1

4. Vertical Stabilizer Structure (Fig. 2)
   A. The main structural components of the vertical stabilizer are as follows: the forward and aft torque boxes; fixed trailing edge; removable leading edge; fin tip; dorsal fin; and rudder.
   B. The forward torque box is between the auxiliary and front spar. The aft torque box is between the front and rear spar. The auxiliary, front, and rear spars are made of aluminum. The spars have cord extrusions with chemically milled sheet webs. Aluminum ribs connect to the spars. The aft torque box is reinforced with aluminum stringers. Aluminum skin panels are on both sides of the vertical stabilizer. The fixed trailing edge has aluminum ribs covered with kevlar/graphite skin panels. The removable leading edges are made from aluminum ribs covered with aluminum skin panels.
   C. A removal fin tip attaches to the top of the vertical stabilizer. The fin tip has an aluminum frame structure with aluminum and fiberglass skin panels. The dorsal fin fairs the vertical stabilizer to the top of the fuselage. The dorsal fin has aluminum frames covered with skin panels. The rudder is hinged from the trailing edge ribs. An aerodynamic seal closes the gap between the rudder leading edge and the vertical stabilizer trailing edge.



Vertical Fin Structure
Figure 2

5. Vertical Stabilizer Attachment (Fig. 3)
   A. The vertical stabilizer attaches to the top of the fuselage with tension and shear fittings. The front and rear spars, stringers, and skin panels are joined to the body with tension fittings. Skin panels and spars are also attached with shear fittings. The forward torque box and leading edge is connected to the body through a side load link.
6. Vertical Stabilizer Access (Fig. 4)
   A. You can get access to the inside of the vertical stabilizer through access doors or removable panels. Access to the TV or HF couplers feedline, and TV antenna, is through access panels on the forward torque box. You can remove a section or sections of the leading edge to get access to inspection holes in the auxiliary spar. You can remove sections of the stabilizer tip to get access to the VOR antenna. There are removable panels in the upper rear spar to view the inside of the aft torque box. Removable panels access the rudder hinges. Rudder controls and actuators are accessible through access panels in the left side of the trailing edge. The forward torque box can be entered through access panels in the front spar, and through access openings from the aft torque box. The vertical stabilizer can be entered from the fuselage through the body/stabilizer access door. Above the body/stabilizer access door, the ribs have openings to allow access into the aft torque box.

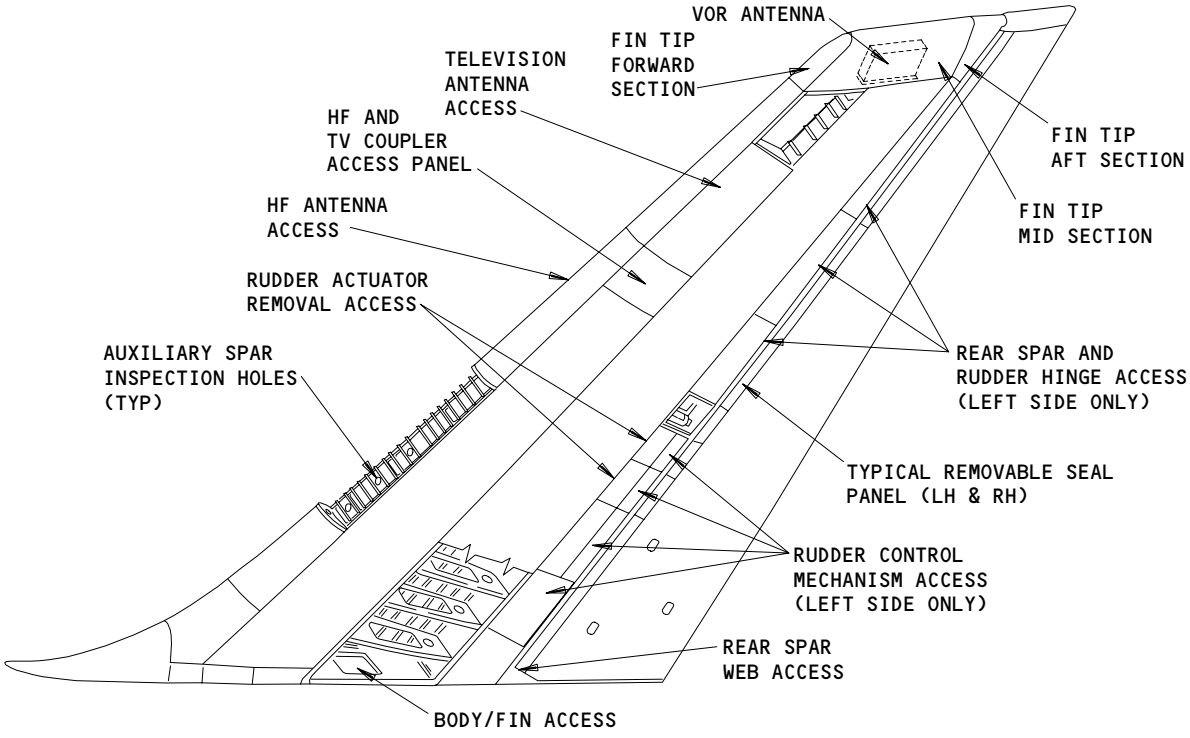


Vertical Fin Attachment
Figure 3

7. Flight Control Surfaces

A. Two elevators, inboard and outboard, hinge to the horizontal stabilizer trailing edge ribs. The outboard elevators are hinged to the horizontal stabilizers three degrees lower than the inboard elevator. Three actuators move the outboard elevators, which move the inboard elevators. Refer to 27-31-00, Elevator Control System, for a detailed description of rudder controls.

B. The rudder is hinged to the vertical stabilizer rear spar at nine places. Three hydraulic actuators move the rudder. For a detailed description of rudder controls, refer to 27-21-00, Rudder and Rudder Trim Control System.



Vertical Fin Access
Figure 4

C. The elevators and rudder are made of graphite epoxy ribs and honeycomb panels. These flight control surfaces are not considered balance critical, however, they do have operational balance limits. These limits are listed in SRM 51-60-00.

NOTE: A record should be made of all painting and repairs done to the elevators and rudder to ensure that the operational balance moment is not exceeded. Flight control surfaces which exceed the operational balance limits may flutter during flight. Refer to SRM 51-60-00 to determine the operational balance moment.

STABILIZER REMOVABLE LEADING EDGE - MAINTENANCE PRACTICES

TASK 55-05-03-212-801

1. Vertical Stabilizer Removable Leading Edge
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-001
      (1) Do the inspection.

TASK 55-05-03-212-802

2. Vertical Stabilizer Exterior
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-002
      (1) Do the inspection.

TASK 55-05-03-212-803

3. Vertical Stabilizer Removable Leading Edge
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-003
      (1) Do the inspection.

TASK 55-05-03-212-804

4. Vertical Stabilizer Auxiliary Spar to Front Spar
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-004
      (1) Do the inspection.

TASK 55-05-03-212-805

5. Vertical Stabilizer Fixed Leading Edge
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-005
(1) Do the inspection.

TASK 55-05-03-212-806

6. Vertical Stabilizer Auxiliary Spar to Front Spar
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-006
(1) Do the inspection.

TASK 55-05-03-212-807

7. Vertical Stabilizer Front Spar to Rear Spar
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-007
(1) Do the inspection.

TASK 55-05-03-212-808

8. Vertical Stabilizer Fin-to-Body Fittings
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-008
(1) Do the inspection.

TASK 55-05-03-212-809

9. Vertical Stabilizer Inspar Structure
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-009
(1) Do the inspection.

TASK 55-05-03-212-810

10. Vertical Stabilizer Front Spar to Rear Spar
    A. General
       (1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-010
(1) Do the inspection.

TASK 55-05-03-212-811
11. Vertical Stabilizer Inspar Structure
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-011
(1) Do the inspection.

TASK 55-05-03-212-812
12. Vertical Stabilizer Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-012
(1) Do the inspection.

TASK 55-05-03-212-813
13. Rudder
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-013
(1) Do the inspection.

TASK 55-05-03-212-814
14. Rudder
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-014
(1) Do the inspection.

TASK 55-05-03-212-815
15. Rudder
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-015
(1) Do the inspection.

TASK 55-05-03-212-816

16. Rudder
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-016
(1) Do the inspection.

TASK 55-05-03-212-817

17. Vertical Stabilizer Tip
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-017
(1) Do the inspection.

TASK 55-05-03-212-818

18. Horizontal Stabilizer Ext - Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-018
(1) Do the zonal inspection.

TASK 55-05-03-212-819

19. Horizontal Stabilizer Center Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-019
(1) Do the inspection.

TASK 55-05-03-212-820

20. Horizontal Stabilizer Removable Leading Edge
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-020
(1) Do the inspection.

TASK 55-05-03-212-821

21. Horizontal Stabilizer Removable Leading Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-021
(1) Do the inspection.

TASK 55-05-03-212-822

22. Horizontal Stabilizer Fixed Leading Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-022
(1) Do the zonal inspection.

TASK 55-05-03-212-823

23. Horizontal Stabilizer Fixed Leading Edge Lower
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-023
(1) Do the inspection.

TASK 55-05-03-212-824

24. Horizontal Stabilizer Fixed Leading Edge Upper
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-024
(1) Do the inspection.

TASK 55-05-03-212-825

25. Horizontal Stabilizer Front to Rear Spar Left and Right
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-025
(1) Do the inspection.

TASK 55-05-03-212-826

26. Horizontal Stabilizer Outboard Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-026
(1) Do the inspection.

TASK 55-05-03-212-827

27. Horizontal Stabilizer Upper Outboard Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-027
(1) Do the inspection.

TASK 55-05-03-212-828

28. Horizontal Stabilizer Lower Outboard Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-028
(1) Do the inspection.

TASK 55-05-03-212-829

29. Horizontal Stabilizer Upper Outboard Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-029
(1) Do the inspection.

TASK 55-05-03-212-830

30. Horizontal Stabilizer Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-030
(1) Do the inspection.

TASK 55-05-03-212-831

31. Horizontal Stabilizer Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-031
(1) Do the inspection.

TASK 55-05-03-212-832

32. Horizontal Stabilizer Trailing Edge Upper Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-032
(1) Do the inspection.

TASK 55-05-03-212-833

33. Left Elevator Interior
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-033
(1) Do the inspection.

TASK 55-05-03-212-834

34. Left Elevator Inboard/Outboard
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-034
(1) Do the inspection.

TASK 55-05-03-212-835

35. Elevator Spar and Hinge Fittings
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-035
(1) Do the inspection.

TASK 55-05-03-212-836

36. Left Elevator Inboard/Outboard
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-036
(1) Do the inspection.

TASK 55-05-03-212-837

37. Elevator Outboard
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-037
(1) Do the inspection.

TASK 55-05-03-212-838

38. Elevator Spar and Adjacent Structure
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-038
(1) Do the inspection.

TASK 55-05-03-212-839

39. Horizontal Stabilizer Tip
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-039
(1) Do the zonal inspection.

TASK 55-05-03-212-840

40. Horizontal Stabilizer Ext Right
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-040
(1) Do the zonal inspection.

TASK 55-05-03-212-841
41. Horizontal Stabilizer Center Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-041
(1) Do the inspection.

TASK 55-05-03-212-842
42. Horizontal Stabilizer Jackscrew Fitting
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-042
(1) Do the inspection.

TASK 55-05-03-212-843
43. Horizontal Stabilizer Pivot Fittings
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-043
(1) Do the zonal inspection.

TASK 55-05-03-212-844
44. Horizontal Stabilizer Center Section Rear Spar
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-044
(1) Do the inspection.

TASK 55-05-03-212-845
45. Horizontal Stabilizer Removable Leading Edge
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-045
(1) Do the inspection.

TASK 55-05-03-212-846

46. Horizontal Stabilizer Removable Leading Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-046
(1) Do the inspection.

TASK 55-05-03-212-847

47. Horizontal Stabilizer Fixed Leading Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-047
(1) Do the zonal inspection.

TASK 55-05-03-212-848

48. Horizontal Stabilizer Fixed Leading Edge Upper
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-048
(1) Do the inspection.

TASK 55-05-03-212-849

49. Horizontal Stabilizer Fixed Leading Edge Lower
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-049
(1) Do the inspection.

TASK 55-05-03-212-850

50. Horizontal Stabilizer Cavity
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-050
(1) Do the inspection.

TASK 55-05-03-212-851
51. Horizontal Stabilizer Outboard Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-051
(1) Do the inspection.

TASK 55-05-03-212-852
52. Horizontal Stabilizer Lower Outboard Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-052
(1) Do the inspection.

TASK 55-05-03-212-853
53. Horizontal Stabilizer Upper Outboard Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-053
(1) Do the inspection.

TASK 55-05-03-212-854
54. Horizontal Stabilizer Upper Outboard Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-054
(1) Do the inspection.

TASK 55-05-03-212-855
55. Horizontal Stabilizer Interior Cavity
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-055
(1) Do the inspection.

TASK 55-05-03-212-856

56. Horizontal Stabilizer Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-056
(1) Do the inspection.

TASK 55-05-03-212-857

57. Horizontal Stabilizer Trailing Edge Upper Surface
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-057
(1) Do the inspection.

TASK 55-05-03-212-858

58. Right Elevator Interior
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-058
(1) Do the inspection.

TASK 55-05-03-212-859

59. Right Elevator Inboard/Outboard
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-059
(1) Do the inspection.

TASK 55-05-03-212-860

60. Right Elevator Spar and Hinge Fittings
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-060
(1) Do the inspection.

TASK 55-05-03-212-861
61. Right Elevator Inboard/Outboard
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-061
(1) Do the inspection.

TASK 55-05-03-212-862
62. Elevator Spar and Adjacent Structure
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-062
(1) Do the inspection.

TASK 55-05-03-212-863
63. Horizontal Stabilizer Tip
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-063
(1) Do the zonal inspection.

TASK 55-05-03-212-864
64. Horizontal Stabilizer Pivot Fittings
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-064
(1) Do the zonal inspection.

TASK 55-05-03-212-865
65. Horizontal Stabilizer Pivot Fitting Attachments
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-065
(1) Do the inspection.

TASK 55-05-03-212-866

66. Horizontal Stabilizer Pivot Fitting Attachments
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-066
(1) Do the inspection.

TASK 55-05-03-212-867

67. Horizontal Stabilizer Pivot Fitting Attachments
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-067
(1) Do the inspection.

TASK 55-05-03-212-868

68. Horizontal Stabilizer Center Section Rear Spar
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-068
(1) Do the inspection.

TASK 55-05-03-212-869

69. Horizontal Stabilizer Center Section Upper Skin
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-069
(1) Do the inspection.

TASK 55-05-03-212-870

70. Horizontal Stabilizer Jackscrew Attachments
A. General
(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-070

(1) Do the inspection.

TASK 55-05-03-212-871

71. Horizontal Stabilizer Jackscrew Attachments

A. General

(1) This procedure is a scheduled maintenance task.

B. Inspection

S 212-071

(1) Do the inspection.

HORIZONTAL STABILIZER-TO-BODY SEAL - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the instructions to remove the top seal, the leading edge seal, and the bottom seal from the horizontal stabilizer. The second task in the instructions to install the top seal, the leading edge seal, and the bottom seal for the horizontal stabilizer.

TASK 55-10-01-004-001

2. Remove the Horizontal Stabilizer-to-Body Seal (Fig. 401)
   A. Equipment
      (1) Attach Fitting Set - Wing Safety Harness, A20002-4
   B. References
      (1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle
   C. Access
      (1) Location Zones
          330/340 Horizontal Stabilizer
   D. Procedure

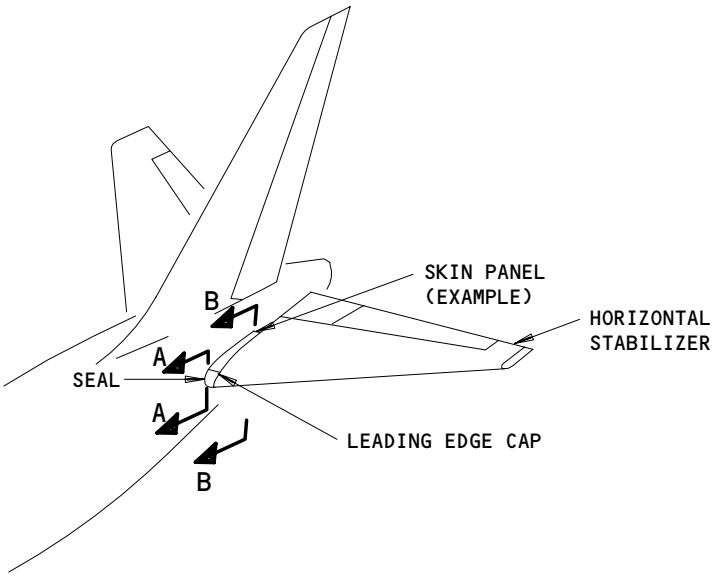
      S 864-002
      (1) Put the stabilizer in a position that permits safe access to the seals.

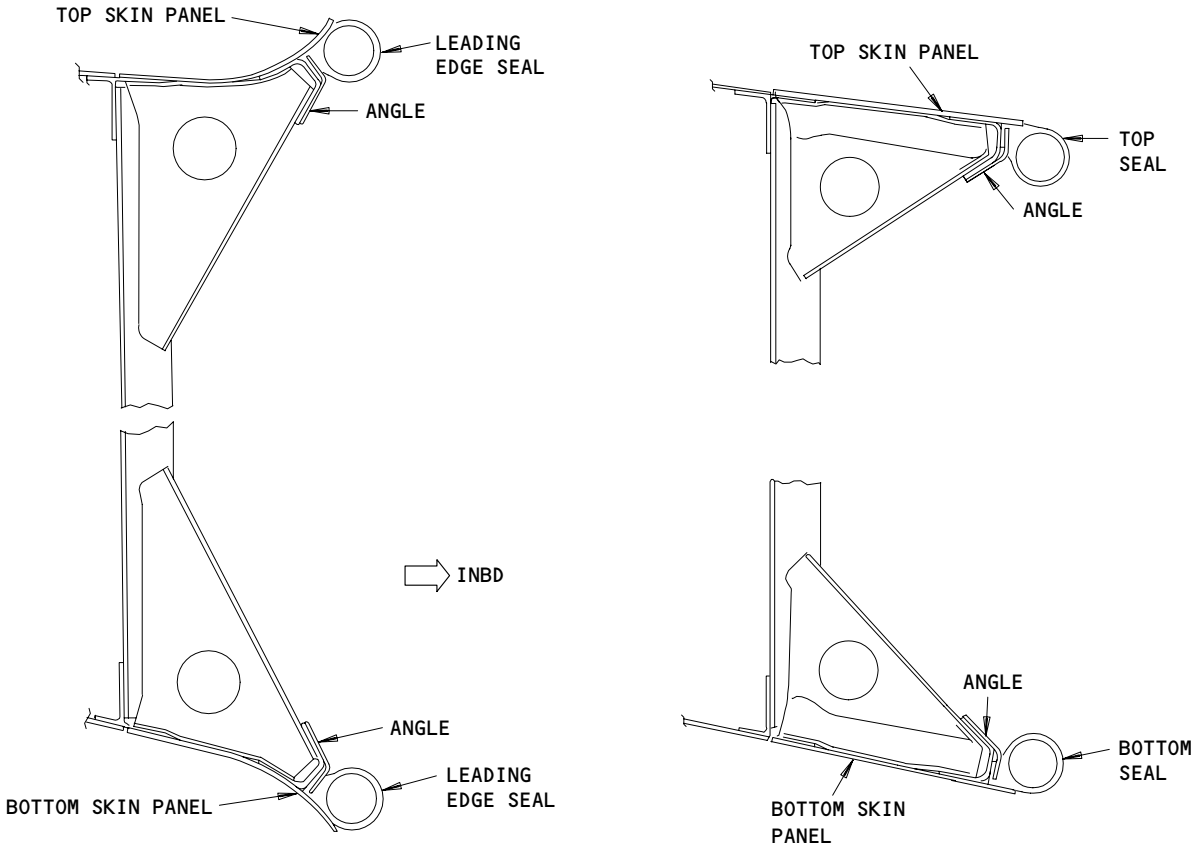
      S 864-003
      (2) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
          (a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
          (b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

      S 424-023

      WARNING: USE A MAN LIFT TO ATTACH THE SAFETY HARNESS FITTINGS TO THE RECEPTACLES. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

      WARNING: DO NOT WALK ON THE HORIZONTAL STABILIZER WITHOUT A SAFETY HARNESS. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.





Horizontal Stabilizer to Body Seal
Figure 401

(3) Attach the Flight Control Safety Lanyard to the horizontal stabilizer (AMM 20-10-27).

S 024-004

(4) Remove the top, the leading edge, and the bottom seals as follows:

CAUTION: HOLD THE BOTTOM SKIN PANEL UP WHEN YOU REMOVE THE FASTENERS. IF YOU DO NOT HOLD THE PANEL UP, THE PANEL WILL FALL TO THE GROUND. DAMAGE TO THE PANEL CAN OCCUR.

(a) Remove the fasteners that hold the skin panel or the leading edge cap to the structure.
(b) Remove the seal.

S 494-005

(5) Install protective covers if the skin panels, leading edge cap, or seals will not be installed immediately.

TASK 55-10-01-404-006

3. Install the Horizontal Stabilizer-to-Body Seal (Fig. 401)

A. Equipment
(1) Attach Fitting Set - Wing Safety Harness, A20002-4

B. Consumable Materials
(1) A00027 Adhesive, Miscellaneous BAC 5010 Type 60
(a) RTV 174
(b) RTV 102
(c) DCQ3-7063

C. References
(1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.
(2) 24-22-00/201, Electrical Power - Control
(3) 29-11-00/201, Pressurize/Depressurize Main Hydraulic System

D. Access
(1) Location Zones
330/340 Horizontal Stabilizer

E. Procedure

S 094-007

(1) Remove the protective covers.

S 434-008

(2) Put the seal in the seal support.

NOTE: Make sure the seal does not make a kink.

S 824-009
(3) Cut the top and bottom seal until the seals touch, but do not make an overlap with the leading edge seal.

S 434-010
(4) Apply the adhesive to the seal plugs.

S 434-011
(5) Install the seal plugs to connect the leading edge seal to the top and bottom seals.

S 434-012
(6) Apply the adhesive to the seal joint to make the joint smooth (±0.03 inch).

S 434-013
(7) Put the skin panel and leading edge cap in position and install the fasteners.

S 094-020
(8) Remove the safety harness if it is not necessary (Ref 20-10-27)

S 864-014
(9) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
(b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

S 864-015
(10) Supply electrical power (Ref 24-22-00).

S 864-016
(11) Supply hydraulic power (Ref 29-11-00).

S 824-017
(12) Operate the stabilizer thru its full range of movement. Examine the seals to make sure the seals touch the fuselage thru the full range of movement.

S 864-018
(13) Remove hydraulic power if it is not necessary (Ref 29-11-00).

S 864-019
(14) Remove electrical power if it is not necessary (Ref 24-22-00).

HORIZONTAL STABILIZER TO BODY BLADE SEALS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. Ths first task gives the instructions to remove the horizontal stabilizer-to-body blade seals. The second task gives instructions to install the horizontal stabilizer-to-body blade seals.
   B. The removal and installation procedures of the top and bottom, left and right, blade seals are almost the same.

TASK 55-10-02-004-001

2. Remove the Horizontal Stabilizer-to-Body Blade Seals (Fig. 401)
   A. Equipment
      (1) Attach Fitting Set - Wing Safety Harness, A20002-4
   B. References
      (1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle
      (2) 24-22-00/201, Electrical Power - Control
      (3) 29-11-00/201, Pressurize/Depressurize Main Hydraulic System
   C. Access
      (1) Location Zones
          311/312 Area Aft of the Pressure Bulkhead to BS 1725

      (2) Access Door
          311BL Access Door

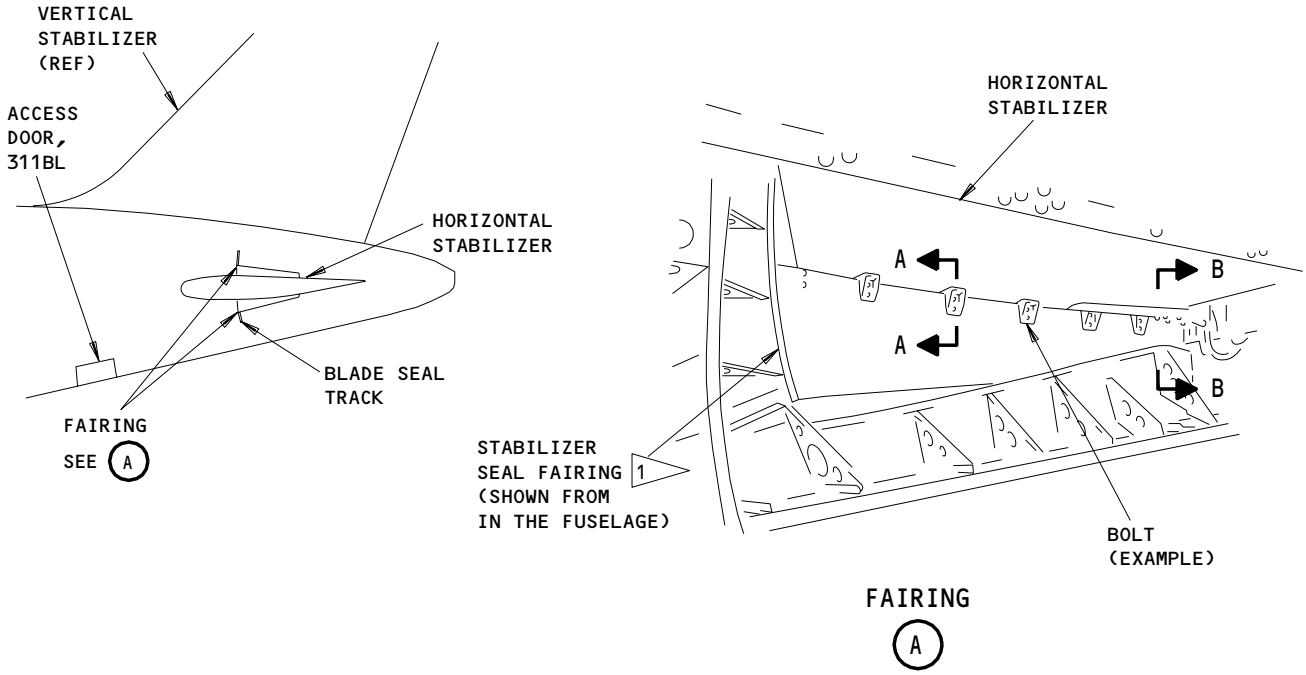
   D. Prepare For Removal

      S 864-002
      (1) Supply electrical power (Ref 24-22-00).

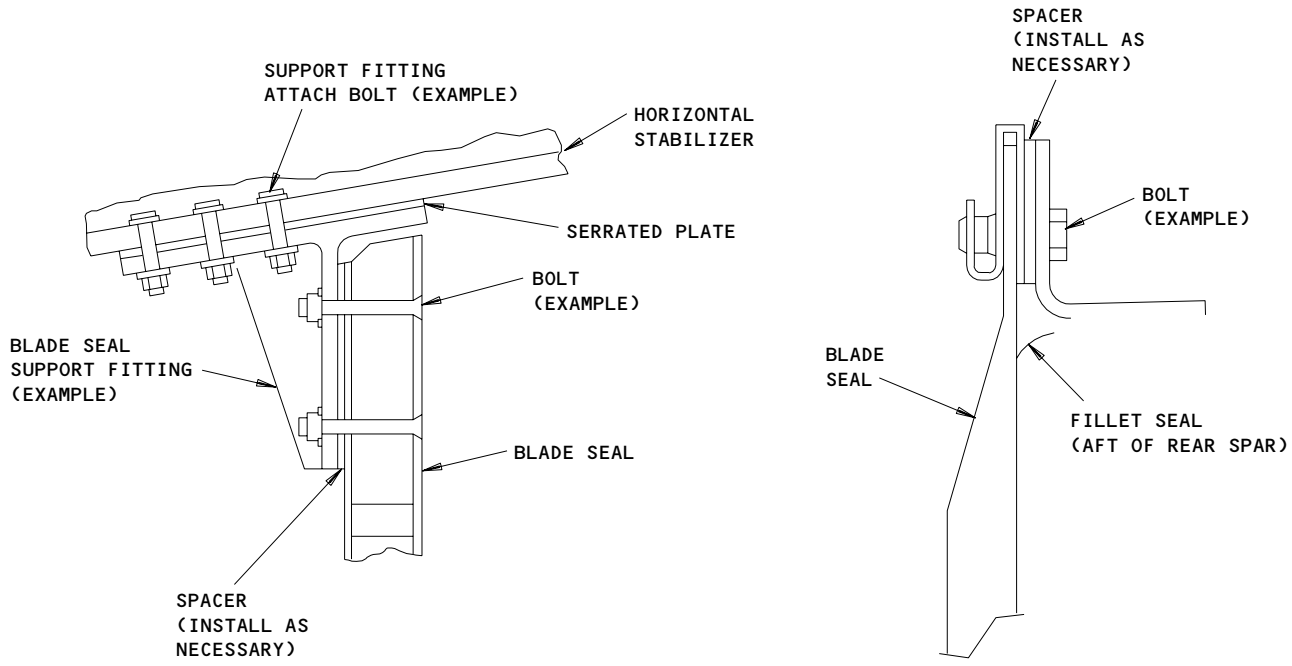
      S 864-003
      (2) Make sure these circuit breakers on the overhead circuit breaker panel, P11, are closed:
          (a) 11H10, STAB TRIM POS IND LEFT
          (b) 11H19, STAB TRIM POS IND RIGHT
          (c) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF CENTER

      S 864-004
      (3) Put the CENTER STAB TRIM SHUTOFF VALVE switch on the control stand panel P10 in the NORM position.

      S 864-005
      (4) Pressurize the center hydraulic system (Ref 29-11-00).



FAIRING
A



A–A

B–B

1 BOTTOM RIGHT FAIRING SHOWN. BOTTOM LEFT, TOP RIGHT, AND TOP LEFT FAIRINGS ARE ALMOST THE SAME

Horizontal Stabilizer To Body Blade Seals
Figure 401

S 864-006

WARNING: MAKE SURE THE AREA AROUND THE HORIZONTAL STABILIZER IS CLEAR OF PERSONS AND EQUIPMENT BEFORE YOU MOVE THE STABILIZER. ACCIDENTAL MOVEMENT OF THE HORIZONTAL STABILIZER CAN CAUSE INJURY OR DAMAGE.

(5) Move the horizontal stabilizer to 7.25 units of trim with the STAB TRIM levers on the control stand.

S 864-008

(6) Put the LEFT and CENTER STAB TRIM SHUTOFF VALVE switches on the control stand in the CUTOUT position .

S 864-007

(7) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF LEFT
(b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF CENTER

S 864-009

(8) Remove hydraulic pressurize from the center hydraulic system (Ref 29-11-00).

S 014-010

(9) Open access door 311BL to get access to the blade seal attach fittings.

E. Procedure - Remove the Blade Seal

S 424-037

WARNING: USE A MAN LIFT TO ATTACH THE SAFETY HARNESS FITTINGS TO THE RECEPTACLES. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

WARNING: DO NOT WALK ON THE HORIZONTAL STABILIZER WITHOUT A SAFETY HARNESS. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Attach the Flight Control Safety Lanyard to the horizontal stabilizer (AMM 20-10-27).

S 024-011

(2) Remove the bolts that hold the blade seal to the blade seal support fittings.

S 024-012

(3) Remove the bolts that hold the aft end of the blade seal.

S 024-013

(4) Remove the blade seal.

TASK 55-10-02-404-014

3. Install the Horizontal Stabilizer-to-Body Blade Seals (Fig. 401)

A. General

(1) You must drill holes through the blade seals for the blade seal bolt. To do this, hold the blade seal in position and drill the holes from in the fuselage.

(2) The blade seal adjustment procedure is given in the installation procedure.

B. Equipment

(1) Drill - commercially available

(2) Attach Fitting Set - Wing Safety Harness, A20002-4.

C. Consumable Materials

(1) A00247 Sealant - BMS 5-95

D. References

(1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle

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

(3) 29-11-00/201, Pressurize/Depressurize Main Hydraulic System

(4) 51-31-01/201, Seals and Sealing

E. Access

(1) Location Zones

311/312 Area Aft of the Pressure Bulkhead to BS 1725

(2) Access Door

311BL Access Door

F. Procedure

S 424-015

(1) Put the forward end of the blade seal in the track and hold the aft end of the blade seal in position.

S 424-016
(2) Drill the holes through the blade seal at the aft attach locations from in the fuselage.

NOTE: Use the holes in the mounting fixtures as pilot holes.

S 824-017
(3) Install or remove spacers, as necessary, until the aft end of the blade seal makes a smooth contour with the fuselage.

S 424-018
(4) Install the bolts, wet with sealant, that hold the aft end of the blade seal.

S 424-019
(5) Hold the blade seal on the support fittings and drill holes through the blade seal that align with the holes in the support fittings.

S 824-021
(6) If the blade seal does not touch the airplane structure, do these steps to adjust the blade seal:
(a) Loosen the bolts that hold the blade seal support fittings to the stabilizer.
(b) Move the fittings inboard or outboard, on the serrated plates, until the blade seal fully touches the airplane structure.

NOTE: You must hold the blade seal tightly on the support fittings when you do the adjustment.

(c) If you cannot get a satisfactory adjustment from the support fittings, install or remove spacers between the blade seal and the support fittings until the blade seal fully touches the airplane structure.
(d) Tighten the bolts that hold the blade seal support fittings to the stabilizer.
(e) Make a fillet seal with the sealant around the serrated plates (Ref 51-31-01).

S 424-024
(7) Install the bolts, wet with sealant, that hold the blade seal to the support fittings.

S 394-025
(8) Make a fillet seal with the sealant between the blade seal and the structure aft of the rear spar (Ref 51-71-01).

S 094-034
(9) Remove the safety harness if it is not necessary (Ref 20-10-27).

S 414-026
(10) Close the access door 311BL.

S 864-027
(11) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF LEFT
(b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF CENTER

S 864-028
(12) Put the CENTER STAB TRIM SHUTOFF VALVE switch on the control stand in the NORM position.

S 864-029
(13) Pressurize the center hydraulic system (Ref 29-11-00).

S 864-030

WARNING: MAKE SURE THE AREA AROUND THE HORIZONTAL STABILIZER IS CLEAR OF PERSONS AND EQUIPMENT BEFORE YOU MOVE THE STABILIZER. ACCIDENTAL MOVEMENT OF THE HORIZONTAL STABILIZER CAN CAUSE INJURY OR DAMAGE.

(14) Operate the horizontal stabilizer, with the STAB TRIM levers, between the full limits of motion two or three times. Make sure the blade seal always touches the airplane structure.

S 864-031
(15) Remove hydraulic power if it is not necessary (Ref 29-11-00).

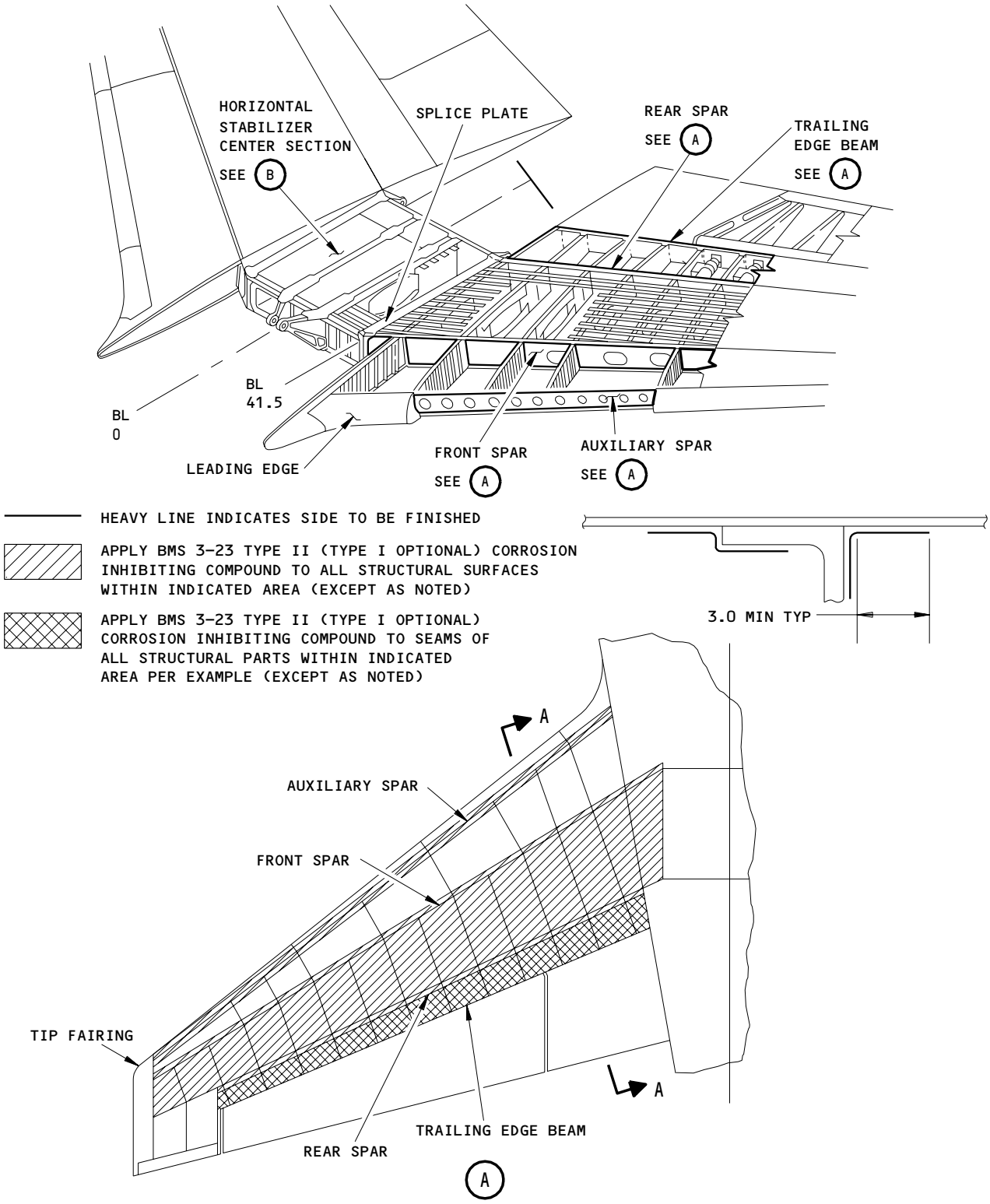
S 864-032
(16) Remove electrical power if it is not necessary (Ref 24-22-00).

CORROSION PREVENTION IN HORIZONTAL STABILIZERS

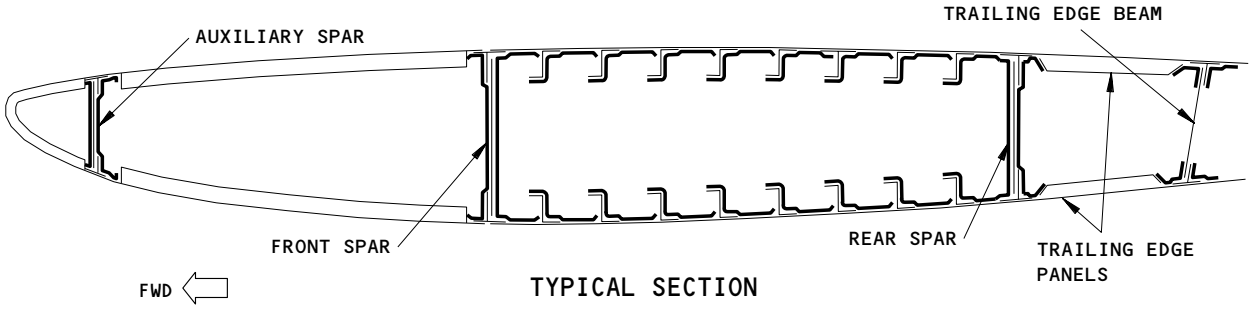
1. General
   A. The interior aluminum parts of the horizontal stabilizer inspar structure have a corrosion protective finish that consists of anodize surface treatment and a coat of BMS 10-11, type 1, primer on detail parts. The assembled structure, including fasteners, was given an additoinal coat of BMS 10-11, type 1, primer followed by a coat of BMS 3-23 corrosion inhibiting compound. BMS 3-23 was also applied to both sides of the auxiliary, front and rear spars. The upper and lower fixed trailing edge Kevlar panels are protected with BMS 10-60, tyoe 2, enamel. On some airplanes, an additoinal coat of BMS 5-95, class F sealant is applied before the enamel top coat.
   B. Areas of possible corrosion are auxiliary, front, and rear spars, upper splice plates, trailing edge beam, and inspar skin.
   C. Overboard drains are open holes in the lowest point in any given area. Drain paths through the internal structure lead to the overboard drains (Fig. 201).

TASK 55-10-03-602-001

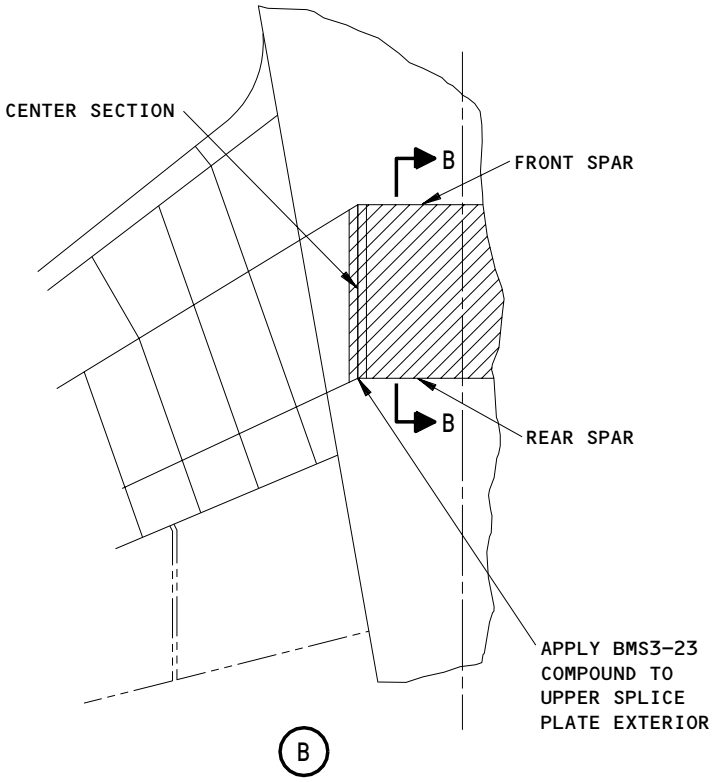
2. Corrosion Prevention Treatment
   A. General
      (1) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to ensure that protective finishes provided during manufacture remain intact.
      (2) Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges), refer to the Structure Repair Manual for details of corrosion removal.
      (3) For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by the application of a corrosion inhibiting compound into the affected area to decrease the corrosion process. Refer to AMM 51-24-09/701 for details on applying corrosion inhibiting compound. The finish system should be repaired at the first opportunity consistent with the maintenance schedule.
      (4) Periodic inspection is required in areas identified as susceptible to corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.
      (5) Periodic application of BMS 3-23 compound is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.
   B. References
      (1) AMM 51-21-03/701, Corrosion Removal and Control-Cleaning/Painting
      (2) AMM 51-24-09/701, Corrosion Inhibiting Compound-Cleaning/Painting



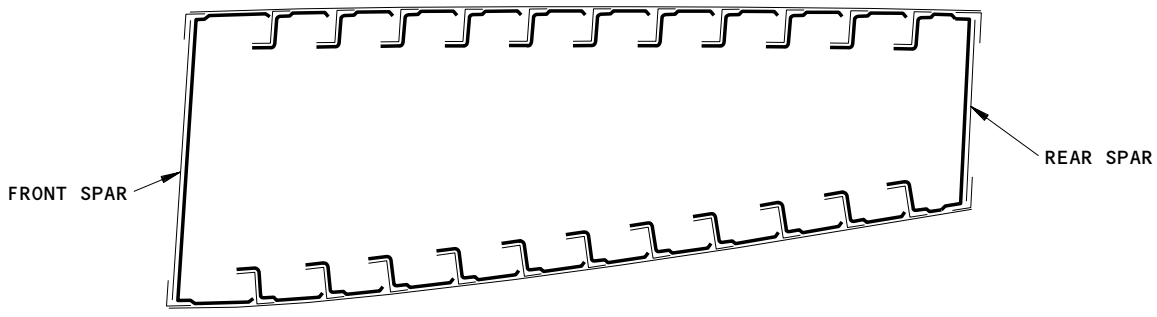
Corrosion Prevention Horizontal Stabilizer
Figure 201 (Sheet 1)



TYPICAL SECTION
A–A

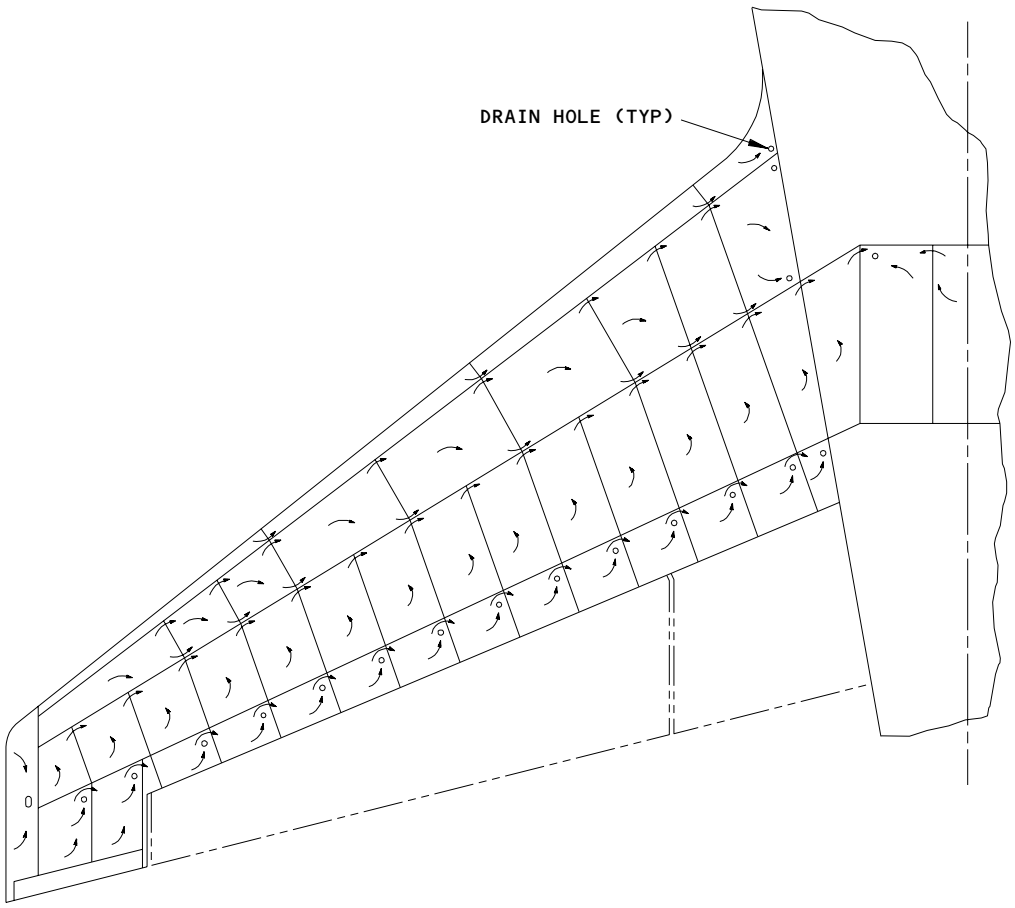


B



TYPICAL SECTION
B–B

Corrosion Prevention Horizontal Stabilizer
Figure 201 (Sheet 2)



Corrosion Prevention Horizontal Stabilizer
Figure 201 (Sheet 3)

C. Consumable Materials
(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23

D. Access
(1) Location Zones
330/340 Horizontal Stabilizer

E. Procedure

S 602-003
(1) At first opportunity consistent with scheduled maintenance activity, do corrosion prevention treatment on the horizontal stabilizer.

S 602-004
(2) Apply BMS 10-79, Type 3 primer followed by BMS 10-100 (Aeroflex G12E25) coating where repair or replacement of existing corrosion protection is needed on upper and lower stabilizer surfaces. The BMS 10-100 coating is chemically compatible with Corogard, but the two coatings have slight differences in color and finish.

S 602-005
(3) FOR AIRPLANES WITH SB 51-0008;
For Structural Honeycomb Component, apply a coat of BMS 5-95, class F sprayable sealant to external surfaces of the trailing edge panels and tip fairing. Follow with BMS 10-60 enamel.

HORIZONTAL STABILIZER TIP FAIRING - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task gives instructions to remove the horizontal stabilizer tip fairing. The second task gives instructions to install the horizontal stabilizer tip fairing.

TASK 55-11-01-004-001

2. Remove the Horizontal Stabilizer Tip Fairing (Fig. 401)
   A. Equipment
      (1) Attach Fitting Set - Wing Safety Harness, A20002-4
   B. References
      (1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.
   C. Access
      (1) Location Zones
          338/348 Horizontal Stabilizer - Tip

   D. Procedure

      S 864-002
      (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
          (a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
          (b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

      S 494-012

      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).

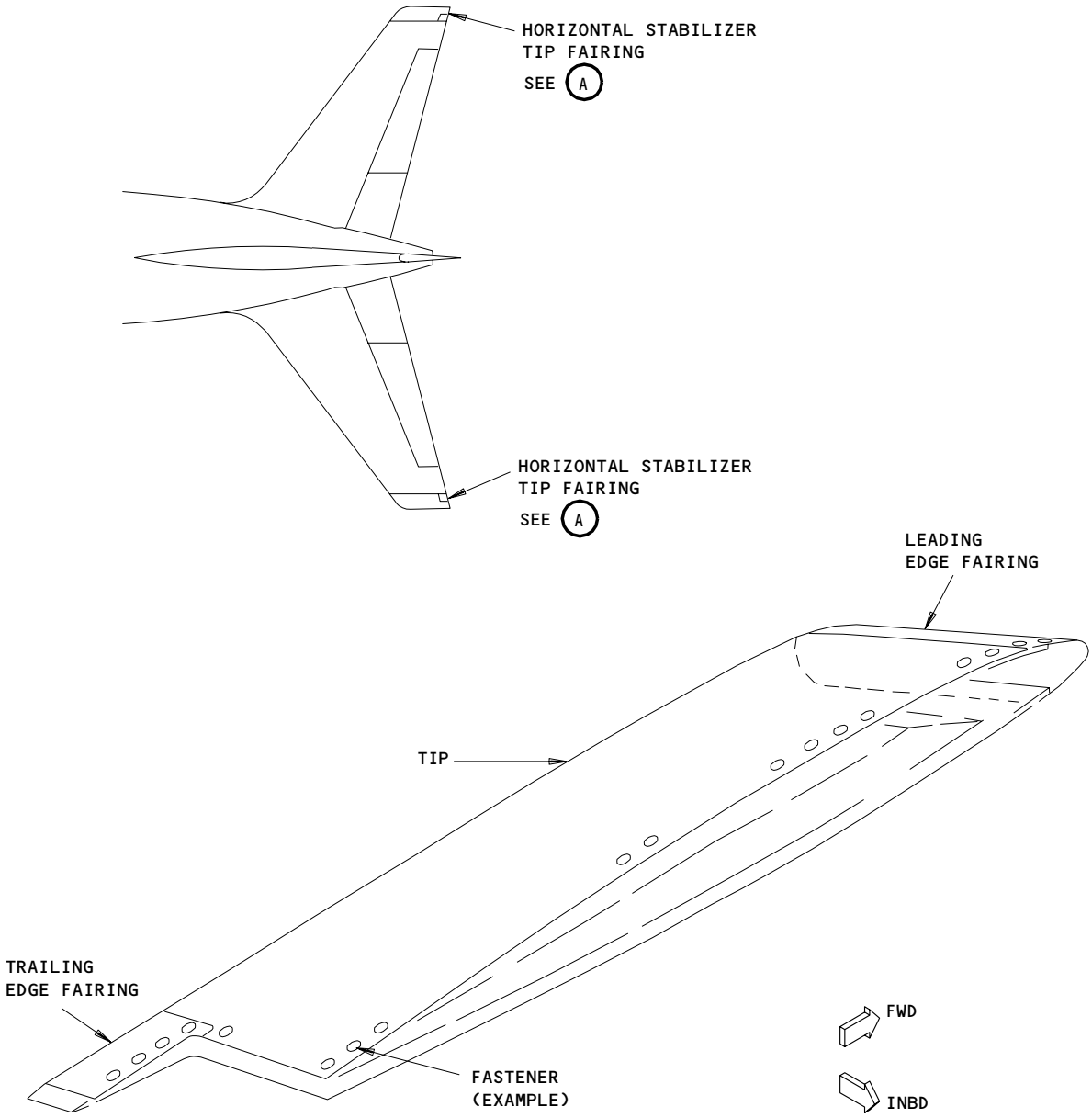
      S 934-015
      (3) Identify the bonding fasteners and bonding fastener holes.

      NOTE: Bonding fasteners will have a larger washer than other fasteners. Bonding fasteners must be installed in the holes they were removed from when the tip fairing is installed.

      S 024-010

      CAUTION: BE CAREFUL WHEN YOU REMOVE THE TIP. IF YOU RUB THE TIP ON THE ADJACENT STRUCTURE OR AIRPLANE SKIN, DAMAGE TO THE PAINT, AIRPLANE SKIN, OR STRUCTURE CAN OCCUR.

      (4) Remove the fasteners from the edges of the tip and carefully remove the tip.



HORIZONTAL STABILIZER TIP FAIRING

A

Horizontal Stabilizer Tip Fairing
Figure 401

S 494-004
(5) Install protective covers over the end of the horizontal stabilizer.

TASK 55-11-01-404-005

3. Install the Horizontal Stabilizer Tip Fairing (Fig. 401)
   A. Equipment
      (1) Attach Fitting Set - Wing Safety Harness, A20002-4
   B. Consumables
      (1) C00453 Coating-MIL-C-5541, Chemical Conversion Class 3 (Alodine)
   C. References
      (1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.
   D. Access
      (1) Location Zones
          338/348 Horizontal Stabilizer - Tip

   E. Procedure

S 094-007
(1) Prepare to install the tip fairing:
   (a) Remove the protective covers.
   (b) Examine the nutplates and fasteners which hold the tip to the ribs. You must replace all damaged nutplates or fasteners. You must install new nutplates where the nutplates are gone.
   (c) If a new tip fairing will be installed, do these steps:
      1) On the tip new fairing, under where the bonding washers will be, remove primer and other coatings down to the aluminum flame spray.
      2) Brush coating-MIL-C-5541 on to the surface of the bonding washers that will be in contact with the conductive layer of the tip fairing.

S 424-017
(2) Install the tip fairing:
   (a) Install the tip fairing on the horizontal stabilizer.
   (b) Install the bonding fasteners in the bonding fastener holes.
   (c) Make sure the resistance between the bonding fasteners and the horizontal stabilizer is less than 0.10 ohm.

(d) Install the remaining fasteners that attach the tip fairing to the horizontal stabilizer.
(e) Make sure the resistance between the static discharger retainer bases on the tip fairing and the horizontal stabilizer rear spar is less than 0.10 ohmn.

S 844-016
(3) Put the airplane back to its usual condition:
(a) Remove the safety harness if it is not necessary (Ref 20-10-27)
(b) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
1) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
2) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

HORIZONTAL STABILIZER LEADING EDGE - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task gives instructions to remove the leading edge from the horizontal stabilizer. The second task gives instructions to install the leading edge on the horizontal stabilizer.
   B. You can remove one or all the sections as it is necessary.

TASK 55-15-01-004-001

2. Remove the Horizontal Stabilizer Leading Edge (Fig. 401)
   A. Equipment
      (1) Attach Fitting Set - Wing Safety Harness, A20002-4
   B. References
      (1) AMM 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.
   C. Access
      (1) Location Zones
          332/342 Horizontal Stabilizer - Removable Leading Edge

   D. Procedure

      S 864-002

      (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
          (a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
          (b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

      S 424-020

      WARNING: USE A MAN LIFT TO ATTACH THE SAFETY HARNESS FITTINGS TO THE RECEPTACLES. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

      WARNING: DO NOT WALK ON THE HORIZONTAL STABILIZER WITHOUT A SAFETY HARNESS. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

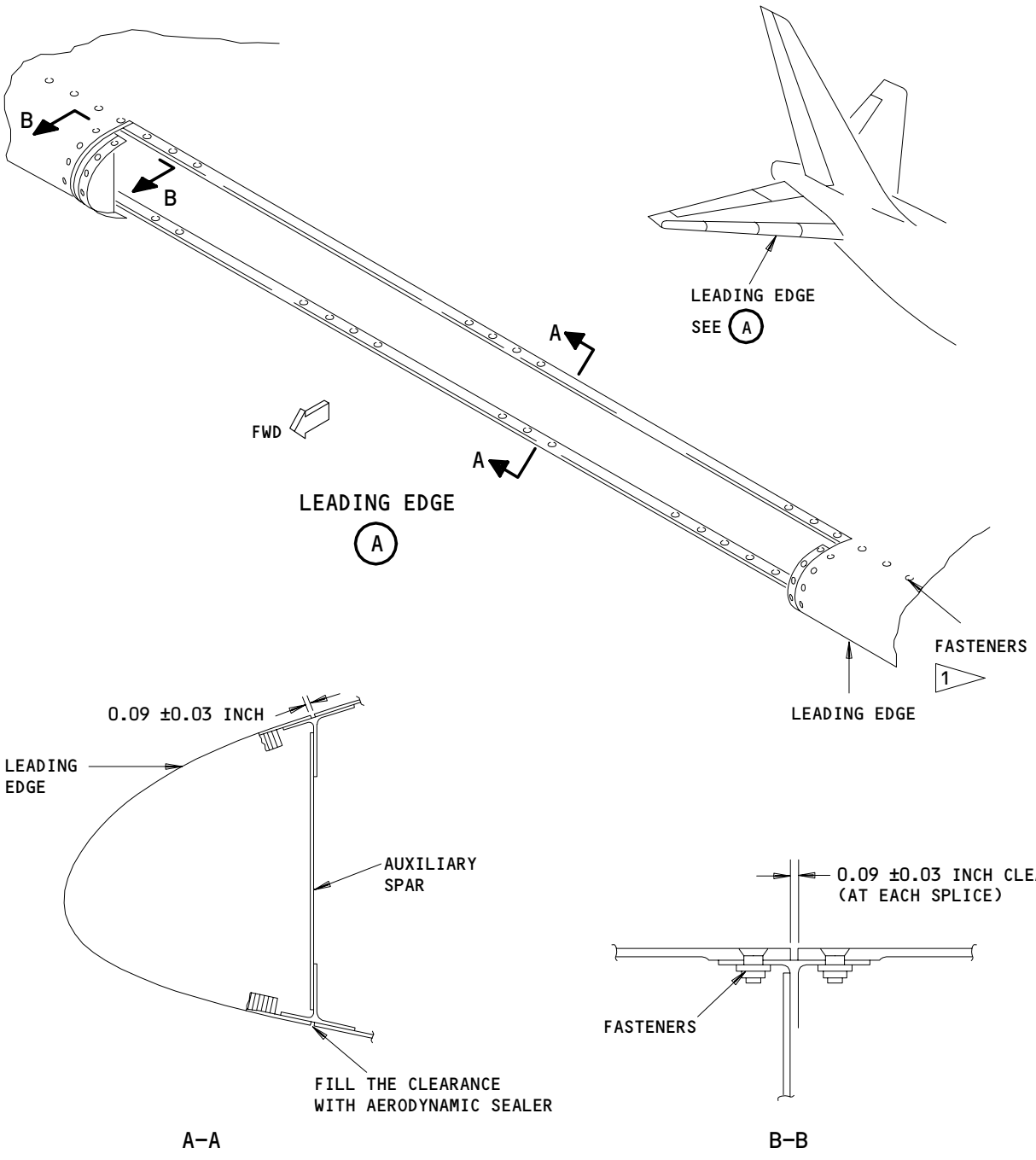
      (2) Attach a safety harness (AMM 20-10-27/201).

      S 024-015

      WARNING: KEEP PERSONS AWAY FROM AREA BELOW THE STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE AN INJURY TO PERSONS.

      CAUTION: BE CAREFUL WHEN YOU REMOVE THE LEADING EDGE SECTIONS. IF YOU RUB THE SKIN OR STRUCTURE, DAMAGE TO THE PAINT CAN OCCUR.

      (3) Remove the applicable fasteners from the section that you will remove. Remove the section.



1 THE FASTENER HEADS MUST BE SMOOTH WITH THE LEADING EDGE SURFACE OR BETWEEN 0.003 INCH ABOVE AND 0.007 INCH BELOW SKIN LINE. UP TO 20% OF THE FASTENERS CAN BE 0.012 INCH (MAXIMUM) BELOW THE SKIN LINE

Horizontal Stabilizer Leading Edge
Figure 401

S 024-004

(4) If it is necessary, remove the remaining sections.

NOTE: You must remove each section one at a time. You can let the splice rib stay attached to one of the sections. If you do, you must remove the fasteners that hold the splice rib to the auxiliary spar chord.

S 494-005

(5) Put a cover on the auxiliary spar.

TASK 55-15-01-404-006

3. Install the Horizontal Stabilizer Leading Edge (Fig. 401)

A. Equipment

(1) Attach Fitting Set - Wing Safety Harness, A20002-4

B. Consumable Materials

(1) A00247 Compound - Sealing, BMS 5-95 Class B-2

(2) C00064 Coating - Surface Treatment - MIL-C-5541, Type II, Grade C Class 1 for Aluminum or Aluminum Alloys (Alodizing) Alodine 1000 Clear.

(3) D00633 Grease - Corrosion Preventive, BMS 3-33 (preferred)
D00015 Grease - Corrosion Preventive, BMS 3-24 (alternative)

C. References

(1) AMM 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.

(2) AMM 51-21-04/701, Alodizing

(3) AMM 51-31-01/201, Seals and Sealing.

D. Access

(1) Location Zones
332/342 Horizontal Stabilizer - Removable Leading Edge

E. Procedure

S 094-007

(1) Remove the cover from the auxiliary spar, if it is necessary.

S 644-008

(2) Install grease in the countersunk holes before you install the fasteners.

S 424-016

WARNING: KEEP PERSONS AWAY FROM AREA BELOW THE STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE AN INJURY TO PERSONS.

CAUTION: BE CAREFUL WHEN YOU REMOVE THE LEADING EDGE SECTIONS. IF YOU RUB THE SKIN OR STRUCTURE, DAMAGE TO THE PAINT CAN OCCUR.

(3) Put the leading edge section in position and install the fasteners.

S 364-009
(4) On the new leading edge section, remove the unwanted skin to get the correct clearance (Fig. 401).

S 364-010
(5) Remove sharp edges from the skin.

S 374-011
(6) Apply a layer of clear Alodine on the cut skin with a brush (AMM 51-21-04/701).

S 224-012
(7) Make sure the fastener heads are smooth with the leading edge skin as shown (Fig. 401).

S 394-022

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO APPLY THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

(8) Fill the clearances between the leading edge sections, and between the leading edge and the stabilizer skin with the sealant (AMM 51-31-01/201).

S 094-017
(9) Remove the safety harness if it is not necessary (AMM 20-10-27/201).

S 864-019
(10) Remove the DO-NOT-CLOSE tags and close these circuit breakers on P11 panel:
(a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
(b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

HORIZONTAL STABILIZER TRAILING EDGE LOWER PANELS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks.
      (1) The first task gives instructions to remove the horizontal stabilizer trailing edge lower panels.
      (2) The second task gives instructions to install the horizontal stabilizer trailing edge lower panels.
   B. The horizontal stabilizer trailing edge lower panels are referred to as the panels in this procedure.

TASK 55-16-01-004-010

2. Remove the Horizontal Stabilizer Trailing Edge Lower Panel (Fig. 401)
   A. Access
      (1) Location Zones
          335/345 Horizontal Stabilizer - Rear Spar to Trailing Edge

   B. Procedure

      S 864-001
      (1) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
          (a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
          (b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

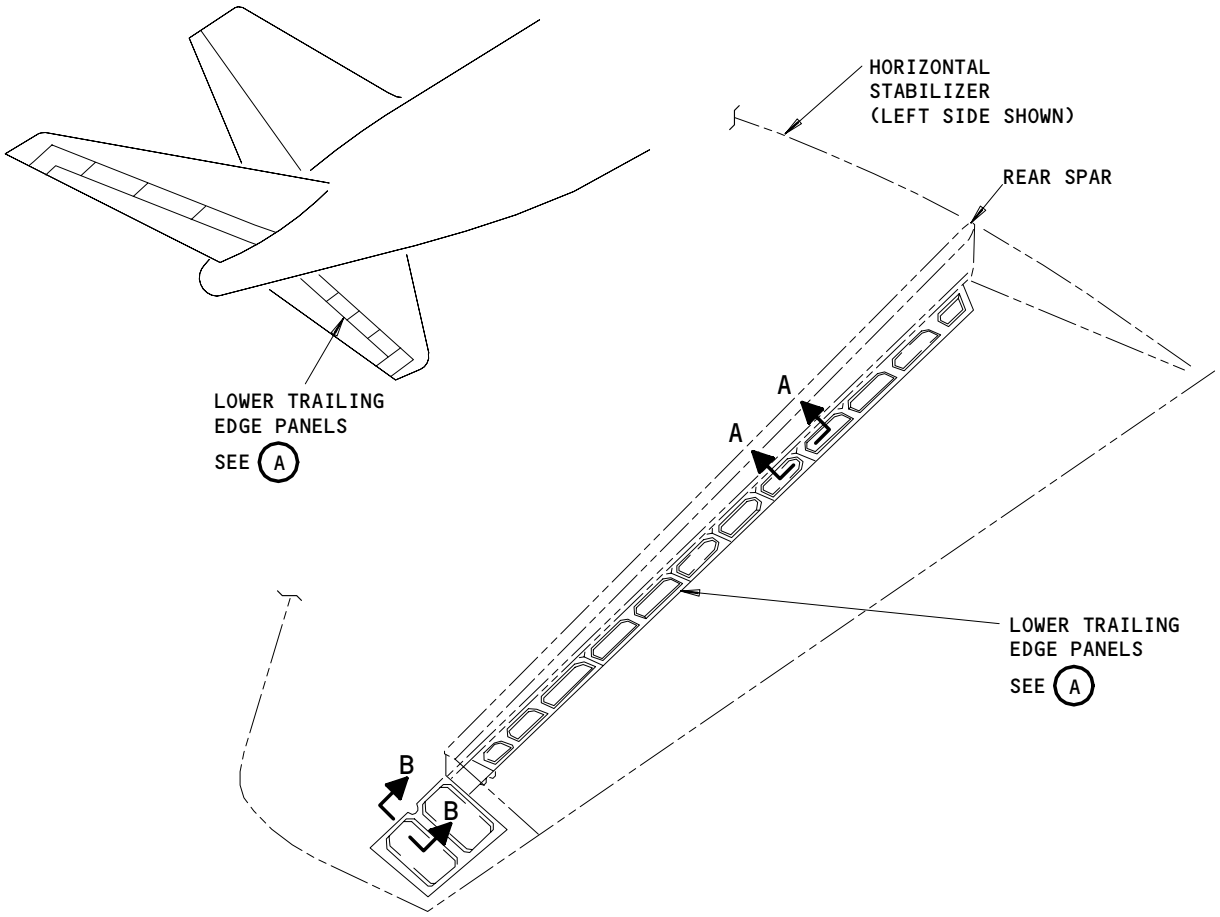
      S 024-009

      WARNING: KEEP PERSONS AWAY FROM THE AREA BELOW THE STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE AN INJURY TO PERSONS.

      (2) Remove the fasteners and the panel.

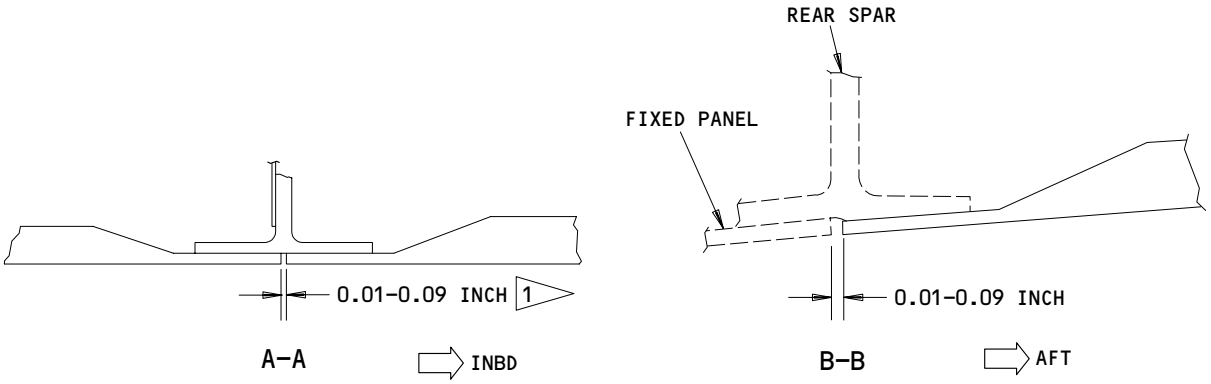
TASK 55-16-01-404-003

3. Install the Horizontal Stabilizer Trailing Edge Lower Panel (Fig. 401)
   A. Consumable Materials
      (1) A00247 Compound - Sealing, BMS 5-95, Class B-2
   B. References
      (1) 51-31-01/201, Seals and Sealing
   C. Access
      (1) Location Zones
          335/345 Horizontal Stabilizer - Rear Spar to Trailing Edge



LOWER TRAILING EDGE PANELS

A



1 THE CLEARING BETWEEN THE LOWER TRAILING EDGE PANELS (EXAMPLE)

Horizontal Stabilizer Trailing Edge Lower Panel
Figure 401

D. Procedure

S 424-011

WARNING: KEEP PERSONS AWAY FROM THE AREA BELOW THE STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE AN INJURY TO PERSONS.

CAUTION: IF YOU MUST INSTALL NEW FASTENERS, USE TITANIUM OR CORROSION RESISTANT STEEL FASTENERS ONLY. OTHER TYPES OF FASTENERS WILL CAUSE GALVANIC CORROSION.

(1) Hold the panel in position and install the fasteners.

S 354-005

(2) When you install a new panel, remove the unwanted skin to keep the clearance between the adjacent panels and skins correct (Fig. 401).

S 354-006

(3) Remove sharp edges from the cut skin.

S 394-013

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO APPLY THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

(4) Fill the clearances with the sealant (Ref 51-31-01).

S 864-008

(5) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
   (a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
   (b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF C

HORIZONTAL STABILIZER FIXED TRAILING EDGE SEALS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains four tasks:
      (1) The first task gives instructions to remove the lower seals from the fixed trailing edge.
      (2) The second task gives instructions to install the lower seals on the fixed trailing edge.
      (3) The third task gives instructions to remove the upper seals from the fixed trailing edge.
      (4) The fourth task gives instructions to install the upper seals on the fixed trailing edge.

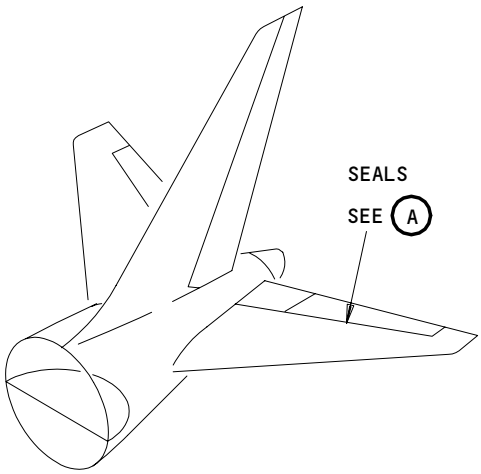
TASK 55-16-02-004-001

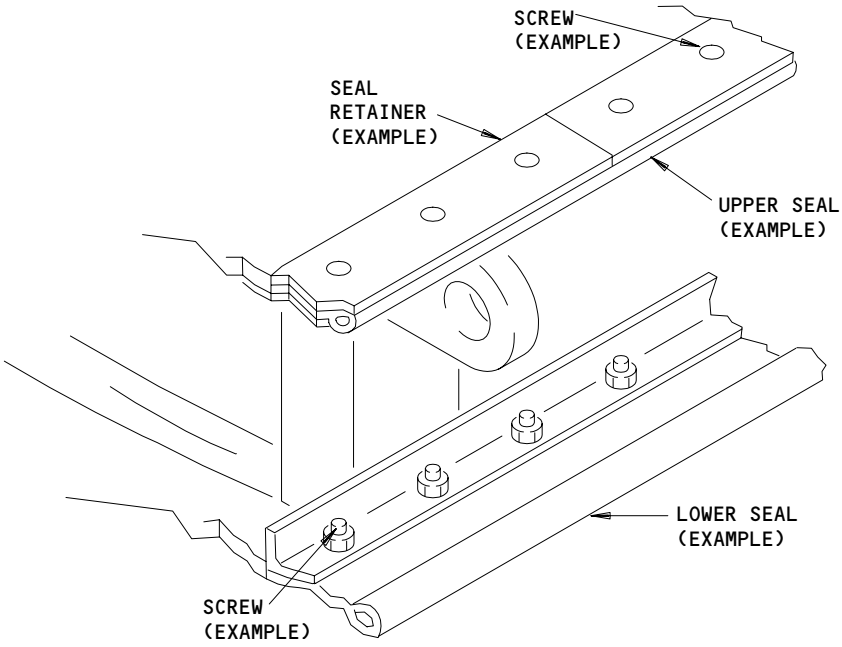
2. Remove the Lower Seal (Fig. 401)
   A. Equipment
      (1) Attach Fitting Set - Wing Safety Harness, A20002-4
   B. References
      (1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.
      (2) 29-11-00/201, Pressurize/Depressurize Main Hydraulic System
   C. Access
      (1) Location Zones
          335/345 Horizontal Stabilizer - Rear Spar to Trailing Edge
   D. Procedure

      S 864-024
      (1) Put these switches on the P61 panel in the OFF position and attach DO-NOT-OPERATE tags:
          (a) FLT CONTROL SHUTOFF TAIL LEFT
          (b) FLT CONTROL SHUTOFF TAIL RIGHT
          (c) FLT CONTROL SHUTOFF TAIL CENTER

      S 864-025
      (2) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
          (a) 11H17, FLT CONTROL SHUTOFF TAIL L
          (b) 11H18, FLT CONTROL SHUTOFF TAIL C
          (c) 11H27, FLT CONTROL SHUTOFF TAIL R

      S 864-002
      (3) Remove the pressure from the left, right, and center hydraulic systems (Ref 29-11-00).





SEALS

A

Horizontal Stabilizer Fixed Trailing Edge Seals
Figure 401

S 424-027

WARNING: USE A MAN LIFT TO ATTACH THE SAFETY HARNESS FITTINGS TO THE RECEPTACLES. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

WARNING: DO NOT WALK ON THE HORIZONTAL STABILIZER WITHOUT A SAFETY HARNESS. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

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

S 024-003

(5) Remove the screws that hold the damaged part of the seal.

S 024-004

(6) Remove the damaged seal.

TASK 55-16-02-404-005

3. Install the Lower Seal (Fig. 401)

A. Equipment

(1) Attach Fitting Set - Wing Safety Harness, A20002-4

B. Consumable Materials

(1) A00562 Sealant - RTV 157

C. References

(1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.

D. Access

(1) Location Zones

335/345 Horizontal Stabilizer - Rear Spar to Trailing Edge

E. Procedure

S 164-006

(1) Remove the sealant from the clearance between the seal and the lower skin panel.

S 424-007

(2) Cut the new seal to the correct length.

S 424-008

(3) Install the screws that hold the seal.

S 394-009

(4) Fill the clearance between the seal and the lower skin panel with the sealant.

S 024-028

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

S 864-010
(6) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11H17, FLT CONTROL SHUTOFF TAIL L
(b) 11H18, FLT CONTROL SHUTOFF TAIL C
(c) 11H27, FLT CONTROL SHUTOFF TAIL R

S 864-023
(7) Remove the DO-NOT-OPERATE tags and put these switches on the P61 panel in the ON position:
(a) FLT CONTROL SHUTOFF TAIL LEFT
(b) FLT CONTROL SHUTOFF TAIL RIGHT
(c) FLT CONTROL SHUTOFF TAIL CENTER

TASK 55-16-02-004-011

4. Remove the Upper Seal (Fig. 401)

A. Equipment
(1) Attach Fitting Set - Wing Safety Harness, A20002-4

B. References
(1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.
(2) 29-11-00/201, Pressurize/Depressurize Main Hydraulic System

C. Access
(1) Location Zones
335/345 Horizontal Stabilizer - Rear Spar to Trailing Edge

D. Procedure

S 864-012
(1) Put these switches on the P61 panel in the OFF position and attach DO-NOT-OPERATE tags:
(a) FLT CONTROL SHUTOFF TAIL LEFT
(b) FLT CONTROL SHUTOFF TAIL RIGHT
(c) FLT CONTROL SHUTOFF TAIL CENTER

S 864-013
(2) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11H17, FLT CONTROL SHUTOFF TAIL L
(b) 11H18, FLT CONTROL SHUTOFF TAIL C
(c) 11H27, FLT CONTROL SHUTOFF TAIL R

S 864-014
(3) Remove the pressure from the left, right, and center hydraulic systems.

S 424-029

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

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

S 024-015

(5) Remove the screws that hold the seal retainer in the damaged area of the seal.

S 024-026

(6) Remove the damaged seal.

TASK 55-16-02-404-016

5. Install the Upper Seal (Fig. 401)

A. Equipment

(1) Attach Fitting Set - Wing Safety Harness, A20002-4

B. Consumable Materials

(1) A00562 Sealant - RTV 157

C. References

(1) 20-10-27/201, Flight Control Surfaces Safety Harness Receptacle.

D. Access

(1) Location Zones

335/345 Horizontal Stabilizer - Rear Spar to Trailing Edge

E. Procedure

S 164-017

(1) Remove the sealant from the clearance between the seal and the upper skin panel.

S 424-018

(2) Cut the new seal to the correct length to fill the clearance.

S 424-019

(3) Put the seal retainer on the new seal and install the screws.

S 394-020

(4) Fill the clearance between the seal and the upper skin panel with sealant.

S 024-030

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

S 864-021

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

(a) 11H17, FLT CONTROL SHUTOFF TAIL L

(b) 11H18, FLT CONTROL SHUTOFF TAIL C
(c) 11H27, FLT CONTROL SHUTOFF TAIL R

S 864-022
(7) Remove the DO-NOT-OPERATE tags and put these switches on the P61 panel in the ON position:
(a) FLT CONTROL SHUTOFF TAIL LEFT
(b) FLT CONTROL SHUTOFF TAIL RIGHT
(c) FLT CONTROL SHUTOFF TAIL CENTER

HORIZONTAL STABILIZER PIVOT FITTINGS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains four tasks.
      (1) The first task is the instructions to remove the pivot pin.
      (2) The second task is the instructions to install the pivot pin.
      (3) The third task is the instructions to remove the pivot fitting bearing.
      (4) The fourth task is the instructions to install the pivot fitting bearing.
   B. The procedures for the pivot pins and pivot fitting bearings for the left and right sides are equivalent.
   C. Remove the pivot pins or bearings from one side at a time.

TASK 55-17-51-004-001

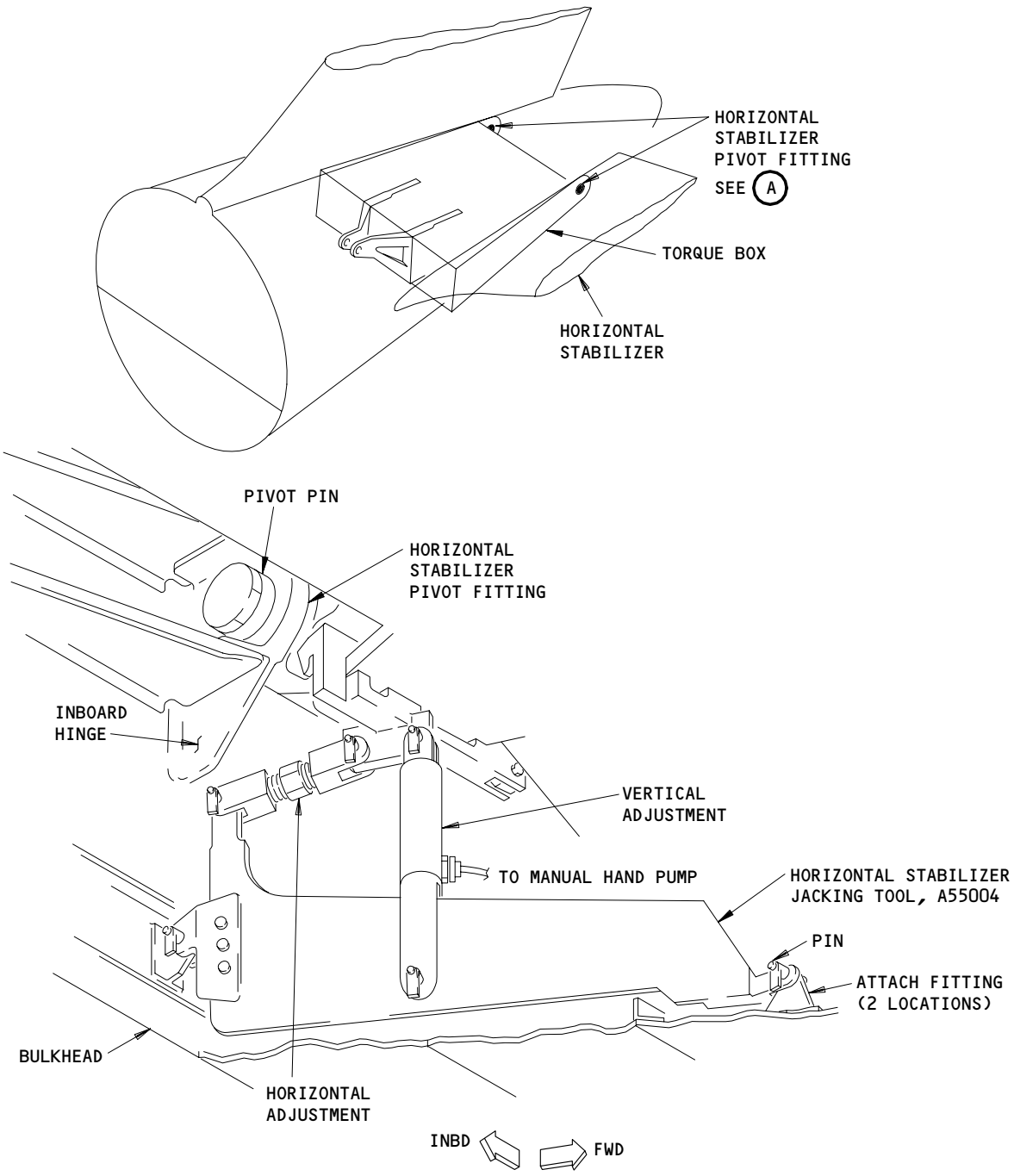
2. Remove the Pivot Pin
   A. Equipment
      (1) Dial Indicator and bracket - Commercially available
      (2) A55004-98 Horizontal Stabilizer Jacking Equipment
      (3) A27114-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (PREFERRED).
      (4) A55007-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (ALTERNATE).
      (5) A32045-48 Pivot Fitting Spanner Wrench
      (6) F70312-30 Pivot Fitting Crowfoot Wrench
      (7) F70312-50 Pivot Fitting Crowfoot Wrench
      (8) A52025-1 Service Platform, Service Access Door
   B. References
      (1) AMM 06-42-00/201, Empennage Access Doors and Panels
   C. Access
      (1) Location Zones
          311/312 Area Aft of the Pressure Bulkhead to Sta 1725

      (2) Access Panel
          312AR Service Access Door

   D. Prepare to Remove the Pivot Pin

      S 864-072
      (1) Put the leading edge of the horizontal stabilizer up before you open the circuit breakers.

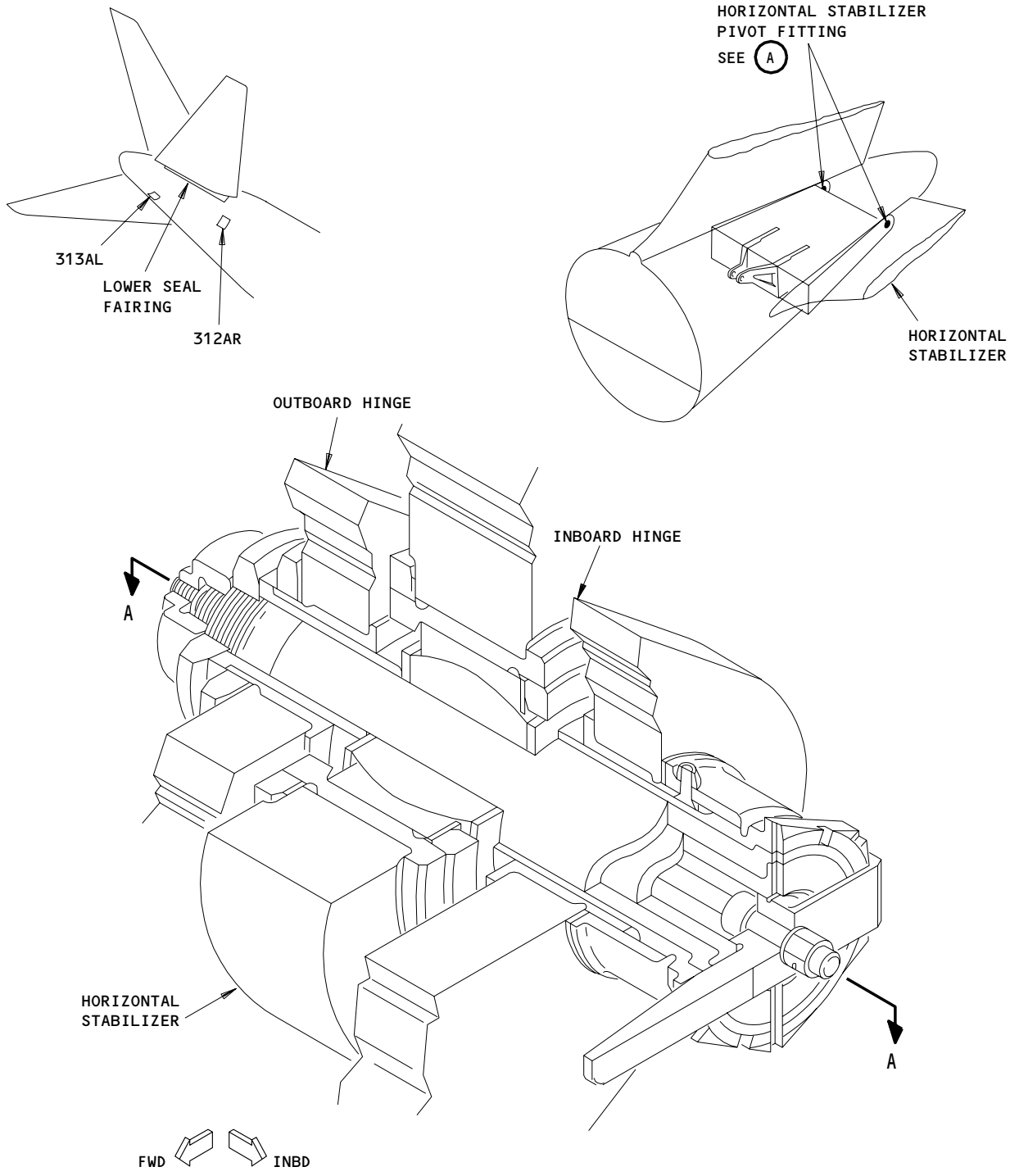
          NOTE: This position will give you the best access when you remove and install the pivot pin.



HORIZONTAL STABILIZER PIVOT FITTING

A

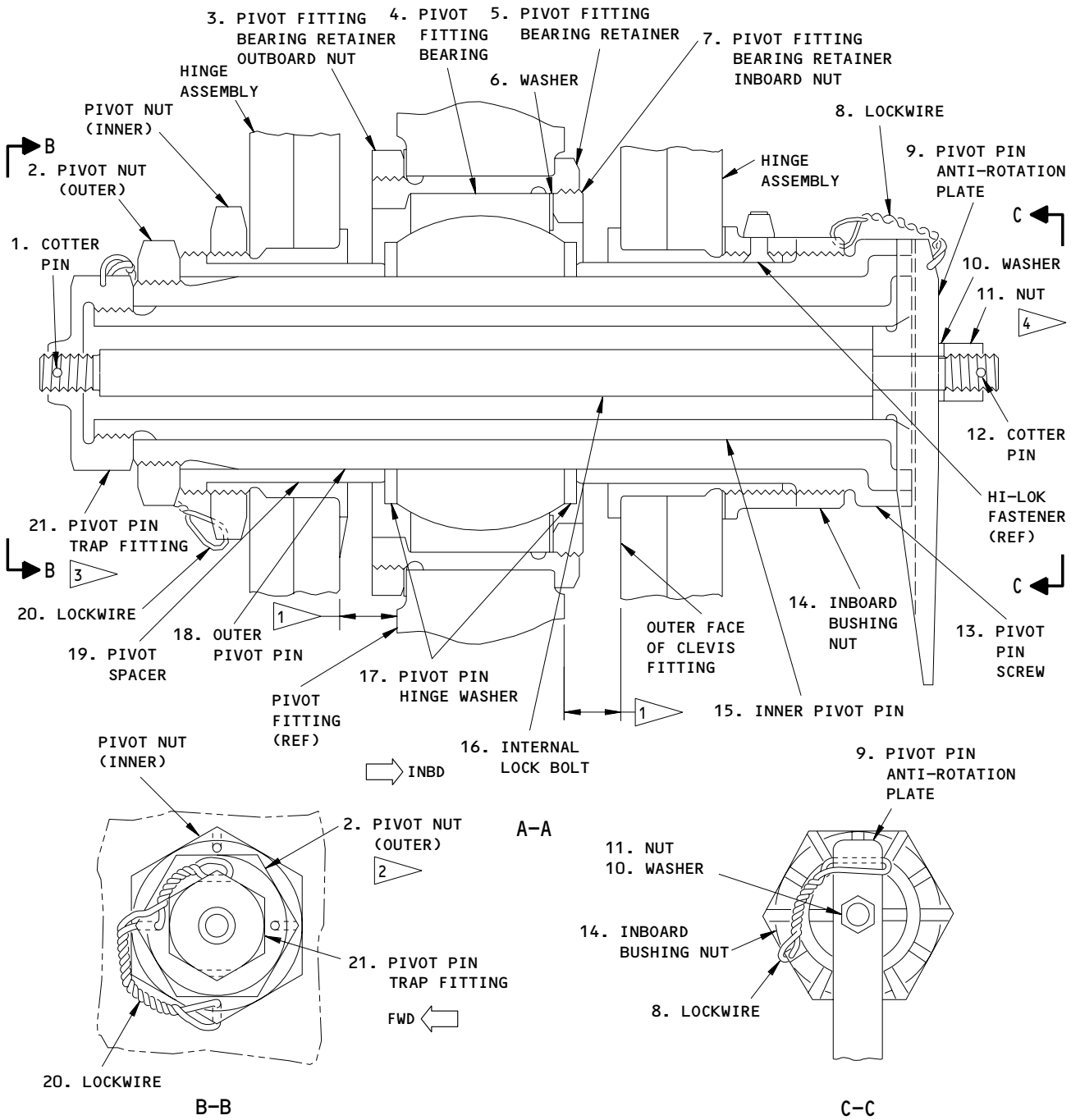
Horizontal Stabilizer Jacking Equipment
Figure 401



HORIZONTAL STABILIZER
PIVOT FITTING

A

Horizontal Stabilizer Pivot Pin
Figure 402 (Sheet 1)



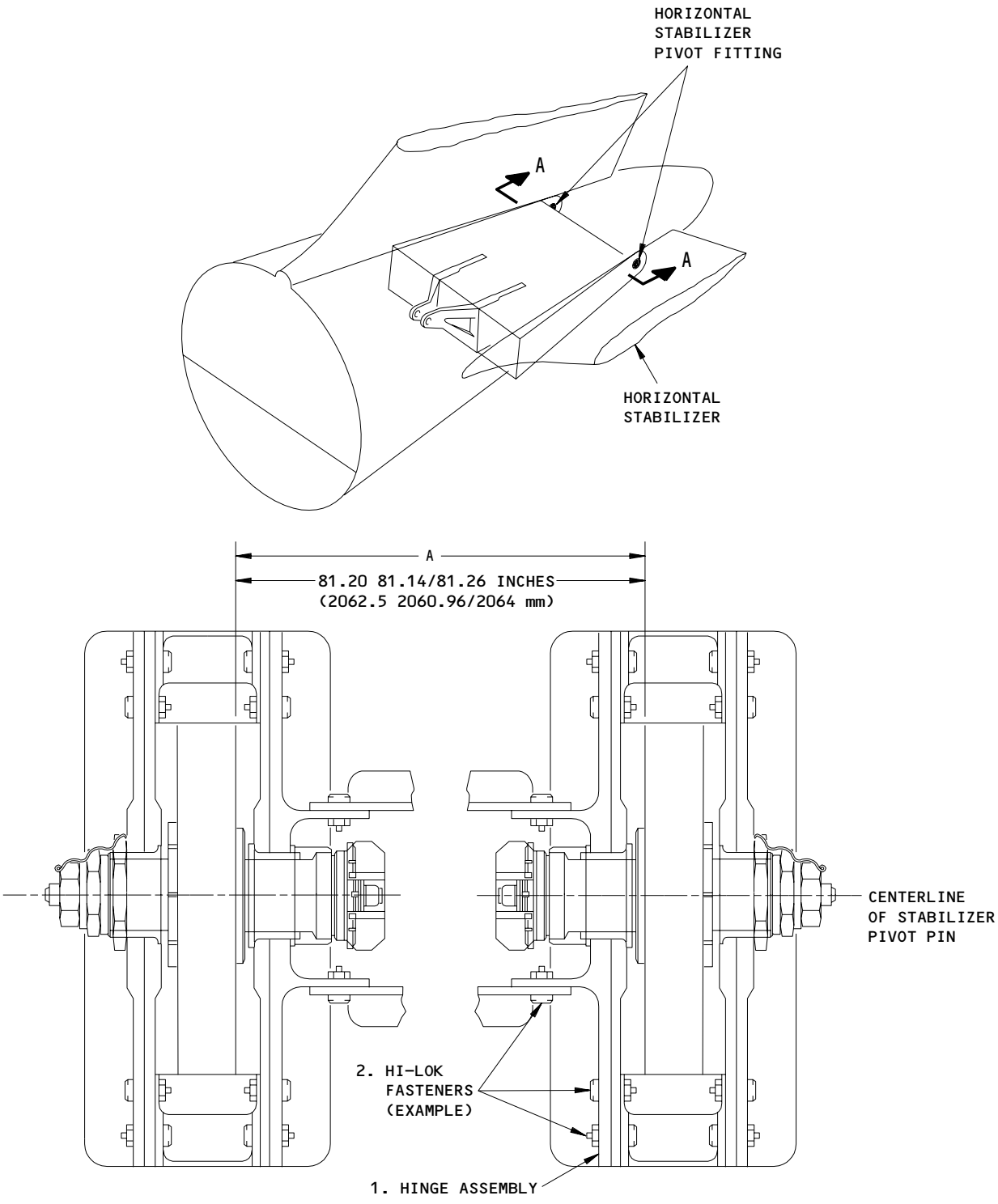
1 THE CLEARANCE MUST BE BETWEEN 0.575 AND 0.675 INCHES (14.605 AND 17.145 mm)

2 TORQUE VALUE 25-30 POUND-INCHES (2.82-3.38 Nm)

3 TORQUE VALUE 500-700 POUND-INCHES (56.49-79.08 Nm)

4 TORQUE VALUE 220-410 POUND-INCHES (24.85-46.32 Nm)

Horizontal Stabilizer Pivot Pin
Figure 402 (Sheet 2)



A-A

Horizontal Stabilizer Pivot Fitting Bearing
Figure 403

S 864-088

(2) Put these switches on the P10 Panel, in the CUTOUT position and attach DO-NOT-OPERATE tags:
(a) S5 LEFT STAB TRIM
(b) S6 RIGHT STAB TRIM

S 864-004

(3) Put these switches on the right side panel, P61, in the OFF position and attach DO-NOT-OPERATE tags:
(a) S2 RIGHT TAIL HYD SHUT OFF VALVE SWITCH
(b) S4 CENTER TAIL HYD SHUT OFF VALVE SWITCH
(c) S6 LEFT TAIL HYD SHUT OFF VALVE SWITCH

S 864-005

(4) Open these circuit breaker on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11C12, STAB TRIM SHUTOFF L
(b) 11C13, STAB TRIM SHUTOFF CENTER
(c) 11H17, FLT CONT SHUTOFF TAIL LEFT
(d) 11H18, FLT CONT SHUTOFF TAIL CENTER
(e) 11H27, FLT CONT SHUTOFF TAIL RIGHT

S 864-006

(5) Remove the pressure from the LEFT, RIGHT and CENTER hydraulic system. Open the circuit breakers from the overhead circuit breaker panel, P11, panel and attach DO-NOT-CLOSE tags as follows:
(a) 11D29 ENG HYD. PUMP L SUPPLY
11D30 ENG HYD. PUMP R SUPPLY
11L25 HYD ELEC PUMP L
11L16 HYD ELEC PUMP R
11L15 ELEC HYD PUMP C1
11L18 HYD SYS C PRESS
11D31 AIR HYD PUMP

S 014-073

WARNING: BEFORE YOU BEGIN TO WORK, MAKE SURE THAT THERE IS NO MOVEMENT OF THE HORIZONTAL STABILIZER.

WARNING: STAY OFF THE SERVICE ACCESS DOOR, 312AR, 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.

(6) Open the Service Access Door, 312AR (AMM 06-42-00/201).

S 944-008

WARNING: MAKE SURE THE SERVICE PLATFORM IS INSTALLED BELOW THE SERVICE ACCESS DOOR OPENING. IF YOU DO NOT INSTALL THE SERVICE PLATFORM, YOU CAN FALL THROUGH THE SERVICE ACCESS DOOR OPENING AND INJURY CAN OCCUR.

(7) Install the service platform below the opening of the service access door.

S 014-092

(8) Remove the lower seal fairing, to improve the access to the pivot bearing.

S 494-010

(9) Install the horizontal stabilizer jacking equipment as shown in Fig 401.

S 494-011

(10) Attach the dial indicator bracket to the flange of an intercostal bracket above and behind the torque box.
   (a) At the free end of the dial indicator bracket, attach the dial indicator.
   (b) Put the dial indicator needle on top of the torque box. The movement of the dial will indicate that the pivot fitting has moved vertically in relation to the airplane structure.

S 984-094

CAUTION: DO NOT APPLY MORE THAN 3000 POUNDS (1360.8 KG) OF OF LIFT FORCE. YOU WILL CAUSE DAMAGE TO THE AIRPLANE IF YOU APPLY MORE THAN 3000 POUNDS (1360.8 KG) OF LIFT FORCE. THE WEIGHT OF THE STABILIZER IS APPROXIMATELY 2800 POUNDS (1270.1 KG).

(11) Operate the horizontal stabilizer jacking equipment until you can move the pivot pin. Stop the operation when the dial indicator needle starts to move.

   NOTE: Movement of the needle shows that the stabilizer does not have a load and that the pivot fitting has moved.

E. Procedure - Remove the Pivot Pin

S 224-061

(1) Before you remove or loosen any components, measure the distance "A" between the inboard faces of the pivot fittings (Fig. 403) and make a record of the location and the dimension.

NOTE: After you install and complete the the pivot assembly installation, you will measure the same distance "A" at the same location. You will compare the before and after dimension.

S 024-015

(2) Remove the cotter pin (12).

S 024-016

(3) Remove the nut (11) and washer (10).

S 024-017

(4) Remove the anti-rotation plate (9).

S 024-090

(5) Remove the cotter pin (1).

S 024-091

(6) Remove the trap fitting (21) and the internal lockbolt (16) together.
(a) Use the crowfoot wrench F70312-50.

S 024-019

(7) Remove the inner pivot pin (15).
(a) Use the crowfoot wrench F70312-30.

S 024-020

(8) Remove the nut (2).

S 024-021

CAUTION: BE CAREFUL WHEN YOU REMOVE THE OUTER PIVOT PIN (18). THE THREADS ON THE OUTER PIVOT PIN (18) CAN EASILY CAUSE DAMAGE TO THE PIVOT FITTING BEARING (4).

(9) Carefully remove the outer pivot pin (18) and washers (17).

NOTE: When you remove the outer pivot pin (18), the washers (17) can fall on the ground.

TASK 55-17-51-404-013

3. Install the Pivot Pin

NOTE: The wear limits for these components are given in the Horizontal Stabilizer Pivot Fitting Free Play - Inspection/Check procedure.

A. Equipment
   (1) Dial Indicator - Commercially available
   (2) A55004-98 Horizontal Stabilizer Jacking Equipment
   (3) A32045-87 Pivot Fitting Spanner Wrench
   (4) A27114-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (PREFERRED).
   (5) A55007-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (ALTERNATE).
   (6) F70312-30 Pivot Fitting Crowfoot Wrench
   (7) F70312-50 Pivot Fitting Crowfoot Wrench
   (8) A52025-1 Service Platform, Service Access Door

B. Consumable Materials
   (1) D00633 Grease, Corrosion Prevention - BMS 3-33 (Preferred)
   (2) D00015 Grease, Corrosive Preventive - BMS 3-24 (Alternate)
   (3) C00913 Corrosion Preventative Compound - BMS 3-27 (Preferred)
   (4) C50056 Compound - Non-drying Corrosion Inhibiting Resin Mix, BMS 3-38 (Alternate)
   (5) G50136 Paste - Corrosion Inhibiting Non-drying, BMS 3-38 (Alternate)
   (6) G50237 Compound - Corrosion Inhibiting, Non-drying Cor-Ban 27L, BMS 3-38 (Alternate)
   (7) A00247 Sealant, Chromate Type - BMS 5-95, Type I, Class B or C

C. References
   (1) AMM 06-42-00/201, Empennage Access Doors and Panels

D. Access
   (1) Location Zones
   311/312 Area Aft of the Pressure Bulkhead to Sta 1725

   (2) Access Panel
   312AR Service Access Door

E. Procedure

S 424-075

(1) Make sure the HI-LOK fastener is installed in the inboard bushing nut (14).
   (a) If the HI-LOK fastener is not there or if the HI-LOK is broken, make sure the bushing nut has a torque of 500 to 900 inch-pounds.
      1) Use the spanner wrench A32045-87.
      2) Install a new HI-LOK fastener.

S 434-077
(2) Put a new fillet seal on BMS 5-95 around the inboard bushing flanges.

S 644-024
(3) Apply the grease on the washers (17) and to the outer pivot pin (18).

S 424-023

CAUTION: BE CAREFUL WHEN YOU INSTALL THE OUTER PIVOT PIN (18). THE THREADS ON THE OUTER PIVOT PIN (18) CAN EASILY CAUSE DAMAGE TO THE PIVOT FITTING BEARING (4).

(4) Apply grease to the (13) pivot pin screw.

S 424-064
(5) Install the outer pivot pin (18) into the (13) pivot pin screw.

S 424-065
(6) Hold the one (17) washer in place.

S 424-066
(7) Hold the other (17) washer in place and install the spacer (19) into the hinge assembly.

S 424-067
(8) Install the outer pin (18) and the pivot pin screw (13) together into the hinge assembly.

S 644-025
(9) Apply the grease to the threads in the nut (2).

S 424-014
(10) Install and tighten the nut (2) until there is no clearance between the spacer (19) and the bearing (4).
(a) Use the crowfoot wrench F70312-30.

S 644-027
(11) Apply the grease to the inner pivot pin (15).

S 424-028
(12) Install the inner pivot pin (15).

S 824-029

(13) Adjust the pivot pin assembly as follows:

NOTE: Prevent excessive loading of the hinge joints during installation.

(a) On the right side, loosen the screw (13) and the nut (2). This will let you adjust the pivot joint on the left side.
(b) Make sure you can turn the left-hand outer pivot pin (9) easily with your hand.
(c) Adjust the screw (13) and the nut (2) until the horizontal stabilizer assembly is in the center position.

NOTE: When you turn the screw (13), do not apply more torque than the break-away torque plus 25 inch-pounds (2.82 Nm).

(d) Tighten the nut (2) until there is no clearance between the bearing (4) and the spacer (19), and the screw (13) and the bearing (4).
(e) Make sure the clearance between the horizontal stabilizer and the outer face of the clevis fitting is 0.575 to 0.675 inch (14.6 to 17.15 mm) (View A-A, Fig. 402).

S 434-068

(14) The instructions that follow are for the left side only.
(a) Make sure the horizontal stabilizer is in the center and the mating parts are correctly installed, and then do these steps:
1) Loosen the screw (13) approximately one quarter of a turn. Then, tighten the screw (13) to a torque that is equal to the break-away torque plus 25 inch-pounds (2.82 Nm).

NOTE: You can turn back the screw (13) a maximum of 30 degrees to help you align the slots.

2) Loosen the nut (2) approximately one quarter of a turn, then tighten the nut (2) to 25-30 inch-pounds (2.82-3.39 Nm).

NOTE: You can turn back the nut (2) a maximum of 30 degrees to help you align the slots.

(b) Apply a thin layer of BMS 3-27 (preferred) or BMS 3-38 (alternate) to the threads of the trap fitting (21).
(c) Apply grease to the trap fitting (21) and to the internal lock bolt (16).
(d) Install the trap fitting (21) onto the inner pivot pin (15).
(e) Apply a torque of 500-700 inch-pounds (56.46-79.04 Nm) to the trap fitting (21).
(f) Use the crowfoot wrench F70312-50.

(g) Install the internal lockbolt (16) and secure it to the trap fitting (21) with the cotter pin (1).
(h) Apply the grease to the anti-rotation plate (9).
(i) Install the anti-rotation plate (9).
(j) Install the washer (10) and the nut (11) to 220-410 inch-pounds (24.84-46.30 Nm).
(k) Install the cotter pin (12).
(l) Measure the distance "A" between the inboard face of the pivot fitting at the same location as was done before (Fig. 403). Compare the before and after dimensions.

NOTE: If the difference between the before and after dimensions "A" is greater than 0.010 inch (0.254 mm), disassemble the left pivot joint and repeat the procedure.

1) Make sure the distance "A" is 81.14 to 81.26 inches (2.061 to 2.064 meters) (View A-A, Fig. 403).
(m) If the left joint is in tolerance, complete the pivot joint installation on the right side.

S 424-036
(15) After the left and right pivot joints are in tolerance, install the lockwire (8, 20) as shown (Fig. 402).

F. Put the Airplane back in its Usual Condition.

S 094-038
(1) Remove the horizontal stabilizer jacking equipment and the dial indicator.

S 864-039
(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11C12, STAB TRIM SHUTOFF L
(b) 11C13, STAB TRIM SHUTOFF CENTER
(c) 11H17, FLT CONT SHUTOFF TAIL LEFT
(d) 11H18, FLT CONT SHUTOFF TAIL CENTER
(e) 11H27, FLT CONT SHUTOFF TAIL RIGHT

S 864-040
(3) Remove the DO-NOT-OPERATE tags and put these switches on the P61 panel in the ON position:
(a) S2 RIGHT TAIL HYD SHUT OFF VALVE SWITCH
(b) S4 CENTER TAIL HYD SHUT OFF VALVE SWITCH
(c) S6 LEFT TAIL HYD SHUT OFF VALVE SWITCH

S 864-087
(4) Remove the DO-NOT-OPERATE tags and move to the NORMAL position, these switches on the P11 panel:
(a) S5 LEFT STAB TRIM
(b) S6 RIGHT STAB TRIM

S 864-070
(5) Restore the pressure to the LEFT, RIGHT and CENTER hydraulic system. Close the circuit breakers from the overhead circuit breaker panel, P11, panel and remove the DO-NOT-CLOSE tags from the circuit breakers as follows:
(a) 11D29 ENG HYD. PUMP L SUPPLY
11D30 ENG HYD. PUMP R SUPPLY
11L25 HYD ELEC PUMP L
11L16 HYD ELEC PUMP R
11L15 ELEC HYD PUMP C1
11L18 HYD SYS C PRESS
11D31 AIR HYD PUMP

S 714-042
(6) Operate the horizontal stabilizer and make sure the stabilizer pivot fittings do not bind.

S 944-043
(7) Remove the service platform and close the service access door, 312AR.

TASK 55-17-51-004-003
4. Remove the Pivot Fitting Bearing
A. Equipment
(1) A32045-48 Pivot Fitting Spanner wrench
(2) A27114-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (PREFERRED).
(3) A55007-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (ALTERNATE).
B. Access
(1) Location Zones
311/312 Area Aft of the Pressure Bulkhead to Sta 1725

(2) Access Panel
312AR Service Access Door

C. Procedure - Remove the Pivot Fitting Bearing

S 024-044
(1) Do the Remove the Pivot Pin task.

S 024-045
(2) Remove the pivot pin screw (13).

S 024-046
(3) Remove the Hi-Lok fasteners (2) that holds the inboard hinge (1) to the structure (Fig. 403).

S 024-047
(4) Remove the inboard hinge (1) (Fig. 403).

S 024-069
(5) Remove the lockwire from the retainer (5) and the inboard nut (7).

S 024-048
(6) Remove the nut (7) and washer (6) (Fig. 402).

S 024-049
(7) Use the pivot bearing removal equipment to remove the bearing (4).
(a) Use the Horizontal Stabilizer Pivot Bearing Removal Equipment (A27114-1 - PREFERRED) or (A55007-1 - ALTERNATE).

TASK 55-17-51-404-002

5. Install the Pivot Fitting Bearing

NOTE: The wear limits for these parts are given in the Horizontal Stabilizer Pivot Fitting Free Play - Inspection/Check procedure.

A. Equipment
(1) A32045-48 Pivot Fitting Spanner Wrench
(2) A27114-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (PREFERRED).
(3) A55007-1 Horizontal Stabilizer Pivot Bearing Removal Equipment (ALTERNATE).

B. Consumable Materials
(1) D00633 Grease, Corrosion Preventive - BMS 3-33 (Preferred)
(2) D00015 Grease, Corrosion Preventive - BMS 3-24 (Alternate)
(3) A00247 Sealant, Chromate Type - BMS 5-95, Type I, Class B or C

C. Access
(1) Location Zones
311/312 Area Aft of the Pressure Bulkhead to Sta 1725

(2) Access Panel
312AR Service Access Door

D. Procedure

S 644-050
(1) Apply the grease to the outer diameter of the outer race of the bearing (4)

S 434-051
(2) Install the bearing (4).

S 094-060
(3) Remove the bearing removal equipment.

S 394-052
(4) Apply the sealant to the washer (6).

S 014-083
(5) Install and tighten the nut (3) to 200-300 inch-pounds (22.58-33.87 Nm).
(a) Use the wrench A32045-48.

S 424-053
(6) Install and tighten the washer (6) and nut (7) to 200-300 inch-pounds (22.58-33.87 Nm).

S 424-054
(7) Install the lockwire between the nut (7) and the retainer (5).

S 434-055
(8) Install the hinge (1) Fig 403.

S 424-056
(9) Install the Hi-Lok fasteners (2) that hold the hinge (1) to the structure Fig 403.

S 644-057
(10) Apply the grease to the screw (13).

S 424-058
(11) Tighten the screw (13) to the breakaway torque plus 25 inch-pounds (2.82 Nm).

S 434-059
(12) Do the Install the Pivot Pin task.

HORIZONTAL STABILIZER PIVOT FITTING FREE PLAY - INSPECTION/CHECK

1. General
   A. This procedure contains one task. The task gives instructions to do the checks for the free play in the pivot fittings of the horizontal stabilizer.
   B. This procedure does not give instructions to remove or install the components. Refer to the Horizontal Stabilizer Pivot Fitting - Removal/Installation procedures for this data.
   C. Do this check in an area that does not have wind.

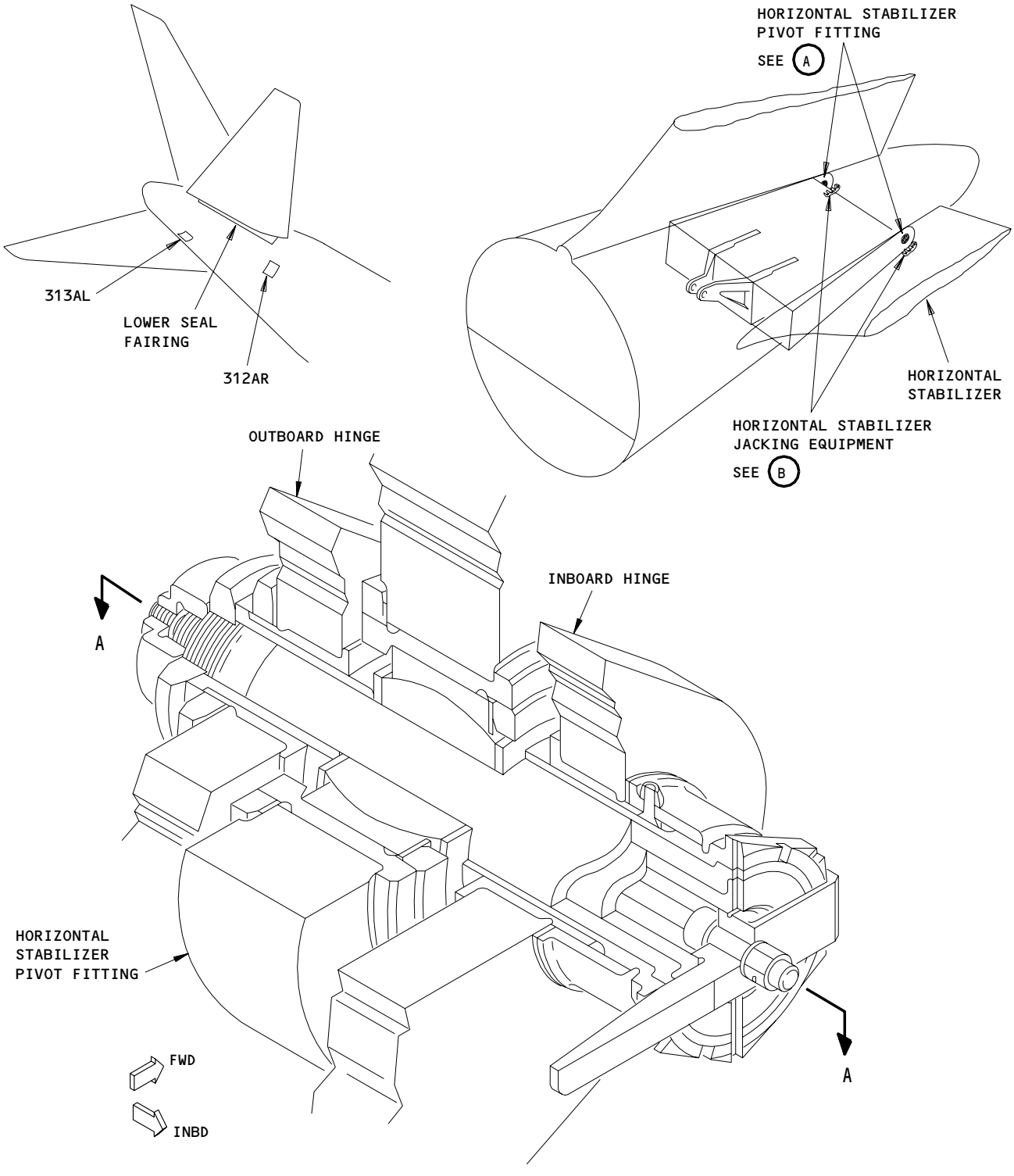
   TASK 55-17-51-206-001

2. Horizontal Stabilizer Pivot Fitting Free Play Check (Fig. 601)
   A. Equipment
      (1) Dial Indicator - commercially available
      (2) Jacking Equipment, Horizontal Stabilizer - A55004-98
      (3) Service Platform, Service Access Door - A52025-1
      (4) Bracket, made in-house (if dial indicator is not supplied with a bracket) to connect to the dial indicator.
   B. References
      (1) 06-42-00/201, Empennage Access Doors and Panels
      (2) 29-11-00/201, Pressurize/Depressurize Main Hydraulic Systems
      (3) 53-86-01/401, Horizontal Stabilizer to Body Seal Door
      (4) 55-17-51/401, Horizontal Stabilizer Pivot Fittings
   C. Access
      (1) Location Zone
          310 Fuselage - Body Section 48

      (2) Access Panels
          312AR Service Access Door

   D. Prepare for Stabilizer Hinge Free Play Check

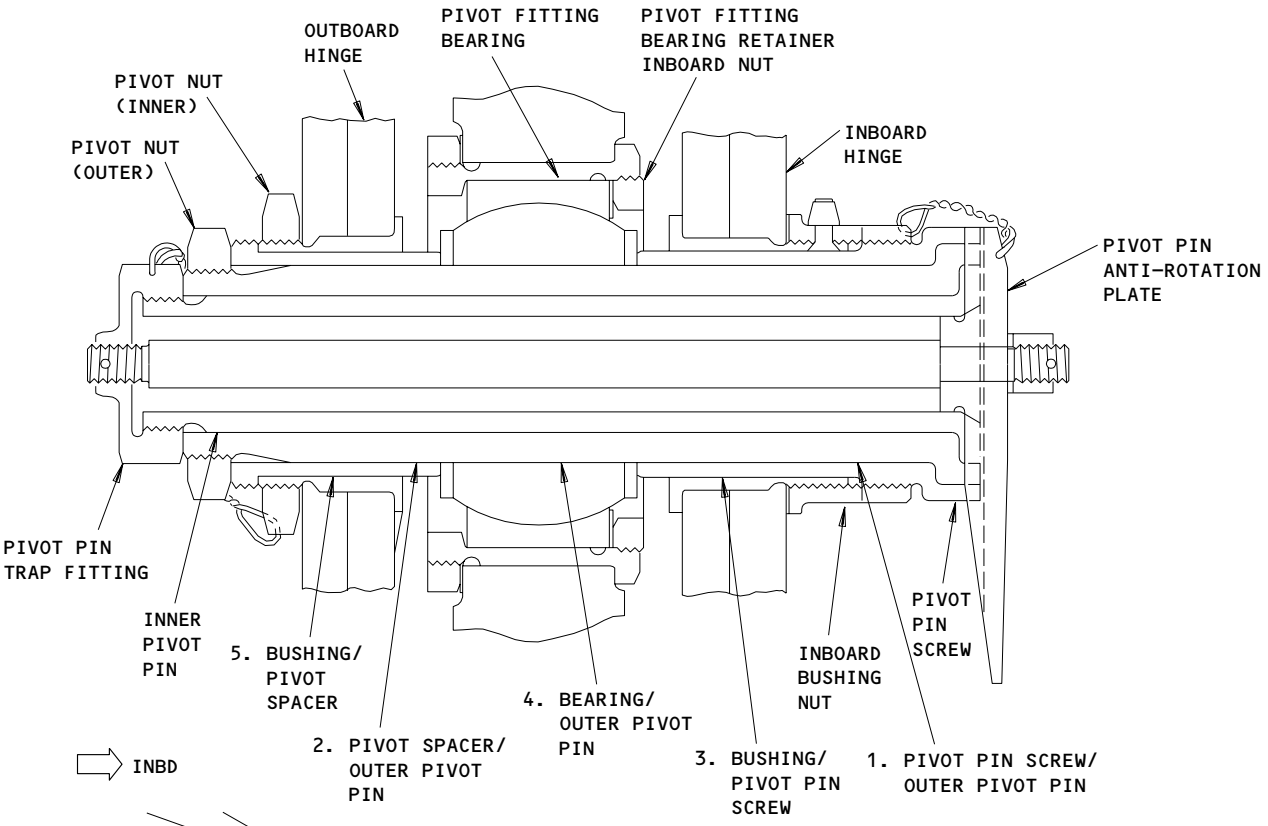
      S 866-003
      (1) Put the horizontal stabilizer in the neutral position (2 units of trim).



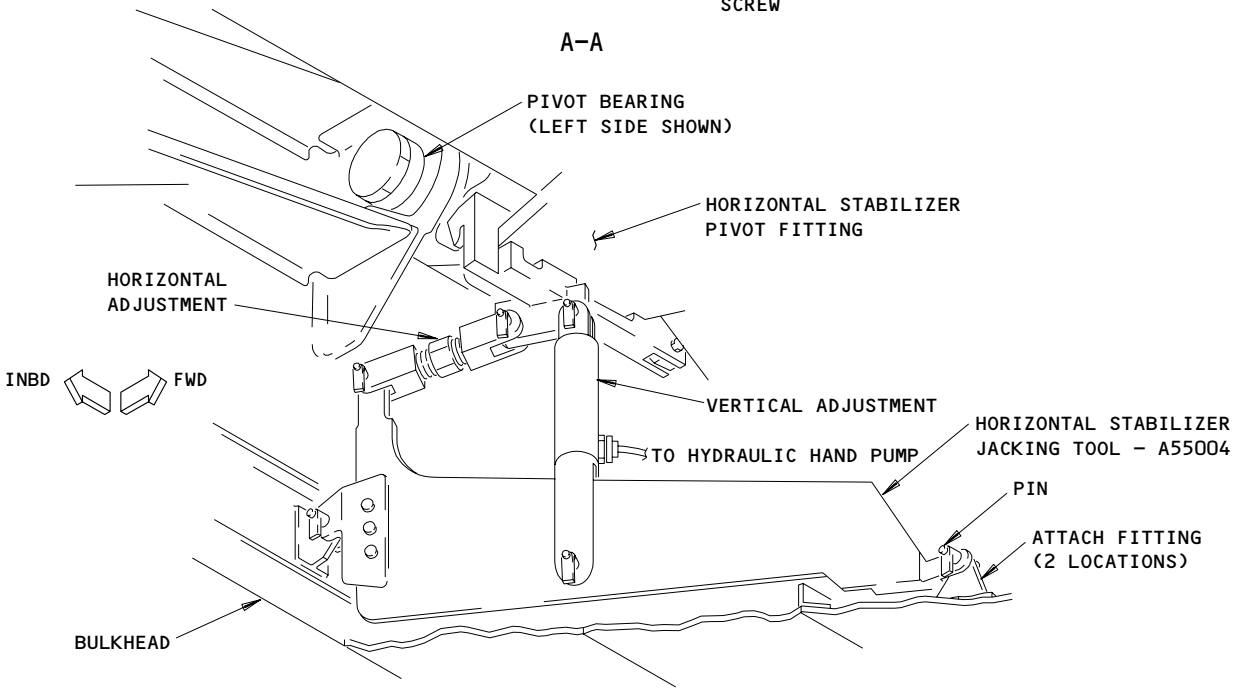
HORIZONTAL STABILIZER PIVOT FITTING

(A)

Horizontal Stabilizer Pivot Fittings Wear Limits
Figure 601 (Sheet 1)



A-A



HORIZONTAL STABILIZER JACKING EQUIPMENT

(B)

Horizontal Stabilizer Pivot Fitting Wear Limits
Figure 601 (Sheet 2)

INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR.
			DIAMETER		ALLOWED WEAR DIM.	MAX DIAM CLEAR-ANCE			
			MIN	MAX					
1	PIVOT PIN SCREW	ID	2.0980	2.0985	2.1053	0.0080 *[1]	X		
	OUTER PIVOT PIN	OD	2.0971	2.0973	2.0905		X		
2	PIVOT SPACER	ID	2.0980	2.0985	2.1053	0.0080 *[1]	X		
	OUTER PIVOT PIN	OD	2.0971	2.0973	2.0905		X		
3	BUSHING	ID	2.3995	2.4000	2.4073	0.0080 *[1]	X		
	PIVOT PIN SCREW	OD	2.3976	2.3985	2.3912		X		
4	BEARING	ID	2.0980	2.1000	2.1053	0.0080 *[1]	X		
	OUTER PIVOT PIN	OD	2.0971	2.0973	2.0920		X		
5	BUSHING	ID	2.3995	2.4000	2.4073	0.0088 *[1]	X		
	PIVOT SPACER	OD	2.3976	2.3985	2.3912		X		

*[1] THE TOTAL FREEPLAY OF ALL THE COMPONENTS OF THE HORIZONTAL STABILIZER PIVOT JOINT MUST NOT BE MORE THAN 0.034 IN.

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

S 866-006

(2) Remove the pressure from the LEFT, RIGHT and CENTER hydraulic systems (Ref 29-11-00).

S 866-004

(3) Put the these switches on the right side panel, P61, in the OFF position and attach DO-NOT-OPERATE tags:
(a) FLIGHT CONT SHUTOFF TAIL LEFT
(b) FLIGHT CONT SHUTOFF TAIL RIGHT
(c) FLIGHT CONT SHUTOFF TAIL CENTER

S 866-005

(4) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11H17, FLT CONT SHUTOFF TAIL LEFT
(b) 11H18, FLT CONT SHUTOFF TAIL CENTER
(c) 11H27, FLT CONT SHUTOFF TAIL RIGHT

S 016-002

WARNING: STAY OFF THE SERVICE ACCESS DOOR 312AR 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.

(5) Get access to the pivot fittings through the access door 312AR (Ref 06-42-00).

S 496-007

WARNING: INSTALL THE SERVICE PLATFORM ABOVE THE ACCESS DOOR OPENING. DO NOT STAND ON THE SERVICE PLATFORM. IF YOU FALL THROUGH THE DOOR, INJURY CAN OCCUR.

(6) Install the service platform above the access door opening.

S 016-008

(7) Remove the lower seal fairing, if it is necessary, to improve the access to the pivot bearing (Ref 53-86-01).

E. Procedure - Stabilizer Left Side Pivot Fitting Free Play Check

S 496-009

(1) Install the horizontal stabilizer jacking equipment at the pivot fitting (Fig. 601).

S 486-011
(2) Install the dial indicator at the pivot pin centerline to measure the vertical movement of the stabilizer pivot fitting in relation to the airplane structure.

NOTE: Refer to the instructions supplied with the equipment.

S 486-020
(3) Attach the bracket at body station 1809.5 bulkhead.

S 486-021
(4) Connect the dial indicator to the bracket.

NOTE: The bracket and the dial indicator must be rigidly attached to each other and to the bulkhead to do a check of the free-play.

S 486-012
(5) Set the dial indicator to the zero position.

S 226-013
(6) Measure the free play as follows:

CAUTION: APPLY HYDRAULIC PRESSURE WITH THE JACKING EQUIPMENT UNTIL THE DIAL INDICATOR NEEDLE STOPS. IF YOU APPLY HYDRAULIC PRESSURE AFTER THE DIAL INDICATOR NEEDLE STOPS, YOU WILL CAUSE DAMAGE TO THE EQUIPMENT.

DO NOT APPLY MORE THAN 3000 POUNDS OF LIFT FORCE. YOU WILL CAUSE DAMAGE TO THE AIRPLANE IF YOU APPLY MORE THAN 3000 POUNDS OF LIFT FORCE. THE WEIGHT OF THE STABILIZER IS APPROXIMATELY 2800 POUNDS.

NOTE: One psi of hydraulic pressure equals approximately 0.99 pounds of lift force.

(a) Slowly apply the hydraulic pressure until the dial indicator needle stops.
(b) Write a record of the quantity shown on the dial indicator.
(c) Slowly release the hydraulic pressure.
(d) Make sure the dial indicator needle goes to the zero position.

NOTE: If the needle does not go to the zero position, do the steps again to measure the free play.

S 906-014
(7) If the free play is more than 0.034 inch, do the steps that follow:
(a) Remove the horizontal stabilizer hinge pin (Ref 55-17-51/401).
(b) Inspect the hinge pin components. Refer to the wear limit data (Fig. 601).
(c) Replace all the worn hinge pin components.
(d) Install the horizontal stabilizer hinge pin (Ref 55-17-51/401).

NOTE: Do not do the Put the Airplane Back to its Initial Condition procedure.

F. Procedure - Stabilizer Right Side Pivot Fitting Free Play Check

S 026-013
(1) Remove the jacking equipment from the left side pivot fitting.

S 716-014
(2) Do the Stabilizer Left Side Pivot Fitting Free Play Check procedure at the right side pivot fitting.

G. Put the Airplane Back to its Initial Condition.

S 096-015
(1) Remove the Horizontal Stabilizer Jacking Equipment and the dial indicator.

S 866-016
(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P11 panel:
(a) 11H17, FLT CONT SHUTOFF TAIL LEFT
(b) 11H18, FLT CONT SHUTOFF TAIL CENTER
(c) 11H27, FLT CONT SHUTOFF TAIL RIGHT

S 866-017
(3) Remove the DO-NOT-OPERATE tags and put these switches on the P61 panel in the ON position:
(a) FLIGHT CONT SHUTOFF TAIL LEFT
(b) FLIGHT CONT SHUTOFF TAIL RIGHT
(c) FLIGHT CONT SHUTOFF TAIL CENTER

S 866-018
(4) Pressurize the LEFT, RIGHT and CENTER hydraulic systems (Ref 29-11-00).

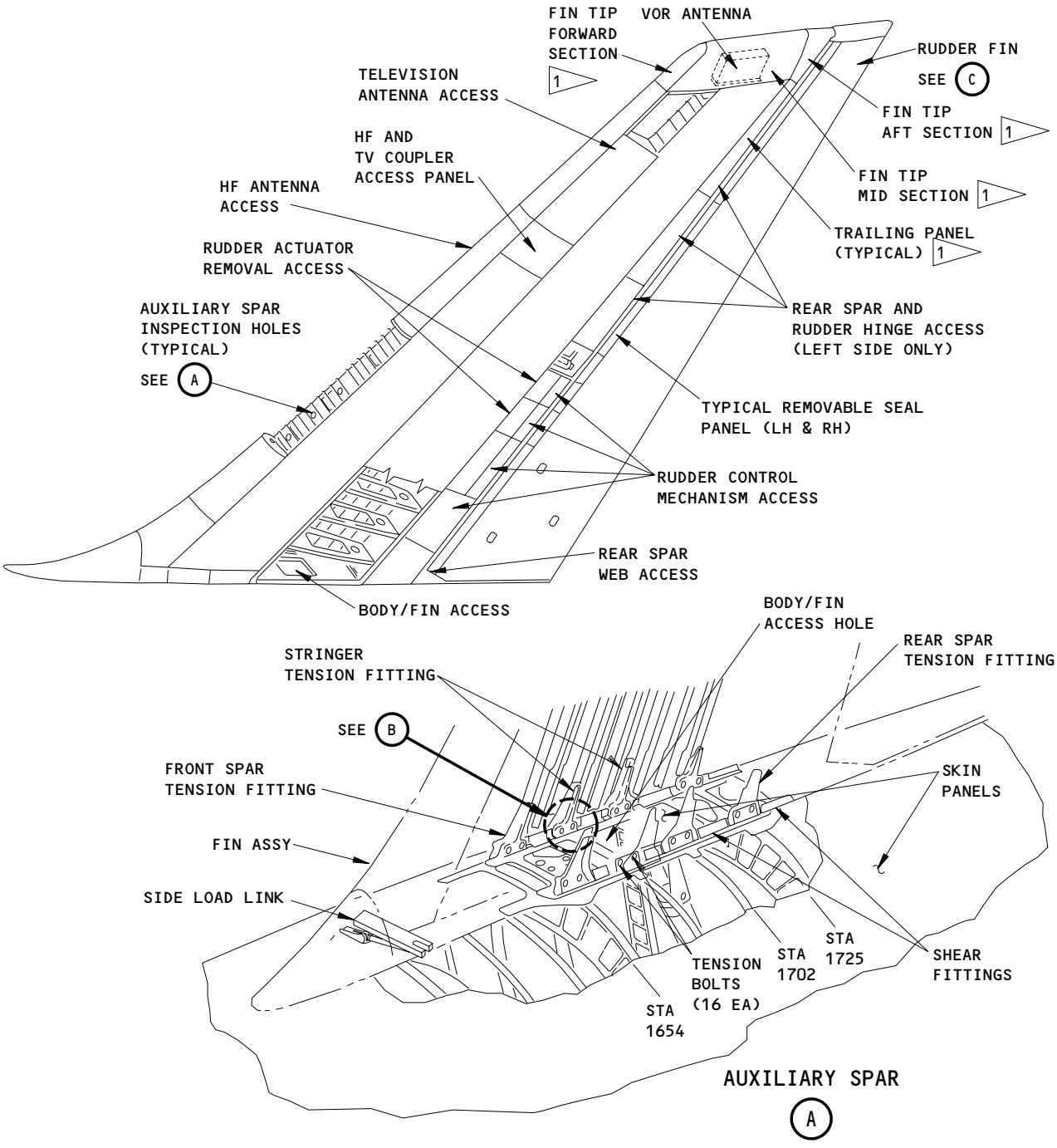
S 096-019
(5) Remove the service platform and close the access door 312AR.

CORROSION PREVENTION IN VERTICAL STABILIZERS

1. General
   A. BMS 3-23 water displacing inhibiting compound has been applied to all internal surfaces of the vertical fin, exterior forward surface of the vertical fin front spar assembly and fixed trailing edge cavity.
   B. The fixed trailing edge has aluminum ribs covered with kevlar/graphite skin panels. Corrosion can occur when the Kevlar gets cracks and lets water come in.
   C. H-11 bolts can get stress-corrosion cracks. When you remove H-11 bolts, replace them with Inconel 718 bolts, which do not get stress-corrosion cracks.

TASK 55-30-01-602-001

2. Corrosion Prevention Treatment
   A. General
      (1) Following cleaning of suspected areas, (Ref AMM 51-21-03/701), a full inspection is effective to ensure that protective finishes provided during manufacture remain intact.
      (2) Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges), refer to Structural Repair Manual for details of corrosion removal.
      (3) For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by the application of a corrosion inhibiting compound into the affected area to decrease the corrosion process. Refer to AMM 51-24-03/701 for details on applying corrosion inhibiting compound. The finish system should be repaired at the first opportunity consistent with the maintenance schedule.
      (4) Periodic inspection is required in areas identified as susceptible to corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.
      (5) Periodic application of BMS 3-23 compound is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.
   B. References
      (1) AMM 51-21-03/701, Corrosion Removal and Control-Cleaning/Painting
      (2) AMM 51-24-09/701, Corrosion Inhibiting Compound-Cleaning/Painting
   C. Consumable Materials
      (1) G00009 Compound, Organic Corrosion Preventive - BMS3-23
   D. Access
      (1) Location Zones
          310/320 Vertical Stabilizer

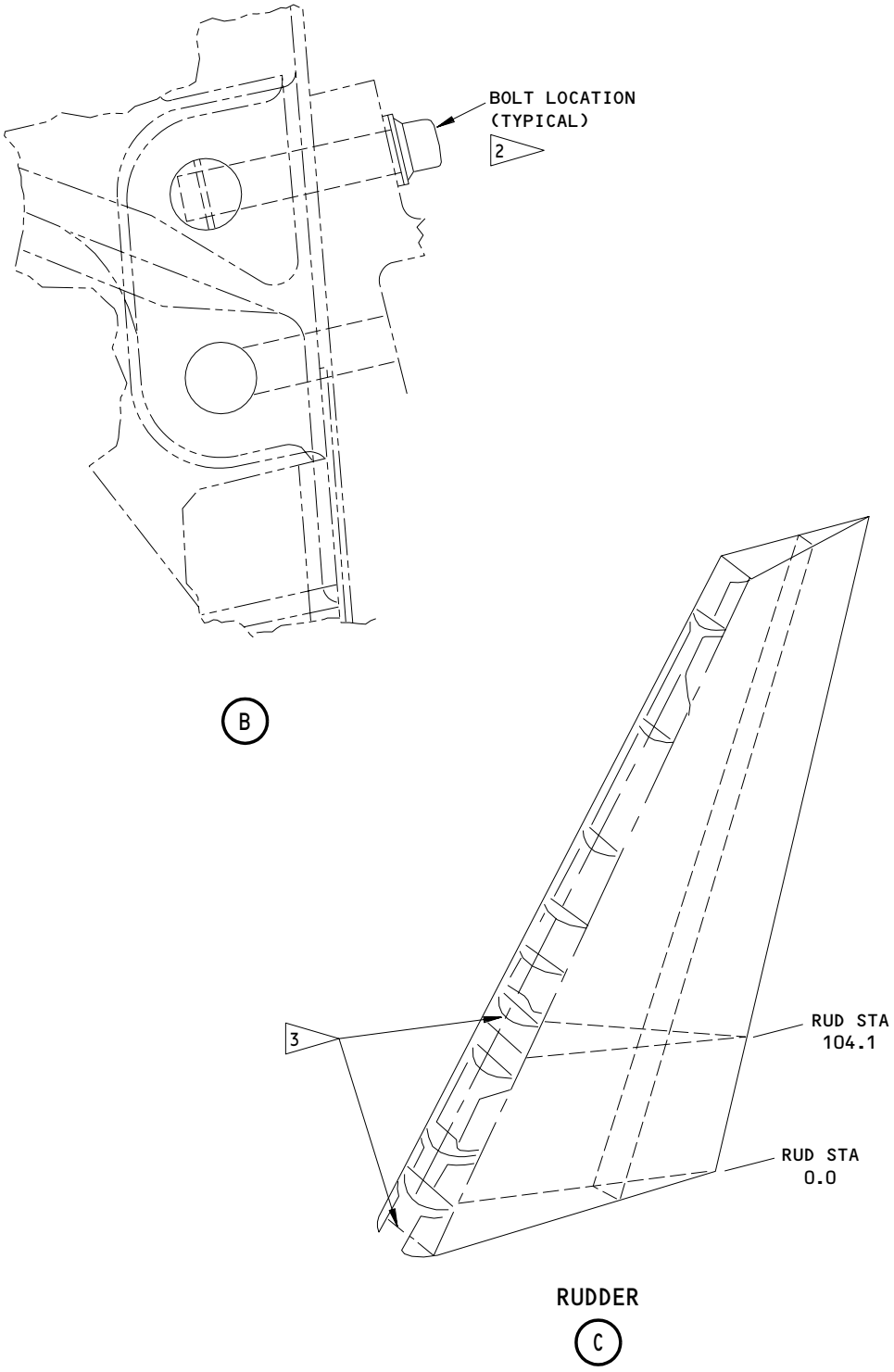


1 FIBERGLASS COVERED HONEYCOMB STRUCTURE COMPONENTS

2 ON AIRPLANE LINE NO.S 155 AND ON, H-11 BOLTS HAVE BEEN REPLACED WITH INCONEL 718 BOLTS ON THIS LOCATION

3 DRAIN HOLES ADDED ON THE RUDDER LEADING EDGE RIB

Corrosion Prevention in Vertical Stabilizer
Figure 201 (Sheet 1)



Corrosion Prevention in Vertical Stabilizer
Figure 201 (Sheet 2)

E. Procedure

S 602-003

(1) At first opportunity consistent with scheduled maintenance activity, do corrosion prevention treatment on the vertical stabilizer.

S 602-004

(2) FOR AIRPLANES WITH SB 51-0008;
For Structural Honeycomb components, apply BMS 5-95, class F sprayable sealant to external surfaces of the trailing edge panels and tip fairing. Follow with BMS 10-60 enamel.

VERTICAL STABILIZER FIN TIP - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the instructions to remove the vertical stabilizer fin tip. The second task is the instructions to install the vertical stabilizer fin tip.

TASK 55-31-01-004-002

2. Remove the Vertical Stabilizer Fin Tip (Fig. 401)
   A. Access
      (1) Location Zone
          326 Vertical Stabilizer Tip

   B. Procedure

S 024-001

WARNING: KEEP PERSONS AWAY FROM THE AREA BELOW THE VERTICAL STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE INJURY TO PERSONS.

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: WHEN YOU REMOVE THE FIN TIP, DO NOT RUB THE VERTICAL STABILIZER STRUCTURE OR THE ANTENNA. DAMAGE TO THE STRUCTURE AND THE ANTENNA CAN OCCUR EASILY.

(1) Remove the fasteners from the bottom edge of the fin tip.

S 024-004

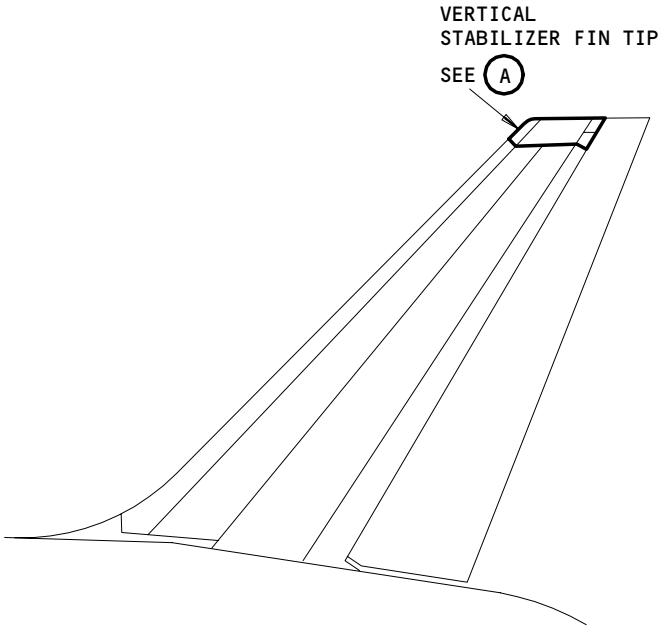
(2) Move the fin tip forward and up.

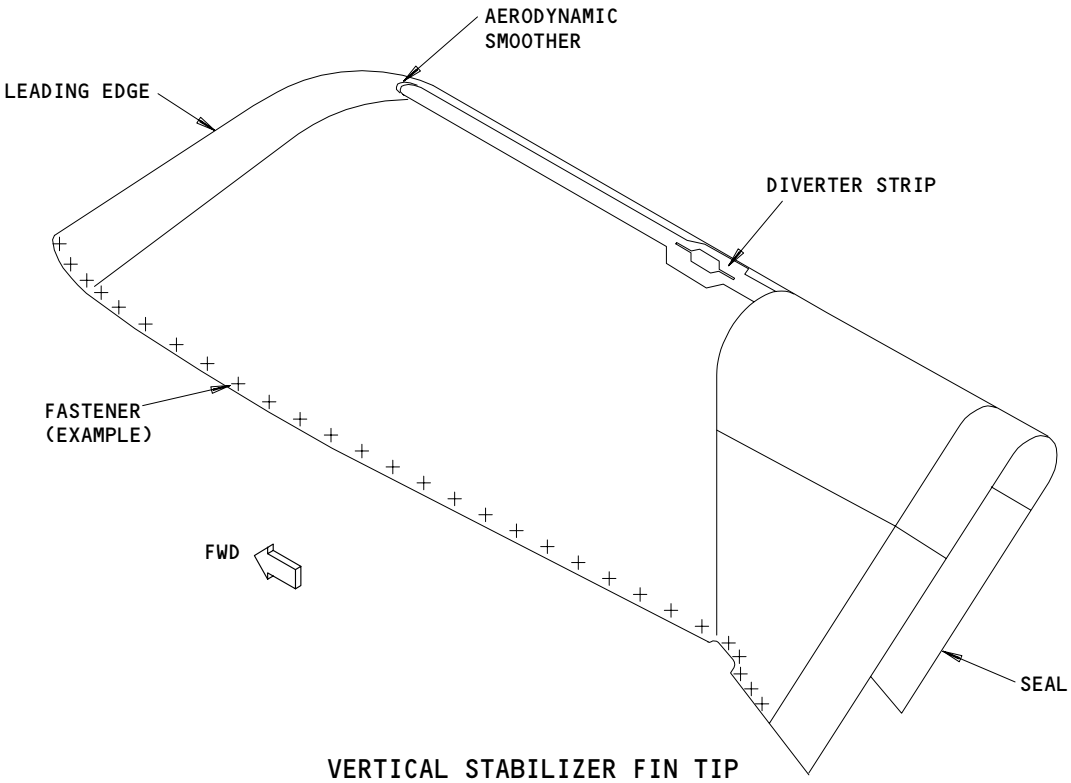
S 494-005

(3) Put a cover on the equipment that is on top of the vertical stabilizer.

TASK 55-31-01-404-006

3. Install the Vertical Stabilizer Fin Tip (Fig. 401)
   A. Consumable Materials
      (1) A00247 Aerodynamic Sealant, BMS 5-95





VERTICAL STABILIZER FIN TIP
A

Vertical Stabilizer Fin Tip
Figure 401

B. References
(1) AMM 51-31-01/201, Seals and Sealing
(2) AMM 55-31-02/401, Lighting Diverter

C. Access
(1) Location Zone
326 Vertical Stabilizer Tip

D. Procedure

S 424-013
(1) If it is necessary, assemble the leading edge of the fin tip and the fairing panel.

S 094-008

WARNING: KEEP PERSONS AWAY FROM THE AREA BELOW THE VERTICAL STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE AN INJURY TO PERSONS.

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.

(2) Remove the cover from the top of the vertical stabilizer.

S 424-009

CAUTION: WHEN YOU INSTALL THE FIN TIP, DO NOT RUB THE VERTICAL STABILIZER STRUCTURE OR THE ANTENNA. DAMAGE TO THE STRUCTURE OR THE ANTENNA CAN EASILY OCCUR.

(3) Put the fin tip in position and install the fasteners.

S 434-011
(4) Install the lightning diverter strip, if it is necessary (AMM 55-31-01/201).

S 394-015

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO APPLY THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

(5) Apply the aerodynamic sealant to the leading edge of the lightning diverter strip (AMM 51-31-01/201).

LIGHTNING DIVERTER - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the instructions to remove the lightning diverter from the vertical stabilizer. The second task is the instructions to install the lightning diverter to the vertical stabilizer.

TASK 55-31-02-004-001

2. Remove the Lightning Diverter (Fig. 401)
   A. Access
      (1) Location Zone
          326 Vertical Stabilizer Tip

   B. Procedure

      S 024-010

      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 REMOVE THE LIGHTNING DIVERTER. DO NOT RUB THE VERTICAL STABILIZER STRUCTURE OR ANTENNA. CORROSION OR AN ANTENNA DEFECT CAN OCCUR IF YOU ARE NOT CAREFUL.

      (1) Remove the screws that hold the splice plate.

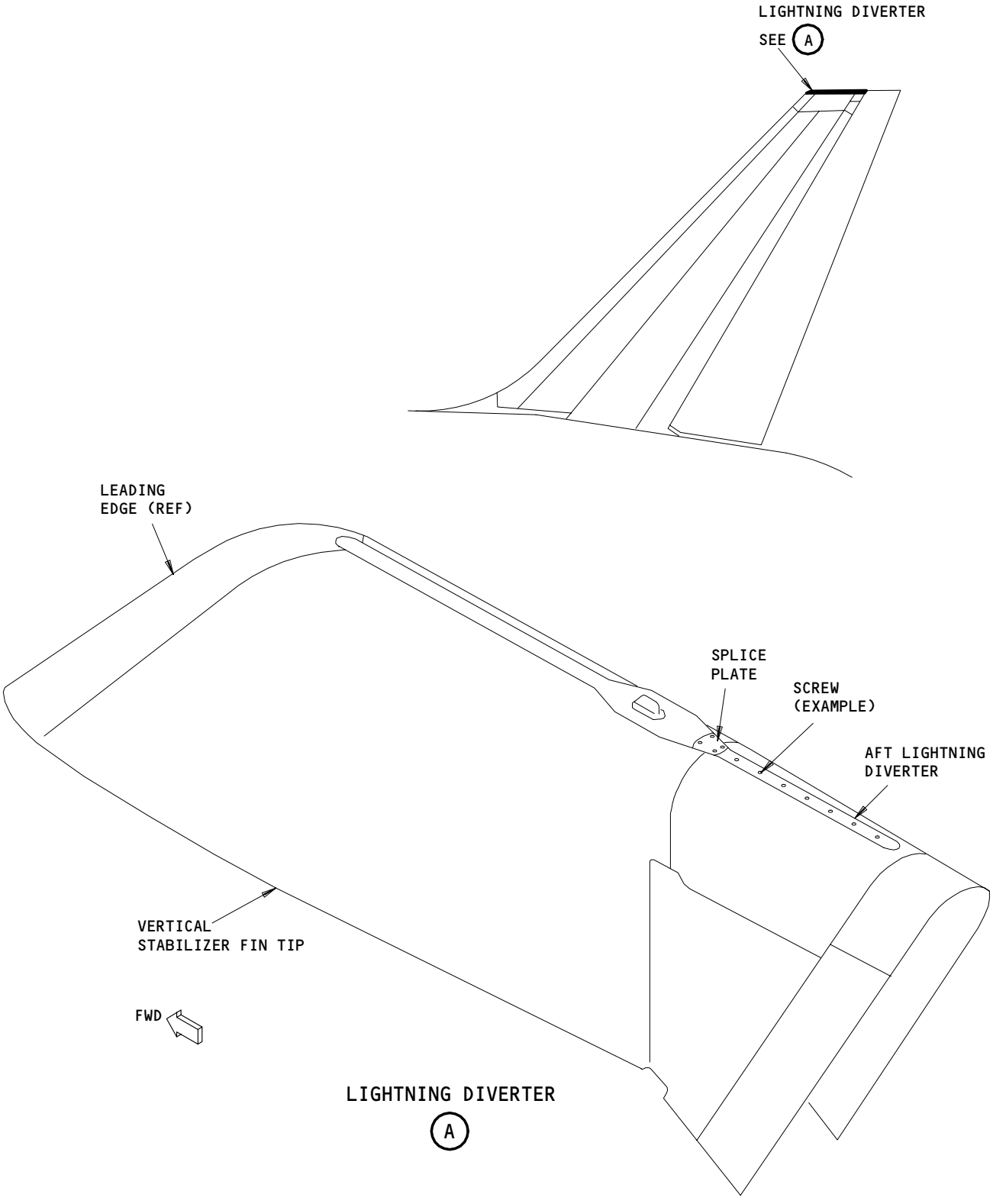
      S 024-003
      (2) Remove the splice plate.

      S 024-004
      (3) Remove the screws that hold the lightning diverter to the fin tip.

      S 024-005
      (4) Remove the lightning diverter.

TASK 55-31-02-404-006

3. Install the Lightning Diverter (Fig. 401)
   A. Access
      (1) Location Zone
          326 Vertical Stabilizer Tip



Lightning Diverter
Figure 401

B. Procedure

S 424-009

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 REMOVE THE LIGHTNING DIVERTER. DO NOT RUB THE VERTICAL STABILIZER STRUCTURE OR ANTENNA. CORROSION OR AN ANTENNA DEFECT CAN OCCUR IF YOU ARE NOT CAREFUL.

(1) Put the lightning diverter in position and install the screws.

S 424-008

(2) Put the splice plate in position and install the screws.

VERTICAL STABILIZER REMOVABLE LEADING EDGE - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task gives instructions to remove the leading edge from the vertical stabilizer. The second task gives instructions to install the leading edge on the vertical stabilizer.
   B. You can remove or install each section of the vertical stabilizer one at a time.

TASK 55-35-01-004-019

2. Remove the Vertical Stabilizer Leading Edge (Fig. 401)
   A. Access
      (1) Location Zone
          321 Vertical Stabilizer - Removable Leading Edge

   B. Equipment
      (1) Access Panel Leverage Adapter, B20004-21
      (2) Attach Fitting Set - Wing Safety Harness, A20002-4
   C. Procedure

      S 424-023

      WARNING: USE A MAN LIFT TO ATTACH THE SAFETY HARNESS FITTINGS TO THE RECEPTACLES. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

      WARNING: DO NOT WALK ON THE HORIZONTAL STABILIZER WITHOUT A SAFETY HARNESS. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

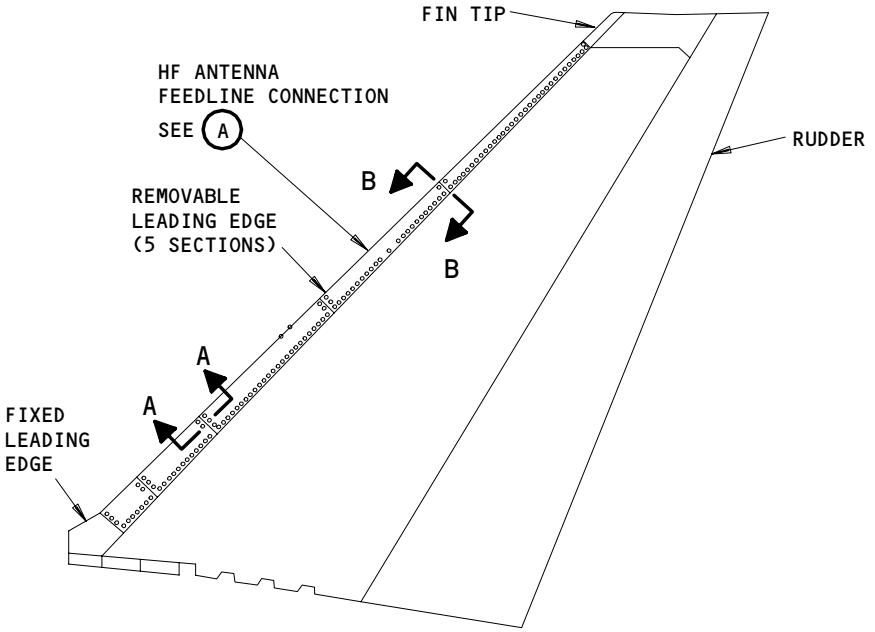
      (1) Attach the Flight Control Safety Lanyard to the horizontal stabilizer (AMM 20-10-27).

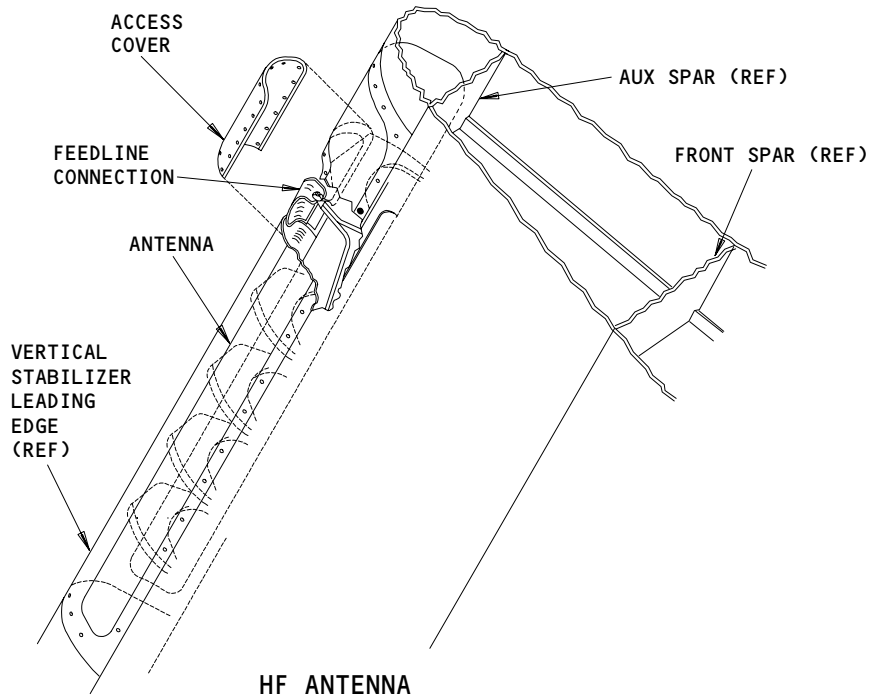
      S 864-025

      WARNING: MAKE SURE THAT THE HF SYSTEM IS OFF. DO NOT OPERATE THE HF SYSTEM. AN ACCIDENTAL HF TRANSMISSION CAN CAUSE ELECTRICAL SHOCK AND INJURY TO PERSONNEL.

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

      (2) Put the HF system (pilots' overhead panel, P5) in the OFF position and attach a DO-NOT-OPERATE tag.





HF ANTENNA
FEEDLINE CONNECTION
A

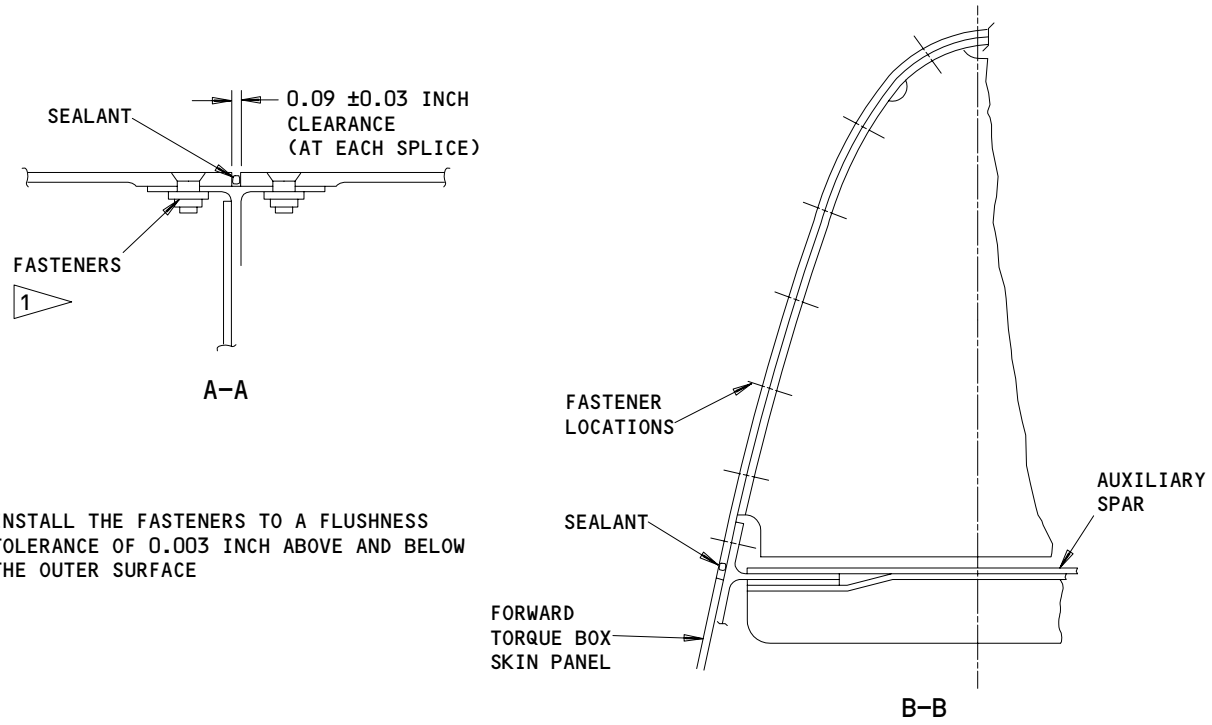
Vertical Stabilizer Leading Edge
Figure 401 (Sheet 1)

S 614-036

(3) When removing bolts from the leading edge panels, the following information can help:

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.

(a) A leverage adapter, B20004-21,



Vertical Stabilizer Leading Edge
Figure 401 (Sheet 2)

(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.

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

S 024-029

WARNING: KEEP PERSONS AWAY FROM THE AREA BELOW THE VERTICAL STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE AN INJURY TO PERSONS.

(4) Remove the HF feedline access cover.

S 034-004

(5) Disconnect the feedline connection.

S 014-040

(6) Remove the fasteners and remove the leading edge sections.

TASK 55-35-01-404-006

3. Install the Vertical Stabilizer Leading Edge (Fig. 401)

A. Consumable Materials

(1) Compound - Anti-seize, BMS 3-28

(2) A00247 Compound Sealing - BMS 5-95, Class B

(3) Coating - Surface Treatment - MIL-C-5541, Type II, Grade C Class 1 for Aluminum or Aluminum Alloys (Alodizing) Alodine 1000 Clear.

B. Equipment

(1) Access Panel Leverage Adapter, B20004-21

(2) Ohmeter - Electrical Bonding (Model T477W)

C. References
(1) 20-11-00/201, Standard Torques
(2) 23-11-00/501, HF Communication System
(3) 23-11-04/601, HF Communication Antenna
(4) 51-31-01/201, Seals and Sealing
(5) 51-21-04/701 Alodizing

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

E. Procedure

S 424-021

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

WARNING: KEEP PERSONS AWAY FROM THE AREA BELOW THE VERTICAL STABILIZER. PARTS COULD ACCIDENTALLY FALL AND CAUSE INJURY TO PERSONS.

(1) Put the leading edge section in position and install fasteners (Fig. 401).

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.

(a) 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.

1) Use an access panel leverage adapter, B20004-21 to install the bolts.
2) 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.

3) Remove any excess paint or debris on fastener recesses.
4) Lubricate the threads of the fasteners with compound, BMS 3-28.

5) 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 434-008

(2) Connect the HF feedline connection.
   (a) Remove any primer or other compound from the contact surface by lightly abrading with abrasive pads and treating with alodine 600 or equivalent before connecting the feedline. (Ref. 23-11-04/601).
   (b) After connecting the feedline connector, apply sealant (BMS5-95 or BMS5-44) to the sides of the connector and the fasteners.
   (c) Use an electrical bonding ohmeter to do a resistance check between the antenna feedline and attach plate.

NOTE: The maximum resistance permitted is 0.0025 ohm.

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

S 414-009

(3) Install the access cover.

S 354-010

CAUTION: REMOVE THE SAME QUANTITY OF UNWANTED SKIN FROM THE ADJACENT LEADING EDGE SECTIONS AT THE SPLICE RIBS. YOU MUST KEEP THE CORRECT EDGE DISTANCE FOR THE FASTENERS TO PREVENT DAMAGE TO THE LEADING EDGE SECTIONS.

(4) If you installed new leading edge sections, do the steps that follow:
   (a) Remove the unwanted skin to get the correct clearance between the leading edge sections and fixed leading edge (Fig. 401).
   (b) Remove the sharp edges from the cut skin.
   (c) Apply a layer of the clear Alodine with a brush (Ref 51-21-04).

S 394-045

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO APPLY THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

(5) Fill the clearance between the leading edge sections with the aerodynamic sealant (Ref 51-31-01).

S 734-024

(6) Do the system test - HF Communication System (Ref 23-11-00/501).

VERTICAL STABILIZER REMOVABLE LEADING EDGE - APPROVED REPAIRS

1. General
   A. This procedure contains two tasks. The first task gives instructions to repair with tape the fiberglass leading edge section which is the HF antenna cover. The second task of this procedure gives instructions to repair the Rain-Erosion Resistant Coating (RERC) on the vertical stabilizer.
   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 Coating (RERC). Do not use antistatic coatings. Refer to the end of this procedure for the repair instructions of the Rain-Erosion Resistant Coatings (RERC).

      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.

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 avialable
      (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) Sealer - 683-3-2 Clear
      (4) Catalyst - X-310A
      (5) B00571, Coating, BAC 5710, Type 41
      (6) 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
(7) 3M Polyurethane Outdoor Tape 8671.
(8) B00541 General Purpose Detergent, P-D-220

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

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

E. Procedure

S 118-018

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.

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. 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 20-30-91/201).

S 118-003
(2) Dry the surface with a clean cheesecloth.

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 20-30-91/201).

S 118-006
(5) Dry the surface with a clean, dry cheesecloth.

S 348-009
(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 348-010
(7) Make a mark, with a felt tip marker, at the edge of the area where you will apply the tape.

S 348-007
(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 in a pint solution of 25% isopropyl alcohol and 75% water.
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 358-008

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

S 398-017

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

TASK 55-35-01-308-019

3. Vertical Stabilizer Removable Leading Edge RERC Repair (Fig. 801, 802)

A. General

(1) These tasks are for the repair of the Rain-Erosion-Resistant Coating (RERC) with Caapcoat, when the damage extends over much of the surface of the RERC, and for different types of damage when only minor repair to the topcoat of the RECR is required.

B. Equipment

(1) Spray Gun Nozzle - Commercially available
(2) High-Speed Disk Sander - Commercially available

C. Consumable Materials

(1) Rain Erosion Coatings

NOTE: BMS 10-103, Type I is the preferred primer in place of Chemglaze 9924.

(a) C00807 Primer - Chemglaze 9924 Wash Primer Base (Part A) and Catalyst (Part B)

(b) C00766 Primer - BMS 10-103, Type I Nonchromated Primer Base (512X310) and Curing Solution (910X533).
(c) Erosion Coating - Caapcoat FP-200 (BAC 707, Gray) Base curing agent and accelerator

(2) E00136 Caapcoat Polyurethane Thinner PUT10, or Mil-T-81772 Type I (for use with Caapcoat paint).

(3) Solvents
(a) B00378 Methyl Ethyl Ketone (MEK) TT-M-261
(b) B00589 Toluene (Toluol), TT-T-548
(c) B00154 JAN-T-171 Grade A
(d) B00344 Xylene, TT-X-916

(4) Abrasive Pads
(a) G02167 Scotchbrite Finishing Type A, very fine
(b) Aluminum Abrasive Nylon Pad Type F

(5) Masking Tape, Solvent Resistant
(a) No. 226 YR-239
(b) G01925 3M 850

(6) G00843 Wipers - Lint Free Cotton (BMS 15-5 Class A)

D. Access

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

E. Procedure

S 348-021

(1) If the damage extends over much of the surface of the RERC repair as follows:

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.

WARNING: DO NOT GET THESE FINISHES AND SOLVENTS IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES. PUT ON PROTECTIVE SPLASH GOGGLES AND GLOVES WHEN YOU USE THESE SOLVENTS. KEEP THESE SOLVENTS AWAY FROM SPARKS, FLAMES AND HEAT. THESE SOLVENTS ARE POISONOUS AND FLAMMABLE WHICH CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT. OBEY ALL SAFETY AND FIRE PRECAUTIONS. IF THE MATERIALS TOUCH THE EYES, FLUSH WITH WATER FOR 15 MINUTES AND GET MEDICAL ATTENTION. IF MATERIALS TOUCH THE SKIN, WASH WITH WATER AND WIPE UP ALL SPILLS IMMEDIATELY.

(a) Apply masking tape to areas that surround the RERC coating that will not be touched by solvents, cleaners or equivalent agents.

CAUTION: DO NOT LET SOLVENTS REMAIN ON THE SURFACE FOR MORE THAN 12-24 HOURS. IF YOU LEAVE SOLVENTS ON THE SURFACE FOR MORE THAN 24 HOURS, THE SURFACE CAN SWELL.

(b) Clean off the coating with abrasive pads and water.
(c) Wipe the area with solvent, Series 87 (AMM 20-30-87/201) and use the wiper until it collects no signs of coating residue.
(d) Place a wiper moistened with solvent over the area to be repaired.
(e) Place a plastic cover over the moistened wiper.

NOTE: The plastic cover will capture the solvent and will help keep the solvent in the part and will not let the solvent evaporate.

(f) Keep the plastic cover on the leading edge from 12-24 hours.
(g) Remove any paint or primer and old conductive coating and use 240 grit or finer abrasive cloth or paper.
(h) Wipe off sanding residue with a clean cloth moistened with solvent.

F. Application of Coating

S 378-012

(1) Refer to Figure 802 when you mix, thin, apply, and cure the materials.

NOTE: Unmixed primer and coating can be used up to 24 months from the date of manufacture, if they were stored in accordance with standard industry practices. They can also be used if tests at 12 and 18 months from the date of manufacture show that they agree with specifications. Discard materials more than 2 years old.

Caapcoat comes as a kit, including primer, corrosion coating and thinner.

BMS 10-79 primer comes as a two-component kit. Before you mix the components together, shake each component sufficiently to mix all solids. Then add and stir continuously (Ratio 1 part base to 1 part catalyst by volume. Use thinner as applicable). Let the mixture stand a minimum of 30 minutes before application.

S 378-013

(2) Apply primers and coatings by spray only.

NOTE: BMS 10-103, Type I is the preferred primer in place of Chemglaze 9924.

NOTE: On the primer coat if the film is rough, lightly sand with 180 grit or finer aluminum oxide abrasive paper or pad before you apply the overcoat. Remove sanding residues with wipers lightly dampened with solvents.

S 378-015

(3) Apply materials to get the dry film thickness per Fig. 802.

NOTE: Make sure that between application of coats, you allow enough time to flush off the solvents because of the thickness requirements of the Caapcoat erosion coating. If you follow these instructions, you will prevent appearance of bubbles and get a better finish.

G. Minor Repair to Topcoats of the RERC

S 348-020

(1) The two sets of instructions that follow should be used if there is minor damage to the RERC, and/or the fiberglass of the leading edge, and/or the primer.

S 348-014

(2) If the RERC is damaged and the fiberglass of the LE is not damaged and the primer is intact repair as follows:

CAUTION: AVOID EXPOSURE OF PRIMER OR FIBERGLASS SUBSTRATE. IF FIBER-GLASS SUBSTRATE IS EXPOSED, APPLY PRIMER. DO NOT APPLY PRIMER OVER EXISTING POLYURETHANE.

(a) Trim or sand to remove all loosened coatings.
(b) Make the area smooth and feather the edges by sanding.

NOTE: Use 280 grit or finer abrasive. A high-speed disk sander is recommended.

(c) Vacuum thoroughly to remove sanding dust.
(d) Just before you begin to apply the coating, wipe the sanded area with thinner.
1) Repeat the solvent wipe and use a clean wiper until there is no visible pick-up of particles or discoloration.
2) Wipe dry with a clean wiper.
(e) Brush apply the appropriate polyurethane coatings to the required thicknesses.

NOTE: Prevent any overlap of this coating onto the unsanded area of the existing coating.

(f) Make sure that the final finish is smooth, continuous and has no particles in it.
(g) Make sure that the dry film thickness is within the limits of Fig. 802 and the coatings conform to the contour of the part.

S 348-016

(3) If the RERC, primer and fiberglass of the Leading Edge is exposed repair as follows:
(a) If a small damaged area exists that has primer or epoxy fiberglass substrate exposed, trim to remove significant amounts of loosened coatings.
(b) Use sandpaper to remove the remaining, loosened coating.
(c) Make the edges of the good coating smooth.

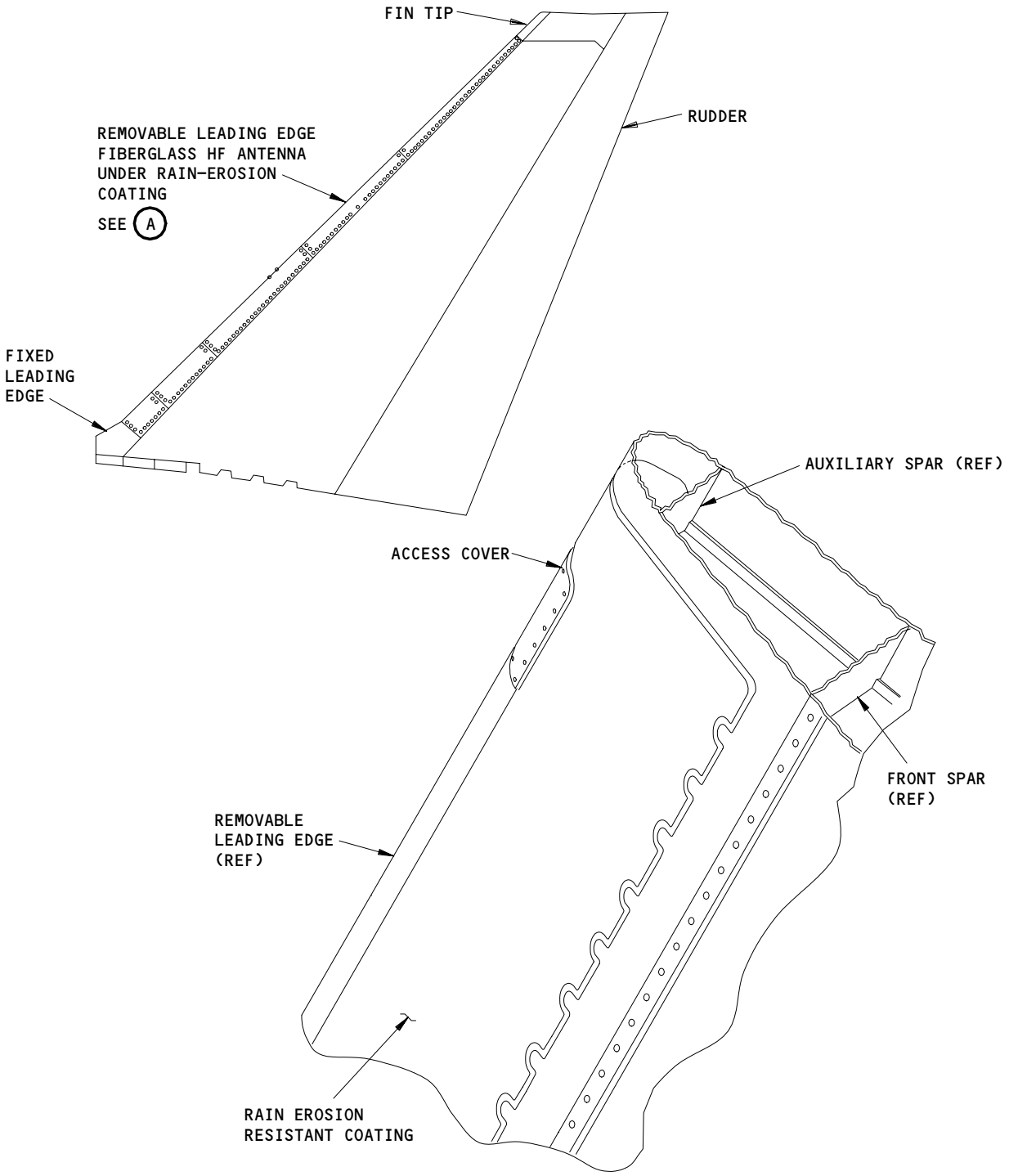
NOTE: Do not expose glass fabric during sanding operation.

(d) Rub the repaired area with a bristle brush and MEK for a minimum of 1 minute.
(e) With a dry, clean cloth blot-dry, then dry brush and vaccuum to remove loose particles.

(f) Apply BMS10-79 primer and Caapcoat kit with a brush to the required thicknesses.

NOTE: Do not apply primer over existing polyurethane coating.

(g) Make sure that the final finish is smooth, continuous and has no particles in it.
(h) Make sure that the dry film thickness is within the limits of Fig. 802 and the coatings conform to the contour of the part.



REMOVABLE LEADING EDGE FIBERGLASS HF ANTENNA
UNDER RAIN-EROSION COATING

A

Fiberglass Panel on Vertical Stabilizer
Figure 801

MATERIAL	MIX RATIO PARTS BY VOLUME	VISCOSITY SEC.	RELATIVE HUMIDITY PERCENT	DRY FILM THICKNESS, MIL-INCHES		CURE TIMES, HOURS		
				PER COAT	TOTAL	TO RECOAT	TO OVERCOAT	FINAL
TYPE I, CLASS 5 FP-200, VEHICLE CURING AGENT ACCELERATOR	64 3 4	ZAHN NO. 2 22 TO 28 AT 70° TO 80°F (RECOMMENDED)	MINIMUM 30	MAXIMUM 1ST TO 1.5 2ND AND ON 2.0	10 ±2	MINIMUM 1/3, MAXIMUM 2 HOURS	2 TO 8	TO HANDLE -36 1 TO SERVICE -48
BMS 10-103, TYPE I BASE CURING SOLUTION	1 1	ZAHN NO. 1 30 TO 40 AT 70° TO 80°, 15 MIN AFTER MIXING			0.3 TO 0.8, ONE COAT ONLY		MINIMUM 30 MIN AT MINIMUM 65°F MAXIMUM 2	3

1 CURE TIME MAY BE ACCELERATED BY 24 HOURS AT ROOM TEMPERATURE FOLLOWED BY OVEN CURING AT 150°F FOR 3 HOURS.

2 48 HOURS OF AIR DRYING
4 HOURS OF FORCE DRYING AT 120°F
2 HOURS OF FORCE DRYING AT 140°F
1 HOUR OF FORCE DRYING AT 160°F

3 AIR DRY AT A MINIMUM OF 65°F (OR 18°C) FOR A MINIMUM OF 5 HOURS. AS AN OPTION TO AIR DRYING, UTILIZE ONE OF THE FOLLOWING FORCE DRYING OPTIONS:

- AIR DRY AT A MINIMUM OF 65°F (OR 18°C) FOR A MINIMUM OF 15 MINUTES, THEN FORCE DRY AT 120°F (OR 49°C) FOR A MINIMUM OF 2 HOURS
- AIR DRY AT A MINIMUM OF 65°F (OR 18°C) FOR A MINIMUM OF 15 MINUTES, THEN FORCE DRY AT 140°F (OR 60°C) FOR A MINIMUM OF 60 MINUTES
- AIR DRY AT A MINIMUM OF 65°F (OR 18°C) FOR A MINIMUM OF 15 MINUTES, THEN FORCE DRY AT 160°F (OR 71°C) FOR A MINIMUM OF 30 MINUTES.

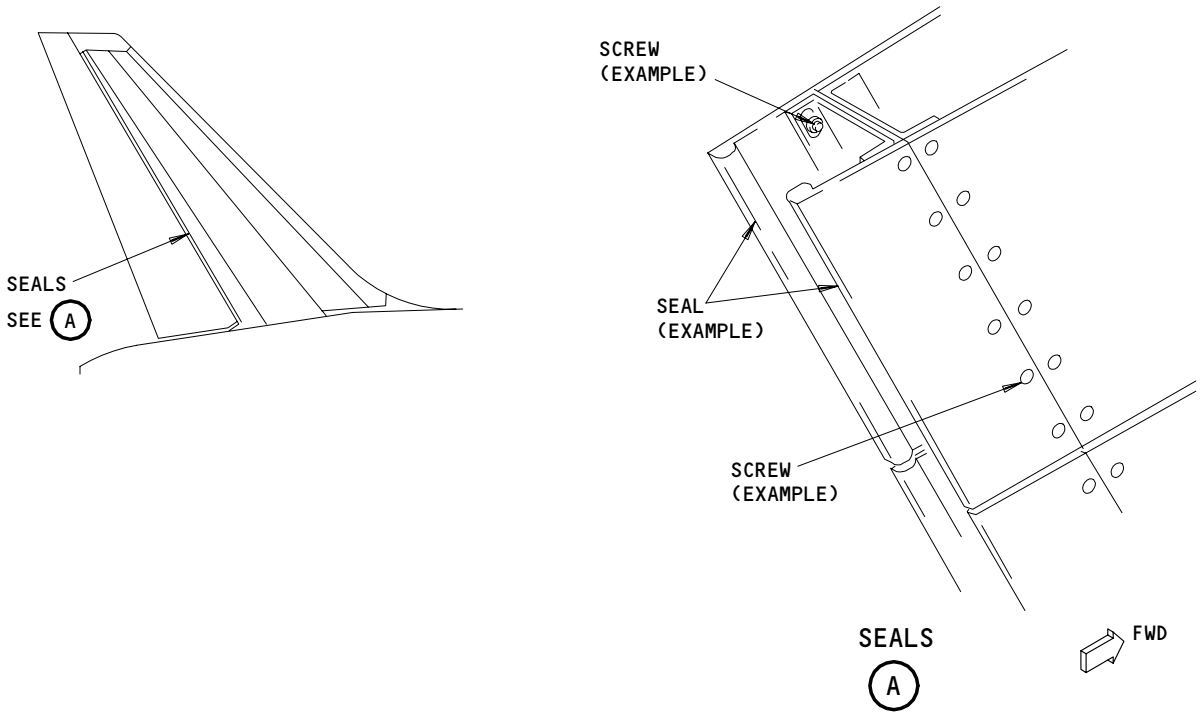
Material Chart
Figure 802

VERTICAL STABILIZER FIXED TRAILING EDGE SEALS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks:
      (1) The first task is the instructions to remove the seals from the fixed trailing edge of the vertical stabilizer.
      (2) The second task gives the instructions to install the seals to the fixed trailing edge of the vertical stabilizer.
   B. The removal and installation of the left and right side seals are almost the same.

TASK 55-36-02-004-002

2. Remove the Seal (Fig. 401)
   A. Equipment
      (1) Attach Fitting Set - Wing Safety Harness, A20002-4
   B. References
      (1) 29-11-00/201, Pressurize/Depressurize Main Hydraulic System



Vertical Stabilizer Fixed Trailing Edge Seals
Figure 401

C. Access
(1) Location Zone
324 Vertical Stabilizer, Rear Spar to Trailing Edge

D. Procedure

S 424-016

WARNING: USE A MANLIFT TO ATTACH THE SAFETY HARNESS FITTINGS TO THE RECEPTACLES. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

WARNING: DO NOT WALK ON THE HORIZONTAL STABILIZER WITHOUT A SAFETY HARNESS. MAINTENANCE PERSONS CAN FALL WHICH MAY CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Attach the Flight Control Safety Lanyard to the horizontal stabilizer (AMM 20-10-27).

S 864-003
(2) Put these switches on the P61 panel in the OFF position and attach DO-NOT-OPERATE tags:
(a) FLT CONT SHUTOFF TAIL LEFT
(b) FLT CONT SHUTOFF TAIL RIGHT
(c) FLT CONT SHUTOFF TAIL CENTER

S 864-004
(3) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
(a) 11H17, FLT CONT SHUTOFF TAIL L
(b) 11H18, FLT CONT SHUTOFF TAIL C
(c) 11H27, FLT CONT SHUTOFF TAIL R

S 044-005
(4) Remove the pressure from the LEFT, RIGHT, and CENTER hydraulic systems (Ref 29-11-00).

S 024-006
(5) Remove the screws that hold the damaged part of the seal.

S 024-007
(6) Remove the damaged seal.

TASK 55-36-02-404-008

3. Install the Seal (Fig. 401)
A. Consumable Materials
(1) A00009 Sealant - RTV 154
B. References
(1) 29-11-00/201, Pressurize/Depressurize Main Hydraulic System

C. Access

(1) Location Zone

324 Vertical Stabilizer, Rear Spar to Trailing Edge

D. Procedure

S 164-009

(1) Remove the sealant from the clearance between the seal and the skin panel.

S 424-010

(2) Cut a new seal to the correct length.

S 424-011

(3) Install the screws that hold the seal.

S 394-012

(4) Fill the clearance between the seal and the skin panel with the sealant.

S 864-013

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

(a) 11H17, FLT CONT SHUTOFF TAIL L
(b) 11H18, FLT CONT SHUTOFF TAIL C
(c) 11H27, FLT CONT SHUTOFF TAIL R

S 864-014

(6) Remove the DO-NOT-OPERATE tags and put these switches on the P61 panel in the ON position:

(a) FLT CONT SHUTOFF TAIL LEFT
(b) FLT CONT SHUTOFF TAIL RIGHT
(c) FLT CONT SHUTOFF TAIL CENTER

S 864-001

(7) Pressurize the LEFT, RIGHT, and CENTER hydraulic systems, if it is necessary (Ref 29-11-00).