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TAB-737			06-00-37	*11	Oct 01/02			
				*12	Oct 01/02	27-00-37	*1	Oct 01/02
LEP	*1	Apr 01/03					*2	Oct 01/02
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78-30-37	*1	Oct 01/02						
	*2	Oct 01/02						

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CHAPTER

06

DIMENSIONS AND AREAS

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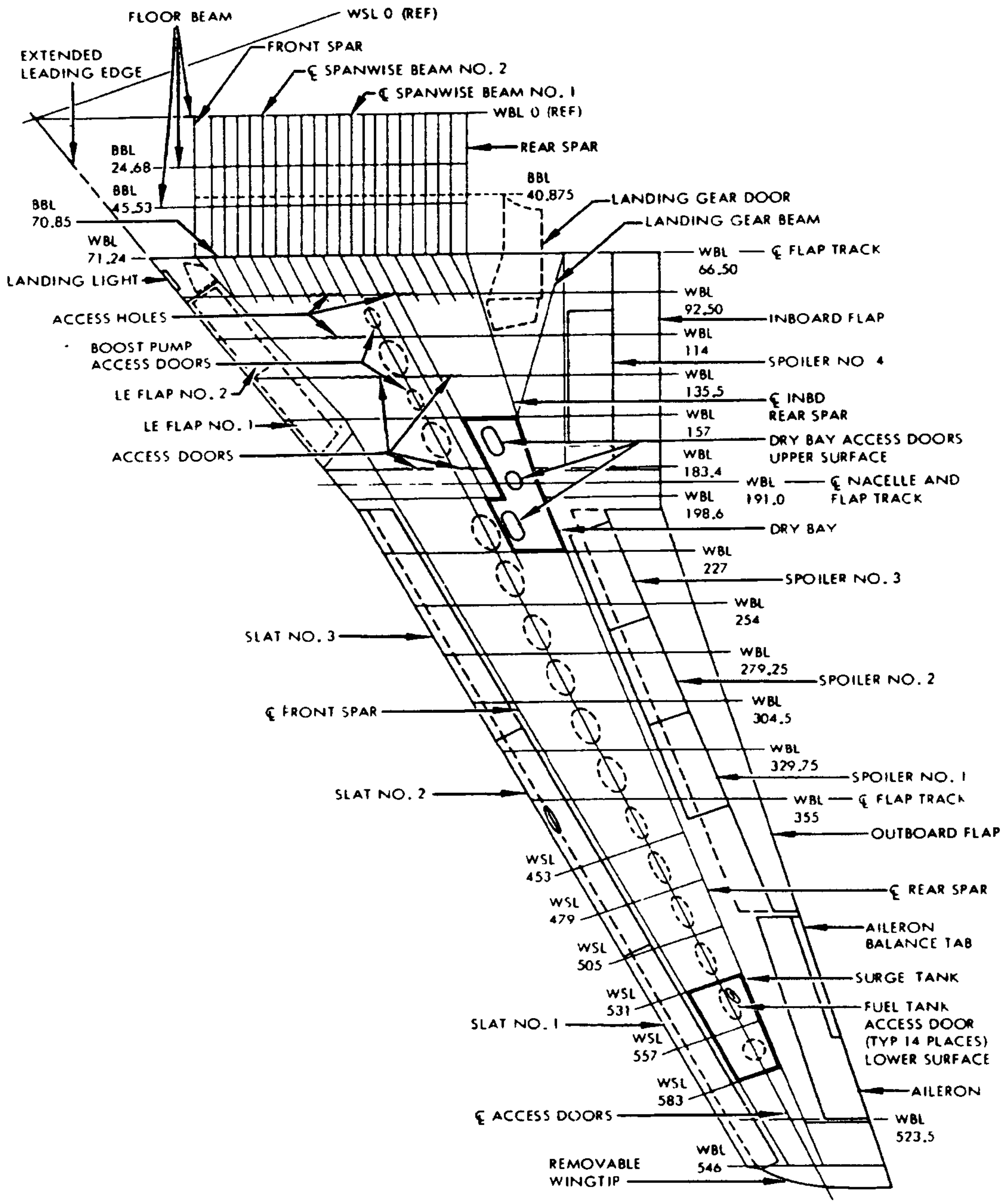
REFERENCE DATA

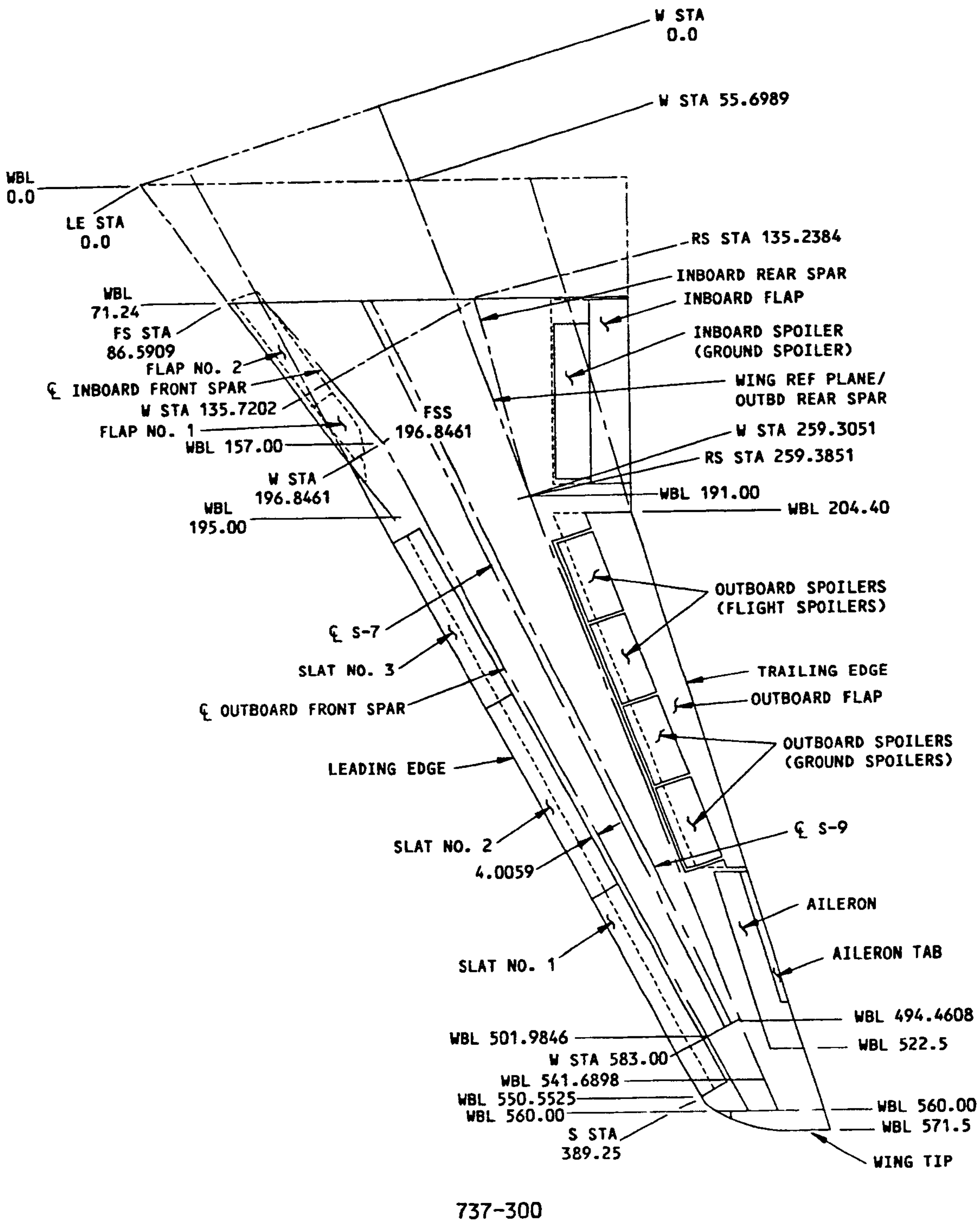
AWG	American Wire Gage
BBL	Body Buttock Line
BRP	Body Reference Plane
BS or B STA	Body Station
CMM	Component Maintenance Manual
CRES	Corrosion Resistant Steel
CRT	Cathode Ray Tube
DIA	Diameter
DME	Distance Measuring Equipment
EDM	Electric Discharge Machine
ELEV STA	Elevator Station
ENG STA	Engine Station
FIN STA	Fin Station
FIN WL	Fin Water Line
FSS or FSS STA	Front Spar Station
H & D	Herter and Driffield
ID	Inside Diameter
kHz	Kilohertz
KV	Kilovolt
LE	Leading Edge
LE STA	Leading Edge Station
LH	Left Hand
MA	Milliamperes
MAS	Milliamp Seconds
MHz	Megahertz
MLG	Main Landing Gear ~
MM	Maintenance Manual
MPD	Maintenance Planning Data (or Document)
MRB	Maintenance Review Board
NAC BL	Nacelle Buttock Line
NAC STA	Nacelle Station
NAC WL	Nacelle Water Line
NDI	Nondestructive Inspection
NDT	Nondestructive Test
NLG	Nose Landing Gear
NOM	Nominal
OD	Outside Diameter
OHM	Overhaul Manual
R or RAD	Radius
RH	Right-hand
RSS or RS STA	Rear Spar Station
RUD STA	Rudder Station
SB	Service Bulletin
SFD	Source-to-Film Distance
SL	Service Letter
SLAT STA	Slat Station
SRM	Structural Repair Manual
STA	Station
STAB STA	Stabilizer Station
TR STA	Thrust Reverser Station
WBL	Wing Buttock Line
WL	Water Line
WS or W STA	Wing Station
	Centerline
	Generator Position

Abbreviations and Symbols
Figure 1

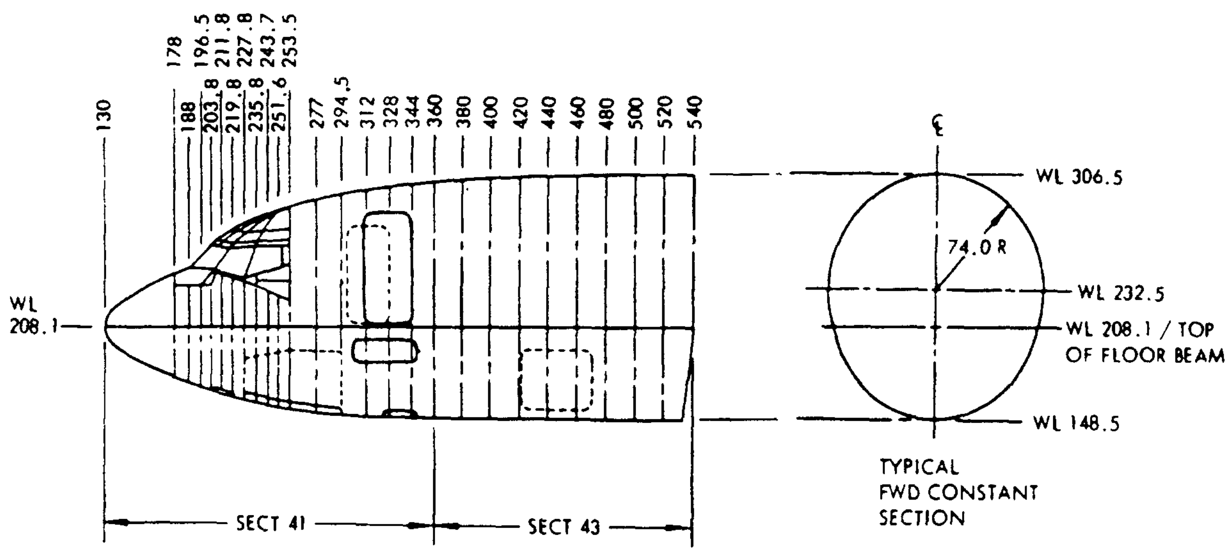


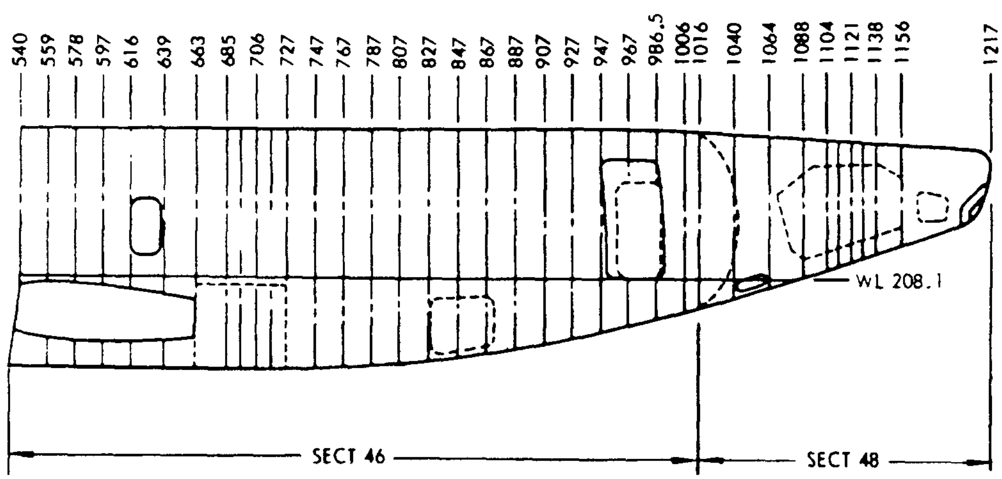
737-100, -200

Wing Station Diagram
Figure 2 (Sheet 1)



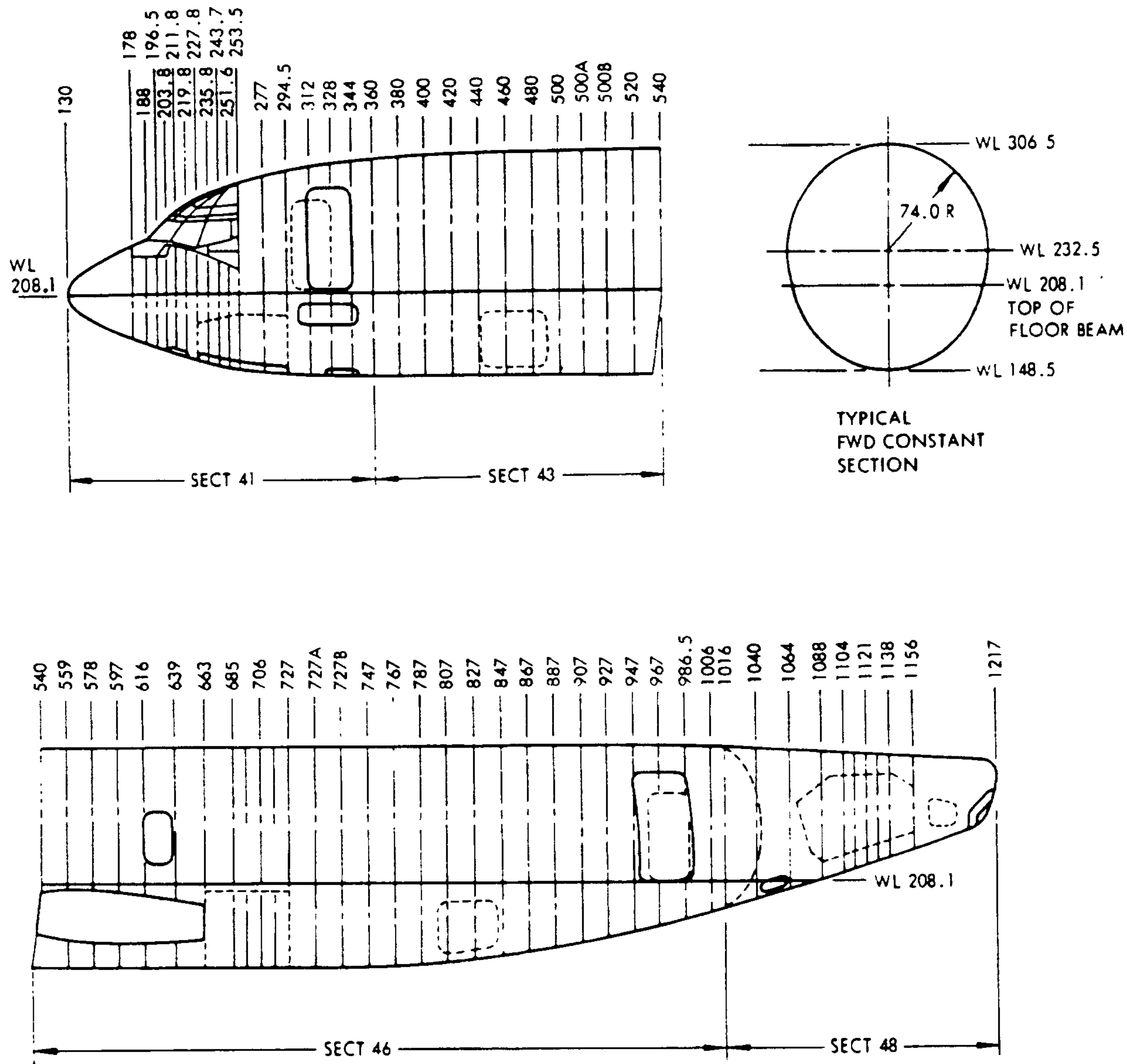
Wing Station Diagram
Figure 2 (Sheet 2)





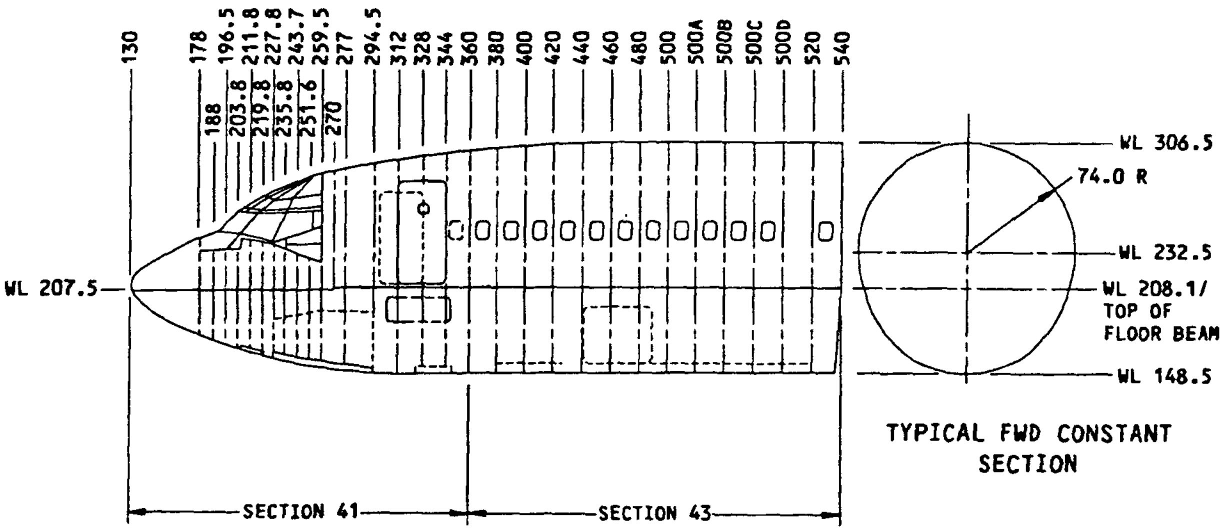
737-100

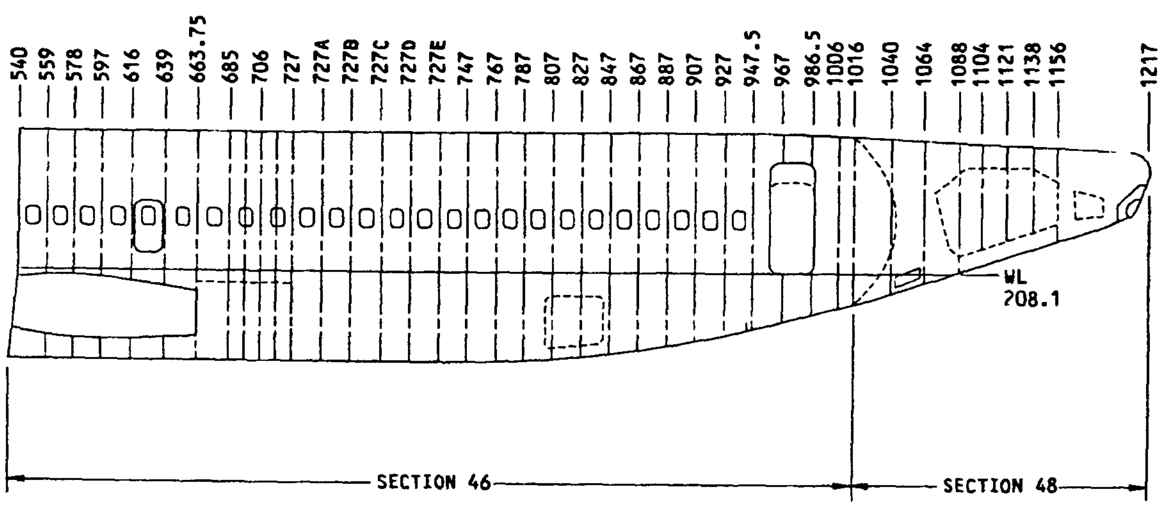
Fuselage Station Diagram
Figure 3 (Sheet 1)



737-200

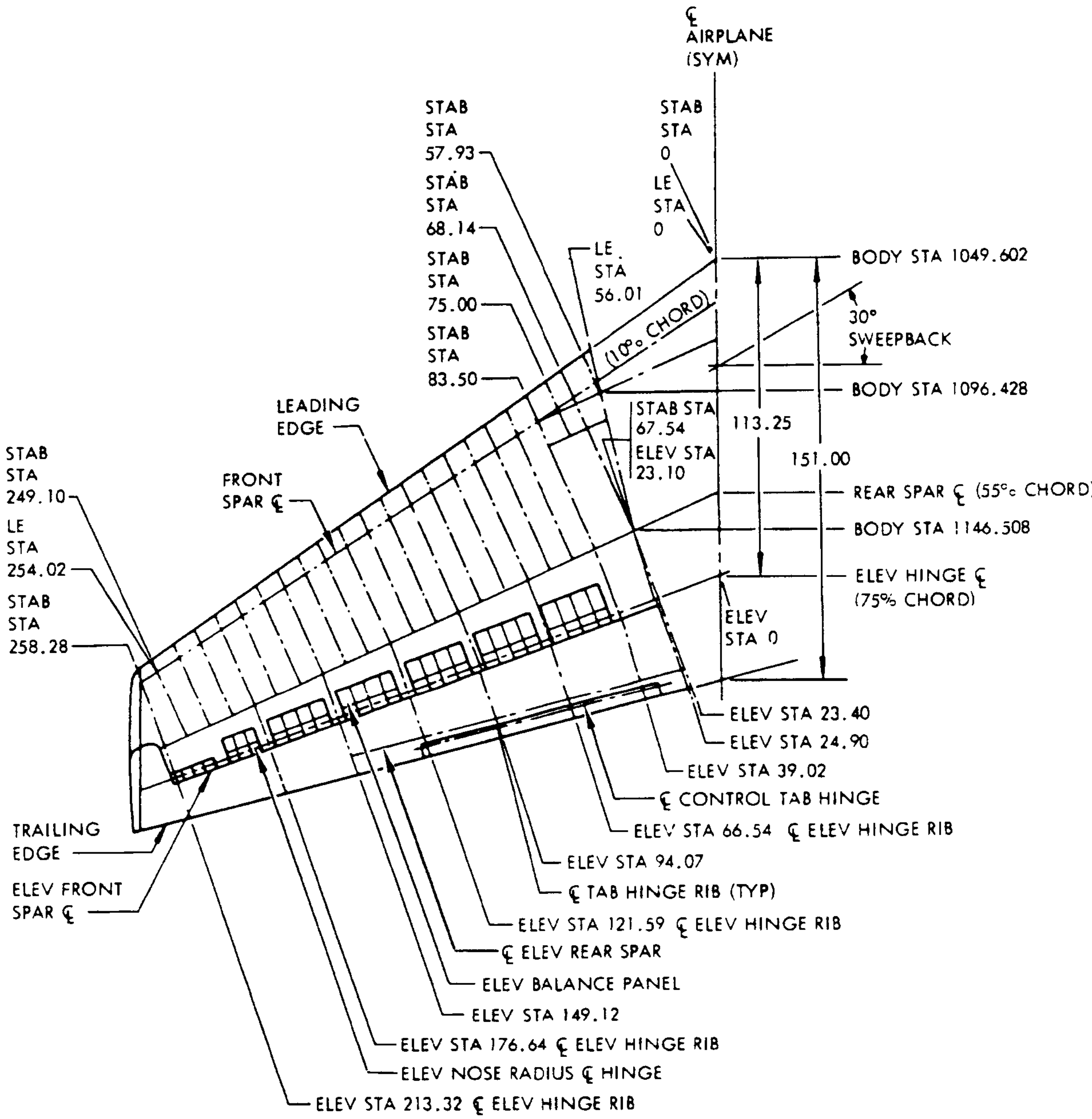
Fuselage Station Diagram
Figure 3 (Sheet 2)





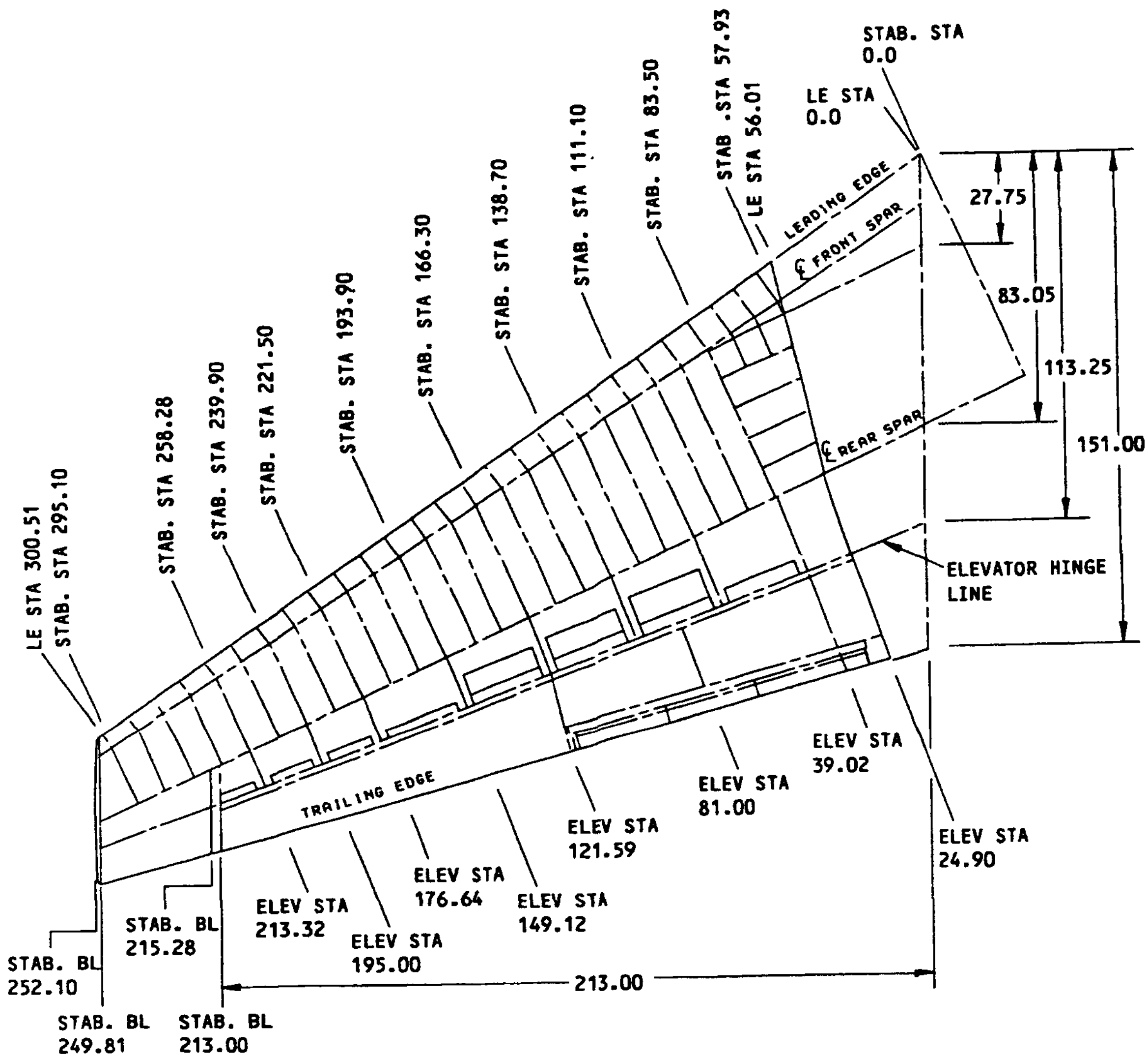
737-300

Fuselage Station Diagram
Figure 3 (Sheet 3)



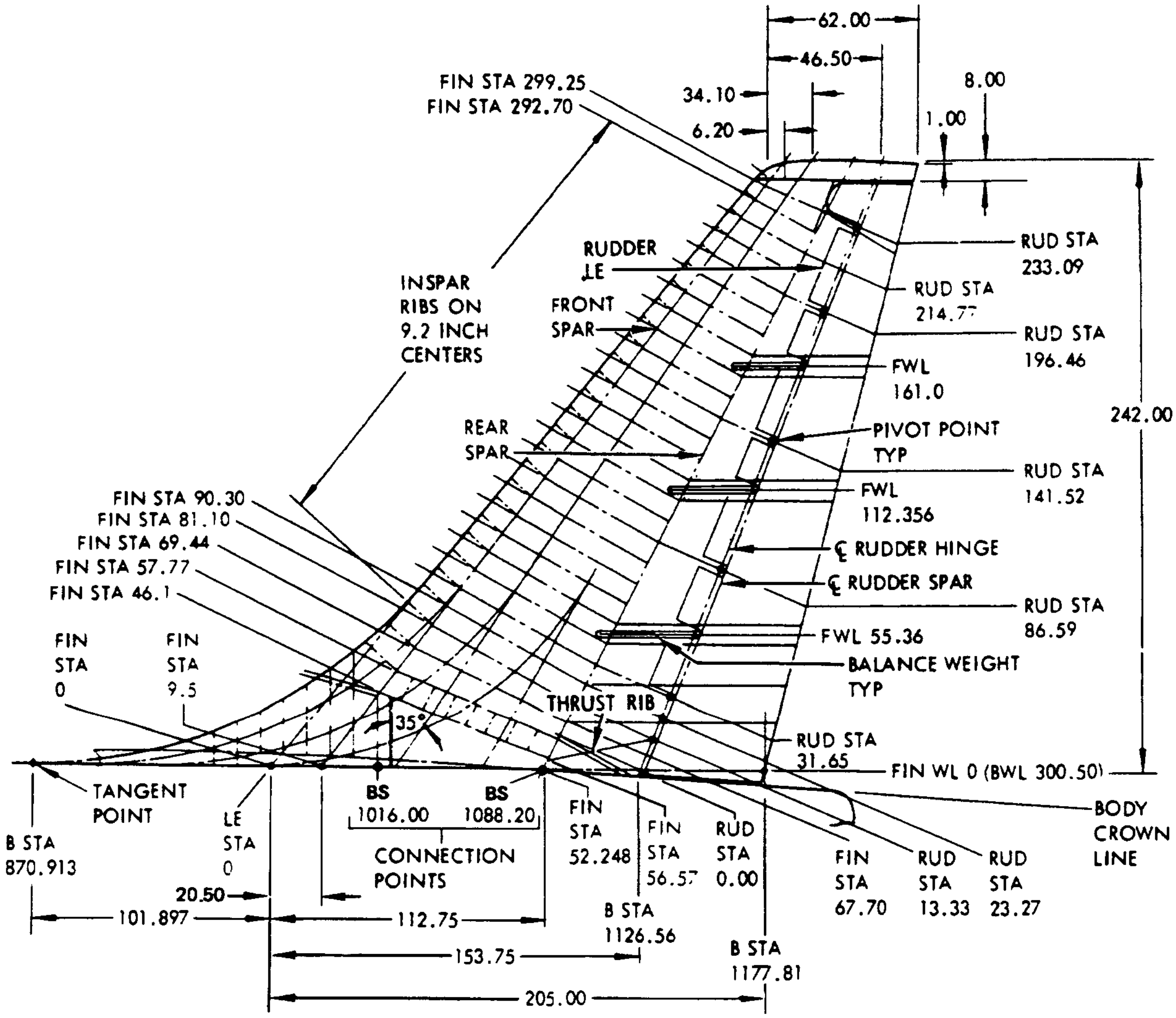
737–100, –200

Horizontal Stabilizer and Elevator Station Diagram
Figure 4 (Sheet 1)



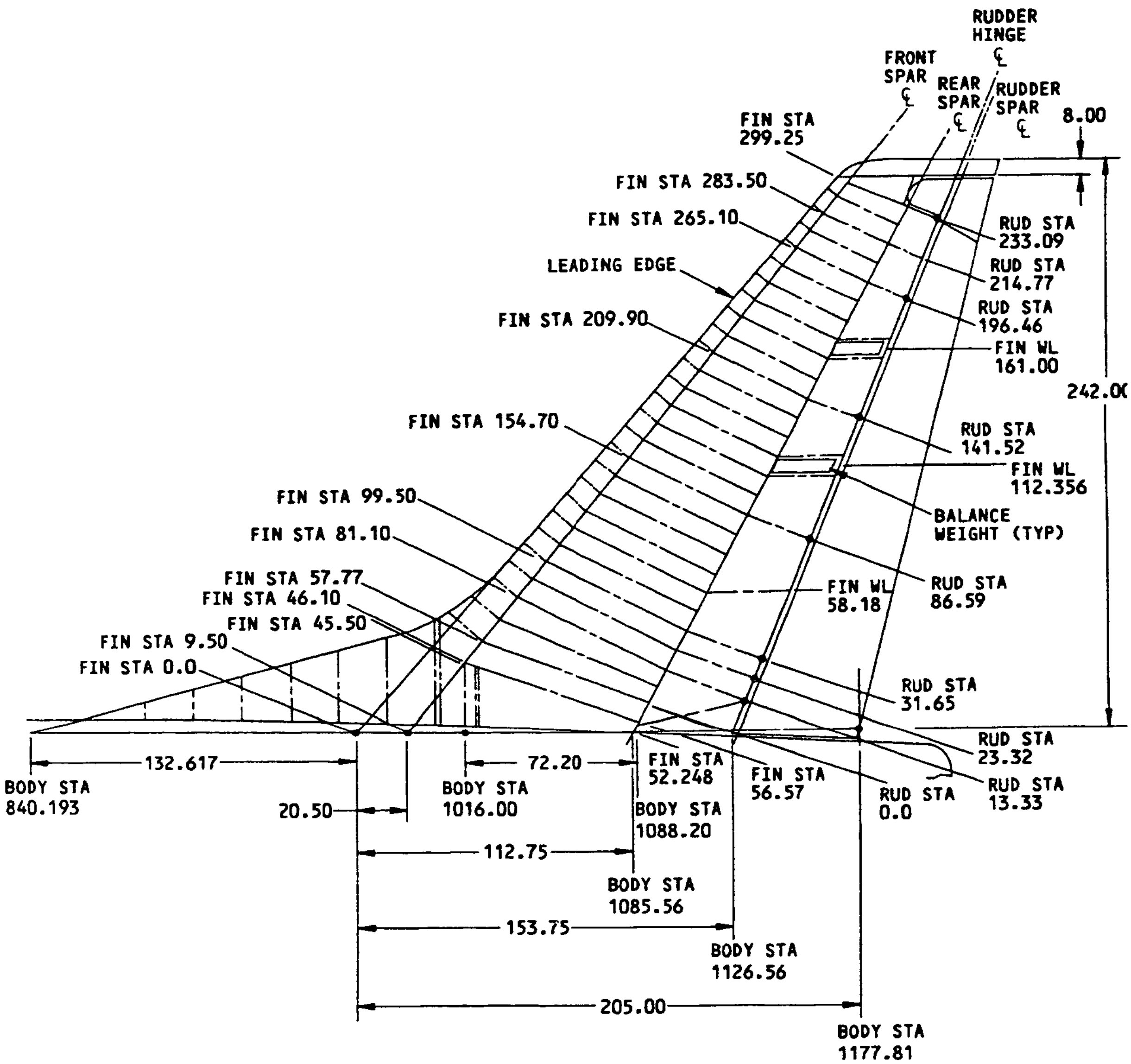
737-300

Horizontal Stabilizer and Elevator Station Diagram
Figure 4 (Sheet 2)



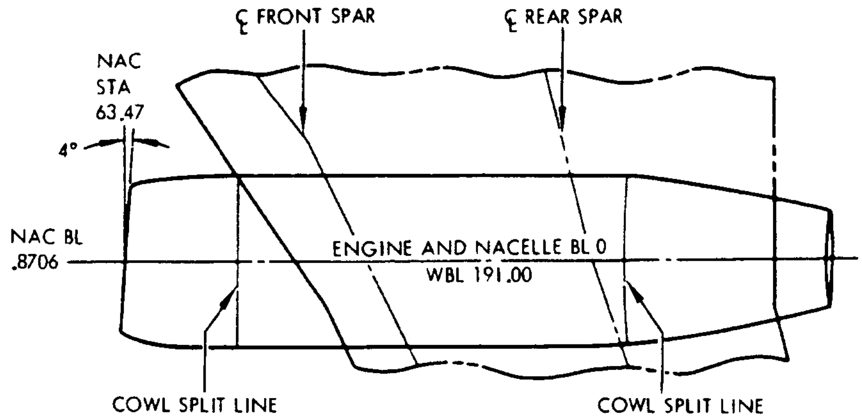
737–100, – 200

Vertical Fin and Rudder Station Diagram
Figure 5 (Sheet 1)

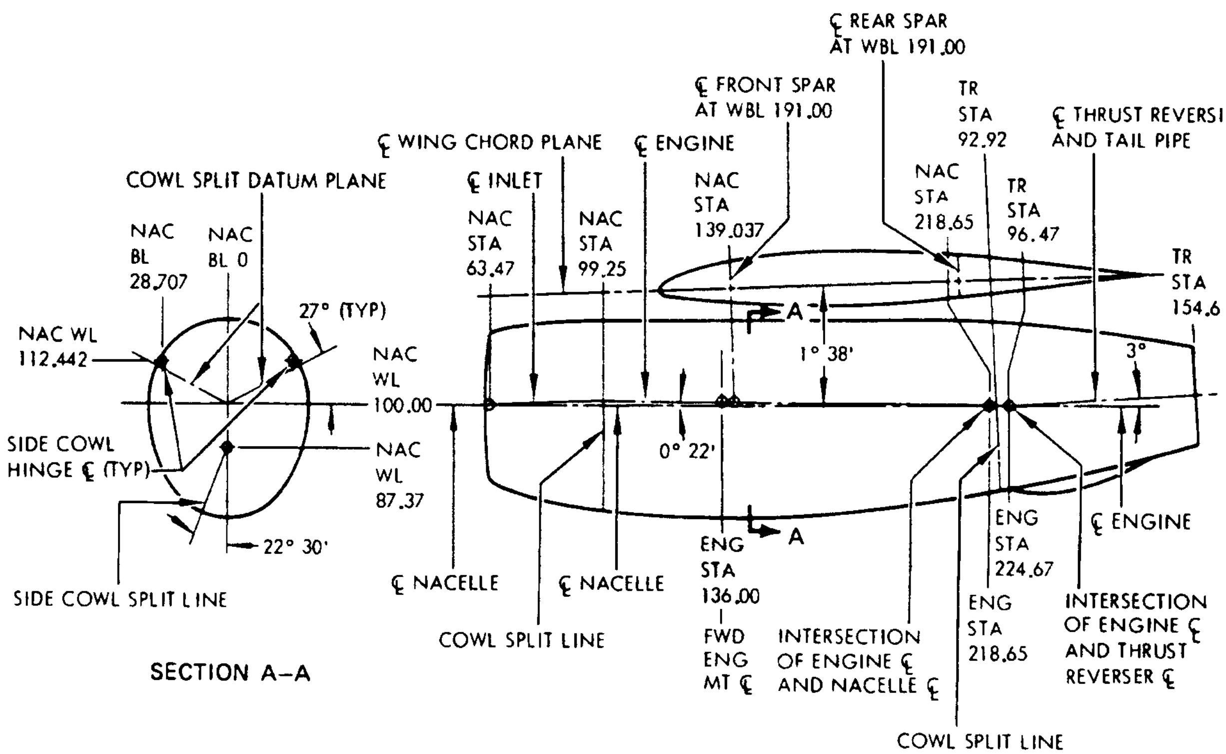


737-300

Vertical Fin and Rudder Station Diagram
Figure 5 (Sheet 2)

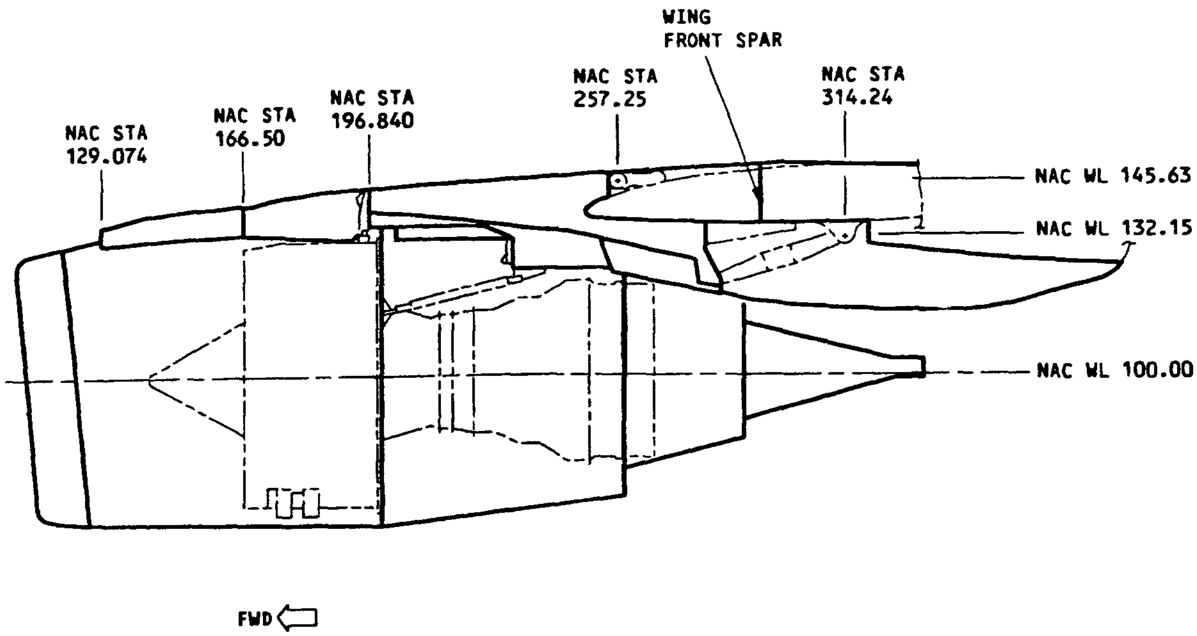


PLAN VIEW - ENGINE NO. 1
ENGINE NO. 2 OPPOSITE



SIDE VIEW - ENGINE NO. 1

Nacelle and Strut Station Diagram
Figure 6 (Sheet 1)



LEFT SIDE VIEW OF NACELLE FOR CFM56-3 ENGINE

737-300

Nacelle and Strut Station Diagram
Figure 6 (Sheet 2)

CHAPTER

25

EQUIPMENT AND FURNISHINGS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Door Mounted Escape Slide	Corrosion has been found on girt retainer bar under the nylon sleeve	25-60-37 Fig. 1	Escape slide vendors notified to provide moisture barriers

Specific Corrosion Problems - Equipment and Furnishings
Figure 1

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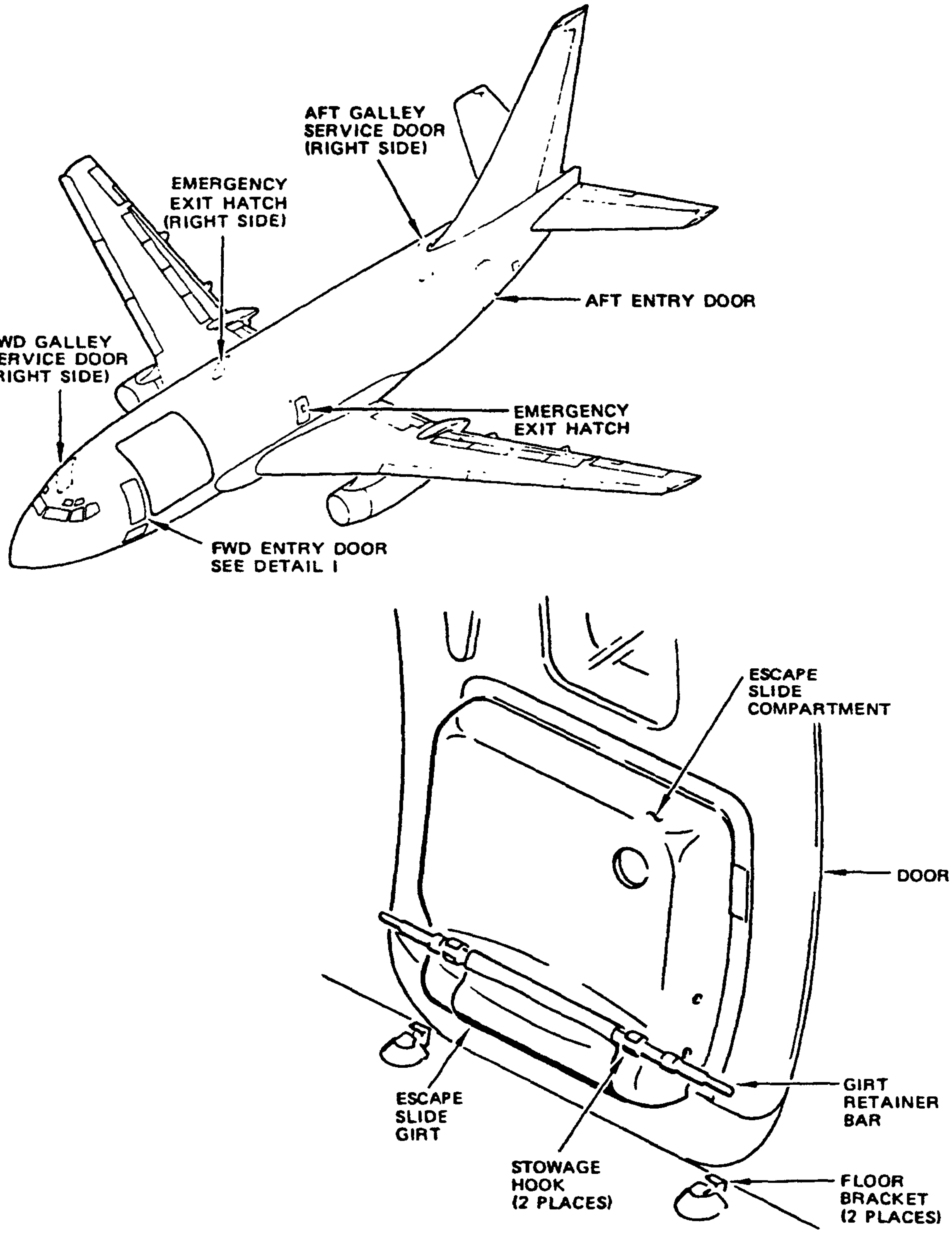

Door Mounted Escape Slide
Figure 1 (Sheet 1)

1. General

A. As a means of debarking the airplane in emergency escape, slides are located at entry and service doors as shown in the illustration. Some airplane configurations, however, do not have emergency slide provisions at the aft service or entry door locations.

Floor-mounted brackets are provided so that a girt retainer bar can be attached to arm the deployment system.

B. Severe corrosion has been the cause of floor bracket assemblies separating from the floor mounted adapter plate when the evacuation slide girt bar was attached.

C. Corrosion has been encountered on the girt retainer bar under the nylon sleeve. Slide vendors have been notified to provide moisture barriers on new assemblies.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener leads of joint edges) refer to Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Prevention Treatment

(1) Periodically inspect girt as follows:

NOTE: Some nylon sleeves may be bonded to the girt bar. In this case no further inspection or action is considered necessary provided the adhesive forms a complete fillet at both ends of the sleeve. If a bonded sleeve is to be removed, it must be cut and replaced with a new one.

(a) Remove nylon sleeves from girt retainer bar and make periodic inspection described in Volume 1, 20-20-00.

(b) As an interim measure pending full inspection, apply water displacing corrosion inhibiting compound to the assembled girt retainer bar in the airplane by placing corrosion inhibiting compound adjacent to the sleeve ends with the aid of an eyedropper or similar applicator. Capillary action will distribute it to the sleeve/bar faying surface, thereby expelling any moisture.

F. Improved Corrosion Protection

(1) SB 25-1084 provides modification procedures on evacuation slide floor bracket assemblies and floor mounted adapter plates.

(2) Aluminum floor brackets were installed on early production airplanes and replaced with steel brackets to increase service life. Steel brackets may be installed retroactively by incorporating SB 25-1113. Service experience on other Boeing airplanes indicate that due to dissimilar metals this area can be a corrosion suspect area unless installations are accomplished with sealants and use of mylar shims as outlined in the service bulletin.

G. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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CHAPTER

26

FIRE PROTECTION

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Fire Extinguishing Bottle Squib	Squib corrosion and epoxy seal deterioration	26-20-37 Fig. 1	Replace with stainless steel squib per APCO Service Bulletin FMTC 331 FMTC 332 FNTC 333

Specific Corrosion Problems - Fire Protection
Figure 1

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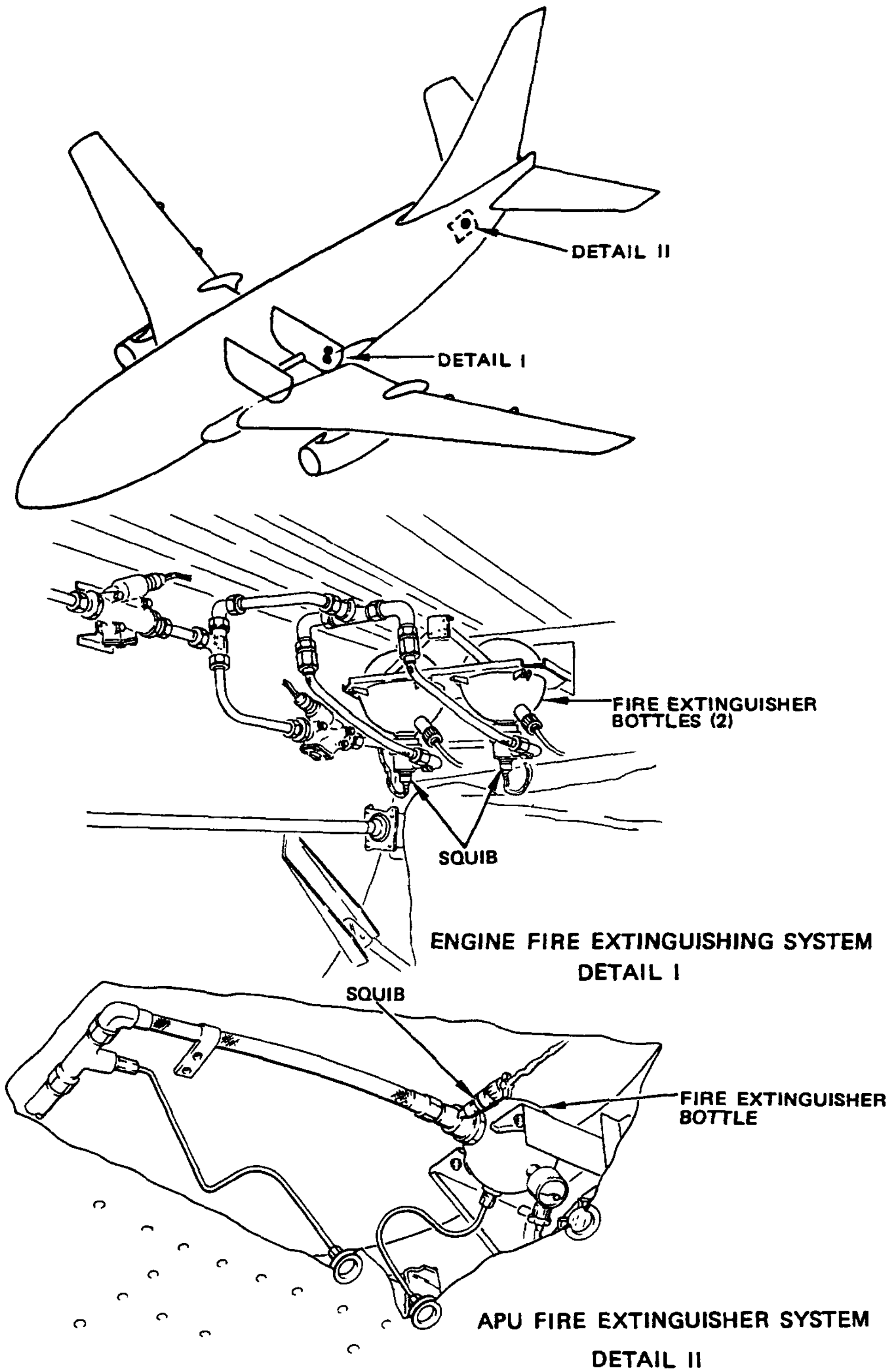
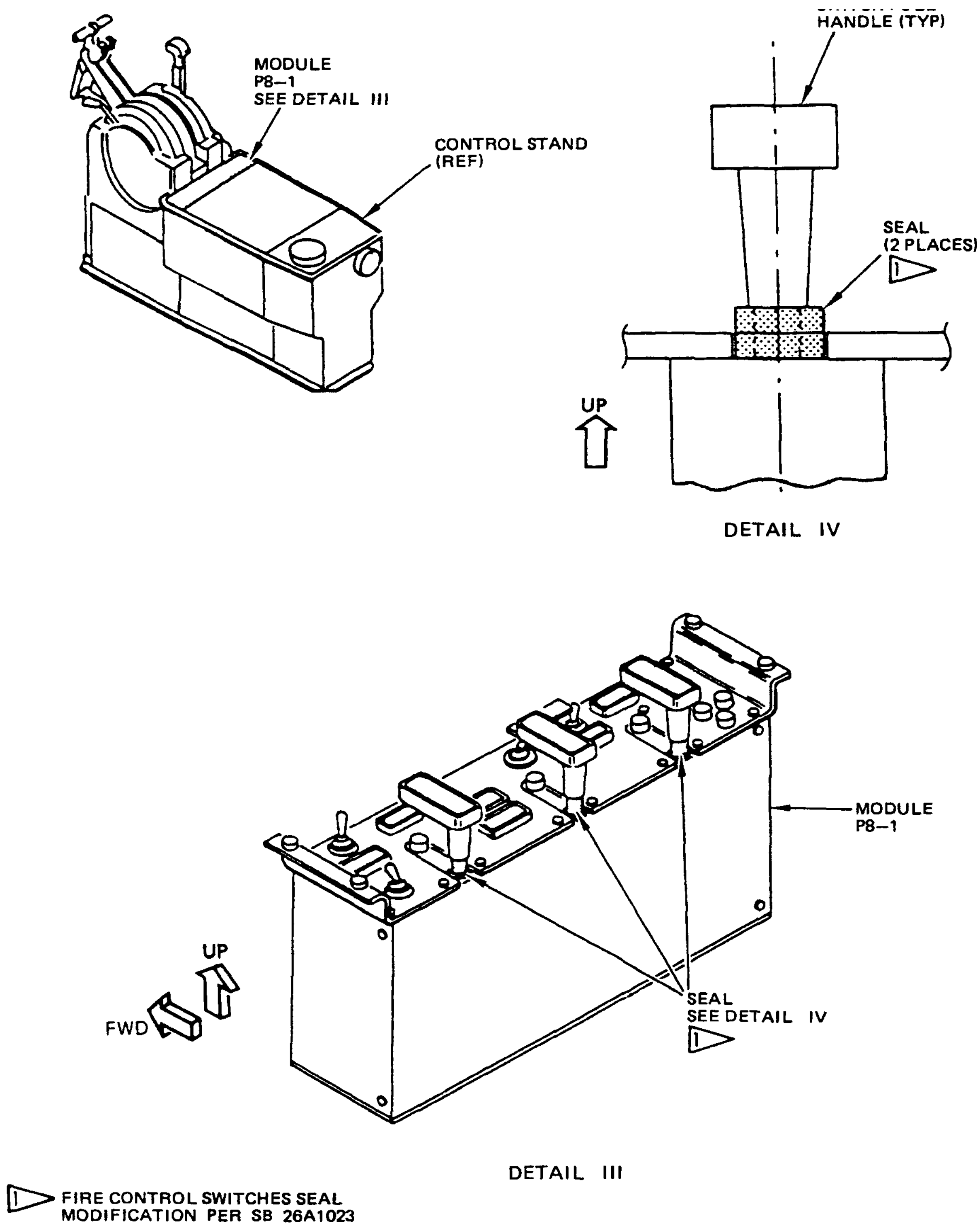


Fire Protection
Figure 1 (Sheet 1)



Fire Protection
Figure 1 (Sheet 2)

FIRE PROTECTION

1. General

A. The fire extinguishing system is a gaseous smothering system designed to extinguish fires in certain areas of the airplane by expelling an inert gas. This system is electrically controlled by switches located on the fire protection module (P8-1) which is located on the aft control stand electronic panel (P8).

The extinguishing systems include a fixed engine fire extinguishing system, a fixed APU fire extinguishing system, a fixed lavatory fire extinguishing system (after incorporation of SB 25-1109) and portable fire extinguishers. The fixed engine fire extinguishing system consists of two fire extinguisher bottles, providing a two-shot extinguishing capability at either engine. The bottles are connected to each engine by manifolds and tubing. A fire switch for either engine provides the means of selecting either extinguisher bottle for discharge. The fixed APU fire extinguisher system consists of a single extinguisher bottle connected by tubing to the APU shroud. The engine and APU discharge switches are located on the fire protection module. The APU bottle may be discharged by actuating a discharge switch on the remote APU fire control panel. After incorporation of SB 25-1109, the fixed lavatory fire extinguishing system consists of a heat activated fire extinguisher bottle located in each lavatory. The bottle is provided to extinguish fires under the sink counter and in the towel chute.

B. Squib corrosion has been reported. Each tin plated squib is susceptible to corrosion regardless of its location on the airplane. However, the squib installed in the APU area is most susceptible. There have been reports of presence of water in the bottle, indicating that water can seep along the bottle threads and into the discharge plug, thereby causing squib corrosion. The corrosion progressively lifts the epoxy seal, which permits moisture to enter the powder cavity. This can render the powder charge useless or disintegrate the ignition filament.

C. Corrosion has been reported on the fire switch pull handle shafts at the control stand. Spilled liquids have leaked down along the fire switch pull handle shafts and caused contamination and corrosion of the switch contacts.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

D. Improved Corrosion Protection

(1) AFCO Service Bulletins FMTC 331, FMTC 332, and FMTC 333 provides replacement procedures on existing tin-plated fire extinguisher squibs with new stainless steel squibs. Compliance to above SB's is recommended to minimize the possibility of squib corrosion.

(2) On the bottle located in the APU area, apply RTV 1200 and a bead of Silastic 731 RTV or 738 RTV adhesive sealant around the mating surface between the bottle neck and discharge plug to keep water from entering through the threads. Apply in accordance with manufacturer's instructions.

(3) SB 26A1023 provides modification procedures on fire control switches seal at the control stand. Compliance to SB 26A1023 is recommended to reduce the possibility of contamination and corrosion of the engine and auxiliary power unit (APU) fire switches by liquids spilled on the control stand fire control module P8-1 (Ref Fig. 1, Detail III).

E. Frequency of Application

(1) Periodic inspection is required to 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 area of occurrences.

CHAPTER

27

FLIGHT CONTROLS

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FLIGHT CONTROLS
SPECIFIC CORROSION PROBLEMS

AREA	PROBLEM	INDEX PREVENTION REWORK	TERMINATING ACTION (IF ANY)
Flight Controls	Control cables	27-00-37 Fig. 2	
Ailerons	Centering mechanism bearings	27-10-37 Fig. 1	
	Power control unit mechanism bearings		
Rudder	Control tension rods	27-20-37 Fig. 1	
Elevator	Control rods	27-30-37 Fig. 1,2	SB 27-1068
	Tab lockout mechanism spring		SB 27A1084
Flaps	Asymmetry cables	27-50-37 Fig. 1, 2	
	Asymmetry shut off mechanism assembly springs		
	Drive transmission universal joint bolts		SB 27-1015
	Asymmetry shut off mechanism assembly springs		
	Transmission gearbox		SB 27-1048
Spoilers	Actuator housing	27-60-37 Fig. 1	SB 27-1093
	Bearings on shaft of spoiler control quadrant		
	Mixer mechanism bearings		

Specific Corrosion Problems - Flight Controls
Figure 1

1. General

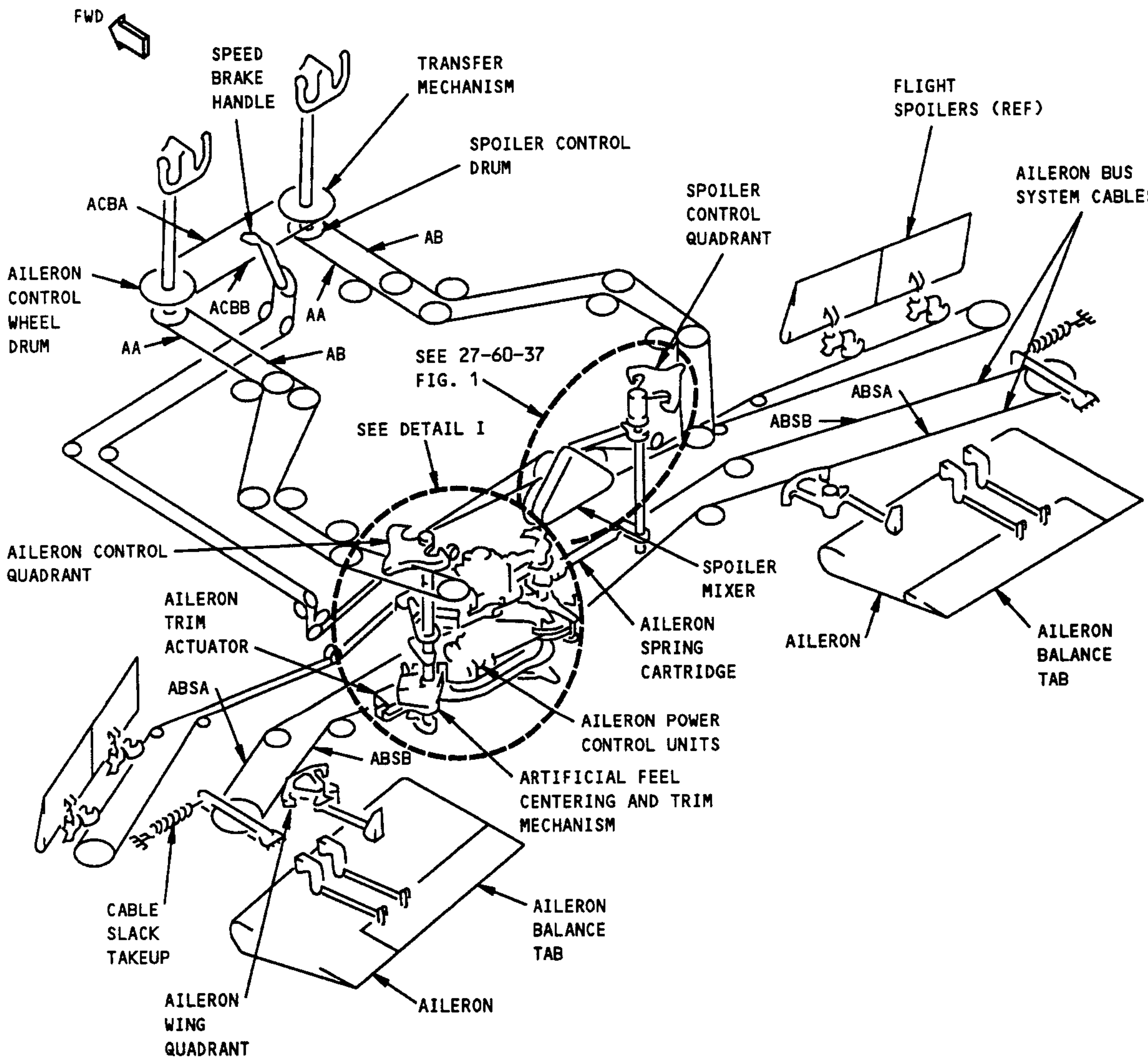
A. Control cables are made of thin strands of tinned carbon steel or stainless steel (CRES) wire. Carbon steel cables are protected by a thin ribbon of grease between the strands. Corrosion can occur where the grease film is not there and the cables are open to moisture.

2. Corrosion Prevention

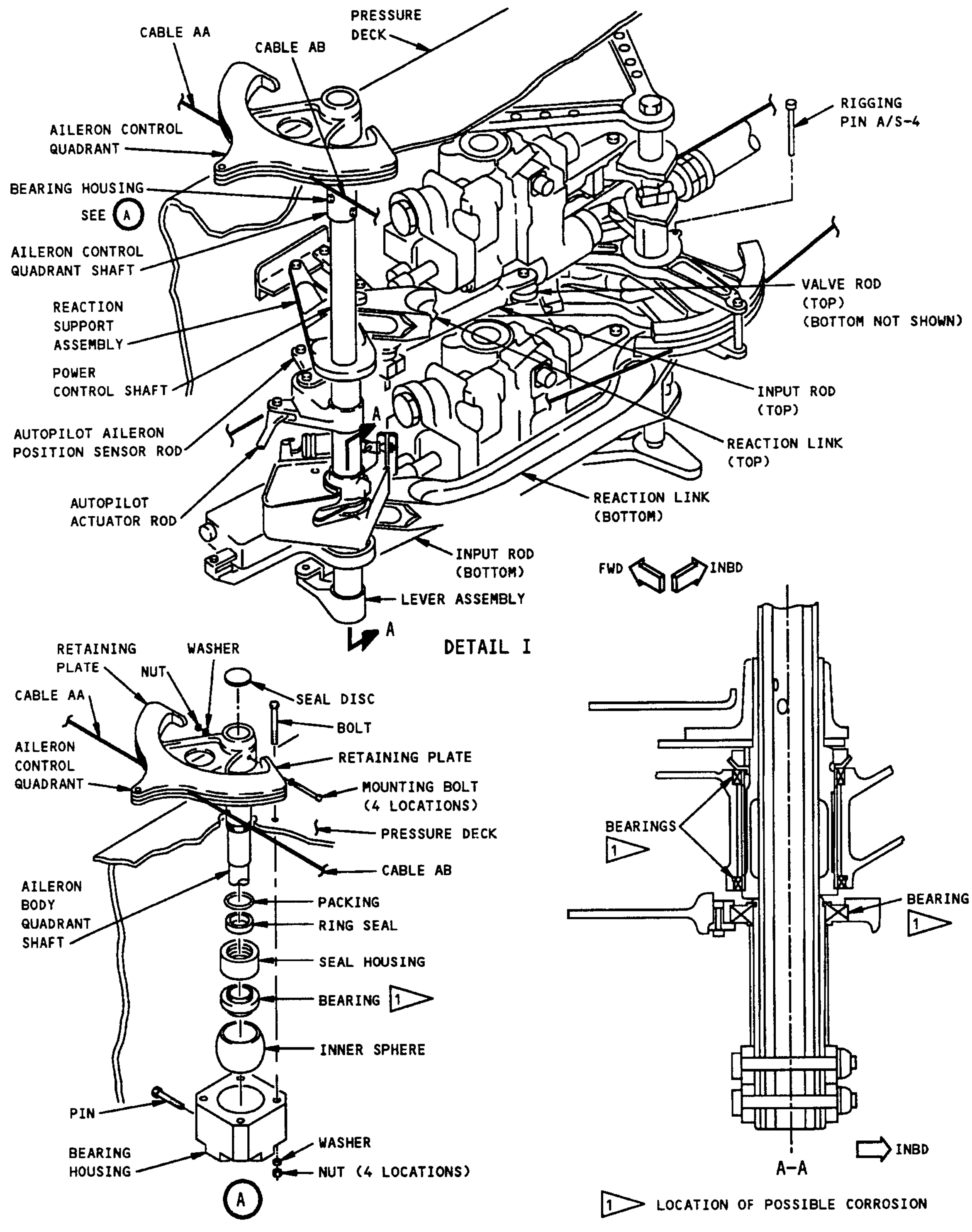
A. At regular times, wipe off the grease with a dry, lint-free cloth and examine the cable for corrosion.

B. On carbon steel cables only, apply a thin film of grease over the length of the cable per 12-26-0 of the Maintenance Manual after you examine the cable. Do not use grease on stainless steel (CRES) cables.

C. If you find corrosion, refer to Structural Repair Manual.



Aileron Control System
Figure 1 (Sheet 1)



Aileron Control System
Figure 1 (Sheet 2)

1. General

   A. Corrosion can occur on the bearings of the aileron centering mechanism in the main gear wheel well. Some of this corrosion was caused by moisture that came in after cleaning fluids washed out the lubricant.

   B. Corrosion can occur on bearings in the power control unit mechanism.

2. Corrosion Prevention

   A. Regularly examine the aileron control system mechanism bearings for signs of corrosion.

   B. Give the bearings protection when you wash the wheel well. Make sure you fully rinse the area with water to remove cleaning fluids.

   C. Apply MIL-G-23827 grease, or equivalent, over the upper seal of the bearings to give protection during routine operation.

   D. Improved Corrosion Protection

      (1) At line No. 2422, PRR 35037 changed the bearing material to corrosion resistant steel in the aileron centering mechanism.

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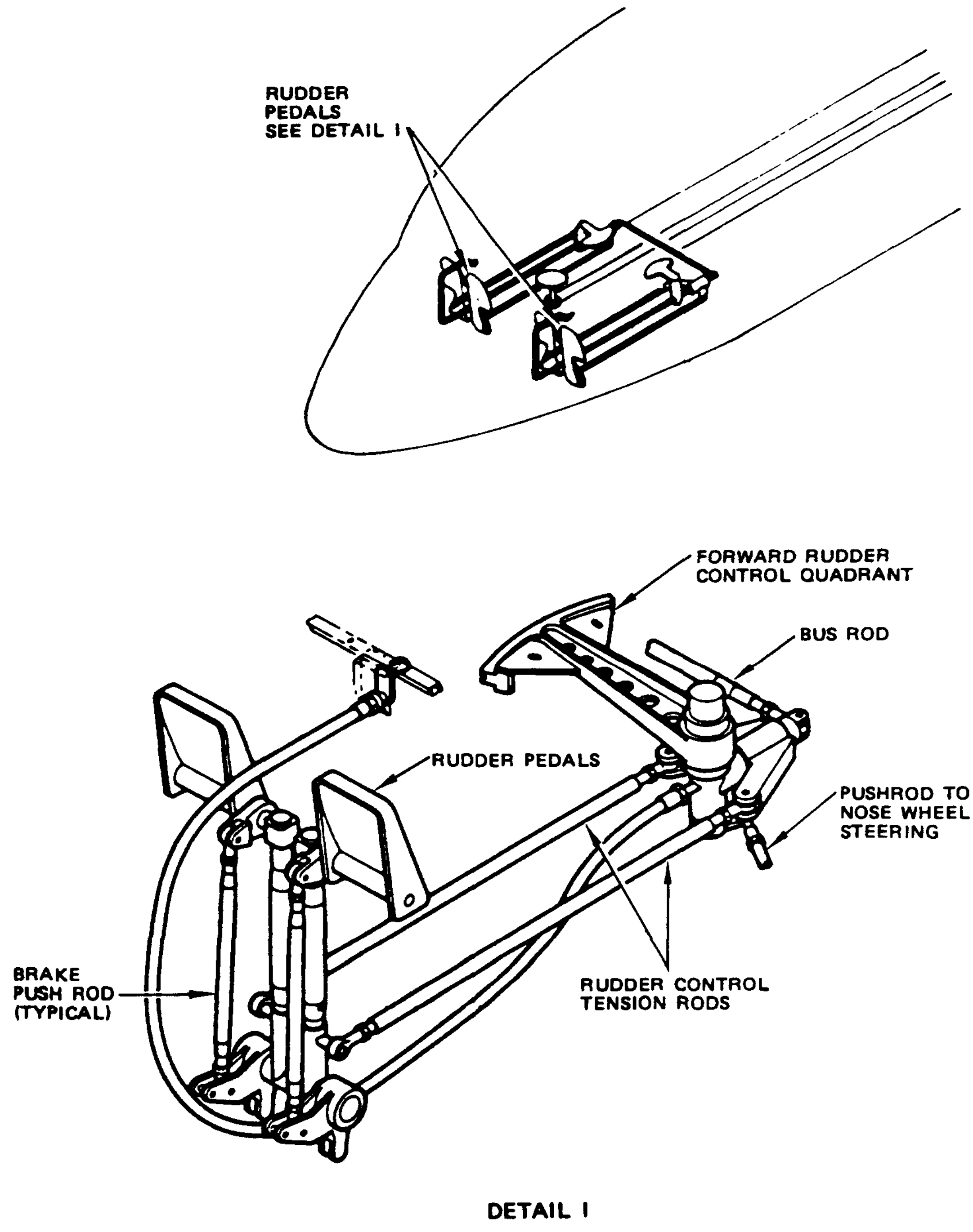


Rudder Control Tension Rods
Figure 1

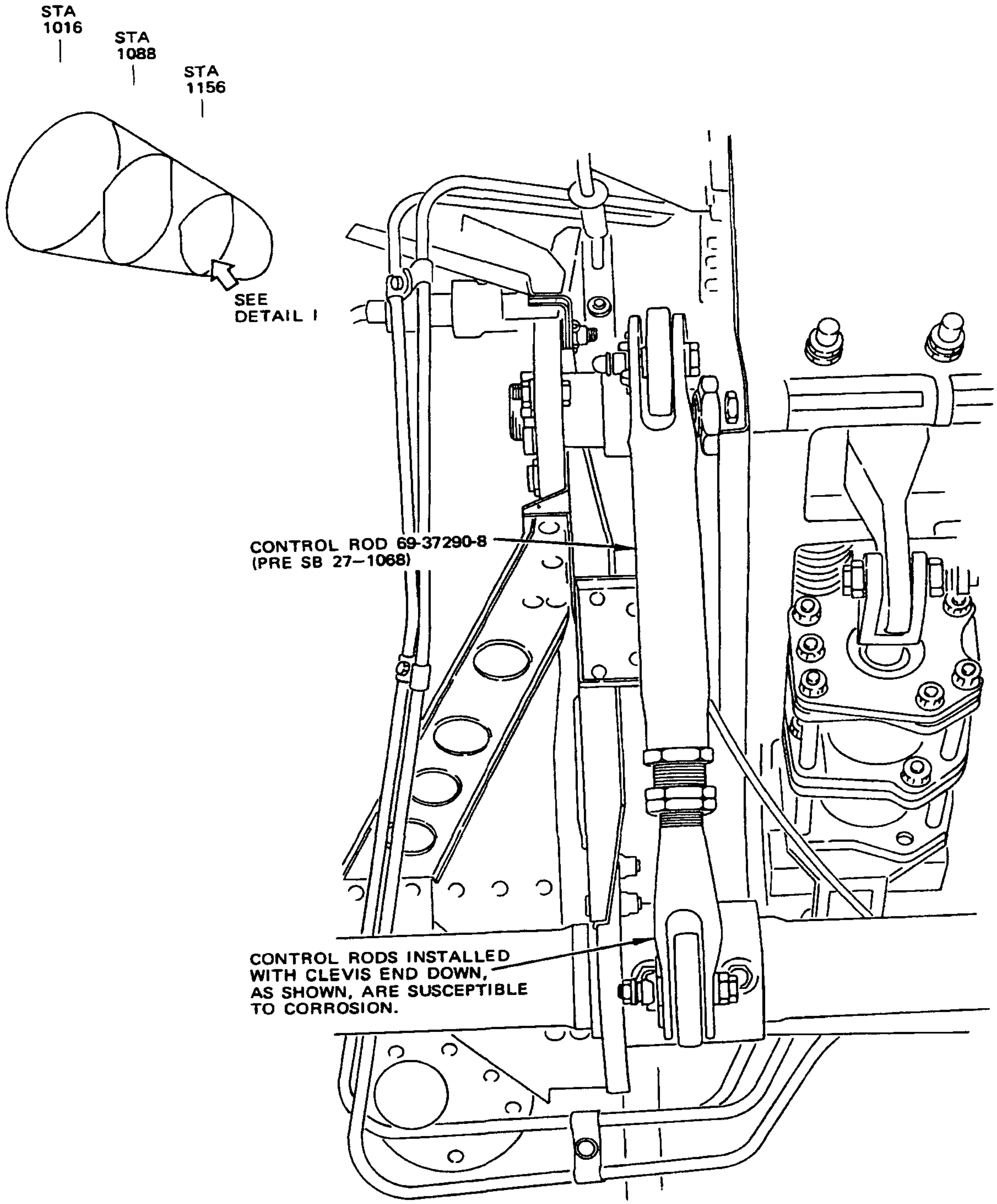
1. General

   A. Corrosion has been reported on the rudder control tension rods located between the rudder pedals and the forward cable quadrants. Corrosion may reduce the fatigue life of these rod assemblies.

2. Corrosion Prevention

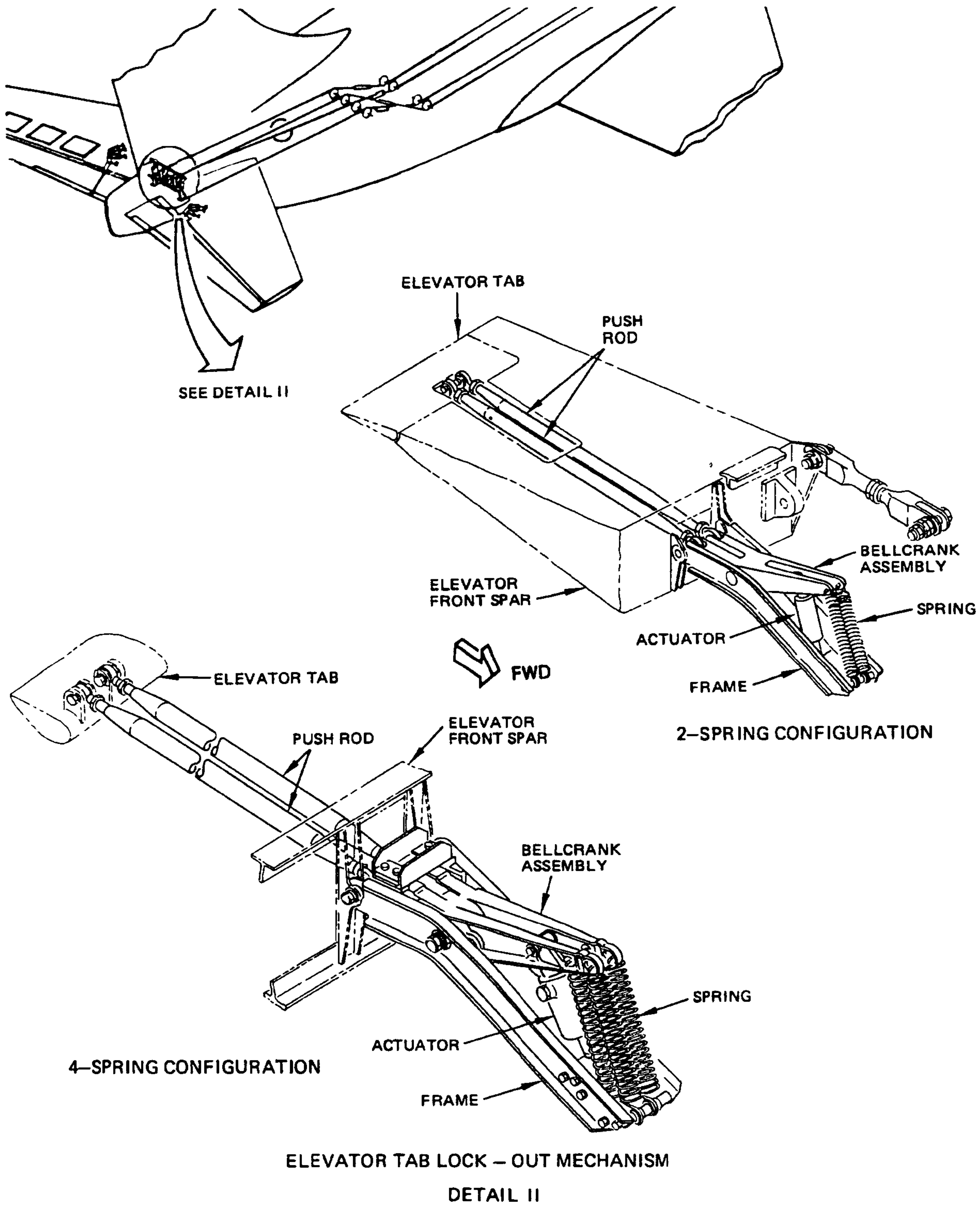
   A. Periodically examine the rudder control tension rods for evidence of corrosion.

   B. Where corrosion has already started, refer to Structural Repair Manual for details of corrosion removal.

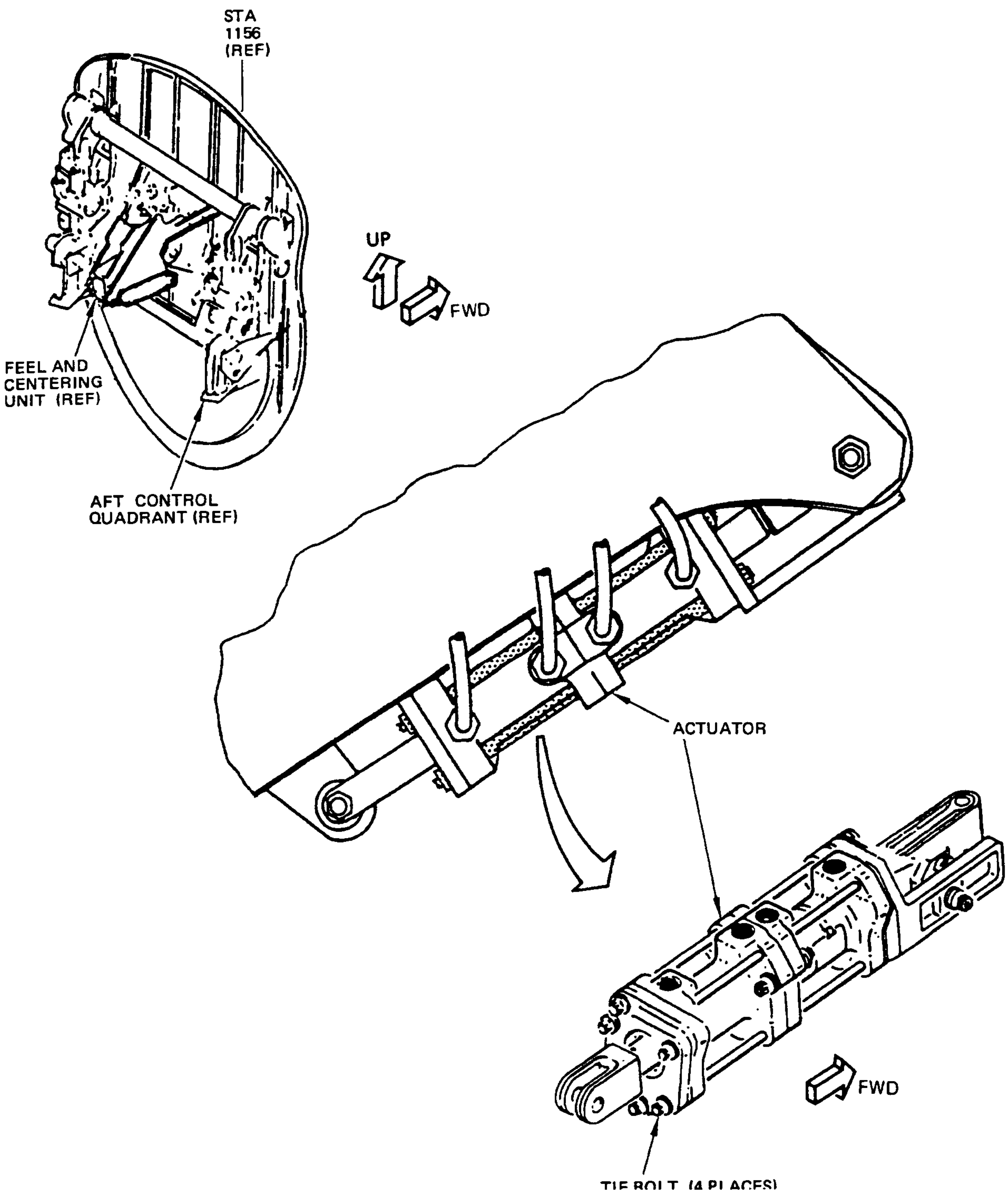


TYPICAL CONTROL ROD INSTALLATION
(VIEW LOOKING FORWARD ON BULKHEAD AT B.S. 1156)
DETAIL I

Elevator Linkages and Controls
Figure 1 (Sheet 1)



Elevator Linkages and Controls
Figure 1 (Sheet 2)



Elevator Linkages and Controls
Figure 1 (Sheet 3)

1. General

A. The portion of the systems which controls the position and movement of the elevator/elevon and tabs. Includes items such as control column, stick-shaker units, automatic stall recovery devices, tab control wheels, cables, boosters, linkages, control surfaces, position indicators, and stall warning systems.

B. The elevator tab lock linkage provides tab-assisted elevator movement. The tab lock linkage mechanism consists of a pushrod bellcrank mechanism, lock actuator and springs.

C. Early production models had a 4-spring elevator tab lock configuration which was changed to a 2-spring configuration at cum line 289. However, the tab lock mechanisms are interchangeable and operators will have to inspect their fleet for the configuration installed.

D. Corroded and broken springs of the tab lock mechanism have been reported, primarily on the 2-spring configuration. A production change to install stainless steel springs will be initiated at cum line number 476 and can be accomplished retroactively by incorporating SB 27-A1084.

E. Stress corrosion has been the cause of fractured tie bolts on six elevator feel actuators. All fractured bolts were found on actuators manufactured by Western Hydraulics, Incorporated (VlFT58).

F. The flight control mechanism located on the aft face of the bulkhead at BS 1156 contains three adjustable control rods which are susceptible to corrosion. These control rods, part number 69-37290-8, were installed on airplanes up to and including cum line number 409. From cum line No. 410 improved control rods, part number 69-37290-13 have been installed.

G. The accumulation of moisture trapped in the hollow rod assembly results in corrosion of the adjustment threads causing seizure. Adjustment of these control rods may be required during routine servicing, therefore it is essential that these threads are not corroded. Remedial action on installations using the 69-37290-8 control rods is detailed in SB 27-1068.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

D. Prevention Treatment

(1) At earliest opportunity consistent with the scheduled maintenance activity, corrosion prevention treatment should be accomplished to the elevator controls and linkages.

(2) Elevator Tab Lock Mechanism;

(a) SB 27-A1084 has been issued to alert operators for possible corrosion and broken springs in the elevator tab lock mechanism.

(b) Gain access to elevator tab lock mechanism through access panels 9105 LH and 9205 RH.

(c) Replace broken and corroded springs.

(d) Apply BMS 3-23 to springs.

NOTE: For details of application of BMS 3-23 water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

(e) On airplanes with the 4-spring configuration elevator tab lock mechanism installed, a one time inspection and application of BMS 3-23 is sufficient.

(f) On airplanes with the 2-spring configuration elevator tab lock mechanism, make periodic inspections to determine condition of corrosion inhibitor and reapply as necessary.

NOTE:The stainless steel strings preclude the need for inspection and corrosion inhibitor application.

(3) SB 27-1095 provides inspection and replacement procedures on elevator feel actuator tie bolts. Compliance with the SB 27-1095 is recommended to ensure the integrity of the actuator tie bolts.

(4) Dual Vernier Adjustment Control Rods

(a) Inspect the control rods periodically for evidence of corrosion. The initial installation of 69-37290-8 control rods was with the adjustable clevis end down, and these are more susceptible to corrosion than those with the clevis at the top.

(b) Replace any corroded control rod assemblies.

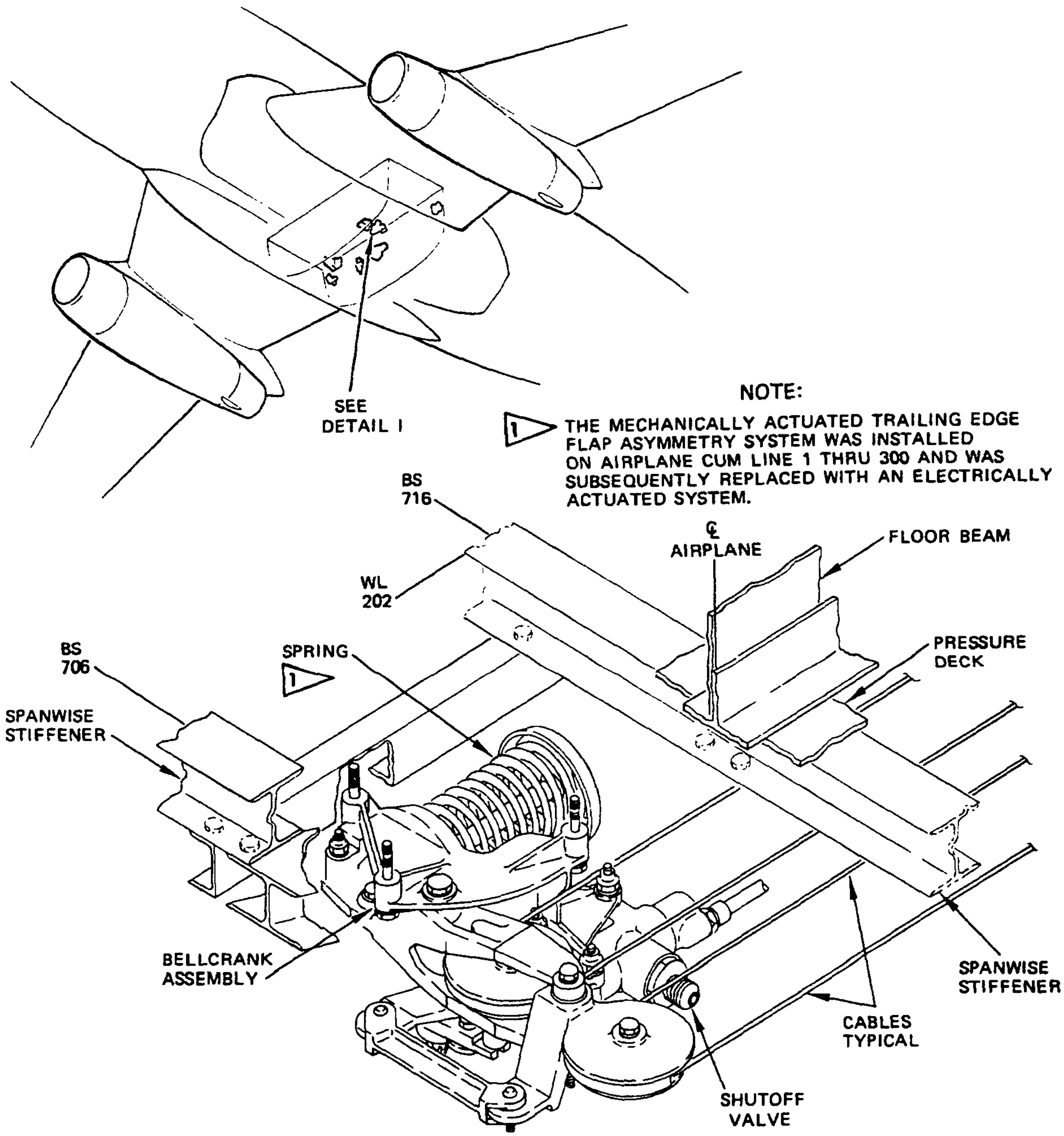
(c) Adjustment threads should be cleaned and coated with MIL-C-16173 grade 2 corrosion preventive compound as required.

(d) SB 27-1068 provides procedures to add additional corrosion protection. Compliance with the SB 27-1068 is recommended to ensure that the control rod is protected against corrosion.

E. Frequency of Application

(1) Periodic inspection is required to 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.

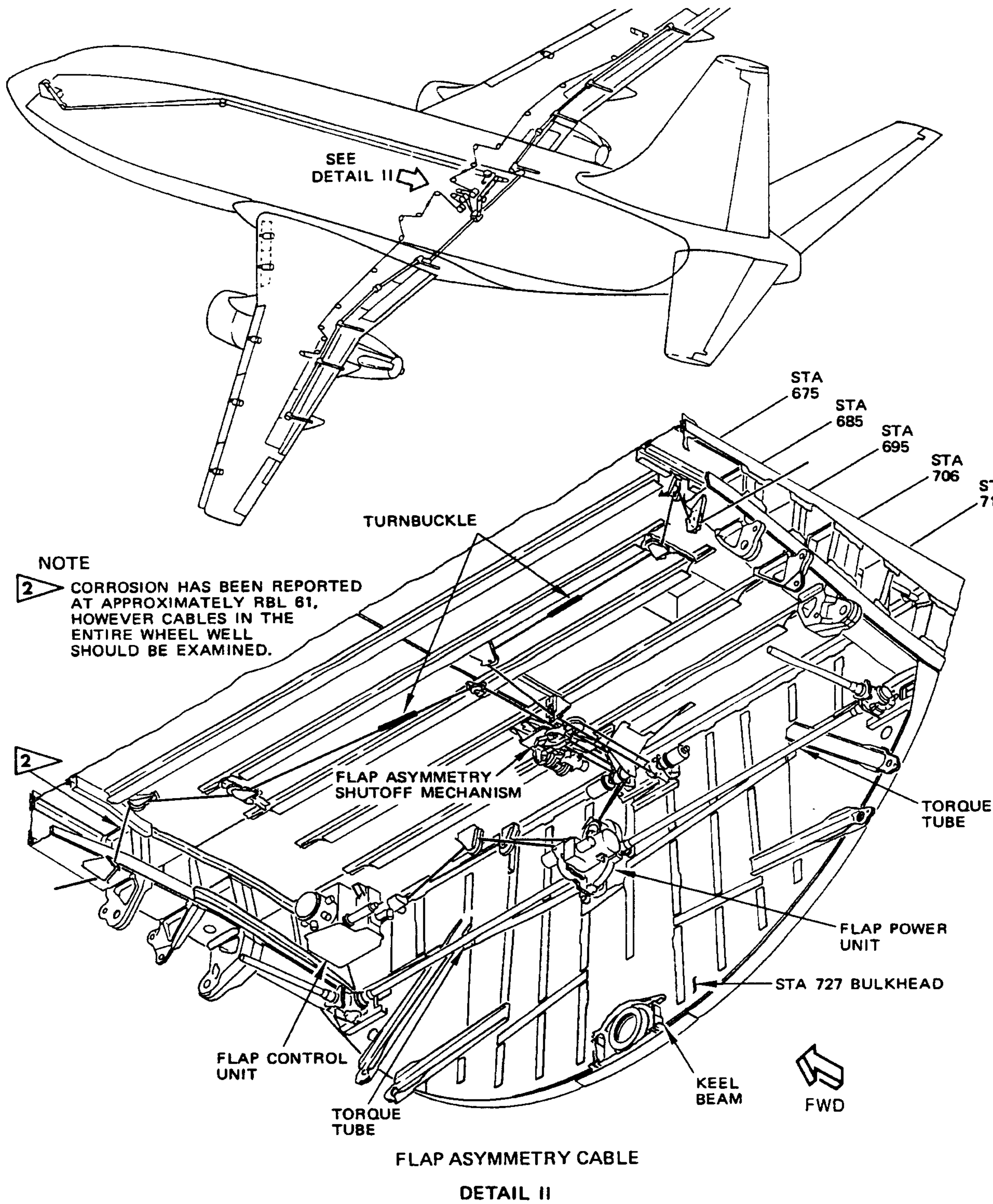
(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.



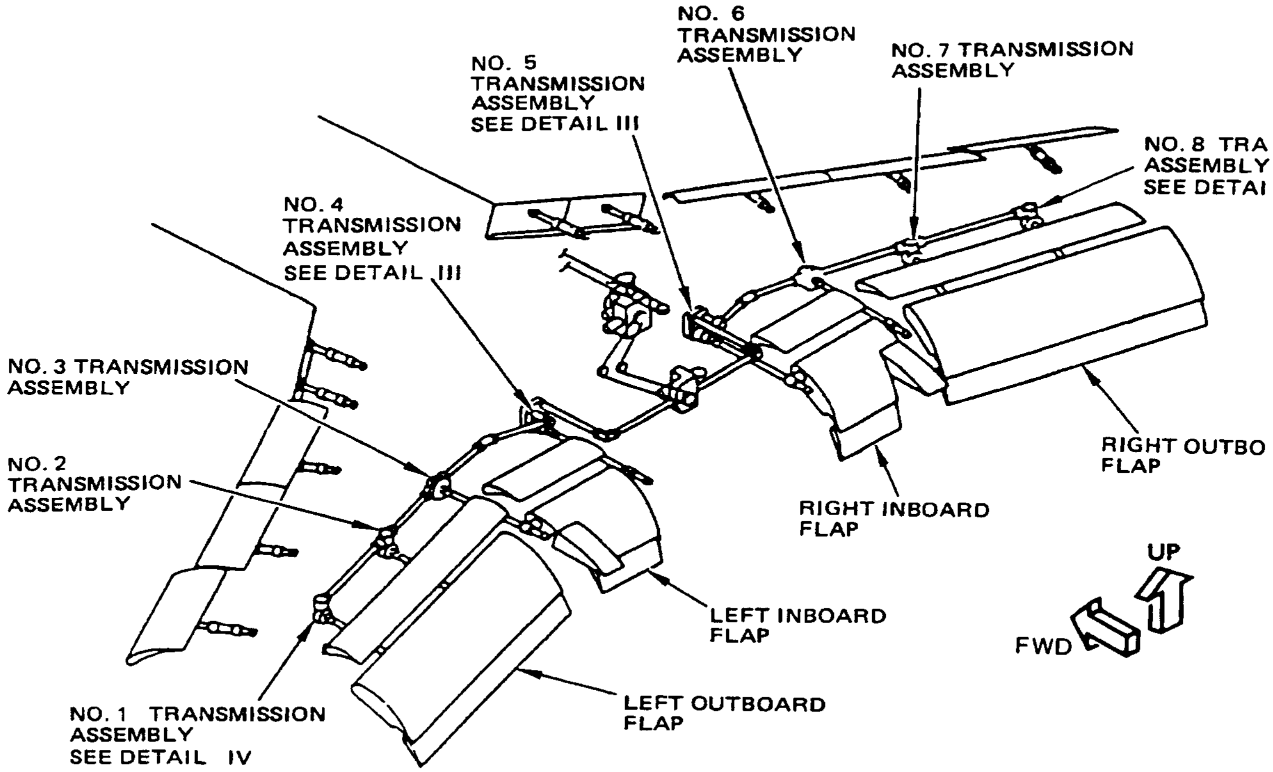
FLAP ASYMMETRY SHUTOFF MECHANISM

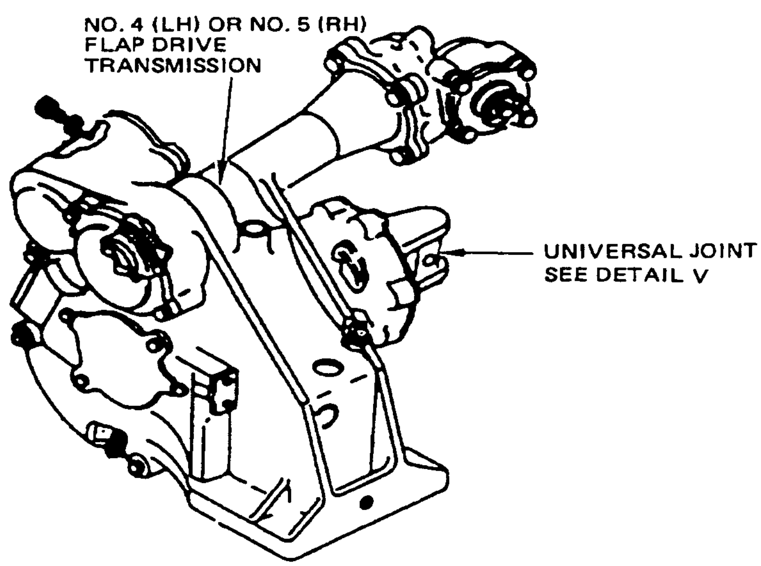
DETAIL I

Flap Linkages and Controls
Figure 1 (Sheet 1)



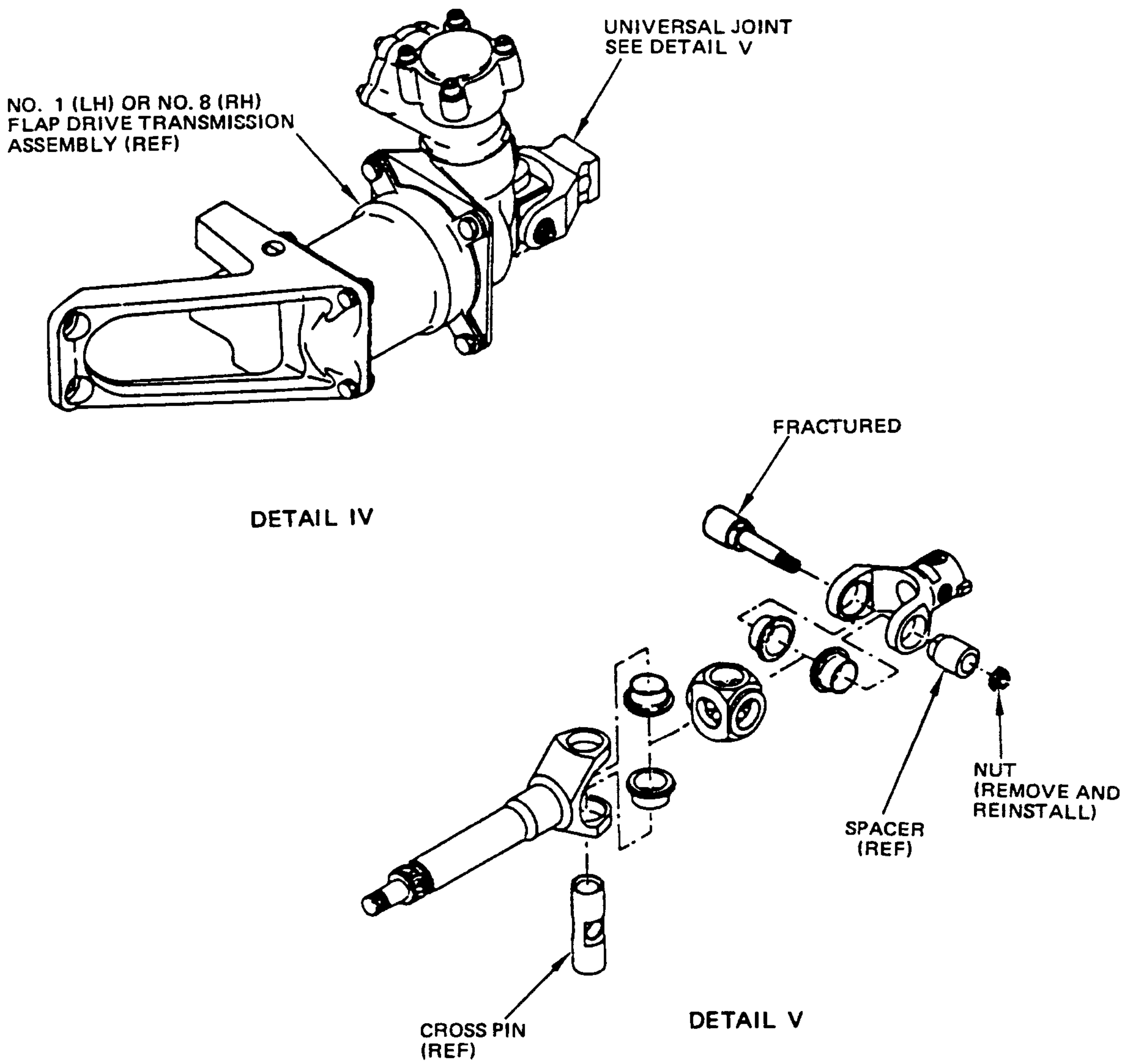
Aileron Control System
Figure 1 (Sheet 2)





DETAIL III

Flap Linkages and Controls
Figure 1 (Sheet 3)



Flap Linkages and Controls
Figure 1 (Sheet 4)

1. General

A. The system which controls the position and movement of the trailing edge flaps includes control handles, cables, actuators, warning systems and linkages.

B. The trailing edge flap asymmetry cables are susceptible to corrosion, especially the cable runs in the wheel well area. The mechanical flap asymmetry system was replaced by an electrical system on line No. 300 and on.

Corrosion is attributed to atmospheric and runway contaminants which are deposited on the cables in the areas where the protective lubricant was either worn or washed off.

C. The flap asymmetry shutoff mechanism assembly functions to prevent asymmetrical operation of the flaps. Cables from the trailing edge flap power unit and from the flap position transmitters pass around pulleys on the pulley lever assembly. Any unequal forces on the cables will actuate the bellcrank assembly to move linkages that will cause the hydraulic control valve to shutoff pressure to the power unit. The spring functions to maintain cable tension in the system.

Atmospheric contaminants condensing on the spring remove the surface protective film provided and make the spring susceptible to pitting corrosion and ultimate fracture of the spring.

D. Stress corrosion has been the cause of fractured wing flap drive transmission universal joint bolts (Fig. 1, Detail V).

E. Corrosion has been reported on the flap transmission gearbox output shaft bearings.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. For less important corrosion, to decrease the downtime of the airplane, clean off the corrosion products. Apply corrosion inhibiting compound on the area. Refer to Volume 1, 20-60-00 for how to apply corrosion preventive compound. Repair the finish system when the maintenance schedule permits.

D. Prevention Treatment

(1) When the scheduled maintenance work permits, do corrosion prevention treatment on the flap linkages and controls.

(2) For treatment of cables, refer to Volume 2, 27-00-37, Fig. 2.

(3) Flap Asymmetry Shutoff Mechanism:

(a) At regular times, examine the spring to make sure that the finish stays serviceable.

(b) When maintenance work permits, remove the spring per instructions in 27-57-01 of Overhaul Manual.

(c) Abrasively clean the spring per 20-30-03 of the Boeing Standard Overhaul Practices Manual.

(d) Apply one coat of BMS 10-11 primer, Type I.

(e) Apply one coat of BMS 10-60 white enamel.

(f) Reinstall spring and return system to normal.

(g) Apply water-displacing corrosion inhibiting compound to spring, spring retainer, and spring support.

(4) SB 27-1015 gives procedures for the inspection and replacement of the existing universal joint bolts. Better bolts which have less risk of corrosion are used for replacement. Do SB 27-1015 to be surf of the condition of the wing flap drive system until you replace all of the bolts.

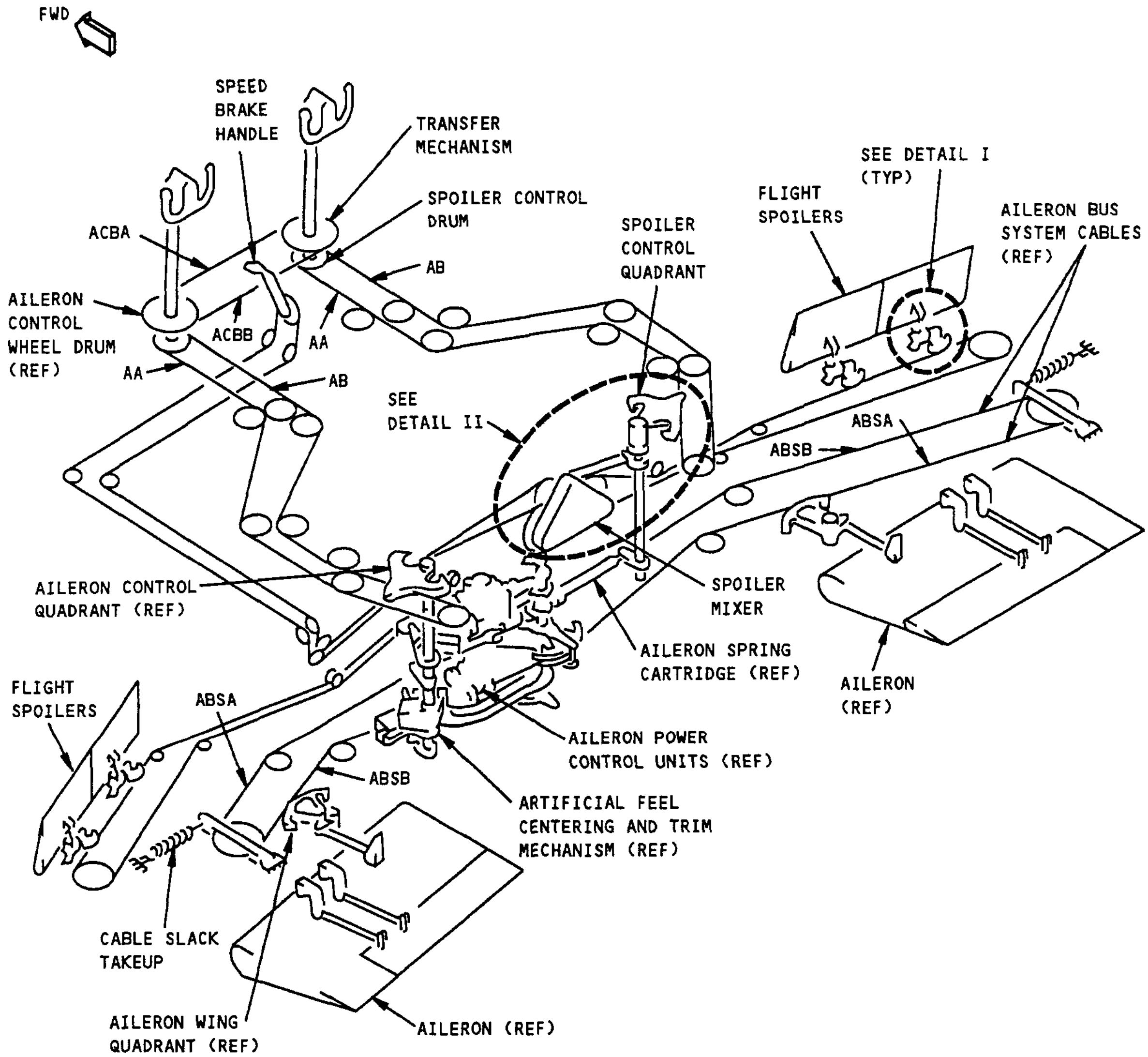
E. Improved Corrosion Protection

(1) SB 27-1048 gives repair procedures for the bearing in the flap-transmission-gearbox-output shaft. Use of the SB 27-1048 procedure is optional, based on operator's experience.

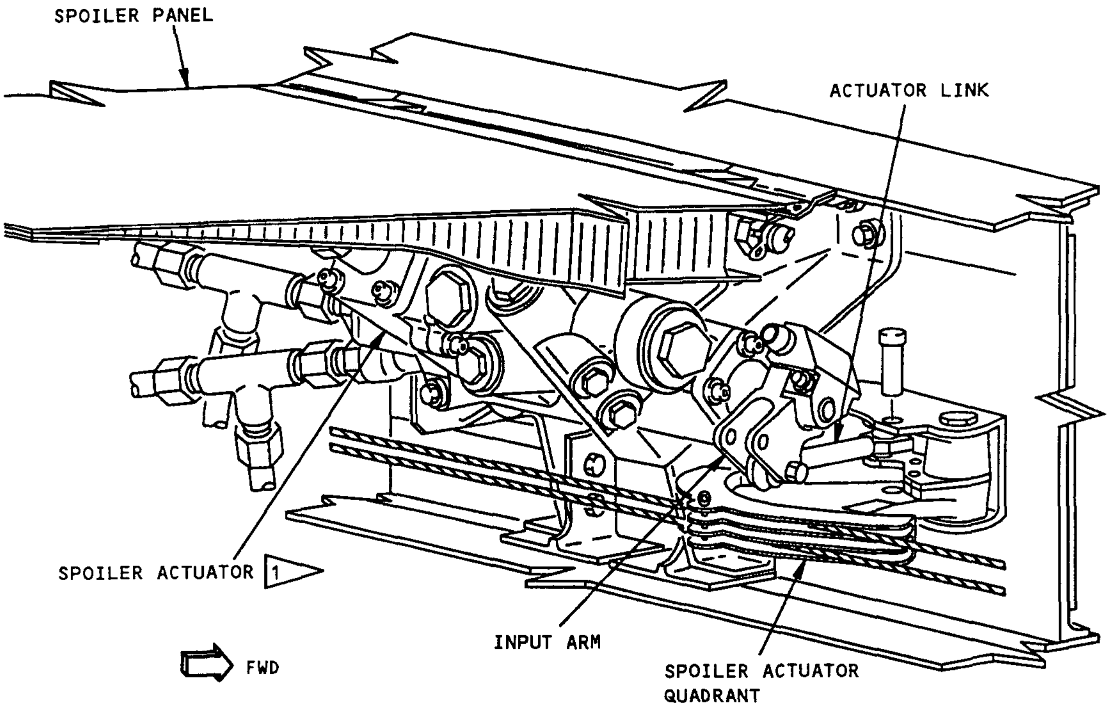
F. Frequency of Application

(1) Regular inspection is required in areas which can get corrosion and should agree with the schedules in the Maintenance Planning Document. Operators must know of reported problems and areas.

(2) Regular application of BMS 3-23 compounds is necessary in areas identified and should agree with the schedules in the Maintenance Planning Document.

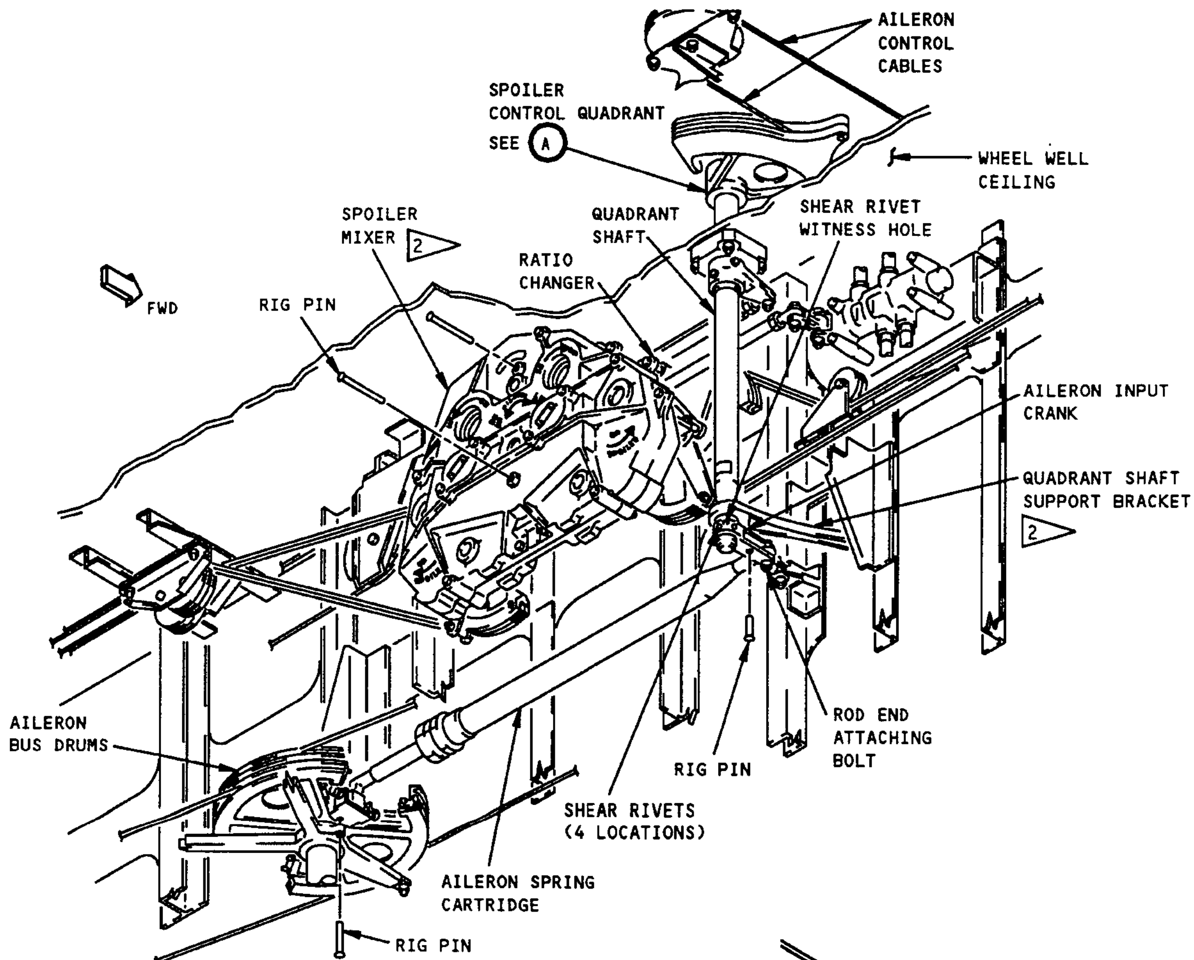


Spoiler Control System
Figure 1 (Sheet 1)

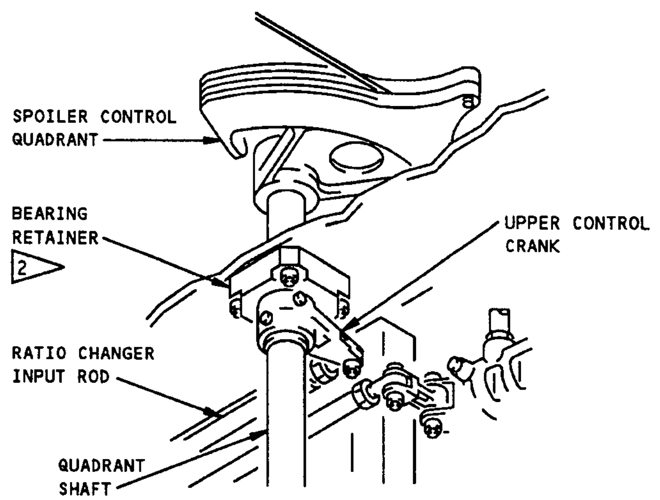


EXAMPLE OF FLIGHT SPOILERS NO. 2, 3, 6 AND 7
DETAIL I

Spoiler Control System
Figure 1 (Sheet 2)



DETAIL II



A

1 CORROSION CAN CAUSE CRACKS ON THE INTERNAL SURFACES OF THE HOUSING

2 CORROSION CAN OCCUR ON THE BEARINGS

Spoiler Control System
Figure 1 (Sheet 3)

1. General

A. The spoiler control system moves the spoilers, drag devices and variable aerodynamic fairings. It includes control handles, cables, warning systems, linkages, spoilers, and drag devices.

B. Corrosion can cause cracks in the housing of outboard ground spoiler corrosion actuators. The cracks start in the housing inner surface. If this housing breaks, it could cause the failure of system A hydraulic pressure.

C. Corrosion can occur on the bearings in the supports for the spoiler control quadrant. Some of this corrosion was caused by moisture that came in after cleaning fluids washed out the lubricant.

D. Corrosion can occur in bearings in the spoiler mixer mechanism.

2. Corrosion Prevention

A. Regularly examine the spoiler actuators for corrosion or cracks on the internal surfaces of the housing. Refer to SB 27-1093 for details about housing replacement with a better housing.

B. Regularly look for corrosion on the bearings at the shaft for the spoiler control quadrant and in the spoiler mixer mechanism. When you wash the wheel well, give these bearings protection. Make sure you fully rinse the area with water to remove cleaning fluids. Then apply grease MIL-G-23827 on these bearings.

C. Improved Corrosion Protection

(1) At line No. 579, PRR 32864 increased the thickness of the housing for the outboard spoiler actuator. The increased thickness is at minimum cross section areas to reduce hoop tension stress. Anew lock sleeve is used with this new configuration of housing inner surface. This change can be added to earlier airplanes with SB 27-1093.

(2) At line No. 2422, PRR 35037 changed the material to corrosion resistant steel for the bearings in the supports for the spoiler control quadrant shaft.

(3) Some operations have suspected or confirmed having corrosion on ground spoiler actuator-hinge fittings. Refer to overhaul manual (OHM) 57-56-61 for further information.

CHAPTER

29

HYDRAULIC POWER

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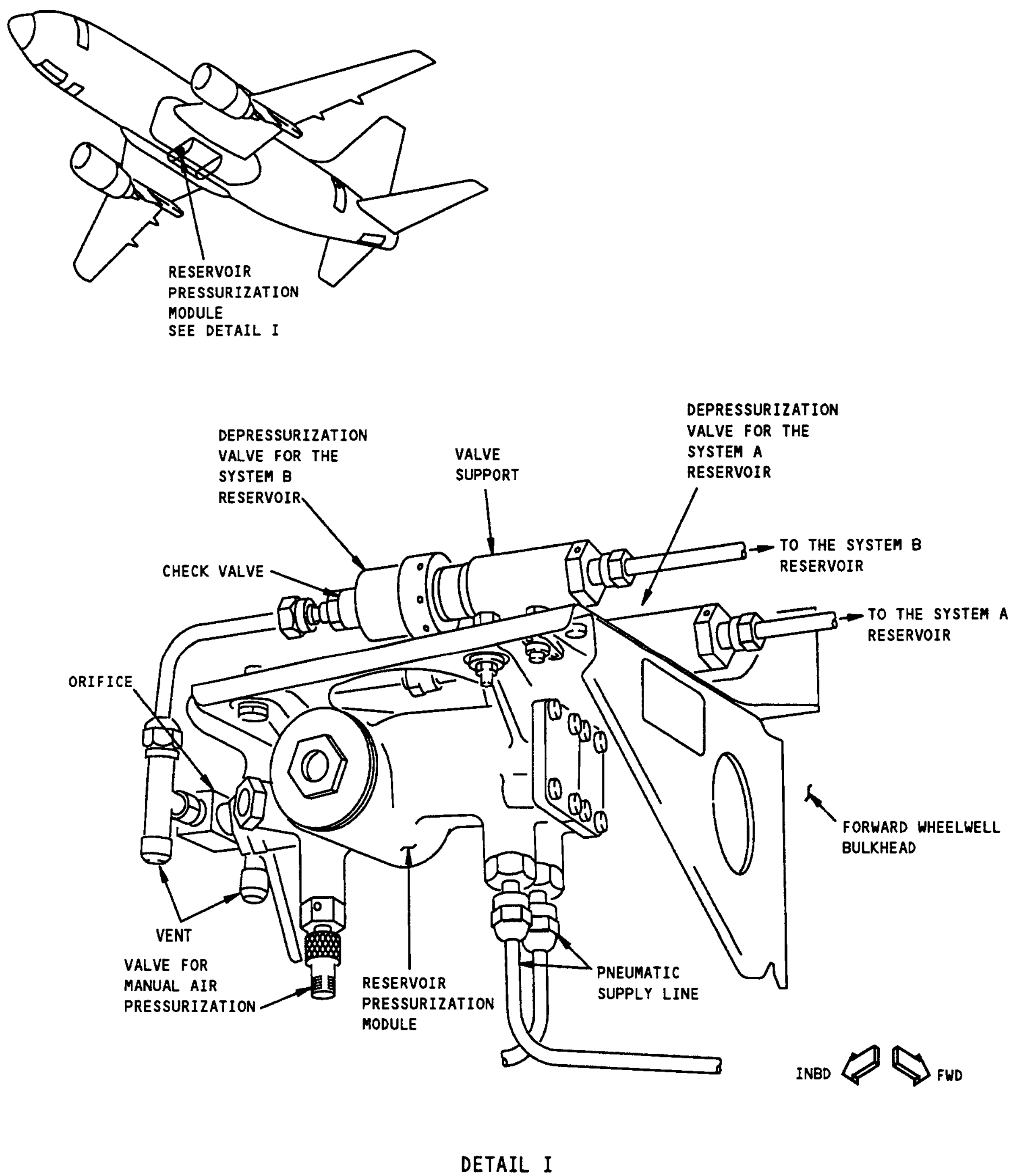
AREA	PROBLEM	INDEX PREVENTION REWORK	TERMINATING ACTION (IF ANY)
General	Reservoir pressurization module	29-00-37 Fig. 2	
Main	Hydraulic lines, valves and fittings when exposed to severe environment	29-10-37 Fig. 1	
	External threads and cavities of hydraulic actuators and components when exposed to moisture	29-10-37 Fig. 1	

Specific Corrosion Problems - Hydraulic Power
Figure 1



Reservoir Pressurization Module
Figure 2 (Sheet 1)

1. General

A. Corrosion can occur in the orifice downstream of the reservoir pressurization module. This can cause low reservoir pressure.

B. Corrosion can also occur in the filter element.

2. Corrosion Prevention

A. Regularly examine the orifice and the filter element for corrosion. Replace parts as necessary.

B. Improved Corrosion Protection

(1) At line number 2539, PRR 35125 installs a CRES orifice and a better filter element.

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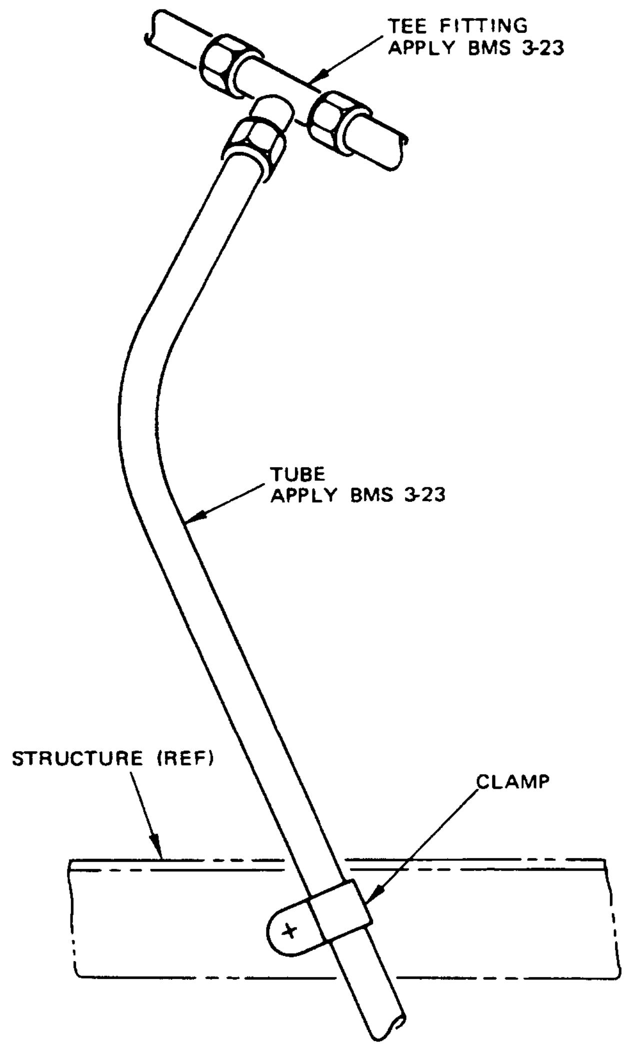

Hydraulic Plumbing
Figure 1

1. General

A. The high pressure hydraulic lines are unpainted corrosion resistant steel. The low pressure hydraulic lines are 5000 or 6000 series aluminum alloys. Valves and fittings are either anodized aluminum or corrosion resistant steel. Service experience has shown that these items are relatively corrosion free unless they are exposed to an extremely severe environment.

B. Clamps are usually manufactured from solid nylon or silicone rubber cushioned steel.

2. Corrosion Prevention

A. Make periodic visual inspections for white corrosion products on aluminum or black pits on corrosion resistant steel. When clamps are removed, inspect the tubing visually for signs of corrosion.

B. Refer to Volume 1, 20-60-00 for details of application of corrosion inhibiting compound BMS 3-23.

CAUTION: DO NOT APPLY BMS 3-23 TO SILICONE RUBBER OR RUBBER CLAMP CUSHIONS. BMS 3-23 MAY CAUSE SILICONE RUBBER TO SWELL.

C. For corrosion prevention, apply BMS 3-23 on tubings and fittings with a cloth wetted with the compound. This method will clean as well as lay a thin protective film.

D. Where corrosion has already started, refer to Structural Repair Manual for details of corrosion removal.

E. In cases where cleaning is accomplished with steam or high pressure water and detergent, reapply BMS 3-23.

F. Scratches or gouges should be treated at the first opportunity.

3. Improved Corrosion Protection

A. Service letter SL-29-37 gives corrosion protection for external threads and cavities of hydraulic actuators and components that are open to moisture. Batco 8401 Number 1 grease plus a bead of BMS 5-26, Type II, Class B-1/2, optional Class 3-2 sealant are applied. This grease was selected because of compatibility with O-ring seal material and fair resistance to BMS 3-11 hydraulic fluid.

Procedures for applying the corrosion protection follow.

(1) Apply a light coating of grease to the faying surfaces of threads or flanges.

(2) Assemble the component and wipe off excess grease.

(3) Clean the areas where sealant will be applied with methyl-ethyl ketone solvent or equivalent.

(4) Apply a bead of BMS 5-26 sealant to the joints that were greased.

(5) Allow the sealant to cure 48 hours and make sure that it has adhered to the surfaces.

CHAPTER

32

LANDING GEAR

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LANDING GEAR

SPECIFIC CORROSION PROBLEMS

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Main Landing Gear	Corrosion because of environmental exposure.	32-10-37 Fig 1	
	Damage to the side strut finish caused by interference with center door.		
	Corrosion on MLG torsion pins.		
	Stress corrosion cracks on H11 brake attachment bolts.		
	737-600, -700, -700C, -800, -900 only. Corrosion on electrical connectors.		SB 24-1148, 24-1149, 26-1112 and SL 24-171
Nose Landing Gear	Corrosion on torsion link pin and shaft.	32-20-37 Fig. 1	SB 32-1044, 32-1095
	Corrosion found in steering collar area.		SB 32-1044, 32-1095
	Corrosion on torsion link pin and shaft.		

Specific Corrosion Problems - Landing Gear

Figure 1

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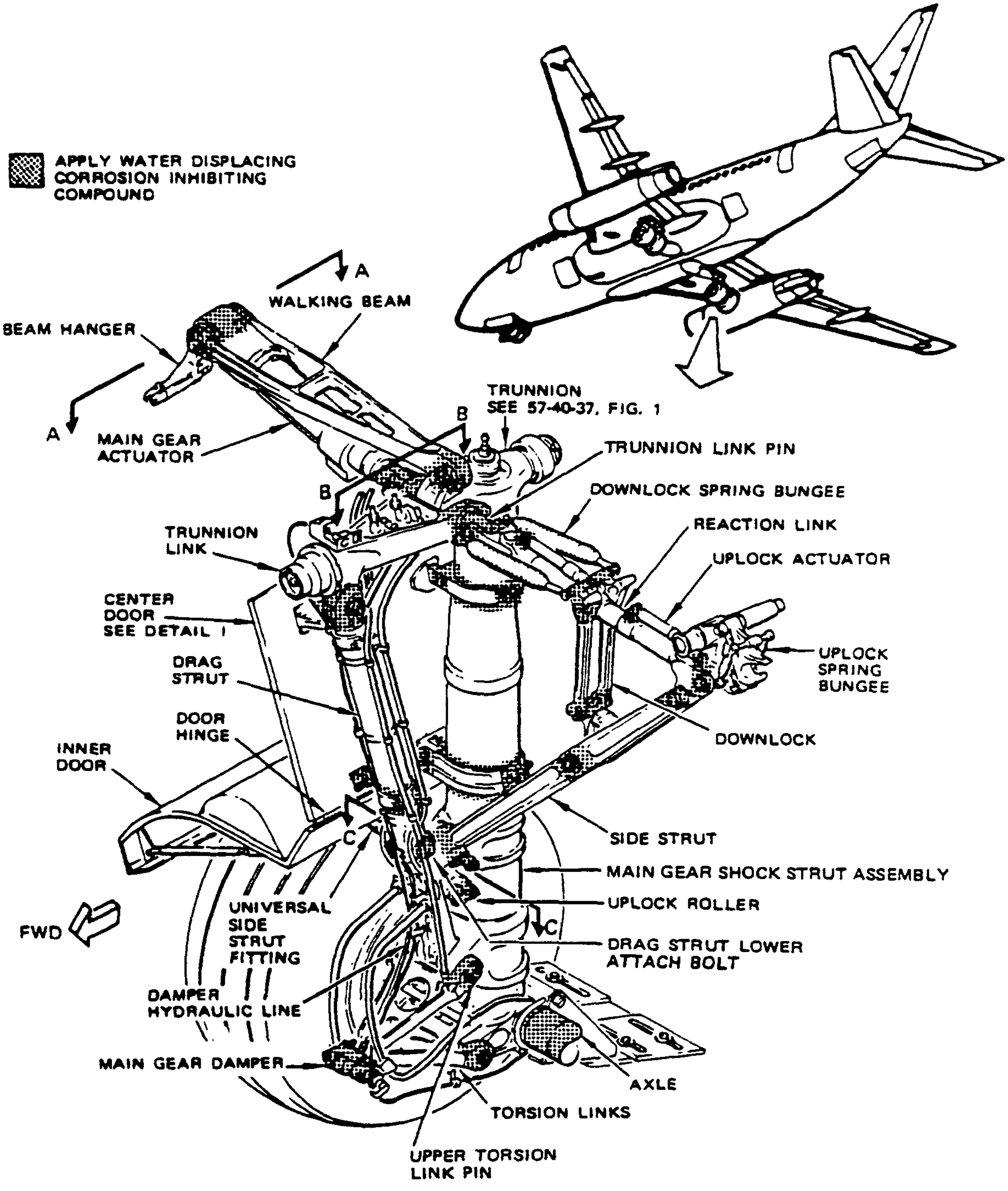
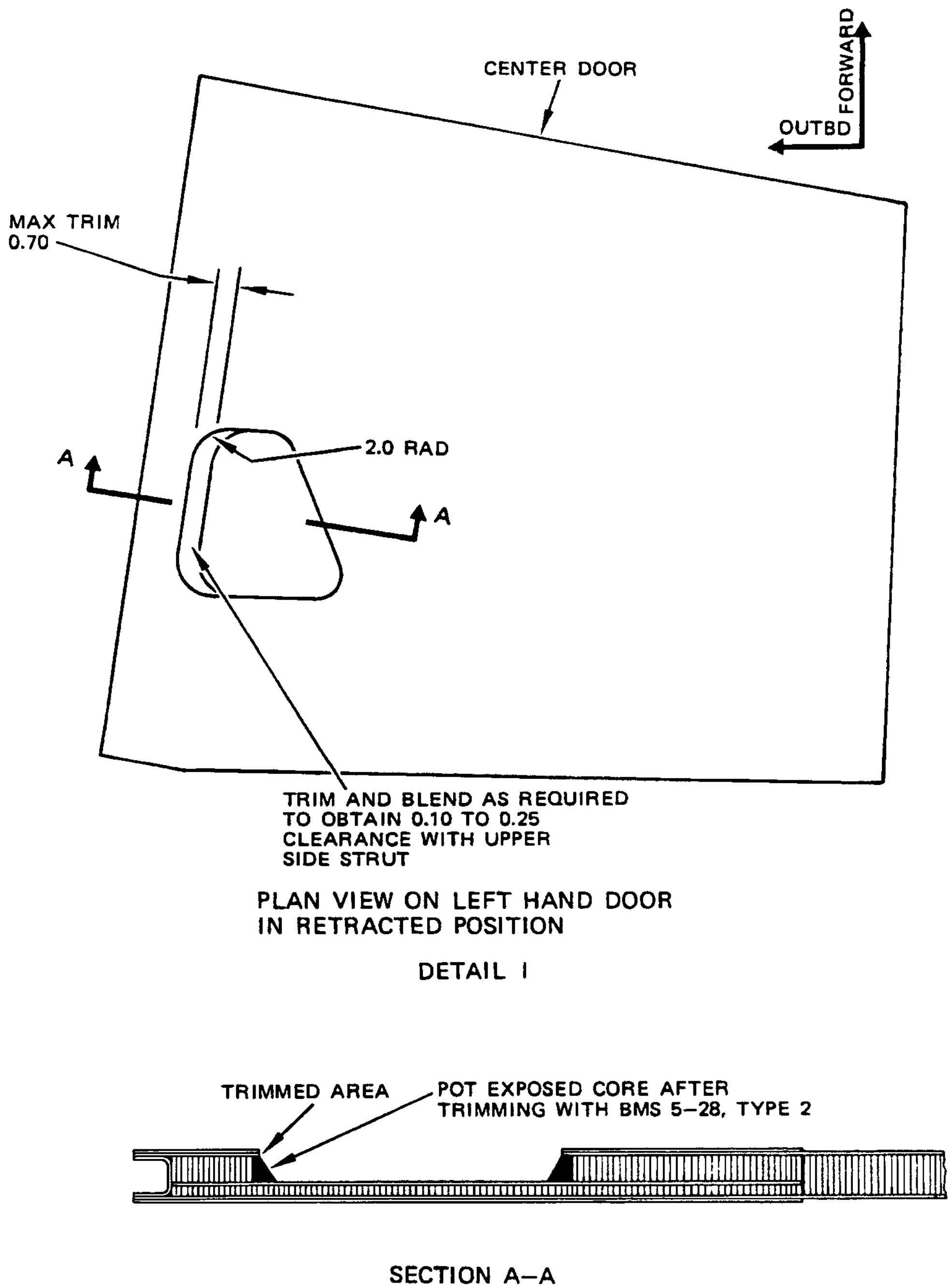
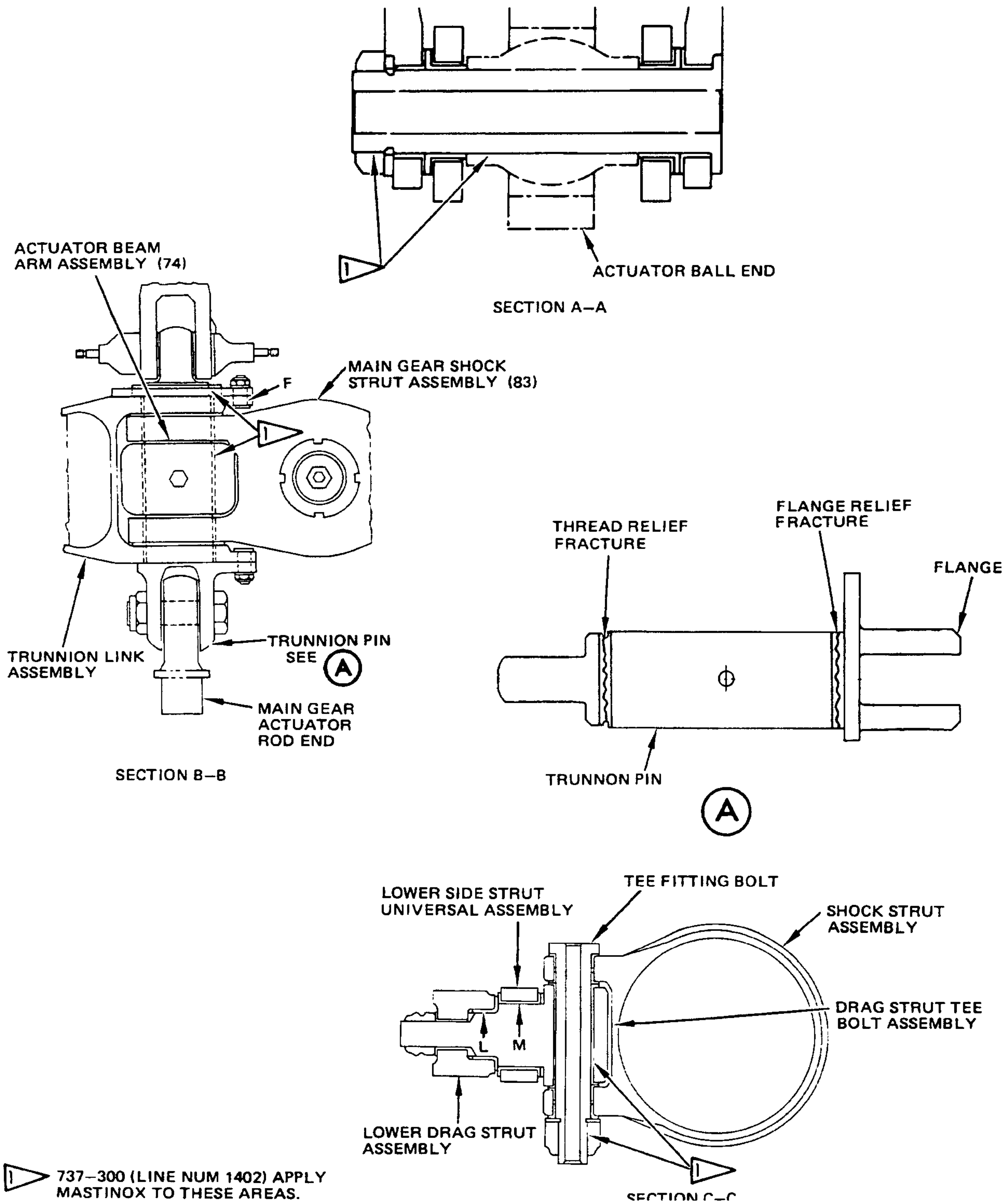


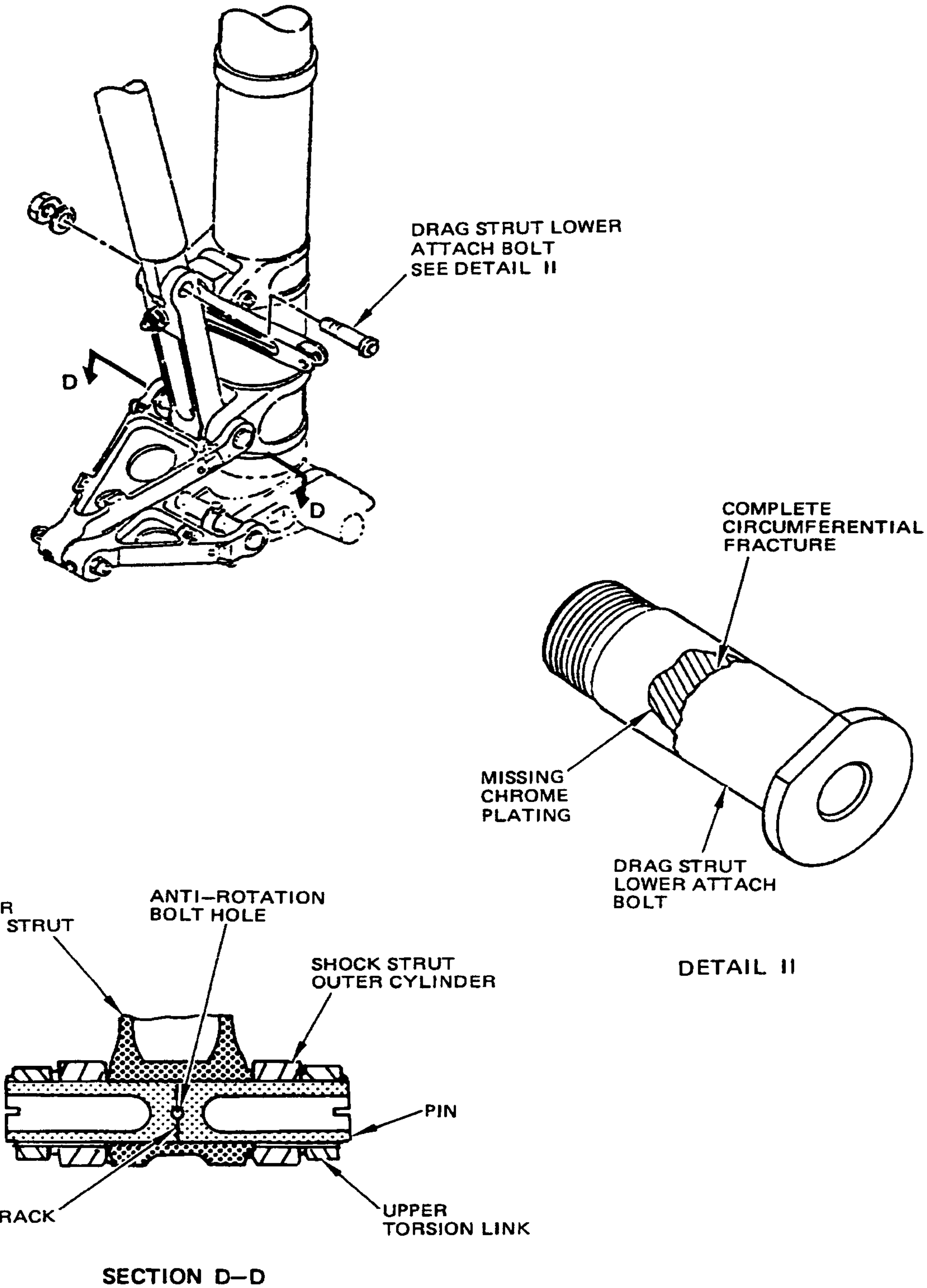
Main Landing Gear
Figure 1 (Sheet 1)



Main Landing Gear
Figure 1 (Sheet 2)



Main Landing Gear
Figure 1 (Sheet 3)



Main Landing Gear
Figure 1 (Sheet 4)

1. General

A. The main landing gear fittings, especially at the attachment lugs, have been found susceptible to corrosion. Damaged paint finishes and plating are attributed to exposure to the weather elements and runway debris. Service wear and hard landings contribute to galling of lugs and lug faces.

B. Specific corrosion problems have been encountered with the aft center door hinge connecting the inner and center door. Corrosion has been attributed to the accumulation of debris in the recessed area of the attachments to the center door.

C. Damaged finish on the outboard aft lug of the main landing gear upper side strut could contribute to stress corrosion cracking of the steel strut. The damage has been attributed to chafing by the center door on airplanes up to line number 491 with the inner skin and honeycomb core trimmed for clearance. No problems have been reported on airplanes with a depression in the door manufactured with a continuous inner skin.

D. Corrosion has been reported under the head of the bolt through the main gear actuator and walking beam.

E. Corrosion has been reported on the shaft of the drag strut lower attach bolt. If this corrosion is left untreated it may lead to fracture of the attach bolt.

F. Cracks and damaged finishes have been reported on the upper torsion link pins. Cracking is attributed to stress corrosion.

G. Corrosion has been reported on the trunnion link pin thread relief radius. Stress corrosion has been reported to cause the main landing gear trunnion 4340M steel pin to fracture at the thread relief and at the flange relief.

H. Stress corrosion fractures have been reported on the drag strut lower attach bolt. The bolt fractured at approximately the middle of the bolt shank. Corrosion started in the bolt area from which the chrome plating had separated. The bolt was fabricated from 4340M steel with hard chrome plating applied to the shank O.D. (Fig. 1, Detail 11).

I. Broken MLG torsion pins were found on some airplanes. Cracks at the anti-rotation bolthole were examined on some torsion pins (Fig. 1, View D-D). Corrosion, flaking chrome and excessive wear were found on some torsion pins.

J. Stress corrosion cracking has been reported on the MLG brake assembly shear studs. Cracked or broken attaching shear studs will reduce the structural integrity of the brake attaching assembly.

K. Stress corrosion cracks can occur on h11 steel brake attachment bolts.

L. Pitting corrosion has been reported on the main landing gear as a result of missing chrome plate at the fuse bolt location.

M. Corrosion occurred on the actuator beam attach lugs, the actuator beam attach bolt assemblies, and the trunnion pin. Corrosion can cause the actuator beam arm and trunnion pin to break.

N. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the regular inspection of Volume 1, 20-20-00 to prevent or find the start of corrosion. Fasteners that are gone, white powdery or other deposits are signs of corrosion.

B. After you clean the areas, do the inspection of Volume 1, 20-20-00 to make sure that protective finishes stay serviceable.

C. If you find corrosion (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.

D. For small amounts of corrosion, to decrease the downtime of the airplane, clean off corrosion products. Apply a corrosion inhibiting compound into the affected area to stop the corrosion process. Refer to Volume 1, 20-60-00 for how to apply corrosion inhibiting compound. Repair the finish system when the maintenance schedule permits.

E. Prevention Treatment

(1) At earliest opportunity consistent with the maintenance activity, corrosion prevention treatment should be accomplished to the main landing gear.

(2) After application of corrosion inhibiting compound, all grease fittings in the treated areas should be regreased.

(3) If you cleaned with steam or high pressure water and detergent, apply the corrosion inhibitor again.

(4) Shock Struts (Oleo). Apply water displacing corrosion inhibiting compound to exterior areas of the inner and outer cylinder with broken finish systems. All lugs, lug faces, connecting pin fasteners and strut door attachments should be sprayed with corrosion inhibitor.

(5) Axles. Apply water displacing corrosion inhibiting compound to outside surfaces of the axles except journal and bearing surfaces. Make suitable nozzle extension and spray the inside surfaces of the axles with corrosion inhibitor after protecting electrical wire and connectors.

(6) Side Struts. Apply water displacing corrosion inhibiting compound to surface areas with broken finish systems on both the upper and lower side struts. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibitor.

(7) Drag Strut. Apply water displacing corrosion inhibiting compound to exterior surface areas with broken finish systems. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibitor. Spray corrosion inhibitor on the strut door attachments.

(8) Walking Beam. Apply water displacing corrosion inhibiting compound to surface areas with broken finish systems. All lugs, lug faces and connecting pins shall be sprayed with corrosion inhibitor.

(9) Torsion Links. Apply water displacing corrosion inhibiting compound to surface areas with broken finish systems. All lugs, lug faces and connecting pins shall be sprayed with corrosion inhibitor.

(10) Trunnion Link. Apply water displacing corrosion inhibiting compound to surface areas with broken finish systems. Lugs, lug faces and connecting pins should also be sprayed. Refer to 57-40-37, Fig. 1 for bearing area treatment.

(11) Trunnion. The trunnion should be treated at the same time that the trailing edge attachment fittings are treated (Ref 57-40-37, Fig. 1).

(12) Door Hinges. Remove debris from recessed areas of door hinges and apply water displacing corrosion inhibiting compound to all hinge fittings. Relubricate hinge pins as necessary after application of corrosion inhibitor.

(13) Miscellaneous. Lugs, lug faces and connecting pins of links, actuators and lock mechanisms connecting above mentioned components should also be sprayed with corrosion inhibitor.

(14) The installation of mylar tape under corrosion resistant steel clamps is recommended at overhaul to minimize the risk of galvanic corrosion should the finish be damaged.

(15) Ensure that there is adequate clearance between the center door and the upper aft lug of the side strut. It is permissible to trim the door, as shown in Detail I, to obtain the required clearance of 0.1U to 0.25.

F. Improved corrosion protection

(1) On airplane PP504, BMS 3-27 corrosion preventive compound was applied to MLG actuator bolt, actuator attach bolt, tee fitting attachment bolt (Fig. 1).

(2) SB 32-1054 gives a procedure to replace the MLG brake assembly shear studs. This is optional.

(3) SB 32-1123 gives a procedure to add lubrication provisions at MLG drag strut and torsion link joints. This is recommended to reduce corrosion at upper and lower drag strut fittings.

(4) For airplane line number 1567 and on, PRR 34477 added BMS 3-27 corrosion preventive compound to the following components:

(a) MLG actuator/actuator beam attach bolt

(b) Trunnion pin/trunnion link

(c) Downlock link/spring support shaft

(d) Tee bolt/outer cylinder attach bolt

(e) Uplock shaft to uplock interface.

(5) On airplane line number 1869 and on, PRR 34509-1 replaced the plain bushing with flanged bushing in the upper downlock link assembly and actuator beam arm assembly. Cadmium-titanium plating and hot application of MIL-C-11796 corrosion preventive are applied to bore of trunnion pin assembly, uplock support shaft, reaction link assembly, and spring support shaft. Other parts such as tee-fitting-attachment bolt, torsion-link pin, side-strut-reaction-link assembly and actuator-beam bolt received hot application of MIL-C-11796 corrosion preventive compound to inside diameter.

(6) SB 32A1113 gives procedure for inspection and replacement of MLG torsion link pins on airplane line numbers 1 thru 648, and 650 thru 791. This service bulletin now recommends the replacement of upper and lower pins at the same time with new pins. These pins have no anti-rotation bolt holes.

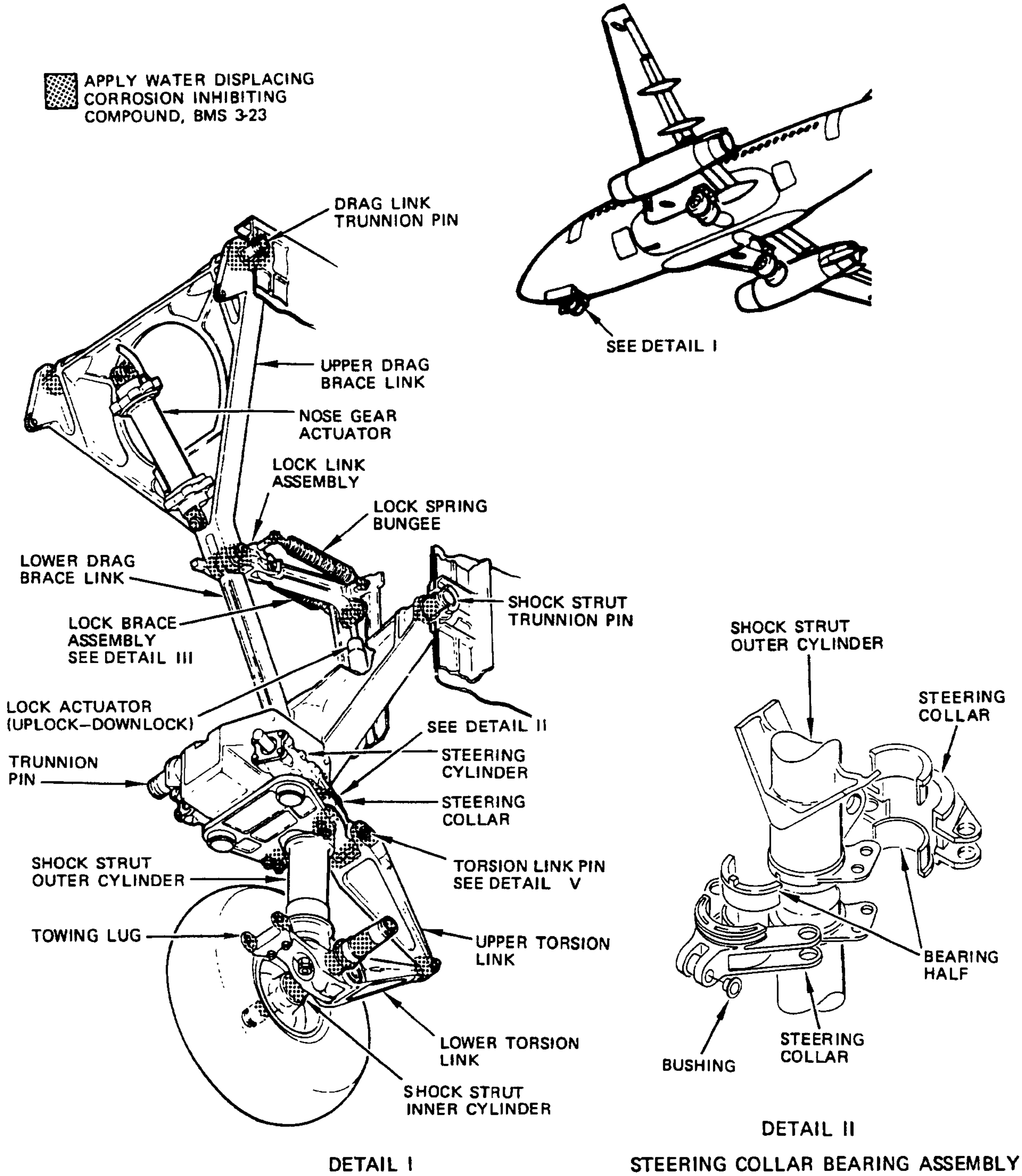
(7) H11 steel brake attachment bolts are replaced by Inconel bolts, which do not get stress corrosion as easily.

(8) (Models 737-600, -700C, -800, -900 only Operators have reported significant corrosion to electrical connectors located in the main wheel well. The airplanes in these operations land on runways that are treated with fluids that contain potassium formate. Use of the fluids has begun to extend to multiple locations in the world. It has been determined that corrosion inhibiting compounds (CICs) can be used to form a shield against the corrosion caused by the potassium formate without affecting the electrical components or the systems. Refer to Service Bulletins 737-24-1148, 737-24-1149, and 737-26-1112. Also refer to Service Letter 737-SL-24-171.

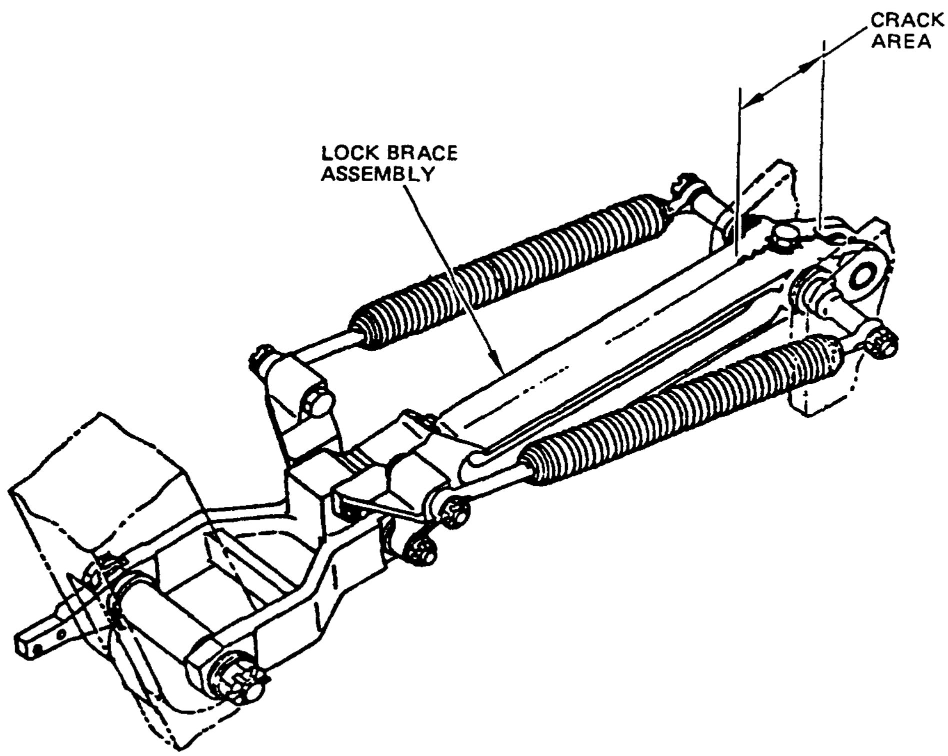
G. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

(2) Annual application of BMS 3-23 compounds is necessary to areas identified or as required by washing cycles.

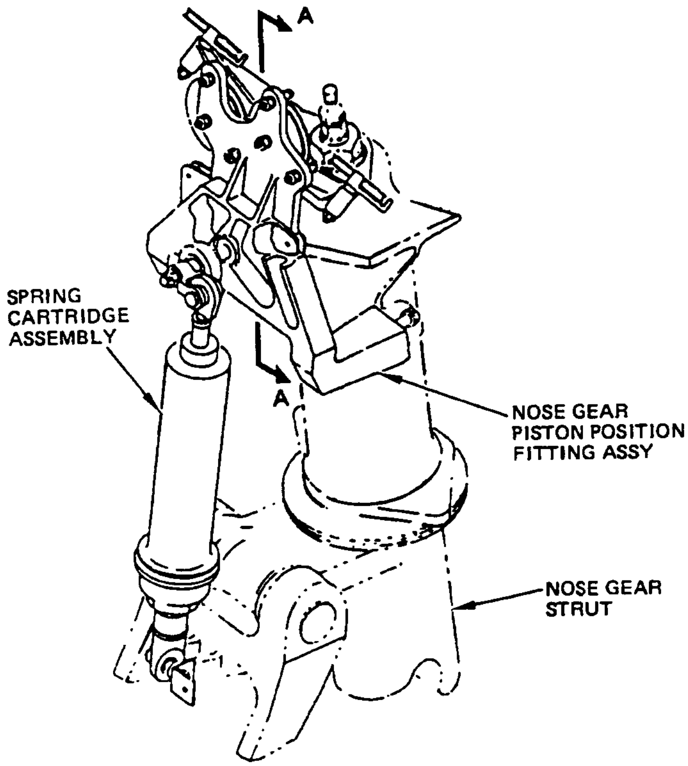


Nose Landing Gear
Figure 1 (Sheet 1)

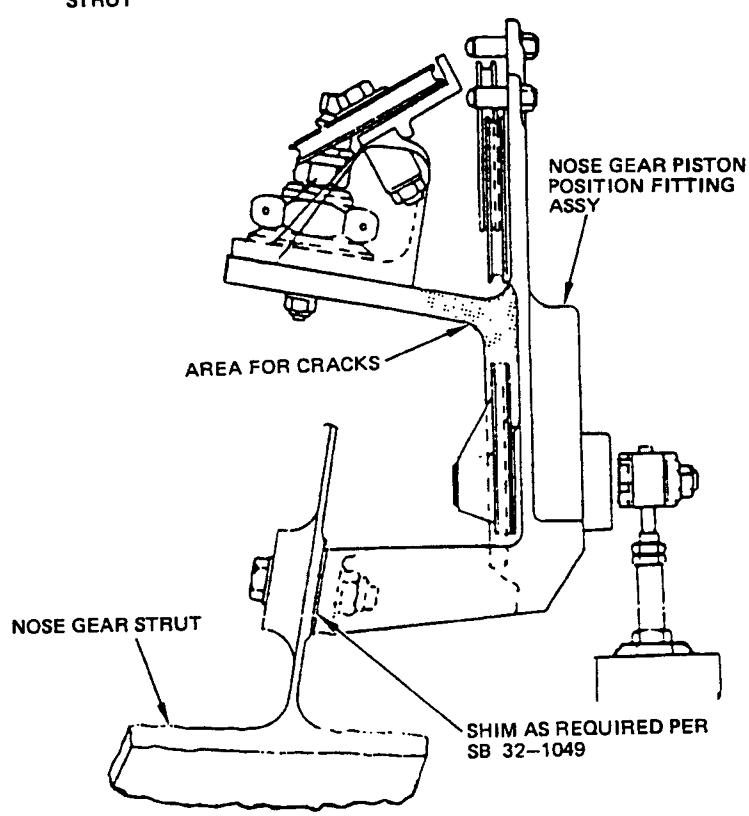


DETAIL III

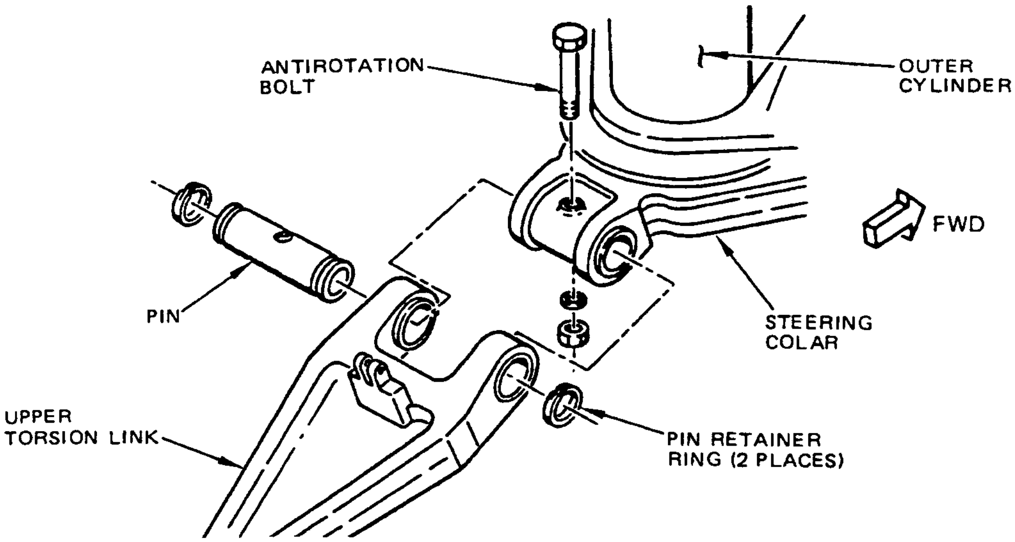
Nose Landing Gear
Figure 1 (Sheet 2)



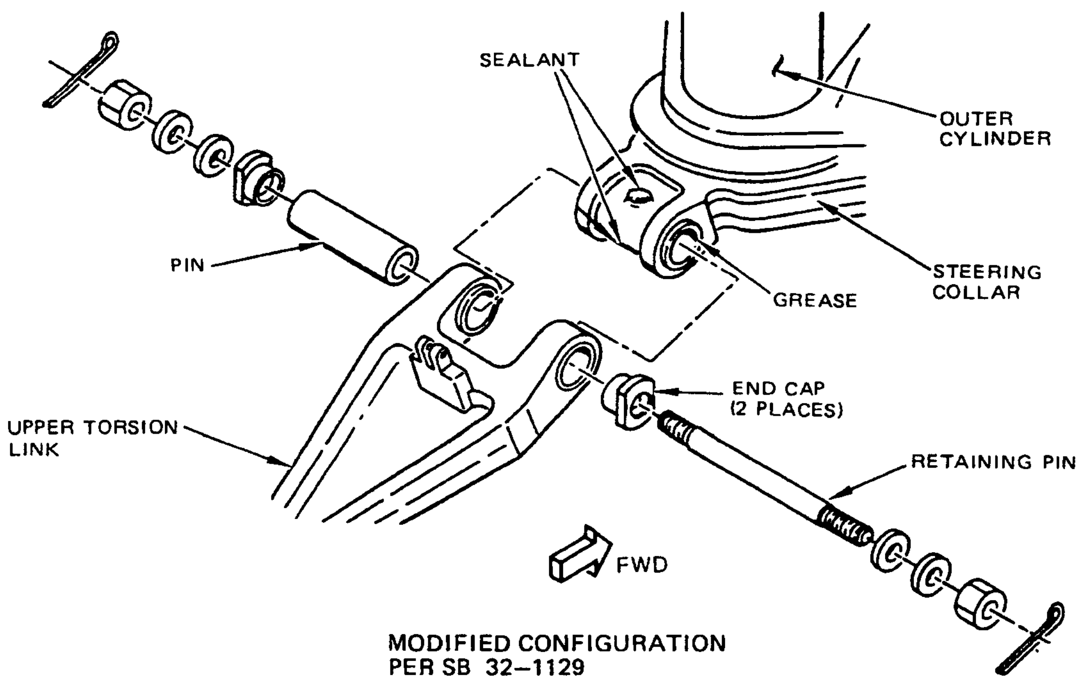
DETAIL IV



Nose Landing Gear
Figure 1 (Sheet 3)



EXISTING CONFIGURATION



MODIFIED CONFIGURATION
PER SB 32-1129

DETAIL V

Nose Landing Gear
Figure 1 (Sheet 4)

1. General

A. The nose landing gear fittings, especially at the attachment lugs, have been found susceptible to corrosion. Damaged paint finishes and plating are attributed to exposure to the weather elements and runway debris. Service wear and hard landings contribute to the galling of tile lugs at the fittings.

B. Anti-rotation lugs on the nose steering collar bearing assembly have been reported to shear resulting in excessive wear and corrosion. Improved bearing assemblies have been incorporated on airplanes from cum line No. 271 and can be installed retroactively by incorporating SB 32-1044. Corrosion has been reported on the steering collars on airplanes with the improved bearing assemblies and is attributed to lubrication escaping between the steering collar halves. On production airplanes, cum line No. 535 and on, the improved steering collars have been further modified by bonding a shim onto the aft steering collar and sealing with BMS 5-95 sealant to prevent the grease running out. This modification can be accomplished retroactively by incorporating SB 32-1095.

C. Stress corrosion cracks have been reported on the nose landing gear lock brace assembly. All cracks originated at the intersection of the 0.875 and 0.250 inch diameter holes and propagated along the forging parting plane. A lock brace assembly of 7075-T73 material is the preferred replacement for those assemblies manufactured from 7073-T6 (Fig. 1, Detail III).

D. Stress corrosion has been the cause of a fractured nose gear piston fitting assembly. The improper shimming, between the two lower legs of the fitting assembly and nose gear strut, permitted a hinge fit-up stress to develop in the fitting assembly and caused stress corrosion cracking (Fig. 1, Detail IV).

E. Corrosion has been reported on tide piston position spring cartridge assembly. The spring cartridge assembly separated from the upper rod end fitting. Bearing corrosion, believed to be the cause of bearing separation, is attributed to moisture collecting in the spring cartridge assembly (Fig. 1, Detail IV).

F. Stress corrosion fracture has been reported on hydraulic transfer cylinder end caps. Aluminum is the material used on the fractured end caps.

G. Excessive corrosion has been reported on the nose landing gear torsion link pin and shaft (Fig. 1, Detail V).

H. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Prevention Treatment

(1) At earliest opportunity consistent with the maintenance activity, corrosion prevention treatment should be accomplished to the nose landing gear.

(2) Perform preventive measures to the following components (Detail I).

(a) Shock Struts (Oleo). Apply corrosion inhibiting compound to exterior areas of the inner and outer cylinder with broken finish systems. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibiting compound. Remove nameplates, covers and easily accessible noncritical (does not affect adjustments) fasteners to reveal tapped holes. Spray steering cable pulley brackets, miscellaneous equipment attached to the outer and inner cylinders, and the inside of tapped holes with corrosion inhibiting compound. Reinstall parts removed after application.

(b) Drag Brace Links. Apply corrosion inhibiting compound to exterior surface areas with broken finish systems. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibiting compound.

(c) Axle. Apply corrosion inhibiting compound to outside surface areas of the axle. Make suitable nozzle extension and spray the inside surfaces of the axle. At wheel removal spray the exterior surfaces of axle covered by wheel except at bearing or journal surfaces.

(d) Torsion Links. Apply corrosion inhibiting compound to surface areas with broken finish systems. Lugs, lug faces and connecting pins should be sprayed with corrosion inhibiting compound.

(e) Nose Gear Actuator. Apply corrosion inhibiting compound to surface areas with broken finish systems. Lugs, lug faces and connecting pins should be sprayed with corrosion inhibiting compound.

(f) Steering Assembly. Apply corrosion inhibiting compound to surface areas with broken finish systems and around the outer cylinder of the shock strut. Lugs, lug faces and connecting pins should also be sprayed.

(g) Trunnion. Apply corrosion inhibiting compound to exterior surface areas with broken finish systems. Lugs, lug faces, connecting pins, fasteners and trunnion bearing caps should be sprayed with corrosion inhibiting compound.

(h) Lock Brace Assembly. Apply corrosion inhibiting compound to surface areas of all components of the locking linkages with broken finish systems. Lugs, lug faces, and connecting pins should also be sprayed.

(3) The installation of mylar tape under corrosion resistant steel clamps is recommended at overhaul to minimize the risk of galvanic corrosion should the finish be damaged.

(4) SB 32-1049 provides instructions for a one time inspection and shimming of the nose gear piston position fitting assembly. Compliance with SB 32-1049 is recommended to ensure that proper shim thickness is provided in the nose gear position fitting assembly.

F. Improved Corrosion Protection

(1) For airplanes thru cum line number 534, the incorporation of SB 32-1095 will lessen the possibility of corrosion between the steering collar bearing halves and outer cylinder.

(2) SB 32-1055 provides modification procedures for spring cartridge assembly. Compliance with the SB 32-1055 is recommended to reduce the possibility of corrosion in the piston spring cartridge assembly.

(3) SB 32-1099 provides a replacement procedure for the landing gear hydraulic transfer cylinder end cap. Compliance with the SB 32-1099 is recommended to prevent hydraulic system pressure loss due to cracked nose and main landing gear transfer cylinder end caps.

(4) SB 32-1129 provides modification procedure for the nose landing gear torsion link. Compliance with the SB 32-1129 is recommended to reduce the possibility of cracking of the nose landing gear torsion link pins and shaft.

(5) For airplane line number 1567 and on, PER 34477 added Mastinox 6856K corrosion preventive compound to the following components prior to installation on the nose gear:

(a) Trunnion pin

(b) Drag brace/body attach bolt

(c) Drag brace attach pin

(d) Lock link/lock link shaft and cross bolt

(e) Steering collar/outer cylinder interface

(f) Steering collar mating surfaces

(g) Steering collar/actuator attach bolt

(h) Bolt/attach fitting

Reapply the Mastinox 6856K corrosion preventive compound whenever the component is removed.

(6) To improve corrosion protection in production, on airplane line number 1900 and on, PER 34509 applied a chrome plate finish on fwd-collar-half-lug surfaces and sulfamate nickel plating on the aft-collar-half-lug surfaces. Full thickness of cadmium-titanium plating (F-15.01) and hot application of MIL-C-11796 corrosion preventive compound are applied to bore of trunnion pin, upper-drag-brace pin, lower-drag-brace bolt, door-operator bolt and torsion-link pin.

G. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

CHAPTER

34

NAVIGATION

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NAVIGATION

SPECIFIC CORROSION PROBLEMS

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
ADF Sense Antenna	Corrosion has been found on the ADF sense antenna feed stud.	34-50-37 Fig. 1	

SPECIFIC CORROSION PROBLEMS - NAVIGATION
Figure 1

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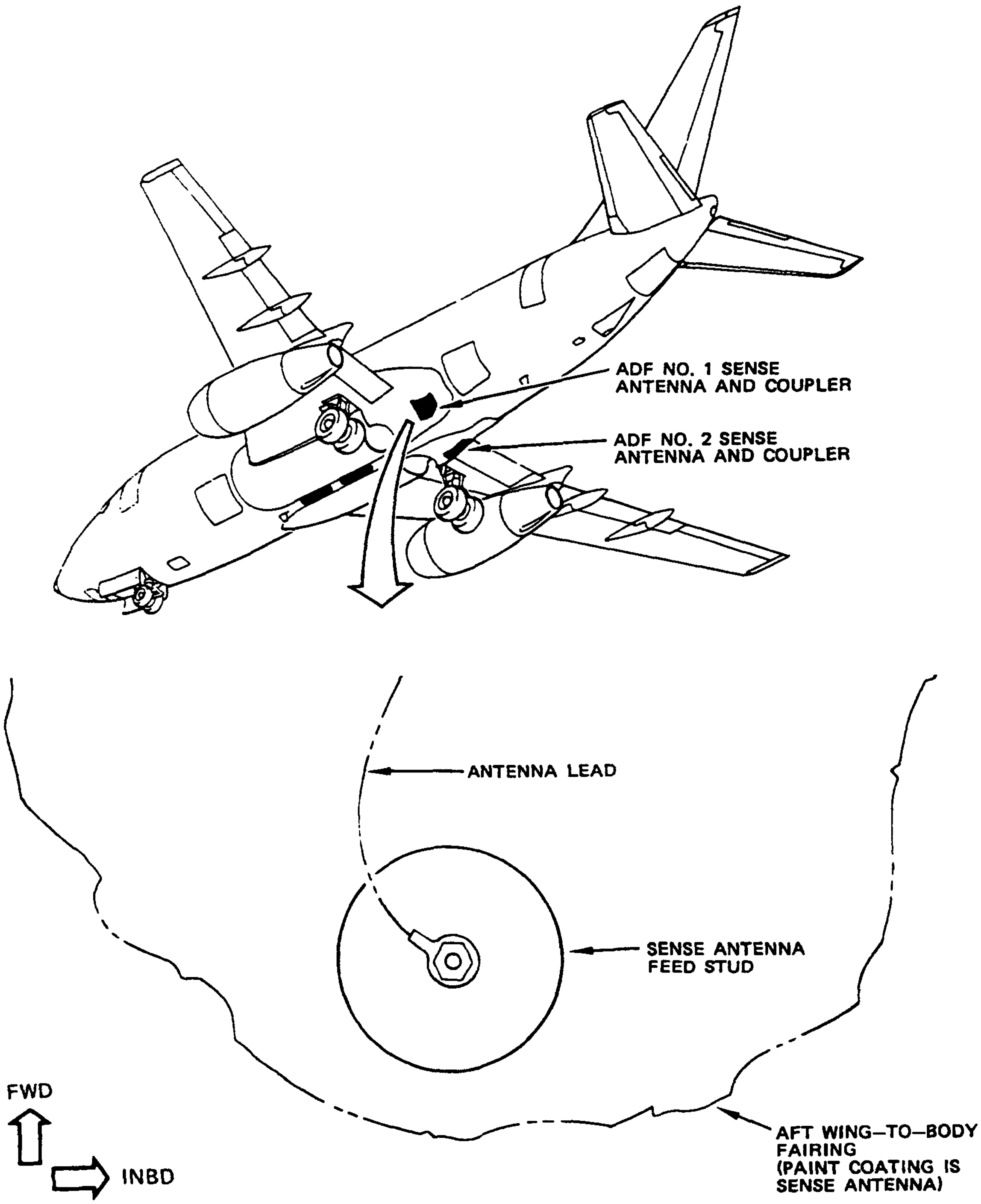

ADF Sense Antenna
Figure 1

1. General

A. The ADF sense antenna has been found to be corroded at the faying surface of the feed stud to the flame sprayed antenna surface.

2. Corrosion Prevention

A. Examine the antenna feed stud connector and antenna flame sprayed area (flame sprayed area is the antenna) for evidence of corrosion. Where corrosion is evident the feed stud must be removed for a more thorough inspection.

B. Refer to Structural Repair Manual, for corrosion removal procedures.

C. Whenever the feed stud is removed, on replacing, it must be fillet sealed both internally and externally with BMS 5-95 sealant to prevent collection of moisture.

CHAPTER

35

OXYGEN

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Oxygen bottle and support cup	Surface corrosion of bottle and support cup	35-30-37 Fig. 1	

SPECIFIC CORROSION PROBLEMS - OXYGEN
Figure 1

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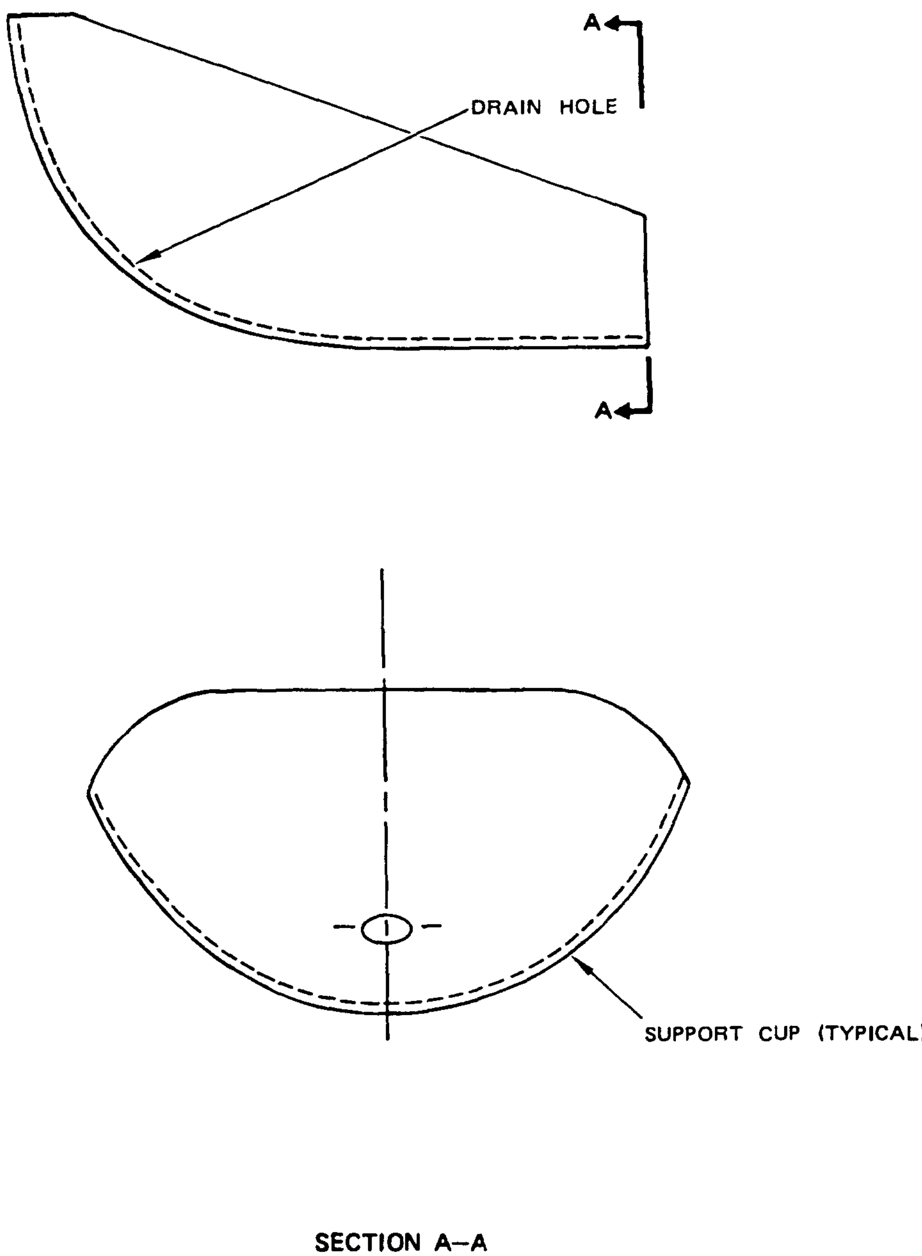

Oxygen Bottle and Support Cup
Figure 1 (Sheet 1)

OXYGEN

1. General

A. Corrosion can occur on oxygen bottles and support cups.

2. Corrosion Removal

A. At regular times, examine each oxygen bottle and support cups for corrosion.

B. If you find corrosion on the bottle or cup, refer to Structural Repair Manual.

C. If the support cups do not have drain holes, put holes in them as follows:

(1) Drill a 0.50 inch diameter hole as shown on sheet 1.

(2) Chemically treat the reworked surfaces per 20-43-03 of the Boeing Standard Overhaul Practices Manual.

(3) Apply one coat of BMS 10-11, type 1 primer.

CHAPTER

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ELECTRICAL/ ELECTRONICS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Electrical/ Electronics Racks	Corrosion found on surfaces of racks and shelves.	39-20-37 Fig. 1	

SPECIFIC CORROSION PROBLEMS - ELECTRICAL/ELECTRONICS
Figure 1

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1. General

A. Corrosion can occur on surfaces of the Electrical/Electronics (E/E) racks and shelves.

2. Corrosion Prevention

A. E/E racks and shelves should be alodined, primed with BMS 10-11 primer and treated with BMS 3-23. Any one of these procedures is sufficient, but you can do all three at the same time.

CAUTION: IF YOU SPRAY BMS 3-23 COMPOUND, REMOVE THE E/E BOXES AND SEAL THE CONNECTORS.

YOU SHOULD TREAT THE MOUNTING SURFACES OF E/E BOXES, SHELVES AND RACKS WITH ELECTRICALLY-CONDUCTIVE ALODINE ONLY.

B. All bonding points (tray to shelf, shelf to rack) should be electrically bonded per 20-10-185 of the Maintenance Manual. The maximum resistance should not exceed 0.001 ohms.

C. If you find corrosion, refer to Structural Repair Manual.

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CHAPTER

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AIRBORNE AUXILIARY POWER UNIT

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AIRBORNE AUXILIARY POWER

SPECIFIC CORROSION PROBLEMS

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
APU Air Inlet	Corrosion of zee stiffener in APU air inlet torque box collector. Corrosion of structure under collector.	49-50-37 Fig. 1	Material changed to CRES at line No. 386 and by SB 53-1050

Specific Corrosion Problems - Airborne Auxiliary Power
Figure 1

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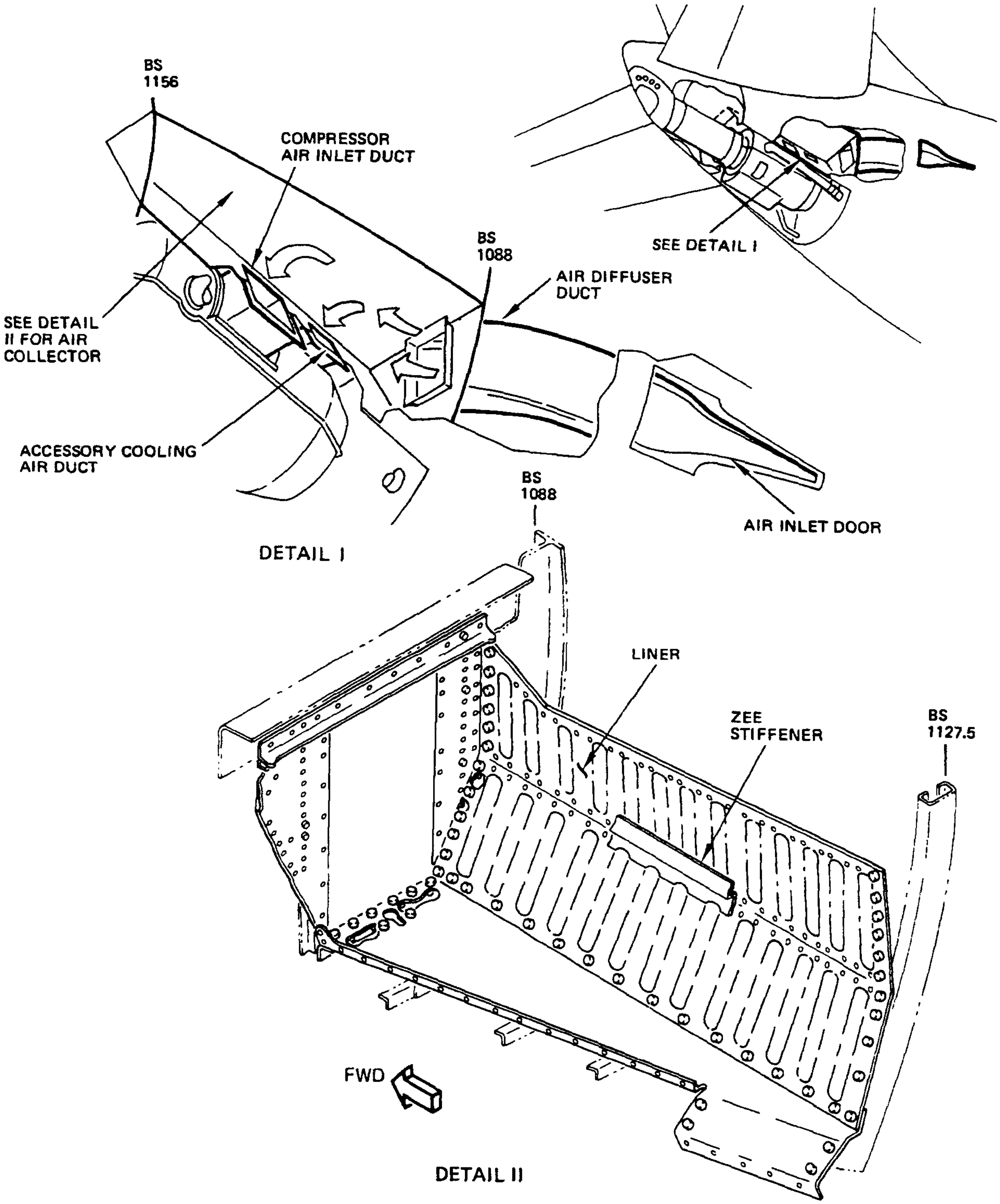

APU Air Inlet Torque Box Collector
Figure 1

1. General

A. Air supply to the APU is provided through the air inlet door and ducts located on the right side of the fuselage forward of the APU. The ducted air is collected in a collector box formed by the right side torque box. The torque box is enclosed with titanium webs, beaded titanium web liners and aluminum or CRES stiffeners.

B. Corrosion has been reported on the structural components of the collector primarily on the scalloped zee stiffener shown in the illustration. Corrosion may be attributed to air borne contaminants and moisture collected in the box. Undetected corrosion leading to broken pieces of corroded parts being ingested into APU components may lead to damage to the APU unit.

C. On airplanes through cum line 385 the stiffener is made from aluminum and the dissimilar metal contact with the titanium webs resulted in potential areas for galvanic corrosion. On subsequent airplanes, the stiffener is made from CRES and eliminated the need for preventative maintenance in this area. Retroactive installation of the zee stiffener can be made by incorporating SB 53-1050.

D. Corrosion has also been discovered under the collector box where the accumulation of dirt has prevented the drainage of moisture, causing the skin and structure to corrode. Corrosion has also been experienced around the sealing surface of the compressor air inlet duct and the adjacent structure.

E. Beginning at line number 2618, PRR 35042-1 (Rapid Revisions 97066-20 and -21) apply BMS 3-29 to interior surface of Section 48, between STA 1088 and STA 1156, and on aluminum surfaces inside the APU compartment.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make periodic inspections on the interior of the collector box to preclude or detect the early stages of corrosion. Skin bulges or white powdery deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. Access to the collector may be through the forward opening with the air diffuser duct removed or through the inboard openings when the APU is removed for maintenance or rework.

B. When the opportunity occurs, access to the area under the collector box should be obtained and the area cleaned to ensure adequate drainage.

C. Where extensive corrosion exists (noticeable skin bulges, missing fasteners, or large amounts of white deposits at fastener heads or joint edges), refer to Structural Repair Manual for details of corrosion removal.

D. For minor corrosion detected during the periodic inspections and to minimize the downtime of the airplane, the corrosion products should be cleaned off followed by an application of water displacing corrosion inhibiting compound into the area to retard the corrosion process. Wipe off excess after 30 minutes.

NOTE: For details of application of water displacing corrosion inhibiting compound refer to Volume 1, 20-60-00.

E. For corrosion prevention, apply water displacing corrosion inhibiting compound into faying surfaces, joints, heels of stiffeners and any structure with its upstanding leg exposed to the air flow. Wipe off excess after 30 minutes. Additionally, apply corrosion inhibiting compound to the structure under the collector box.

F. Frequency of Application

(1) Inspect the area at regular maintenance intervals and reapply corrosion inhibitor as required.

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Table 1:

CHAPTER

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STRUCTURES

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Composite	Composite panel fastener	51-40-37	

SPECIFIC CORROSION PROBLEMS - COMPOSITE PANEL
Figure 1 (Sheet 1)

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1. General

A. Composite panels are widely used on some areas of the airplane. The panel may be a graphite composite, aramid composite or fiberglass composite.

B. Graphite panels installed on graphite panels or on graphite structural components must use CRES or titanium fasteners. Use of aluminum fasteners in graphite or hybrid aramid/graphite structures is not recommended and corrosion may result.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

(2) For treatment of fasteners and fastener holes in composites for repairs, refer to structural repair manual.

C. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

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CHAPTER

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DOORS

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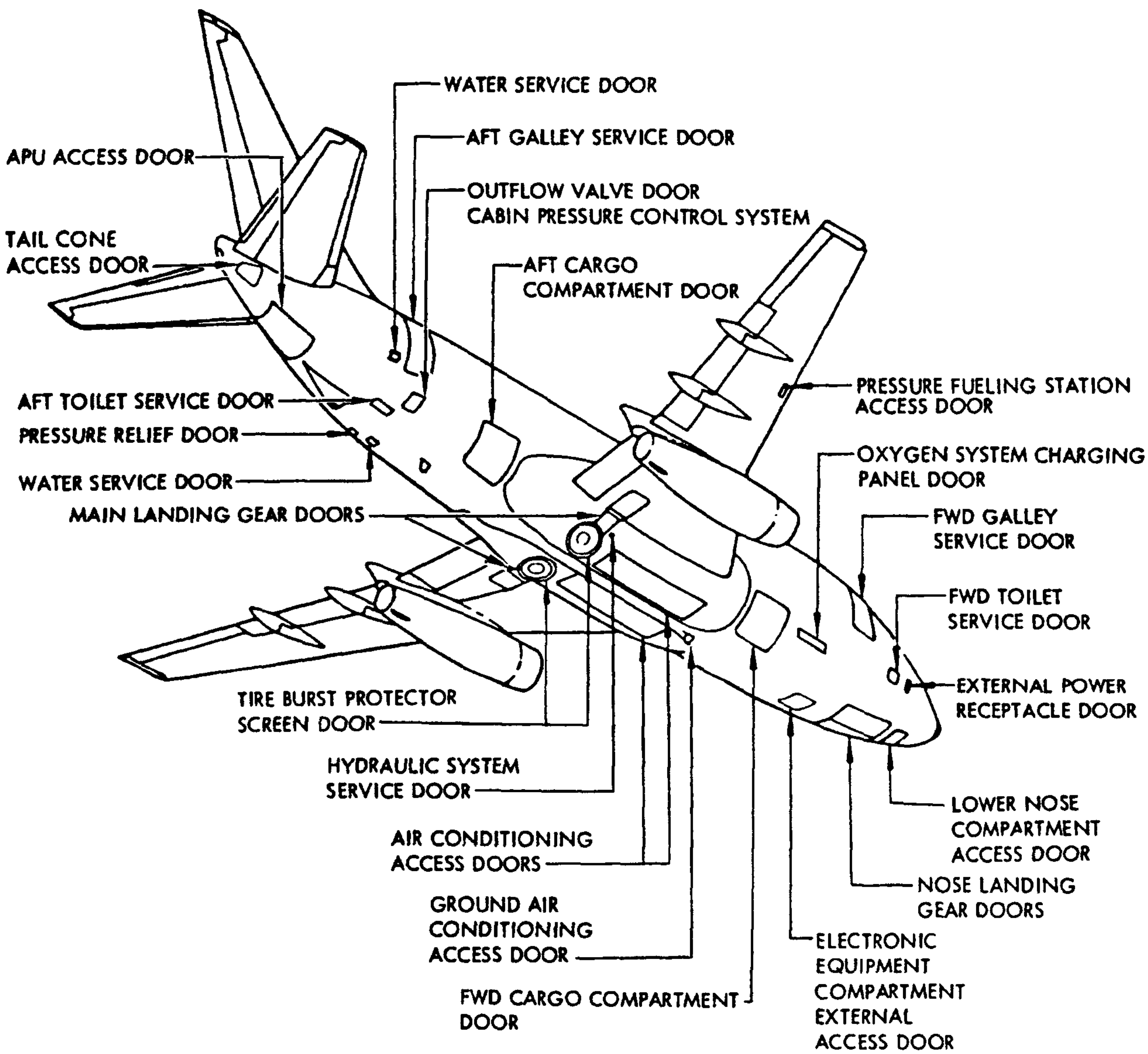
DOORS

SPECIFIC CORROSION PROBLEMS

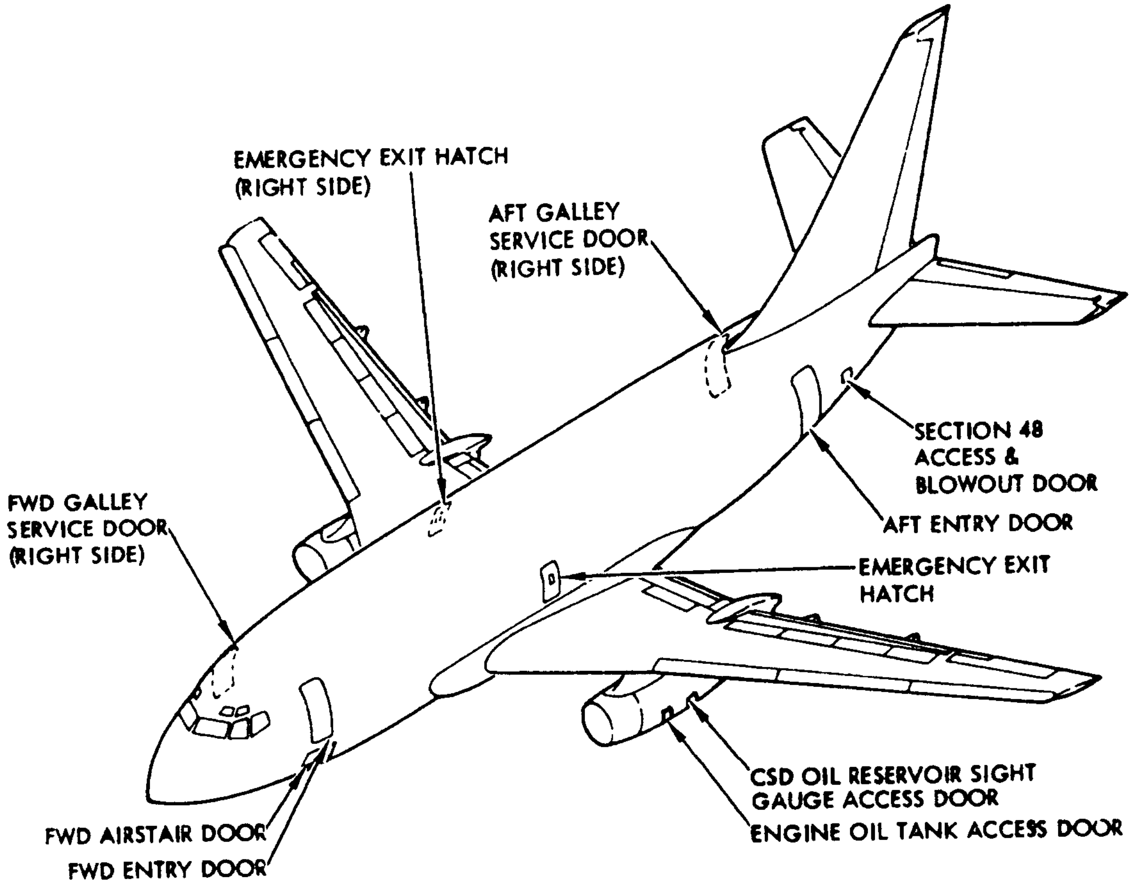
AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Entry Doors	Door corrosion due to exposure to weather in open position.	52-10-37 Fig. 1	
	Corrosion on door torque tubes in the body adjacent to the door.		
	Corrosion on aft service door exterior handle and door handle mechanism housing.		
	Corrosion of aft galley door at rivets between webs and intercostals.		SB 52-1116
Emergency Hatches	Hatch corrosion due to condensation of moisture. Corrosion on hatch operating handle.	52-20-37 Fig. 1	
Cargo Doors	Door corrosion due to condensation of moisture.	52-30-37 Fig. 1	SB 51-1006
	Door-mounted door stops on forward and aft cargo doors cracked due to fatigue and stress corrosion.		SB 52-1065
	Weak or broken door latch springs.	52-30-37 Fig. 1	SB 52-1051

Forward Access and Equipment Access Doors	Door corrosion due to accumulation of fluids.	52-40-37 Fig. 1	
Airstairs	Corrosion at intersection of treads and risers and the lower side rail.	52-60-37 Fig. 1	

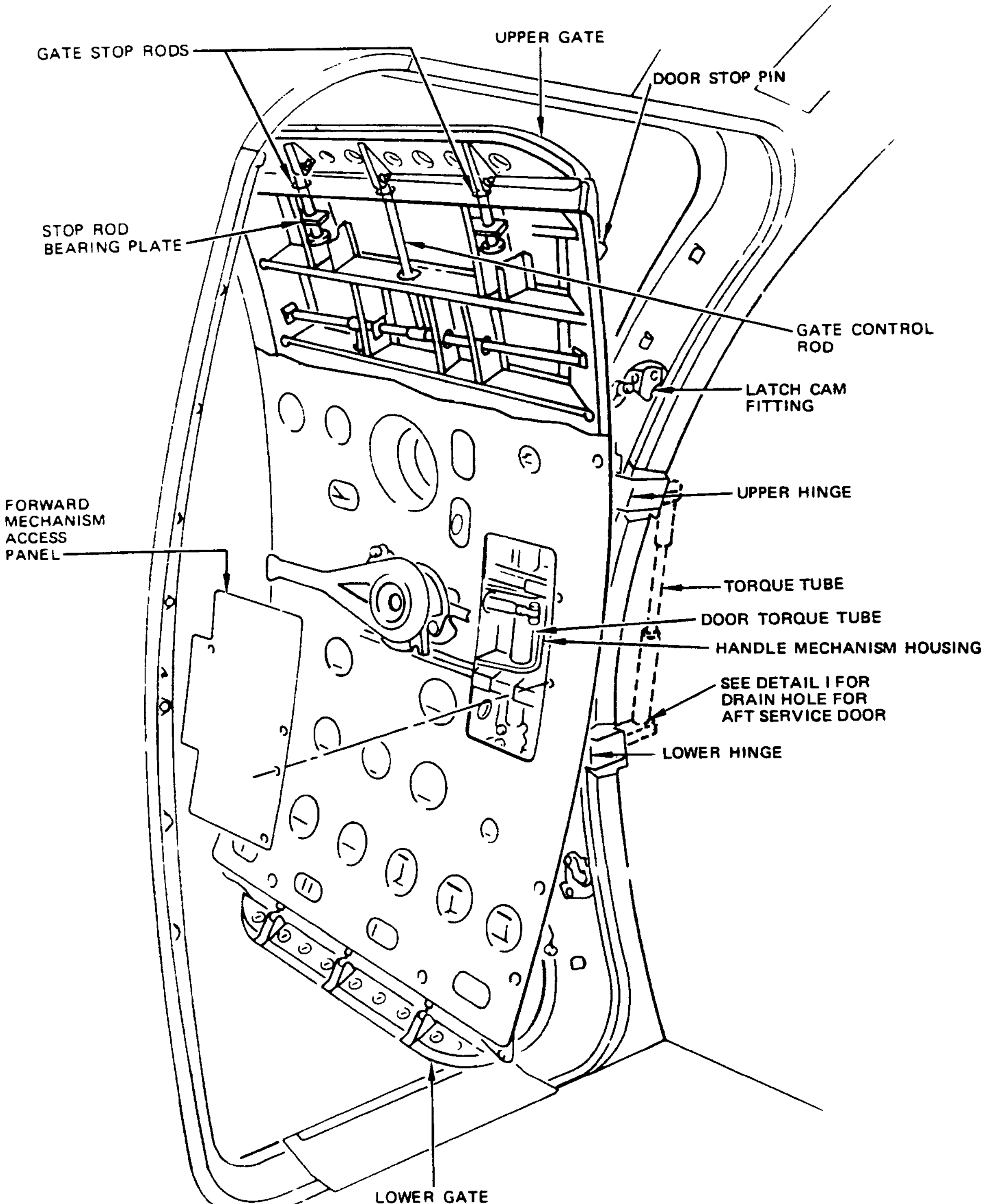
Specific Corrosion Problems - Doors
Figure 1



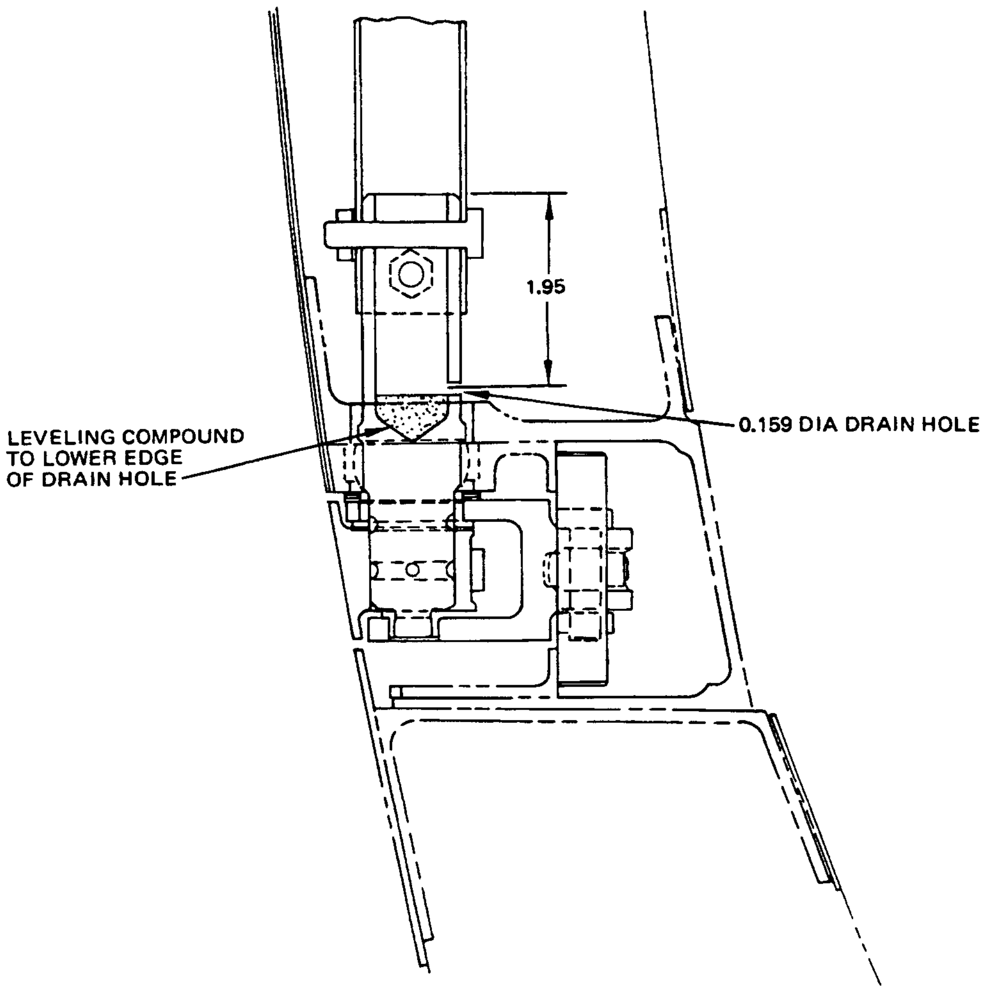
Door Locations
Figure 2 (Sheet 1)



Door Locations
Figure 2 (Sheet 2)



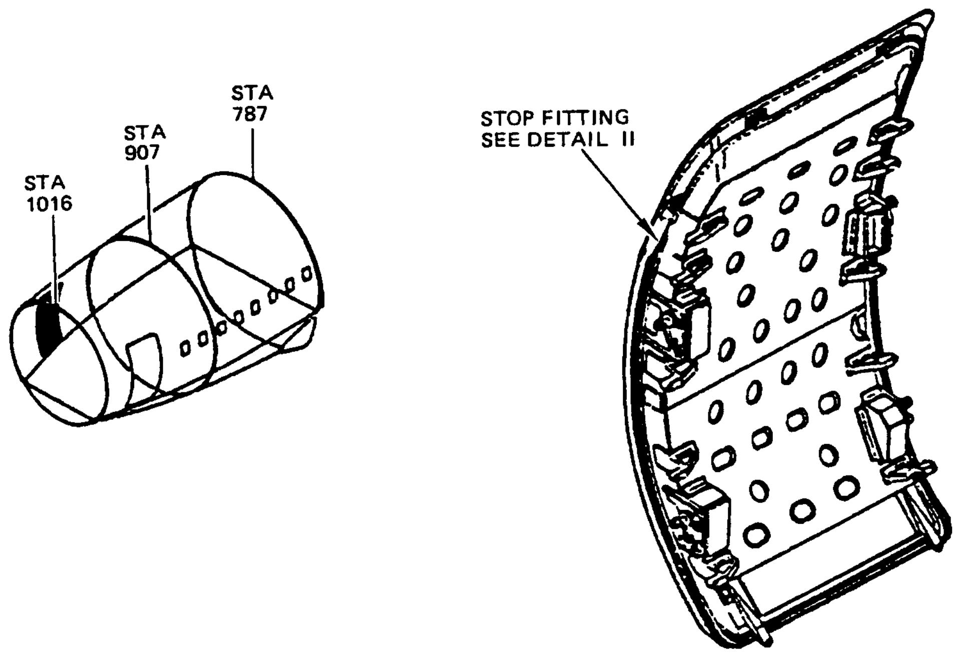
Entry Doors
Figure 1 (Sheet 1)



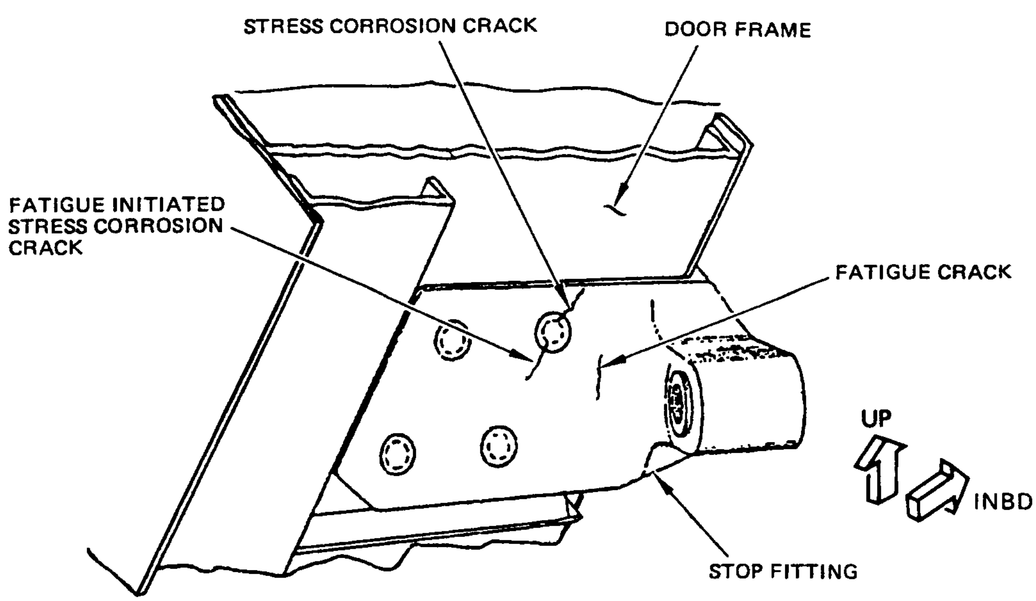
DRAIN HOLE LOCATION IN AFT SERVICE
DOOR TORQUE TUBE

DETAIL I

Entry Doors
Figure 1 (Sheet 2)

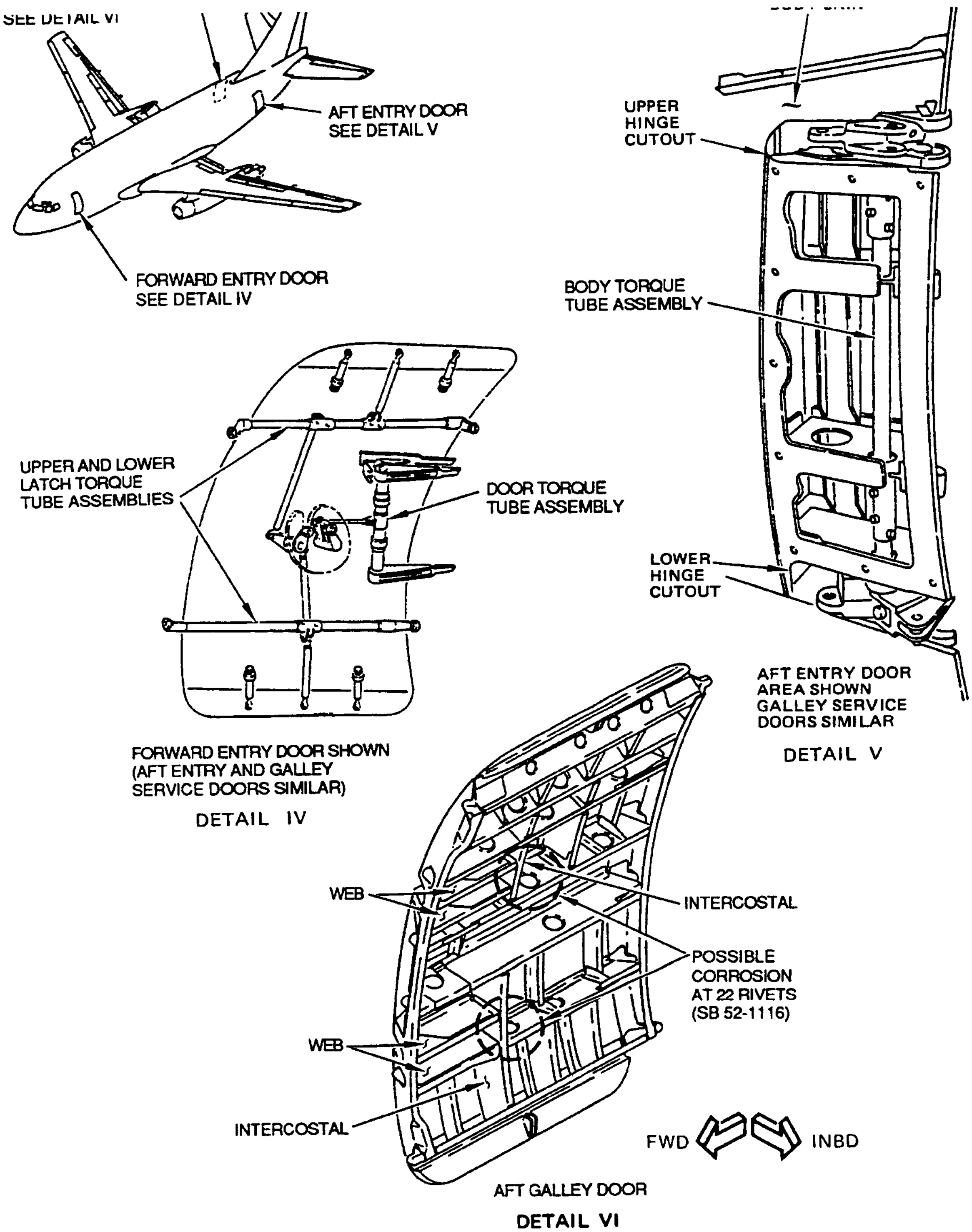


AFT AIRSTAIR DOOR



DETAIL II

Entry Doors
Figure 1 (Sheet 3)



Entry Doors
Figure 1 (Sheet 4)

1. General

A. Areas for possible corrosion are the internal and external structure of the door, especially the inside lower corners, connection points and mechanisms.

B. Corrosion has been reported on the door torque tubes situated adjacent to the door in the body. in particular, the torque tube at the aft service door has in some instances been found to contain a considerable amount of water, which has led to the introduction of a drain hole in production.

C. Corrosion has also been reported on the aft galley service door exterior handle. This corrosion resulted in the handle being seized in the recessed panel preventing the handle from being pulled outward for unlocking.

D. Corrosion has been reported on the entry and galley door handle mechanism housings. These housings are manufactured from magnesium and a particular area of concern is at the upper and lower bearing locations.

E. Stress corrosion cracks have been reported on the aft upper stop fitting at the aft airstair door (Fig. 1, Detail II).

F. In the aft galley door on some airplanes, corrosion can occur at 22 rivets between the webs and the intercostals because the rivets are of a different material than the door structure.

G. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. After you clean the areas, make the inspections of Volume 1, 20-20-00 to make sure that protective finishes stay serviceable.

C. If you find corrosion (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.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Prevention Treatment

(1) At earliest opportunity consistent with the scheduled maintenance activity, corrosion prevention treatment should be accomplished on the entry doors.

(2) Treatment of the door at the same time as door opening is recommended. The external surface areas of the doors should be treated same as the exterior surfaces of the fuselage.

(3) Remove liner and gain access to interior structure of door.

(4) Clean out drains and drain paths.

(5) Apply BMS 3-23 water displacing corrosion inhibiting compound to interior structure of door with special attention given to lower corners and the magnesium handle mechanism housing.

(6) Apply BMS 3-23 water displacing corrosion inhibiting compound to exterior surfaces of door frames and upper and lower web.

(7) After application of corrosion inhibitor, all grease fittings and lubricated parts in treated areas should be relubricated. Refer to 12-25-11 and 12-25-21 of the Maintenance Manual.

(8) Fill the cavities above the door torque tube bearings in the magnesium handle mechanism housing with MIL-G-23827 grease (or equivalent).

(9) Reinstall lining and restore door to normal.

(10) Inspect the door torque tubes in the body periodically for evidence of corrosion. Apply water displacing corrosion inhibiting compound to the external surfaces as a preventive measure. In the case of the aft galley door torque tube ensure that the drain hole in the lower end of the tube is unobstructed. On airplanes which do not have this drain hole, it may be introduced in the location shown in detail I.

(11) Seizure of the aft galley door exterior handle can occur through lack of use. Where operators do not usually open this door from the outside, periodic inspection and operation of the handle is recommended. Increased frequency of lubrication is suggested where stiffness is encountered.

F. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

G. Improved Corrosion Protection

(1) On airplane line numbers 649 and on, more corrosion inhibiting compound BMS 3-23 is applied on the internal surfaces of the entry doors and galley doors.

(2) SB 52-1094 provides modification procedure for entry and galley service door torque tube and bearings. This will decrease the risk of corrosion of the door aluminum alloy components (Fig. 1, Detail III, IV).

(3) On airplanes line numbers 1 thru 1409, SB 52-1099 can be incorporated to install drain holes above the hinge cavities. Installation of drain holes for the enclosed areas above the upper and lower hinge cavities will prevent collected moisture.

(4) On airplanes line numbers 1487 and on, PRR 34272 replaced the latch and vertical tube components of the door from an alloy steel material into a corrosion resistant steel (CRES) material. These changes can be added on some airplanes by SB 52-1094. Replacement of all existing steel torque tube in entry door with ORES material will decrease the possible corrosion.

(5) On airplanes PP351-PP399, all internal surfaces of the forward airstair door are coated with BMS 3-23 or LPS-3 corrosion inhibitor per MCP5121-001.

(6) On airplane line numbers 1738 thru 1771, SB 52-1116 gives inspection and replacement instructions for the 22 rivets that can cause corrosion in the aft galley door structure.

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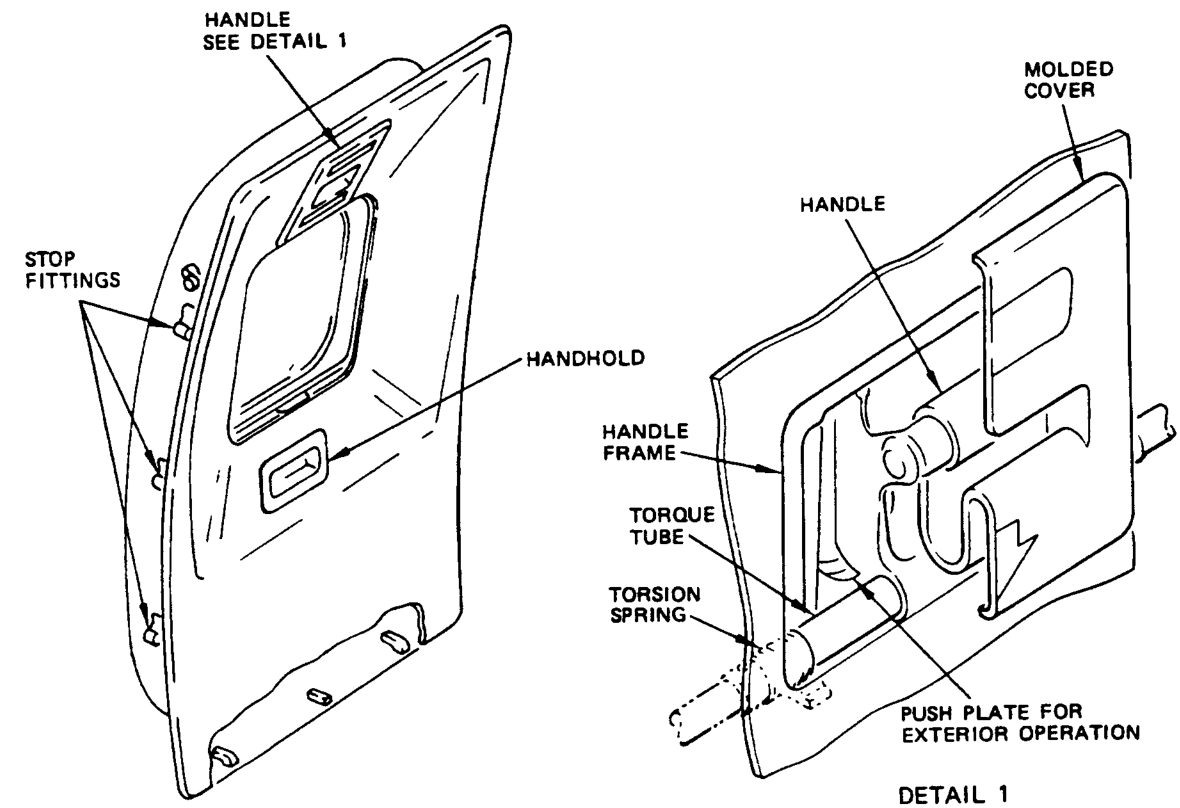

Emergency Hatches
Figure 1

1. General

A. Areas for possible corrosion are the internal structure of the hatch, especially the lower corners, connection points and mechanisms.

B. Corrosion has been reported on the handle (see detail I), especially in the vicinity of the torque tube. Difficulty in opening the hatch from the outside may be due to interference between the handle cover and exterior lining and not corrosion. Refer to SB 52-1054 for rectification instructions.

C. Corrosion has been reported on the left and right side emergency exit overwing door handle frames. On one handle, one of the two lugs on the lower edge of the frame was completely corroded and corrosion had penetrated through the frame at that corner. The lug at the other lower corner also exhibited an advanced state of corrosion. Corrosion was also evident at other locations around the frame including the area of the torsion spring.

D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

(2) Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges), refer to Volume 3, 52-20-37, Fig. 1 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 an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

C. Application of Corrosion Inhibitors

(1) For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

D. Prevention Treatment

(1) Maintenance prevention

(a) The external surface areas of hatches should be treated same as the exterior surfaces of the fuselage (Ref 53-30-7, Fig. 1).

(b) Remove liner and gain access to interior structure of hatch.

(c) Clean out drains and drain paths.

(d) Apply BMS 3-23 to interior structure of hatch with special attention given to lower corners.

(e) Apply BMS 3-23 to exterior surfaces of frames and upper and lower web.

(f) After application of BMS 3-23, all grease fittings and lubricated parts in treated areas should be relubricated. Refer to 12-25-91 of the Maintenance Manual.

(g) Reinstall liner and restore hatch to normal.

(2) Improved Corrosion Protection

(a) For improved corrosion protection, on production airplanes, cum line numbers 649 and on, the internal surfaces of the right-hand and left-hand emergency doors have been coated with a water-displacing corrosion inhibiting compound.

(b) At line number 1924 and on, the left and right side emergency exit overwing handle frame material was changed from magnesium alloy to an injection molded nylon.

E. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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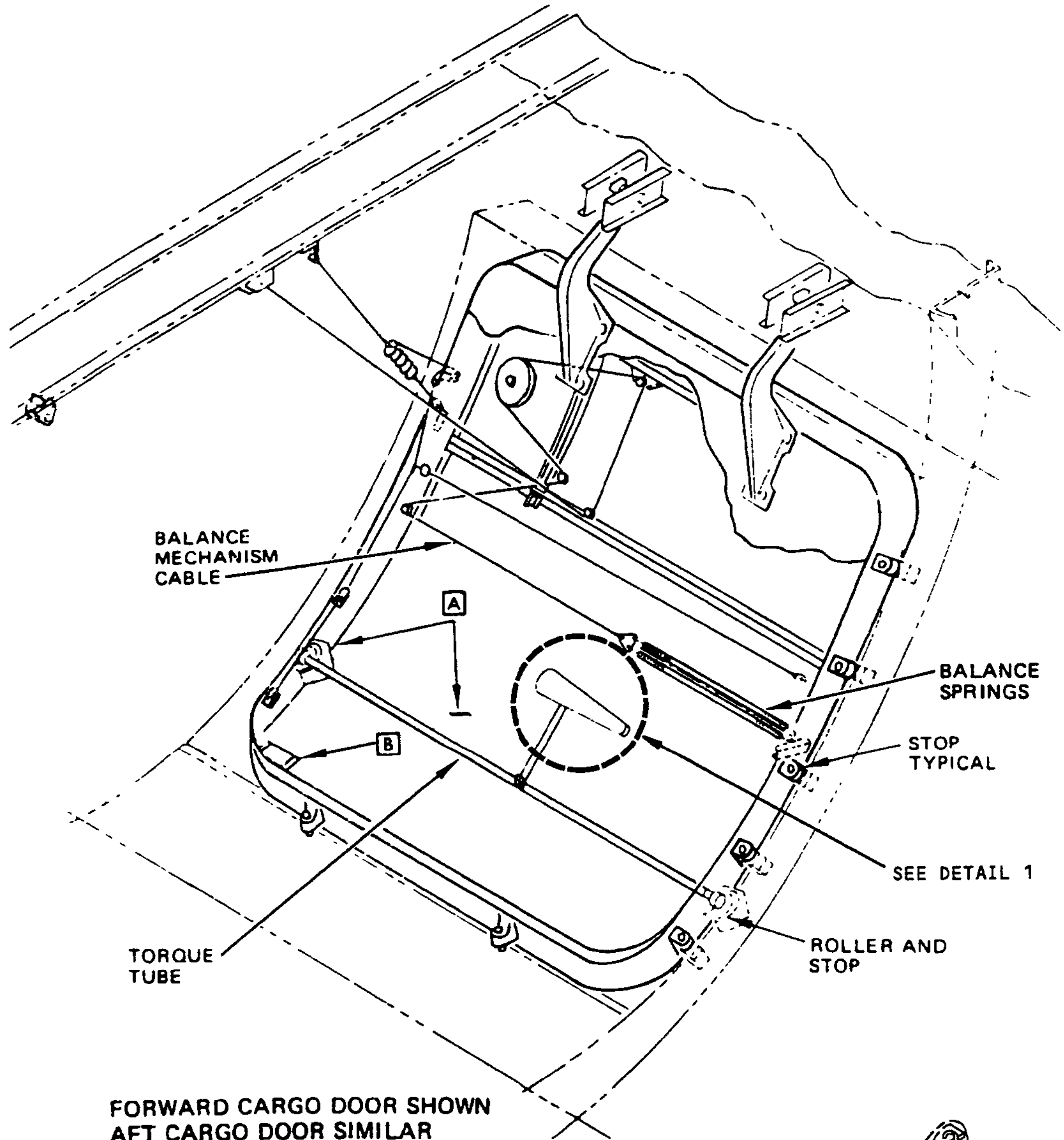
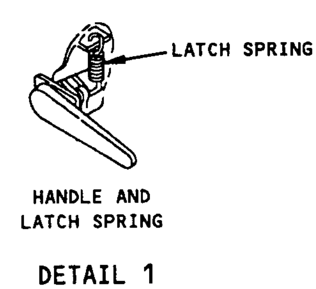
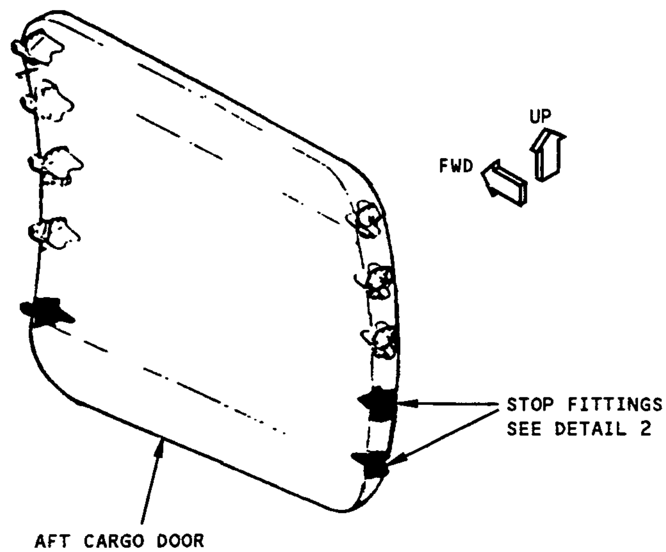


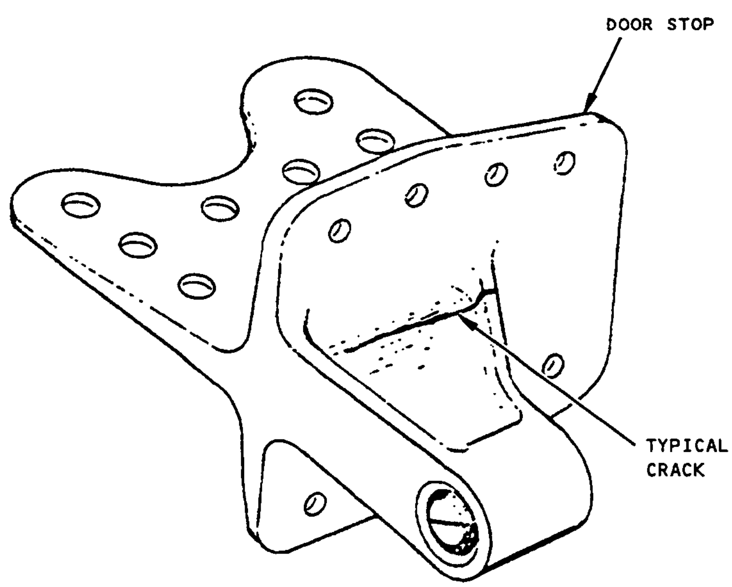


NOTES

- [A] APPLY BMS 3-23 TO ALL EXPOSED STRUCTURE
- [B] OVERBOARD DRAIN

Cargo Doors
Figure 1 (Sheet 1)





STOP FITTING
DETAIL 2

Cargo Doors
Figure 1 (Sheet 2)

1. General

A. Areas for possible corrosion are the internal structure of the door, connection points and mechanisms.

B. Reports of cracking of the door mounted stop fittings have been received. This has been attributed to fatigue and stress corrosion. Improved fittings were installed on line No. 494 and on, plus airplanes incorporating SB 52-1065 (Fig. 1, Detail I).

C. Broken and corroded balance springs have been reported in the fore and aft cargo doors. This has been attributed to the lack of primer where the coils contact each other. A production change was made on line No. 637 and on which consisted of extending the spring during the finish application.

D. Broken and corroded door balance mechanism cables have been reported. Cables were corroded over entire length with no traces of lubrication. Ensure cables are lubricated per 52-31-11 of the Maintenance Manual.

E. Broken or weak handle latch springs have been reported. New stronger, more corrosion resistant latch springs will be installed by SB 52-1051.

F. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance system.

E. Prevention Treatment

(1) At earliest opportunity, consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished on the cargo door.

(2) Treatment of the door at the same time as door opening is recommended. The external surface areas of doors should be treated same as the exterior surfaces of the fuselage (Ref 53-30-37, Fig. 1).

(3) Remove liner and gain access to interior structure of door.

(4) Clean out drains and drain paths and check the leveling compound at the forward lower corner for cracks or separation.

(5) On airplanes up to line number 636 spray BMS 3-23 on the balance springs in the extended position.

(6) Apply BMS 3-23 to interior structure of door with special attention given to lower corners. Do not apply to drain valve or other operational mechanisms.

NOTE: Some doors may have short cable lengths installed in the mechanism. Observe precautions of Volume 1, 20-60-00, for spraying control cables with corrosion inhibitor.

(7) On doors with cable wipe off grease with dry, lint-free cloth and apply a thin film of grease over the length of cable.

(8) Apply BMS 3-23 to exterior surfaces of door frames and upper and lower web.

(9) After application of corrosion inhibitor, all grease fittings and lubricated parts in treated areas should be relubricated. Refer to 12-25-31 of the Maintenance Manual.

(10) Reinstall liner and restore door to normal.

(11) Doors with Drain Valves

(a) On doors with drains installed, inspect the drain seals or plungers for alignment and freedom of movement. The use of a pipe cleaner or wooden dowel to remove debris and contaminants to clear the drain hole is recommended.

CAUTION: EXCESSIVE TIGHTENING OF PLUNGER TYPE DRAIN VALVE WILL CAUSE VALVE FLANGE TO CRACK OR BREAK.

(b) If required, remove plunger type drain valve from outside of door, clear out obstructions and reinstall valve until flange contacts skin. Tighten to 10-15 lb-in.

(c) To minimize the risk of corrosion due to moisture accumulation, it is recommended that the overboard drains be inspected every C check or more frequently when the airplanes are operated in a harsh environment (high humidity, marine atmosphere, etc.).

F. Improved Corrosion Protection

(1) On the forward cargo door, an overboard drain with a rubber flapper valve was installed on airplane line number 349 and on, plus airplanes incorporating SB 51-10-06.

(2) On the aft cargo door, an overboard drain with a rubber flapper valve was installed on airplane line number 349-500, plus airplanes incorporating SB 51-10-06. The rubber flapper valve was replaced by a CRES spring and nylon seal on airplane line number 501-1036, plus airplanes incorporating Boeing Service Letter 737-5L-53-2. Flapper valves were replaced by externally serviceable drain valves on airplane line number 1037 and on (Ref 53-00-37, Fig. 2).

G. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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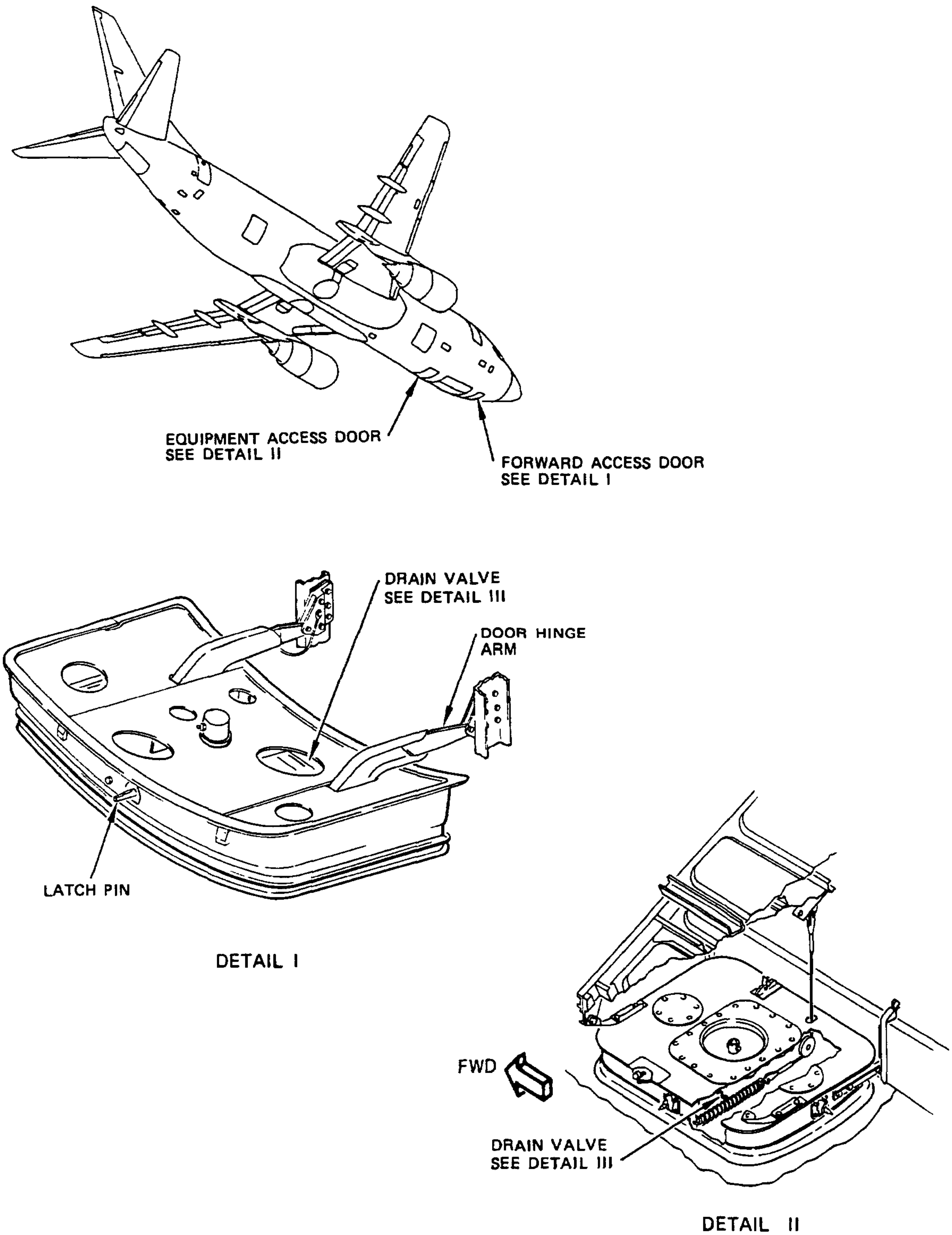
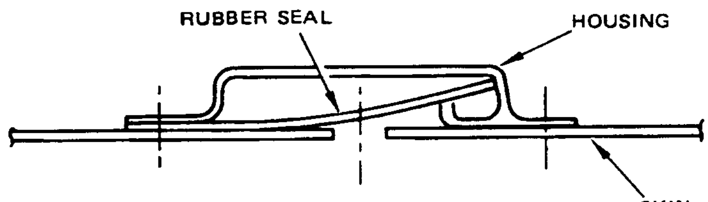
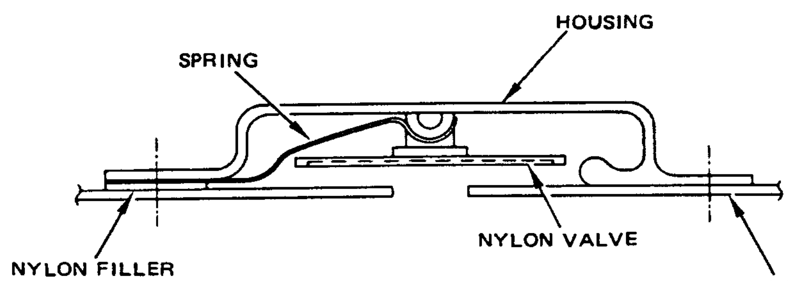


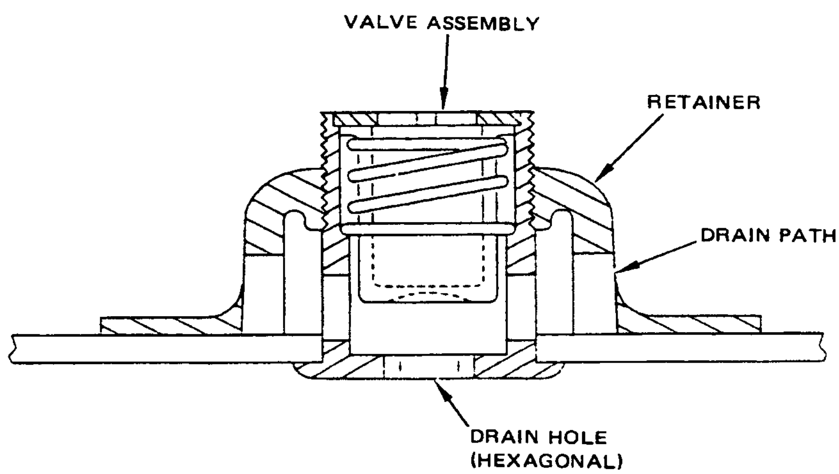
Forward Access and Equipment Access Doors
Figure 1 (Sheet 1)



RUBBER SEAL DRAIN VALVE



SPRING DRAIN VALVE



PLUNGER TYPE DRAIN VALVE

DETAIL III

Forward Access and Equipment Access Doors
Figure 1 (Sheet 2)

1. General

A. Areas of possible corrosion are the internal structure of the door, connection points and mechanisms.

B. The door should be treated at the same time as the door opening.

2. Corrosion Prevention

A. Make periodic inspections as described in Volume 1, 20-20-00 to ensure that the protective finishes provided during manufacture remain intact. BMS 3-23, type II corrosion inhibiting compound has been applied to the door interior during manufacture.

(1) Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

(2) Gain access to interior structure of the door.

(3) Clean out drains and drain paths.

(4) Check that drain valve is free to open and close.

CAUTION: EXCESSIVE TIGHTENING OF PLUNGER TYPE DRAIN VALVE WILL CAUSE VALVE FLANGE TO CRACK OR BREAK.

(5) If required, remove plunger type drain valve from outside of door, clean out obstructions and re-install valve until flange contacts skin. Tighten to 10-15 lb-in.

(6) Apply corrosion inhibiting compound to the accessible interior surfaces of the door, giving special attention to the structural seams. Do not apply to drain valve or other operational mechanisms.

(7) Relubricate interior door fittings as necessary per the maintenance manual.

(8) Restore door to normal.

B. Frequency of Application. Periodically inspect the door structure and condition of the corrosion inhibitor. Reapply corrosion inhibiting compound as required. Local areas where gouges and scratches have occurred should be treated at the first opportunity consistent with the maintenance schedule.

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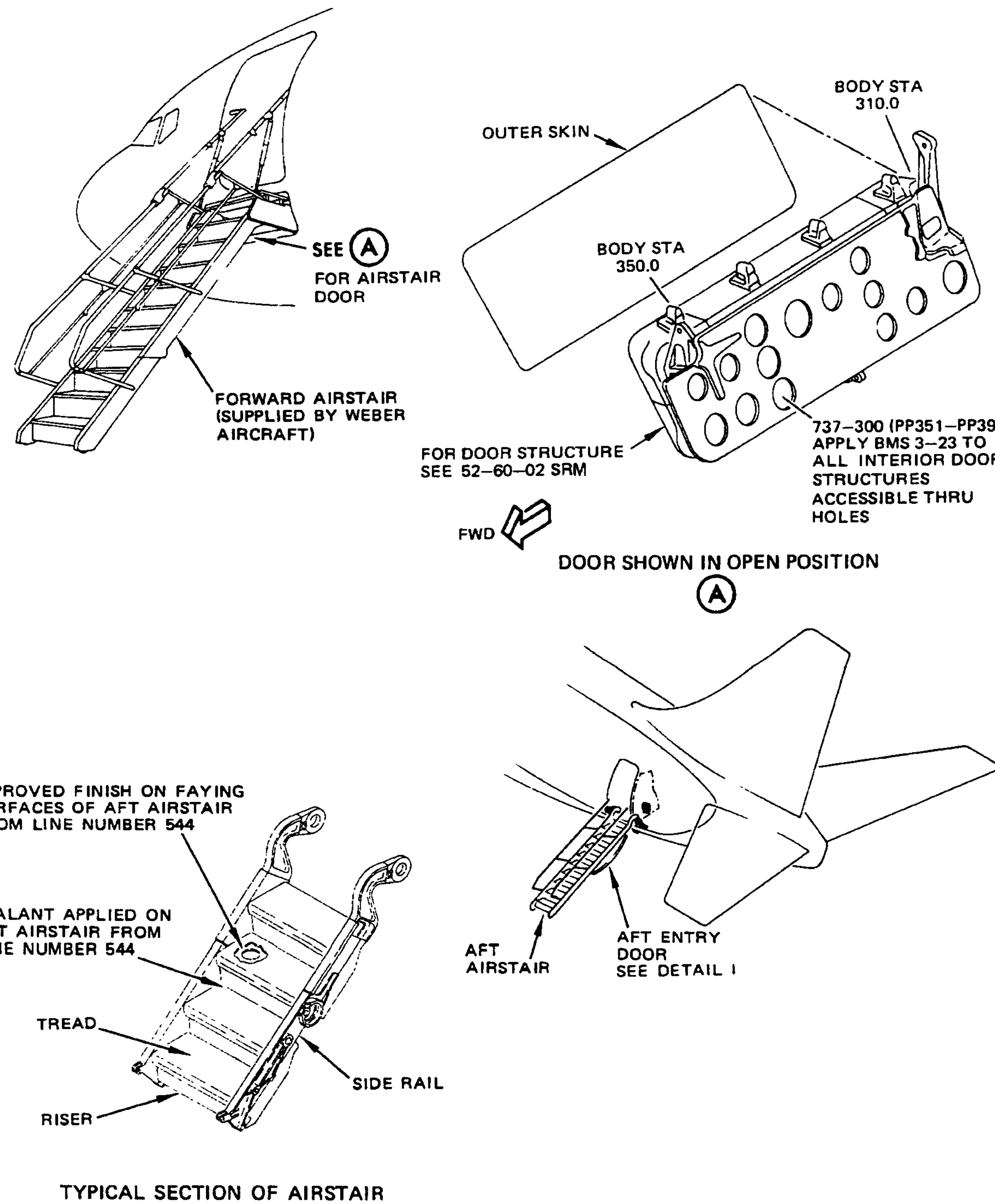
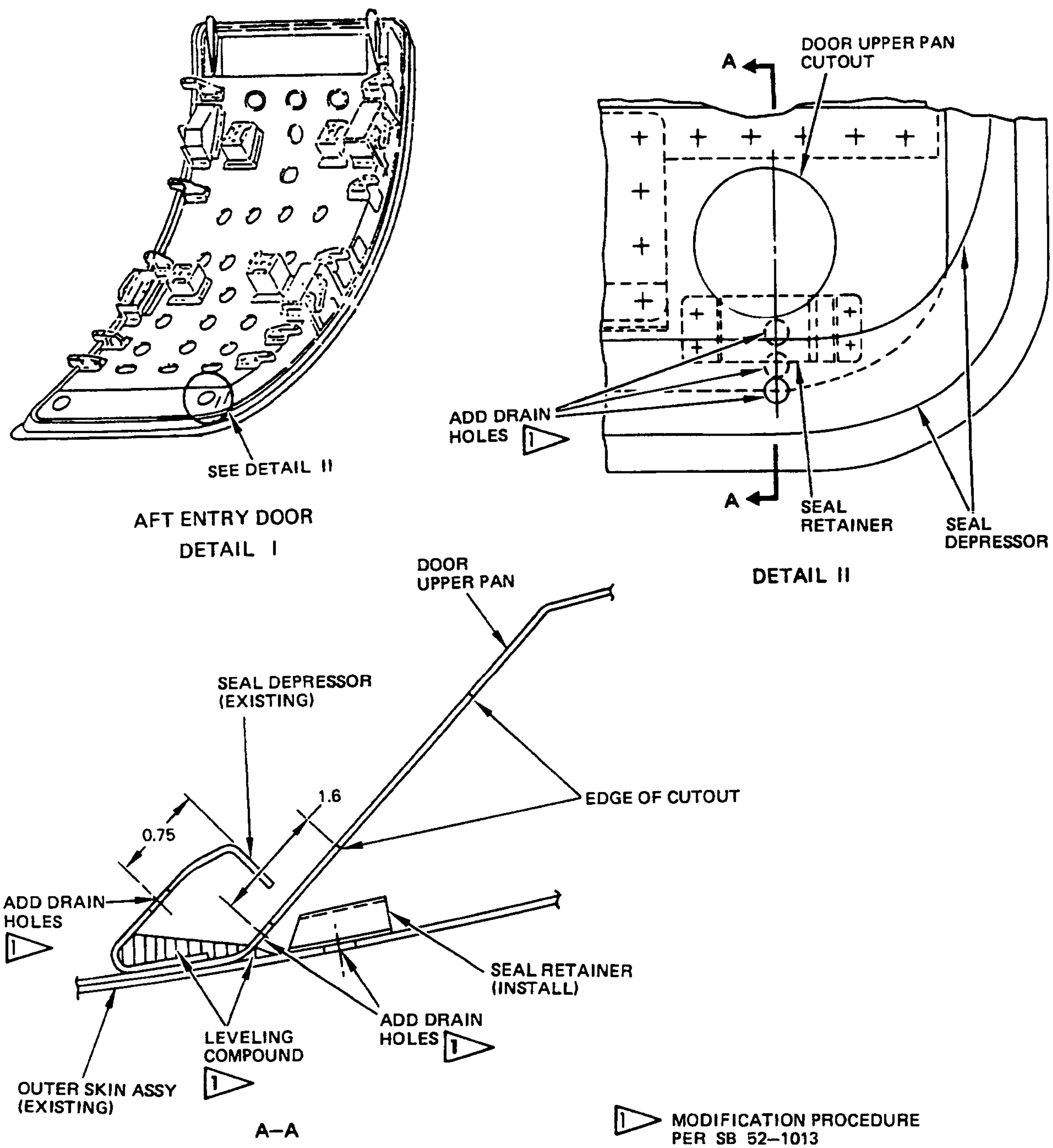
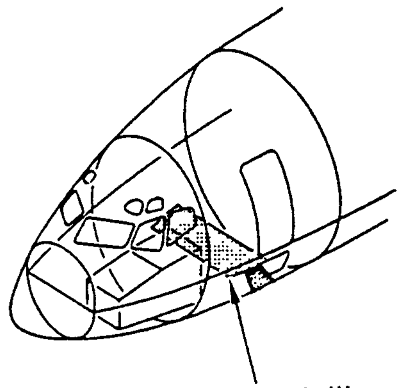
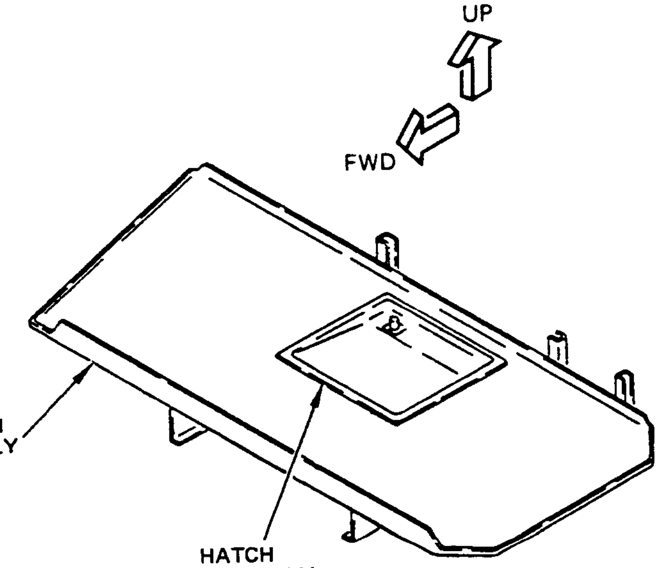


Forward and Aft Airstairs
Figure 1 (Sheet 1)



Forward and Aft Airstairs
Figure 1 (Sheet 2)





FWD AIRSTAIR DRIP PAN

DETAIL III

Forward and Aft Airstairs
Figure 1 (Sheet 3)

1. General

A. The forward airstair retracts into the fuselage beneath the forward entry door. The aft airstair folds and in the retracted position is stowed on the inboard side of the aft entry door. In the extended position these stairs are exposed to adverse weather conditions, consequently can be subject to corrosion.

B. Corrosion has been reported on the forward airstair. This has occurred under the tread plates at the rear end at the intersection with the risers.

C. Corrosion has been reported on the aft airstair on the side rails. The damage occurs at the lower skid end where corrosion on the side rail webs has been encountered in the lower six inches.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

C. 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.

D. For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

E. Application of Corrosion Inhibitors

(1) For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

F. Prevention Treatment

(1) At earliest opportunity consistent with the scheduled maintenance activity, corrosion prevention treatment should be accomplished on the forward and aft airstairs.

(2) Periodically remove the tread assembly from the main airstair structure to examine the support structure beneath for any evidence of corrosion. Removal is accomplished by removing the attaching fasteners on top of the tread assembly, and on the riser. Any damaged finish should be restored.

(3) On the aft airstair apply a sprayed coat of BMS 5-95, Class F sealant to the tread and mating surfaces of the structure. Overcoat the sealant with polyurethane enamel. After installation inject BMS 5-95, Class B sealant in the gap between the tread and support tee at the rear end of the tread. An application of release agent before sealant injection and the inclusion of a nylon rip chord in the sealant will facilitate future removal.

(4) Apply water displacing corrosion inhibiting compound to the airstairs, particularly to the open corrugation of treads and risers.

(5) Apply three coats of Simonize wax (or equivalent) to the handrail.

G. Improved Corrosion Protection

(1) Beginning with line number 544, the following improvements have been made: The addition of faying surface seals between the risers and supporting members, the application of sprayable sealant and polyurethane enamel between the tread and its support surfaces, and the addition of a fillet seal at the rear end of the tread at the intersection with the support tee. Additionally, water displacing corrosion inhibiting compound has been sprayed in the open corrugations of treads and risers. Three coats of Simonize wax (or equivalent) have been applied to the handrail.

(2) On A/P's PP351-PP399, BMS 3-23 or LPS-3 have been applied in all interior door structure that is accessible through the door inner skin lightening holes. Periodic cleaning and reapplication of this inhibitor is required.

(3) SB 52-1013 provides aft entry door airstair modification procedures. Compliance to SB 52-1013 is recommended to prevent water accumulation in the aft entry door and possible resultant corrosion. Also, water drainage in passenger cabin during retraction of aft airstairs is minimized (refer to Fig. 1, Detail I).

(4) SB 52-1087 provides forward airstair door drip pan drain modification and cleaning procedures. Compliance with SB 52-1087 is recommended to ensure that clogging of the dirt pan with dirt and debris is minimized (refer to Fig. 1, Detail III).

H. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

CHAPTER

53

FUSELAGE

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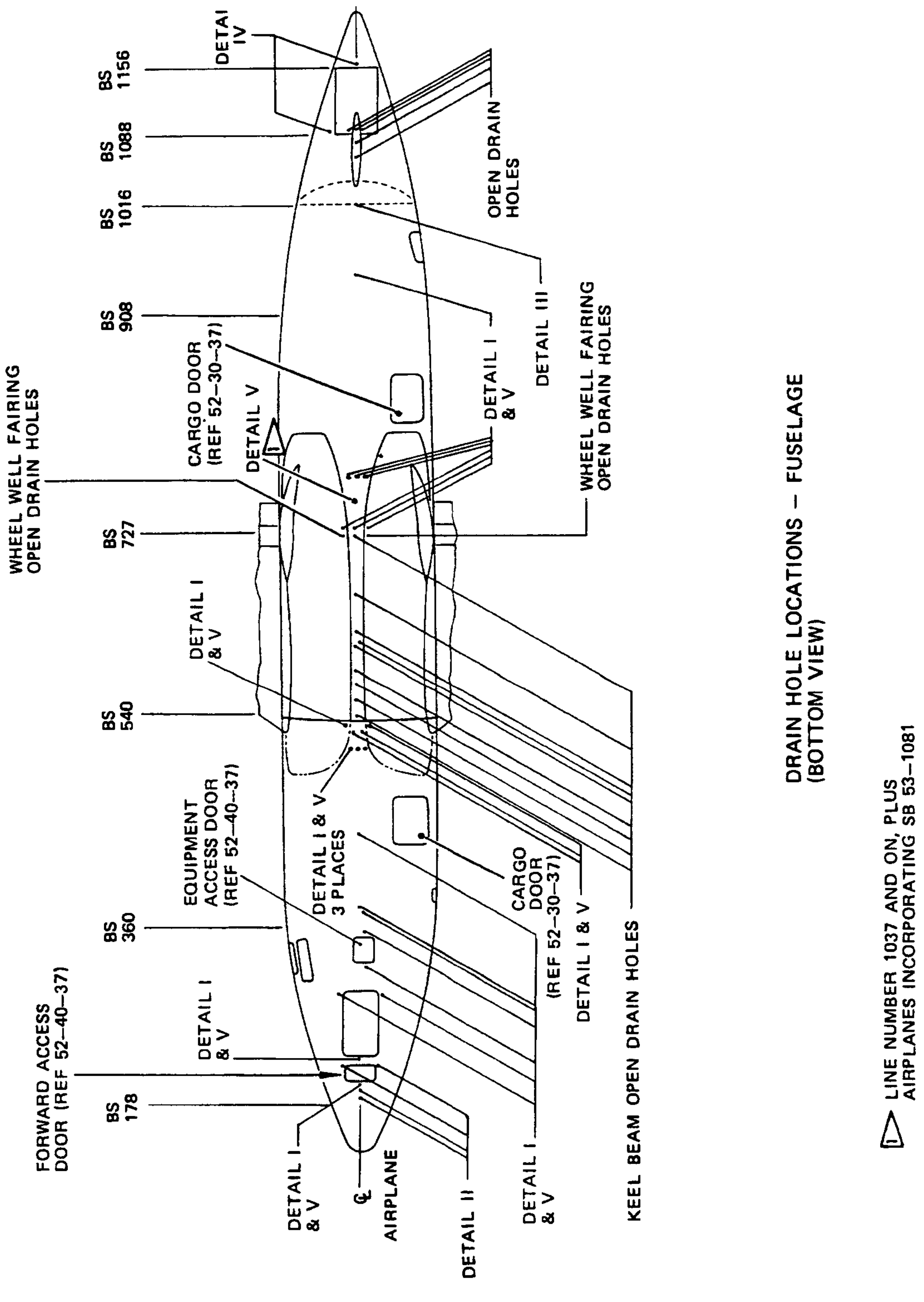
FUSELAGE
SPECIFIC CORROSION PROBLEMS

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Crown Interior	Corrosion of frames, stringers and interior skin surfaces.	53-10-37 Fig. 1	
Lower Lobe Interior	Corrosion of frames, stringers and interior skin surfaces.	53-10-37 Fig. 2	
	Corrosion of lower lobe doublers and lower lobe skins between BS 360 to 540 and BS 727 to 1016.		SB 54A1042
Galleys and Lavatories	Corrosion of structure under galleys and lavatories due to spillage.	53-10-37 Fig. 3, 6	
	Corrosion of partition support on cabin floor between BS 1006 and 1030 because of soaked foam dams.	53-10-37 Fig. 3	
Main Wheel Well and Keel Beam	Corrosion on surfaces inside wheel well because of air contaminants and runway splash.	53-10-37 Fig. 4	
	Stress corrosion on inboard lug of main landing gear trunnion support beam and the BS 706 frame lug.		
	Stress corrosion cracks on horizontal integral ribs on BS 685 and 706 frames.		
	Stress corrosion cracks in keel beam lower tee chords.		
	Stress corrosion of keel beam inboard splice tees.		
Nose Gear Wheel Well	Corrosion on the surfaces inside the wheel well because of air contaminants and runway splash.	53-10-37 Fig. 5	SB 53-1033
	Stress corrosion on lock support fittings.		
	Stress corrosion cracking of the actuator support fittings.		
	Corrosion of the exterior surfaces.		

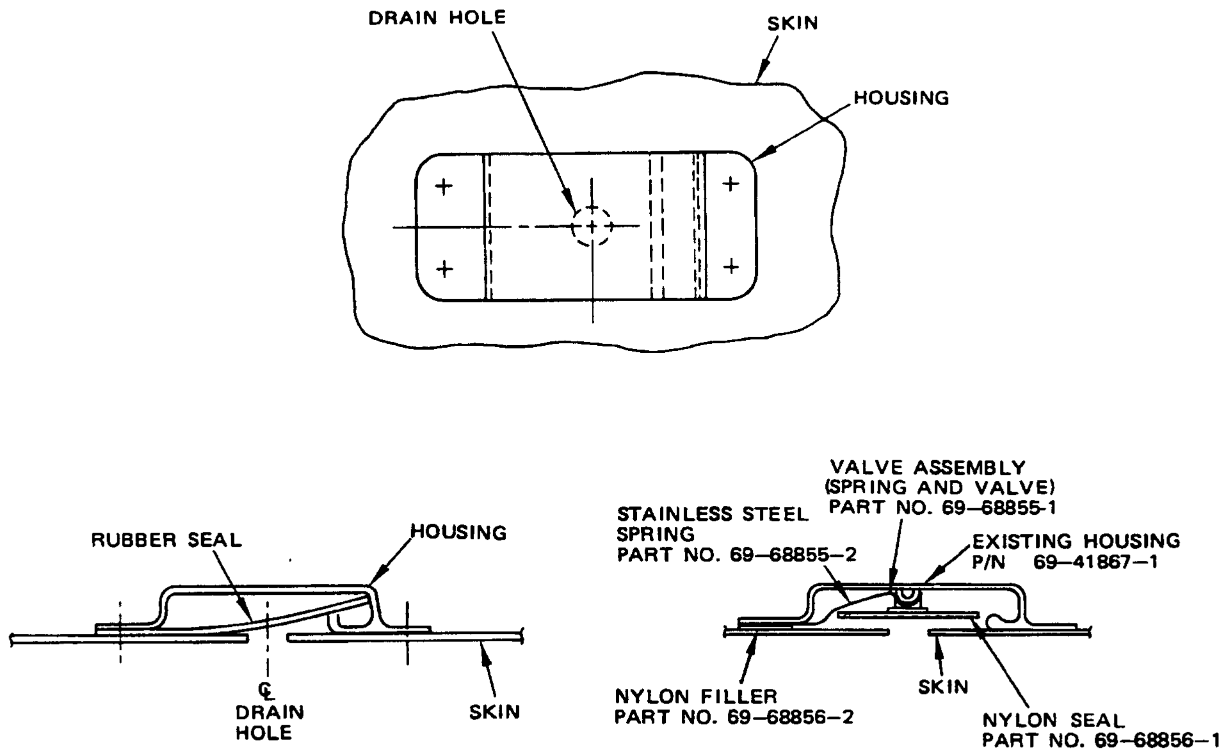
AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Seat Tracks and Cargo Tracks	Corrosion of seat tracks and cargo tracks due to dirt and spillage.	53-10-37 Fig. 6	
Doorway Areas	Corrosion on the structure around door openings. Stress corrosion of aft airstair door stop fittings.	53-10-37 Fig. 7	SB 53-1071
Aft Pressure Bulkhead	Corrosion on the aft face of the bulkhead. Corrosion on the lower 10 inches of the forward face of the bulkhead because of clogged drain hole.	53-10-37 Fig. 8	
Upper Lobe Frames, Stringers and Skin	Cracks from fastener holes on Stringer 17 left and right.	53-10-37 Fig. 9	SB 53-1089
	Broken attach bolt on BS 1088 bulkhead		
	Pillow blankets that trapped moisture.		SB 25-1211
Decorative Paint	Filiform corrosion on the exterior painted surfaces of fuselage skin at fastener locations and panel edges.	53-30-37 Fig. 1	
Skin Lap Splices - External Surface	Corrosion on the faying surface of lap splices.	53-30-37 Fig. 2	
Skin Lap Splices - Internal Surface	Corrosion on the faying surface of lap splices.	53-30-37 Fig. 3	
Exterior Mounted Antennas	Corrosion on faying surfaces between various antennas and the body skin.	53-30-37 Fig. 4	
Toilet Service Panels	Corrosion of the service pan ring.	53-30-37 Fig. 5	

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Corrosion on the door and door hinge.		
Wing-To-Body Fairing Cavity	Corrosion of the under fairing skin.	53-50-37 Fig. 1	SB 53A1039, 53-1042
Drain Holes	Plugged drain holes.	53-00-37 Fig. 2	SL 53-2
	Water accumulation in the aft cargo compartment.		SB 53-1081
	Floor mat retainer plate at the forward entry door prevents access to drain holes.	53-10-37 Fig. 7	SL 25-24

Specific Corrosion Problems - Fuselage
Figure 1 (Sheet 1 - 3)



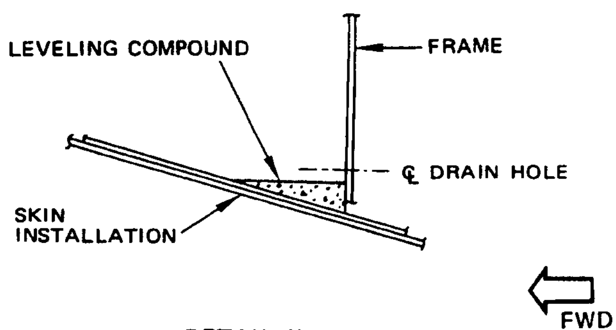
Fuselage External Drain Holes
Figure 2 (Sheet 1)



DRAIN VALVE WITH RUBBER SEAL

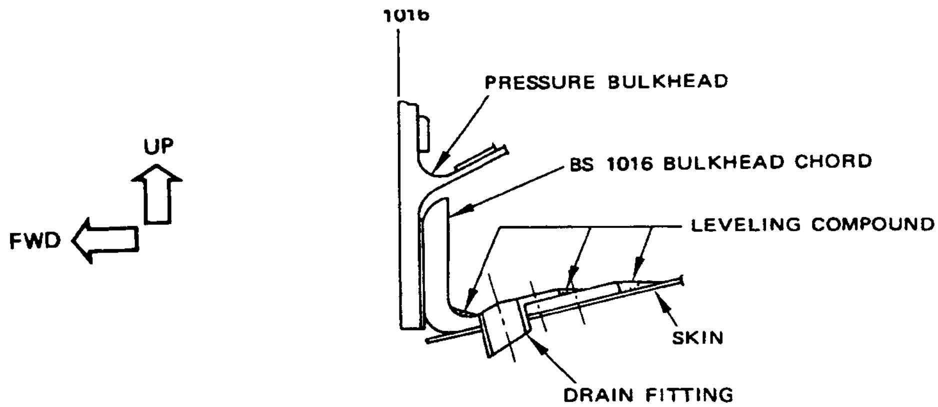
DRAIN VALVE WITH NYLON SEAL

DETAIL I

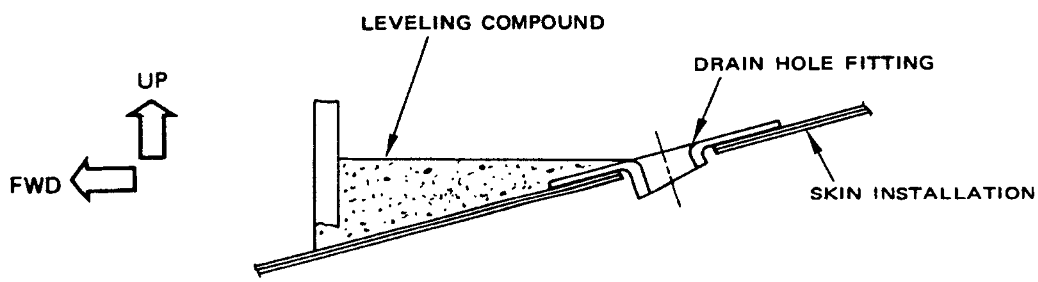


DETAIL II

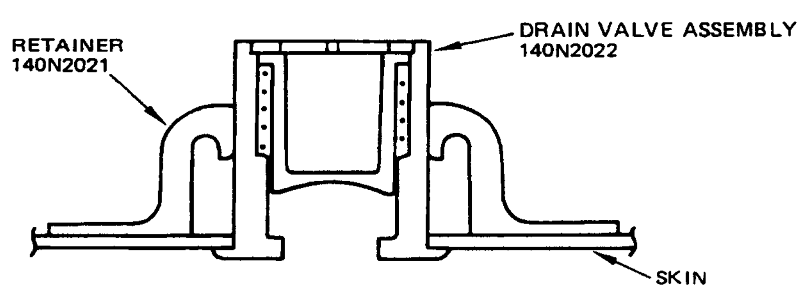
Fuselage External Drain Holes
Figure 2 (Sheet 2)



DETAIL III



DETAIL IV



EXTERNALLY SERVICEABLE DRAIN VALVE

DETAIL V

Fuselage External Drain Holes
Figure 2 (Sheet 3)

FUSELAGE

SPECIFIC CORROSION PROBLEMS

1. General

A. Overboard drains are either the mechanical closure type (pressurized areas) or open hole type (unpressurized areas). These drains are strategically located so that they are at the lowest point in any assembly or area. Drain holes through internal structure and leveling compounds are used to provide drainage paths to lead to the overboard drains. The locations of these drains are shown in the schematic.

B. A drain valve assembly with a nylon seal precludes sticking of the flapper valve or the plugging of the drain hole (Detail I). The drain valve was incorporated on line No. 501-1036 plus airplanes incorporating Boeing Service Letter 737-SL-53-2.

C. Corrosion found in the structure under aft cargo compartment was caused by water accumulation. A large pool of water in the belly area aft BS 727A was found on some airplanes. Water accumulation was caused by blocked drainage path.

D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Periodically inspect the drain holes. Inspect the flappers on the pressurized skin drains for alignment and freedom of movement. The use of a pipe cleaner or thin wooden dowel to remove debris and contaminants to clear the drain hole is recommended.

B. Where the drain flapper valve is inoperative or damaged, repair or replace. Silicone rubber flapper valves should be replaced with nylon valves on an attrition basis per Boeing Service Letter 737-SL-53-2.

NOTE: Valves with nylon seals can be used only with existing housing P/N 69-41867-1. Contact Boeing if installed housing is other than P/N 69-41867-1.

CAUTION: EXCESSIVE TIGHTENING OF PLUNGER TYPE DRAIN VALVE WILL CAUSE VALVE FLANGE TO CRACK OR BREAK

C. Externally serviceable (plunger type) valve assemblies may be removed and replaced using a 3/8-inch Allen wrench when servicing is necessary. Reinstall valve until flange is snug with skin. Tighten to 10-15 lb-in.

D. Open drain holes which have corrosion damage should be cleaned up using corrosion removal methods indicated on fuselage skins (Ref to Structural Repair Manual).

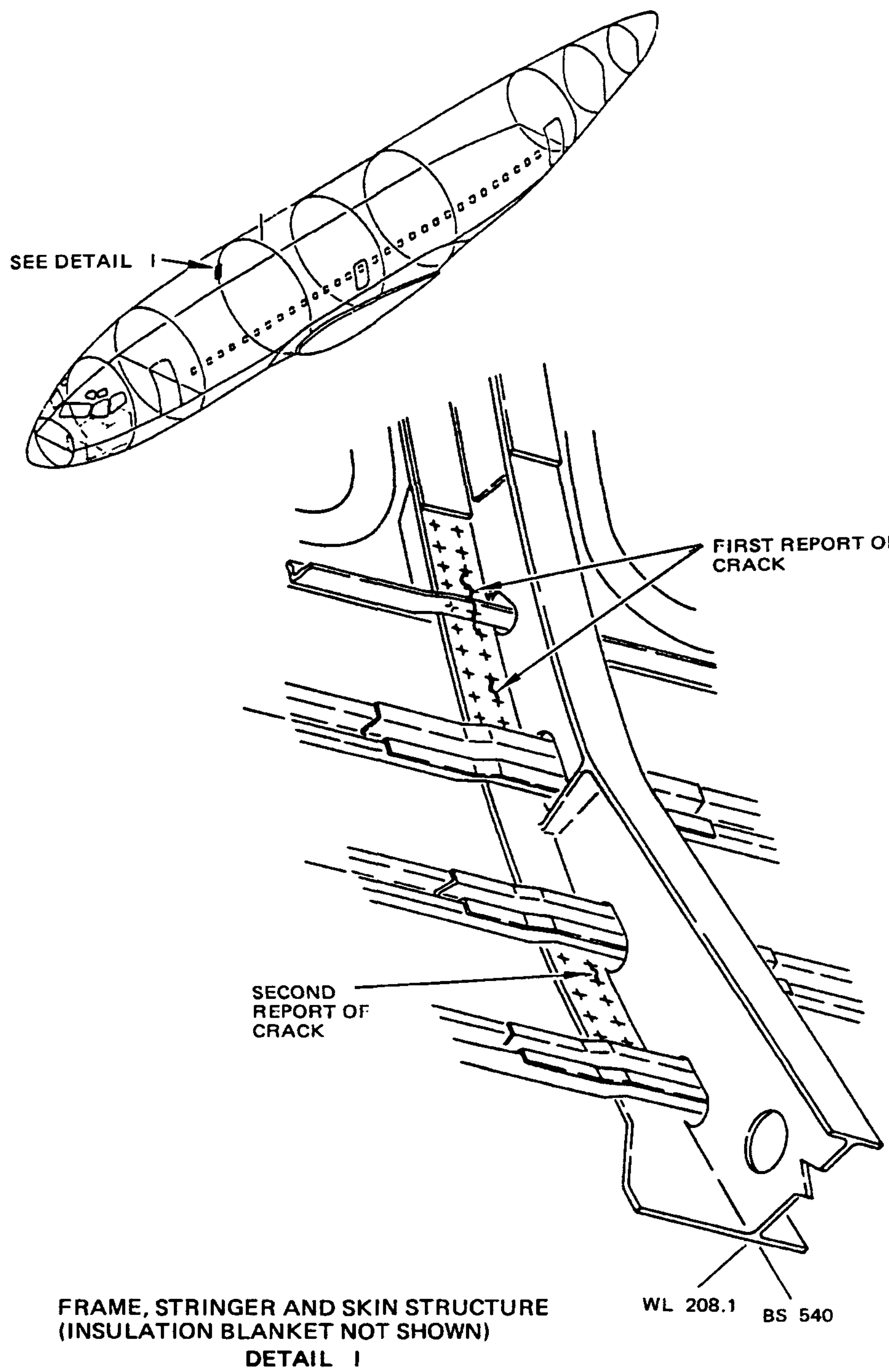
E. Frequency of Inspection

(1) To minimize the risk of corrosion due to moisture accumulation, it is recommended that the overboard drains be inspected every C check or more frequently when the airplanes are operated in a harsh environment (high humidity, marine atmosphere, etc.).

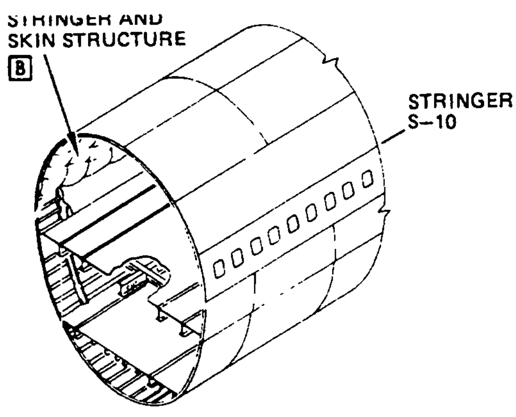
3. Improved Corrosion Protection

A. Additional drain holes are necessary to prevent collected moisture in the belly area aft of BS 727A. As a result, on airplane 1037 and on, PRR 33431 added a better water drainage system for the aft body area. Drain holes of 0.250 inch diameter are added through chord lower flange from BS 787 thru BS 1006 along stringer 27L and 27R. Drain valves are also used over the drain holes. These changes can be included on some airplanes by SB 53-1081.

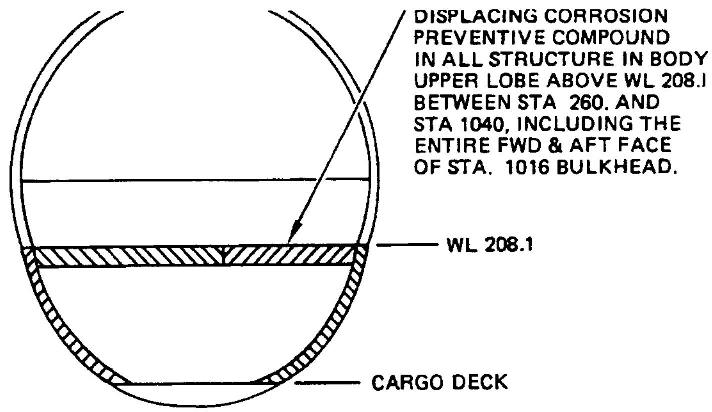
B. On airplane line No. 1836 and on, PRR 34545 changed several detail structures to add drain holes which can improve overall drainage for the entire fuselage. These structures are the skin fwd and aft of BS 380, 500D and 5006; fwd and aft cargo doors sill structure; fwd and aft lower cargo doors; fwd and aft cargo doors frame and strap structure; fwd frame structure aft entry door; frame structure at BS 460, 480, 794, 847, 807, 827 and floor beams at pressure deck.

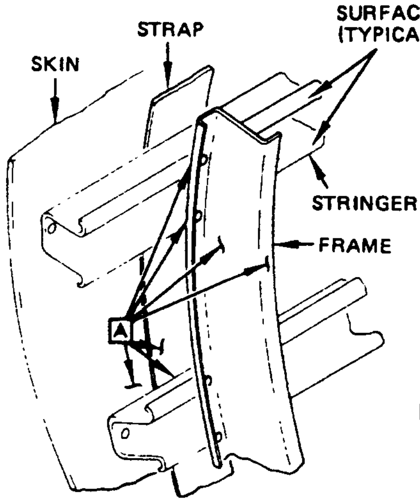


Crown Frames, Stringers and Skin
Figure 1 (Sheet 1)

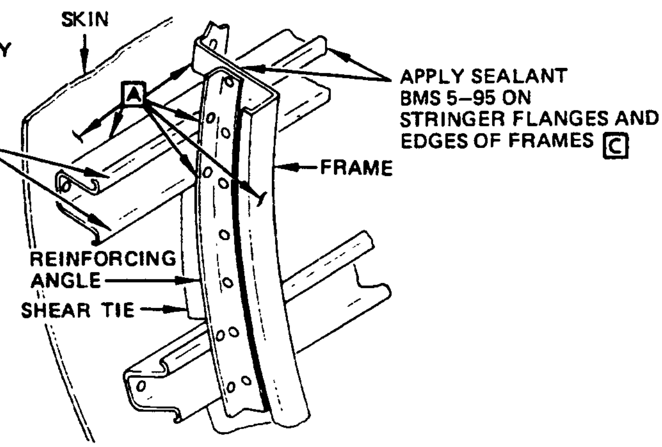


FUSELAGE SECTION





STRAP AND FRAME



FRAME AND SHEAR TIE

NOTES

A APPLY BMS 3-23 TO ALL EXPOSED STRUCTURE

B WHEN INSULATION BLANKETS ARE REINSTALLED ENSURE THAT OUTBOARD SURFACE OF UPPER BLANKET OVERLAPS LOWER BLANKET

C IN AREAS ABOVE THE WINDOW BELT BETWEEN STA 259.5-STA 1015 WHERE BLANKETS CONTACT STRINGER FLANGES AND EDGES OF FRAMES

BETWEEN BODY STATIONS 540 AND 1016 WHERE STRINGER SOUND DAMPING CAPS ARE USED, SEALANT IS NOT REQUIRED

FRAME, STRINGER AND SKIN STRUCTURE
(INSULATION BLANKET NOT SHOWN)

DETAIL II

Crown Frames, Stringers and Skin
Figure 1 (Sheet 2)

1. General

A. The fuselage is of semimonocoque construction utilizing aluminum skins, circumferential frames and longitudinal hat section stringers. The fuselage skin is installed with circumferential butt joints and longitudinal lap joints that are usually flush riveted. Skins should be treated concurrently with fuselage structure.

B. The stringers, frames and skins have been found susceptible to corrosion due to moisture entrapment between the skin and insulation blankets. Added to this moisture spillage, condensation or moisture through open doors running along frames or stringers collecting at some dammed location contribute to corrosion. Corrosion can readily start where protective finishes have been broken or deteriorated.

C. Treatment of the interior structure should be accomplished at the same time as longitudinal lap splices are treated or whenever access is gained to expose the frame/stringer/skin structure. For lap splices, refer to 53-30-37, Fig. 3.

D. Insulation blankets are provided on cabin interiors for passenger comfort and to minimize the condensation of warm cabin air on cold skins and stringers. Corrosion has been experienced in areas where the blankets are not installed taut and wrap around stringers or lay on the skins. Reports of water soaked blankets have been common in these instances.

E. Delamination of the waffle doublers on the crown and side skin panels has been reported. If left untreated, delaminated doublers may promote corrosion and cracking of the skin interior and doublers.

F. Stress corrosion has been attributed to reported three cracks in the right side BS540 bulkhead forging (refer to Detail I).

G. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

(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 an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

C. Application of Corrosion Inhibitors

(1) For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

D. Prevention Treatment

(1) Maintenance Prevention

(a) At first opportunity when scheduled maintenance work allows access to the structure, corrosion prevention treatment should be accomplished.

(b) Remove insulation blankets to expose frame, stringer and skin. Dry blankets thoroughly if found wet.

(c) Open plugged drains.

(d) Replace broken or damaged finishes. Refer to Volume 1, 20-60-00 for protective finish systems.

(e) In all areas, except where indicated, apply a coat of BMS 10-11 epoxy primer to inboard flanges of stringers and allow to dry thoroughly.

(f) Allow solvent to evaporate before reinstalling insulation blankets.

(g) Reinstall blankets so they are taut and so that the outboard surfaces of the upper blanket overlap the lower blanket.

(2) Improved Corrosion Protection

(a) On airplane line numbers 641 thru 990 with sealant applied to inboard flanges of stringers, apply a coat of BMS 5-95, class F, by spray, brush or roller coat to inboard face of stringer flanges and edges of frames where contacted by the insulation blanket, in areas above the window belt, between stations 259.5 and 1015. On airplane line numbers 991 and on, stringers may have either sealant or an additional coat of BMS 10-11, Type 1 (yellow) primer.

(b) Apply BMS 3-23 to all exposed structure. Refer to 20-60-00, Volume 1 for methods of application of BMS 3-23.

(c) Additional corrosion protection was applied on airplanes PP351-PP399 per MCP5121-001. Application of BMS 3-23 or LPS-3 was done in all structure in body upper lobe above WL 208.1 between sta. 260 and sta. 1040, including the entire fwd and aft face of sta. 1016 bulkhead. Periodic cleaning and re-application of. this inhibitor is required.

(d) On airplanes through cum line number 409, operators may wish to rework insulation blankets by removing the sewn cap strip from the lower edge of the blanket and continuously penetrate the stitch sealing. The blankets to be reworked must be fabricated with water-repellent fillers. All 737 airplanes are known to be delivered utilizing water-repellent fillers.

(e) On line number 410 and on, tightly sealed covers are replaced with unsealed covers to permit water to enter the blanket and drain. The blankets serve as drain paths into the lower lobe drain masts. Water repellent blanket filler is used.

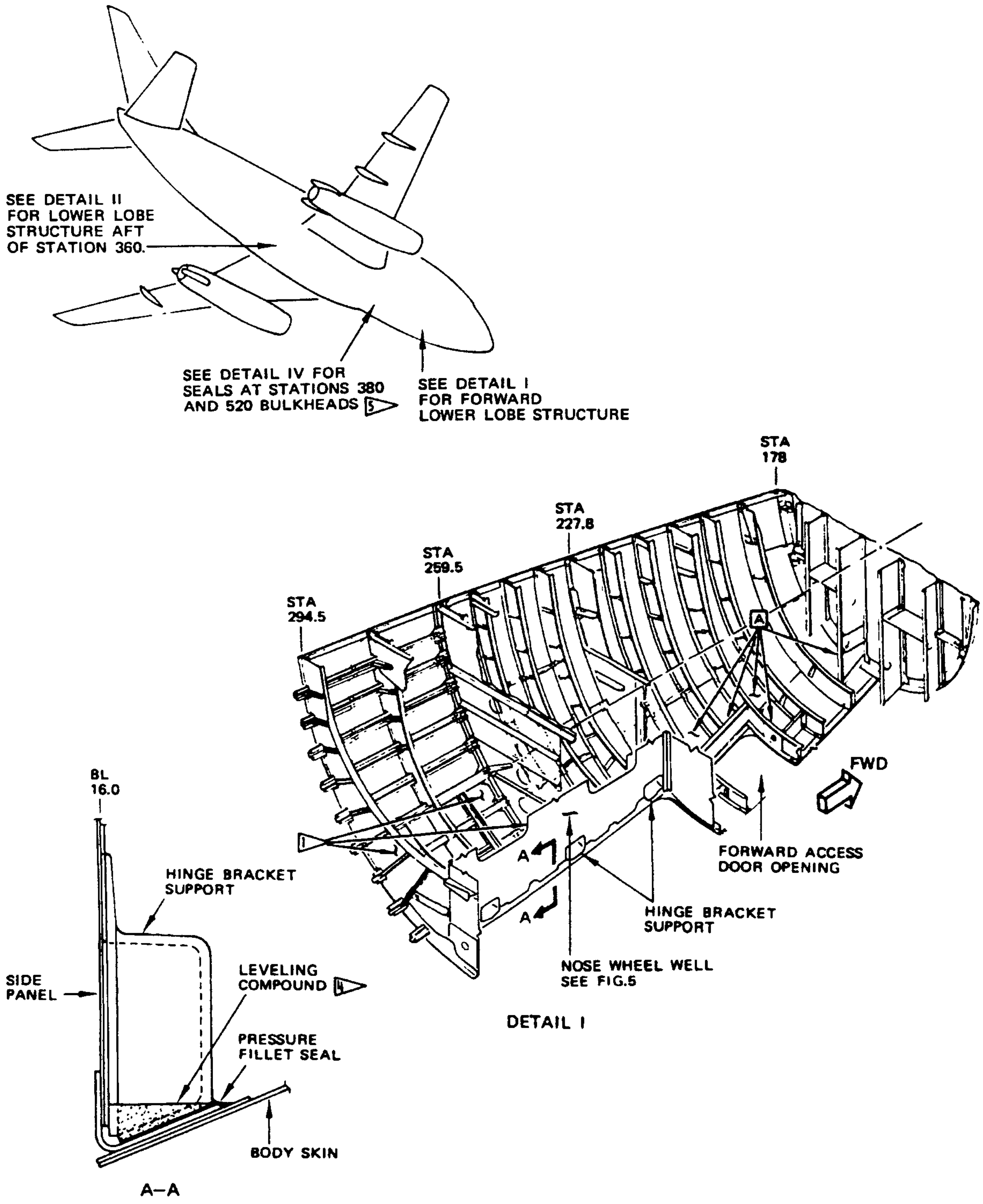
(f) BMS 5-95 sealant, class F (PR 1432GP - General Purpose Coating) is applied by spray, brush or roller coating to the inner flanges of stringers and edges of frames where contacted by the insulation blankets above the window belt, between stations 259.5 and 1015. This has been accomplished on airplanes line numbers 641 thru 990. On airplanes 991 and on, the stringers may have either BMS 5-95 sealant or an additional coat of yellow BMS 10-11 primer.

(g) On airplane line numbers 998 and on, PRR 33135-7 added one coat of BMS 10-11, Type 1 primer to bonded assemblies over the corrosion inhibiting primer (CIAP).

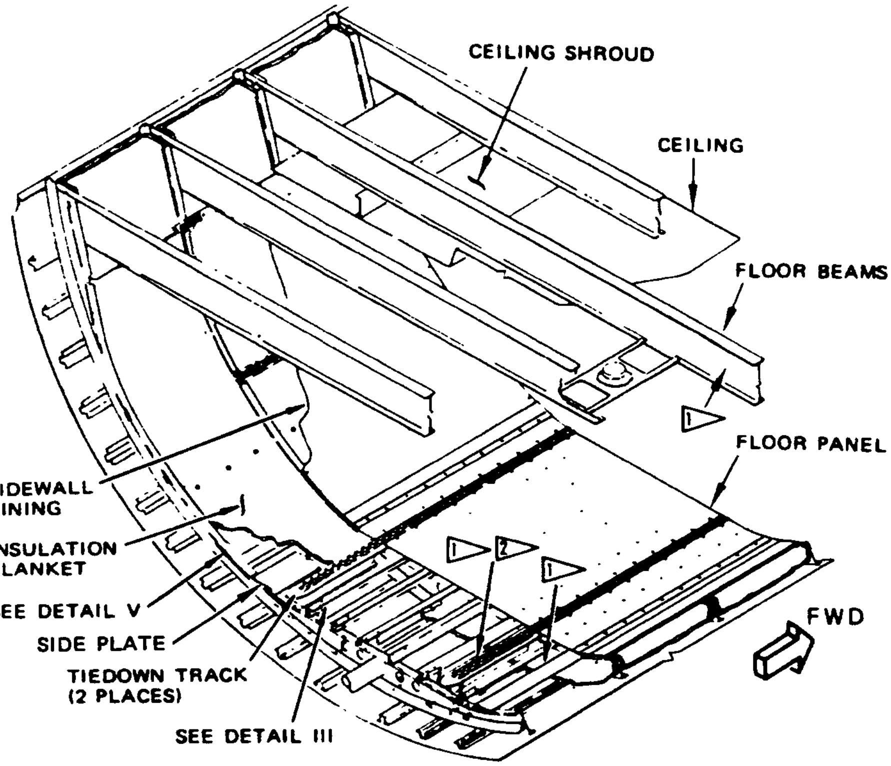
E. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

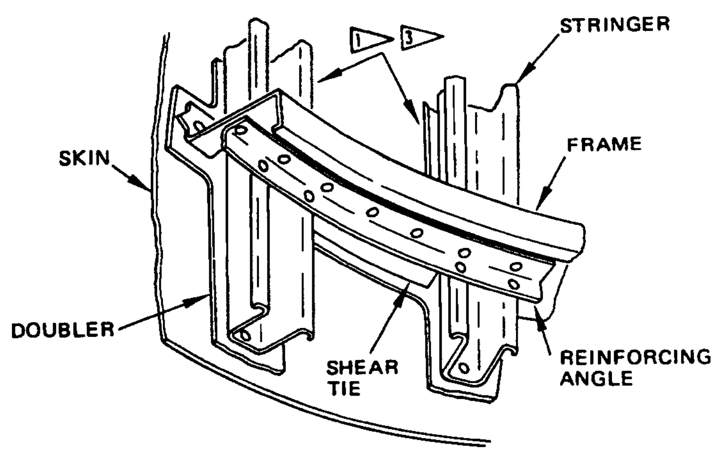
(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.



Lower Lobe Structure
Figure 2 (Sheet 1)

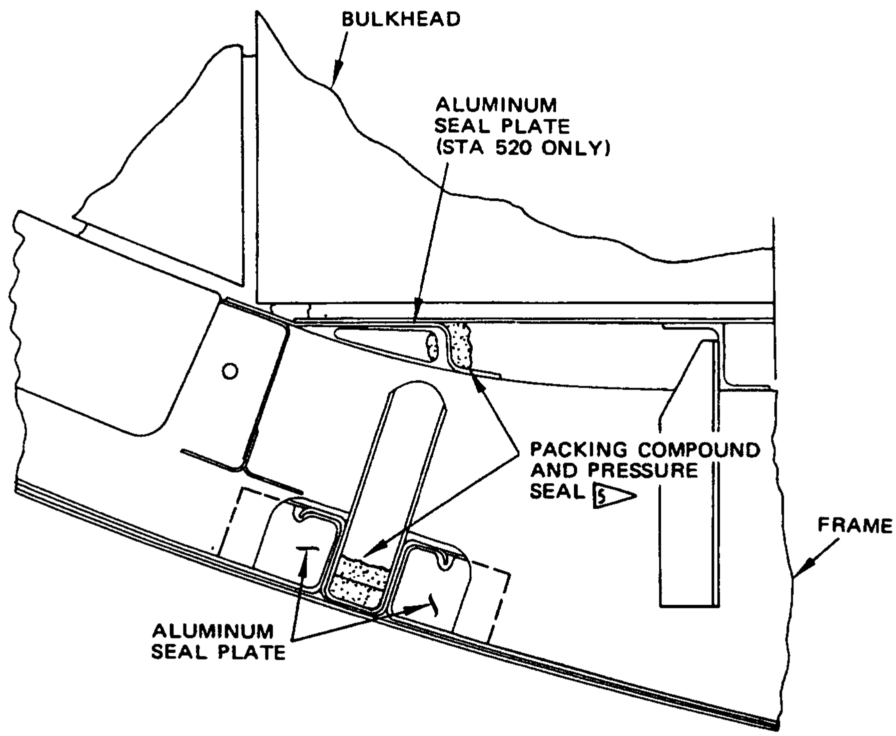


DETAIL II

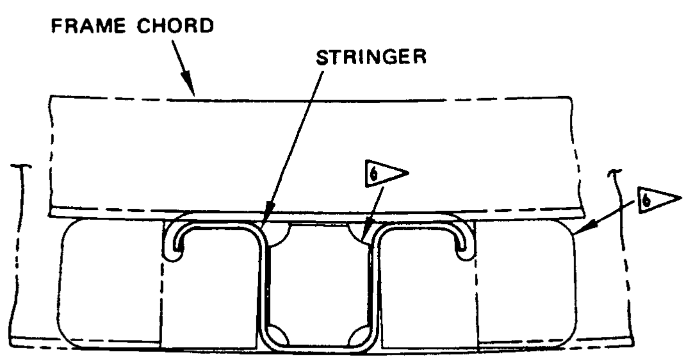


DETAIL III

Lower Lobe Structure
Figure 2 (Sheet 2)



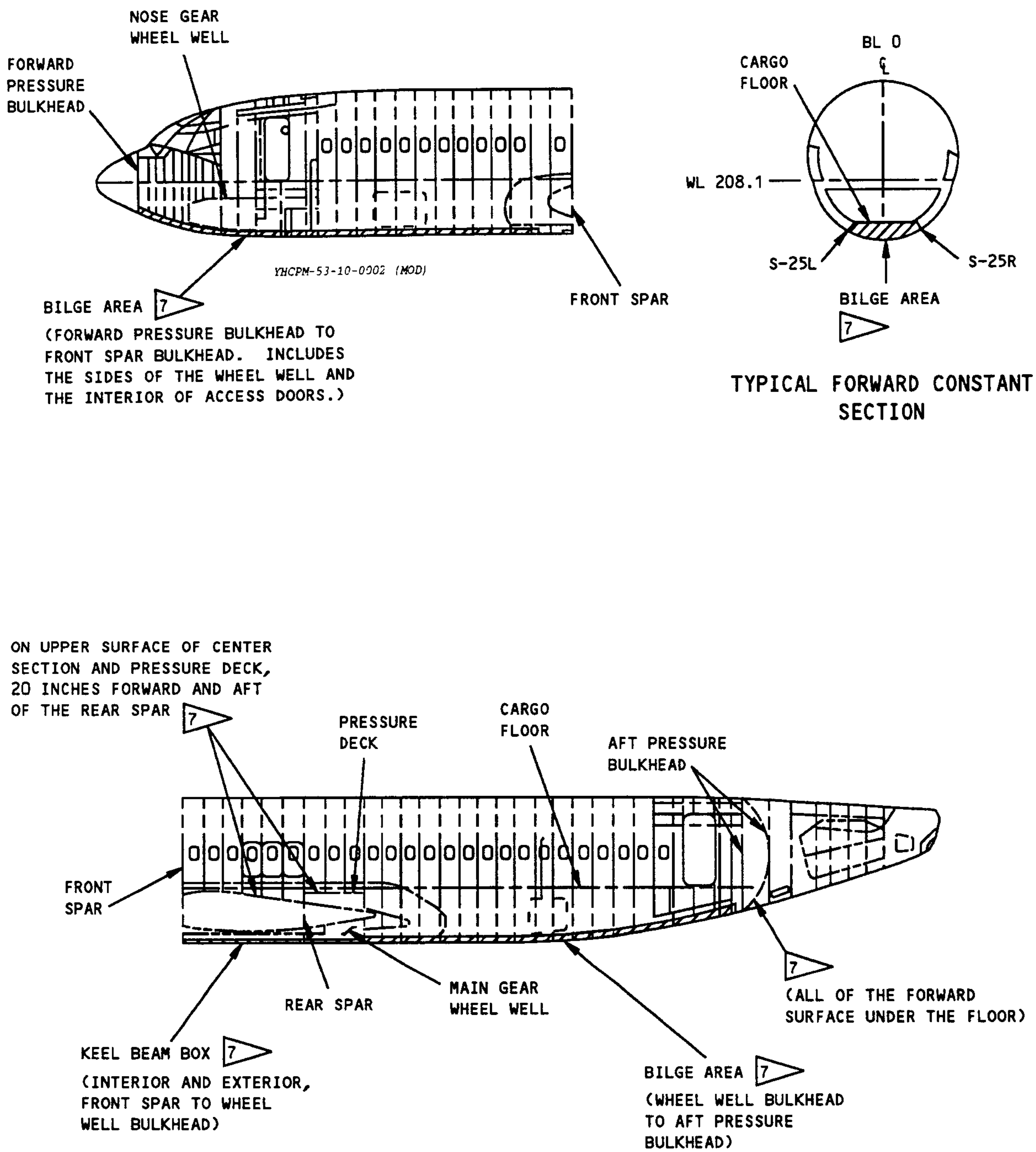
DETAIL IV



DAMS FOR HOSE-OUT OPTION

DETAIL V

Lower Lobe Structure
Figure 2 (Sheet 3)



Lower Lobe Structure
Figure 2 (Sheet 4)

1> APPLY WATER DISPLACING CORROSION INHIBITING COMPOUND BMS 3-23 TO ALL EXPOSED STRUCTURE

2> DOUBLERS ARE BONDED TO INTERIOR OF BODY SKINS IN THE BILGE BETWEEN BODY STATIONS 360-540 AND 727-1016. THE SKIN/DOUBLER ASSEMBLY WAS REPLACED WITH SOLID SKINS AT LINE NUMBER 420

3> TREAT THE SKIN, FRAMES, AND STRINGERS BELOW 2-24

4> AT LINE NUMBER 349, PRR 32299 ADDED THIS LEVELING COMPOUND AND ALSO MORE DRAIN HOLES. THESE CHANGES CAN BE INCORPORATED ON EARLIER AIRPLANES WITH SB 51-10-06

5> PRESSURE SEALS WERE ADDED AT LINE NUMBER 415

6> THESE DAMS DIVIDE AREAS INTO COMPARTMENTS FOR OPTIONAL HOSE-OUT OPERATIONS. CORROSION CAN OCCUR WITH WATER-SOAKED FOAM BLOCKS USED BEFORE LINE NUMBER 415, OR MISSING METAL SEAL PLATES ON SOME 737-400 AND 737-500 AIRPLANES

7> AT LINE NUMBER 2068, PRR 34898 ADDED CORROSION PREVENTIVE COMPOUND BMS 3-26 TO THESE AREAS

1. General

A. The fuselage is of semimonocoque construction utilizing aluminum skins, circumferential frames and longitudinal stringers. The fuselage skin is installed with circumferential butt joints and longitudinal lap joints. The floor beams act as tension ties across the frames. In the lower lobe area, shear ties from the skin to the frame are used between stringers with an inner angle on the frame.

B. The lower lobe structure including stringers, frames, shear ties, faying surfaces at doublers and straps, etc., are susceptible to corrosion due to moisture accumulation, moisture laden insulation blankets, cargo spillage, toilet effluent leakage and environmental contaminants. The lower lobe areas described herein include the cargo compartments, bilge areas and the electronic compartment.

C. To help clean out contamination in the lower lobe, dam divide the bilge into compartments for optional hose out operations (see Detail V). But on some airplanes, these dams have foam blocks which can become soaked with moisture and cause corrosion. Also, some 737-400 and 737-500 airplanes were delivered without the metal seal plates in the forward cargo compartment for the hose out option. Corrosion can occur if these airplanes are hosed out, because the water gets into adjacent areas and soaks insulation blankets. On line numbers 2547, 2609 and 2655, MC 5121 MP3070 provides for sealing of the aft side of station 380 frame and the forward side of station 5006 frame.

D. Some lower lobe doublers came apart from the skin, and corrosion and cracks occurred on airplanes with 1400 flight hours or more. The damaged areas were between Stringers 26L and 26R under the forward cargo compartment, BS 360-540 and between Stringers 25L and 25R under the aft cargo compartment, BS 727-1016.

E. At the nose wheel well, the three hinge bracket supports for the wheel well doors on the left and right side have pockets that can catch moisture.

F. Insulation blankets are provided on cabin interiors for passenger comfort and to minimize the condensation of warm cabin air on cold skins and stringers. Corrosion has been experienced in areas where the blankets are not installed taut and wrap around stringers or lay on the skins. Reports of water soaked blankets have been common in these instances.

G. Treatment of the areas under galleys and lavatories is described in Fig. 3.

H. Much corrosion and separation of doublers has been reported in the lower lobe. Areas where corrosion is of particular concern is from BS 260 to BS 360, stringers S-19 left to S-19 right.

I. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the regular inspections of Volume 1, 20-20-00 to stop of find the start of corrosion. SB 53-A1042 gives the inspection procedure for the areas beneath the forward and aft cargo floors. Skin bulges, missing fasteners, or white powdery deposits are signs of corrosion.

B. If you find corrosion (skin bulges, missing fasteners or large amounts of white deposits at the fastener heads or faying surfaces), refer to Structural Repair Manual for details of corrosion removal.

WARNING: DO NOT APPLY CORROSION INHIBITING COMPOUNDS INTO AREAS WHICH COULD POTENTIALLY BE IN CONTACT WITH OXYGEN SYSTEM COMPONENTS. MIXING OF CORROSION INHIBITORS AND OXYGEN MAY RESULT IN AN EXPLOSION.

CAUTION: INSULATION BLANKETS SOAKED WITH CORROSION INHIBITORS ARE POTENTIAL FIRE HAZARDS. BLANKETS INADVERTENTLY SPATTERED SHOULD BE ALLOWED TO DRY BEFORE REINSTALLATION.

C. For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

D. For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule.

NOTE: The treatment of internal structure described above should be made at first opportunity the area is exposed. Location of the area should be noted and monitored from the outside every 3 months for visual indication of corrosion progression. Any noticeable skin bulges would require scheduling corrosion removal outlined in Structural Repair Manual.

E. BMS 3-23 corrosion inhibiting compound should not be used in the vicinity of oxygen system components. The suggested protection system for areas near oxygen system components is as follows:

(1) Clean corrosion and repair affected area per the Structural Repair Manual.

(2) Chemical treat bare aluminum surfaces.

(3) Apply one coat of BMS 10-11, Type 1 green primer.

(4) Apply one coat of BMS 10-11, type 1 yellow primer.

(5) Apply BMS 10-11, type 2 epoxy or BMS 10-60 polyurethane enamel top coat.

F. Prevention Treatment

(1) At first opportunity when scheduled maintenance work allows access to the structure, corrosion prevention treatment should be accomplished.

(2) Remove sidewall lining and insulation blankets in the cargo compartment and beneath the upper lobe entry and cargo doors to expose frame, stringer, doublers and skin.

(3) Remove floor panels to gain access to bilge areas, if required.

(4) Remove ceiling lining for access to main deck floor beams and intercostals.

(5) Open plugged drains.

(6) Make sure that all drain paths are clear at the frames and stringers in the airframe lower lobe and stringer ends at station bulkhead. Refer to SB 51-1013 for the detail inspection procedure on the moisture drainage paths.

(7) Replace broken or damaged finishes. Refer to Volume 1, 20-60-00 for protective finish systems.

(8) Apply a coat of BMS 10-11 epoxy primer to the inboard flange surfaces of stringers and allow to dry thoroughly.

(9) Replace or repair broken or damaged leveling compounds used for drainage.

(10) On airplanes up to line 649 apply BMS 5-95, class F, chromate-loaded sealant to the inboard flanges and to portions of the frames that come in contact with insulation blankets. Allow to cure for 48 hours. On subsequent airplanes, note condition of the sealant and reapply as necessary.

(11) Apply corrosion inhibiting compound to all exposed structure under the cargo floor and to the sidewalls beneath the upper lobe entry and cargo doors. The use of spray equipment with nozzle directed into faying surfaces is recommended. Do not apply excessively.

NOTE: To reduce the possibility of moisture entrapment between insulation blankets and airplane skins in the bilge area, supports for the insulation blankets were provided on production airplanes at line number 332 and can be provided retroactively by incorporating SB 25-1085. These supports consist of nylon twine and brackets. Earlier installations utilizing silicone rubber loops may deteriorate because of exposure to hydrocarbons such as corrosion inhibitors and should be replaced with the nylon twine.

(12) Allow solvent to evaporate before reinstalling insulation blankets.

(13) Install blankets so they are taut and so that the outboard surfaces of the upper blanket overlap the lower blanket.

NOTE: On airplanes through line number 409, you can rework insulation blankets by removing the sewn cap strip from the lower edge of the blanket and continuously penetrate the stitch sealing. The blankets have water-repellent fillers. All 737 airplanes are known to be delivered utilizing water-repellent fillers.

(14) Install liners and floor panels. Install the floor panel fasteners with BMS 3-24 grease.

G. Frequency of Application

(1) SB 53A1042 recommends structural inspection and application of corrosion inhibiting compound every 2 years in the cargo compartment bilge areas. We recommend this schedule of inspection and application of the compound on all 737 airplanes.

H. Improved Corrosion Protection

(1) On airplane line numbers 1130 and on, PRR 33784 added additional BMS 3-23, Type II corrosion inhibiting compound to the lower lobe structure in Section 43 and 48 below WL 208.1 including the crease beam. Also around the passenger doors, lavatories and galleys above the passenger deck, interior of keel beam from BS 540 to BS 727A + 14 inches and exterior of keel beam from BS 540 to 664.

(2) SB 53A1042 gives an inspection, repair and panel replacement procedure for the lower hot-bonded skin panel. This service bulletin now recommends these changes be included to all 737 aging airplanes from airplane line numbers 1 thru 433. It is recommended to include SB 25-1085, 53-1089, 53-1081, and 53-1087 at the same time with SB 53A1042. SB 53A1042 is included in the Federal Aviation Administration (FAA) Airworthiness Directive 82-01-09. However, on airplane line number 434 and on, PRR 32349 replaced the bonded skin/doubler panel with a similar thickness single clad skin panel from BS 360 to 540, Stringer 26L to 26R and BS 727 to 1016, Stringer 25L to 25R.

(3) On airplane line numbers 1769 and on, PRR 34475-3, -6 added corrosion resistant primer and a flexible white enamel finish to the metallic detail parts below the passenger compartment floor.

(4) On airplane line numbers 1863 and on, PRR 34783 deleted the addition of fillet seal to stringers and frames in the cargo areas that are already sufficiently sealed and finished.

(5) On airplanes PP351-PP399, MCP5121-001 added BMS 3-23 (LPS-3)corrosion inhibitor to all skin and stringers between Sta 1040 and Sta 1088 including the forward face of the Sta 1088 bulkhead.

(6) At line number 415, PRR 32428 replaced the foam dams (for the hose-out option) with metal dams. This change can be incorporated on earlier airplanes with SB 51-1007.

(7) At line number 415, more metal seal plates and pressure seals were added at station 380 and 520 bulkheads. This will help keep moisture out of the lower lobe areas.

(8) Some 737-400 and 737-500 airplanes did not come with the hose-out option for the forward cargo compartment. PRR 34998 and 35002 added the necessary seal plates. SB 51-1014 gives details of inspection and installation.

(9) At line number 349, PRR 32299 filled with leveling compound the three hinge bracket supports for the nose wheel doors, and added more drain holes. These changes can be incorporated on earlier airplanes with SB 51-1006.

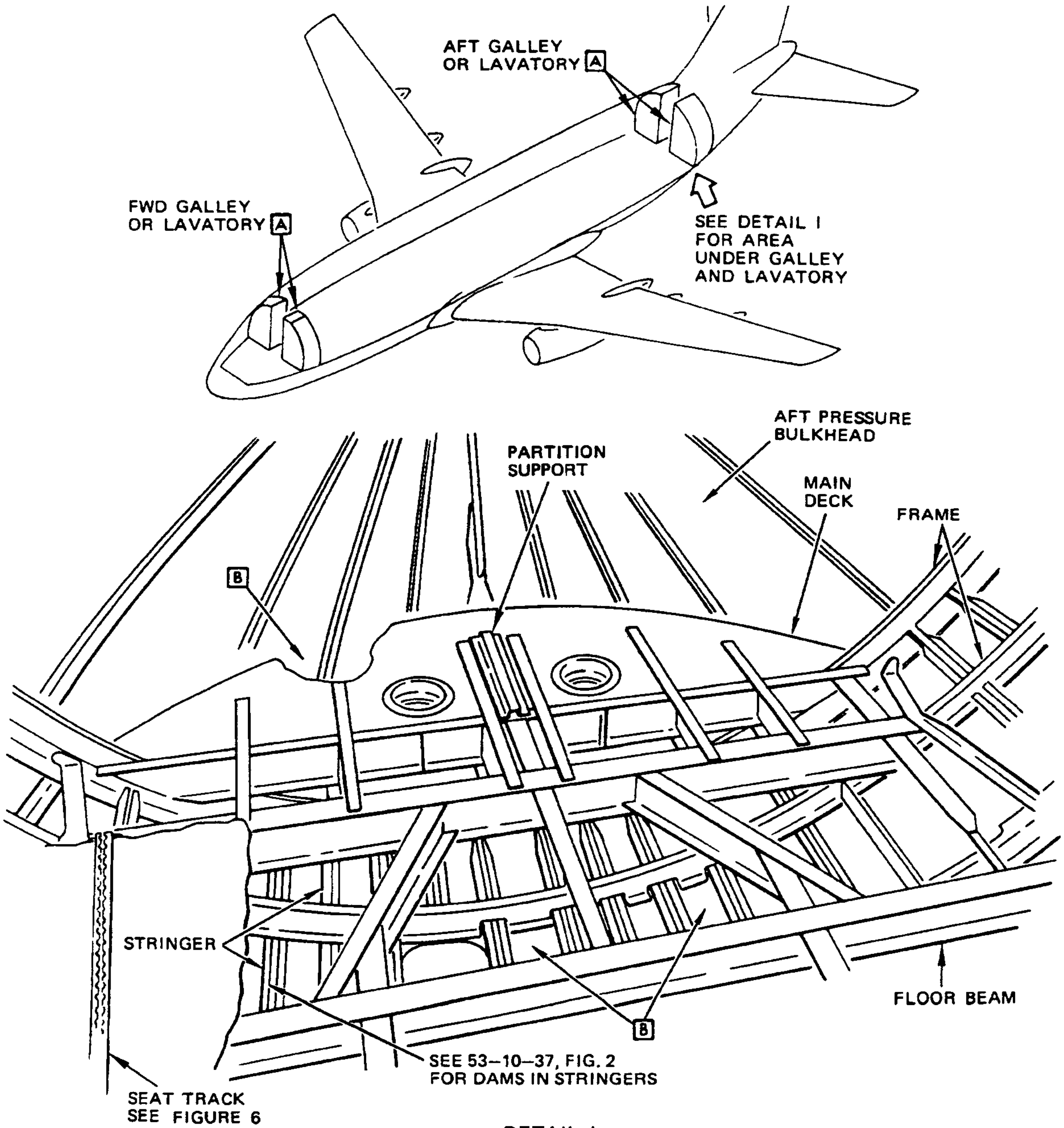
(10) At line number 410, a new insulation blanket installation is used. The tightly sealed covers are replaced with unsealed covers to permit water to enter the blanket and drain equally easily. The blankets become drain paths into the lower lobe drain masts. Water repellent blanket filler is also used.

(11) At line number 528, faying surface sealant, BMS 5-95, is applied between the Station 727 bulkhead chord and the body skin, from S-24, left to S-24 right.

(12) At line number 591, BMS 5-95 sprayable sealant is applied to the lower cargo compartment side plates after assembly, before the enamel topcoat.

(13) At line number 649, a production change applies BMS 5-95, class F chromate-loaded sealant to inboard flanges of stringers and to the areas of the frames that touch the insulation blankets.

(14) At line number 2068, PRR 34898 added BMS 3-26 corrosion preventive compound on the BMS 3-23 compound in the bilge below the cargo floor, the keel beam box, and on the center section and pressure deck.

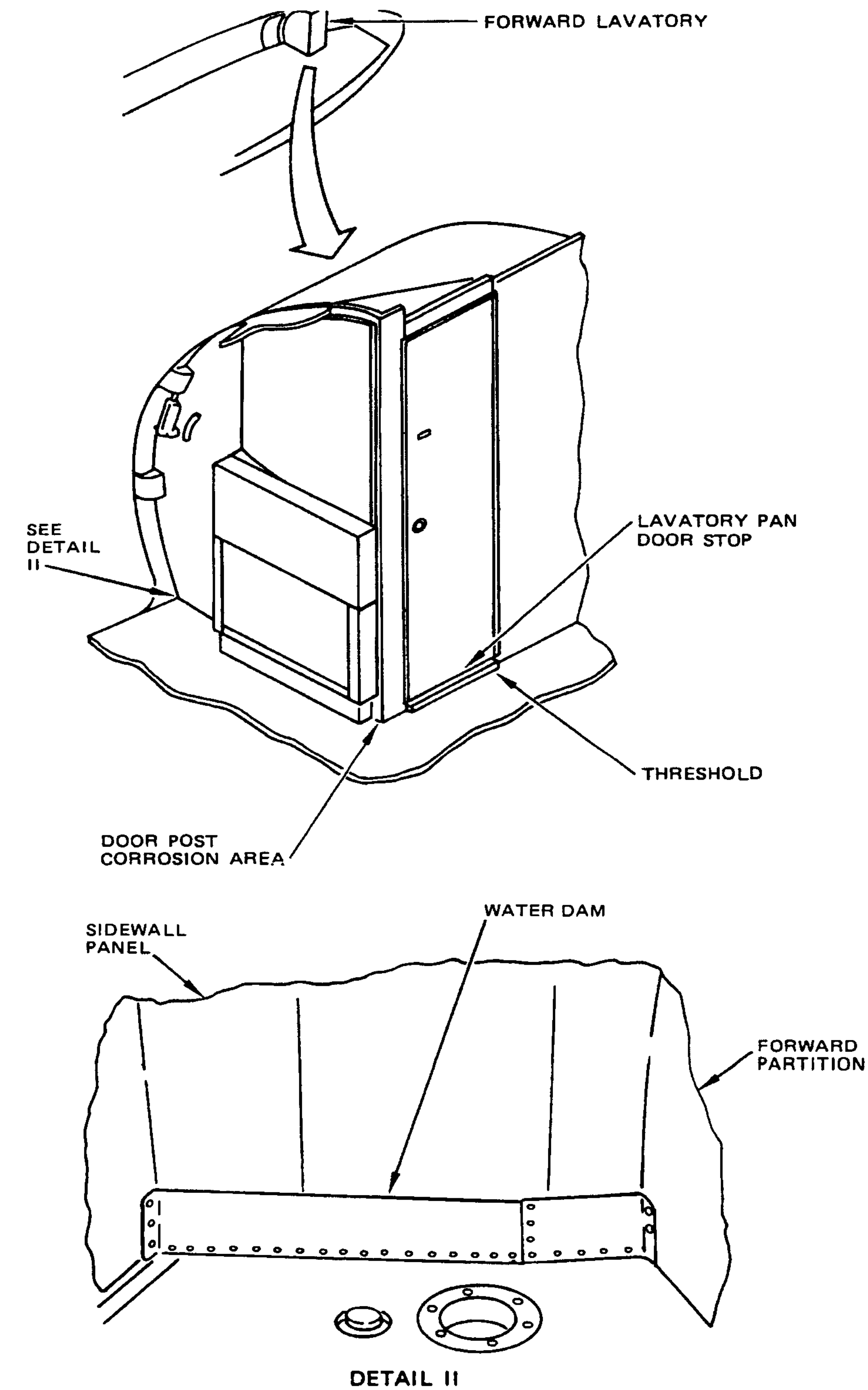


NOTES

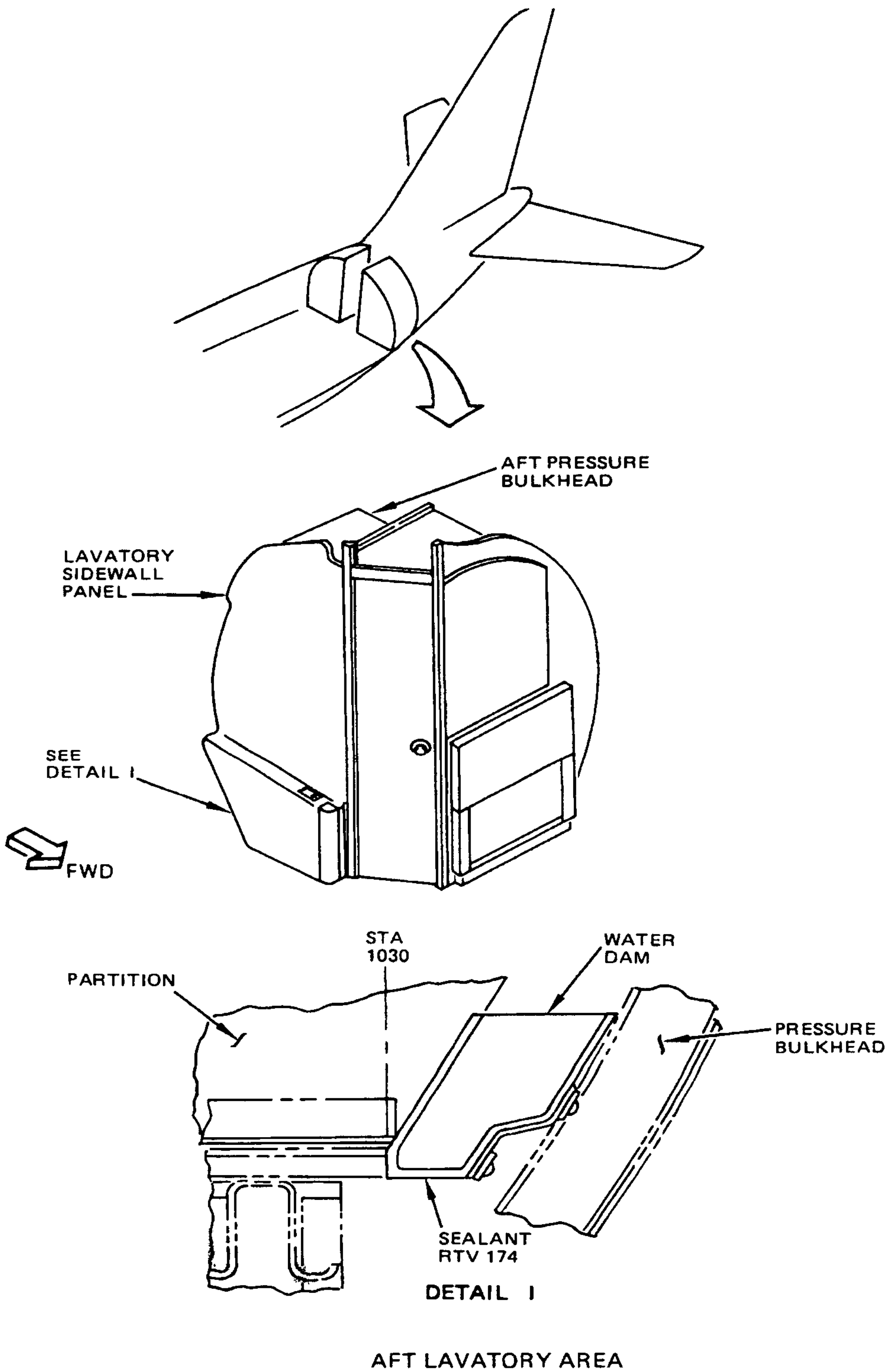
A LOCATION OF GALLEY AND LAVATORY VARIES

B APPLY BMS 3-23 ON ALL EXPOSED STRUCTURE

Galley and Lavatory Areas
Figure 3 (Sheet 1)



Galley and Lavatory Areas
Figure 3 (Sheet 1A)



Galley and Lavatory Areas
Figure 3 (Sheet 1B)

1. General

A. Areas under galleys and lavatories are susceptible to corrosion because of spillage of fluids or food. Leakage from plumbing lines also contributes to corrosion. Seat tracks in galley or lavatory areas are particularly susceptible because of exposure to traffic debris and spillage which collect inside the track. Corrosion has also been reported on the forward lavatory bulkhead-to-floor area and door post, aft of the lavatory door. Finishing changes and faying surface sealants were added on line number 949 and on, plus airplanes incorporating SB 25-1161.

B. Corrosion of the aluminum faced floor panels under galleys and lavatories has been alleviated by using fiberglass faced balsa panels.

C. Insulation blankets are provided on cabin interiors for passenger comfort and to minimize the condensation of warm cabin air on cold skins and stringers. Corrosion has been experienced in areas where the blankets are not installed taut and wrap around stringers or lie on the skins. Reports of water soaked blankets have been common in these instances.

D. On line number 410 and on, sealed covers are replaced with unsealed covers to permit water to enter the blanket and drain. The blankets serve as drain paths into the lower lobe drain masts. Water repellent blanket filler is used.

E. On airplanes line number 722 and on, plus airplanes incorporating SB 25-1169, a water dam and seal have been added to the outboard side of the forward lavatory floor, and between the aft lavatories. Floor drains have been added to the aft lavatories and a drain installation to the forward lavatory.

F. For improved corrosion protection, a production change has been made on line number 649 and on to apply BMS 5-95, class F, sealant to inboard flanges of stringers and to portions of frames that contact insulation blankets.

G. Severe corrosion and corrosion cracking have been reported on the lower ten inches of the bulkhead forward face. Corrosion of the bulkhead web can result in severe cracks and rapid cabin depressurization. The corrosion, as noted in SB 737-53A1075, has been attributed to fluids from galleys and lavatories. A plugged drain hole in the station 1016 frame chord assembly can trap these fluids and thereby accelerate the corrosion process. See 53-10-37, figure 8 for aft pressure bulkhead.

H. Corrosion has been experienced on the partition support installed between floor panels from BS 1006 to 1030. Lastifoam 5502 was used inside the crown of the support to prevent moisture accumulation. Due to its tendency to absorb moisture, Lastifoam 5502 was deleted on line number 1040 and on.

I. Beginning at line number 2765, PRR 35005-116 applies corrosion inhibiting compound BMS 3-23 to wet areas (doorways, galleys and lavatories) of the main cabin (Ref. 53-10-37, Fig. 3 and 6). Refer to Service Letter 737-SL-53-034 for more details.

J. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Periodically examine galley and lavatory areas to detect early stages of corrosion. Skin bulges, missing fasteners or white powdery deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of moisture in order to minimize the occurrence of corrosion.

B. Where extensive corrosion exists (noticeable skin bulges, missing fasteners, or large amounts of white deposits) refer to Structural Repair Manual for details of corrosion removal.

C. For details of application of BMS 3-23, refer to Volume 1, 20-60-00.

WARNING: DO NOT APPLY CORROSION INHIBITING COMPOUNDS INTO AREAS WHICH COULD POTENTIALLY BE IN CONTACT WITH OXYGEN SYSTEM COMPONENTS. MIXING OF CORROSION INHIBITORS AND OXYGEN MAY RESULT IN AN EXPLOSION.

CAUTION: INSULATION BLANKETS SOAKED WITH CORROSION INHIBITORS ARE POTENTIAL FIRE HAZARDS. BLANKETS INADVERTENTLY SPATTERED SHOULD BE ALLOWED TO DRY BEFORE REINSTALLATION.

D. For minor corrosion to minimize the down time of the airplane, the corrosion products should be cleared off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

NOTE: The treatment of the internal structure described above should be made at the first opportunity the area is exposed. Location of the area should be noted and monitored from the outside every 3 months for visual indication of corrosion progression. Any noticeable skin bulges would require scheduling corrosion removal outlined in Structural Repair Manual.

E. The treatment of seat tracks in the galleys arid lavatories should be accomplished per 53-10-37, Fig. 6.

F. Prevention Treatment

(1) At first opportunity when scheduled maintenance work allows access to the structure, corrosion prevention treatment should be accomplished.

NOTE: Preferred access to the floor structure is from the lower lobe.

(2) Remove sidewall lining and insulation blankets to expose frames, stringers, doublers and skin.

(3) Remove floor panels to gain access to bilge areas.

(4) Remove insulation blankets and liners (if any) from bulkheads in the immediate area below galleys or lavatories.

(5) Remove ceiling lining for access to main deck floor beams and intercostals.

(6) Open plugged drains, if any.

(7) Clear all drain paths.

(8) Refinish broken or damaged finishes. Refer to Volume 1, 20-60-00 for protective finish systems. Use interior finish system with polyurethane enamel topcoat.

(9) Replace or repair broken or damaged leveling compounds used for drainage.

(10) On airplanes to cum line 649 apply BMS 5-95, class F, chromate-loaded sealant to the inboard flanges and to portions of the frames that come in contact with insulation blankets. Allow to cure for 48 hours. On subsequent airplanes, note condition of the sealant and reapply as necessary.

(11) Apply BMS 3-23 water displacing corrosion inhibiting compound to all structures under galleys and lavatories. Exposed structure of bulkheads should also be included. Special efforts should be made to apply the corrosion inhibitor to the top of the floor support structure where moisture may be trapped between the floor panel and floor support. The use of spray equipment with nozzle directed into faying surfaces is recommended. Do not apply excessively.

NOTE: To reduce the possibility of moisture entrapment between insulation blankets and airplane skins in the bilge area, supports for the insulation blankets were provided on production airplanes at line number 332 and can be provided retroactively by incorporating SB 25-1085. These supports consist of nylon twine and brackets. Silicone rubber used on earlier installations may deteriorate due to exposure to hydrocarbons present in corrosion inhibiting compound and should be replaced with nylon twine.

(12) Allow solvent in the corrosion inhibitor to evaporate before reinstalling insulation blankets.

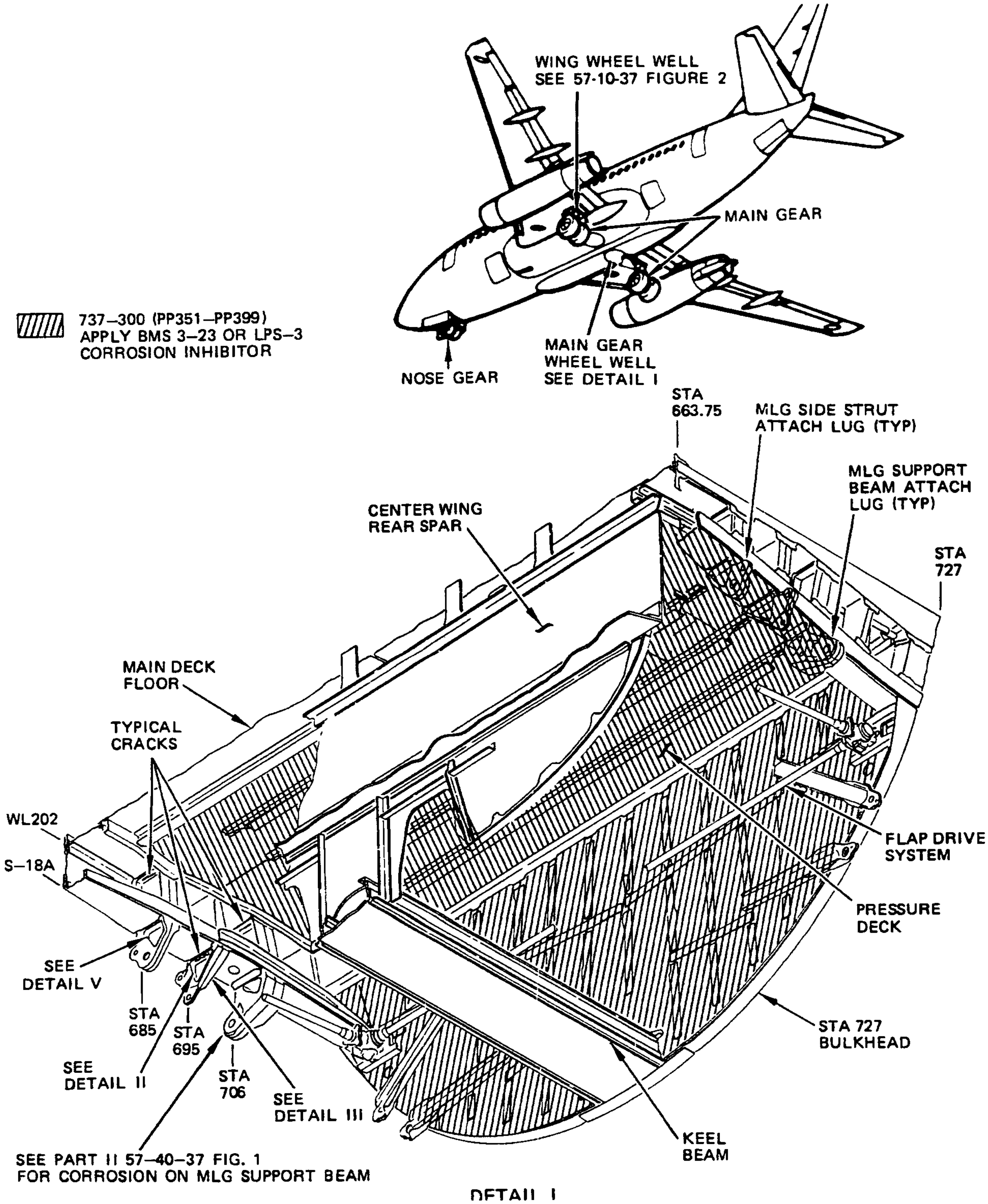
(13) Install blankets so they are taut and so that the outboard surfaces of lower blanket overlap the lower blanket.

NOTE: On airplanes through cum line number 409 operators may wish to rework insulation blankets by removing the sewn cap strip from the lower edge of the blanket and continuously penetrate the stitch sealing. The blankets to be reworked must be fabricated with water-repellent fillers. All 737 airplanes are known to be delivered utilizing water-repellent fillers.

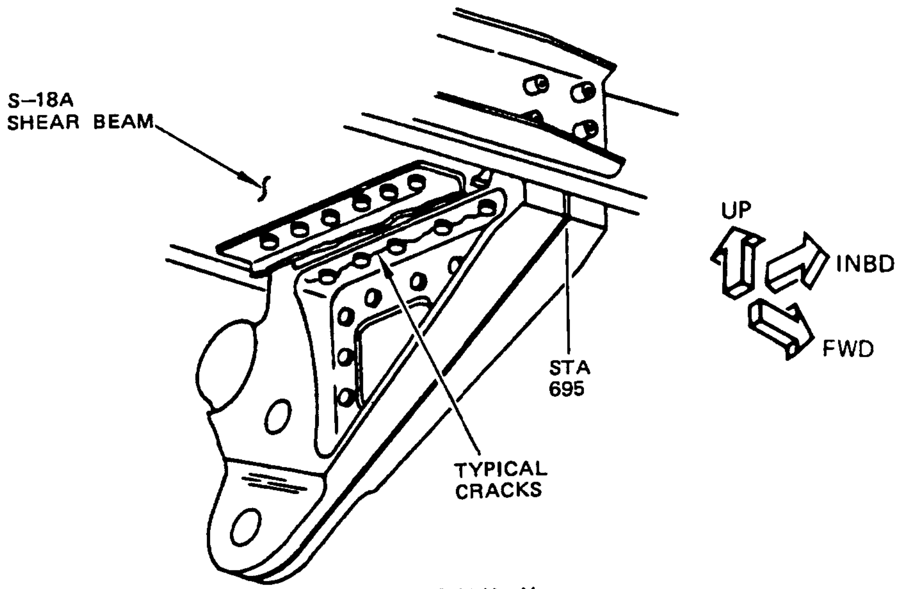
(14) Install liners and floor panels. Install the floor panel fasteners with BMS 3-24 grease.

G. Frequency of Application

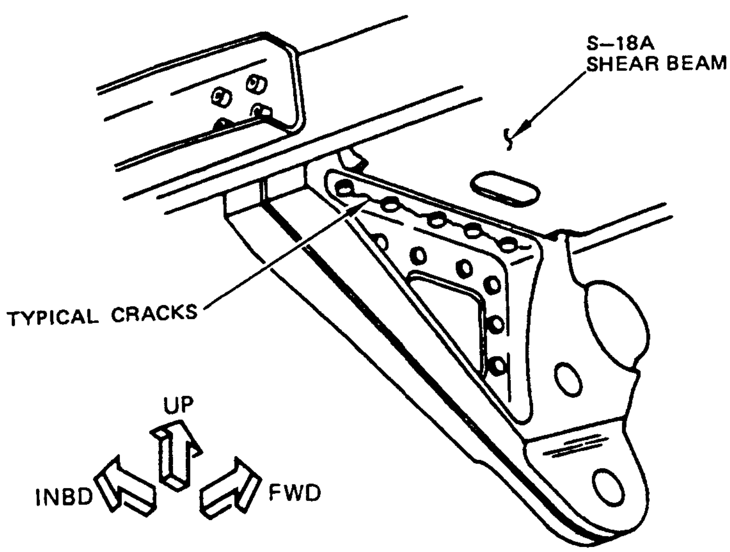
(1) It is recommended that BMS 3-23 water displacing corrosion inhibiting compound be applied to the lower lobe structure whenever the area is made accessible, at intervals not to exceed the "D" cneck.



Main Gear Wheel Well and Keel Beam
Figure 4 (Sheet 1)

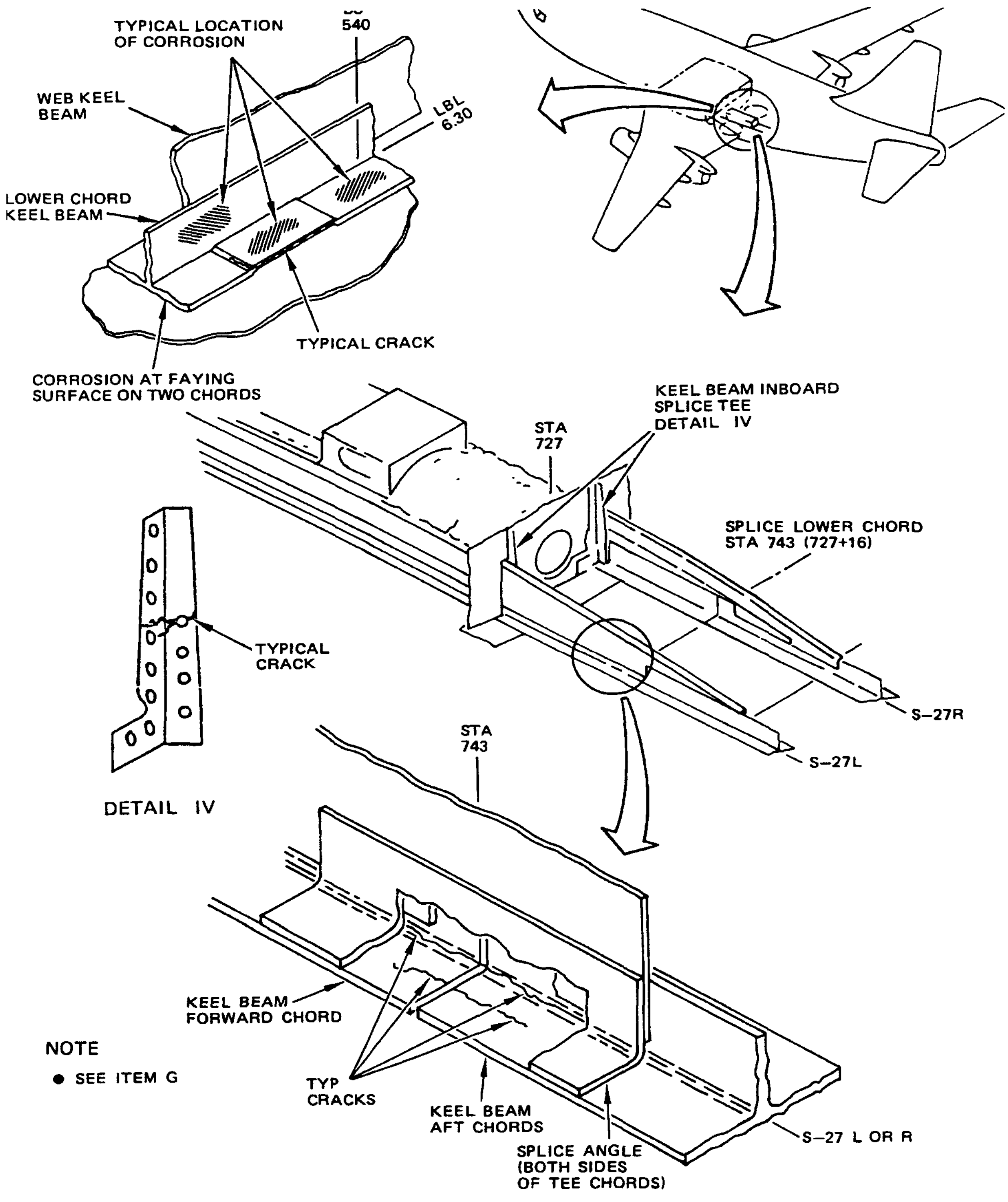


DETAIL II

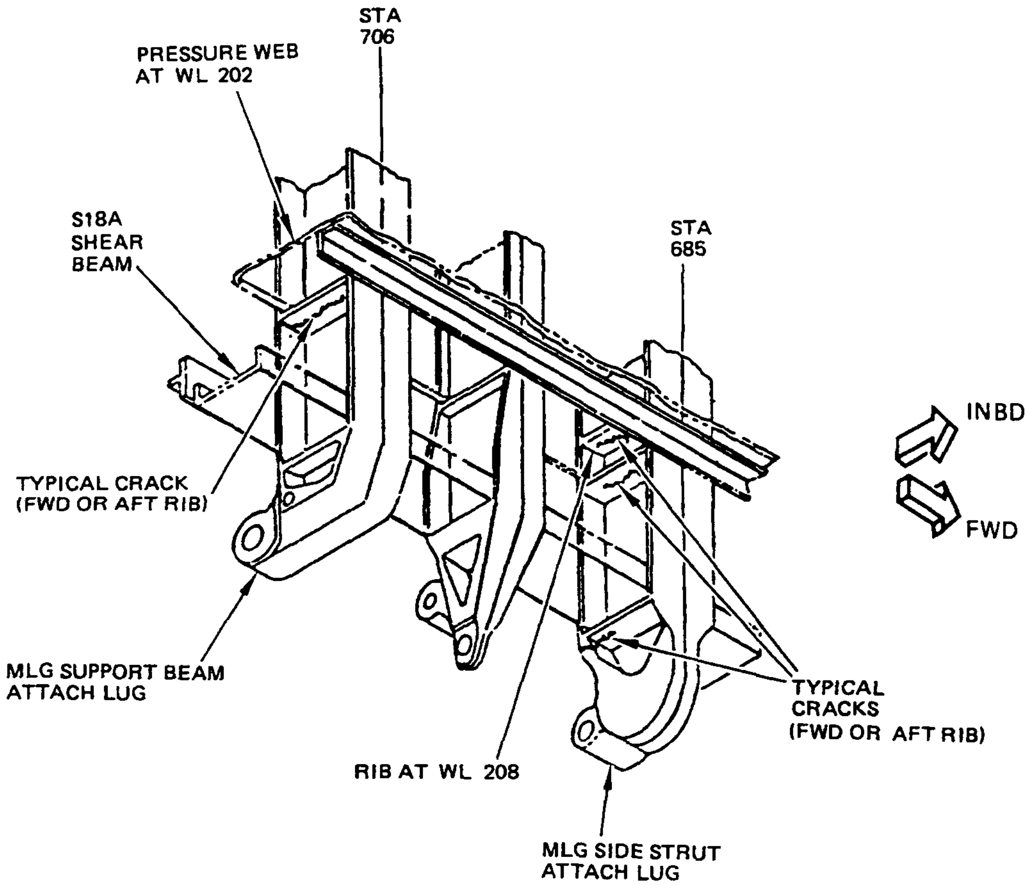


DETAIL III

Main Gear Wheel Well and Keel Beam
Figure 4 (Sheet 2)



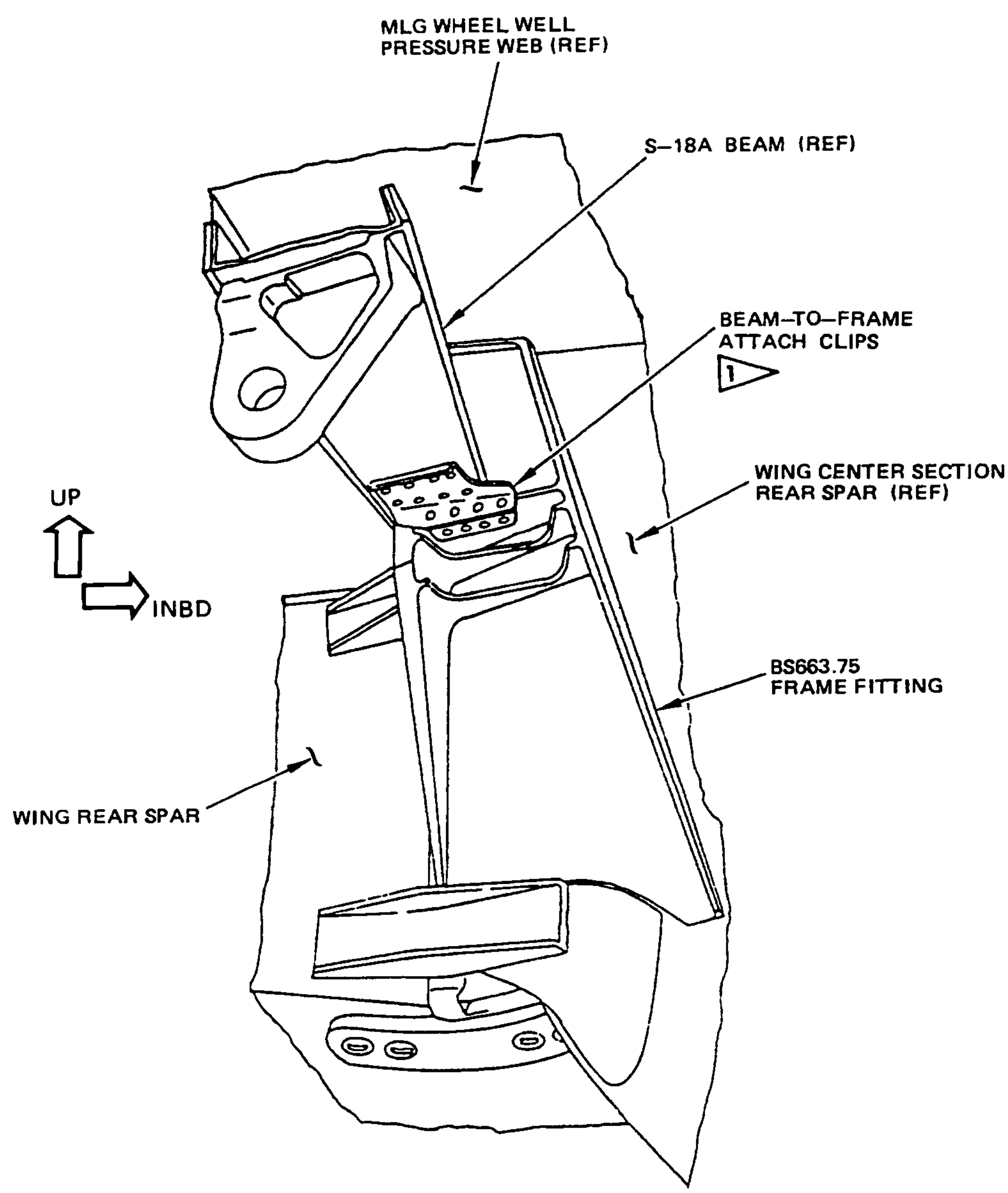
Main Gear Wheel Well and Keel Beam
Figure 4 (Sheet 3)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

DETAIL V

Main Gear Wheel Well and Keel Beam
Figure 4 (Sheet 4)



DETAIL VI

1 SB 53-1028 RECOMMENDS ONE TIME INSPECTION

Main Gear Wheel Well and Keel Beam
Figure 4 (Sheet 5)

1. General

A. The main gear wheel well is in the fuselage section aft of the bulkhead at the rear spar of the wing center section. The floor is formed by the wing to body fairing with an opening provided to fit the tire, with the outboard tire providing the closure for the cavity. A keel beam carries the longitudinal stress loads across the cavity. The wheel well in the fuselage extends into the inboard end of the wing trailing edge structure. The wing wheel well houses the greater portion of the landing gear components.

B. The surfaces inside the fuselage are exposed to air contaminants and runway splash and are subject to corrosion.

C. The wing wheel well should be treated at the same time as the trunnion attach fittings, the landing gear support beam and forward trunnion support structure (Ref 57-40-37, Fig. 1).

D. A special area of concern for airplanes through line number 310 is the inboard lug of the main landing gear trunnion support beam and the Body Station 706 integral frame lug. Corrosion and stress corrosion cracking has been reported on these lugs. SB 57-1071 has been issued to provide instructions for inspection, preventive maintenance and corrosion removal.

E. *The Body Station 706 frame has been redesigned and the forging material* changed from 7075-F to 7075-T411. The main landing gear trunnion beam was also redesigned and the beam forging material changed from 7079-T652 to 7075-T73. Both structural changes were incorporated in production at line number 311.

F. Stress *corrosion cracking has been reported in the horizontal integral ribs* of the BS 685 and 706 frames. Cracks occurred at WL192, 202 and 208 on Sta 685 frames and at WL202 on STA 706 frames on both sides of airplanes. Cracks originated at, or passed through holes for fasteners used to attach shear webs to frame ribs. Cracks occurred in frames made from 7079 material. Material changes were made in the frames on airplanes line numbers 97, 98, 100, 102, 104, 105 and from 108 and on.

G. Stress corrosion cracks have occurred in the keel beam left and right lower tee chord. They initiated under the splice near the ends of the 7178-T6511 aluminum chords at Sta 743. Corrosion has also occurred between the tee chord and skin.

H. Stress corrosion combined with fatigue is believed responsible for cracks in the left and right inboard splice tees of the keel beam. Splice tee material was changed from 7075-T6 to 7075-T73511 aluminum alloy effective on line number 110.

I. Corrosion has been reported on the keel beam lower chord surfaces between STA 520 and STA 540 and aft of STA 727. Stress corrosion cracks have also been reported on the keel beam lower chord at STA 590 and between STA 530 and STA 536.

J. Stress corrosion cracking has been reported in the horizontal flange of the forward and aft frame fitting at STA 695. The cracks ran along the line of fasteners common to the stringer S-18A shear beam (refer to Fig. 4, 11, 111).

K. Stress corrosion cracks has been reported in both left and right inboard splice tees of the keel beam at the main wheel well aft bulkhead (Refer to Fig. 4, Detail IV).

L. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of moisture or corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

(2) Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads of 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

C. Application of Corrosion Inhibitors

(1) For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

(2) Hydraulic tubing, tubing supports and fittings are to be treated per 29-00-37, Fig. 1.

D. Prevention Treatment

(1) Maintenance Prevention

(a) At first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished in the wheel well and on the aft keel beam.

(b) Treatment of the wheel well at the same time as the main gear is recommended.

(c) Remove runway debris and generally clean the entire wheel well area.

(d) Replace damaged or broken finishes if at all possible. Refer to Volume 1, 20-60-00 for protective finish systems.

(e) Apply corrosion inhibiting compound to all exposed wheel well structure. Special effort should be made to apply corrosion inhibitor along doubler edges, along faying surfaces and on fastener heads. The use of spray equipment with nozzle directed into faying surface is recommended.

(f) Apply water displacing corrosion inhibiting compound to the frames at BS 685 and 706, WL 193 to 208.

(g) Regrease all grease fittings in the treatment area.

(h) In cases where the wheel well is cleaned with steam or high pressure water and detergent, reapplication of corrosion inhibiting compound is recommended.

(i) SB 53-1028 describes a one-time inspection for excessive preload and insufficient edge margin on the angle clips at BS 663.75 frame fitting (refer to Fig. 4, Detail VI).

(2) Improved corrosion protection

(a) For preventive maintenance practices for the flap asymmetry mechanism on airplanes up to line number 300, refer to 27-50-37, Fig. 1 and 2.

(b) For preventive maintenance on the lugs at BS 706, identified in par. 1.D., refer to SB 57-1071. It is recommended that SB 57-1071 be incorporated at the first opportunity maintenance schedule will allow. Refer to 57-40-37, Fig. 1 for preventive maintenance on the main landing gear trunnion support beam.

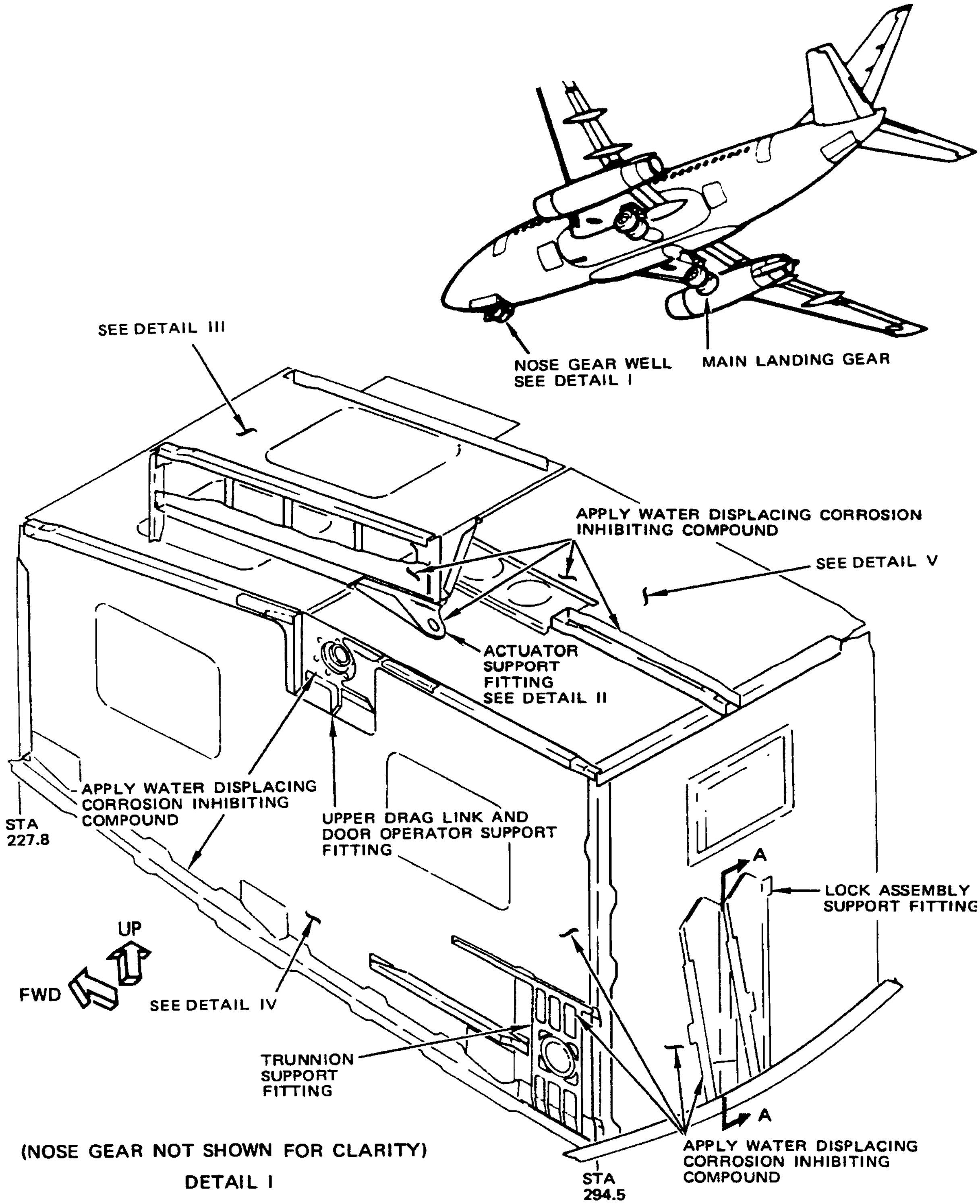
(c) On A/P's PP351-PP399, BMS 3-23 or LPS-3 was applied in the main wheel well cavity (aft face of wing center section rear spar), lower surface of the pressure deck, fwd face of the BS 727 bulkhead, exterior of the keel beam (rear spar center section to 727 bulkhead), and all wheel well fairing structures (see Fig. 4, Sht. 1). Periodic cleaning and re-application of this inhibitor is required.

(d) The main landing gear support structure may fail to hold the design loads if there are corrosion and cracks in the structure. As a result, SB 53-1080 was released on April 13, 1989 to give procedure on the inspection, repair and replacement of the BS 695 frame-lower fitting.

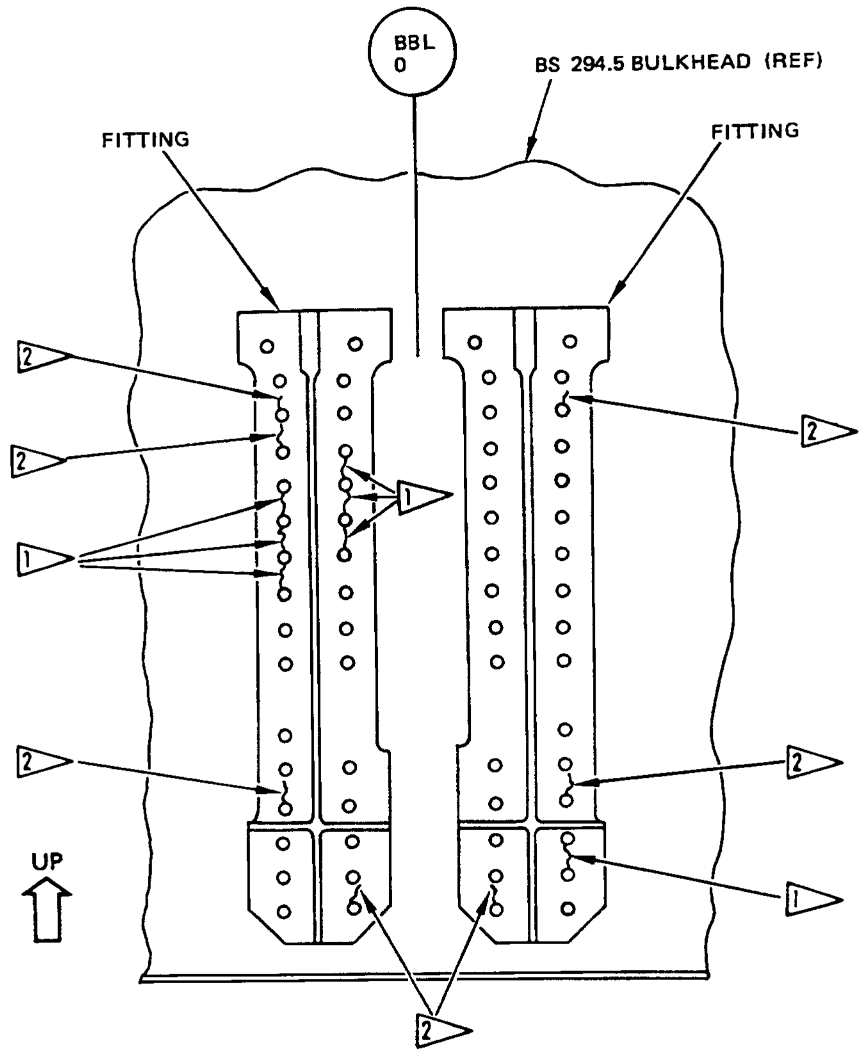
E. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.



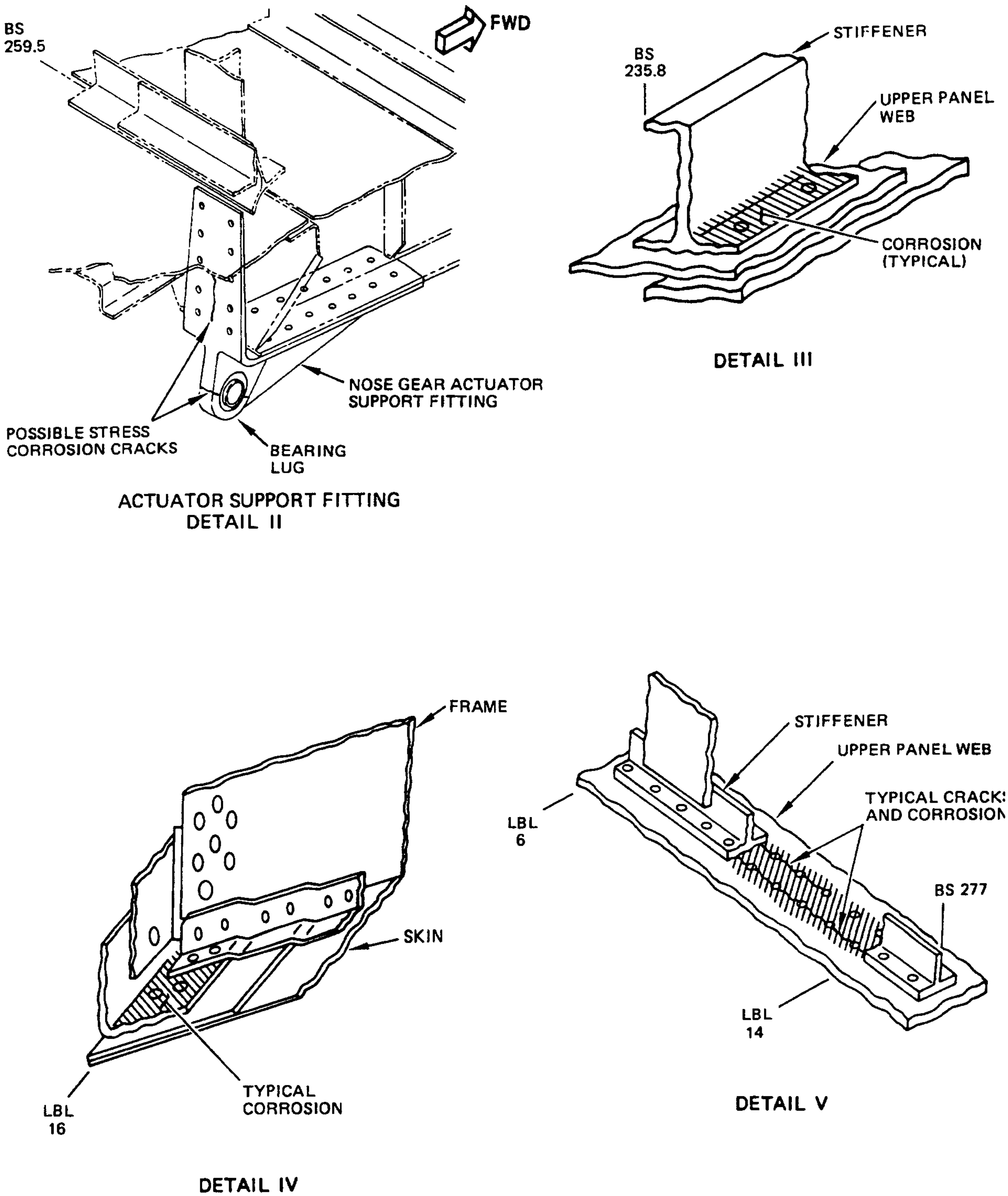
Nose Gear Wheel Well
Figure 5 (Sheet 1)



1 CRACK LOCATION ON AIRPLANE WITH 5567 FLIGHT HOURS
2 CRANK LOCATION ON AIRPLANE WITH 5648 FLIGHT HOURS.

SECTION A-A
FITTING AFT FLANGE

Nose Gear Wheel Well
Figure 5 (Sheet 2)



Nose Gear Wheel Well
Figure 5 (Sheet 3)

1. General

A. The nose gear wheel well is a rigid box structure consisting of a ceiling, two sidewalls, a forward and an aft wall and is located in the forward fuselage. The nose gear attachment fittings are located in the wheel well.

B. The surfaces inside the box structure are exposed to air contaminants and runway splash and are subject to corrosion. The nose gear attachment fittings are also found to be susceptible to corrosion.

C. The lock support fittings on the BS 294.5 bulkhead have been the subject of stress corrosion cracking. Fittings of improved material were introduced at line number 285 and may be installed retroactively by SB 53-1033 (refer to Fig. 5, Sec. A-A).

D. Stress corrosion cracking of the 7079-T6 aluminum alloy actuator support fitting has been reported. Cracks occurred in the vertical leg midway between the rows of fastener holes. In another instance cracking and failure of the bearing retaining lug was reported. Material of the fitting was changed to 7075-T73 in January, 1969.

E. Corrosion has been reported on the exterior surfaces of the box, on webs, stiffeners and chords. Cracking of the upper panel web BS 277 stiffener has also been reported.

F. Stress corrosion cracks have been reported on the LH and RH lock support fitting to which the strap is riveted. One of the cracks was between the two attach rivet holes and the other extended into the upper flange radius. It was determined that the strap induced clamp-up stresses in the fitting during strap installation. SB 53-1007 removes the strap as a crack preventive measure.

G. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

(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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

C. Application of Corrosion Inhibitors

(1) For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

D. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished in the wheel well.

(2) Treatment of the wheel well at the same time as the nose gear is recommended.

(3) Remove runway debris and generally clean the entire wheel well. Make sure that all drain paths are clear in structural areas at the nose gear wheel well. Refer to SB 51-1013 for the detail inspection procedure on the moisture drainage paths.

(4) Replace damaged or broken finishes if at all possible. Refer to Volume 1, 20-60-00 for protective finish systems.

(5) Apply water displacing corrosion inhibiting compound to all exposed wheel well structure. Special effort should be made to apply the corrosion inhibitor along doubler edges, along faying surfaces and on fastener heads. The use of spray equipment with nozzle directed into faying surfaces is recommended.

(6) Apply water displacing corrosion inhibiting compound to nose gear actuator attachment fitting, nose gear trunnion support fittings and miscellaneous other fittings. Ensure that all lugs and lug faces are treated.

(7) Regrease all grease fittings in the treatment area.

(8) In cases where the wheel well is cleaned with steam or high pressure water and detergent, reapplication of corrosion inhibiting compound is recommended.

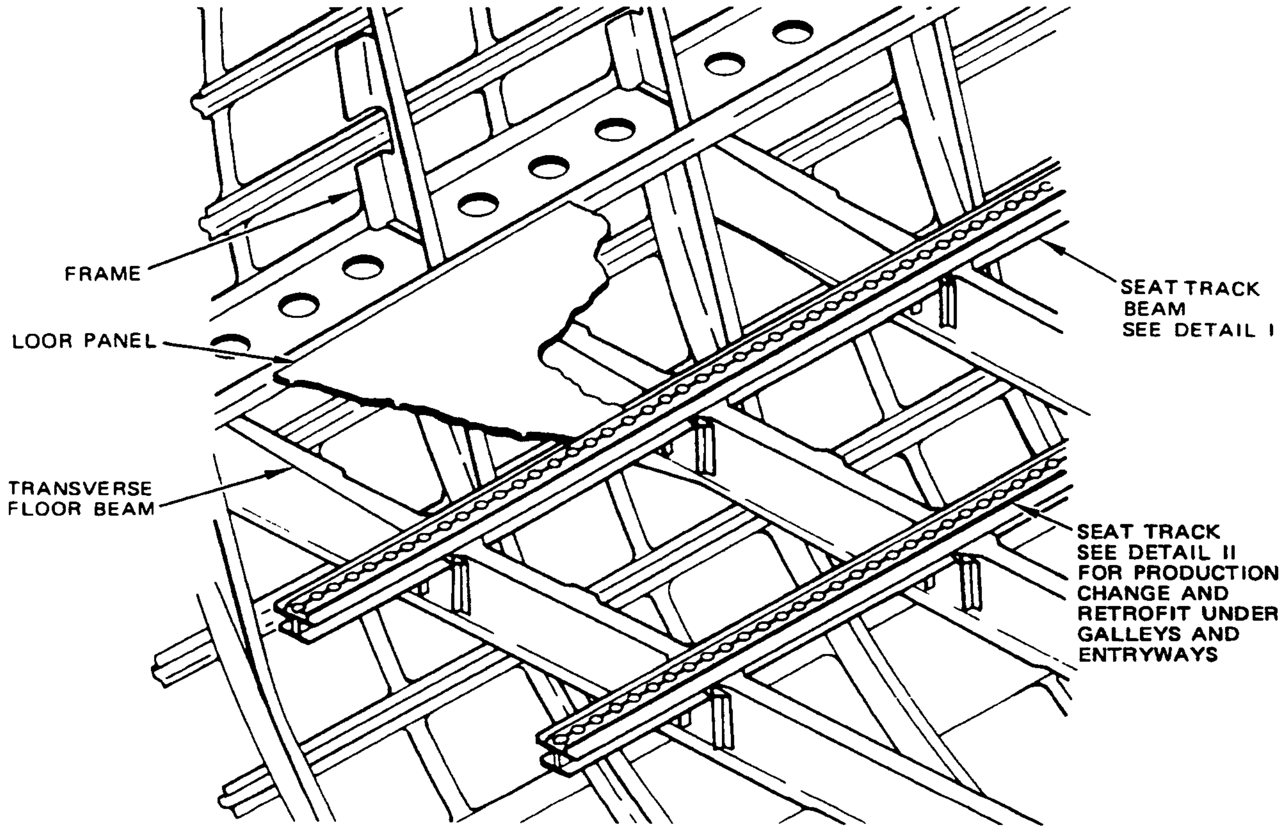
E. Frequency of Application

(1) Periodic inspection is required to 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.

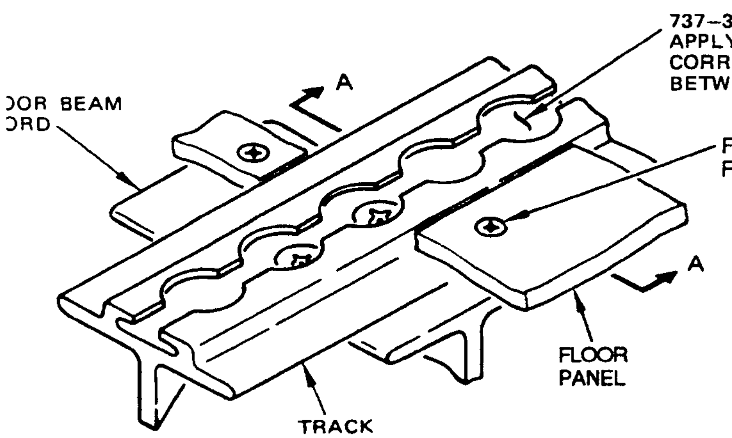
(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

F. Improved Corrosion Protection

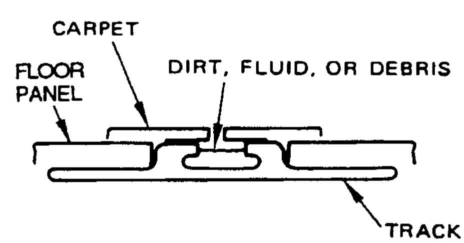
(1) At line number 2068, PRR 34898 adds a layer of BMS 3-26 corrosion preventive compound on the BMS 3-23 compound in some areas.



TYPICAL FLOOR STRUCTURE

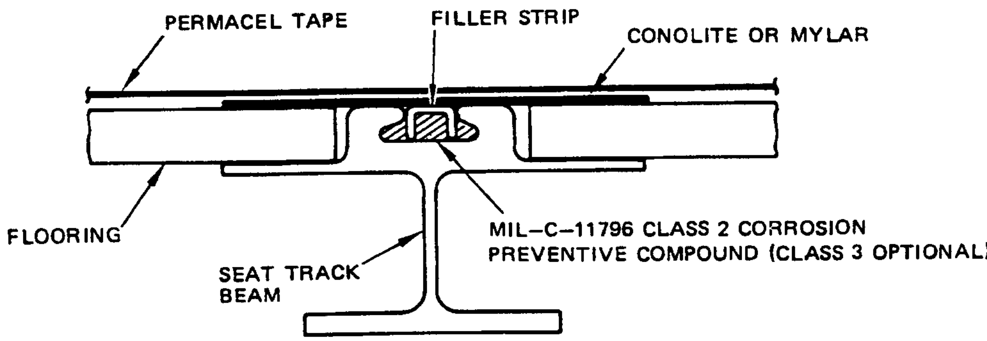


DETAIL I

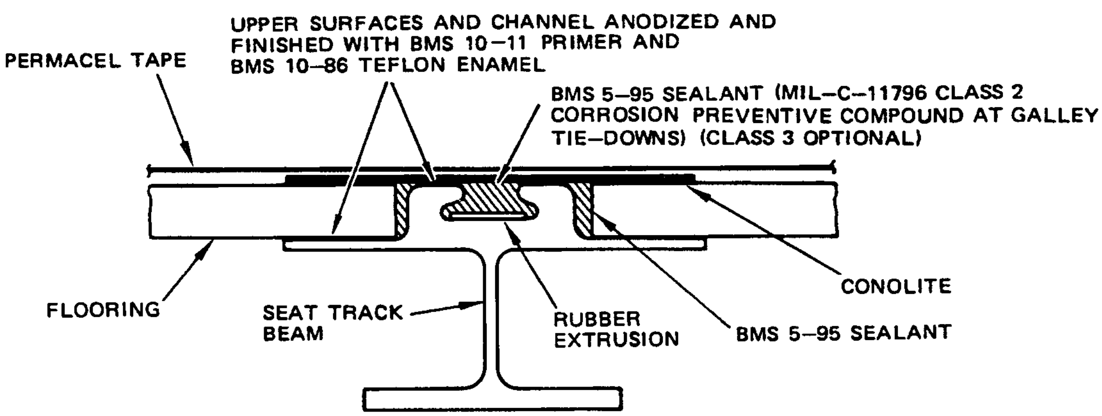


SECTION A–A

Seat and Cargo Tracks
Figure 6 (Sheet 1)



SEALING OF SEAT TRACKS
UNDER GALLEYS AND ENTRYWAYS
ON LINE NUMBER 649 AND ON



SEALING OF SEAT TRACKS
UNDER GALLEYS AND ENTRYWAYS ON
LINE NUMBERS 513 THRU 648

DETAIL II

Seat and Cargo Tracks
Figure 6 (Sheet 2)

1. General

A. The passenger seat and cargo tracks are made from extrusions of 7178 aluminum alloy.

B. Because they are a channel on floor, seat and cargo tracks tend to collect dirt and spilled liquids. Dirt holds moisture and promotes corrosion. The areas near galleys, lavatories and entrances are particularly susceptible to corrosion.

C. Techniques to combat the occurrence of corrosion include use of dams, inserts and filling of unused portions of seat tracks with sealant. Improved surface treatments are also being used for corrosion prevention.

D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

(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 small amounts of corrosion, to reduce the downtime of the airplane, clean off the corrosion products. Apply corrosion inhibiting compound on the affected area to stop the corrosion process (Ref Volume 1, 20-60-00). Repair the finish system when the maintenance schedule permits.

C. Prevention Treatment

(1) Seat tracks extending into galleys, lavatories and entrances are usually filled with sealant and protected with mylar or vinyl tape under the carpeting. Periodically, consistent with scheduled maintenance activity and when the carpeting can be lifted to expose the tape; a visual inspection should be made to ensure that the tape is not broken.

(2) Clean the track of all contaminants and corrosion products using one of the methods described in Volume 1, 20-40-00.

(3) Brush Alodine 1200 and apply BMS 10-11 epoxy primer on all clean exposed areas (Ref Volume 1, 20-50-00 and 20-60-00).

(4) Apply BMS 5-95 sealant on fasteners in the seat track grooves. Sealant should also be used to form dams in the seat tracks at the extremities of the galley or entryway areas to be protected.

(5) Cut a nonmetallic filler (plastic, rubber, wood) to fill track groove (Detail III).

NOTE: A typical extruded plastic section is BAC1522-148.

(6) Partially fill the track groove with MIL-C-11796, class 2 or 3 corrosion preventive compound to the top of the track. Wipe off excess.

NOTE: The corrosion preventive compound requires heating so that it may be poured.

(7) Apply a 3-inch strip of Conolite or mylar over the treated track and bond to the floor panels on either side of the track.

NOTE: Conolite is a rigid, fire-resistant, glass fabric reinforced, plastic sheeting from Sterling Engineered Products, Inc. (V29423).

(8) Apply Permacel tape or equivalent over the entire floor as a moisture barrier.

(9) Tracks in the passenger seating areas can be inspected and treated by removing the inserts installed in the unused portion of the track.

(10) Tracks in the cargo section are usually open but may have inserts for cargo handling which should be removed for inspecting and treating the area underneath.

(11) For track treatment remove mylar or vinyl tape and inserts to expose track channel.

(12) Vacuum seat and cargo tracks regularly as part of the cabin cleaning procedure to prevent buildup of dirt and debris.

(13) Open any plugged drains in dammed portion of the tracks.

(14) Clean tracks with aliphatic naphtha for removal of oil and grease.

(15) Repair or replace damaged or broken dams.

(16) Apply corrosion inhibitor to all parts of the track, especially the channel portion. The use of spray equipment with nozzle will make application easier and its use is recommended.

(17) Apply corrosion inhibitor into seat attachments, galley and lavatory tiedown fittings and cargo fittings attached to the track.

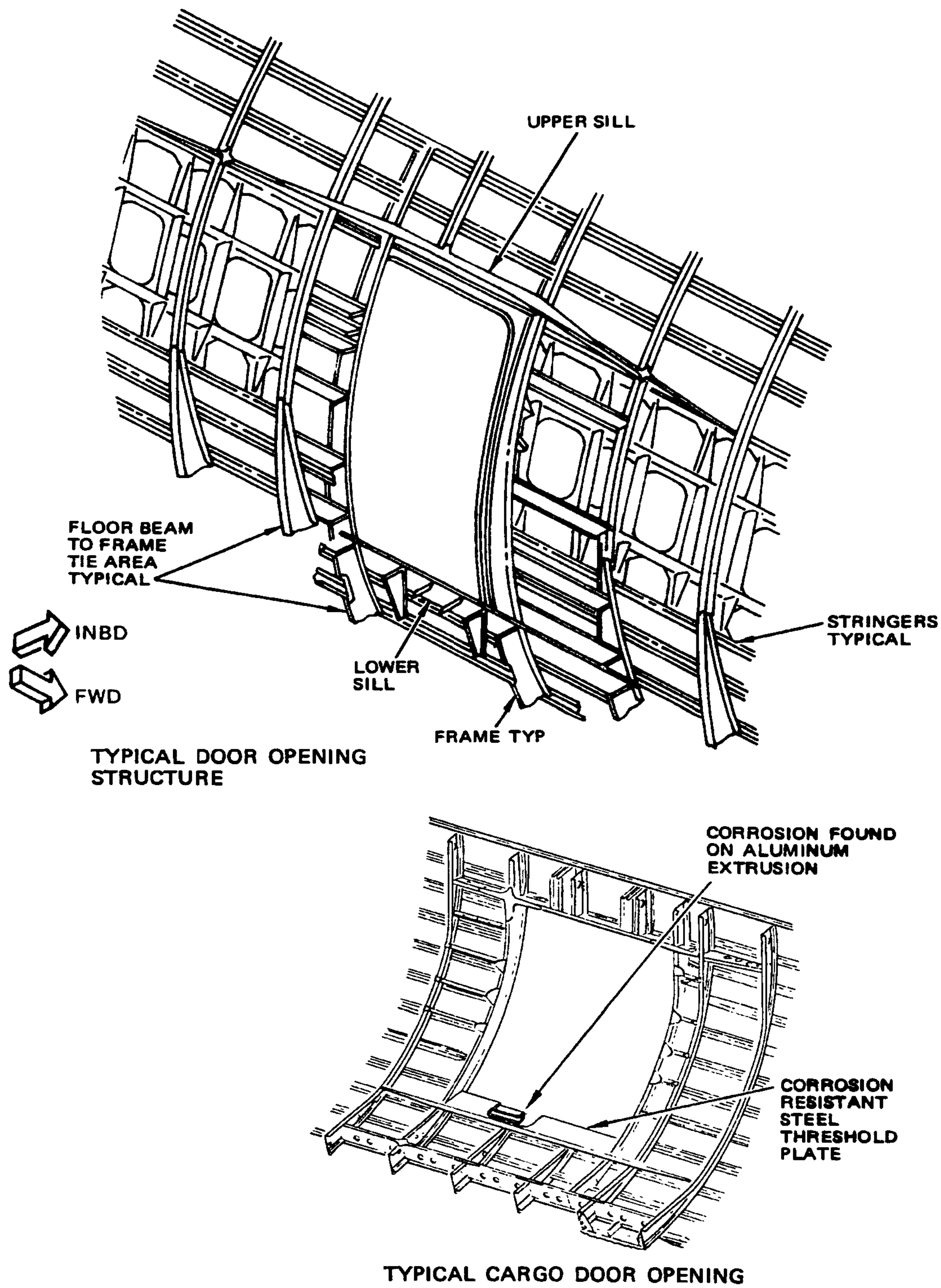
(18) Allow the corrosion inhibitor to dry before reinstalling inserts and restoring the airplane to normal.

(19) If you removed floor panel fasteners, install the fasteners with BMS 3-24 grease.

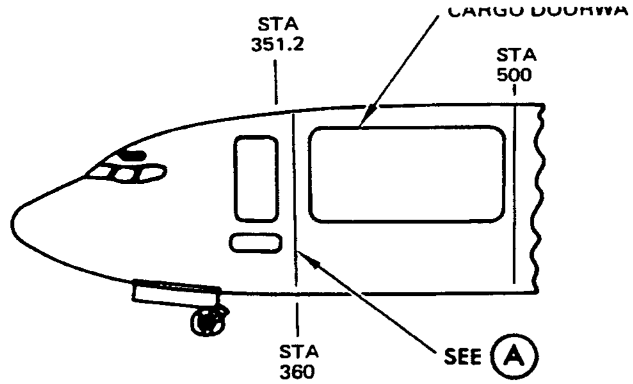
(20) Improved Corrosion Protection

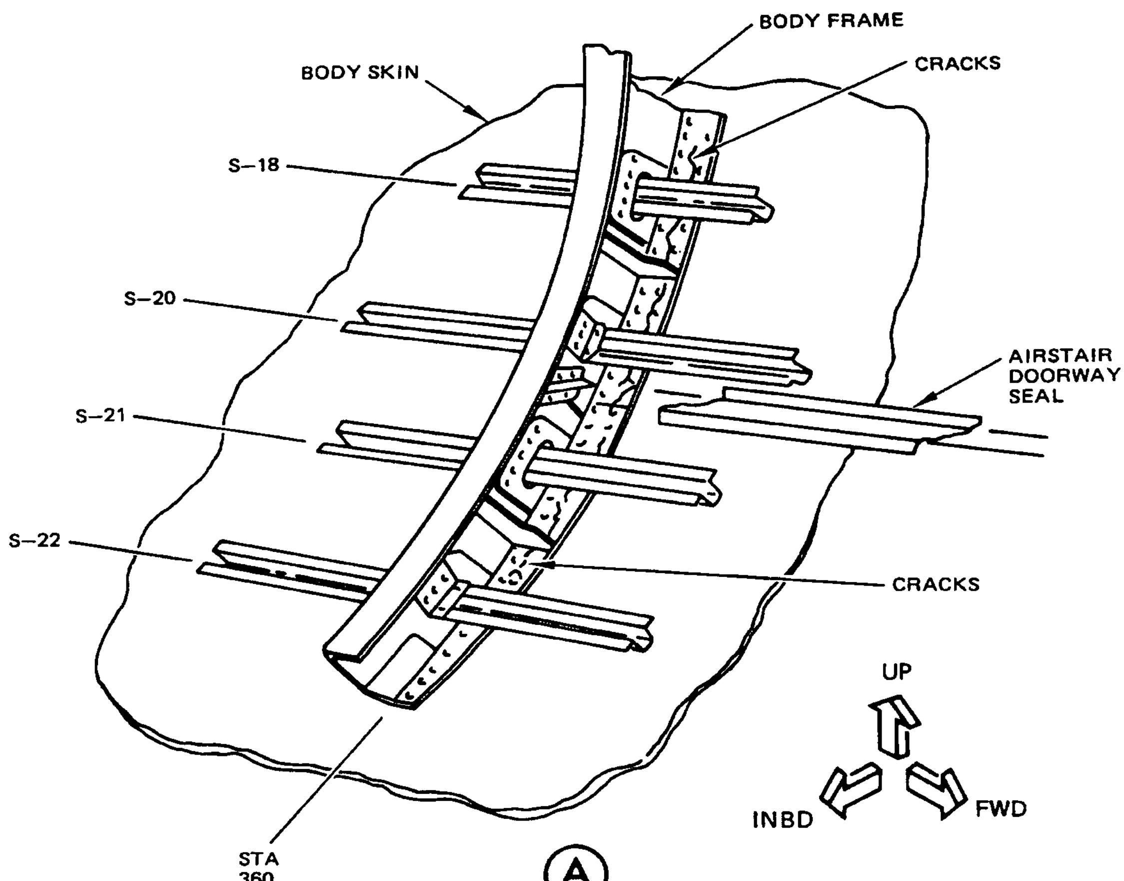
(21) On airplanes line number and on, a production change uses MIL-C-11796 Class 2 (class 3 optional) corrosion preventive compound to replace BMS 5-95 sealant in the seat tracks under galleys and lavatories.

(22) On airplanes PP351-PP399, a production change applies BMS 3-23 (LPS-3) in all of the cavities in all seat tracks in galley areas after installation of seal dams between stations 344 and 947.



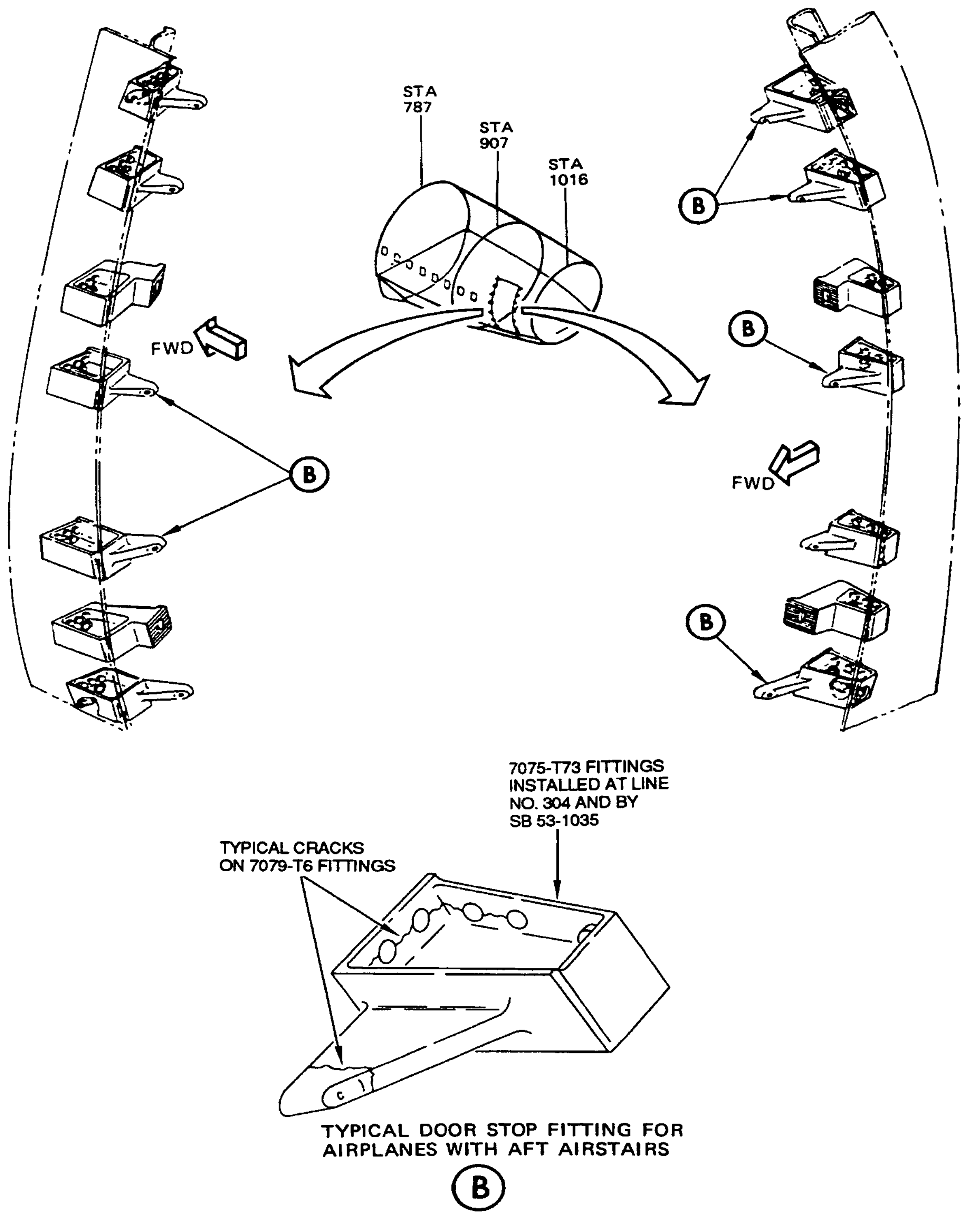
Door Openings
Figure 7 (Sheet 1)



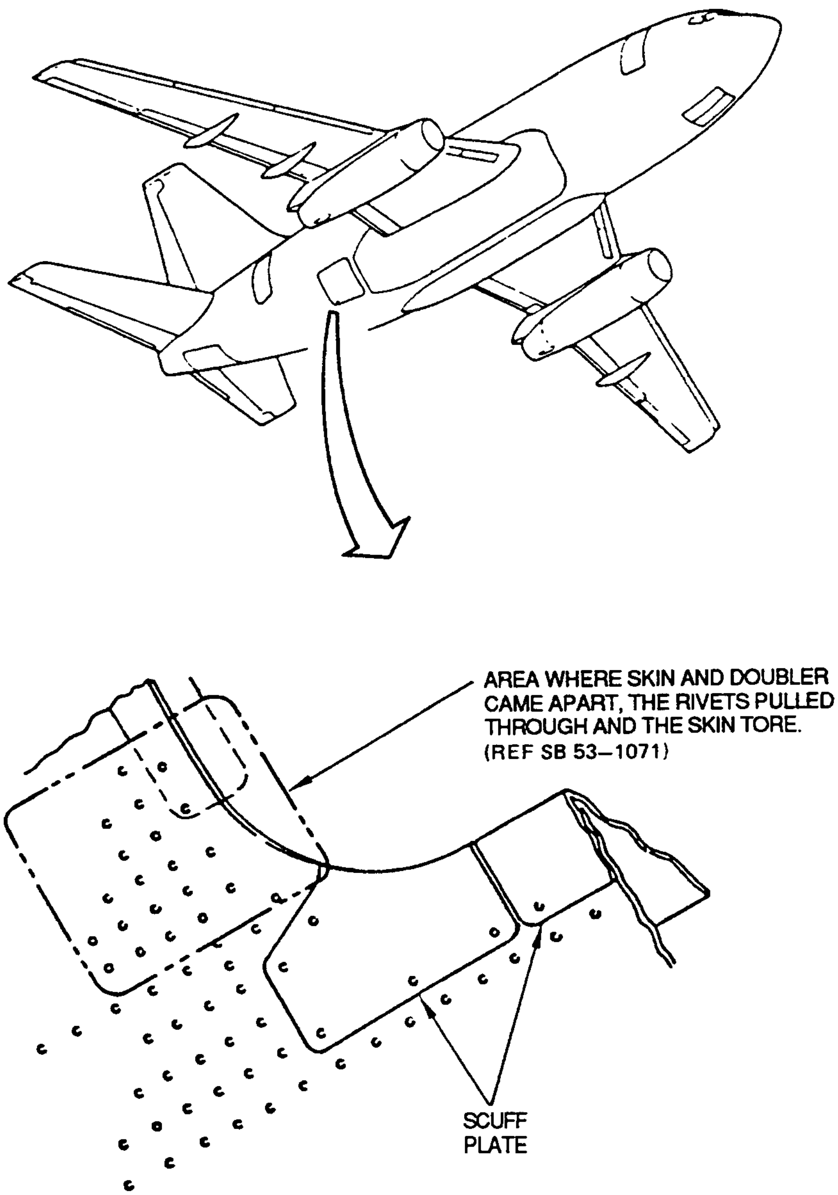


737 CARGO AIRPLANES

Door Openings
Figure 7 (Sheet 2)



Door Openings
Figure 7 (Sheet 3)



Door Openings
Figure 7 (Sheet 4)

1. General

A. The door openings and surrounding structure in the fuselage section are made up of frames, doublers, fittings, stiffeners and intercostals. In addition, the passenger and/or crew entry doors have reveals and scuff plates.

B. The primary corrosion area is under the door sill, floor panels and floor beams. Contaminants are tracked in by passenger, crew members, cargo and service personnel or by driven rain/snow when door is opened. Specific problems have been reported under the corrosion resistant steel plates at the cargo doors.

C. Insulation blankets are provided on cabin interiors for passenger comfort and to minimize the condensation of warm cabin air on cold skins and stringers. Corrosion has been experienced in areas where the blankets are not installed taut and wrap around stringers or lay on the skins. Reports of water soaked blankets have been common in these instances.

D. Stress corrosion cracking can occur on the 7079-T6 aluminum stop fittings for the aft airstair entry door.

E. Stress corrosion can cause cracks in the frame at Station 360.

F. Some skins and doublers came apart, pulled through the rivets, and tore the skin at the aft edge of the cutout for the aft cargo door. The damage was caused by the water from the main landing gear tires when the runway was wet.

G. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the regular inspection of Volume 1, 20-20-00 to stop or find the start of corrosion. Missing fasteners, white powdery or any discolored deposits are signs of corrosion.

B. If you find corrosion (web bulges, missing fasteners or large amounts of discolored deposits at fastener heads or faying surfaces), refer to Structural Repair Manual for details of corrosion removal.

C. For small amounts of corrosion, to decrease the downtime of the airplane, clean off the corrosion products. Apply a corrosion inhibiting compound into the affected area to stop the corrosion process (Ref Volume 1, 20-60-00). Repair the finish system when the maintenance schedule permits.

D. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity corrosion prevention treatment should be accomplished in the door opening area.

(2) Treatment of the door at the same time as the door opening is recommended.

(3) Remove traffic debris and generally clean the entire door opening area. Remove reveal and scuff plate where applicable.

(4) Remove sidewall lining and insulation blankets to expose frames, stringers, doublers and skin.

(5) Remove door reveal, scuff plates and thresholds.

(6) Remove floor panels to gain access to floor beams and intercostals near the door opening.

(7) Open plugged drains.

(8) Make sure that all drain paths are clear at the equipment access doorway, fwd and aft galley and entry doorways and cargo doorway. Refer to SB 51-1013 for details about the moisture drainage paths.

(9) Replace damaged or broken finishes. Refer to Volume 1, 20-60-00 for protective finish system.

(10)Apply a coat of BMS 10-11 epoxy primer to the inboard flange surfaces of stringers and allow to dry thoroughly.

(11)On airplanes through line 649 apply BMS 5-95, class F, chromate-loaded sealant to the inboard flanges and to portions of the frames that come in contact with insulation blankets. Allow to cure for 48 hours. On. subsequent airplanes, note condition of the sealant and reapply as necessary.

(12)Apply corrosion inhibiting compound to all immediate structure. Special efforts should be made to apply the corrosion inhibitor along doubler edges, along faying surfaces and on fastener heads. The use of spray equipment with nozzle directed into faying surfaces in recommended. Special attention should be given to flanges of floor beams, doorsills and floor beam to fuselage frame splices.

(13)Apply corrosion inhibiting compound to aft airstair door stop fittings on airplanes which have not had the improved 7075-T73 stop fittings installed.(14)Replace or repair broken or damaged leveling compounds used for drainage.

(14)Replace or repair broken or damaged leveling compounds used for drainage.

(15)Allow solvent in corrosion inhibiting compound to evaporate before reinstalling insulation blankets.

(16)Install blankets so they are tight and so that the outboard surfaces of the upper blanket overlap the lower blanket.

(17)Relubricate all lube points per standard servicing procedures.

(18)Install liners and floor panels. Install the floor panel fasteners with BMS 3-24 grease.

E. Frequency of Application

(1) Regular inspection is required in areas that can get corrosion and should agree with the schedules in the Maintenance Planning Document. Operators must know of problems and areas.

(2) Regular application of BMS 3-23 compound is necessary on areas identified and should agree with the schedule in the Maintenance Planning Document.

F. Improved Corrosion Protection

(1) At line number 643, on all entry and galley doorway scuff plate support structure a production change added BMS 5-95 fay surface seals between the scuff plate and support structure and installed the screws through the scuff plate with BMS 5-95 sealant.

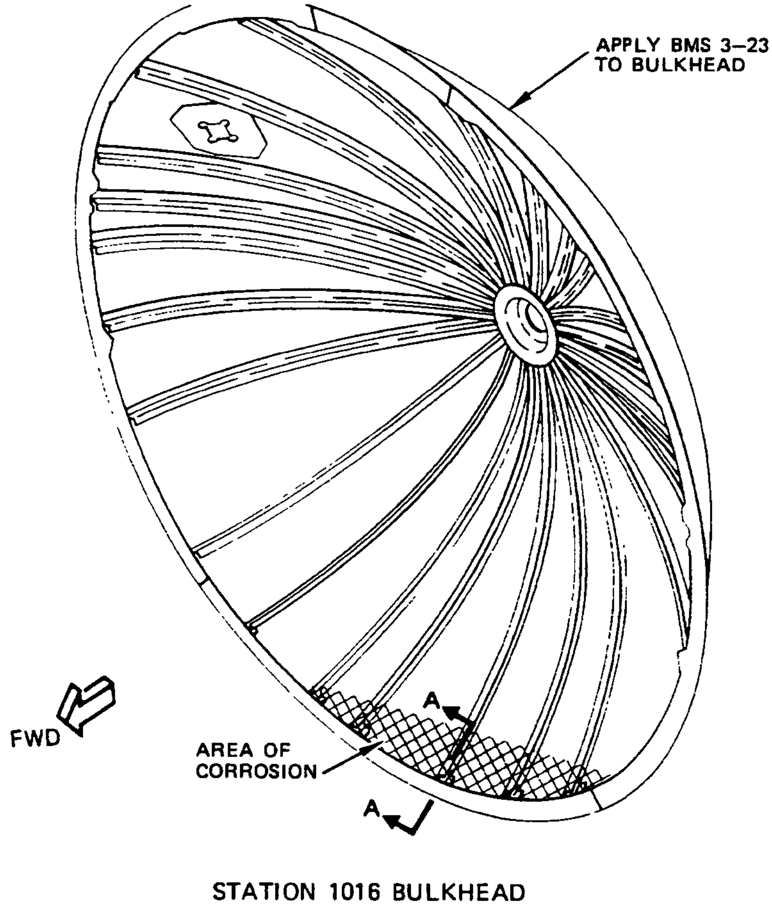
(2) At line number 649, a production change applied BMS 5-95, class F, chromate-loaded sealant to inboard flanges of stringers and to the areas of the frames that touch the insulation blankets.

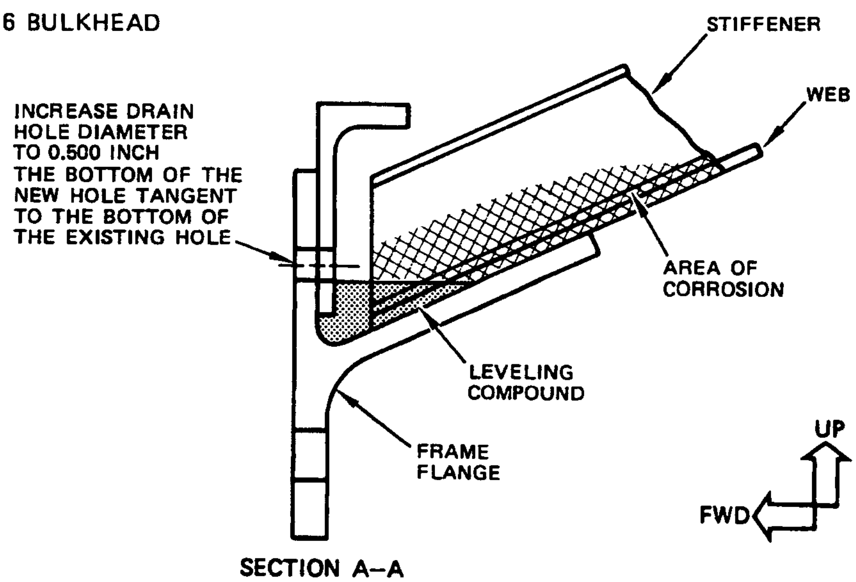
(3) On airplanes through line number 409, you can rework insulation blankets by removing the sewn cap strip from the lower edge of the blanket and continuously penetrate the stitch sealing. The blankets to be reworked must be made with water-repellent fillers. All 737 airplanes are known to be delivered with blankets that use water-repellent fillers.

(4) SB 53-1071 tells how to install an edge protection for the aft-cargo-door on airplane line numbers 1 thru 1097. This change can prevent skin and doubler operation, pulled-through rivets, and torn skin at the aft edge of the cutout for this door.

(5) At line number 419, a new insulation blanket installation is used. The tightly sealed covers are replaced with unsealed covers to permit water to enter the blanket and drain equally easily. The blankets become drain paths into the lower lobe drain masts. Water repellent blanket filler is also used.

(6) At line number 539, drain holes with drain tubes were added at the forward entry doorway. but the drain tubes can become clogged with dirt and carpet debris. To make it easier to clean the drain lines, at line number 1093 a production change added cutouts in the floor mat retainer plate. This change can be incorporated on airplane line numbers 539-1092 per SB 25-24.





Aft Pressure Bulkhead
Figure 8 (Sheet 1)

1. General

A. The circular concave pressure bulkhead at station 1016 consists of aluminum web panels with stiffening members on the forward face. The periphery is an extruded aluminum tee section which forms the station 1016 frame.

B. The aft face of the bulkhead although in a sheltered area is susceptible to corrosion due to moisture and contamination. The web lap splices and fastener heads leave unsupported areas for the paint system leading to cracking of the paint and openings for moisture to enter. Edges of the panels where the paint has cracked or flaked are starting points for corrosion.

C. Improper drainage in the non-pressurized area may cause water to accumulate at the lower portion of the frame.

D. Severe corrosion and corrosion cracking have been reported on the lower ten inches of the bulkhead forward face. Corrosion of the bulkhead web can result in severe cracks and rapid cabin depressurization. The corrosion, as reported in SIIA 737-107 and SB 737-53A1075 has been attributed to fluids from galleys and lavatories. A plugged drain hole in the station 1016 frame chord assembly can trap these fluids and thereby accelerate the corrosion process.

E. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspections as described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. It is essential that a corrosion inspection and prevention program be initiated to minimize the accumulation of moisture of corrosive products and detect the occurrence of corrosion.

B. Where corrosion has already started, refer to Structural Repair Manual for details of corrosion removal.

C. For corrosion prevention of the forward surface of the bulkhead

(1) Remove any deteriorated or disbonded leveling compound and inspect for corrosion. Remove all corrosion by one of the methods described in Volume 1, 20-40-00. Restore leveling compound with BMS 5-95 sealant material.

(2) Increase the diameter of the existing drain hole from 0.25 inch to 0.50 inch. Retain the bottom of the enlarged drain hole tangent to the bottom of the existing drain hole.

(3) Inspect for corrosion and apply water displacing compound BMS 3-23 at approximately 2-year intervals.

D. For corrosion prevention of the aft surface of the bulkhead, apply water displacing compound BMS 3-23 to fastener heads and edges or surface areas of panels where the paint system has been cracked or flaked. Repeat the application of BMS 3-23 compound at approximately 2-year intervals.

E. Visually inspect the entire bulkhead web, stiffeners, chords and chord splice angles for corrosion, clean plugged drains, if any and apply water displacing compound BMS 3-23 to the aft and forward side of the bulkhead below the cabin floor level at approximately two year intervals. Inspection and BMS 3-23 application at 2-year intervals will minimize corrosion and also ensure that previously undetected corrosion is found before it reaches critical limits.

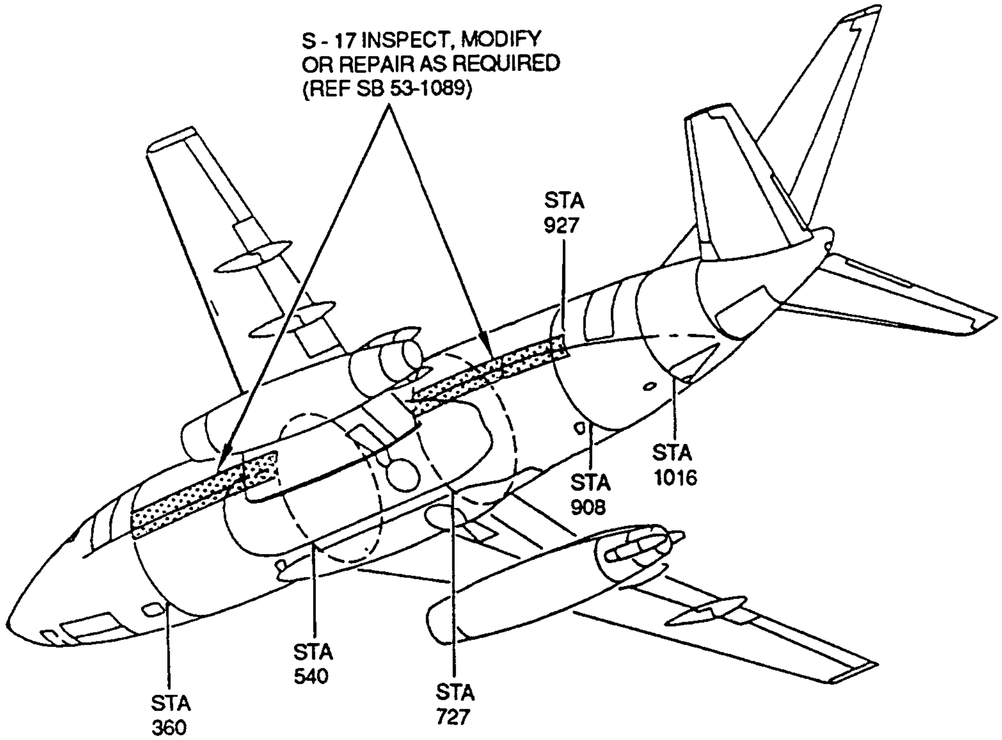
F. For details of application of water displacing compound BMS 3-23, refer to Volume 1, 20-60-00.

G. Treatment of the crown structure is covered in 53-10-37, Fig. 1.

H. Improved Corrosion Protection

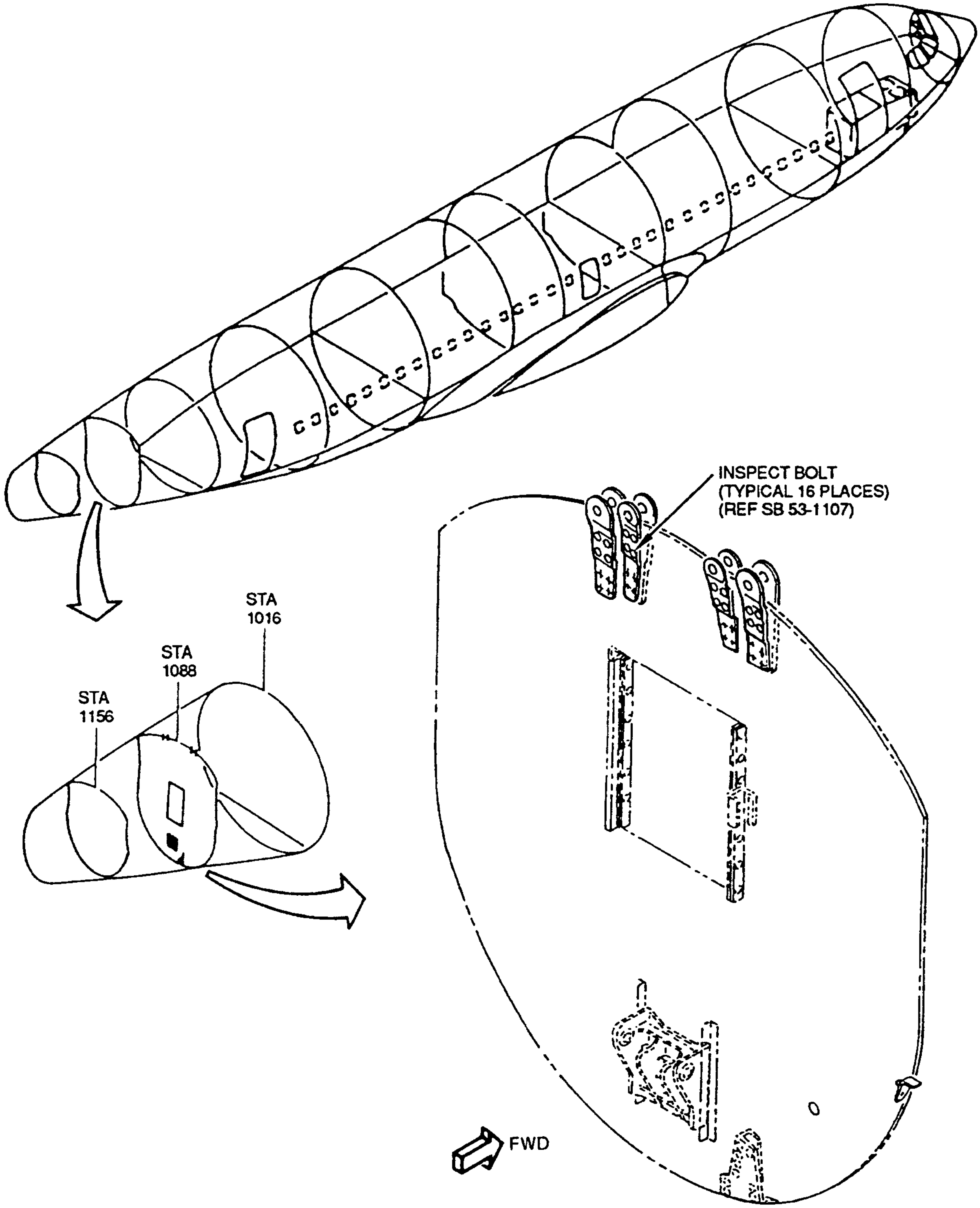
(1) On airplane line numbers 1200 and on, PRR 33783 added white paint to all the detail parts of the pressure bulkhead, a fay seal to all the components of the bulkhead, and added BMS 3-23, Type II corrosion inhibiting compound to all of the Station 1016 bulkhead on the forward and aft face. Some earlier airplanes have BMS 3-23 (LPS-3) corrosion prevention compound on all of the aft face of the Station 1016 pressure bulkhead per MCP5121-001.

(2) At line number 2068, PRR 34898 added BMS 3-26 corrosion preventive compound or the BMS 3-23 compound on the forward surface of the pressure bulkhead below the cargo floor.

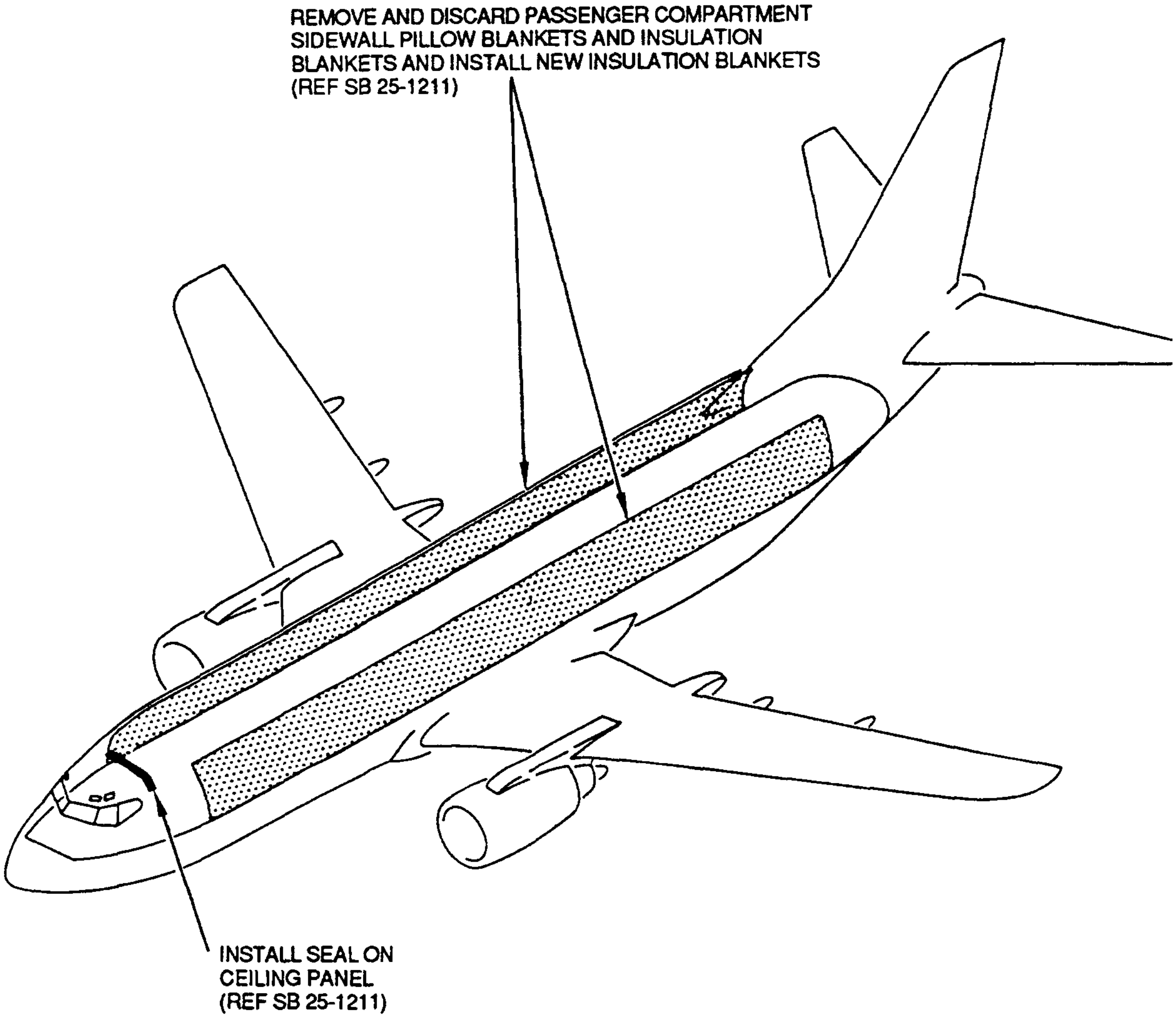


LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

Upper Lobe Frames, Stringers and Skin
Figure 9 (Sheet 1)



Upper Lobe Frames, Stringers and Skin
Figure 9 (Sheet 2)



Upper Lobe Frames, Stringers and Skin
Figure 9 (Sheet 3)

1. General

A. The fuselage is of semimonocoque construction which uses aluminum skins, circumferential frames and longitudinal hat section stringers. The fuselage skin is installed with circumferential butt joints and longitudinal lap joints that are usually flush riveted. Skins should be treated at the same time with the fuselage structure.

B. Cracks were found in the areas where the skin and doubler come apart. Cracks come from the fastener holes in the double rivet row in Stringer 17L and 17R between BS 422 to 500A, and BS 727A to BS 747.

C. Broken attach bolts were found in the vertical-fin-aft-spar-terminal support fitting at the upper center part of BS 1088 bulkhead. The attach bolts are made from H-11 steel alloy which are susceptible to cracks caused by stress corrosion.

D. The main compartment sidewall insulation have pillow blankets installed just inboard of the airplane skin and insulation blankets installed inboard of the pillow blankets. It was found that the pillow catches the moisture against the airplane skin which can add to possible corrosion of the adjacent structure.

E. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Skin bulges, missing fasteners or white powdery deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of moisture or corrosive compounds in order to minimize the occurrence of corrosion.

B. Where extensive corrosion exists (very noticeable skin bulges, missing fasteners, or large amounts of white deposits at the fastener heads or faying surfaces), refer to Structural Repair Manual for details of corrosion removal.

C. For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

WARNING: DO NOT APPLY CORROSION INHIBITING COMPOUNDS INTO AREAS WHICH COULD POTENTIALLY BE IN CONTACT WITH OXYGEN SYSTEM COMPONENTS. MIXING OF CORROSION INHIBITORS AND OXYGEN MAY RESULT IN AN EXPLOSION.

CAUTION: INSULATION BLANKETS SOAKED WITH CORROSION INHIBITORS ARE POTENTIAL FIRE HAZARDS, BLANKETS INADVERTENTLY SPATTERED SHOULD BE ALLOWED TO DRY BEFORE REINSTALLATION.

D. For minor corrosion detected during the periodic inspections and to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process.

E. Prevention Treatment

(1) At first opportunity when schedule maintenance work allows access to the structure, corrosion prevention treatment should be accomplished.

(2) Remove insulation blankets to expose frame, stringer and skin. Dry blankets thoroughly if found wet.

(3) Replace broken or damaged finishes. Refer to Volume 1, 20-60-00 for protective finish systems.

(4) Apply a coat of BMS 10-11 epoxy primer to the inboard flange surfaces of stringer and allow to dry thoroughly.

(5) Apply water displacing corrosion inhibiting compound to all exposed structure. The use of spray equipment with nozzle directed into faying surfaces is recommended.

(6) Allow solvent to evaporate before reinstalling insulation blankets.

(7) Reinstall blankets so they are taut and so that the outboard surface of the upper blanket overlaps the lower blanket.

(8) Reinstall liner and restore airplane to normal.

F. Improved Corrosion Protection

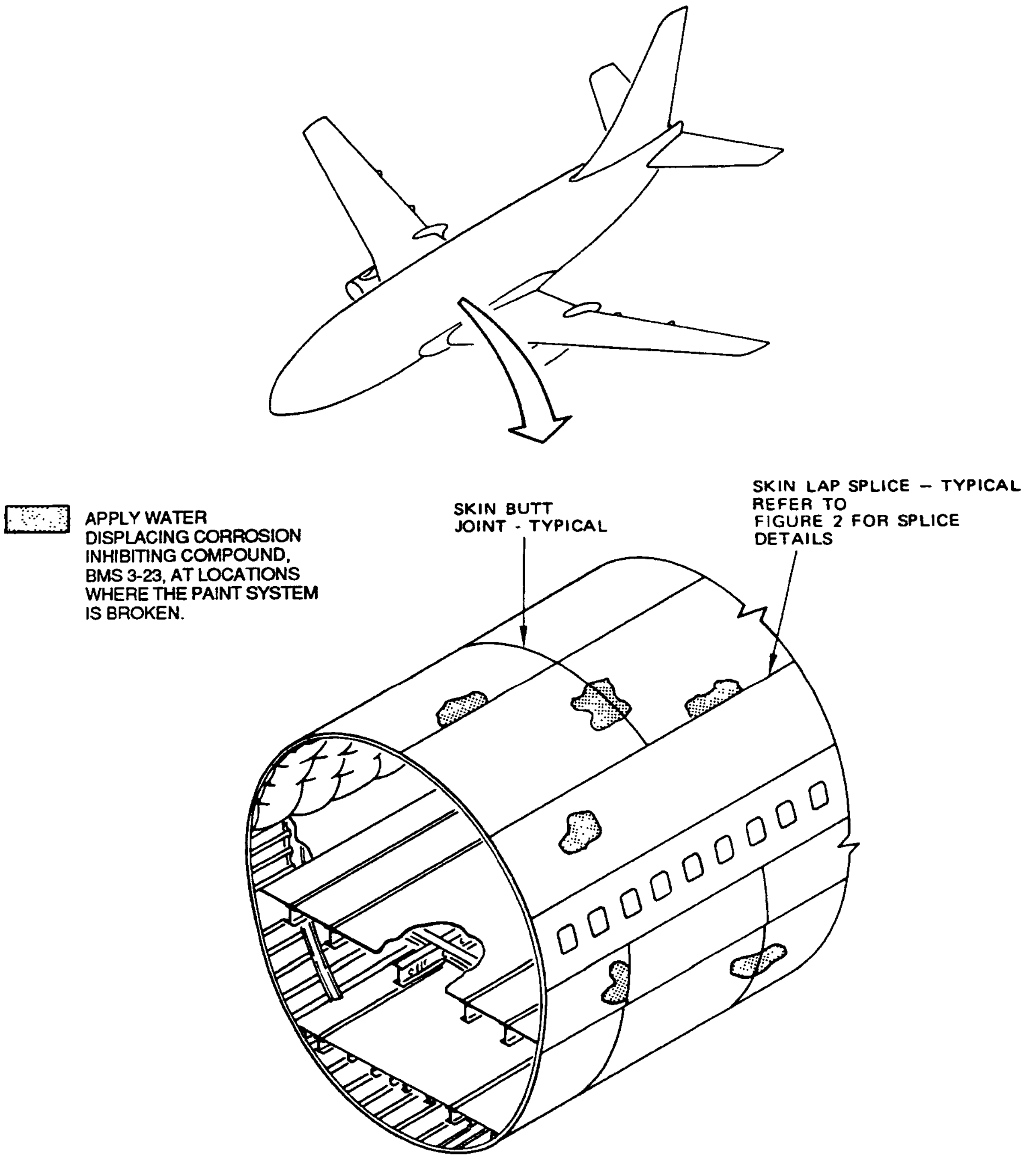
(1) At times, hot-bonded doublers can come apart and let moisture in to cause corrosion on airplane line numbers 1 thru 519. As a result, revision 2 of SB 53-1089 gives procedure for internal inspection of the pocketed skin doubler along the Stringer 17 crease beam. This service bulletin is part of the ammended FAA Airworthiness Directives (AD) 88-22-11 and AD 89-09-03.

(2) On airplane line numbers 1486 and on, PRR 34103-1 replaced the H-11 attach bolts used in the vertical-fin-aft-spar-terminal support fitting at BS 1088 bulkhead with Inconel 718 bolts. The Inconel 718 bolt is less susceptible to cracks caused by stress corrosion. These changes can be added on some earlier airplanes by SB 53-1107.

(3) For airplane PP501-PP502 and PP801-PP802, SB 25-1211 gives procedure to install a rubber seal strip along the ceiling panel edge above the flight compartment second observer's seat. This rubber seal strip can stop the condensation of moisture filled air that passes through a gap between ceiling panel and closure panel.

(4) On airplanes PP351-PP399, MCP5121-001 added BMS 3-23 or LPS-3 corrosion inhibitor to all skin and stringers between Sta 1040 and Sta 1088, including the forward face of the Sta 1088 bulkhead.

(5) On airplanes PW511-PW530, 5121MP3042 added BMS 3-23 corrosion inhibitor to the interior surface of the fuselage upper lobe above WL 208.1 from Sta 260 to Sta 1061.



Fuselage Skin - External Surfaces
Figure 1

1. General

A. The exterior surfaces of fuselage skins at fastener locations and panel edges can get filiform corrosion. The small gap between the dimpled or countersunk skin and the head of flush fasteners makes an unsupported area for the paint system. The paint around the fastener head then can crack and permit moisture and contaminants to come in. Filiform corrosion starts at breaks between skin and protruding head fasteners and edges of skin panels where the paint system has cracks.

B. The preventive action in this figure is for the exterior surfaces of butt jointed or lap spliced skin panels. See Fig. 2 for data about the joints of the lap spliced panels.

C. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the regular inspections of Volume 1, 20-20-00 to stop or find the start of corrosion. Fasteners that are gone, or white powdery or other deposits are signs of corrosion.

B. After you clean the areas, do the inspection of Volume 1, 20-20-00 to make sure that protective finishes stay serviceable.

C. If you find corrosion (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.

D. For small amounts of corrosion, to decrease the downtime of the airplane, clean off the corrosion products. Apply a corrosion inhibiting compound into the affected area to stop the corrosion. process. Refer to Volume 1, 20-60-00 for how to apply corrosion inhibiting compound. Repair the finish system when the maintenance schedule permits.

E. Prevention Treatment

(1) For corrosion prevention, apply BMS 3-23 to fastener heads or edges of skin panels where the paint system has been cracked or flaked.

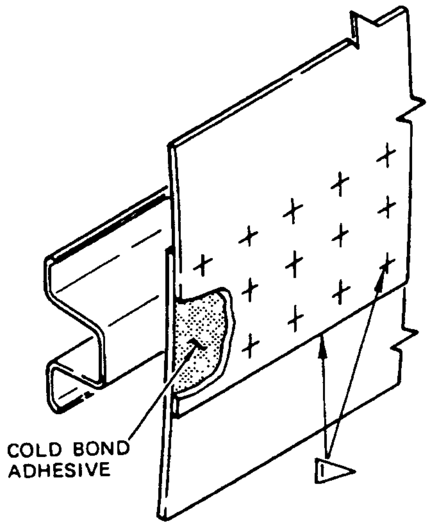
(2) If you clean with steam and high pressure water and detergent, apply the BMS 3-23 compound again.

(3) Apply the BMS 3-23 compound again as necessary. Use your own service experience and the schedules in the Maintenance Planning Document or use these values: Six months in severe environment, 12 months in moderate environment, 18 months in mild environment.

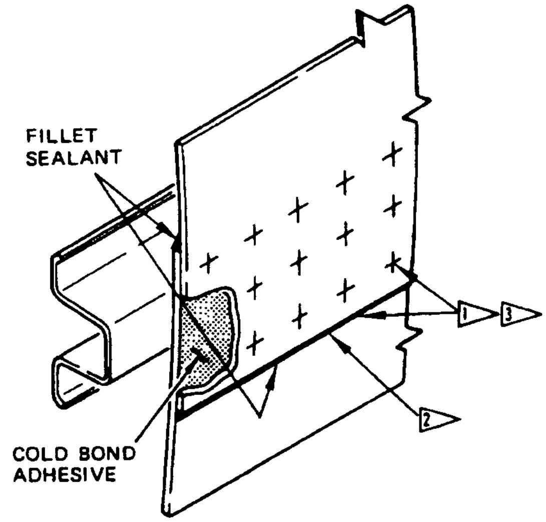
F. Improved Corrosion Protection

(1) At line numbers 1610 and on, PRR 34270 changed the primer used for the exterior surfaces from BMS 10-11 to BMS 10-79.

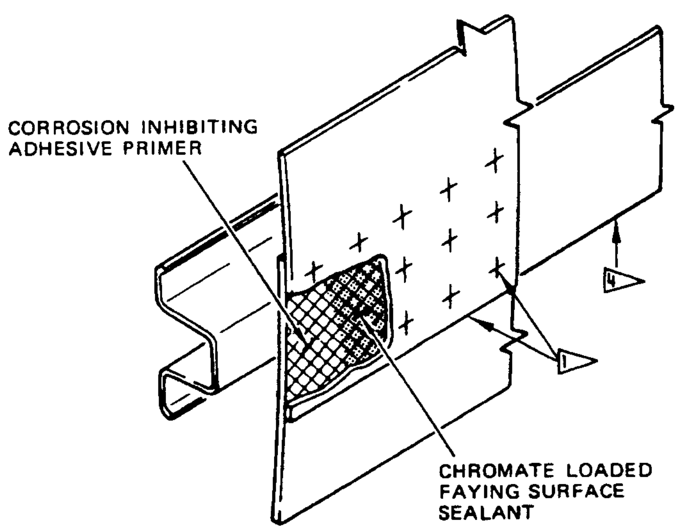
(2) At line number 2181, PRR 34822 changed the finish requirements for nonaluminum fasteners on the exterior of the airplane. Permanently-installed fasteners are installed with BMS 5-95 sealant on the hole and under the fastener head. For removable fasteners, the hole is given a layer of BMS 10-11, Type 1 primer and after the primer dries, the fastener is installed with BMS 3-24 grease.



COLD BOND LAP SPLICE



COLD BOND LAP SPLICE
FILLET SEALED



LAP SPLICE WITH FAYING
SURFACE SEAL

NOTE

REFER TO FIGURE 3 FOR TREATMENT OF INTERNAL SURFACES.

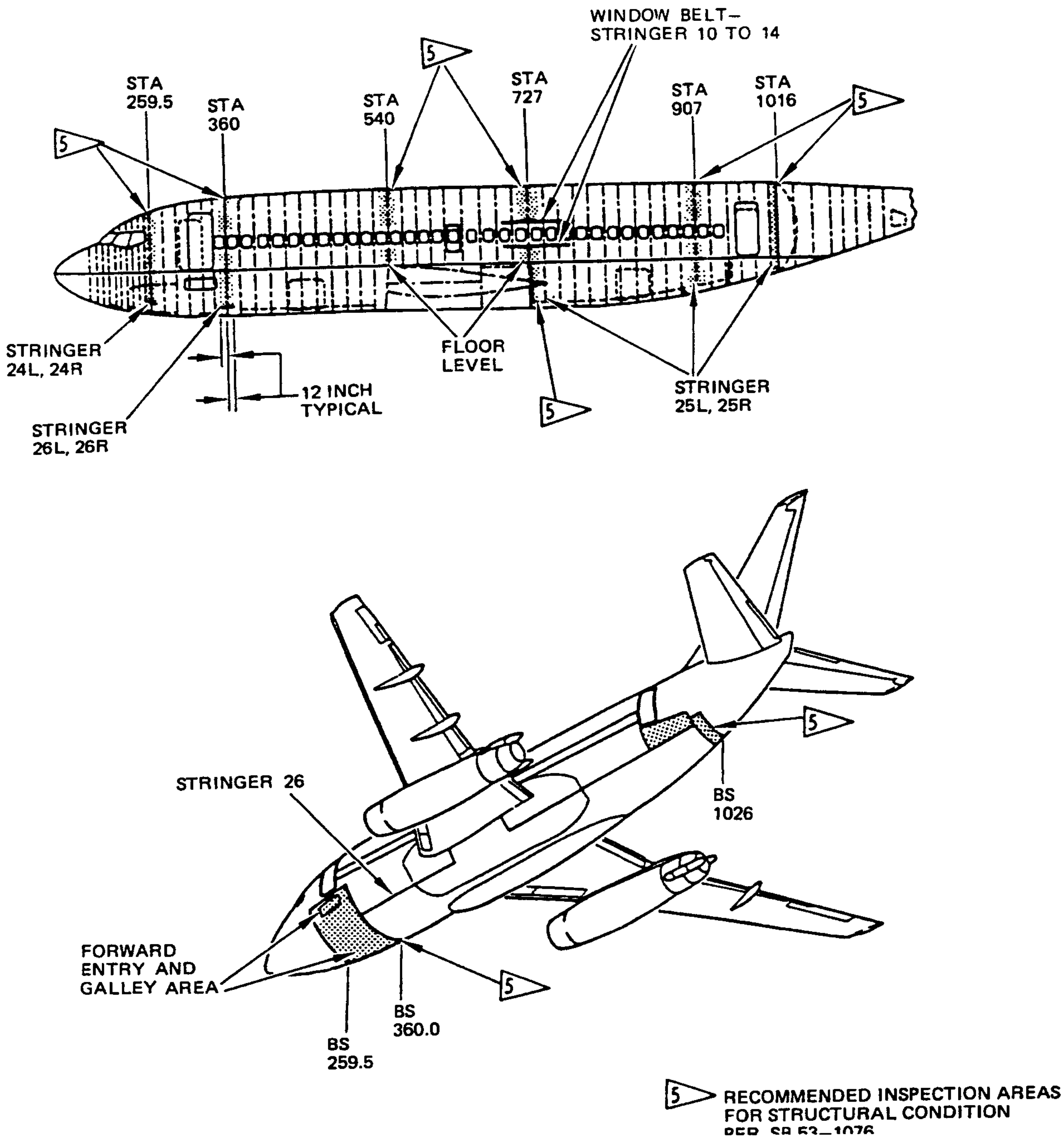
1 APPLY BMS 3-23 ALONG EDGE OF LAP SPLICE AND FASTENER HEADS.

2 THE ADDITION OF FILLET SEALS AT THE INTERIOR AND/OR EXTERIOR EDGE OF LAP, AT THE HEEL OF THE STRINGER, AND BRUSH COATING OF FASTENER HEADS HAS BEEN EMBODIED ON SOME AIRPLANES

3 BROKEN FILLET SEALS SHOULD NOT BE REPLACED. REMOVE LOOSE SEALS.

4 STRAP HOT BONDED TO UPPER SKIN.

Fuselage Skin Lap Joints - External Treatment
Figure 2 (Sheet 1)



Fuselage Skin Lap Joints - External Treatment
Figure 2 (Sheet 2)

1. General

A. The longitudinal lap splices of fuselage skins are located at stringers 4, 10, 14, 19/20 and 24/25/26. The lapped skins are joined by rivets and were supplemented by a cold bond process at the joint up to line number 291. Several changes were initiated on the lap splice because of splice delamination problems. The first major change added corrosion inhibiting adhesive primer (CIAP) to the skin panels of the bonding area. A later design change maintained the cold bonding process with fillet sealing of the interior and exterior laps and along the heels of the attaching stringer. The bucked head of the rivets were brush coated. The latest change replaced the cold bond in the lap splices with a designed joint that incorporated a CLAP with a chromate loading faying surface sealant. This change was added at line number 292. Preventive maintenance procedures to cold bonded joints are the subject of Service Bulletin 53A1039. This service bulletin is the subject of FAA Airworthiness Directive 89-09-03.

B. The faying surface of the cold bonded lap splices have been found susceptible to corrosion. Over an extended period of time, exposure to moisture or high humidity can cause deterioration of the cold bonding adhesive. Delamination of the joint may follow leaving the area vulnerable to attack by corrosive agents. Lap splices with the corrosion inhibiting adhesive primer and faying surface sealant are not subject to faying surface corrosion and do not require periodic treatment with water displacing corrosion inhibiting compound.

C. The application of a pressure fillet seal of BMS 5-95 sealant at all exterior skin lap joints between BS 178 and BS 1156 has been initiated on production airplanes at cum line number 594 to improve corrosion protection.

D. Treatment of the interior surface requires extensive work and should be accomplished as access is gained to the interior surfaces. Corrosion prevention for the interior lap splice is described in Fig. 3.

E. Delamination and corrosion has been found in almost all areas of the passenger cabin skins, including under and adjacent to the forward entry door and main cargo door, in the crown area at upper centerline, under the aft galley door adjacent to the pressurization outflow valve, and in the area of pilot's static ports.

F. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is 'effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Preventive Maintenance

(1) At earliest opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished on the fuselage skin lap joints.

(2) Apply BMS 3-23 water displacing into lap joints and on lap joint rivet heads. On fillet sealed splices apply water displacing corrosion inhibiting compound along the edge of panel and on lap joint rivet heads. Broken seals should not be replaced.

(3) The application of fillet sealant on the exterior surface of in-service airplanes manufactured without the seal installed is not recommended. Moisture and contaminants may have already entered the joint and sealing the joint would trap the corrosion products.

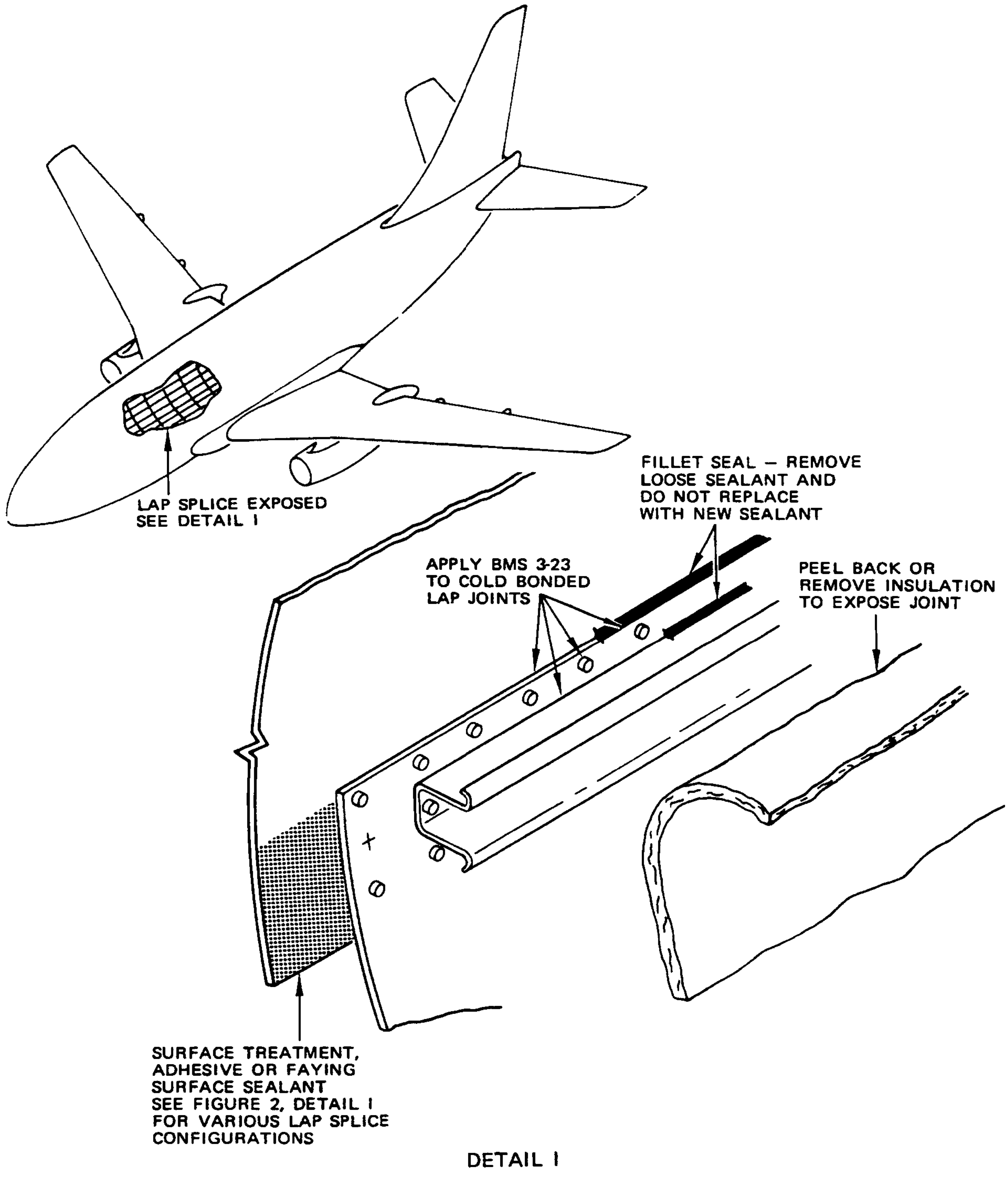
(4) SB 53-1076 gives inspection procedures for the bonded crown and side skin-doubler assemblies, one belly skin between SB 259.5 and BS 360, and a segment of a belly skin between BS 1016 and BS 1026. Corrosion between disbonded surfaces could reduce static strength or cause skin cracks. SB 53-1076 now includes recommended changes to stop corrosion on the fuselage circumferential butt splices and bonded doublers for aging 737 airplanes. SB 53-1076 is the subject of FAA Airworthiness Directive 88-22-12.

(5) On affected airplanes, do the inspection per SB 53-1076 and SB 53A1039, 53A1042, 53-1078, and 53-1089 at the same time because of common access requirements. SB 53A1039 is the subject of FAA Airworthiness Directive 89-09-03.

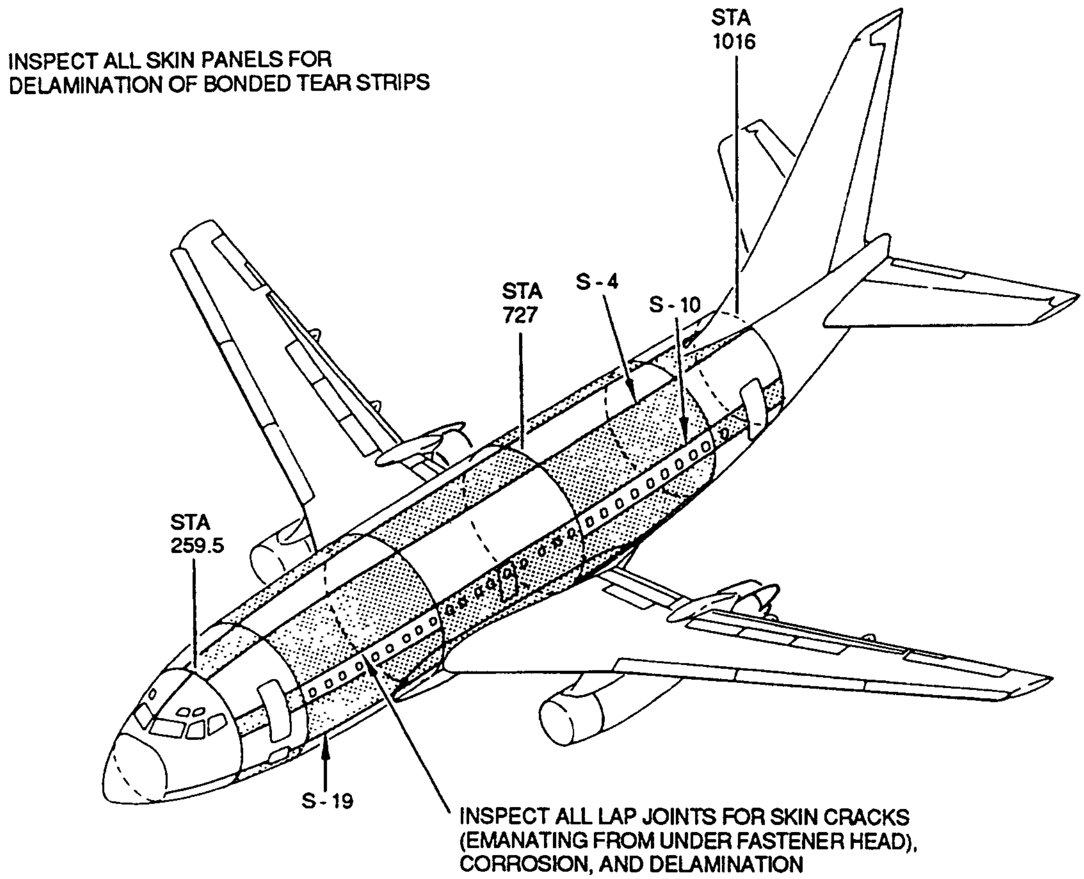
F. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.



Fuselage Skin Lap Joints - Internal Treatment
Figure 3 (Sheet 1)



Fuselage Skin Lap Joints - Internal Treatment
Figure 3 (Sheet 1A)

1. General

A. The longitudinal lap splices of fuselage skins are located at Stringers 4, 10, 14, 19/20 and 24/25/26. The lapped skins are joined by rivets and were supplemented by a cold bond process at the joint up to line number 291. Several changes were initiated on the lap splice because of splice delamination problems. The first major change added corrosion inhibiting adhesive primer (CLAP) to the skin panels of the bonding area. A later design change maintained the cold bonding process with fillet sealing of the interior and the exterior laps and along the heels of the attaching stringer. The bucked head of the rivets were brush coated. The latest change replaced the cold bond in the lap spliced with a redesigned joint that incorporated a CIAP with a chromate loading faying surface sealant. This change was added at line number 292. Preventive maintenance procedures to cold bonded joints are the subject of Service Bulletin 53A1039. SB 53A1039 is the subject of FAA Airworthiness Directive 89-09-03.

B. The faying surface of the cold bonded lap splices have been found susceptible to corrosion. Over an extended period of time, exposure to moisture or high humidity can cause deterioration of the cold bonding adhesive. Delamination of the joint may follow leaving the area vulnerable to attack by corrosive agents. Lap splices with the corrosion inhibiting adhesive primer and faying surface sealant are not subject to faying surface corrosion and do not require periodic treatment with water displacing corrosion inhibiting compound.

C. The application of a pressure fillet seal of BMS 5-95 sealant at all interior skin lap joints (Section 48) between BS 1016 and BS 1156 has been initiated on production airplanes at cum line number 594 to improve corrosion protection.

D. Treatment of the exterior surface of the splice is described in Fig. 2.

E. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Skin bulges or white powdery deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the ingress of contaminants and moisture into the joints to minimize the occurrence of corrosion.

B. Where extensive corrosion exists (very noticeable skin bulges, missing fasteners, or large amounts of white deposits at fastener heads or joint edges), refer to Structural Repair Manual for details of corrosion removal.

C. For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

WARNING: DO NOT APPLY CORROSION INHIBITING COMPOUNDS INTO AREAS WHICH COULD POTENTIALLY BE IN CONTACT WITH OXYGEN SYSTEM COMPONENTS. MIXING OF CORROSION INHIBITORS AND OXYGEN MAY RESULT IN AN EXPLOSION.

CAUTION: INSULATION BLANKETS SOAKED WITH CORROSION INHIBITORS ARE POTENTIAL FIRE HAZARDS. BLANKETS INADVERTENTLY SPATTERED SHOULD BE ALLOWED TO DRY BEFORE REINSTALLATION.

D. For minor corrosion detected during the periodic inspections and to minimize the downtime of the airplane, the corrosion products should be cleaned off followed by an application of a corrosion inhibiting compound into the joint to retard the corrosion process.

NOTE: The treatment of internal surfaces described above should be made at first opportunity splice area is exposed. Location of the area should be noted and monitored from the outside every 3 months for visual indication of corrosion progression. Any noticeable skin bulges would require scheduling corrosion removal outlined in Structural Repair Manual.

E. For corrosion prevention, apply water displacing corrosion inhibiting compound into lap joints, rivet heads, and/or heel of stringers as noted in the methods described below. The preferred method is to make the applications at the first opportunity that the internal splice area is exposed.

(1) Insulation blankets should be protected or removed from the immediate treatment area to prevent spattering of the blankets. Insulation inadvertently spattered should be allowed to dry before installation.

(2) On some airplanes, fillet sealants have been installed. Loose sealants should be removed but not replaced. Broken sealants should not be replaced.

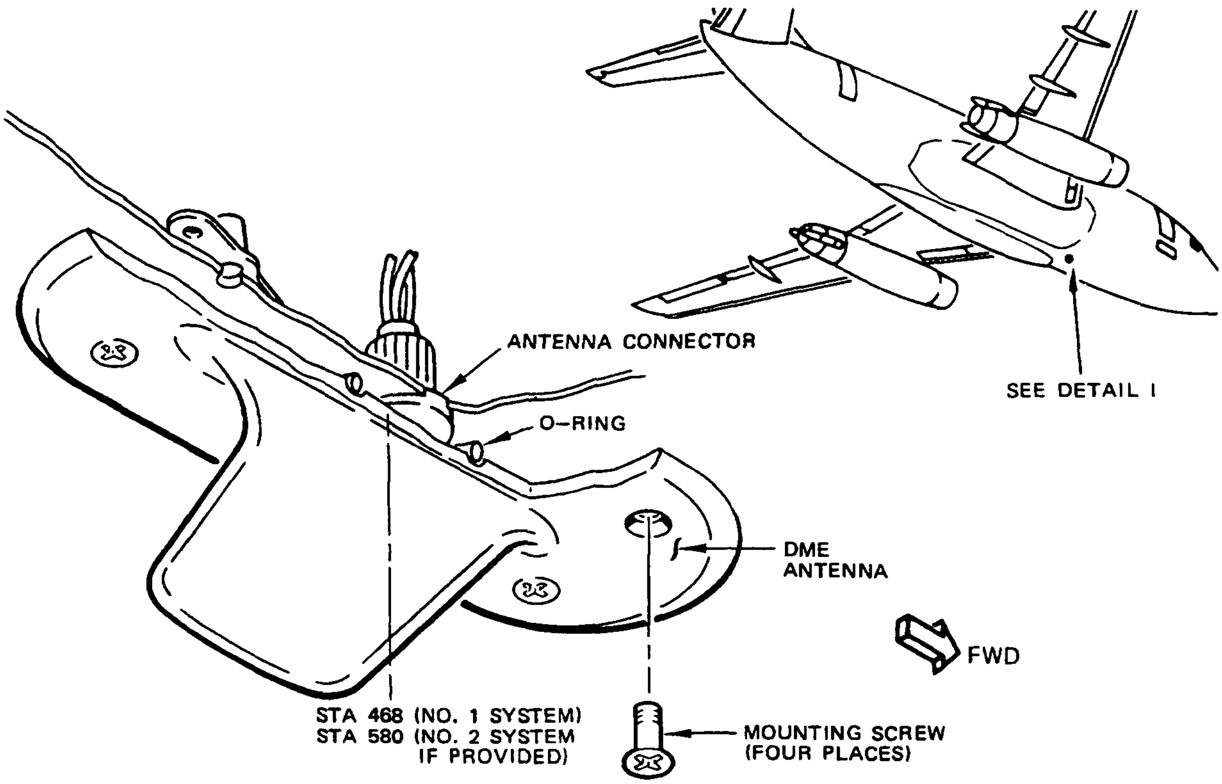
(3) Apply water displacing corrosion inhibiting compound into lap joint edges, rivet heads and heel of the stringer. The use of pressure spray equipment with nozzle directed into joint is recommended.

F. Frequency of Application

(1) It is recommended that the corrosion inhibitor be reapplied whenever access is available to the area, preferably at approximately 2-year intervals.

G. Improved Corrosion Protection

(1) Some hot-bonded skin tearstraps can come apart and let moisture in to cause corrosion. Service Bulletin 53A1039 gives inspection and repair procedure for the fuselage skin lap joints on all airplanes thru line number 519. SB 53A1039 is the subject of FAA Airworthiness Directive 89-09-03.



Skin at Antenna Mount
Figure 4

1. General

   A. Varying degrees of corrosion have been reported on faying surfaces of the antenna and body skin on exterior mounted ATC, DME, VHF, HF, marker beacon, radio altimeter, and ADF loop antennas. Generally, corrosion in the antenna areas appears to be more prevalent at the lower fuselage locations where moisture tends to collect.

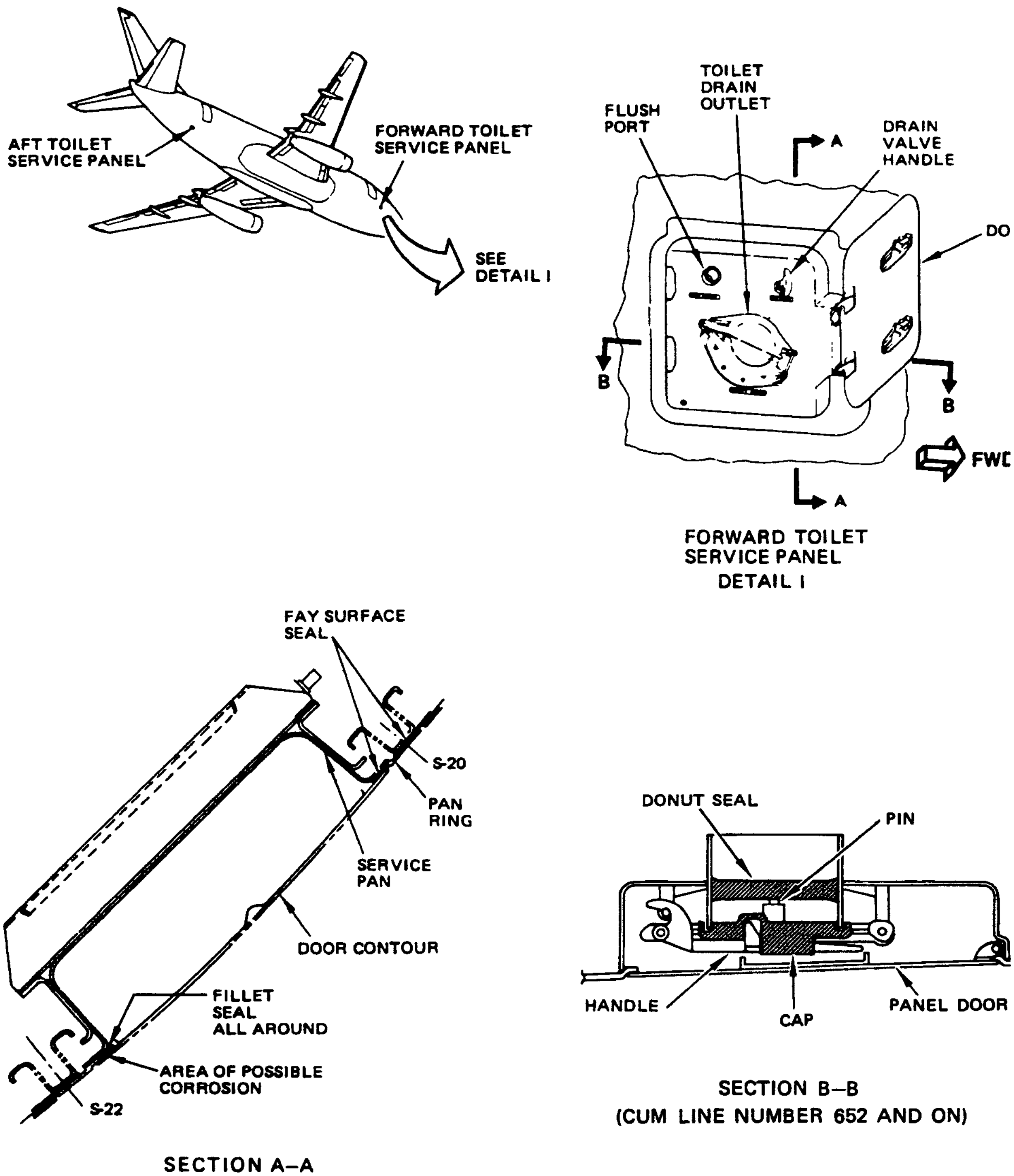
   B. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

   A. Examine the skin and antenna regularly for signs of corrosion products. If necessary, remove the antenna and look under it.

   B. Refer to Structural Repair Manual for corrosion removal procedures.

   C. When you remove an antenna, apply BMS 3-23 to the mating surfaces to help prevent corrosion. Tests at Boeing show that antenna performance will not be affected by the film of BMS 3-23.



Toilet Service Panels
Figure 5 (Sheet 1)

1. General

A. Reports have been received about the occurrence of corrosion on the surface of the service pan ring at the forward toilet service panel. The aluminum ring is attached to the fuselage skin at the forward toilet access door cut-out. A stainless steel pan is in turn attached to the ring.

B. Evidence of corrosion has been found along the faying surfaces of the pan and the ring. The corrosion became evident in most cases when it penetrated to the exterior surface usually at the fastener locations. The problem is attributed to waste fluid leakage accumulation.

C. Design improvements incorporated at airplane cum line 360 include ring material change from 7075-76 to 7075-T73, a finish change consisting of chromic acid anodize followed by two coats of BMS 10-11 primer on all surfaces. The surfaces common to the ring and skin and surfaces common to ring and pan are fay surface sealed with BMS 5-95. An application of fillet sealant with BMS 5-95 material is made to the entire periphery of the ring. The ring width along the lower surface was increased to obtain a larger surface for sealant adhesion.

D. Corrosion has also occurred on toilet service panel doors and door hinges.

E. Corrosion has been reported in the toilet service area due to leakage from the 4.0-inch diameter service panel toilet drain due to the omission of the expandable donut seal during routing servicing. A production change was made at cum line number 652 to provide a new Kaiser-Roylyn drain cap that will not close unless the donut seal is in place.

F. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make periodic inspections for corrosion as described in Volume 1, 20-20-00. Bulges of skin or white powdery deposits are evidences of corrosion which should alert operators that some corrective action is required. A corrective prevention program should be initiated to prevent the ingress of contaminants to minimize the occurrence of corrosion.

B. 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.

C. Prevention Treatment

(1) Flush the toilet service pan after each toilet servicing operation with water. Dry with clean cloth.

(2) Remove damaged or broken fillet seals.

(3) Apply BMS 3-23 along all edges and fastener heads. Allow carrier solvents to evaporate and wipe off excess.

NOTE: For details of application of water displacing corrosion inhibiting compound BMS 3-23, refer to Volume 1, 20-60-00.

(4) Clean edges of joint where fillet seals were removed using one of solvents recommended in Volume 1, 20-60-00.

(5) Reapply fillet seals removed with BMS 5-95 sealant material.

(6) Apply BMS 3-23 over fillet seals and immediate areas after sealant has cured.

(7) Conduct maintenance check on drain cap seals as indicated in 12-17-0 of Maintenance Manual. Service experience has indicated that leakage from deteriorated seals in the toilet drain tube caused corrosion problems on the fuselage in the area immediately aft of the toilet service area. Seals in the drain tube cap with cuts, cracks, gouges, excessive hardening, deformation or any sign of deterioration should be replaced. Remove all foreign matter adhering to the seals which could contribute to leakage.

(8) Frequency of treatment

(a) Periodically inspect the condition of corrosion inhibitor applied over sealant and pan and reapply as necessary.

(b) Where fillet seals have deteriorated, remove seal and apply BMS 3-23 into joint. Repeat steps (4) thru (6).

(c) Simple checks of the seals in the drain caps should be accomplished at each toilet servicing operation.

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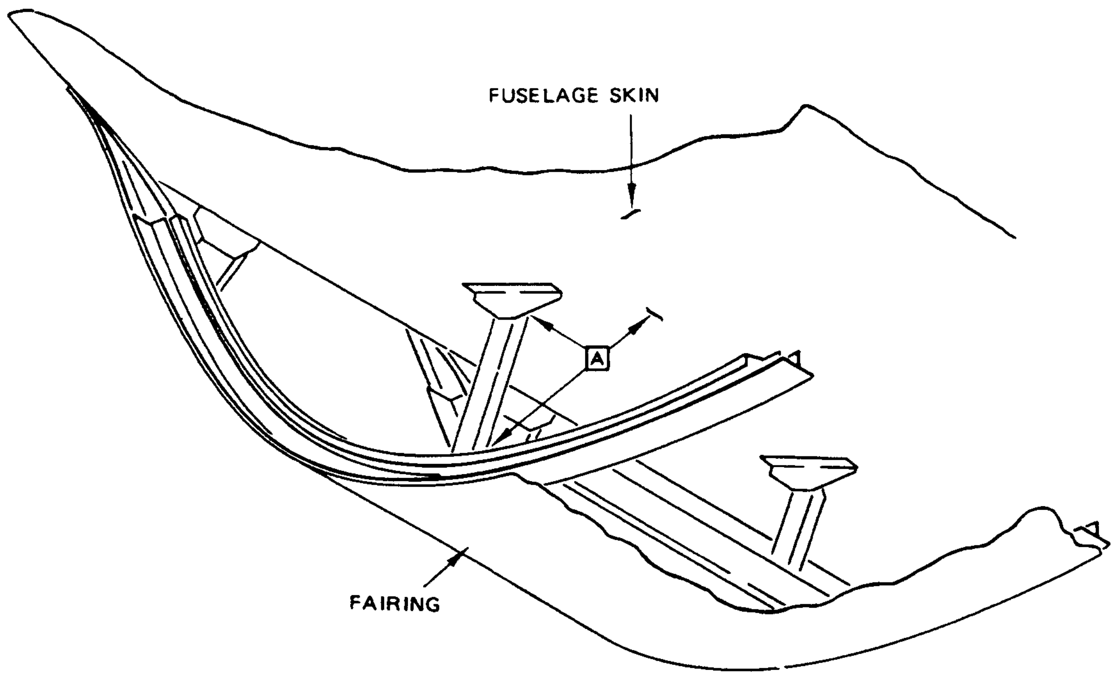

NOTE

A APPLY BMS 3-23 CORROSION INHIBITOR

TYPICAL FAIRING CAVITY STRUCTURE

Wing to Body Fairing Cavity
Figure 1 (Sheet 1)

1. General

A. The upper wing-to-body fairing is attached to the upper wing surface and fuselage skin along the wing to fuselage joints. The lower lobe fairing houses the ambient air inlets to the ram air system during pack cooling fan operation. The lower lobe fuselage skin under the fairing extends to the bulkhead below the front spar of the center wing section. The cavity formed by the lower lobe fairing and fuselage skin is the area of concern and is the subject of this figure. Aft of this area the fairing covers the center wing section. Refer to 57-30-37, Fig. 2 for data on the center wing section.

B. Service experience has shown the revised finish system has been effective in controlling the corrosion problem. Corrosion damage is due to the accumulation of moisture from the ambient air as it enters the cavity during pack cooling fan operation.

C. Corrosion was reported on the fuselage skin and the external doubler on the wing upper surface under the wing to body fairing. The body surfaces under the fairing is treated with a water displacing corrosion inhibiting compound in production.

D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. Access for inspections can be made through service doors and access panels in the fairing. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Where extensive corrosion exists (noticeable skin bulges, missing fasteners or large amounts of discolored deposits of fastener heads or faying surfaces), refer to Structural Repair Manual for details of corrosion removal.

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUND TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONS. BMS 3-23 MAY CAUSE SEALS OR CUSHIONS TO SWELL AND DETERIORATE.

C. Where corrosion is not evident, apply corrosion inhibiting compound in all metallic areas of the cavity.

NOTE: For details of water displacing corrosion inhibiting compound, BMS 3-23, refer to Volume 1, 20-60-00.

D. For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of corrosion inhibiting compound on the affected area to retard the corrosion process and into the entire cavity area noted in par. C. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00 and Structural Repair Manual).

E. Frequency of Application

(1) Inspect the area at regular maintenance intervals and reapply corrosion inhibitor as necessary.

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CHAPTER

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NACELLES/ PYLONS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Engine Mounts	Corrosion at the forward and aft engine mounts. Corrosion in the aft engine mount fitting attach hole in flap track	54-40-37 Fig. 1	
	Stress corrosion in the forward engine support bracket		
	Stress corrosion cracks in H-11 steel attachment bolts at the rear mount vibration isolator		Replace with Inconel 718 bolts

Specific Corrosion Problems - Nacelles/Pylons
Figure 1

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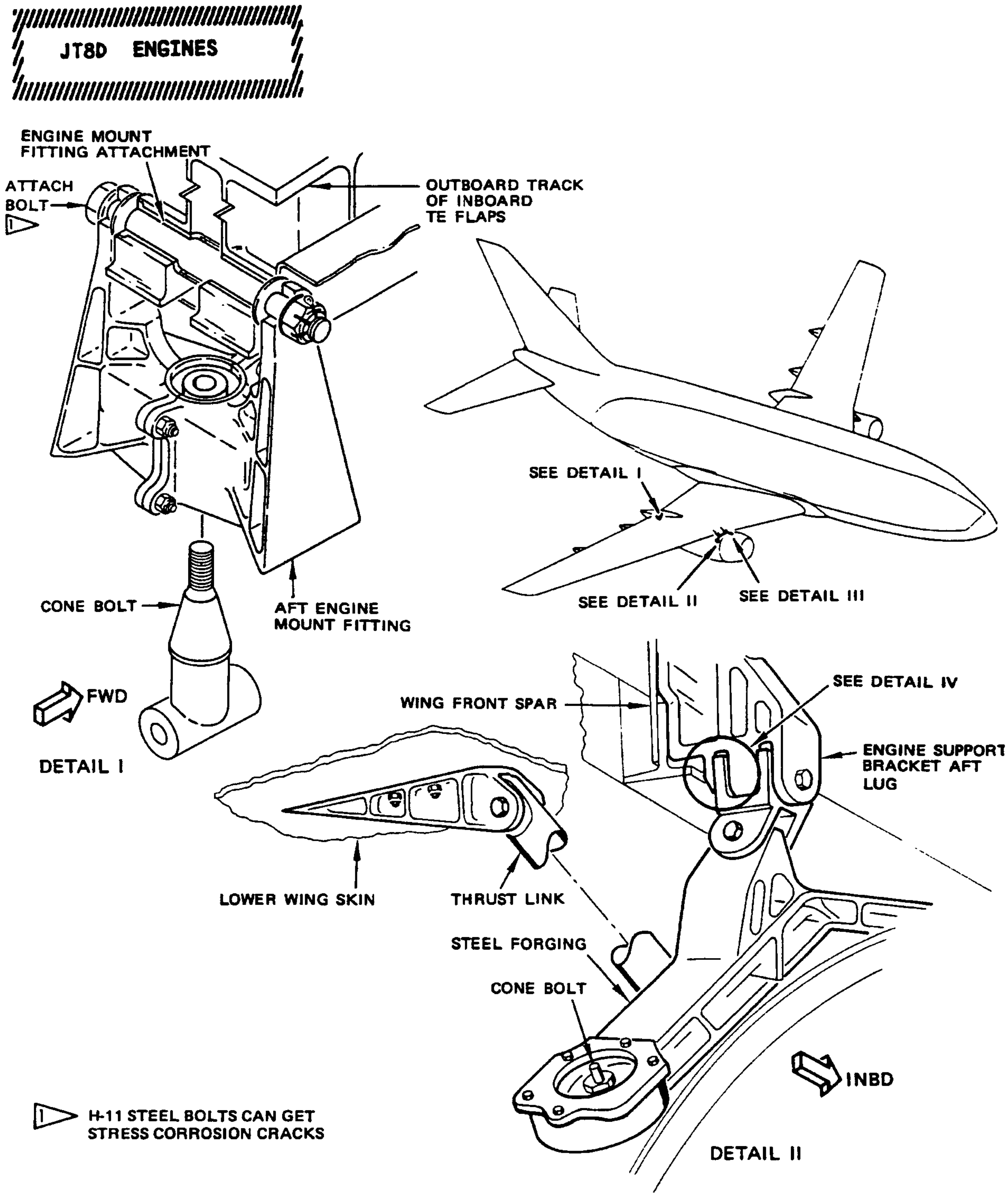


Forward and Aft Engine Mounts
Figure 1

JT8D ENGINES

1. General

   A. Corrosion can occur on some airplanes at forward engine mounts and at the aft engine mount fitting attach hole in the aft flap track.

   B. Stress corrosion can occur in the aft lug of the engine mount outboard support bracket which attaches to the wing front spar. Corrosion can also occur between the bushing and the lug bore.

   C. Stress corrosion cracks can occur in H-11 steel attachment bolts at the rear mount vibration isolator.

   D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

   A. The engine mounts are normally inspected as part of the routine maintenance of the airplane and at overhaul. The opportunity to carry out additional inspections arises at anytime an engine is removed. As the engine is disconnected from the nacelle by releasing the cone bolts at the forward and aft mounts, it is possible to inspect the cones and the mating tapered holes and the aft engine mount fitting attachment to the flap track at this time.

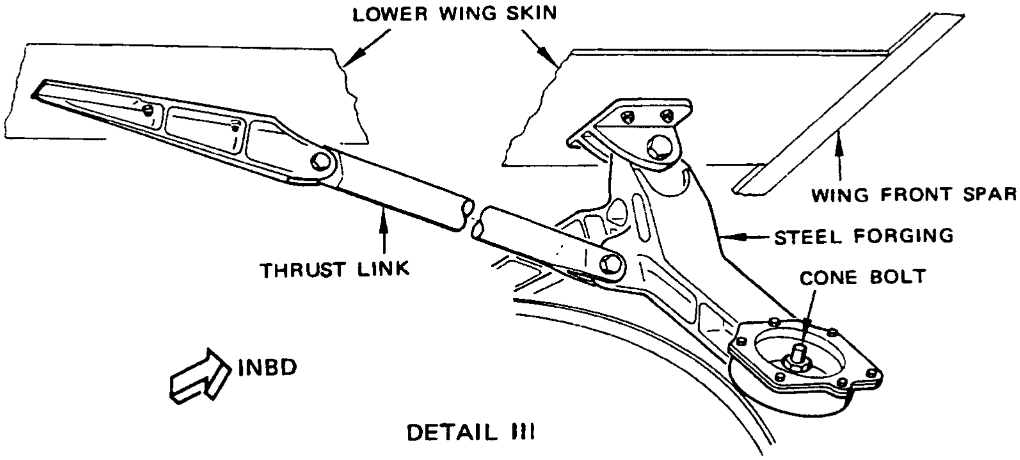
   B. The various components of the engine mounts should be inspected for signs of corrosion and for damaged finish. Damaged finish should be restored to prevent the initiation of corrosion.

   C. Look for stress corrosion cracks in the attachment bolts at the rear mount vibration isolator. Bolts of H-11 steel can be identified by part numbers 69-37473-1 or -2. Replace these bolts with 69-37473-3 bolts which are made of Inconel 718. This is a nickel alloy which does not get stress corrosion cracks as easily.

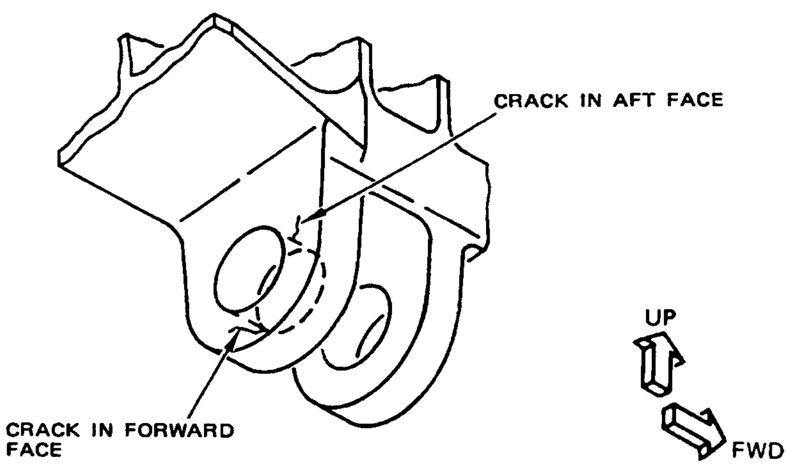
   D. During engine installation, cone bolt threads and both faces of washers must be coated with Ease-off 990 antiseize compound. If you do not use antiseize compound, corrosion that occurs could cause stress corrosion failure.

   E. If corrosion is discovered, refer to Structural Repair Manual.

JT8D ENGINES



DETAIL III



DETAIL IV

Forward and Aft Engine Mounts
Figure 2

CFM-56 ENGINES

1. General

   A. The engine nacelle support consists of overwing fitting, aft drag fitting, and side load fitting.

   B. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

   A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

   B. Corrosion Inspection/Removal

      (1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

      (2) Where corrosion exists it will produce noticeable bulges of the skin or white deposits of corrosion products at fastener heads.

      (3) For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

   C. Prevention Treatment

      (1) Improved corrosion protection

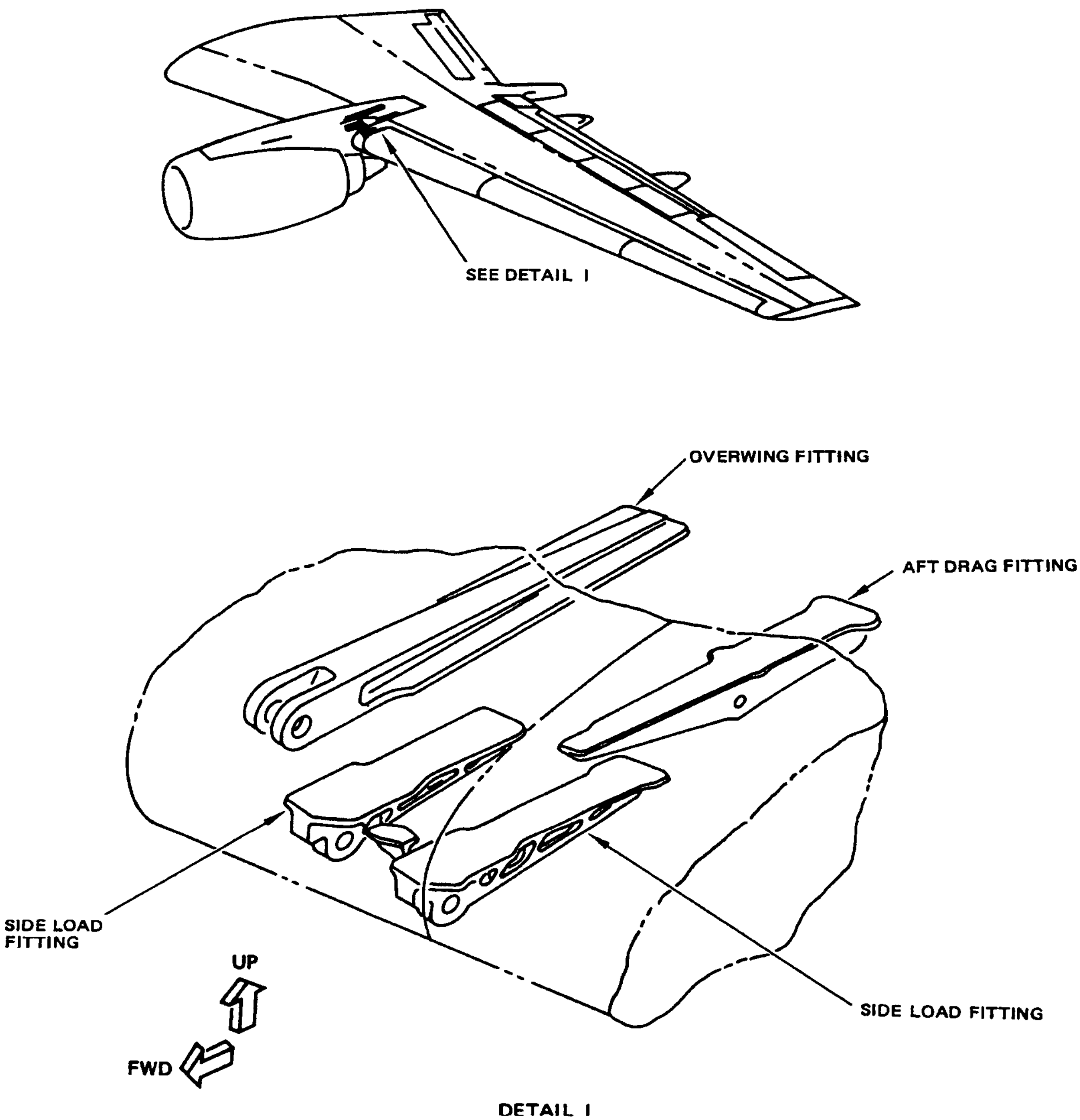
         (a) Some operators have increased corrosion protection by applying water displacing corrosion preventive compound in the engine nacelle support fittings, including edge of faying surfaces.

   D. Frequency of Application

      (1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

      (2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

CFM-56 ENGINES



Engine Nacelle Support
Figure 3

CFM-56 ENGINES

1. General

   A. The engine nacelle support consists of overwing fitting, aft drag fitting, and side load fitting.

   B. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

   A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

   B. Corrosion Inspection/Removal

      (1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

      (2) Where corrosion exists it will produce noticeable bulges of the skin or white deposits of corrosion products at fastener heads.

      (3) For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

   C. Prevention Treatment

      (1) Improved corrosion protection

         (a) Some operators have increased corrosion protection by applying water displacing corrosion preventive compound in the engine nacelle support fittings, including edge of faying surfaces.

   D. Frequency of Application

      (1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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CHAPTER

55

STABILIZERS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Horizontal Stabilizer	Rear spar and inspar skin	55-10-37 Fig. 1	
	Jackscrew support truss		
	Rear spar attachment bolts		
	Fay surface between inspar skin and ribs, inspar skin and spar edge panels and rear spar chords		
	Stabilizer center section elevises and lugs		
	Hinge pins at center section		
	Pivot pins		
	Attachment lugs		
	Attach bolts of H-11 or PH13-8M0 steel		SB 55-1026
	Attach fittings		
	Trailing edge beam		SL 55-6
Elevator	Balance panels and adjacent structure on the front spar	55-20-37 Fig. 1	
	Laminated rear spar		
	Trailing edge skin panel mating surfaces		
	Nose skins and hinge fittings for balance panels		
Vertical Stabilizer	Skin, rear spar, attach fittings	55-30-37 Fig. 1	
	Rear spar attachment bolt		
	Attach bolts of H-11 or PH13-8M0 steel		SB 55-1026
Rudder	Front spar and attach fittings	55-40-37	
	Trailing edge skin panel mating surfaces		
	Front spar chord forward flange		

Specific Corrosion Problems - Stabilizer
Figure 1

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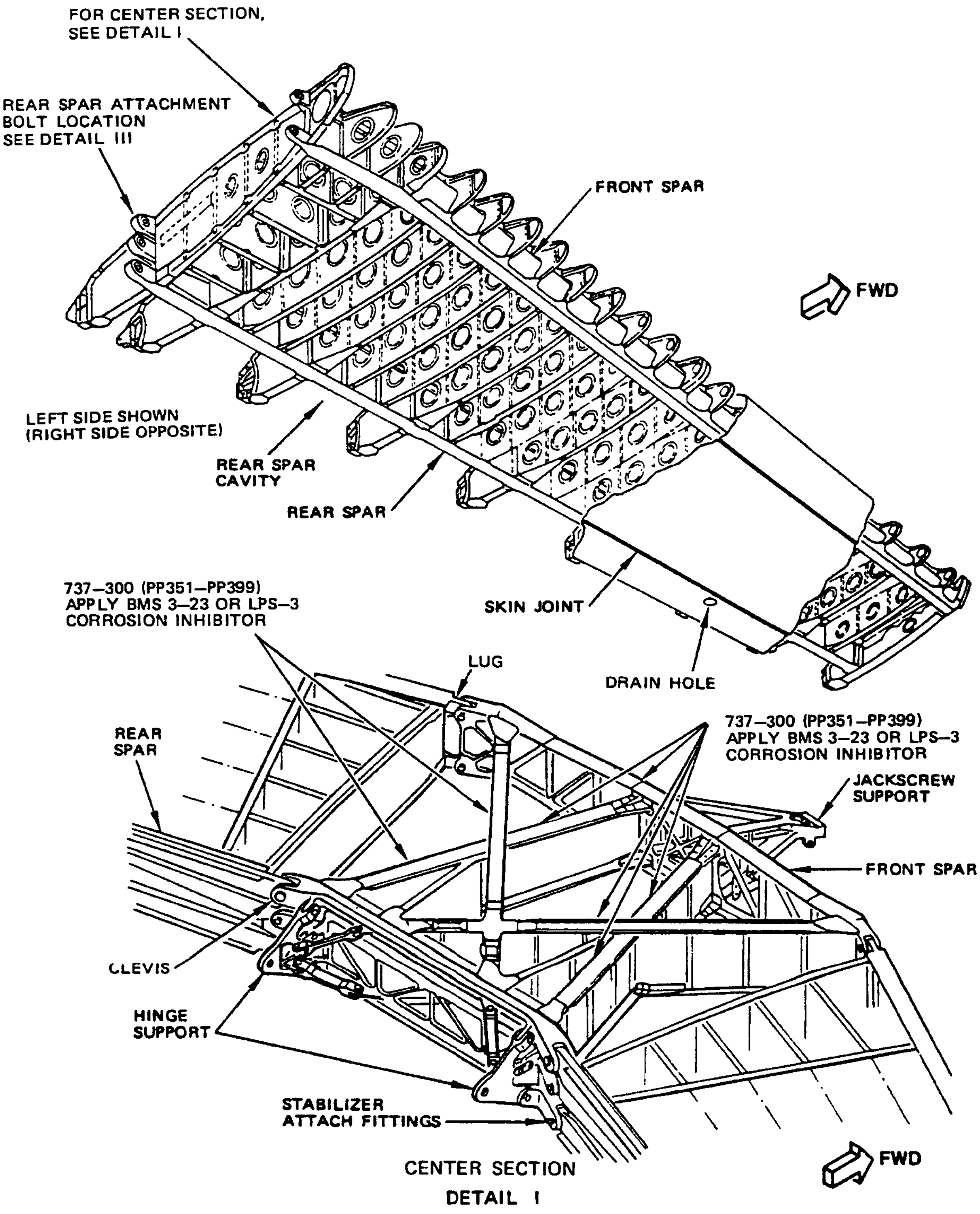
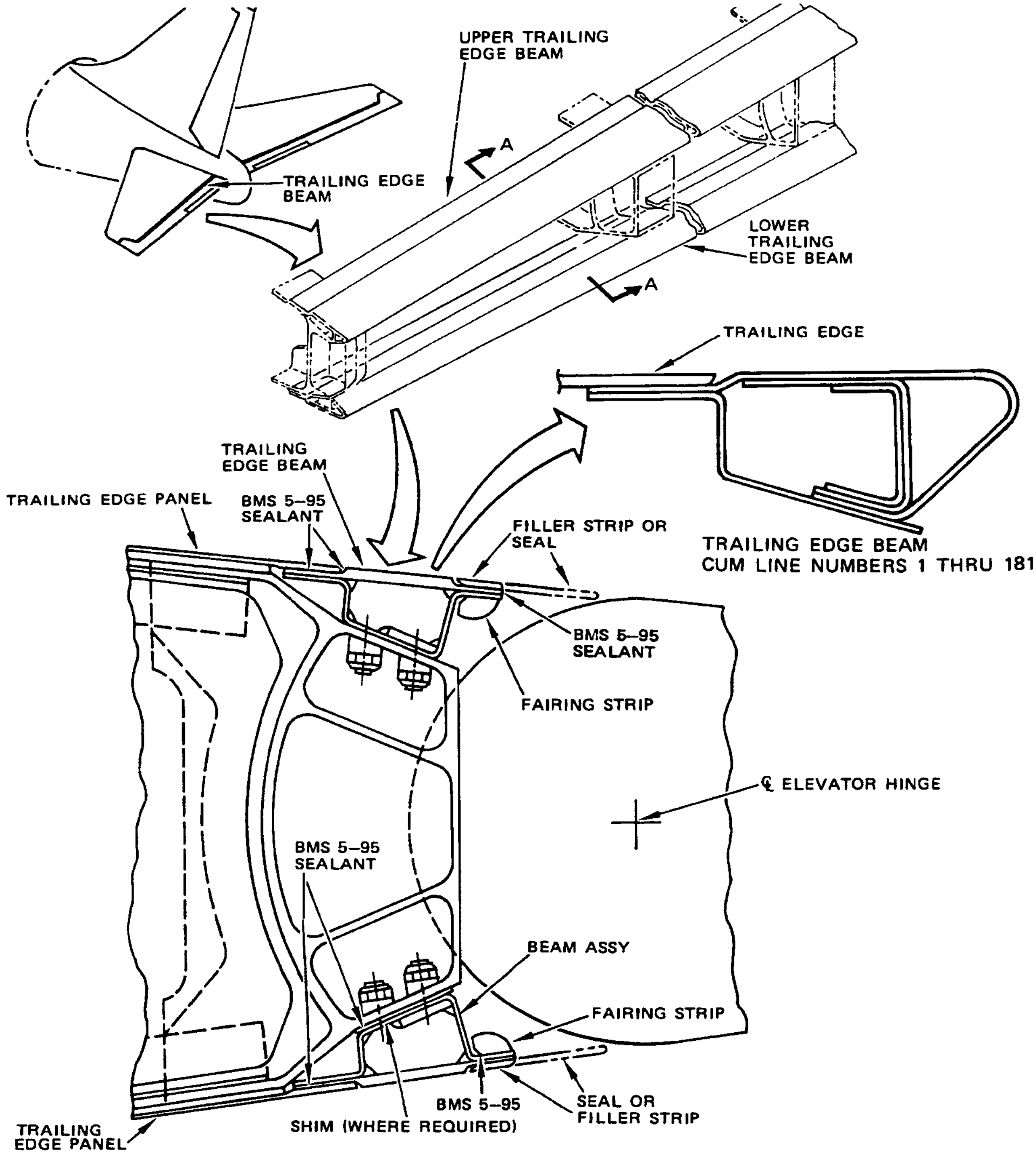


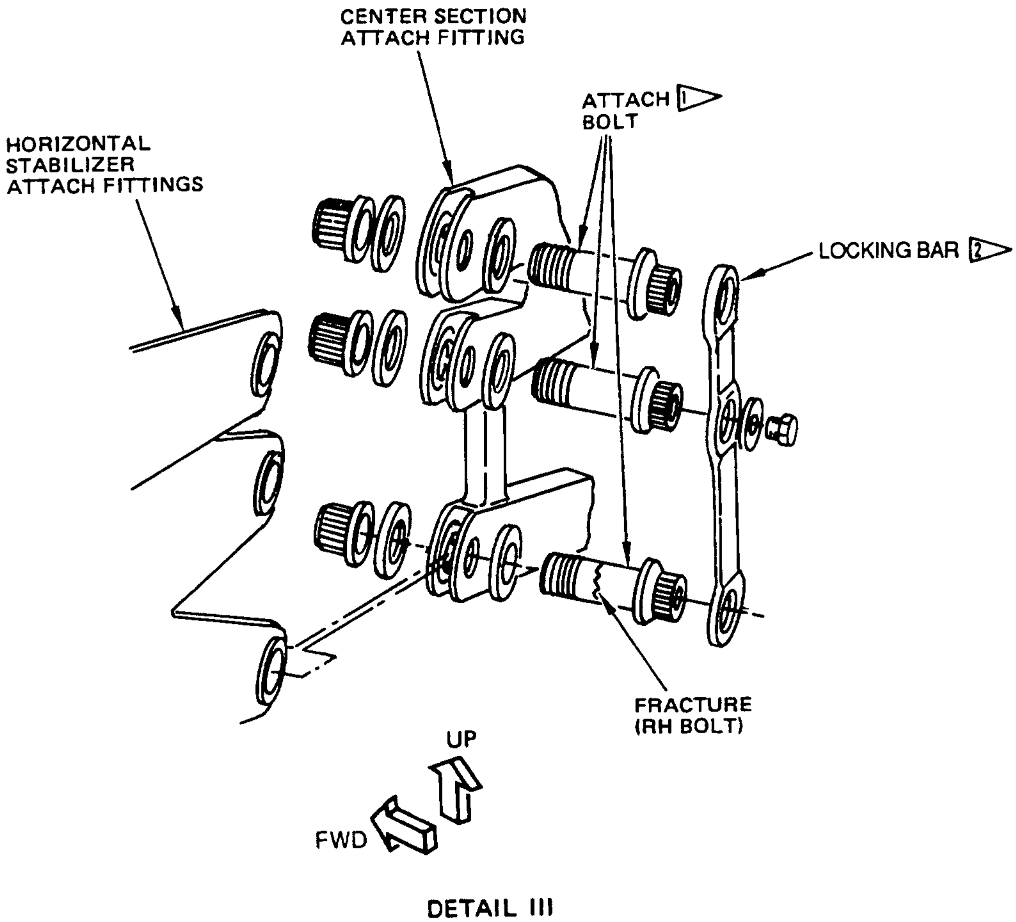
Horizontal Stabilizers
Figure 1 (Sheet 1)



TRAILING EDGE BEAM TYPICAL OF CUM LINE NUMBERS 182 AND ON
SECTION A-A

DETAIL II

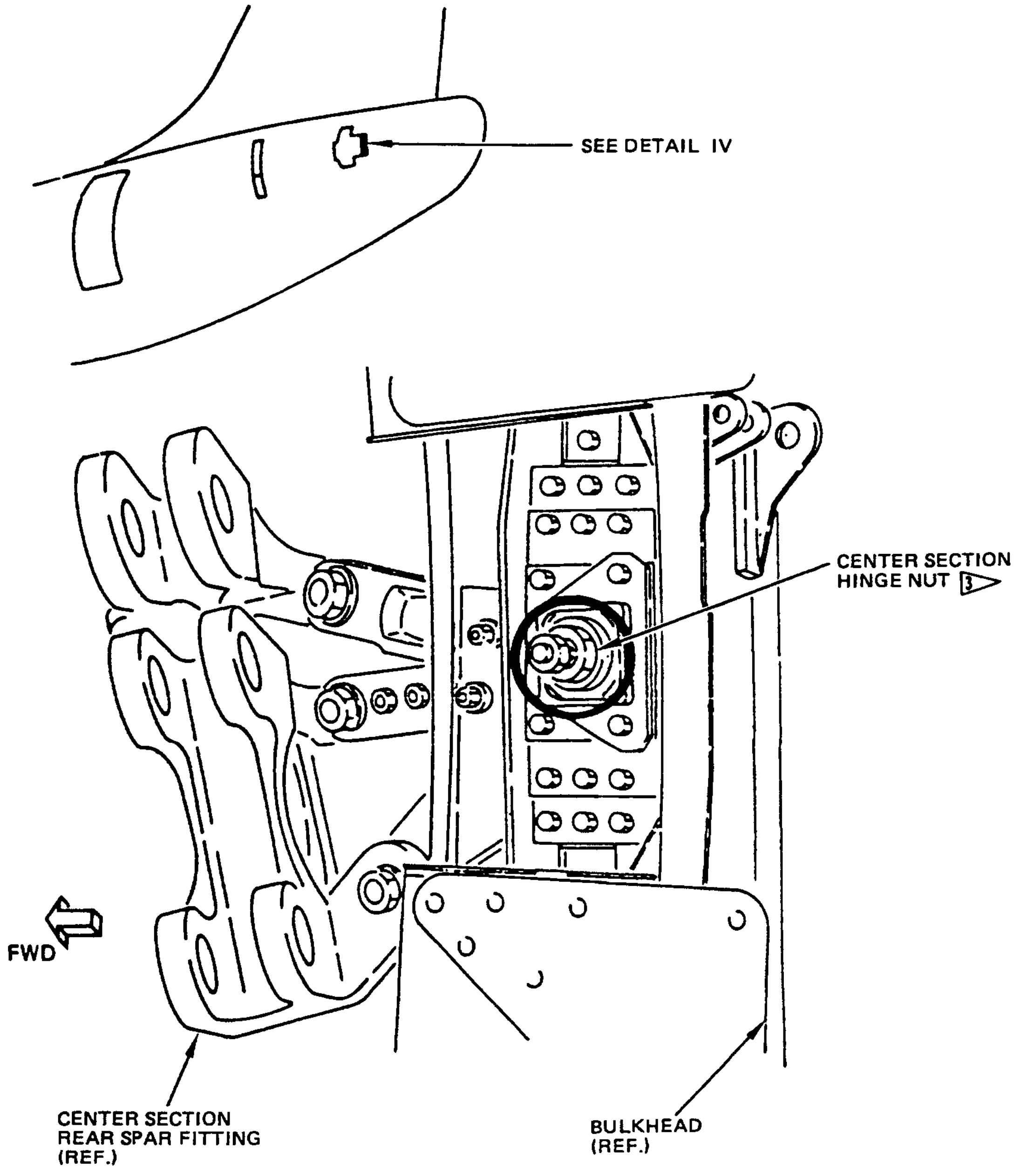
Horizontal Stabilizers
Figure 1 (Sheet 2)



1 BOLTS OF H-11 OR PH13-8 MO STEEL CAN GET STRESS-CORROSION CRACKS. REPLACE THESE BOLTS WITH BOLTS OF INCONEL 718 PER SB 55-1026. 2

2 BECAUSE THE HEADS ARE SMALLER ON THE INCONEL 718 BOLTS, NEW LOCKING BARS THAT ENGAGE THE HEADS MUST BE USED.

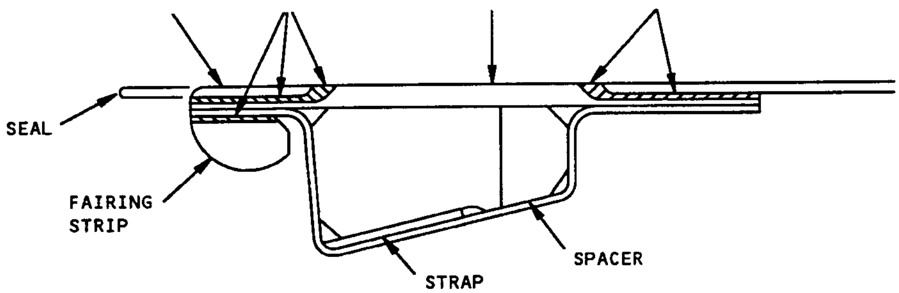
Horizontal Stabilizer
Figure 1 (Sheet 3)



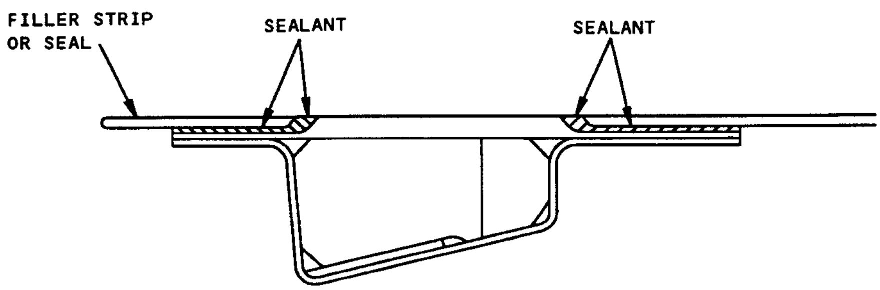
DETAIL IV

3 ON VERY EARLY AIRPLANES, THIS NUT WAS NOT PLATED. REPLACE SUCH NUTS WITH PLATED NUTS PER SB 55-1002.

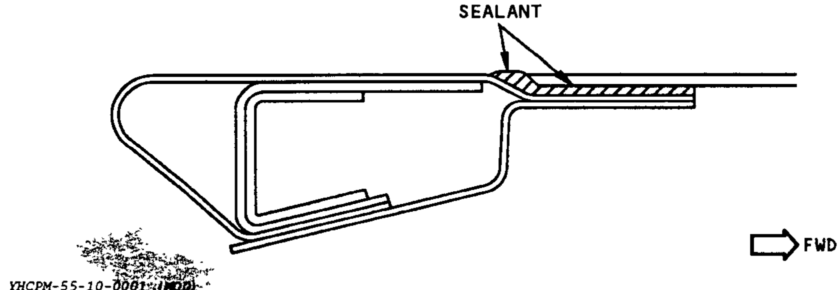
Horizontal Stabilizer
Figure 1 (Sheet 4)



LINE NUMBERS 182-623
(SB 55-1014 INCORPORATED)



LINE NUMBERS 182-623
(SB 55-1014 NOT INCORPORATED)



LINE NUMBERS 1-181

TRAILING EDGE BEAM CHANGES
(REFER TO SL 55-6 FOR MORE DETAILS)

Horizontal Stabilizer
Figure 1 (Sheet 5)

1. General

A. Corrosion has been encountered on the horizontal stabilizer rear spar, and filiform corrosion has occurred in some instances on the inspar skin. Production improvements introduced at line number 318 include the wet installation of nonaluminum fasteners using primer or sealant and an improved finish on the inspar skin, using Alodine 1200, BMS 10-79, Type III epoxy primer and BMS 10-60, Type II polyurethane enamel.

B. Corrosion has been reported on the jackscrew support truss. Although the early production trusses were made of 7079-T6 aluminum, no stress corrosion cracking was reported. The truss material was changed to 7075-T73 at line number 154 except for line number 157 which got a 7079-T6 truss.

C. Corrosion has been found at the faying surfaces of the inspar skin and inspar rib chords.

D. Corrosion has been reported on the rear spar attachment bolts which may result in chrome plating flaking. At line number 520, corrosion resistant steel bolts were used. The improved bolts are directly interchangeable with the old bolts. Replacement can be on an attrition basis.

E. Corrosion has been reported on the stabilizer and stabilizer center section clevises and lugs.

F. Corrosion and plating deterioration has been reported on hinge pins at the horizontal stabilizer center section.

G. Corrosion has been reported between the horizontal stabilizer skin panel and the forward flange of upper and lower trailing edge beams. The corroded areas, two to ten inches long, were found at several locations along the beam between elevator stations 23 and 213. Corrosion is attributed to water trapped in the unsealed seam.

H. Corrosion has been reported on the horizontal stabilizer pivot pins.

I. Corrosion has been reported on the horizontal stabilizer attachment lugs. Corrosion inspection is covered by SB 55-1028 and SB 55-1055.

J. Stress corrosion caused broken lower attach bolt on the RH horizontal stabilizer. The attach bolts are made of a special alloy steel (Fig. 1, Detail III). SB 55-1026 gives replacement procedures for attach bolts.

K. Corrosion has been found in the stabilizer center section attach fittings. The deepest corrosion was found on gap between the two flanged bushings in the lug holes. Some corrosion spots were also found on the lug faces.

L. Corrosion can occur on the surfaces of the horizontal stabilizer that touches the upper and lower trailing-edge skin and the trailing-edge beam. The corrosion is caused by moisture that can get into the joints between these parts.

M. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the regular inspection of Volume 1, 20-20-00 to stop or find the start of corrosion. Fasteners that are gone, or white powdery or other deposits are signs of corrosion.

B. After you clean the areas, do the inspection of Volume 1, 20-20-00 to make sure that protective finishes stay serviceable.

C. If you find corrosion (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.

D. For small amounts of corrosion, to decrease the downtime of the airplane, clean off the corrosion products. Apply a corrosion inhibiting compound into the affected area to stop the corrosion process. Refer to Volume 1, 20-60-00 for details on how to apply corrosion inhibiting compound. Repair the finish system when the maintenance schedule permits.

E. Prevention Treatment

(1) At earliest opportunity consistent with the scheduled maintenance activity, corrosion prevention treatment should be accomplished on the horizontal stabilizer.

(2) Periodically inspect the stabilizer for damaged finish and evidence of corrosion.

(3) Restore any damaged finish at the first available opportunity, meanwhile temporary corrosion protection may be obtained by the use of water displacing corrosion inhibiting compound. On skin surfaces, apply corrosion inhibitor to rivet heads and panel edges where the paint has cracked or flaked and after 30 minutes wipe off the excess with a clean, dry rag.

(4) Apply water displacing corrosion inhibiting compound annually to the aft side of the rear spar cavity, paying particular attention to attachment points and faying surfaces.

(5) Apply water displacing corrosion inhibiting compound annually to the fastener heads and skin joint on the upper and lower surfaces at the rear spar. Wipe off the excess with a clean, dry rag after a minimum of 30 minutes.

(6) Apply water displacing corrosion inhibiting compound annually to jackscrew support truss with particular attention to attachment points. Use care to prevent application on the jackscrew.

(7) Every 2 years, remove the leading edge, and using a suitable extension tube, spray the forward side of the rear spar with water displacing corrosion inhibiting compound. Pay particular attention to the upper and lower spar chords. While the leading edge is removed also apply corrosion inhibitor at the intersection of skin and rib chords.

(8) Apply water displacing corrosion inhibiting compound to the horizontal stabilizer terminal fittings.

(9) BMS 5-95 sealant may be added where shown in Detail II to prevent entrapment of water in the seams.

(10) Refer to SB 55-1028 for application of corrosion inhibiting compound BMS 3-23 to the horizontal stabilizer attachment lugs and bushings.

F. Frequency of Application

(1) Regular inspection is required in areas that can get corrosion and should agree with the schedule in the Maintenance Planning Document. Operators must know of reported problems and areas.

(2) Regular application of BMS 3-23 compounds is necessary on areas identified and should agree with the schedules in the Maintenance Planning Document.

G. Improved Corrosion Protection

(1) At line number 293, corrosion protection improvements include faying surface seal with BMS 5-95 of the rear spar web and rear spar chord, faying surface seal with BMS 5-95 of the front and rear spar chords and inspar skins, and fillet sealing with BMS 5-95 of the spar chords to the skin. In addition, the aft face of the rear spar was top coated with epoxy primer and Corogard except in the area of elevator actuator which has two coats of primer. However, PRR 33004-42 changed the basic finish of the rear-spar-aft surface from Corogard to Aeroflex on airplane line number 1456 and on.

(2) Subsequent production changes applied corrosion inhibiting compound on the aft surface of the rear spar and the inspar structure.

(3) Some airplanes delivered before October 1969 did not have drain holes in the three outboard trailing-edge panels. These drain holes can be added with SB 55-1013.

(4) On airplanes line numbers 649 and on, a production change applies a fillet seal of BMS 5-95 sealant around the flanges of the bushings on the center section fitting for the rear spar attachment bolts.

(5) On airplanes PP351-PP399, application of BMS 3-23 was applied in the entire truss structure at stabilizer center section. Periodic cleaning and re-application of this inhibitor is required.

(6) On some very early airplanes, the horizontal stabilizer hinge bushing retaining nuts (Fig. 1, Detail IV) were not plated. Replace such nuts with plated nuts per SB 55-1002.

(7) On airplane line number 1415 and on, BMS 10-79, Type III primer and Aeroflex replaces the Corogard, as the standard primer and paint for exterior surfaces of the inspar skin.

For airplanes line numbers 1 thru 1407, SL 20-13 and 51-22 gives you the option to apply BMS 10-79, Type III primer and Aeroflex G12E25 as an alternative to the original primer and Corogard when the corrosion protection system in the airplanes requires repair or replacement.

(8) The H-11 or PH13-8M0 horizontal stabilizer rear spar attach bolts can get cracks from stress corrosion. As a result, on airplane line numbers 993 and on, PRR 32779 changed the material for the attach bolts from H-11 or PH13-8M0 to Inconel 718. The Inconel 718 bolt does not get cracks from stress corrosion as easily.This change can be incorporated on earlier airplanes with SB 55-1026, but the new locking bar must be used because the Inconel 718 bolts have smaller heads that will not correctly engage the old locking bar.

(9) At line number 624, PRR 32930-3 added sealant between the joints of external parts of the trailing edge beam and also changed the finish on the beam. These changes can be incorporated on earlier airplanes with SL 55-6.

(10)At line number 2051, PRR 34639-3 added sealant between permanently attached external parts of the horizontal stabilizer.

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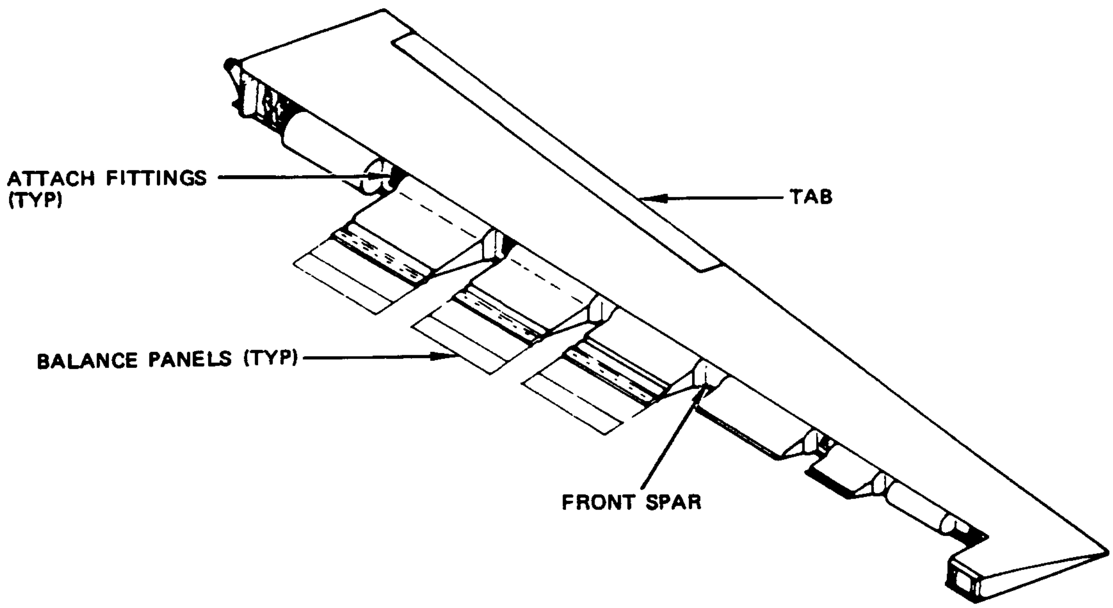


Elevators
Figure 1

STABILIZERS

1. General

A. Corrosion can occur on the elevator balance panels and similar structure to the elevator front spar.

B. The elevator rear spar on airplanes up to line number 491 was of laminated construction. Corrosion, delamination and cracking can occur. At line number 492, the laminated section was replaced with a solid section, and this change can be incorporated on other airplanes by SB 55-1022.

C. Moisture can collect between the trailing edge skin panel mating surfaces.

D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Periodically inspect the elevators and elevator balance panels for deterioration of finish and evidence of corrosion. Particular attention should be given to exposed areas of the rear spar in the tab cut-out on airplanes up to line number 491 which has a laminated rear spar section.

B. Restore damaged finish at the first available opportunity as described in Volume 1, 20-50-00 and 20-60-00. Meanwhile temporary corrosion protection may be obtained by the use of water displacing corrosion inhibiting compound.

C. Apply water displacing corrosion inhibiting compound annually to exposed areas of the elevator spar, with particular attention to the attachment points.

D. Apply water displacing corrosion inhibiting compound annually to the elevator balance panels.

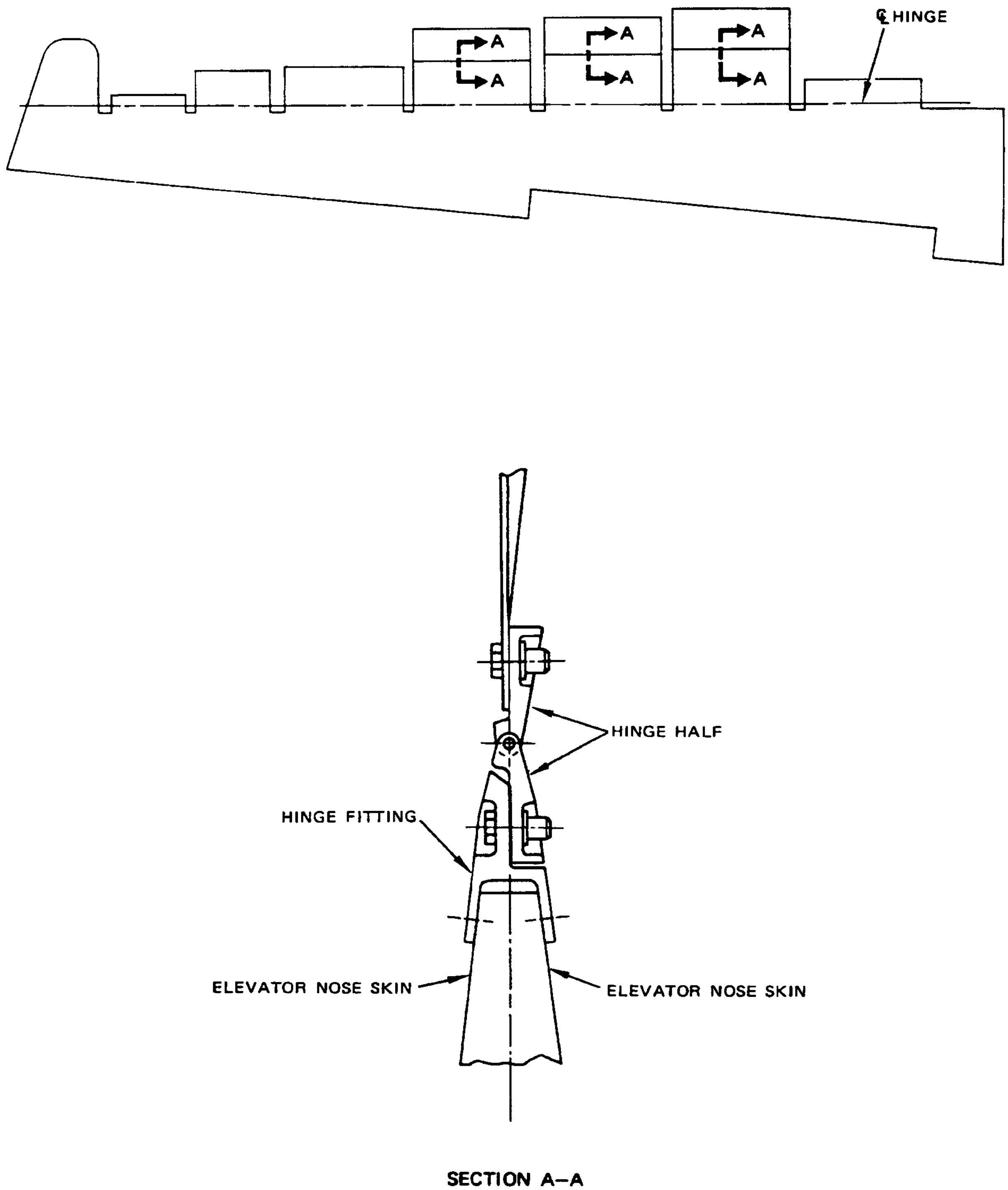
E. Inspect trailing edge skin panels for delamination and the ingress of moisture. Moisture accumulation could promote corrosion on the aluminum sub-structure and possible skin panel delamination. Accumulations of water may be detected radio-graphically.

F. A preventive modification for moisture accumulation may be accomplished by incorporating applicable part of SB 55-1007.

G. Refer to Structural Repair Manual, for corrosion removal procedures.

3. Improved Corrosion Protection

A. On airplane line numbers 492 and on, PRR 32643 changed the laminated elevator rear spar with a new solid rear spar for airplanes in production. This change can be added on some airplanes by SB 55-1022. Revision 1 of this service bulletin recommends the replacement of the laminated elevator rear spar with a solid rear spar on aging 737 airplanes.



Elevator Nose Skin Installation
Figure 2

1. General

A. Corrosion can occur between elevator nose skins and hinge fittings for elevator balance panels, and between hinge halves and adjacent faying structure.

B. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make periodic inspections described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. White powdery or discolored deposits are evidences of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive contaminants between elevator nose skins and hinge fittings for elevator balance panels, and between hinge halves and adjacent faying surface to minimize the occurrence of corrosion

CAUTION: DO NOT APPLY CORROSION-INHIBITING COMPOUND TO THE ELEVATOR BALANCE PANEL SEALS OR BALANCE PANEL SEAL WIPING AREAS. THE CORROSION INHIBITOR MAY CAUSE SWELLING OR DETERIORATION OF THE SEALS.

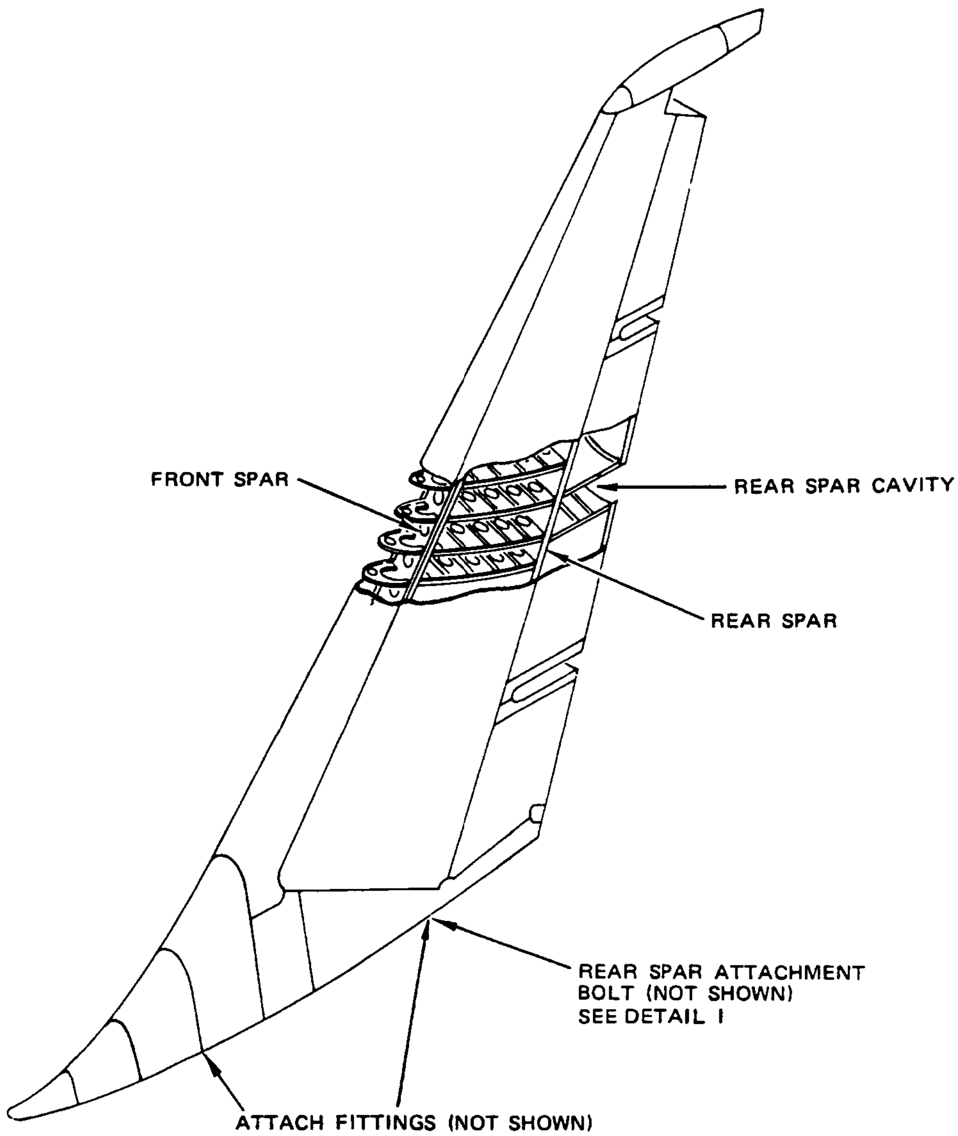
B. Restore damaged finish at the first available opportunity as described in Volume 1, 20-50-00 and 20-60-00. Meanwhile temporary corrosion protection may be obtained by the use of water displacing corrosion inhibiting compound.

C. Refer to Structural Repair Manual, for corrosion removal procedures.

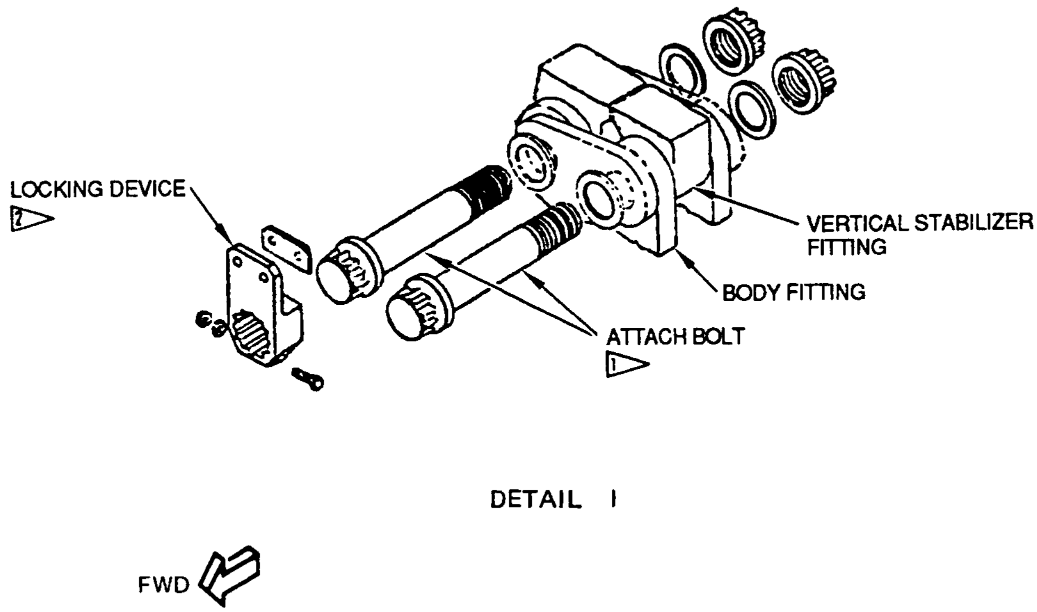
D. Improved Corrosion Protection

(1) At line number 667, hinge fittings and hinge halves installed are cadmium plated and coated with two coats of BMS 10-11, Type 1 primer.

(2) At line number 933, blind rivets are installed with BMS 5-95 sealant.



Vertical Stabilizer
Figure 1 (Sheet 1)



1 BOLTS OF H-11 OR PH13-8MO STEEL CAN GET STRESS-CORROSION CRACKS, REPLACE THESE BOLTS WITH BOLTS OF INCONEL 718 PER SB 55-1026 2

2 BECAUSE THE HEADS ARE SMALLER ON THE INCONEL 718 BOLTS, NEW LOCKING DEVICES THAT ENGAGE THE HEADS MUST BE USED.

Vertical Stabilizer
Figure 1 (Sheet 2)

1. General

   A. Corrosion can occur on the vertical stabilizer skin, on the rear spar and at attach fittings.

   B. Corrosion and broken attach bolts were found in the vertical stabilizer attach fitting. The attach bolts are made from H-11 or PH13-8MO steel alloy, which can get cracks caused by stress corrosion.

   C. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

   A. Make the regular inspections of Volume 1, 20-20-00 to stop or find the start of corrosion. Fasteners that are gone, or white powdery or other deposits are signs of corrosion.

   B. After you clean the suspected areas, do the inspection of Volume 1, 20-20-00 to make sure that protective finishes stay serviceable.

   C. If you find corrosion (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.

   D. For small amounts of corrosion, to decrease the downtime of the airplane, clean off the corrosion products. Apply a corrosion inhibiting compound into the affected area to stop the corrosion process. Refer to Volume 1, 20-60-00 for details on how to apply corrosion inhibiting compound. Repair the finish system when the maintenance schedule permits.

   E. Frequency of Application

      (1) Regular inspection is required in areas that can get corrosion and should agree with the schedule in the Maintenance Planning Document. Operators must know of reported problems and areas.

      (2) Regular application of BMS 3-23 compounds is necessary on areas identified and should agree with the schedule in the Maintenance Planning Document.

   F. Improved Corrosion Protection

      (1) At line number 318, corrosion protection improvements include the wet installation of nonaluminum fasteners using primer or sealant and an improved finish on the inspar skin using Alodine 1000, BMS 10-79 epoxy primer and BMS 10-60, Type II polyurethane enamel.

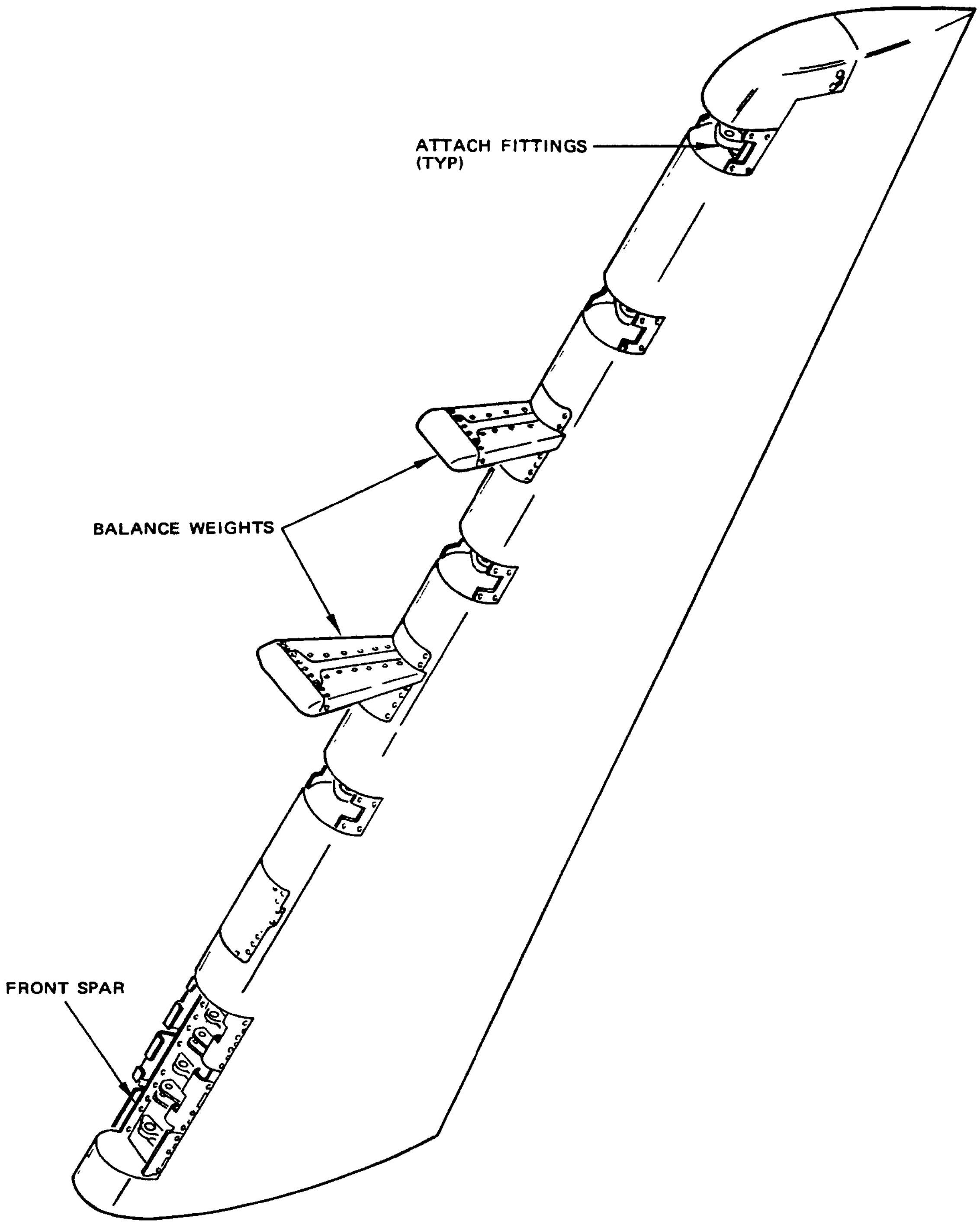
      (2) At line number 1107, on some 737-300 airplanes, a production change applied BMS 3-23 (LPS-3) in all body areas between closure ribs fin to body intersection and also the dorsal pin.

(3) SB 55-1003 gives an inspection procedure for the vertical stabilizer front spar fitting. This will help prevent a pre-stress condition in the stabilizer front spar fitting.

(4) The H-11 or PH13-8MO vertical stabilizer attach bolts can get cracks from stress corrosion. As a result, on airplane line numbers 993 and on, PRR 32779 changed the material for the attach bolts to Inconel 718 bolts. The 718 bolt does not get cracks from stress corrosion as easily. This change can be incorporated on earlier airplanes with SB 55-1026, but the new locking devices must be used because the Inconel 718 bolts have smaller heads that will not correctly engage the old locking devices.

(5) At line number 2051, PRR 34639-3 added sealant between permanently-attached external parts of the vertical stabilizer.

(6) At line number 2380, the corrosion inhibiting compound application includes the dual HF communications system parts installed in the vertical fin of some airplanes per MC 2311MP3193.



Rudder
Figure 1

1. General

A. Corrosion can occur on the rudder front spar and the attach fittings.

B. Moisture can collect between the trailing edge skin panel mating surfaces.

C. Corrosion can occur on fin front spar chord forward flange at fin Sta 82 and 97.

D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume I, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 55-40-37, Volume 1 for applicable method.

(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 an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

C. Application of Corrosion Inhibitors

(1) For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

D. Prevention Treatment

(1) Improved Corrosion Protection

(a) Beginning with line number 933, skin panel blind rivets have been installed with BMS 5-95 sealant.

(b) A preventive modification for moisture accumulation may be accomplished by incorporating applicable part of SB 55-1007.

(c) On airplanes P5501-P8499, corrosion faying surface seal was applied on mating surfaces between stiffeners, webs, chords, spars, gussets, straps, shims, doublers, ribs, skin and fillers within the vertical stabilizer per PRR 34639-3.

E. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

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CHAPTER

56

WINDOWS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Cabin Window Frames	Corrosion on the passenger cabin window frames	56-30-37 Fig. 1	

Specific Corrosion Problems - Windows
Figure 1

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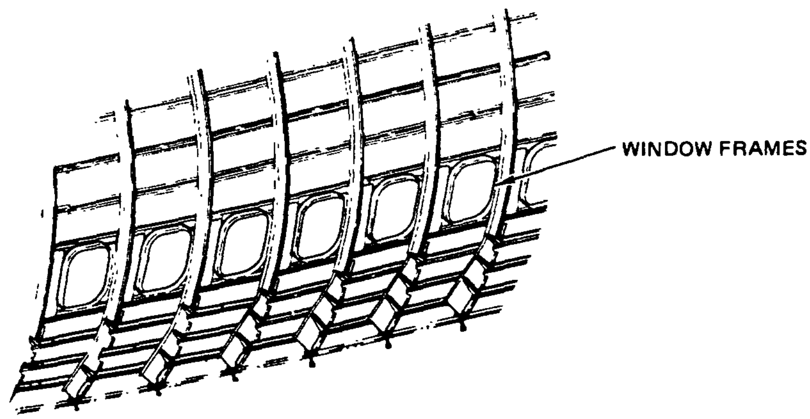

Passenger Cabin Window Frames
Figure 1

1. General

   A. Corrosion can occur on the passenger cabin window frames. To reduce the possibility of this corrosion, an improved finish system is now used.

   B. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

   A. Make periodic inspections of the window frames internally and externally for evidence of corrosion or deterioration of finish.

   B. Where minor corrosion is evident or the finish is broken, refer to Structural Repair Manual for details of corrosion removal.

   C. The improved finish system can be applied to the entire interior surfaces of passenger cabin windows and those in doors. The finish consists of one coat of BMS 10-79 primer followed by one coat of BMS 10-60, Type 2 white enamel. To gain access to the areas to be repainted, it is necessary to remove the decorative trim, the window reveal and the window assembly. It is not necessary to strip existing finish although any evidence of corrosion should be removed. Areas not to be repainted should be masked, but overspray on the inner skin surface, nut plates and sheet metal parts is permissible.

CHAPTER

57

WINGS

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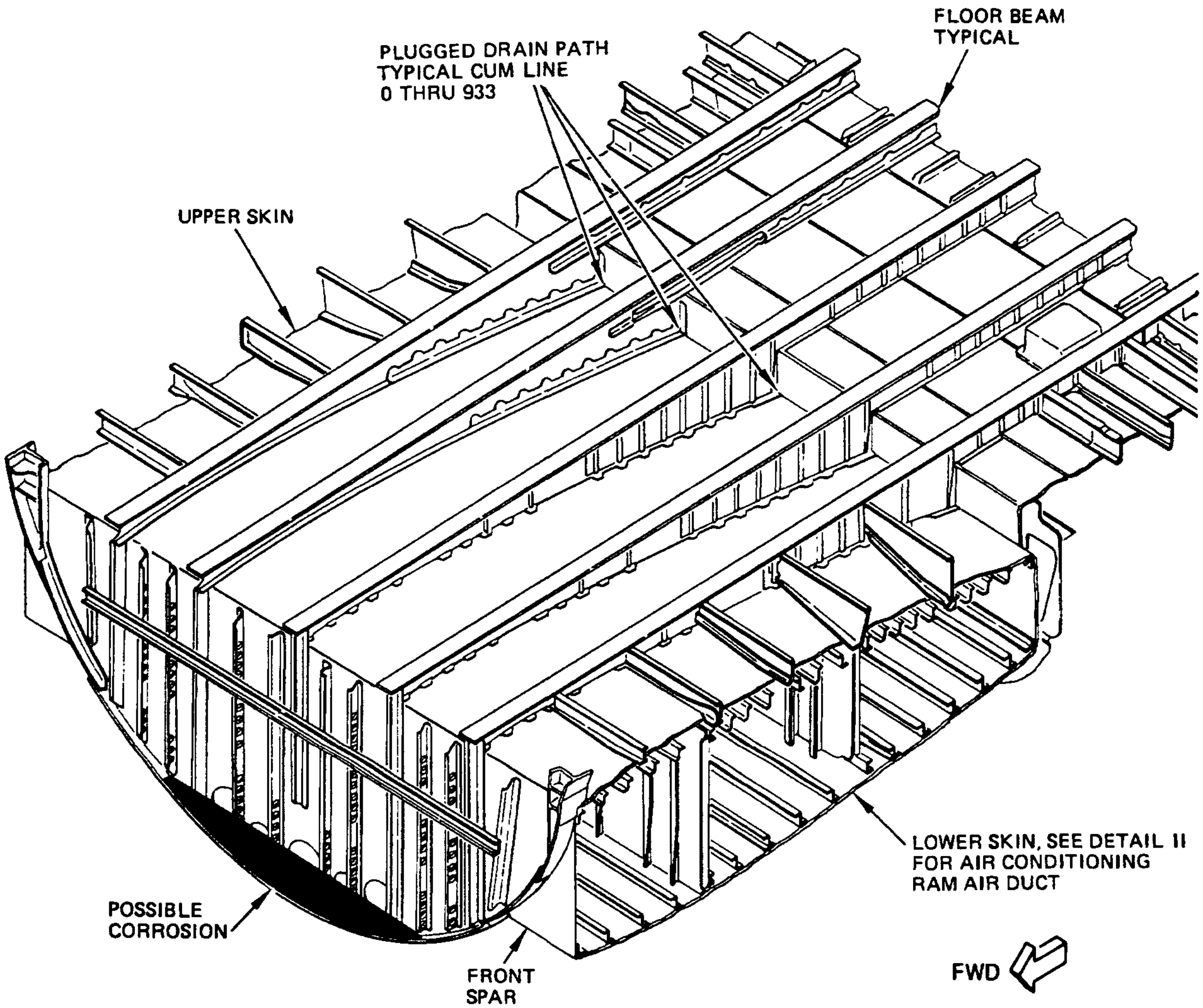
AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Wing Center Section	External surfaces of upper and lower skins	57-10-37 Fig. 1	
	Ram air duct	Fig. 1	SB 51-1005
Outer Wing Section	Front and rear spar chords	57-20-37 Fig. 1 thru 4	
	Internal structure Fuel tank and boost pump cutouts		
Wing Inspar Skins	Exterior surfaces of the upper and lower inspar skins	57-30-37 Fig. 1	
	-PT type bolts		
Main Landing Gear Trunnion Support Structure	Beam structures	57-40-37 Fig. 1	SB 57-1073
	H-11 bolts		SB 57-1086 SB 57-1170 SB 57-1171
	Swing Link		
	Stabilizer, attach fitting and bolts		
	Stabilizer link assembly		SB 57-1231
	Forward trunnion fitting		
Trailing	Flap support and actuation components	57-50-37 Fig. 1	SB 57-1082 SB 57-1084
	Flap tracks Flap track roller contact		
Edge Flaps	Main carriage spindle on outboard flaps	57-50-37 Fig. 1	
surfaces			
	Thrust bearing retaining bolts		

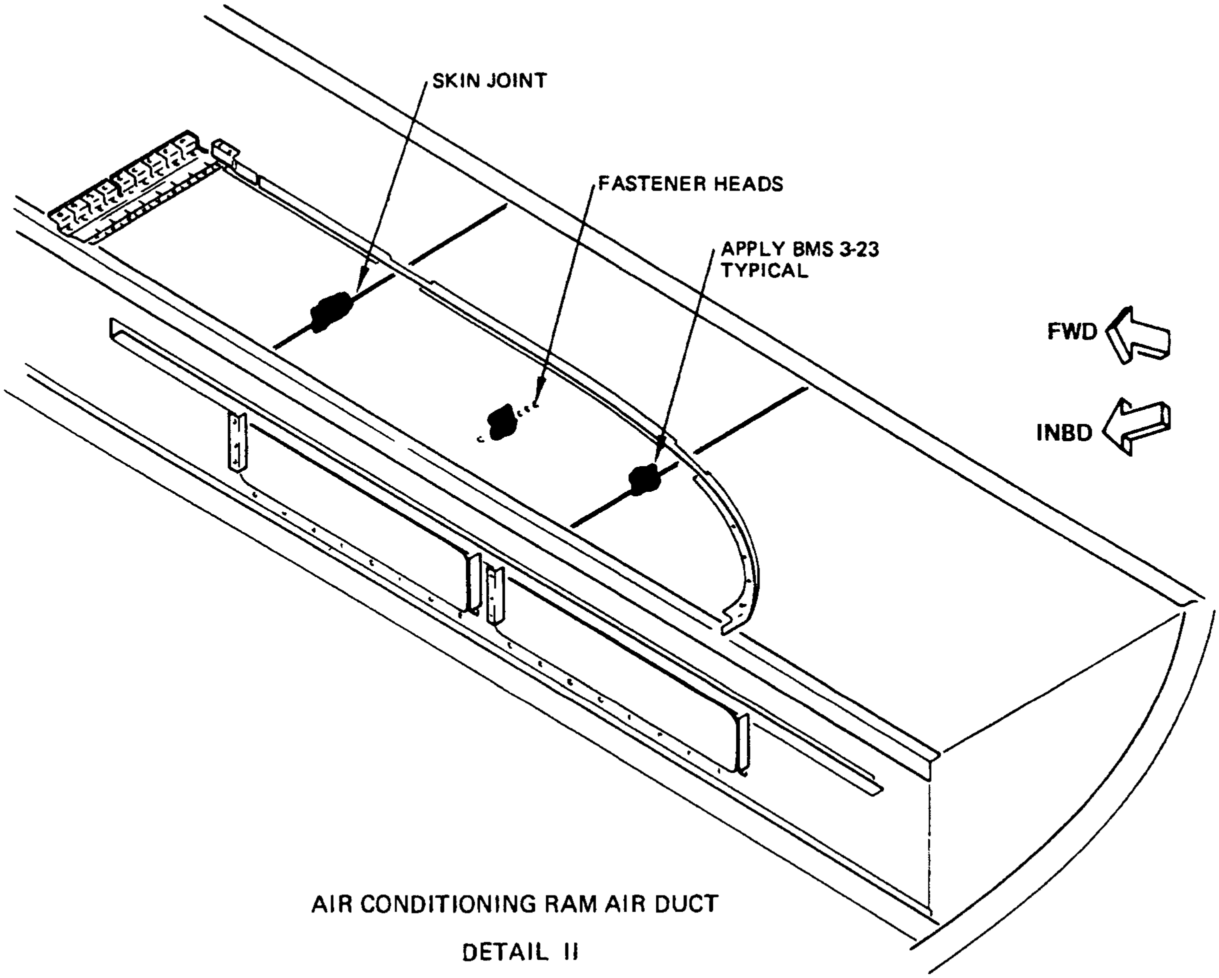
AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Flap drive ballscrew		
	Midflap rear spar at cutout for foref.lap track		
	At the backup fitting of right outbd midflap		
	Outbd trailing edge flap carriage retainer bolt		
	Midflap front spar lower chord		
	INBD and OUTBD AFT FLAPS SKIN and Honeycomb		
Wing Wheel Well	Exposed structures	57-70-37 Fig. 1	
Wing Leading Edge Section	Leading edge flap hinge support ribs	57-80-37 Fig. 1	
	Slat track roller support ribs		
	Slat actuator support fittings		SB 57-1085

Specific Corrosion Problems - Wings
Figure 1



DETAIL I

WING CENTER SECTION
Figure 1 (Sheet 1)



WING CENTER SECTION
Figure 1 (Sheet 2)

1. General

A. The center wing consists of the structural units and associated components and members. These include the skins, primary structure, fillets and fairing of the center wing, and attach fittings.

B. There have been instances of corrosion on the upper and lower external surfaces of the wing center section.

C. Corrosion has been reported on the lower 10 inches of the wing center section front spar web and stiffeners. The corrosion has resulted in replacement of repair of the stiffeners and web.

D. Sealant plugging drain path openings at the corner of floor beams at wing rear spar upper chord has been reported on airplanes line number 0 thru 933. For improved corrosion protection these openings should remain open.

E. The lower surface of the bottom skin of the wing center section forms one wall of the ram air duct and consists of machined aluminum skins.

(1) The skins are susceptible to corrosion due to moisture accumulation. Corrosion can readily start where protective finishes have deteriorated.

(2) Corrosion in the bottom surface of the center wing may cause loss of cross-sectional area of the skin which can result in a reduction in the load carrying capability of this primary structure and result in fuel leakage from airplanes equipped with integral center wing tanks.

F. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact.

C. Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener leads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Prevention Treatment

(1) At first opportunity consistent with the scheduled maintenance activity, corrosion prevention treatment should be accomplished in the center wing section.

(2) On airplanes having a center section bladder tank, spray BMS 3-23 on the upper and lower external surfaces of the structure. Pay particular attention to fastener holes, joints and faying surfaces.

(3) On airplanes with an integral center section tank, apply BMS 3-23 to the floor beam upper chords, webs, and lower flanges. The upper skin is coated with an epoxy fuel barrier and does not require an additional application of BMS 3-23.

(4) When a major overhaul is required, touchup the areas of missing paint on the upper surface. On airplanes with an integral center section fuel tank, ensure that the BMS 5-81, type 1, fuel barrier coating is intact. Touchup any damaged areas. Refinish the lower external surface with BMS 10-60, type II, except in the area of the ram air duct.

(a) For areas previously finished with BMS 10-11, type I primer, clean and refinish.

(b) Apply BMS 10-70 primer over BMS 10-11, type I primer.

(c) For base surfaces, clean and apply Alodine or Iridite, refer to Volume 1, 20-50-00.

(5) The preferred treatment for broken finishes in the ram air duct is to replace finish with BMS 10-79 primer and two coats of Aeroflex paint. Corogard may be used as an optional finish. It is chemically, but not cosmetically, compatible with Aeroflex.

Airplanes in service prior to line number 292 do not have a corrosion resistant paint system such as Corogard or Aeroflex in the ram air duct. Incorporation of SB 51-1005 is recommended. Since in some cases, it is impractical to do this between overhaul cycles, the following treatment is recommended:

(a) For corrosion prevention, apply BMS 3-23 to fastener heads or edges of skin panels where the paint system has been cracked or flaked. Wipe off excess.

(b) In cases where cleaning has been accomplished with steam and high pressure water and detergent, the BMS 3-23 coating should be reapplied in areas noted in par.(2).

(c) Repeat the application of BMS 3-23 as necessary, based on service experience. In the event operator experience precludes the establishment of application intervals, it is suggested that 3 months be established as the initial reinspection and compound reapplication, if required. The operator may subsequently adjust this interval to reflect his service experience.

F. Improved Corrosion Protection

(1) A production change for improved corrosion protection was incorporated in the area of the ram air duct at line number 534. This change consisted of an additional top coat of Corogard on the wing center section lower surfaces in the area of the ram air duct.

However, on airplane line number 1408 and on, the BMS 10-79, Type III primer and Aeroflex G12E25 have been used, to replace the Corogard, as standard primer and paint for exterior surfaces of the skin.

(2) On airplane line numbers 1456 and on, PRR 33004-42 changed the basic finish of the wing center section exterior surface in the area of the air conditioning ducts from Corogard to spray sealant and gray enamel.

(3) On airplane line numbers 2728, inspar material will be 7055-T7751 plate, which will increase corrosion resistance. This was done by PRR 35261.

G. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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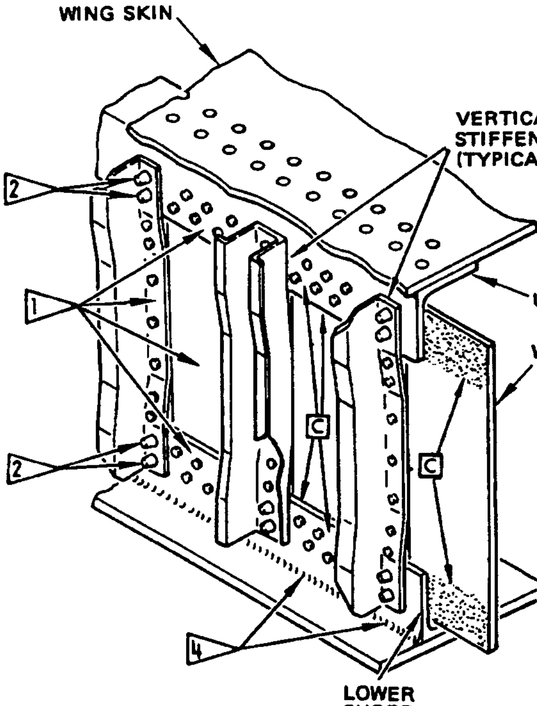
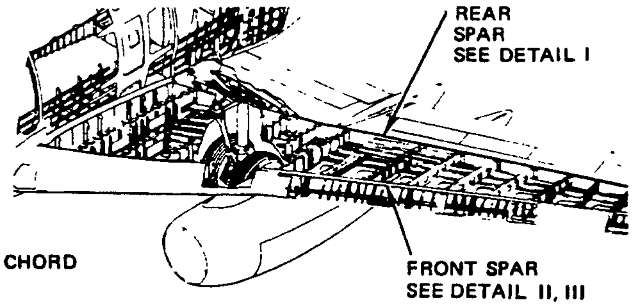
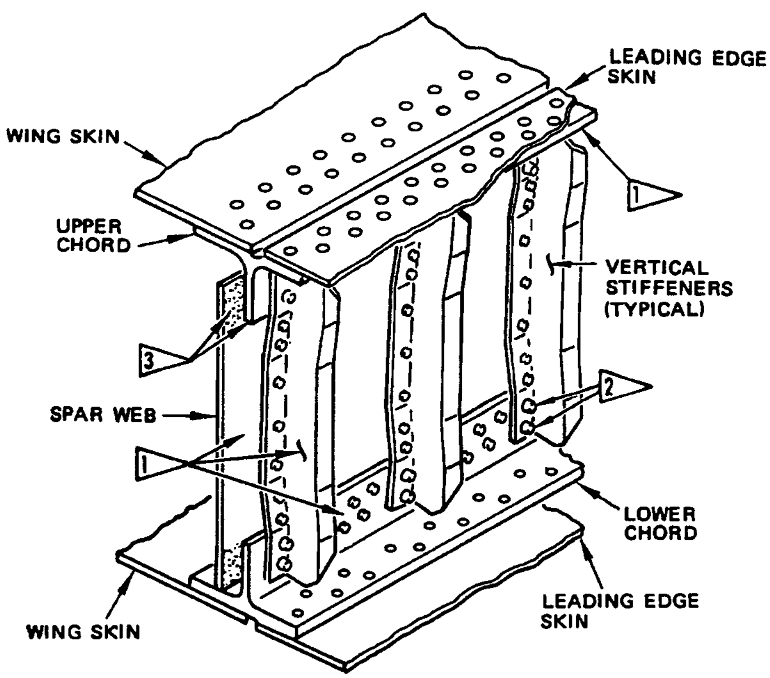


DETAIL I



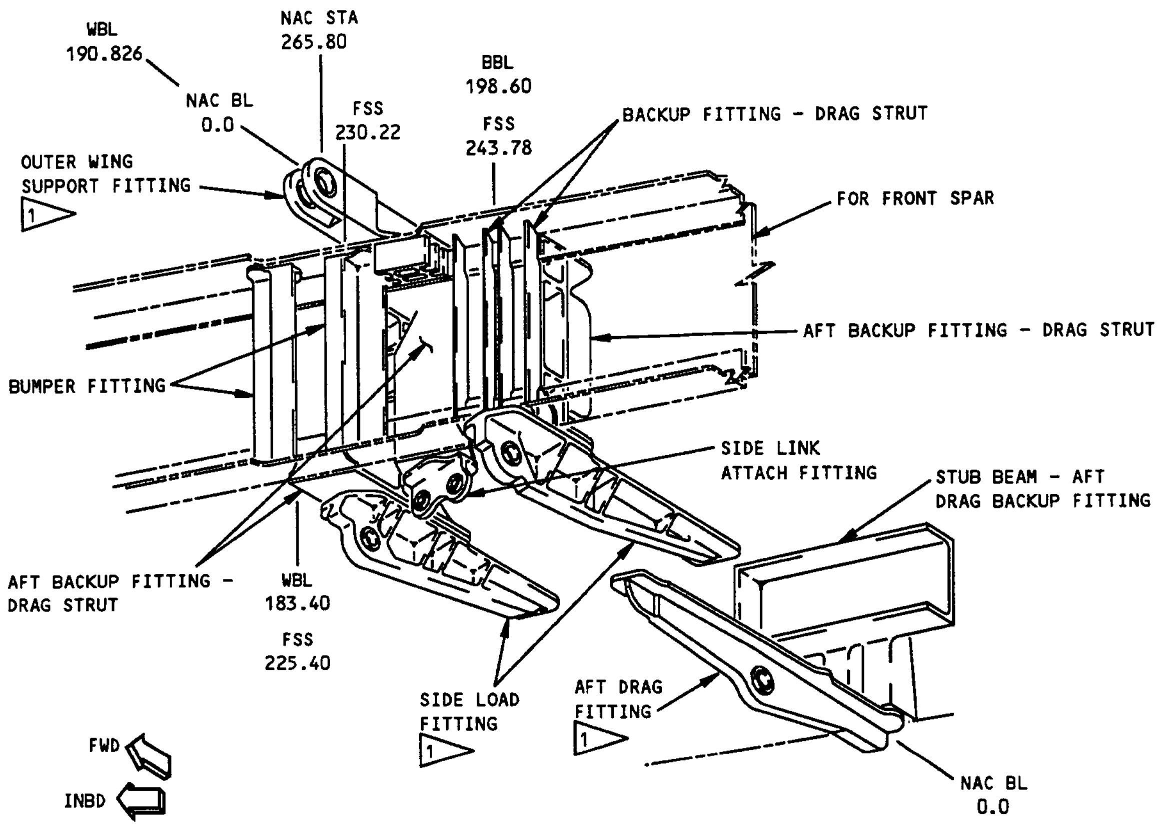
NOTES

1. APPLY CORROSION INHIBITOR ON ALL EXPOSED STRUCTURE
2. FILLET SEAL OF FASTENER HEADS COMMON TO SPAR CHORD AND WEB ADDED IN PRODUCTION AT AIRPLANE CUM LINE NUMBER 231.
3. FILLET SEAL ALONG TOE OF UPPER AND LOWER CHORDS REPLACED WITH CONTINUOUS FAY SEAL WEN TO CHORD AND FAY SURFACE SEAL OF STIFFENER ENDS TO SPAR CHORD AT AIRPLANE CUM LINE NUMBER 302
4. CONTINUOUS FILLET SEAL AT HEEL OF UPPER AND LOWER CHORD ADDED IN PRODUCTION AT AIRPLANE CUM LINE NUMBER 302



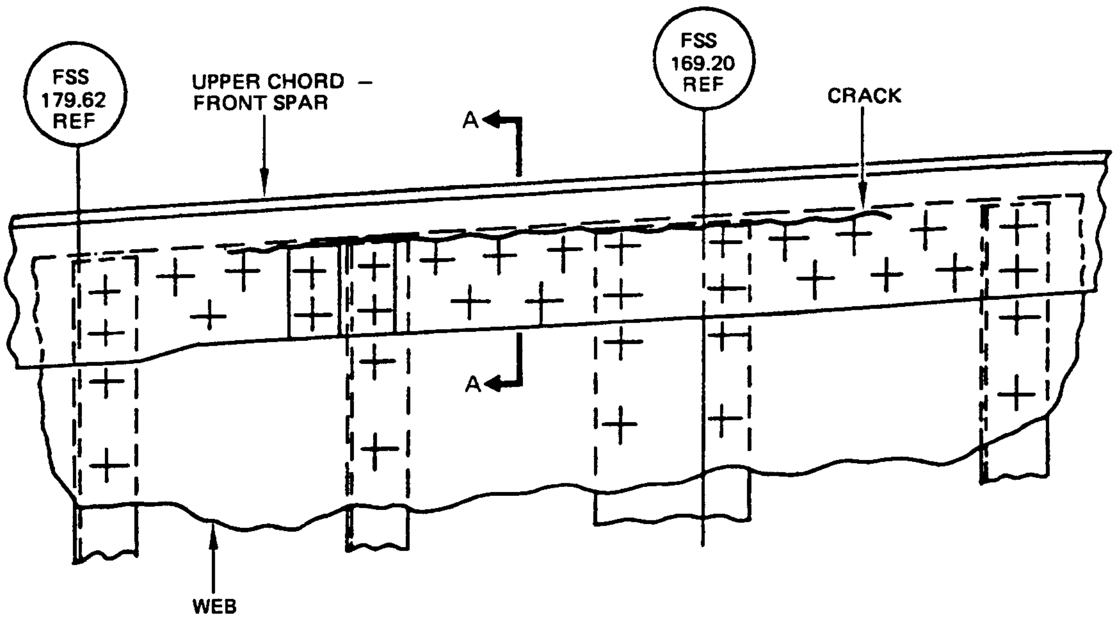
DETAIL II

Outer Wing Front And Rear Spars
Figure 1 (Sheet 1)

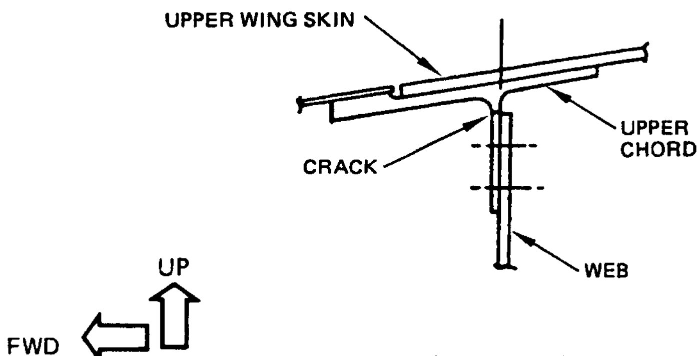


LEFT SIDE SHOWN
RIGHT SIDE SIMILAR
OUTER WING NACELLE SUPPORT FITTING
(CFM-56)
DETAIL III

Outer Wing Front And Rear Spars
Figure 1 (Sheet 2)

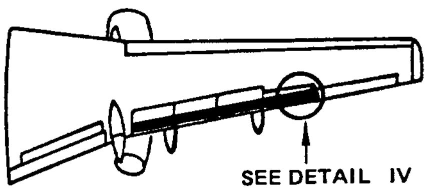


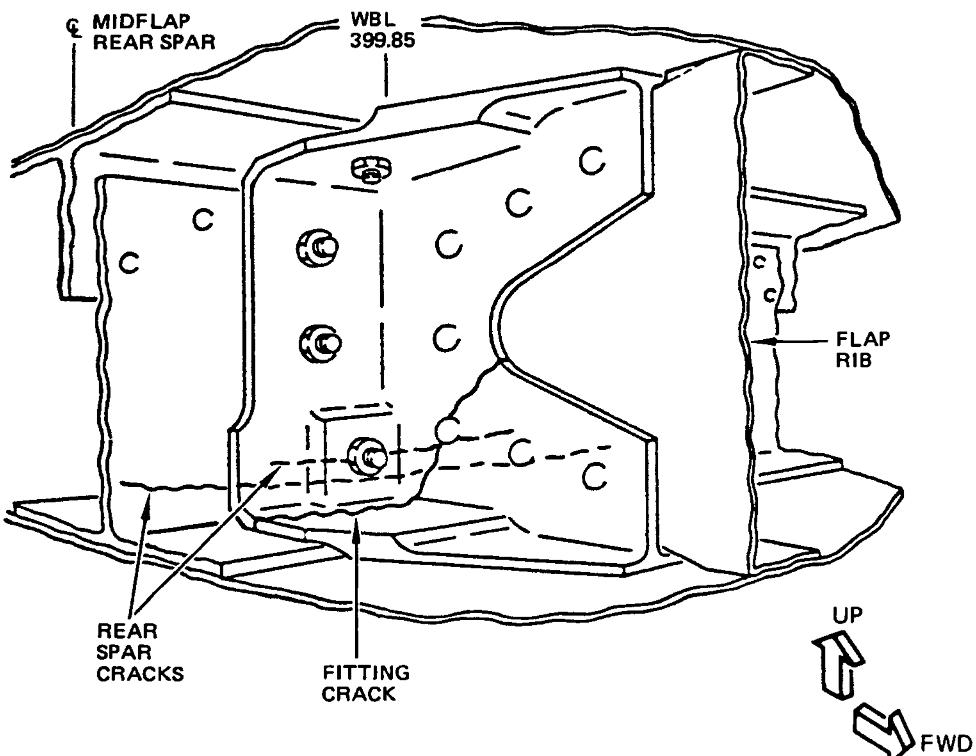
FRONT SPAR -- FRONT VIEW



SECTION A-A

Outer Wing Front And Rear Spars
Figure 1 (Sheet 3)

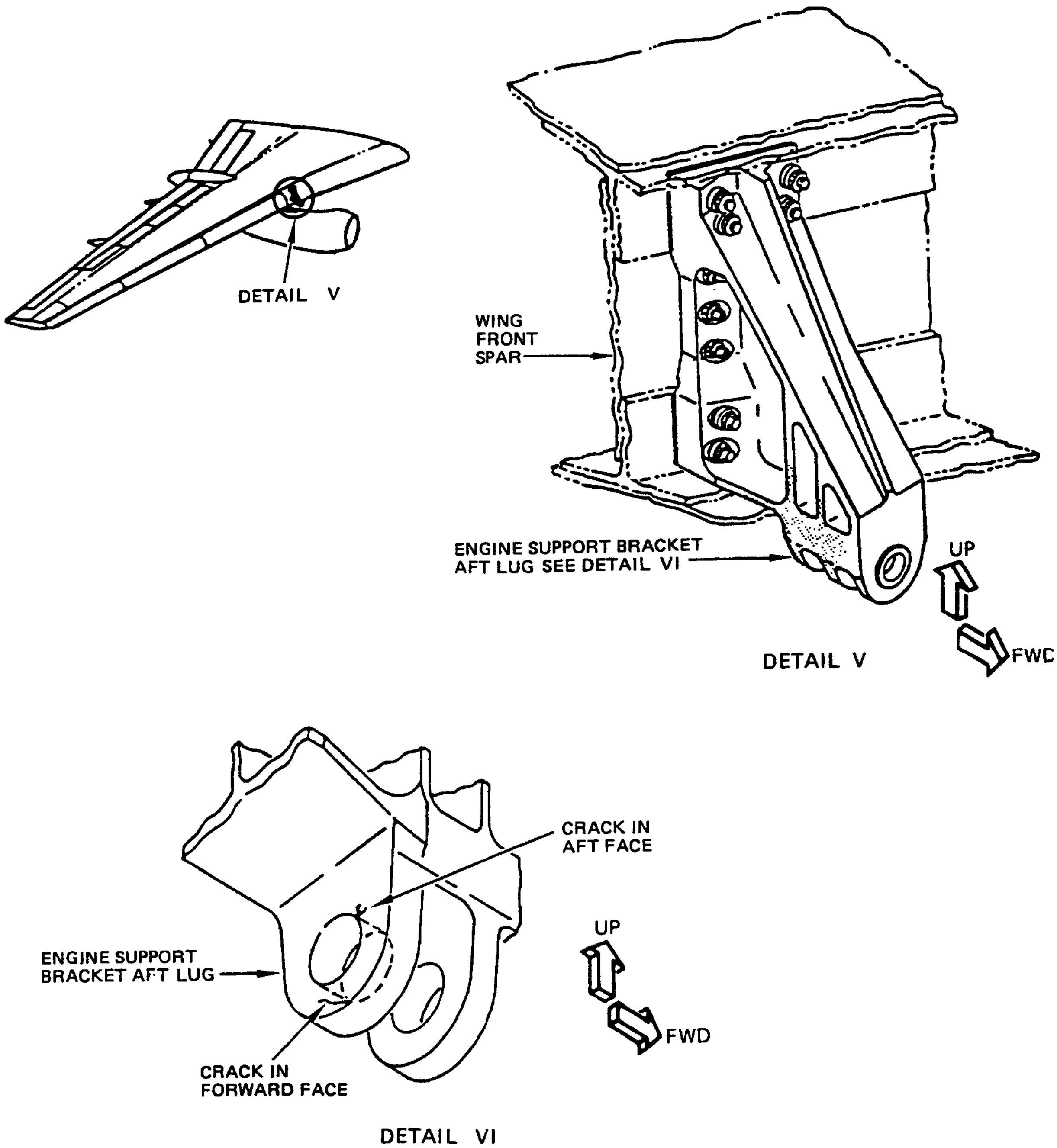




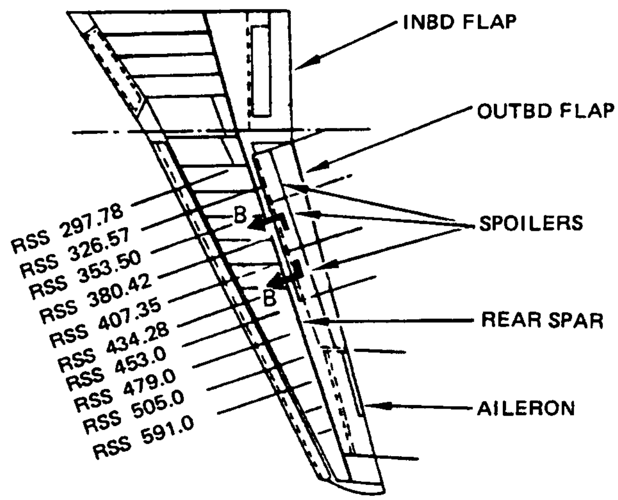
VIEW LOOKING AFT AND INBOARD AT
AFT FLAP TRACK BACKUP FITTING

DETAIL IV

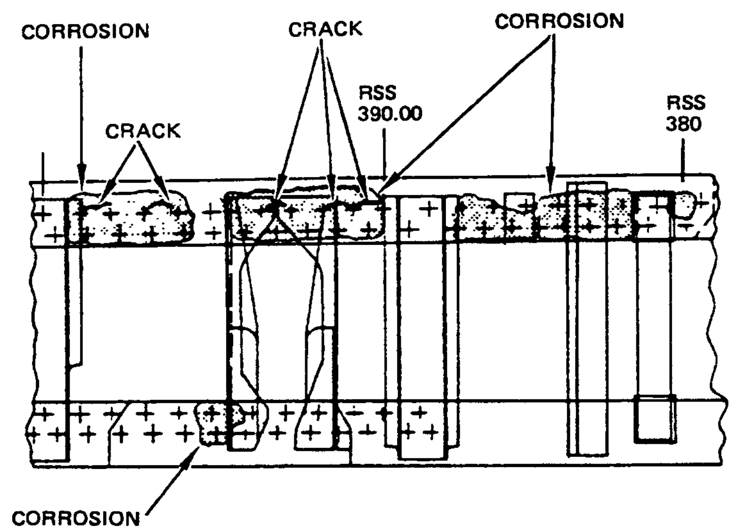
Outer Wing Front And Rear Spars
Figure 1 (Sheet 4)



Outer Wing Front And Rear Spars
Figure 1 (Sheet 5)



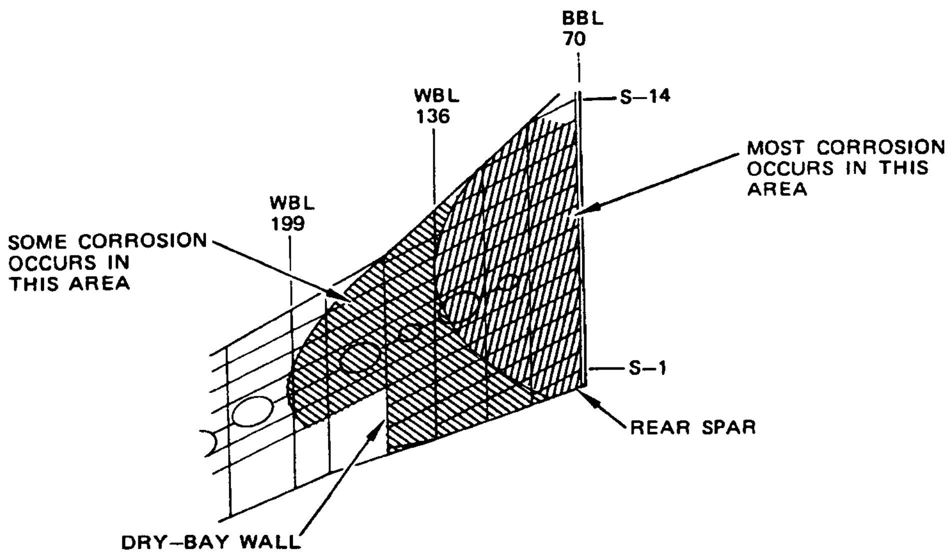
PLAN VIEW
LH SHOWN (RH OPP)



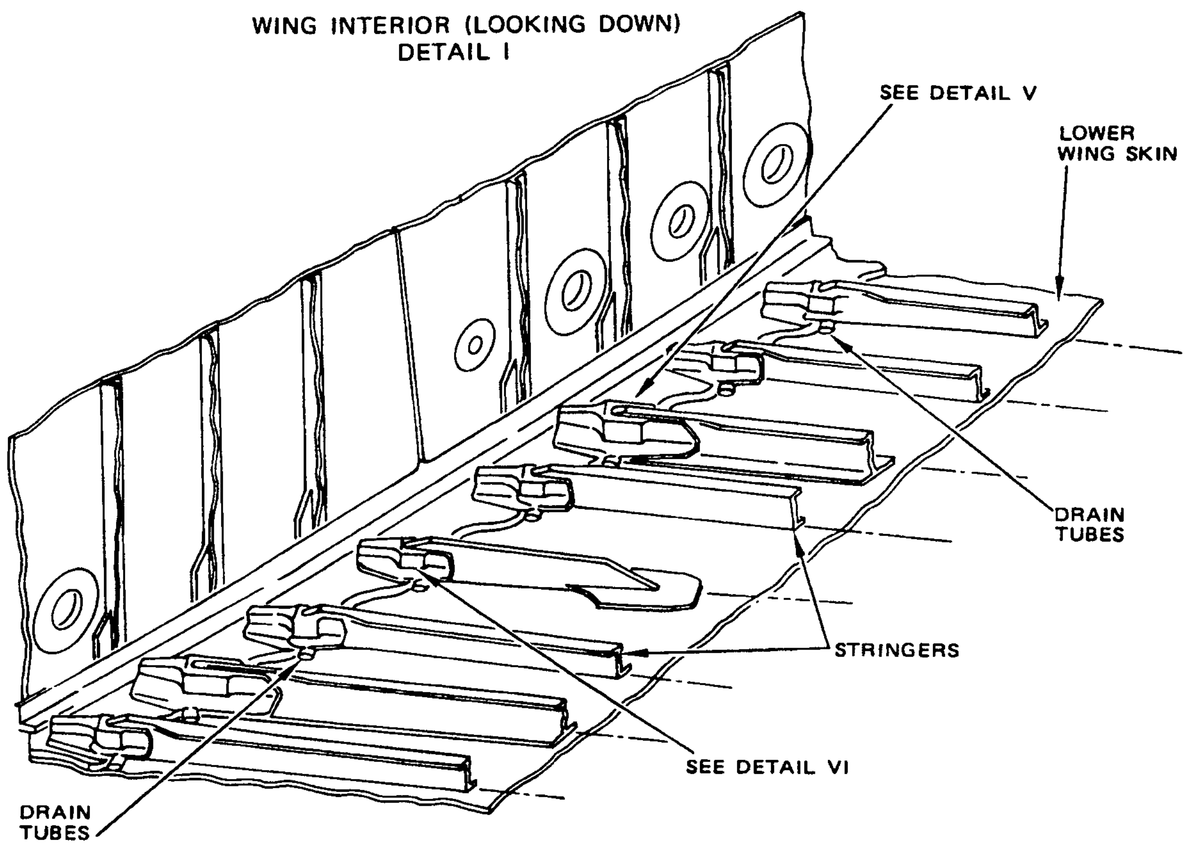
SECTION B-B

TYPICAL CORROSION DAMAGE AREA

Outer Wing Front And Rear Spars
Figure 1 (Sheet 6)



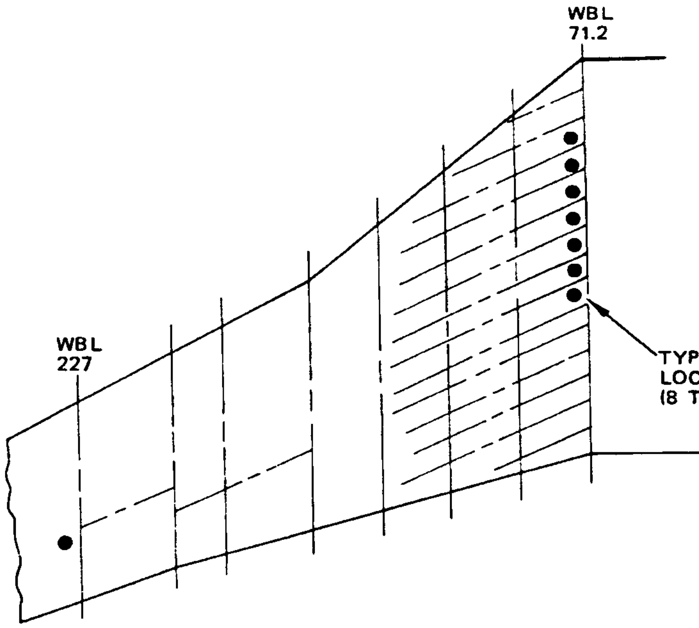
WING INTERIOR (LOOKING DOWN)
DETAIL I



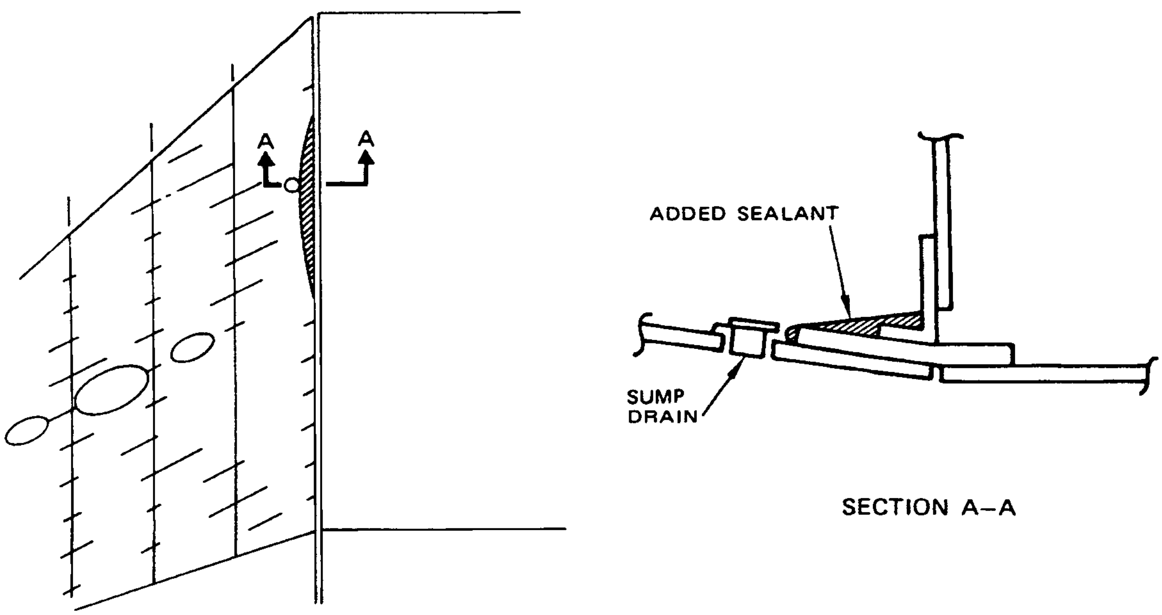
WING ROOT INTERIOR

DETAIL II

Outer Wing Internal Structure
Figure 2 (Sheet 1)



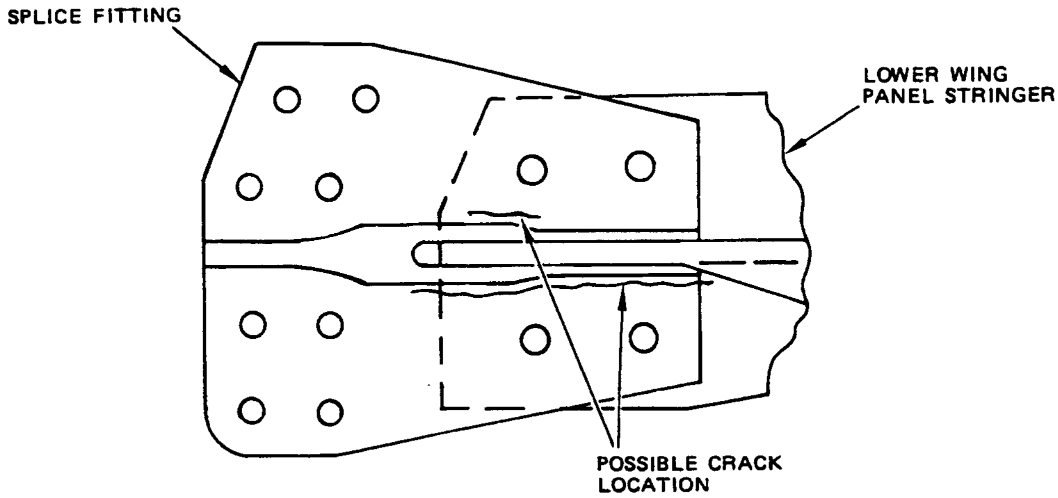
TYPICAL STRONTIUM CHROMATE
CONTAINER INSTALLATION
DETAIL III



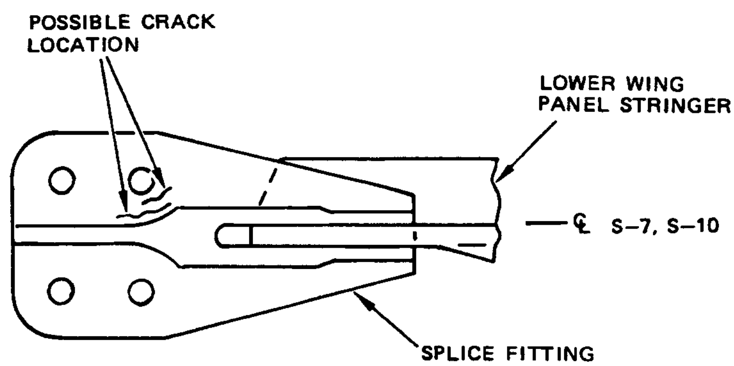
SECTION A–A

ADDED SEALANT INSTALLATION
DETAIL IV

Outer Wing Internal Structure
Figure 2 (Sheet 2)

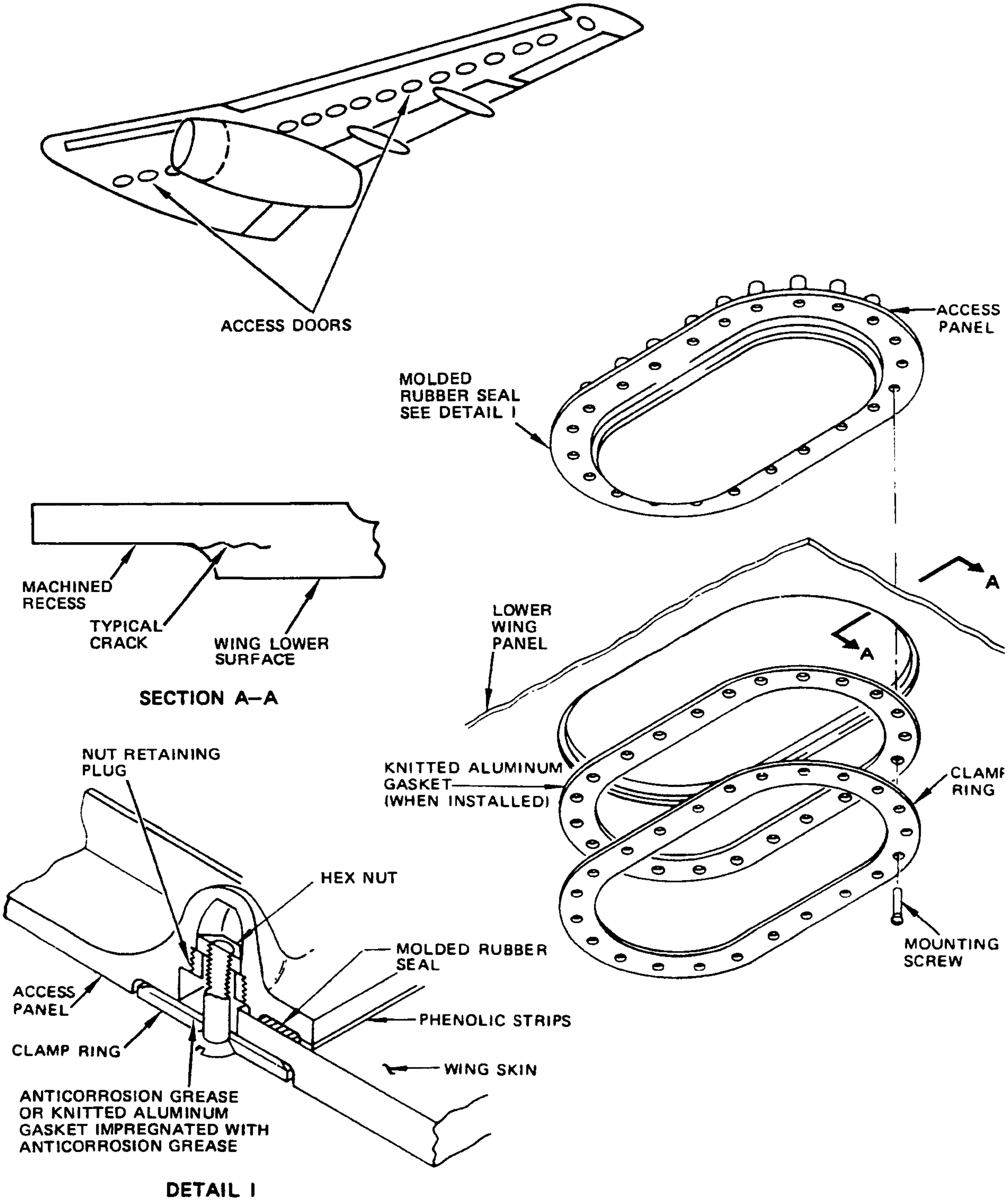


S-5 FITTINGS
DETAIL V



S-7, S-10 FITTING
DETAIL VI

Outer Wing Internal Structure
Figure 2 (Sheet 3)



Outer Wing Fuel Tank and Boost Pump Access Cutouts
Figure 3

1. General

A. The outer wing consists of the structural units and associated components and members which support the airplane in flight. These include spars, skins, ribs, stringers, etc., and integral fuel tank structures.

B. The front and rear spars on the left and right wing boxes are primary structural components of the main wing frame. They extend from the wing root rib to the wingtip. The spars consist of vertical sheet metal webs tapering down in depth towards the wingtips and provided with chords along the upper and lower edges. Vertical stiffeners are attached to the vertical faces of the spare (Fig. 1).

(1) The deployment of flight control surfaces exposes the spars to the ground and near ground air contaminants, thrust reverser soot, runway dirt and debris and inclement weather elements all of which contribute to corrosion.

(2) The spar chords are found to be particularly susceptible to corrosion originating most likely at the fasteners common to the chord and web.

(3) Stress corrosion cracks, have been reported on the front and rear spar upper chords (Fig. 1, Section A-A). On airplanes through line number 310 inspection requirements and repair instructions for cracked chords are described in SB 57-1067 and SB 57-1081. Production changes at cum line number 311 include material change of the upper and lower chords of the rear spar and the upper chord of the front spar from 7178-T6 to 7075-T73. There is no change to the front spar lower chord.

NOTE: The preventive modification in SB 57-1081 R3 was changed for SB 57-1081 R4 due to recurrence of stress corrosion cracking in airplanes modified by SB 57-1081 R3. This has been attributed to improper shimming and fitting of the angles installed for preventive modification. Airplanes modified by SB 57-1081 prior to Revision 4 must be reinspected per Revision 4 (or later) and may incorporate preventive modifications of Revision 4 (or later) to improve corrosion protection. An Airworthiness Directive has been issued on this subject. Revision 3 of SB 737-57-1067 came out to add more recommended repair on wing spar chord for aging 737 airplanes. This service bulletin supersedes SB 57-1046 and SB 57-1062.

(4) Stress corrosion cracks have been reported on the Krueger flap actuator support fittings mounted on the front spars. Inspection procedures for checks in the fittings are outlined in SB 57-1129 for airplanes through line number 813. Material changes were made to steel for airplanes line number 814 and on.

(5) Stress corrosion cracks have been reported in the right outboard trailing edge midflap at WBL 399.85. The cracks were in the flap rear spar and were 1.15 and 3.38 inches long, with the shorter crack through the two flap track attach holes (Fig. 1, Detail IV).

(6) Stress corrosion cracks have been reported in the aft lug of the engine mount outboard support bracket which attaches to the wing front spar. Corrosion was also found between the bushing and the lug bore. The fitting is made of 7079-T6 material and has been replaced with a fitting of 7075-T73 material (Fig. 1, Detail IV).

(7) Exfoliation corrosion has been reported on the back side of the front spar upper chord vertical flange at the interface with the spar web surface at approximately FSS 430, and between FSS 150 and 212.

(8) Corrosion has been reported between RSS 250 and 499 upper rear spar chords (Fig. 1, Section B-B).

(9) Corrosion has been reported around fastener heads in the front and rear spar cavities on airplanes operating in warm moist climatic conditions. Affected fasteners were located in the upper and lower spar chords and the fasteners were made of aluminum.

(10) Stress corrosion cracks have been found in the lower wing panel stringer-to-rib splice fittings (WBL 70.85) at left wing stringers 5 and 7, and right stringers 5 and 10. These cracks were located in the fillet between the vertical and horizontal flanges of the fittings (Fig. 2, Detail V, VI).

C. Some operators have experienced corrosion on the interior surfaces of the wing. This corrosion is usually caused by microbial growth which requires the presence of water in the tank (Fig. 2).

D. The wing lower skin in the area of the reserve and main tank access door cutouts is susceptible to inter granular corrosion. This is attributed to exposed aluminum end grain combined with fretting between the access panel and the wing lower skin. Reports indicate that corrosion occurs on the wing lower skin faying surface adjacent to the access door clamp ring. Cracks have been reported originating in the machined radius of the wing skin extending into the skin in a plane parallel to the skin surface (Fig. 3).

E. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact.

C. Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished along the front and rear spars, wing internal structure, and the fuel tank and boost pump access cutout.

(2) Replace damaged or broken finishes if at all possible. Refer to Volume 1, 20-50-00 and 20-60-00 for protective finish systems.

NOTE: If areas around fasteners are to be refinished, inspect around fasteners to ensure that corrosion is not present and apply fillet seal around fasteners prior to paint finishing.

(3) Front Spar and Rear Spar

(a) Apply corrosion inhibiting compound to the forward surface areas of the front spar with particular attention to spar chord and web joints and faying surfaces of stiffeners, brackets, etc. The use of spray equipment with nozzle directed into faying surfaces is recommended.

(b) Apply corrosion inhibiting compound to the aft surface areas of the rear spar with particular attention to the spar chord and web joints, faying surfaces of stiffeners, brackets, etc., and around high strength boltheads.

(c) Regrease all grease fittings in treatment area.

(d) Experience has shown that when advanced corrosion is present the expansion of the corroded material will cause, in most cases, a localized lifting of the free end of the chord flange. This lifting can be detected by checking the chord surface for flatness using a straightedge or be felt by scanning with fingers. In some cases, instead of chord flange lifting, the spar web may be depressed. Local depression of the web generally occurs where the spar chord flange is stiffer than the web. These web depressions can be detected visually.

(e) SB 57-1046 provides procedures on corrosion cleanup, sealing around the fastener heads, and the addition of a coat of enamel finish in the spar cavities. Compliance is optional, based on operator's experience.

(4) Wing Internal Structure

(a) Corrosion prevention includes drainage of water, controlling microbial growth and making the periodic inspection described in Volume 1, 20-20-00.

(b) Preventive maintenance for microbial growth is described in Volume 1, 20-62-00.

(c) Whenever the wing is entered, limber holes and drain tubes should be inspected to ensure drainage of water (Detail II).

(d) Several options for the removal of water or prevention of corrosion are:

1) Installation of a water scavenge system.

2) Additional sealant (Detail IV) to fill areas where water accumulates.

3) Strontium chromate canisters to inhibit corrosion (Detail III).

(e) Refer to Maintenance Manual Chapter 28 for details.

(f) Zinc-rich primer has been used successfully by some operators for prevention of corrosion (Ref Volume 1, 20-60-00).

(g) Where extensive corrosion exists on the wing inspar skin refer to Structural Repair Manual for details.

(h) Restore integral fuel tank finish per Volume 1, 20-60-00.

(5) Fuel Tank and Boost Pump Cutouts

(a) Inspection of the mating surfaces of the access door clamp ring and wing skin should be made at regularly scheduled maintenance periods for evidence of corrosion.

(b) If there is no corrosion, the access clamp rings should be installed using either anticorrosion grease (Aero Shell No. 14), phenolic rub strips or knitted aluminum gaskets impregnated with anticorrosion grease for corrosion protection. Apply 0.010 - 0.015 inches of Aero Shell No. 14 grease to wing skin faying surface prior to installing door ring and gasket (Ref 28-11-11 of the Maintenance Manual).

(c) If corrosion is evident, refer to Structural Repair Manual for corrosion removal.

F. Improved Corrosion Protection

(1) Front Spar and Rear Spar

(a) In addition the fillet seals along the toes of the spar chords were replaced with a continuous fay seal at surface common to spar chords and web, a fay seal at surface common to stiffeners and spar chords, and a continuous fillet seal at the heel of the upper and lower chords at airplane line number 302.

(b) On airplanes line number 649 and on, the forward face of the front spar from root to WBL 546 and the aft face of the rear spar from root to WBL 415 have been coated with a water-displacing corrosion-inhibiting compound.

(c) For improved corrosion protection of the front and rear spar chord-to-web and chord-to-skin faying surfaces, fillet seals may be added. Service Bulletin 57-1062 provides instructions for the application of fillet seals along the spar chords in the affected areas and application of corrosion preventive compound in the spar cavities and dry bay rear spar area.

(d) Additional corrosion protection was incorporated on airplanes PP351-PP399 per MCP5121-001. BMS 3-23 or LPS-3 was applied to the exterior surface of the following engine nacelle parts: Side load fittings, drag fittings, side link fittings and overwing fittings (Fig. 1, Sheet 2).

(e) For airplanes thru cum line number 310 refer to SB 57-1067 and SB 57-1081 for inspection requirements and preventive modifications to the front spar upper and lower chords.

(f) Incorporation of the preventive modification of SB 57-1081 R4 (or later) will reduce the possibility of stress corrosion cracking on the front spar upper chord.

(g) On airplane line number 1610 and on, PRR 34270 changed the primer used for the exterior surfaces from BMS 10-11 to BMS 10-79.

(h) On airplane line number 1820 and on, PRR 34639-1 added corrosion prevention fay surface sealant between mating structures and the exterior parts of the wing.

G. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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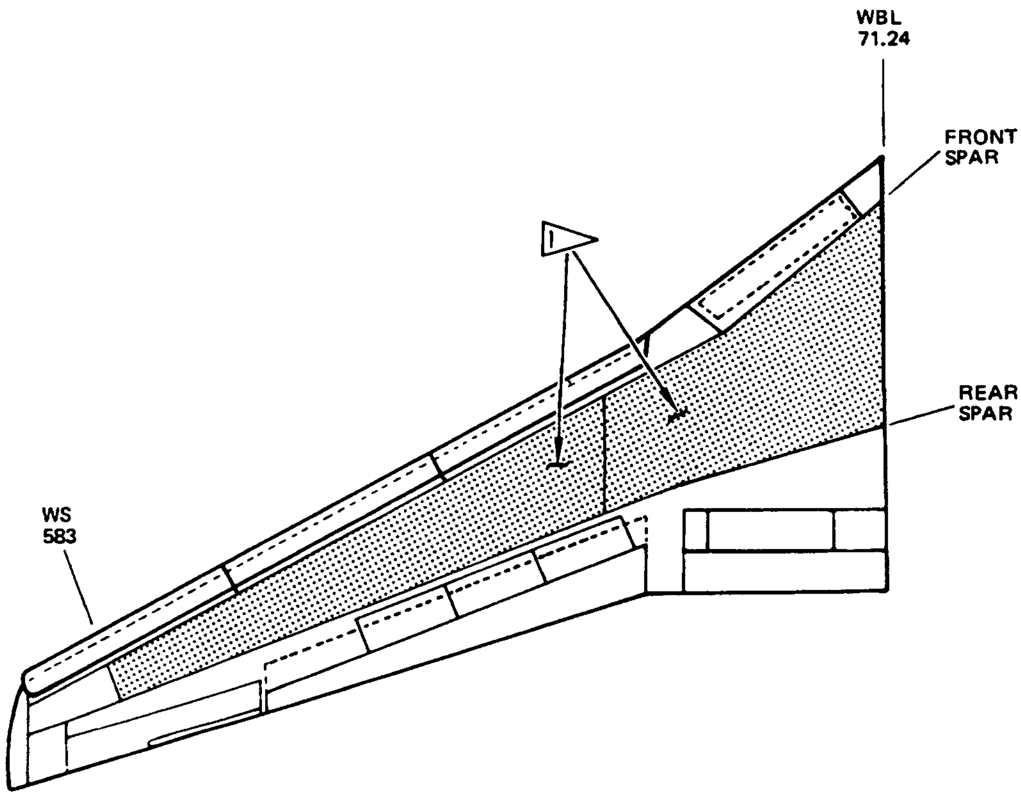

PLAN VIEW

1 APPLY BMS 10–79 TYPE III PRIMER AND AEROFLEX G12E25 (AIRPLANE LINE NOS. 1408 AND ON).

Wing Inspar Skins
Figure 1

1. General

A. The exterior surfaces of the upper and lower inspar skins of the wing have been found to be susceptible to corrosion at fastener locations. The small gap between the countersunk skin and the head of the flush fastener leaves an unsupported area for the paint system leading to cracking of the paint system around the fastener head and an opening for moisture and contaminants to enter.

B. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. After you clean the areas, make the inspections of Volume 1, 20-20-00 to make sure that protective finishes stay serviceable.

C. Where corrosion exists (noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges), refer to Fig. 3, Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Prevention Treatment

(1) At earliest opportunity consistent with the maintenance activity, corrosion prevention treatment should be accomplished in the wing inspar skin.

(2) For airplanes before line number 1408, SL 20-13 and 51-22 tell you to use BMS 10-79, Type III primer and Aeroflex G12E25 as an alternative to the original primer and Corogard when the corrosion protection in the upper inspar skin requires repair or replacement. Corogard is chemically, but not cosmetically, compatible with Aeroflex.

F. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

G. Improved Corrosion Protection

(1) The upper skin on the earlier airplanes were painted with BMS 10-11 or BMS 10-20 primer and BMS 10-60 polyurethane enamel. On most airplanes starting with line number 240, the enamel was replaced with Corogard for corrosion protection. A few operators elected to use a BMS 10-79 primer overcoated with BMS 10-60 polyurethane enamel.

(2) At line number 1408, BMS 10-79, Type III primer and Aeroflex G12E25 replaced the Corogard as standard primer and paint for exterior surfaces of the inspar skin. This can be incorporated on earlier airplanes with SL 30-13 and 51-22.

(3) At line number 309, the upper and lower wing to body splice plates were primed and a coat of Corogard applied to all fasteners sealed. But now Corogard is replaced by the Aeroflex paint system. Corogard can be used as an optional topcoat.

(4) On the lower skin, the primer coat was changed at line number 560 to BMS 5-95, Type F sealant for better bond of the BMS 10-60 polyurethane enamel.

(5) On the lower skin, -PT type bolts were installed in countersunk holes which were finished with BMS 10-11, Type 1 primer. At line number 605, these -PT bolts are installed with BMS 5-95 sealant.

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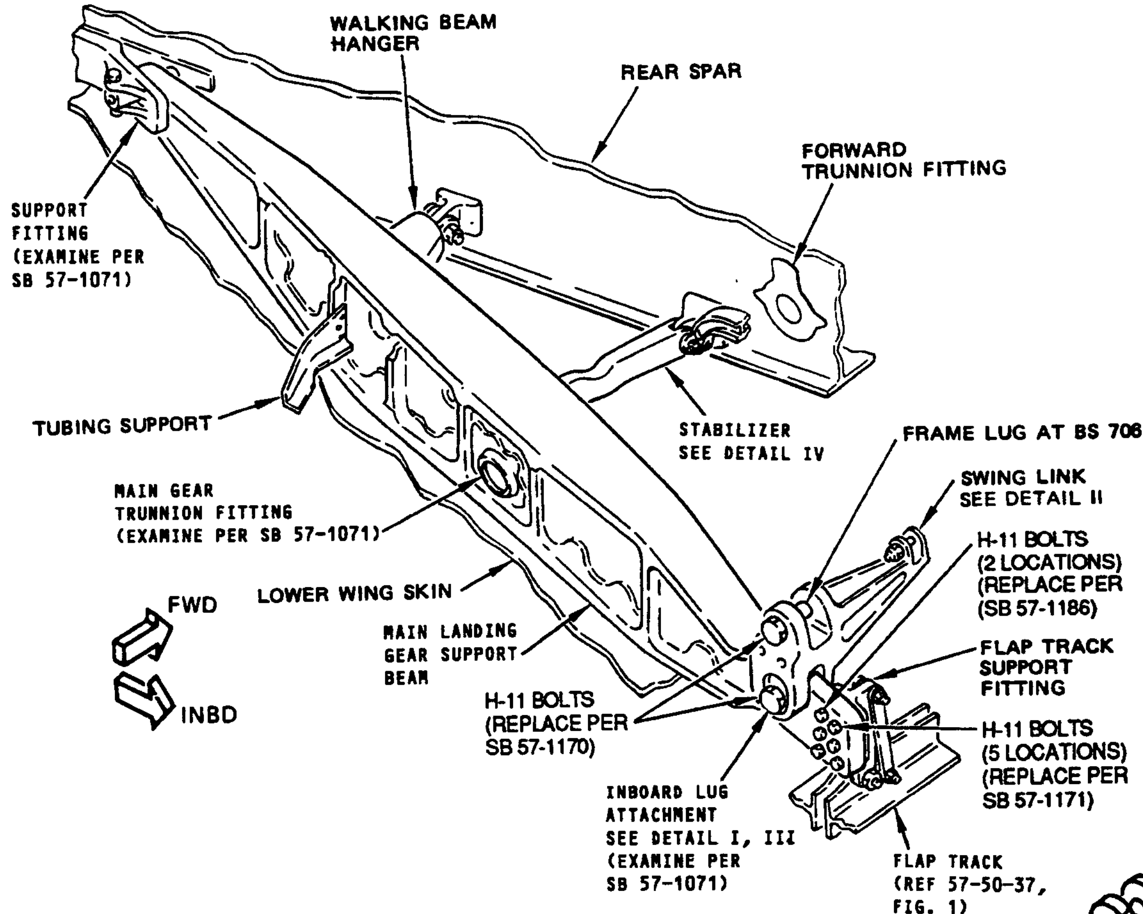
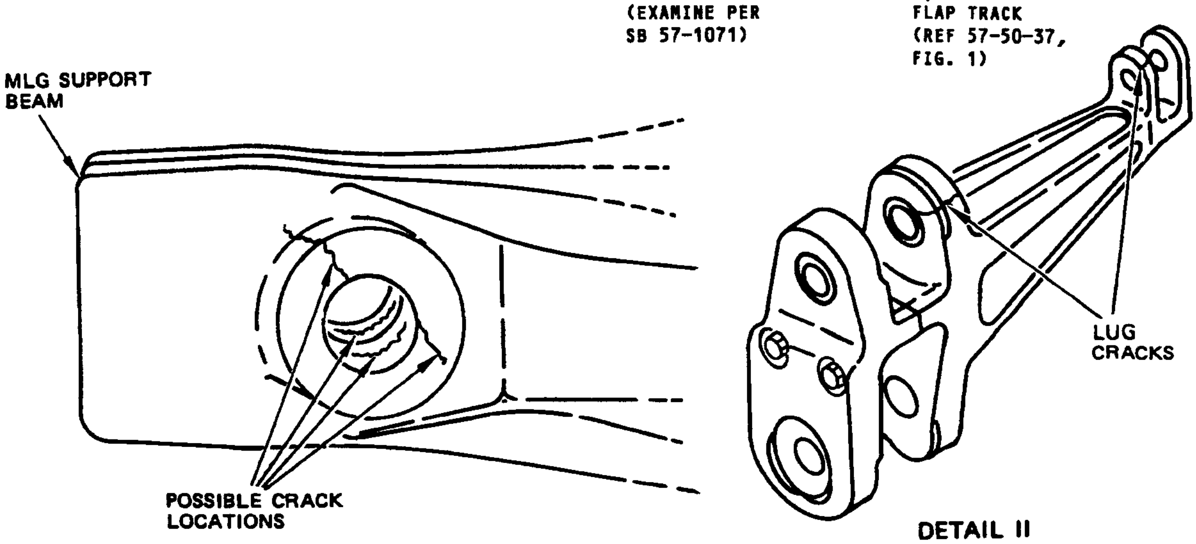
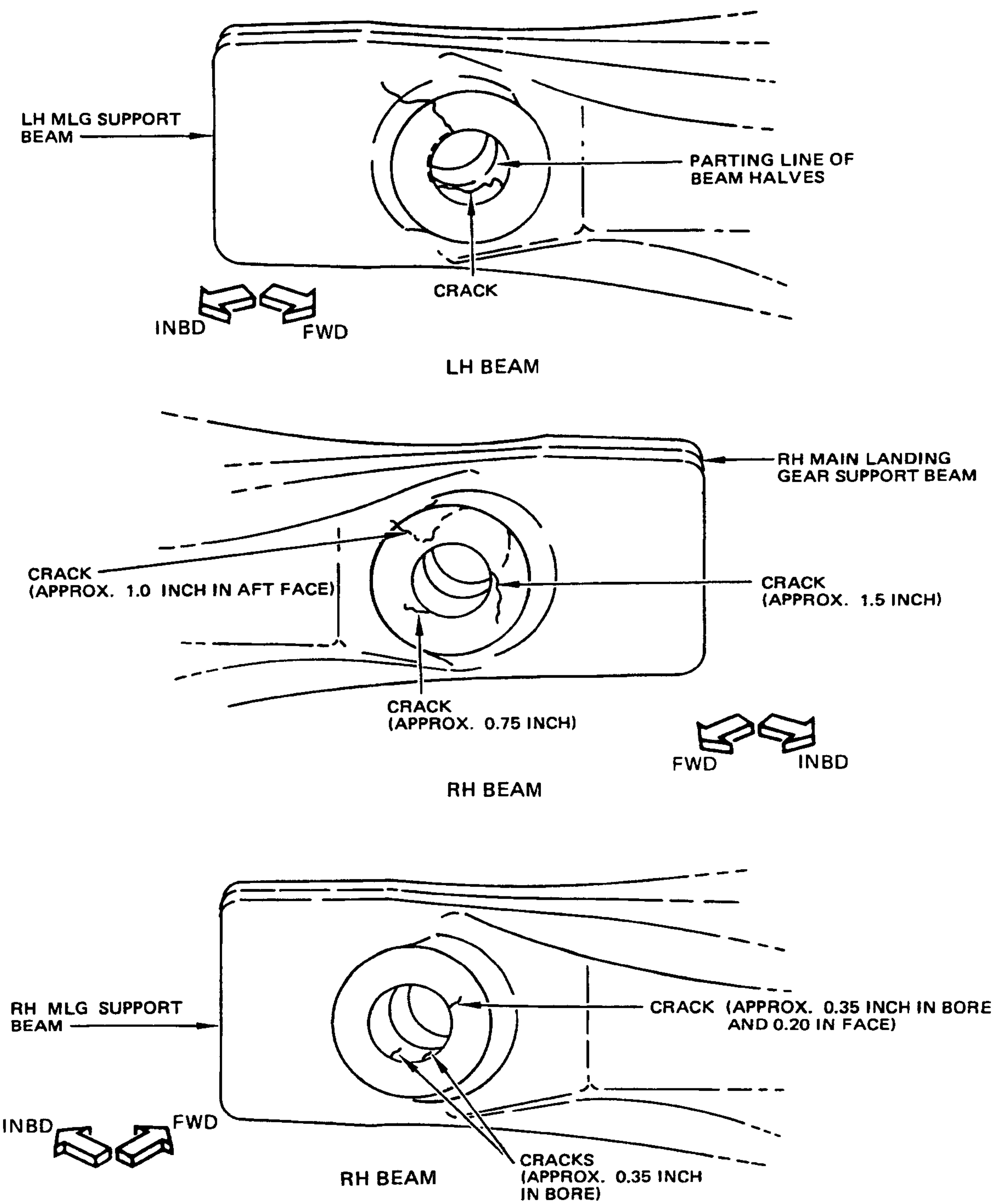




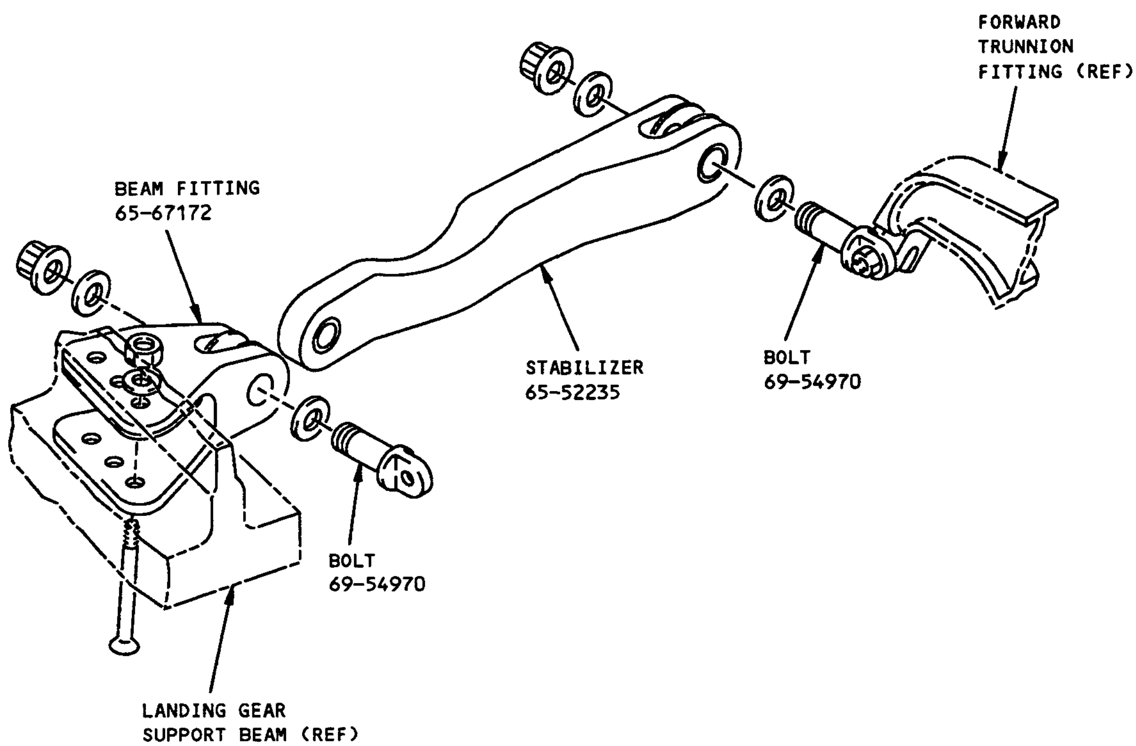
INBOARD LUG ATTACHMENT HOLE OF MLG SUPPORT BEAM (SWING LINK AND BUSHINGS REMOVED)

Main Landing Gear Trunnion Support Structure
Figure 1 (Sheet 1)



DETAIL III

Main Landing Gear Trunnion Support Structure
Figure 1 (Sheet 2)



DETAIL IV

Main Landing Gear Trunnion Support Structure
Figure 1 (Sheet 3)

1. General

   A. Corrosion and stress corrosion cracks can occur on the main landing gear support beam.

   B. On airplanes before line number 310, corrosion can occur on the bolts that connect the landing gear beams to the flap track support fitting and swing link.

   C. Stress corrosion cracks can occur in the forward and aft lugs of the 7079-T611 swing link.

   D. Much corrosion can occur in the trunnion fitting bearing hole.

   E. Stress corrosion cracking occurred in and around the inboard lug attach hole of the MLG support beam. All of these beams had SB 57-1071 incorporated.

   F. Stress corrosion cracks occurred on four main landing gear beam swing links. On one link, the crack was in the aft lug of the forward clevis at BS 695. On the other three links, the crack was in the forward lug of aft clevis at BS 706. Stress corrosion also broke bolts at the link attachment to the body frame at Sta 706 and at the link-to-beam attachment (Fig. 1, Detail III).

   G. Corrosion can occur on the stabilizer and its attach fitting at the landing gear beam. Also, the attach bolts were not installed with corrosion preventive compound until line number 2112.

   H. Corrosion has been reported on the mating surfaces of the stabilizer link assembly of the support beam and on components of the stabilizer link. A new design for the stabilizer link has been supplied as outlined in SB 57-1231.

   I. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

   A. Make the regular inspection described in Volume 1, 20-20-00 to prevent or find the start of corrosion. Fasteners that are gone, or white powdery or other deposits are signs of corrosion.

   B. After you clean the areas, do the inspection of Volume 1, 20-20-00 to make sure that protective finishes stay serviceable.

   C. If you find corrosion (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.

   D. For small amounts of corrosion, to decrease the downtime of the airplane, clean off the corrosion products. Apply a corrosion inhibiting compound into the affected area to stop the corrosion process. Refer to Volume 1, 20-60-00 for how to apply corrosion inhibiting compound. Repair the finish system when the maintenance schedule permits.

E. Prevention Treatment

(1) At earliest opportunity consistent with the maintenance activity, corrosion prevention treatment should be accomplished in the main landing gear trunnion support structure.

(2) Periodically examine the main landing gear beam and the forward trunnion fitting attached to the rear spar.

(3) Apply water displacing corrosion inhibiting compound to landing gear beams.

(4) On airplanes before line number 2112, apply MIL-G-23827 grease to all surfaces of the attachment bolts and mating surfaces when you install the stabilizer.

F. Frequency of Application

(1) Regular inspection is required in areas that can get corrosion and should agree with the schedule in the Maintenance Planning Document. Operators must know of reported problems and areas.

(2) Regular application of BMS 3-23 compounds is necessary in areas identified and should agree with the schedule in the Maintenance Planning Document.

G. Improved Corrosion Protection

(1) At line number 310, more BMS 3-23 water displacing corrosion inhibiting compound was added to the inboard and outboard attach points, the trunnion bearing area and body station 706 frame lug. PRR's 32070-6 and 32134 changed the material of the beam and the frame to 7075-T73. These changes can be added to earlier airplanes by SB 57-1071 (which supersedes SB 57-1038) and 57-1073. These changes are now recommended for all aging 737 airplanes.

(2) A production change replaced with Inconel 718 the H-11 bolts between the support, the flap track support fitting, the swing link, and the MLG support beam. These changes can be incorporated on earlier airplanes with SB 57-1086, 57-1170, and 57-1171. Inconel 718 bolt do not get stress corrosion cracks as easily.

(3) At line number 2112, the stabilizer-to-fitting attachment bolts were installed with corrosive preventive compound.

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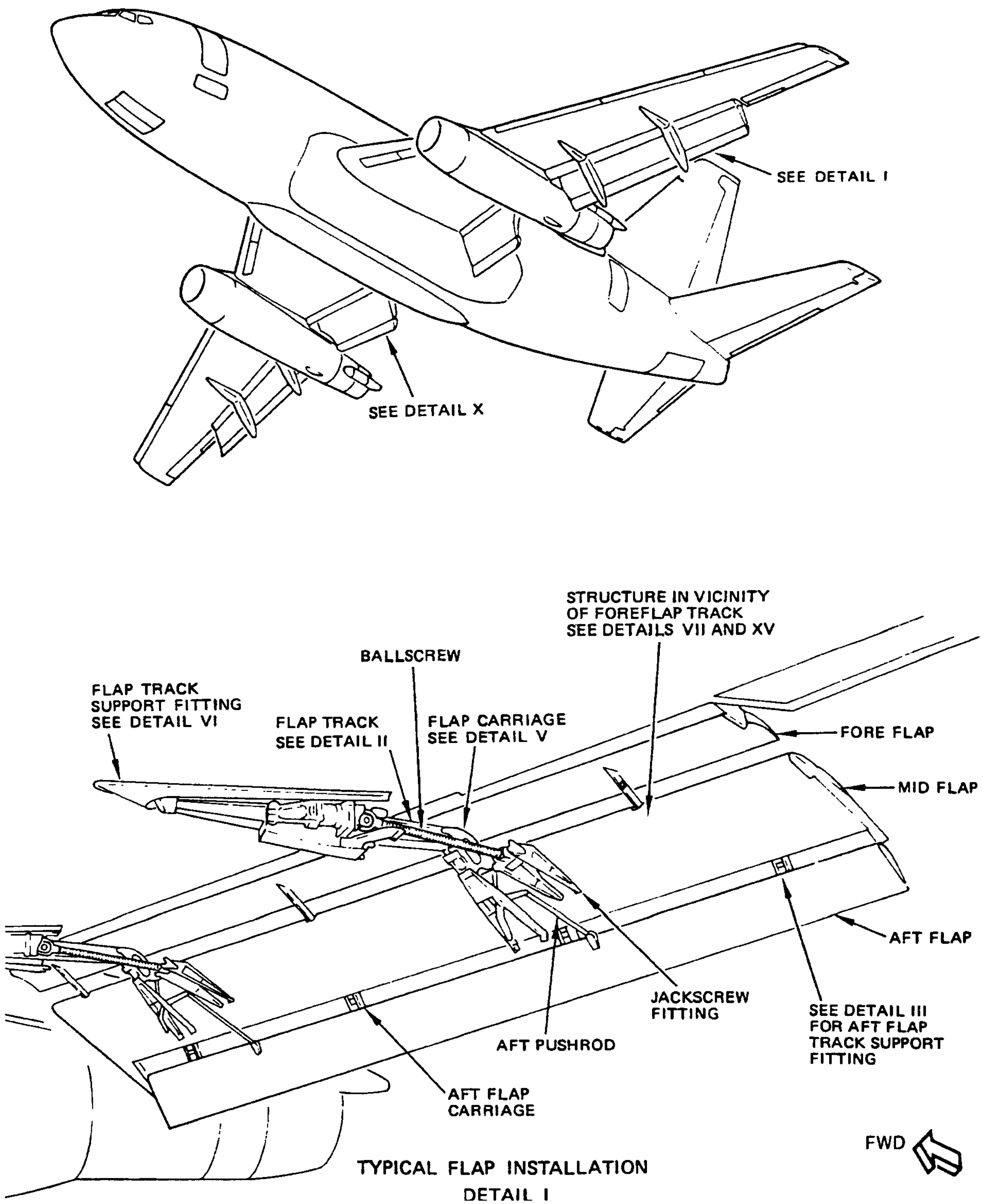
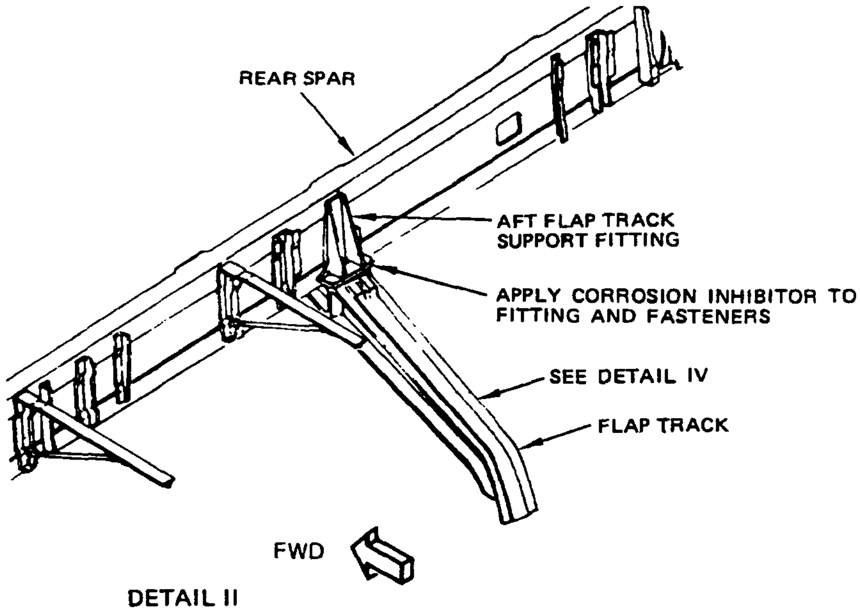
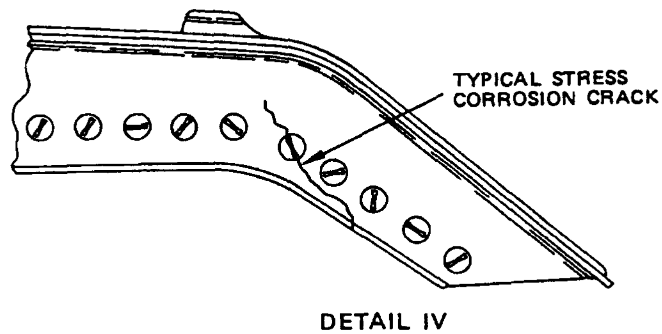
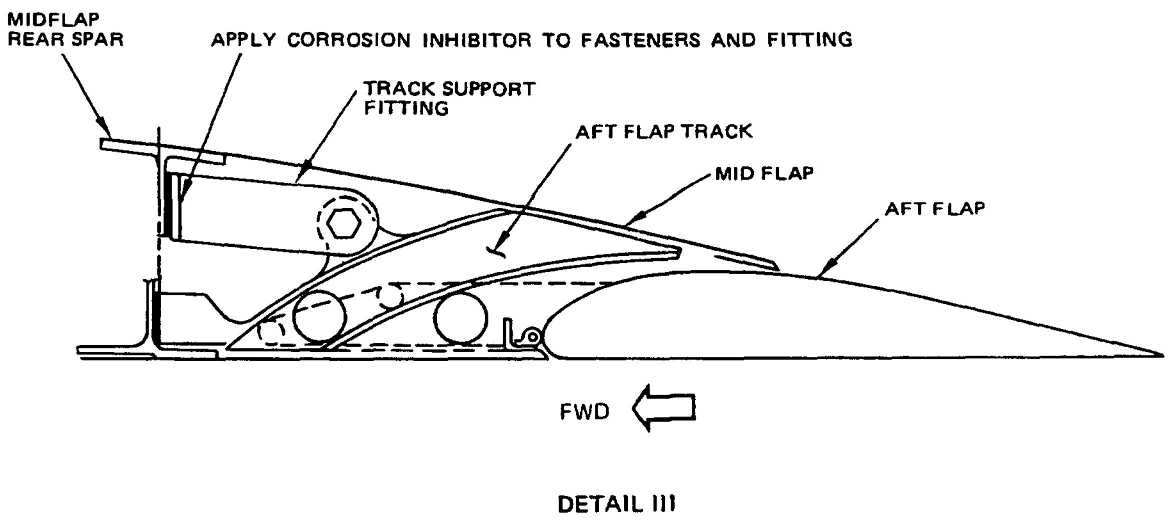


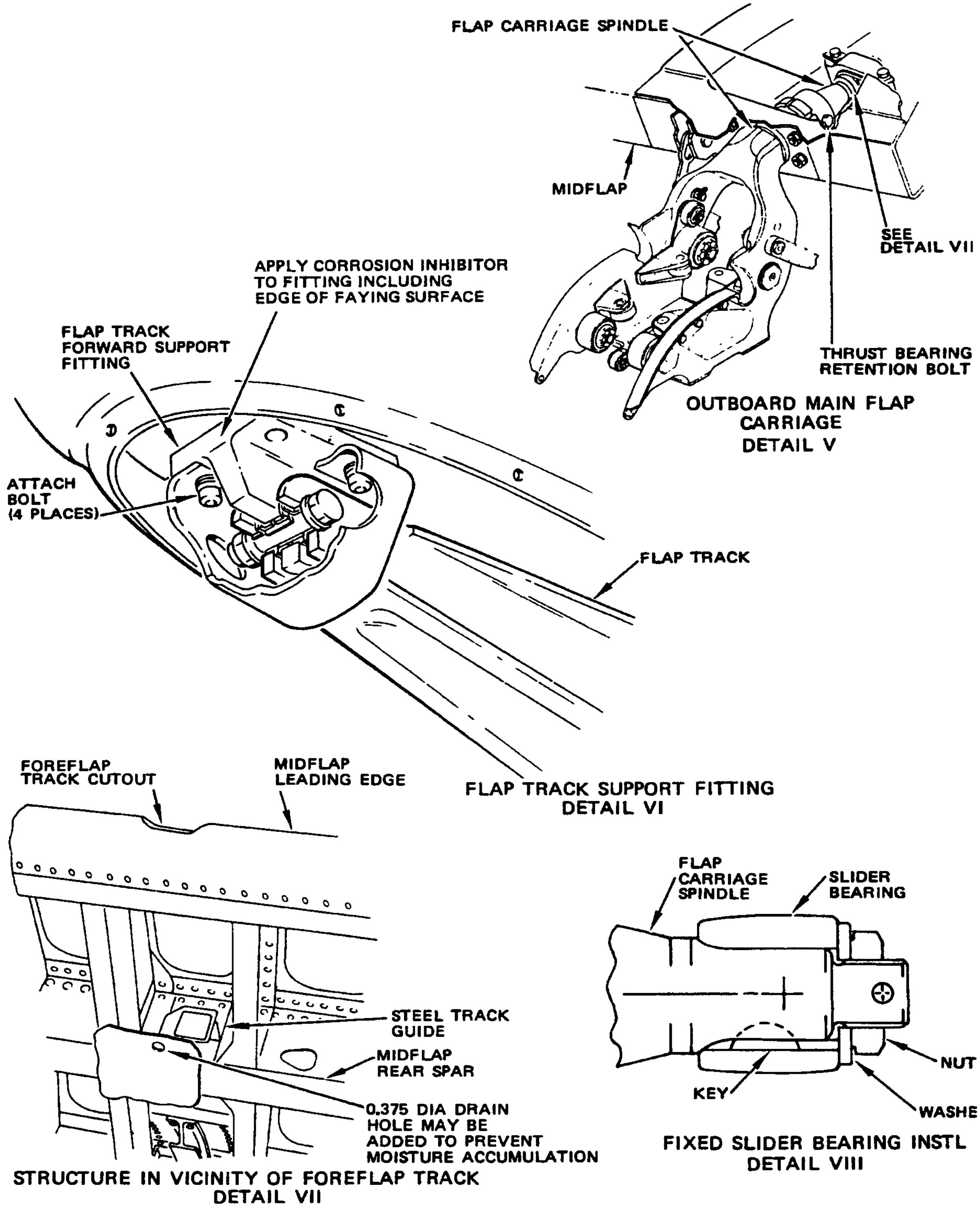
Trailing Edge Flaps
Figure 1 (Sheet 1)



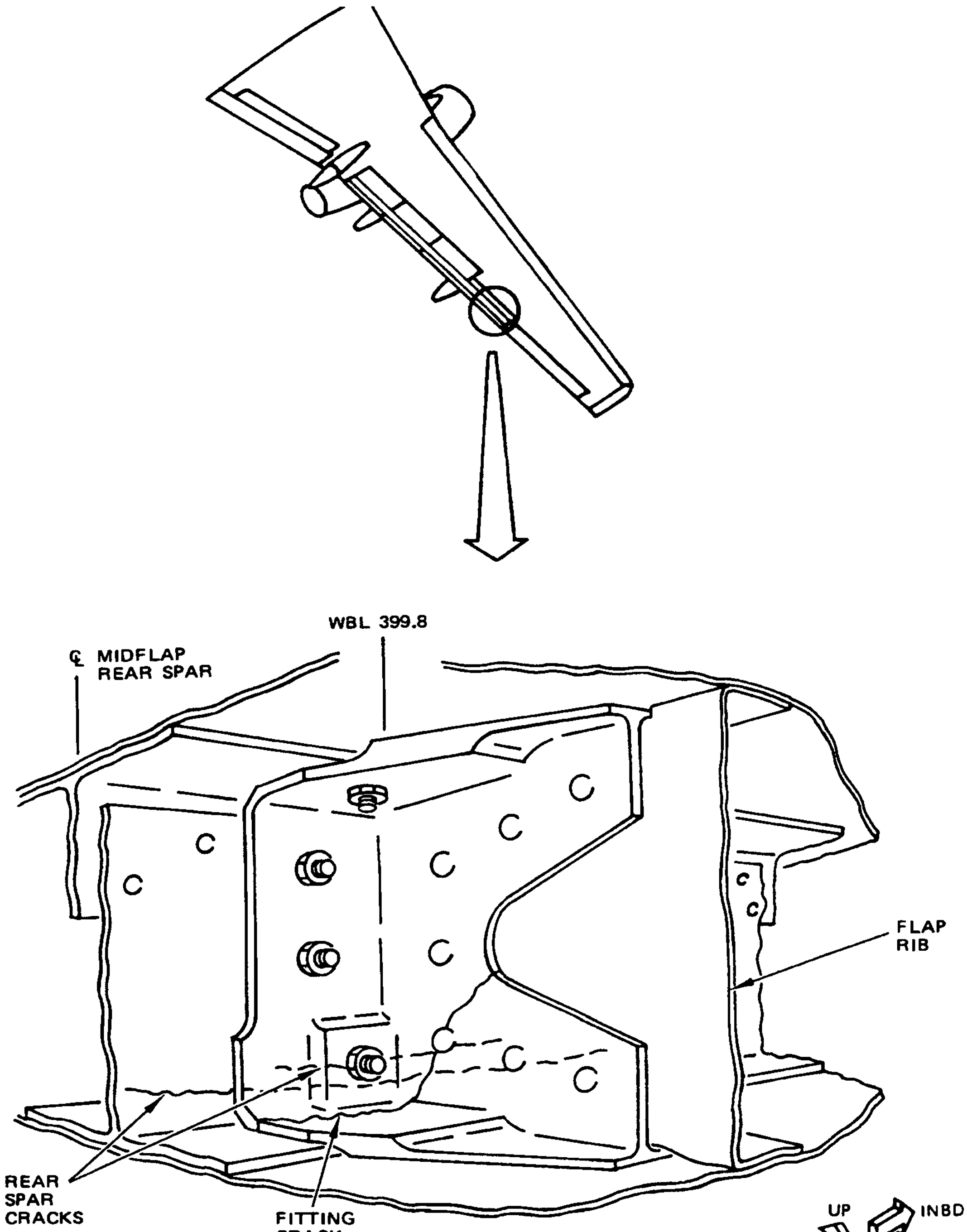




Trailing Edge Flaps
Figure 1 (Sheet 2)

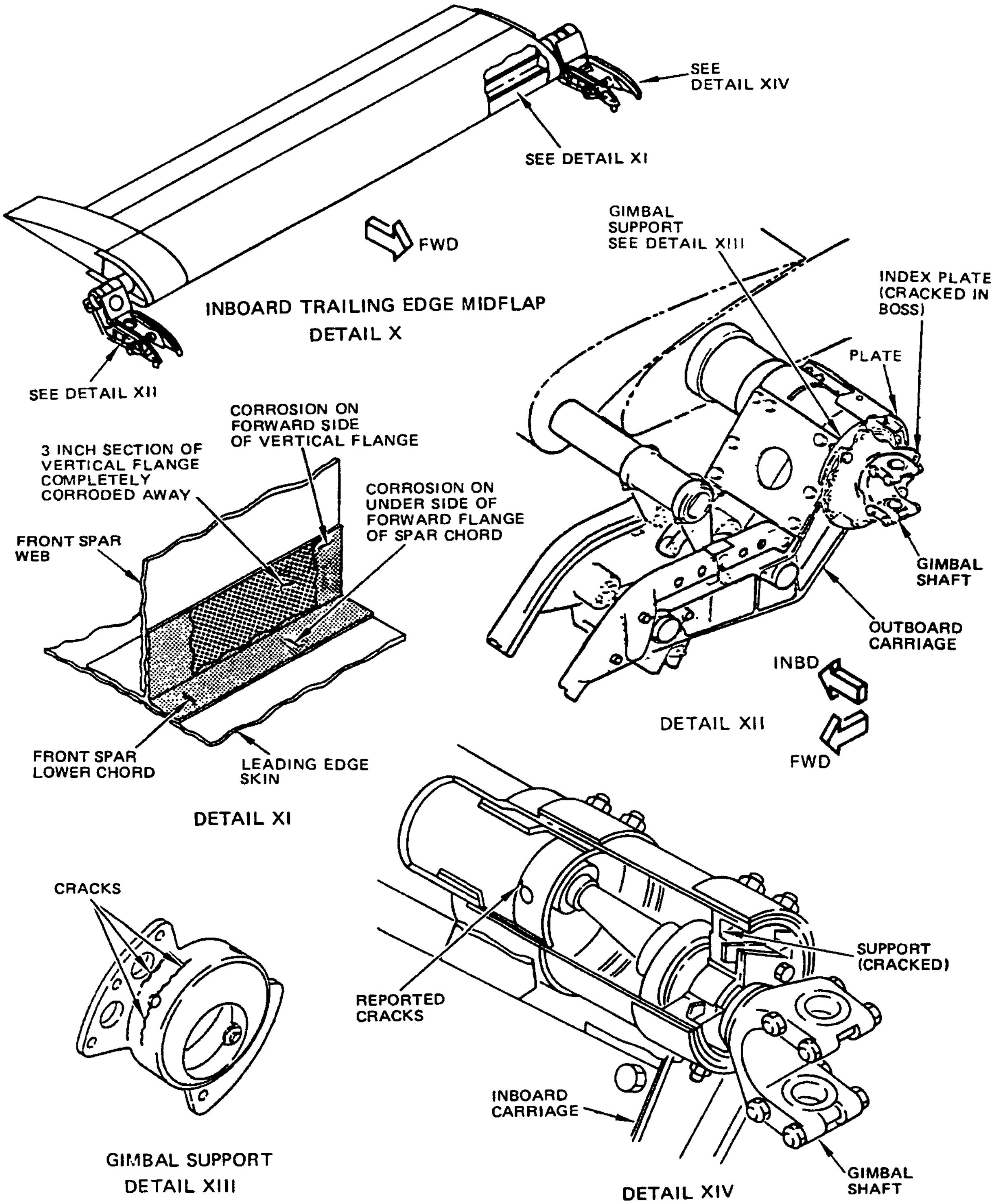


Trailing Edge Flaps
Figure 1 (Sheet 3)

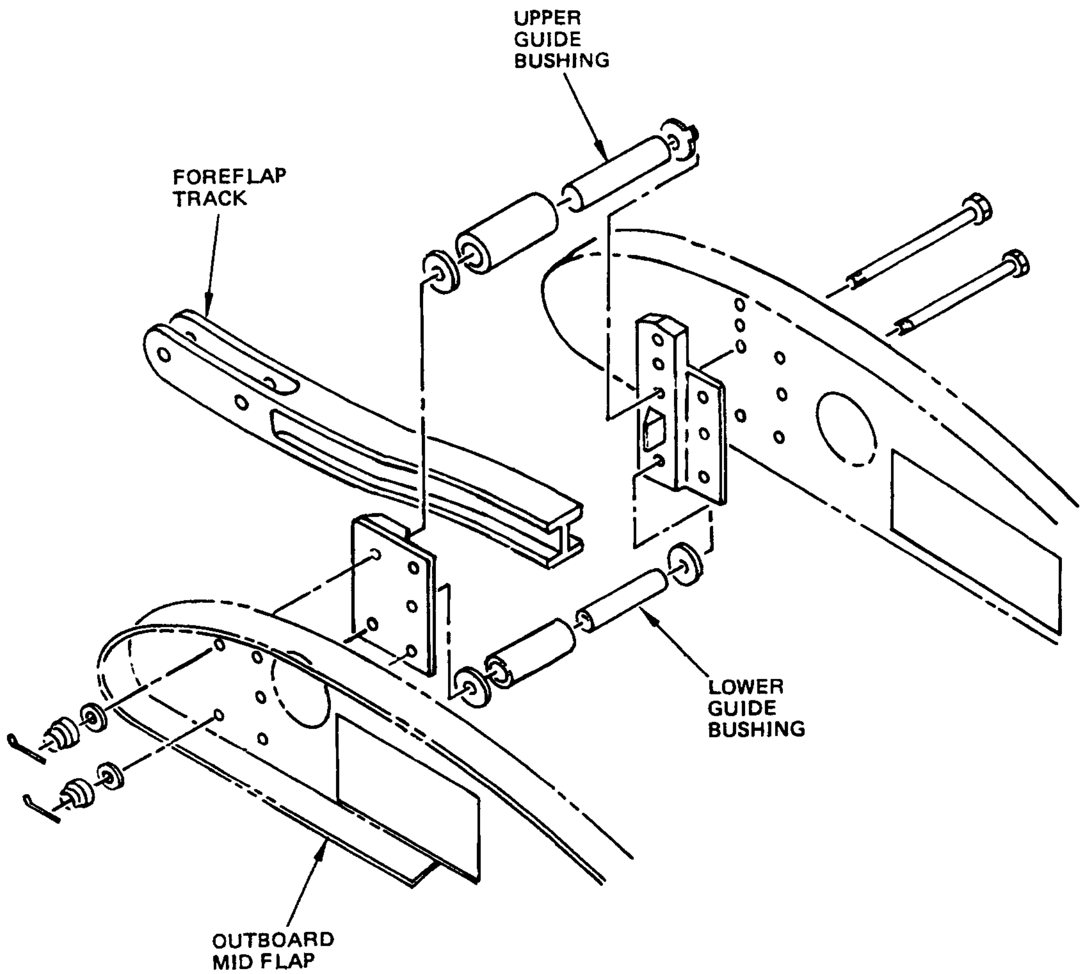


AFT FLAP TRACK BACKUP FITTING
DETAIL IX

Trailing Edge Flaps
Figure 1 (Sheet 4)



Trailing Edge Flaps
Figure 1 (Sheet 5)



DETAIL XV

Trailing Edge Flaps
Figure 1 (Sheet 6)

1. General

A. The flap tracks, track attachment fittings on rear spar and actuator rods, being in exposed positions, are all prone to corrosion. Damaged finishes of these fittings and of the flap skin panels and ribs are attributed to exposure to the weather and runway debris. Service wear also contributes to galling of the moveable bearing surfaces.

B. Corrosion can occur at the main flap track attachments at the wing rear spar.

C. Stress corrosion cracks can occur in 7079-T6 aft flap track support fittings. The material was changed from 7079-T6 to 7075-T73 aluminum at line number 316.

D. Stress corrosion cracks can occur in the inboard and outboard trailing edge flap tracks. Some of these cracks were in the web at the aft end of the tracks. A better track was installed at line number 362. SB's 57-1082 and 57-1084 give inspection and repair instructions.

E. Corrosion and stress corrosion cracking of the outboard main flap carriage spindle has been reported. Improved finish was incorporated on airplanes from line number 413 and improved corrosion resistance can be obtained on earlier airplanes by the incorporation of SB 57-1085.

F. Corrosion and subsequent failure of the thrust bearing retention bolts on the main flap carriage has been reported. Airplanes up to line number 294 were to an earlier configuration which was modified by SB 57-1066. At this time these bolts were reinstalled with a corrosion prevention compound. These bolts have to be removed again for the accomplishment of SB 57-1085 at which time reinstallation with wet primer is called for to improve corrosion resistance.

G. Corrosion has been reported on the midflap rear spar in the vicinity of the cutout for the foreflap track. Changes were introduced at line number 478 to improve the finish, change the temper of the lower spar chord, introduce faying surface seals, and apply water displacing corrosion inhibiting compound to the area.

H. Stress corrosion cracking has been reported on the outboard flap carriage spindle located just aft of the slider bearing. Cracking initiated at a keyway in the spindle installed on airplanes from line number 424 (and not retrofitted).

I. The rear spar backup fitting of the right-hand outboard trailing edge midflap at WBL 399.8 is subject to stress corrosion. Cracks have begun in the backup fitting and propagated until the fitting failed. Cracks have developed in the rear spar adjacent to the backup fitting.

J. Corrosion and stress corrosion cracks have been reported in the rib flanges and support fittings and brackets at WBL 74.50, 82.58, 84.96, 117.10 and 159.50 in the inboard midflaps. For corrective action, refer to SB 57-1044.

K. Corrosion has been reported on the front spar lower chord of the inboard trailing edge midflap. Corrosion extended from WBL 71.24 to WBL 80.0 on the forward horizontal and vertical flange.

L. Stress corrosion cracks have been reported in the gimbal supports and indexing plate of the inboard trailing edge midflap.

M. Heavy corrosion has been reported on the inner diameter of the foreflap guide bushings. See Detail XV. Effective with line number 1313 the existing carbon steel bushings were replaced with corrosion resistant steel bushings.

N. Heavy corrosion has been reported in the outboard trailing edge flap carriage retainer bolt. Stress corrosion crack has also been reported on the retainer bolts (Fig. 1, Detail V).

O. Corrosion can occur on the flap drive ballscrew. The ballscrew has a thin dense chrome plating, but corrosion will start if this plating is not continuous, because the base metal has no resistance to corrosion.

P. Delamination, and corrosion of the skin, and honeycomb has been found on the inboard and outboard trailing edge flaps. Cracks in the edge potting material permit moisture to go into the aft flaps. For corrective action, refer to SB 57-1219.

Q. Corrosion has been reported on the trailing edge flap track roller contact surfaces. Most of these operators operate in areas with harsh winter environments where runway deicing compounds are frequently used. When exposed to moisture in the form of slush, rain, deicing fluids or airplane washing, the grease is washed from the track leaving the unpainted wear surfaces unprotected. The best way to protect the flap track wear surfaces from corrosion is to increase the frequency of cleaning and application of BMS 3-24 grease. Refer to Maintenance Tip 737 MT57-001 for additional information. Refer to 2.D.(9).

R. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of moisture or corrosive products in the structure of the door openings and surrounding structure to minimize the occurrence of corrosion.

B. Where extensive corrosion exists (noticeable web bulges, missing fasteners or large amounts of discolored deposits at fastener heads or faying surfaces), refer to Structural Repair Manual for details of corrosion removal.

C. For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to stop the corrosion (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

D. Prevention treatment

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS TO NEEDLE BEARINGS OR GREASE JOINTS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS.

(1) Flap Tracks. Apply BMS 3-23 annually to areas which are corrosion prone. Apply BMS 3-23, Type I I over the full interior surface of the flap tracks at every D check. For line numbers through 361, except those airplanes with trailing edge flap tracks replaced with improved tracks, inspect track per SB 57-1082 or 57-1084 as applicable and provide preventive treatment described.

(2) Broken finishes on flap skin panels and movable flap track fairings should have corrosion inhibitor applied as necessary based on service experience. Local areas where gouges or scratches have occurred should be treated at first opportunity consistent with the maintenance schedule.

(3) Main flap carriage spindle. On airplanes up to line number 412 periodic inspection for corrosion should be made unless SB 57-1085 has been incorporated. Periodically coat exposed areas of the spindle with water displacing corrosion inhibiting compound.

(4) Main flap carriage thrust bearing retention bolts. Inspect these bolts periodically for evidence of corrosion. Where corrosion is suspected remove the bolts for further examination. Reinstall bolts with wet primer.

(5) Examine the interior of the midflap structure near the foreflap track for corrosion. Spray the area with water displacing corrosion inhibiting compound. You can add a drain hole in the skin adjacent to the rear spar as shown in Detail VII.

(6) After application of corrosion inhibitor, all grease fittings in the treated areas should be regreased.

(7) Clean off minor corrosion at the main flap track support fittings and apply corrosion inhibitor to retard the corrosion process.

(8) Clean off minor corrosion on the aft flap track support fitting Refinish the areas and apply corrosion inhibitor (Ref Volume 1, 20-50-00 and 20-60-00).

(9) The following procedure will help prevent corrosion pitting and arrest small pits that may not be seen visually on the trailing edge flap track roller contact surfaces; especially during winter operations on runways where anti-ice compounds are used. Refer to OHMS 57-53-15 and 57-53-16 for configuration of track roller contact surfaces.

(a) Clean debris (i.e. sand, corrosion products, residual grease, etc.) from track surfaces. The purpose is to remove salt or sand contaminants from surface and to expose corrosion pits.

(b) Allow surfaces to dry.

(c) Examine the track flanges for visible cracks.

(d) Apply a liberal amount of BMS 3-23, Type 2, corrosion preventive compound (CPC) to entire flange surface.

(e) Allow CPC to set for a minimum of 30 minutes to ensure penetration into pits. Wipe excess CPC off the track. It is important to remove all surface CPC residue so that subsequently applied grease does not readily run/wash off.

(f) Apply a liberal amount of BMS 3-24 grease to all wear surfaces of the track. Periodically check surfaces of flanges and repeat procedure to preclude further pitting attack to track.

NOTE: Hand application of grease on the outboard flap tracks can generally be accomplished without removing the flap track fairings.

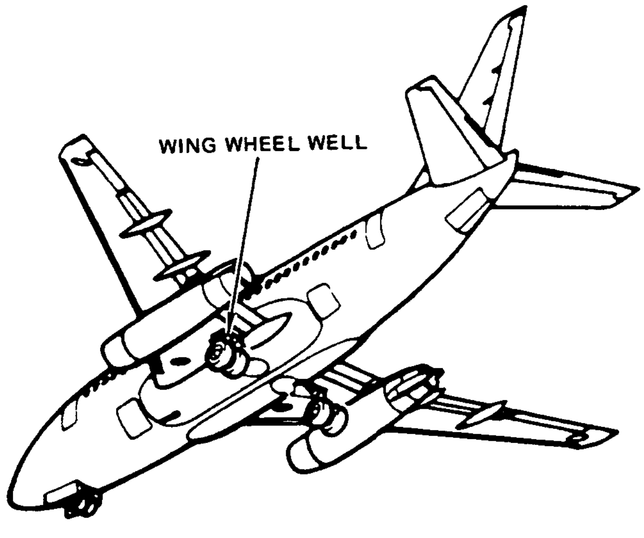
(g) Refer to Structural Repair Manual to remove localized corrosion if desired.

(10) If you clean areas with steam or high pressure water and detergent, apply the corrosion inhibitor and/or grease again.

E. Improved Corrosion Protection

(1) Some 737-300 airplanes line number 1107 and on have BMS 3-23 corrosion inhibiting compound on the exterior of the flap track support fitting at WBL 353 and WBL 254 including edge of faying surface. Periodic cleaning and re-application of this inhibitor is required.

(2) At line number 993, a production change made a change to the material of the outboard trailing edge flap carriage retainer bolt. The new bolt has better resistance to stress corrosion cracking. This change can be made on other airplanes with SB 57-1112.



Wing Wheel Well
Figure 1 (Sheet 1)

1. General

A. The wing wheel well located in the inboard trailing edge area immediately aft of the rear spar houses the main landing gear strut and trunnion.

B. As in the fuselage wheel well, the wing wheel well is exposed to atmospheric pollutants and runway splash and is susceptible to corrosion.

C. The wing well should be treated at the same time as the wing torque box, trunnion and trunnion support fittings (Ref 57-40-37, Fig. 2).

D. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact.

C. 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.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity, corrosion treatment should be accomplished in the wing wheel well.

(2) Remove runway debris and generally clean the entire wheel well area.

(3) Apply BMS 3-23 to all exposed wheel well structure. Special effort should be made to apply the corrosion inhibitor along doubler edges, along edges of structure, forgings, etc., and on fastener heads. The use of spray equipment with nozzle directed into faying surfaces is recommended.

(4) Apply BMS 3-23 to landing gear attachment fittings. Ensure that lugs and lug faces are treated.

(5) Regrease all grease fittings in the treatment area.

(6) In cases where the wheel well is cleaned with steam or high pressure water and detergent, reapplication of BMS 3-23 is recommended.

(7) Periodically inspect heavily loaded structural members and wheel well closure walls for deterioration of protective finishes.

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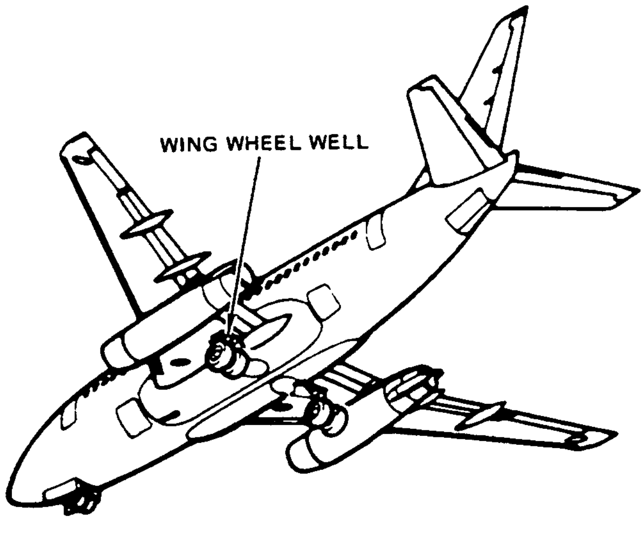
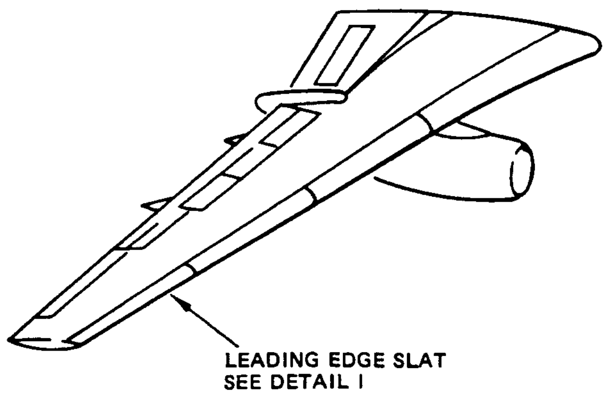
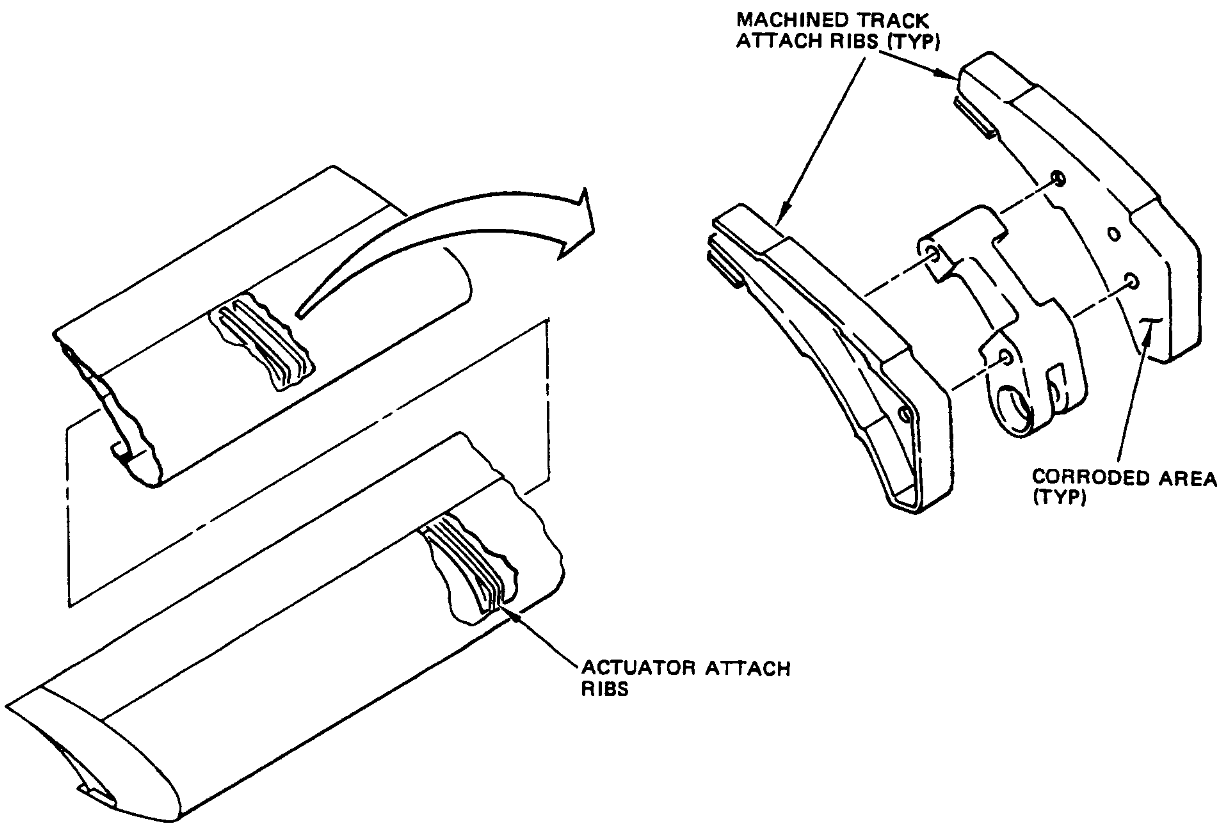


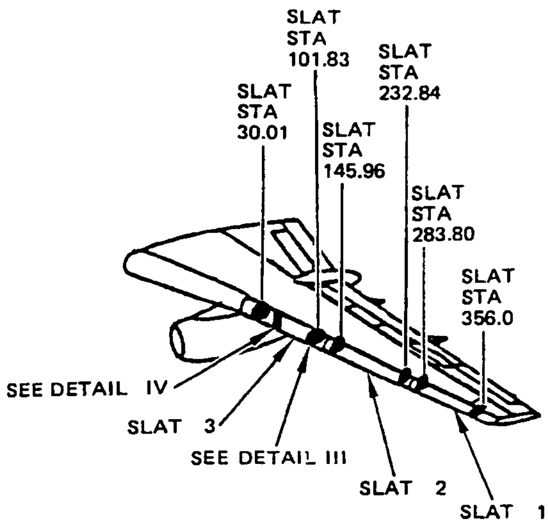
Wing Leading Edge Section
Figure 1 (Sheet 1)





DETAIL II

Wing Leading Edge Section
Figure 1 (Sheet 2)



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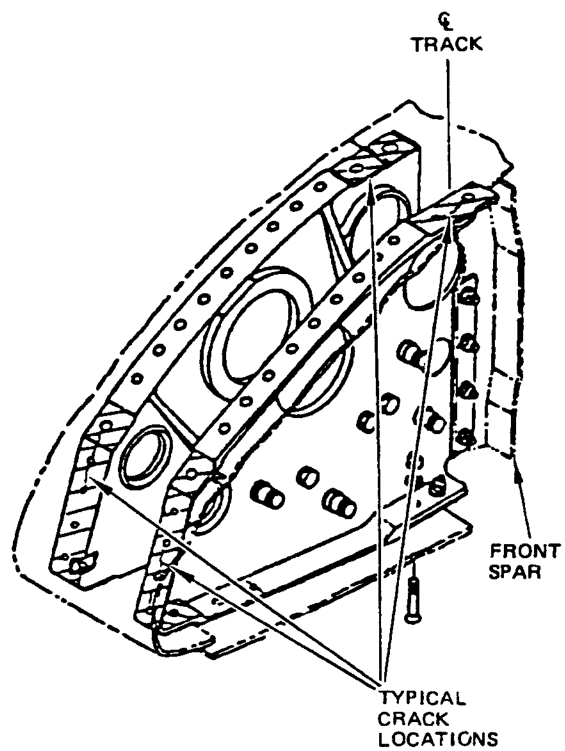
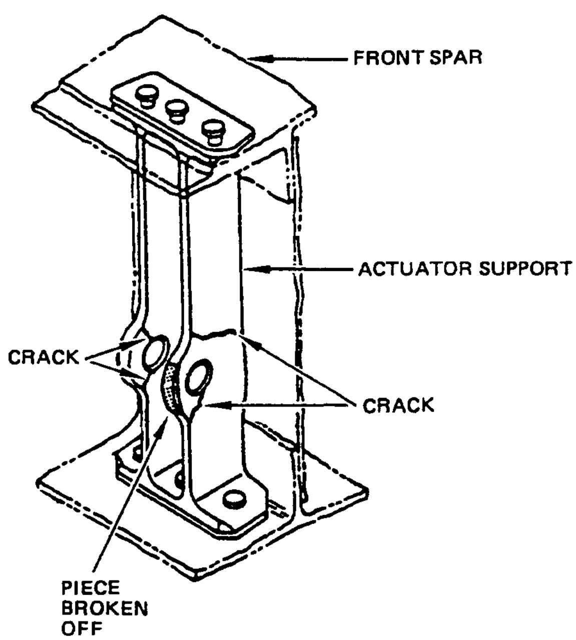


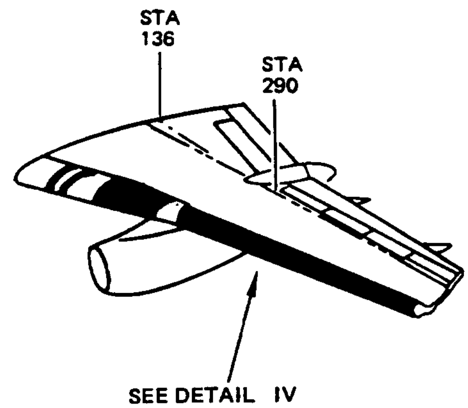
TYPICAL SLAT TRACK ROLLER SUPPORT RIB PAIR

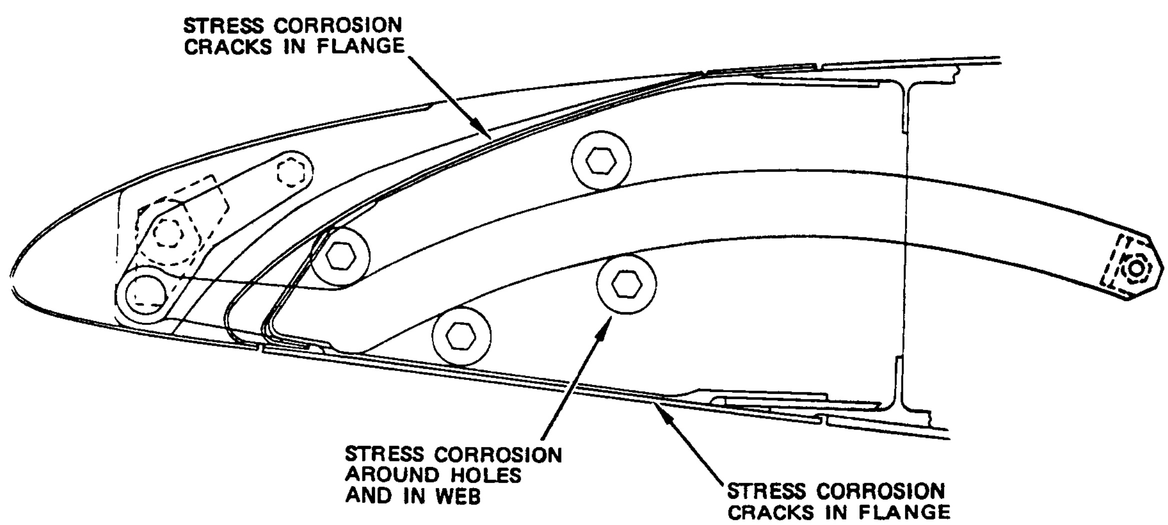
DETAIL III



DETAIL IV

Wing Leading Edge Section
Figure 1 (Sheet 3)





TYPICAL LEADING EDGE SLAT TRACK ROLLER SUPPORT RIB

DETAIL IV

Wing Leading Edge Section
Figure 1 (Sheet 4)

1. General

A. The leading edge portion of the wing consists of skins and structure and removable components such as flaps, seats, and attach fittings.

B. There have been reports of stress corrosion cracking in the hinge support ribs of the inboard leading edge flaps. Most of the cracks were along the fastener line through the inboard and outboard flanges of the ribs, and the remainder were at the flange radius. In addition, the rib webs are considered susceptible to stress corrosion cracks.

C. Severe exfoliation corrosion has been experienced on the No. 6 leading edge slat ribs. Ribs at slat stations 283.00 and 284.60 (main track attach point) were found corroded through the web. The rib at slat station 319.50 (actuator attach point) was also severely corroded. Stress corrosion cracking occurred in ribs made from 7079 material. The 7079 material has been replaced with 7075 material in production airplanes from cum line number 300 and can be installed retroactively by incorporating SB 57-1078.

D. There have been reports of stress corrosion cracking in the fixed leading edge slat track roller support ribs. The cracks have been found in both the chords and the webs. These ribs are considered susceptible to stress corrosion.

E. The stress corrosion cracking has occurred in ribs made from 7075-T651 material. The 7075-T651 material has been changed to 7075-T7351 and the gages of the flanges and webs have been increased. In addition, the ribs have been shot-peened all over (except holes). This takes effect in production for cum line numbers 649 and on. Ribs already manufactured and in spares (airplanes cum line number 625 to 648) have been reworked by shot-peening only.

F. Stress corrosion cracks have been reported in the flanges of the 7075-T6 aluminum alloy slat track roller support ribs attached to the leading edge of the wing front spar (Fig. 1, Detail III).

G. Stress corrosion cracking has been reported on the slat actuator support fittings. Two fittings were cracked through the attaching bolt lug, and three fittings were cracked near the lug (Fig. 1, Detail IV).

H. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Following cleaning of suspected areas, a thorough inspection as described in Volume 1, 20-20-00 is effective to ensure that protective finishes provided during manufacture remain intact. Refer to Volume 1, 20-60-00 for details on the application of corrosion inhibiting compound.

C. Where corrosion exists (noticeable bulges of the skin on white deposits of corrosion products at fastener heads of joint edges), refer to Structural Repair Manual for details of corrosion removal.

D. 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 retard the corrosion process (Ref Volume 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

E. Preventive Treatment

(1) At earliest opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished in the wing leading edge.

(2) Periodically inspect the leading edge slat rib webs and flanges for evidence of corrosion.

CAUTION:DO NOT APPLY CORROSION INHIBITING COMPOUNDS TO WING LE NEEDLE BEARINGS OR GREASE JOINTS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS.

(3) Apply BMS 3-23 water displacing inhibiting compound to slat ribs, hinge support ribs, and seat track roller support ribs.

F. Frequency of Application

(1) Periodic inspection is required to 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.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

G. Improved Corrosion Protection

H. On airplane line numbers 503 and above, CRES engine control cables have been installed in the wing leading edges. Line numbers prior to 503 have experienced cable separation due to corrosion. Service Letter 737-SL-76-9 advises operators to replace existing carbon steel cables with CRES cables.

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CHAPTER

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POWER PLANT

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Engine Mounts	Aft vibration isolator H-11 attach bolts	71-20-37	Replace with Inconel 718 bolts

Specific Corrosion Problems - Power Plant
Figure 1

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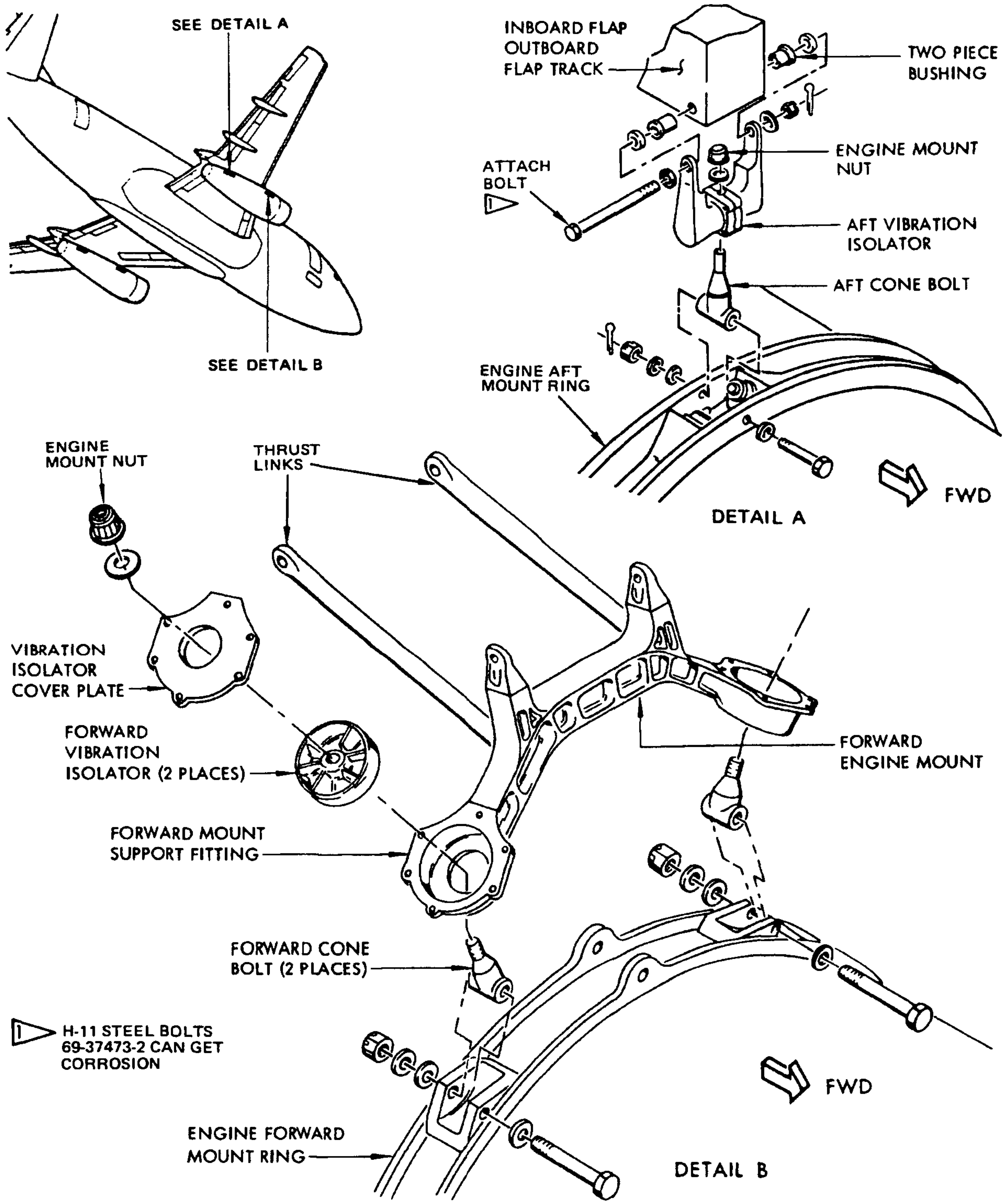

Vibration Isolator Engine Mounts
Figure 1

1. General

A. Stress corrosion cracks can occur on the 69-37473-2 engine aft vibration isolator attach bolts, which are made of H-11 steel.

2. Corrosion Prevention

A. Regularly examine these bolts for corrosion. These bolts are superseded by 69-37473-3 bolts, which are made of Inconel 718, which do not get stress corrosion cracks as easily.

CHAPTER

78

EXHAUST

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Thrust Reverser	Thrust reverser upper driver link	78-30-37	

Specific Corrosion Problems - Engine Exhaust
Figure 1

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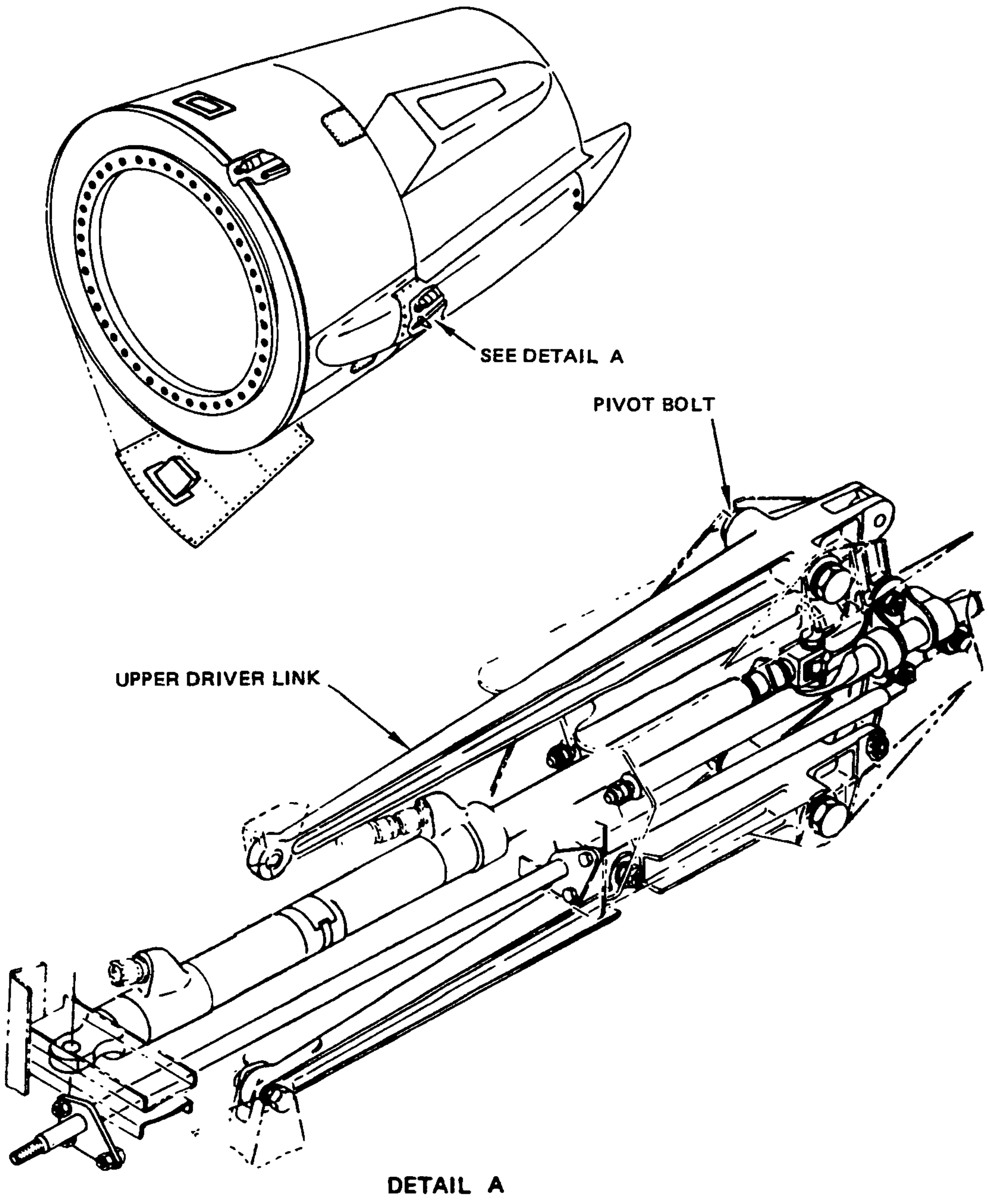

Engine Exhaust (JT8D) - Thrust Reverser
Figure 1

1. General

A. There has been report of fractured thrust reverser upper driver link. The fracture, forward of the main pivot point, was perpendicular to the longitudinal axis and separated the link into two sections. Stress corrosion is attributed to the fractured of the link. Other operators have reported similar fractures which have been attributed to fatigue. To improve corrosion protection, parts are being fabricated from forged 15-5 PH CRES which is less susceptible to stress corrosion and is the preferred replacement part on an attrition basis.

2. Corrosion Prevention

A. General Philosophy

(1) The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Missing fasteners, white powdery or any discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated o prevent the accumulation of corrosive products in order to minimize the occurrence of corrosion.

B. Corrosion Inspection/Removal

(1) Following cleaning of suspected areas, a visual inspection utilizing bright lighting and mirror is effective for identifying the existence of corrosion. In specific localized areas where inspection by visual means is impossible or where extent of corrosion has to be determined after visual detection, refer to 20-20-00, Volume 1 for applicable method.

(2) For minor corrosion, to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-60-00).

C. Application of Corrosion Inhibitors

(1) For details of application of water displacing corrosion inhibiting compound, refer to Volume 1, 20-60-00.

D. Frequency of Application

(1) Periodic inspection is required to areas identified susceptible to corrosion and should be consistent to the schedules identified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

(2) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.