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VOLUME 2 - CORROSION CONTROL

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CHAPTER

06

DIMENSIONS AND AREAS

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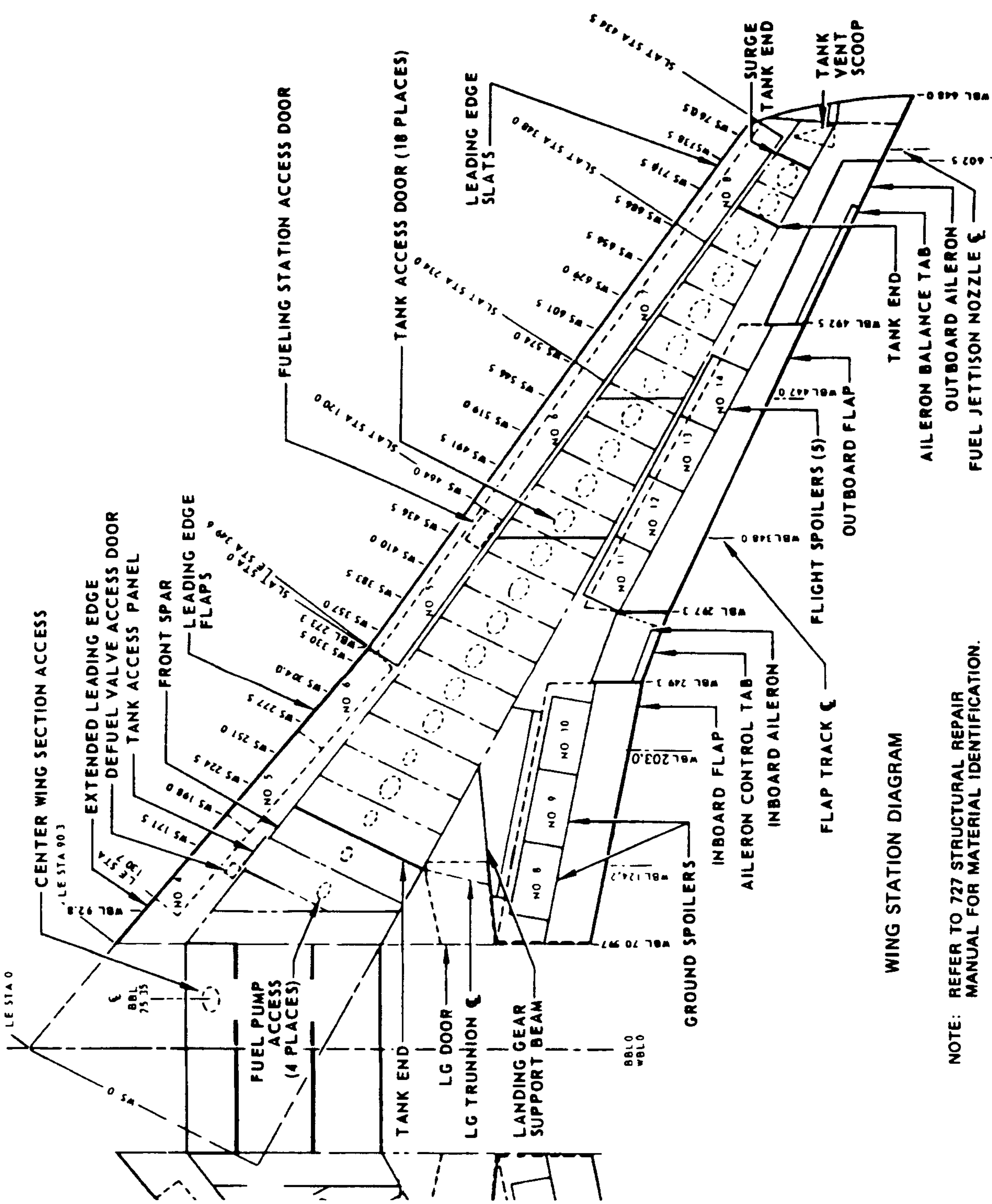
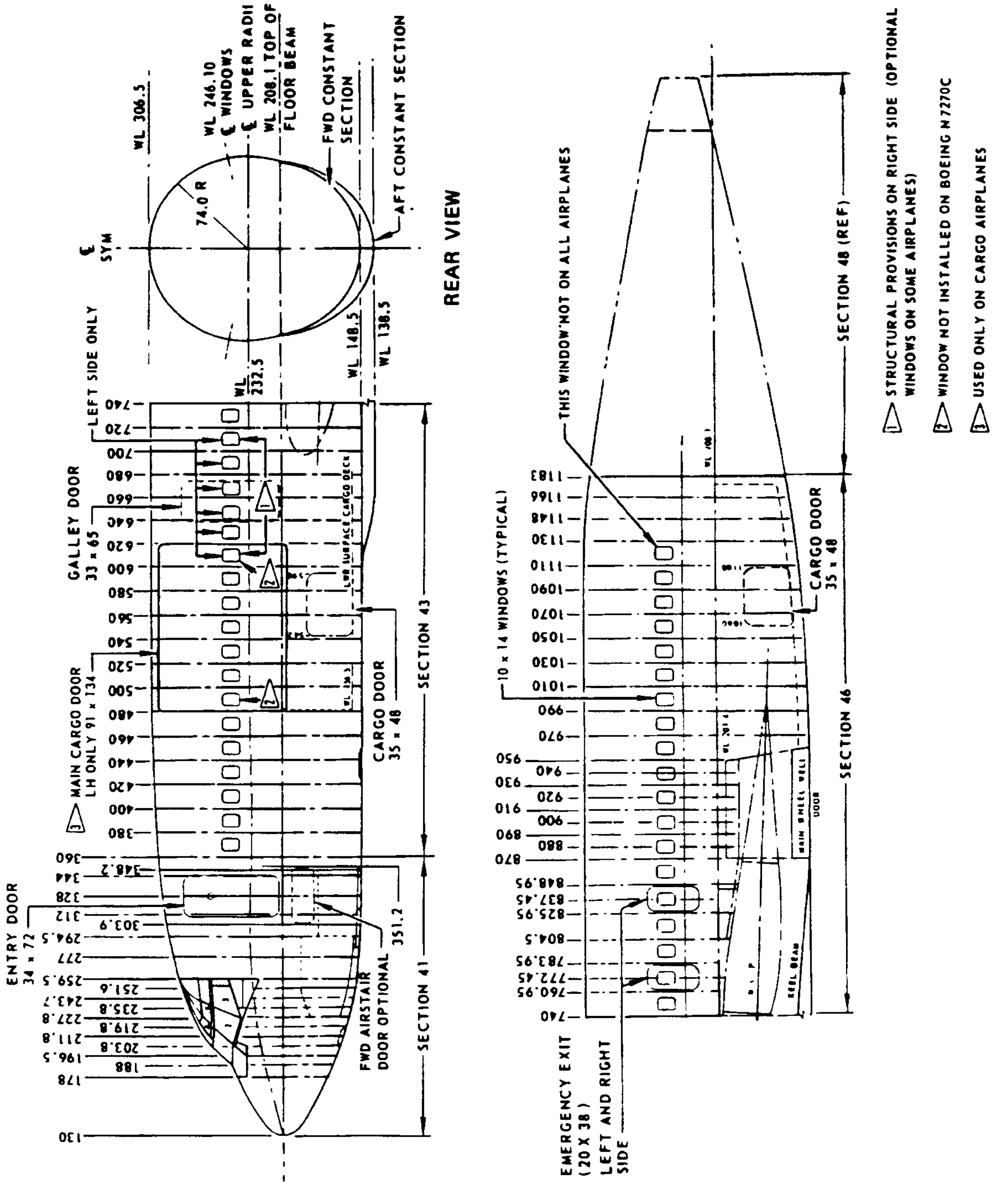
AWG	American Wire Gage
BBL	Body Buttock Line
BRP	Body Reference Plane
BS or B STA	Body Station
CMM	Component Maintenance Manual
CRES	Corrosion Resistant Steel
CRT	Cathode Ray Tube
DIA	Diameter
DME	Distance Measuring Equipment
EDM	Electric Discharge Machine
ELEV STA	Elevator Station
ENG STA	Engine Station
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
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

cl	Centerline
	Generator Position

Abbreviations and Symbols
Figure 1

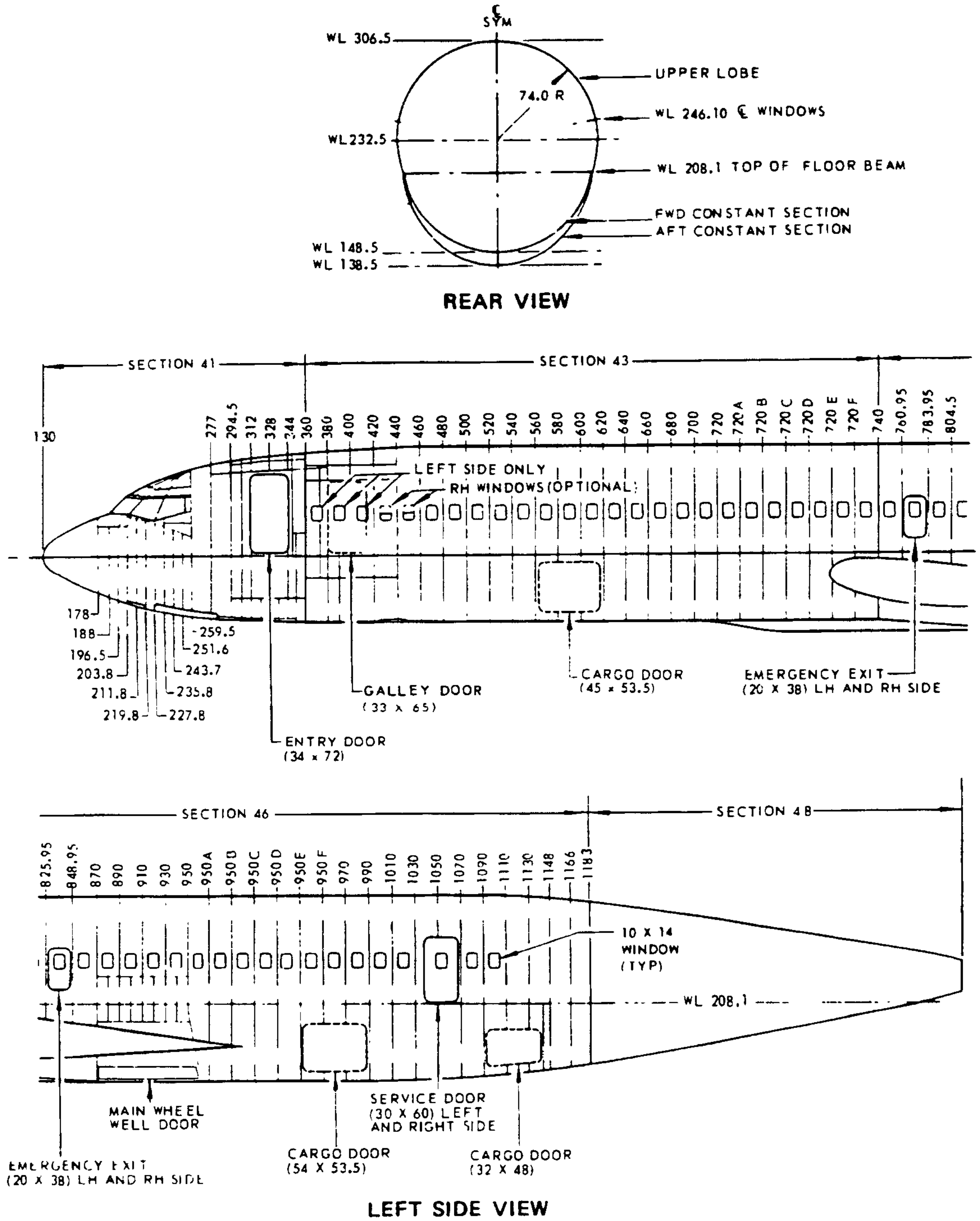


Wing Station Diagram
Figure 2



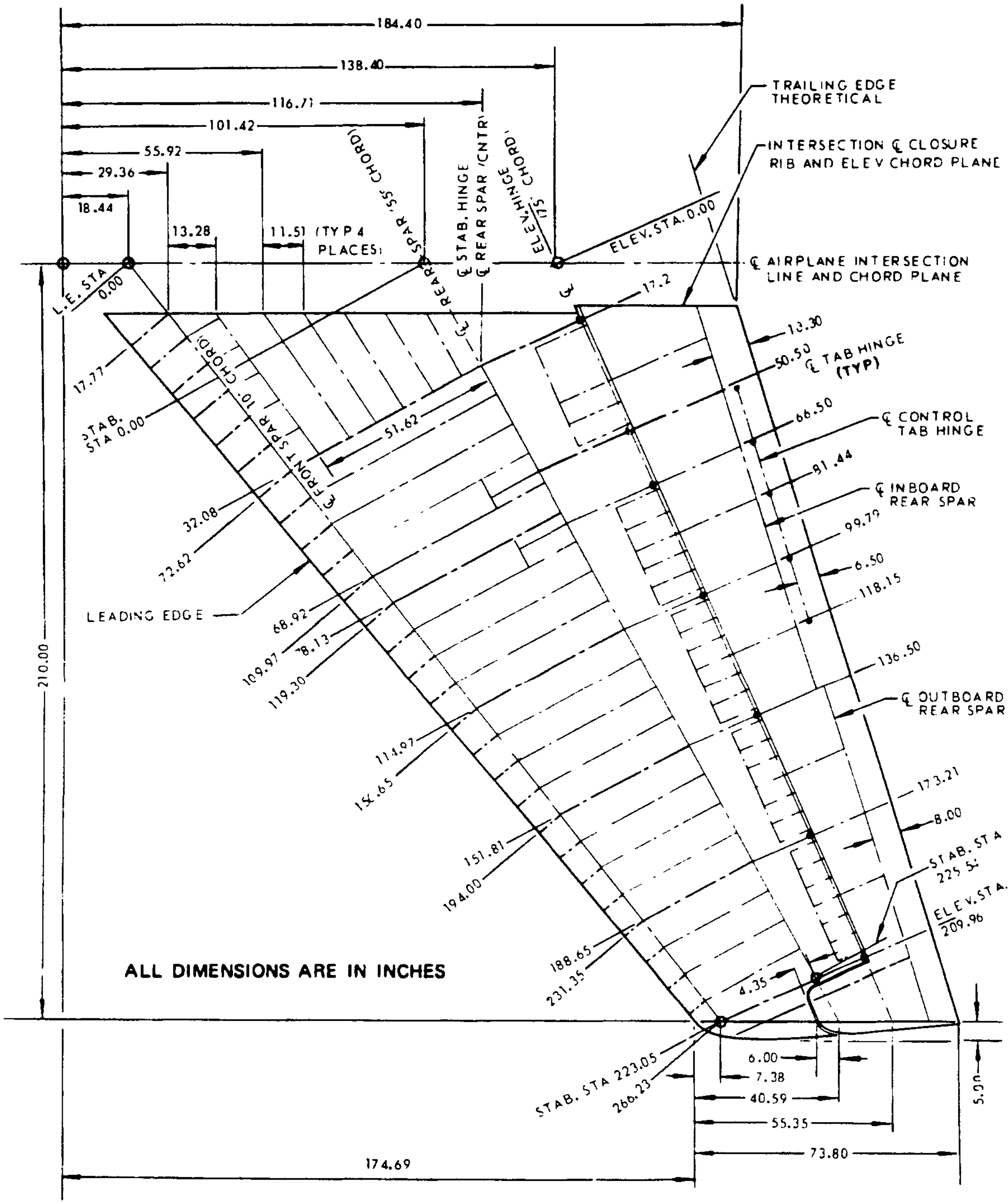
727-100 AND 727-100C

Fuselage Station Diagram
Figure 3 (Sheet 1)

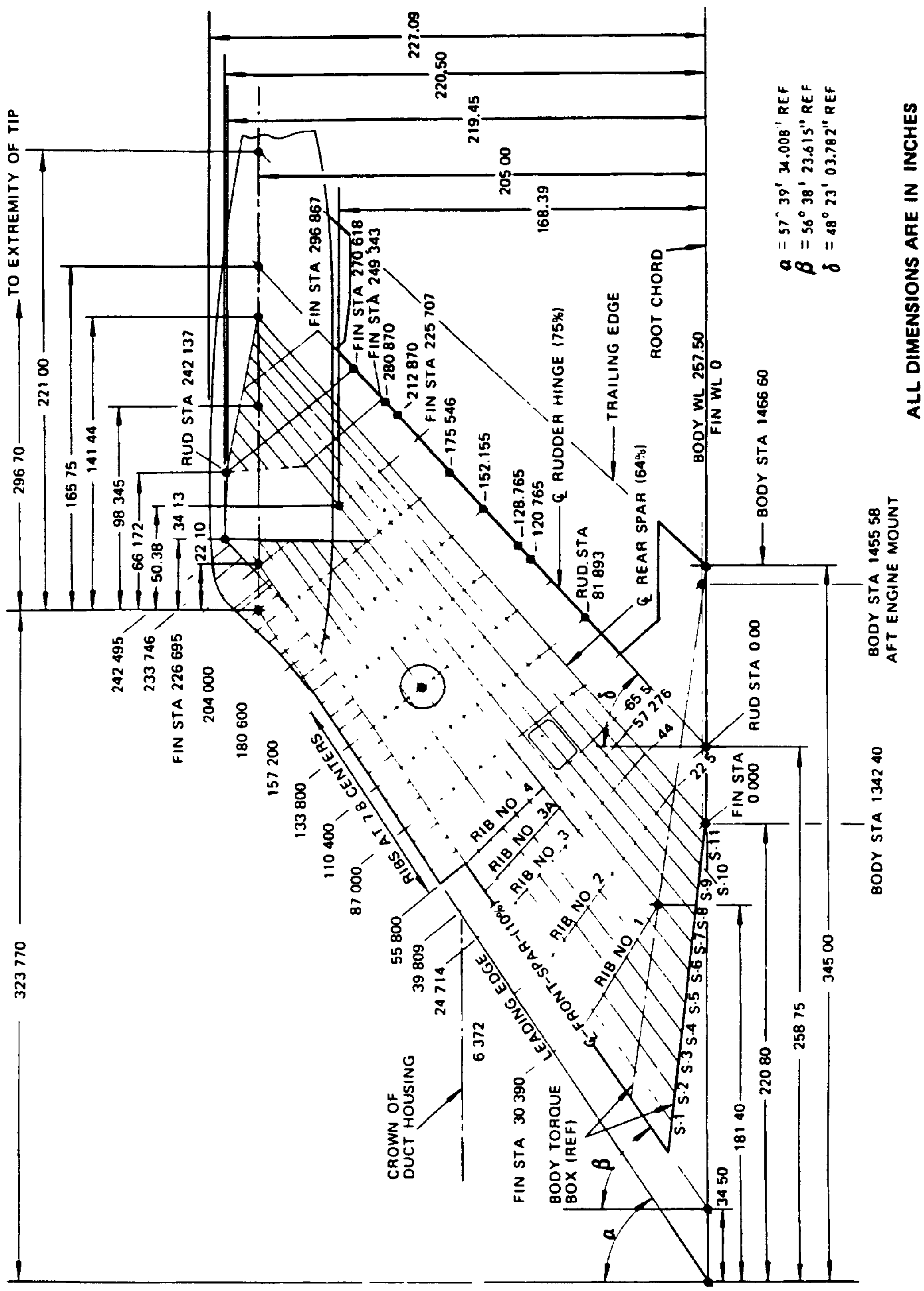


727-200

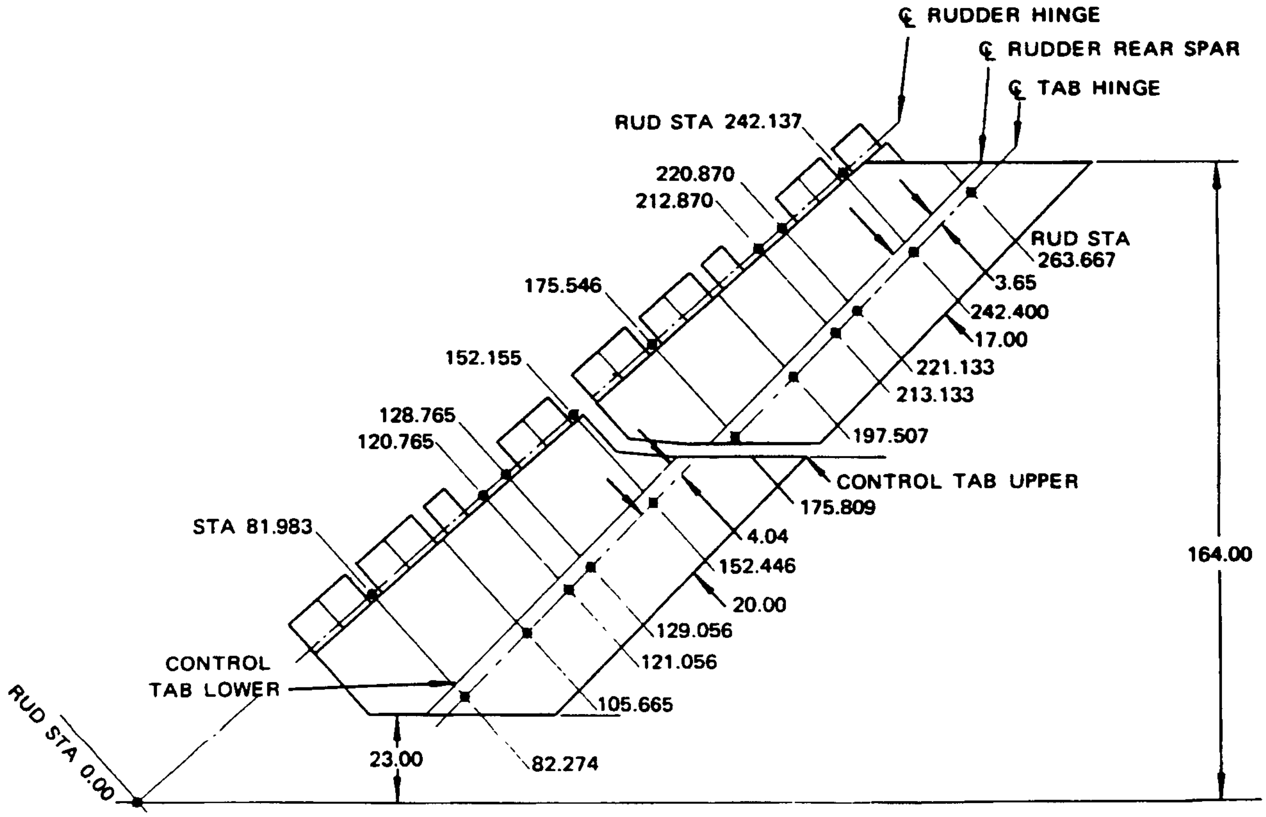
Fuselage Station Diagram
Figure 3 (Sheet 2)



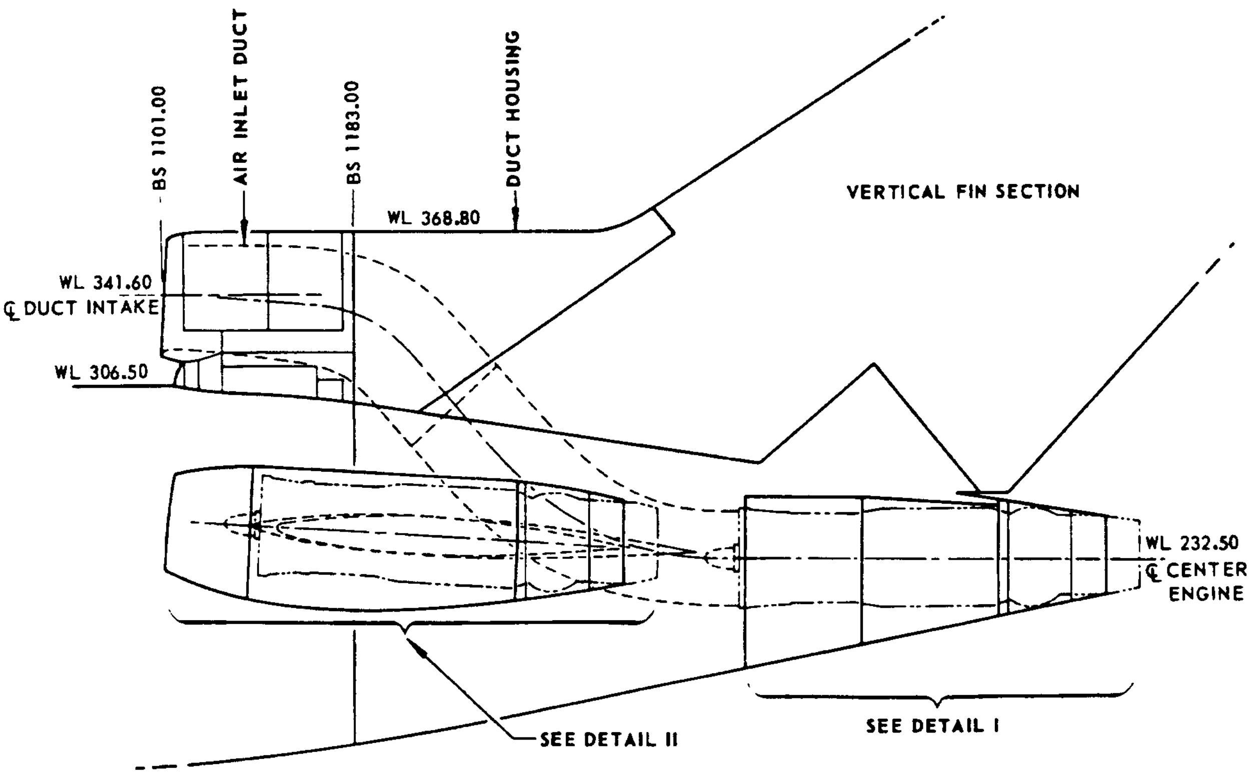
Horizontal Stabilizer and Elevator Station Diagram
Figure 4



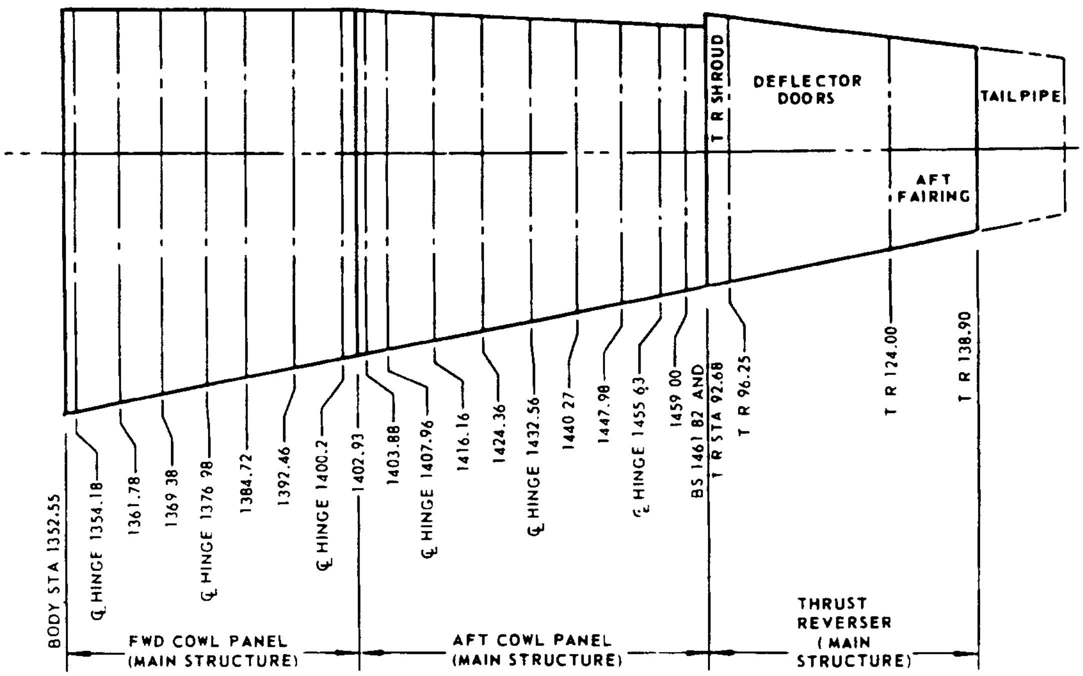
Vertical Fin and Rudder Station Diagram
Figure 5



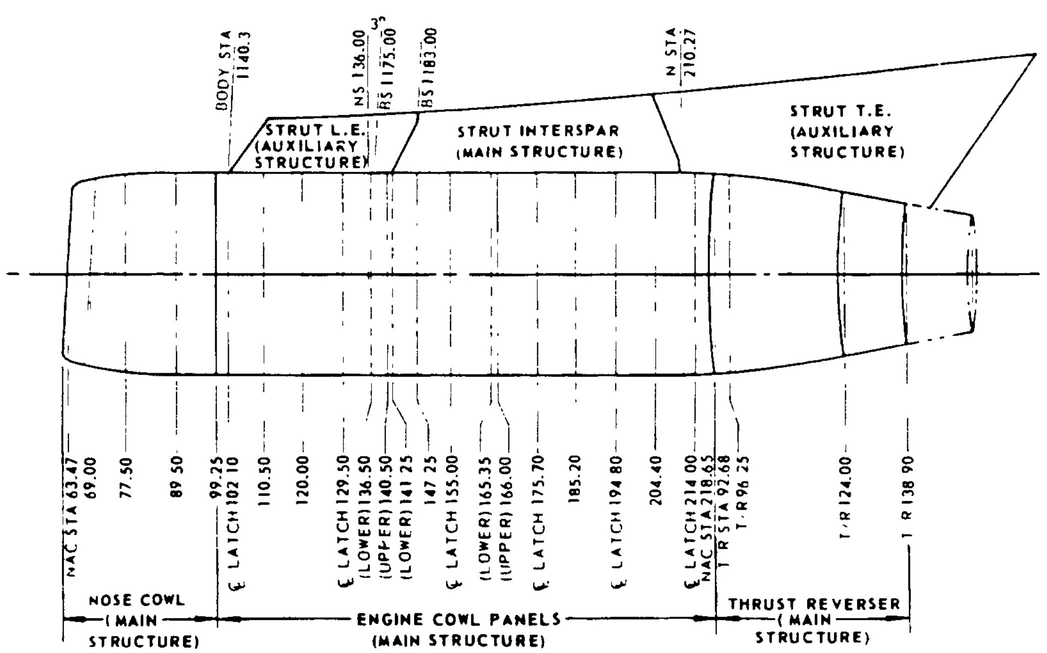
Rudder Station Diagram
Figure 6



Nacelle and Pylon Station Diagram
Figure 7 (Sheet 1)



DETAIL I - SIDE VIEW OF CENTER ENGINE



DETAIL II - PLAN VIEW OF LH SIDE ENGINE (RH SIDE OPPOSITE)

Nacelle and Pylon Station Diagram
Figure 7 (Sheet 1)

CHAPTER

25

EQUIPMENT AND FURNISHINGS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Door-Mounted Escape Slide	Corrosion of the floor plates at entry and service doors and mid-cabin locations. (Improved installation at line No. 872 and by SB 25-185.)	25-60-27 Fig. 1	
	Corrosion found on girt retainer bar under nylon sleeves.	25-60-27 Fig. 1	
	Corrosion found on latch cable assemblies. (Corrosion resistant cables installed at cum line number 1116 and SB 25-223.)		

Specific Corrosion Problems - Equipment and Furnishings
Figure 1

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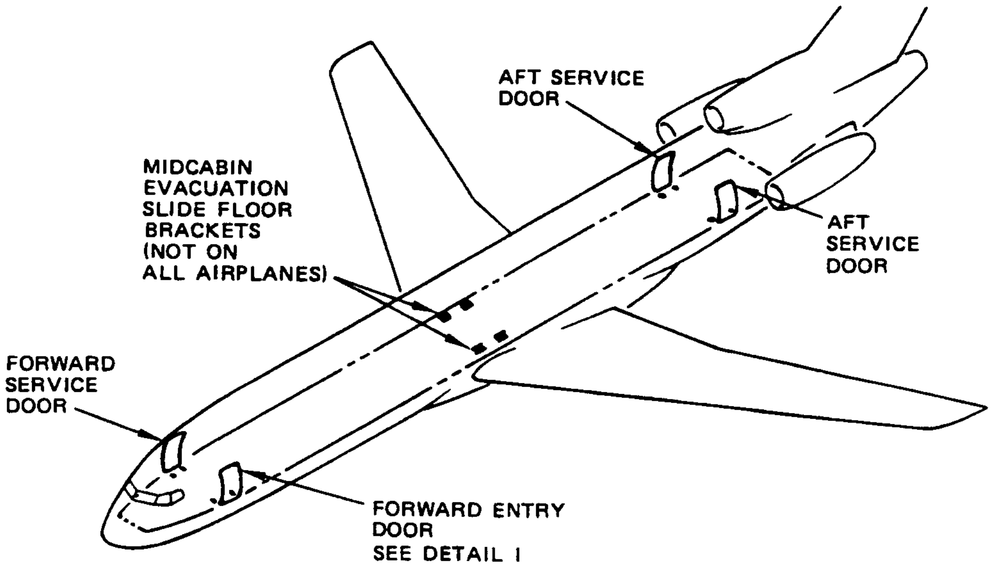
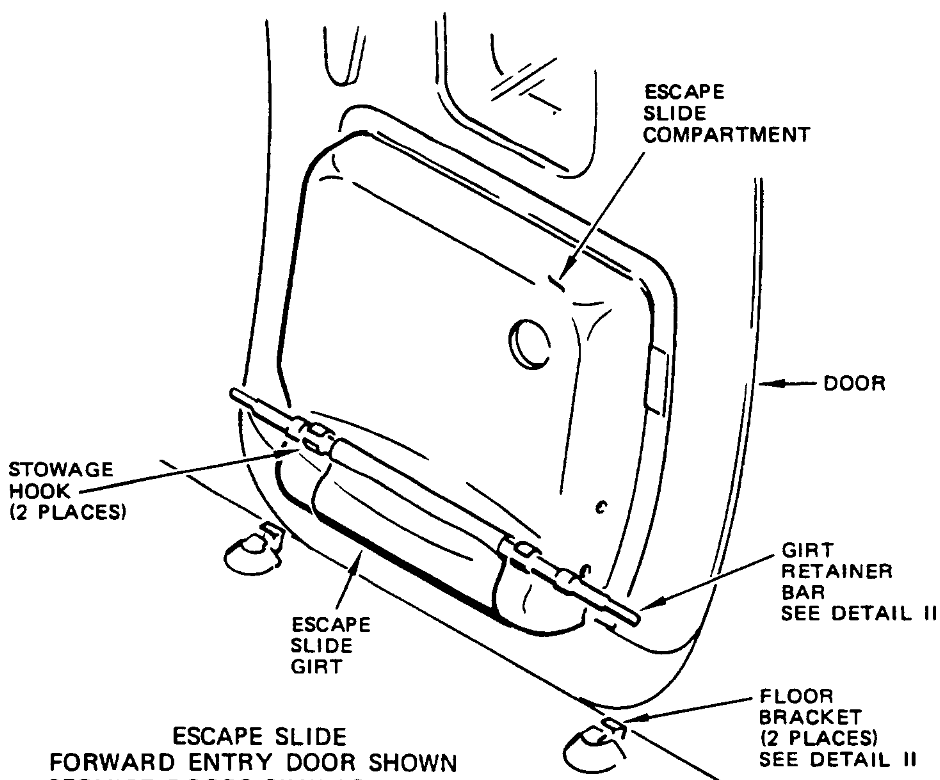
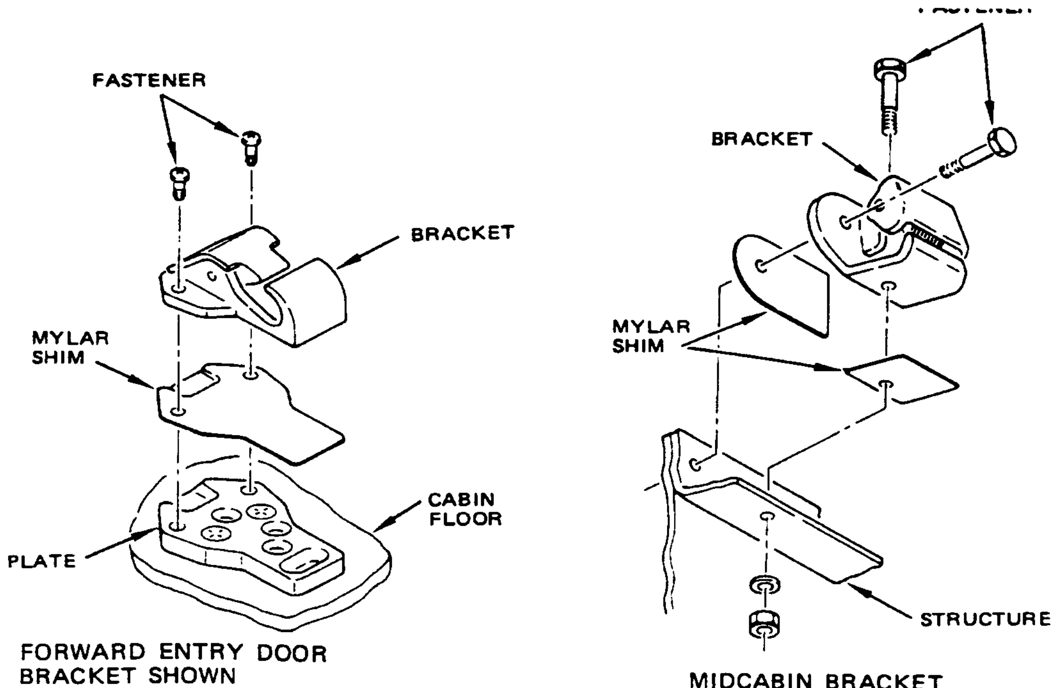


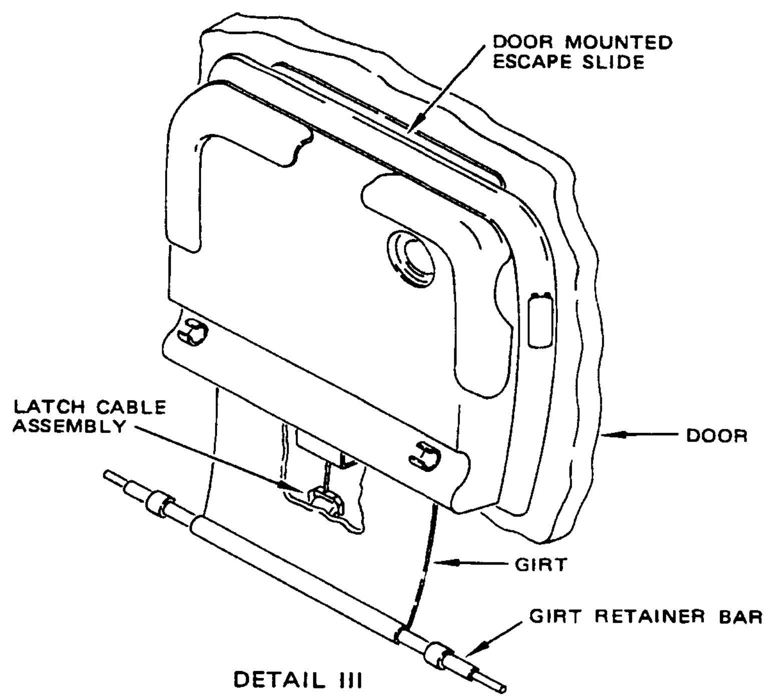


ESCAPE SLIDE
FORWARD ENTRY DOOR SHOWN
SERVICE DOORS SIMILAR
DETAIL I

Door Mounted Escape Slide
Figure 1(Sheet 1)



ESCAPE SLIDE
FLOOR BRACKETS
DETAIL II



DETAIL III

Door Mounted Escape Slide
Figure 1 (Sheet 2)

1. General

A. As a means of debarking the airplane in emergency situations escape slides are located at the entry and service doors and in some airplanes at the mid cabin locations shown in the illustration.

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

C. Corrosion has been encountered on the floor plates at the entry and service doors and on structure at the mid cabin locations. Corrosion has been attributed to the use of dissimilar metals in these installations. The brackets are steel and other components are made of aluminum. Bracket fasteners may also be corrosion suspect areas.

D. Corrective action has been accomplished at cum line 872 with the use of mylar shims between the bracket assembly and floor plate or structure in the case of mid cabin installations. In addition, faying surface sealants are applied at the mating surfaces of parts. Retroactive installation can be accomplished by incorporating SB 25-185.

E. Corrosion has been reported under the nylon sleeve and in the bore of the girt retainer bar. Slide vendors have been notified to provide moisture barriers on new assemblies.

F. On 727-100 and early 727-200, the escape slide latch cable assemblies were installed with carbon steel cables. Reports of corrosion on the subject cable assemblies have been received. Corrosion resistant steel cables have replaced the carbon steel cables in production at cum line number 1116 and can be installed retroactively by incorporating SB 25-223. Cum line numbers 1089, 1093, 1098, 1101, 1102, 1112 and 1115 have been retrofitted prior to delivery.

2. Corrosion Prevention

A. On airplanes thru cum line 871 inspect the floor bracket assemblies at the first opportunity consistent with scheduled maintenance activity.

B. Refer to SB 25-185 for preventive treatment of the floor bracket assemblies.

NOTE: It is recommended that SB 25-185 be incorporated on applicable airplanes because the work can be accomplished in a short time.

C. For extensive corrosion damage to the floor bracket assembly, refer to SB 25-185 for rework or replacement instructions.

D. Inspect girt retainer bar for corrosion 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.

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

(2) As an interim measure pending full inspection, use an eye dropper or similar applicator to apply water displacing corrosion inhibiting compound to the sleeve ends of the assembled girt retainer bar. Capillary action will distribute it to the sleeve/bar faying surface, thereby expelling any moisture.

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

E. Where pitting or evidence of corrosion exists on girt retainer bar, refer to Structural Repair Manual.

F. For inspection and preventive treatment of the carbon steel latch cable assembly refer to SB 25-223.

CHAPTER

26

FIRE PROTECTION

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Fire Extinguisher Bottle Squib	Tin plated squib corrosion and epoxy seal deterioration reported	26-20-27 Fig. 1	Replace with stainless steel squib per APCO Service Bulletin FMTC 331 FMTC 332 FMTC 333

Specific Corrosion Problems - Fire Protection
Figure 1

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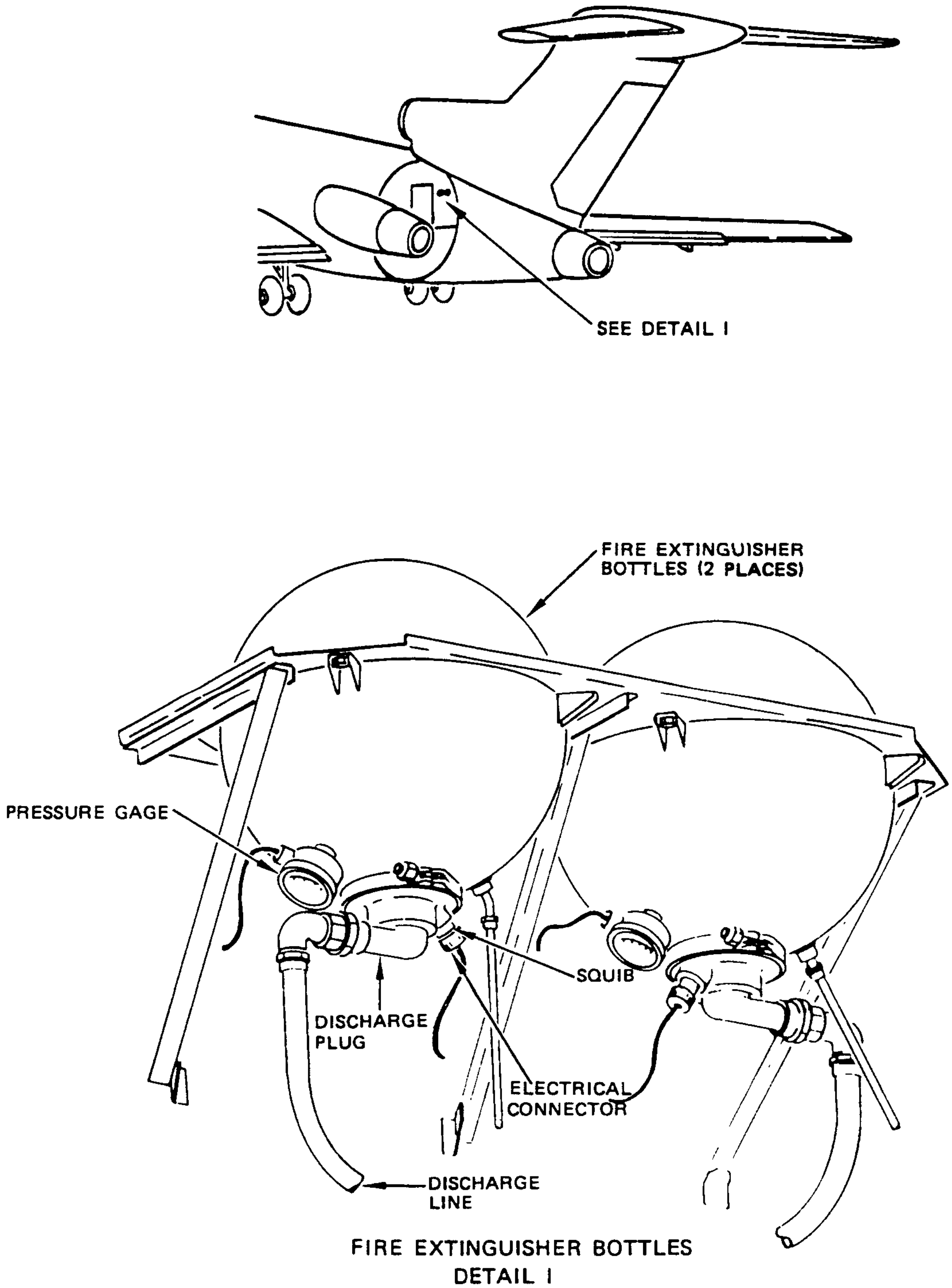

FIRE EXTINGUISHER BOTTLES
DETAIL I

Fire Extinguisher Bottle Squib
Figure 1

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 in case of fire. This system is electrically controlled by switches located on the pilot's fire switch panel. The inert gas is stored in spherical storage bottles located to the right of the aft entry stairs on the aft pressure bulkhead. Also, a fire extinguisher bottle is located in the left wing fillet area to extinguish APU fires. In addition, on airplanes on which SB 25-221 has been incorporated, a fire extinguisher bottle is located in each lavatory to extinguish fires under the sink counter. The corresponding production change is effective at cum line number 1085.

B. Corrosion on tin-plated squibs has been reported. Each tin-plated squib is susceptible to corrosion regardless of its location on the airplane. However, a tin-plated squib installed in the APU area is most susceptible. There have been reports of the 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.

2. Corrosion Prevention

A. Inspect squib per 727 Maintenance Manual, 26-21-81, at the first opportunity consistent with scheduled maintenance activity.

B. Refer to APCO Service Bulletins FMTC 331, FMTC 332, and FMTC 333 for preventive replacement of existing tin-plated fire extinguisher squibs with new stainless steel squibs.

NOTE: It is recommended that the above mentioned service bulletins be incorporated on applicable airplanes in order to minimize the possibility of squib corrosion.

NOTE: Maximum total life of all squibs is 10 years. Maximum in-airplane service life is 6 years for a tin-plated squib and 5 years for a stainless steel squib.

C. If squib corrosion is present, replace existing squibs with stainless steel squibs per APCO Service Bulletins FMTC 331, FMTC 332, and FNTC 333.

D. On the bottle located in the APU area, apply a bead of Silastic 731 RTV adhesive sealant and RTV 1200 primer around the mating surface between the bottle neck and discharge plug to keep water from entering through the threads.

CHAPTER

27

FLIGHT CONTROLS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Flight Control Cables	Cables are subject to corrosion where the protective grease has been removed, particularly if exposed to moisture.		
Rudder Control Tension Rods	Tension rods are subject to corrosion	27-00-27 Fig. 1	
Horizontal Stabilizer Controls	Ball nut assembly and jackscrew subject to corrosion where oil lubricator has been damaged.	27-40-27 Fig. 1	

Specific Corrosion Problems - Flight Controls
Figure 1

1. General

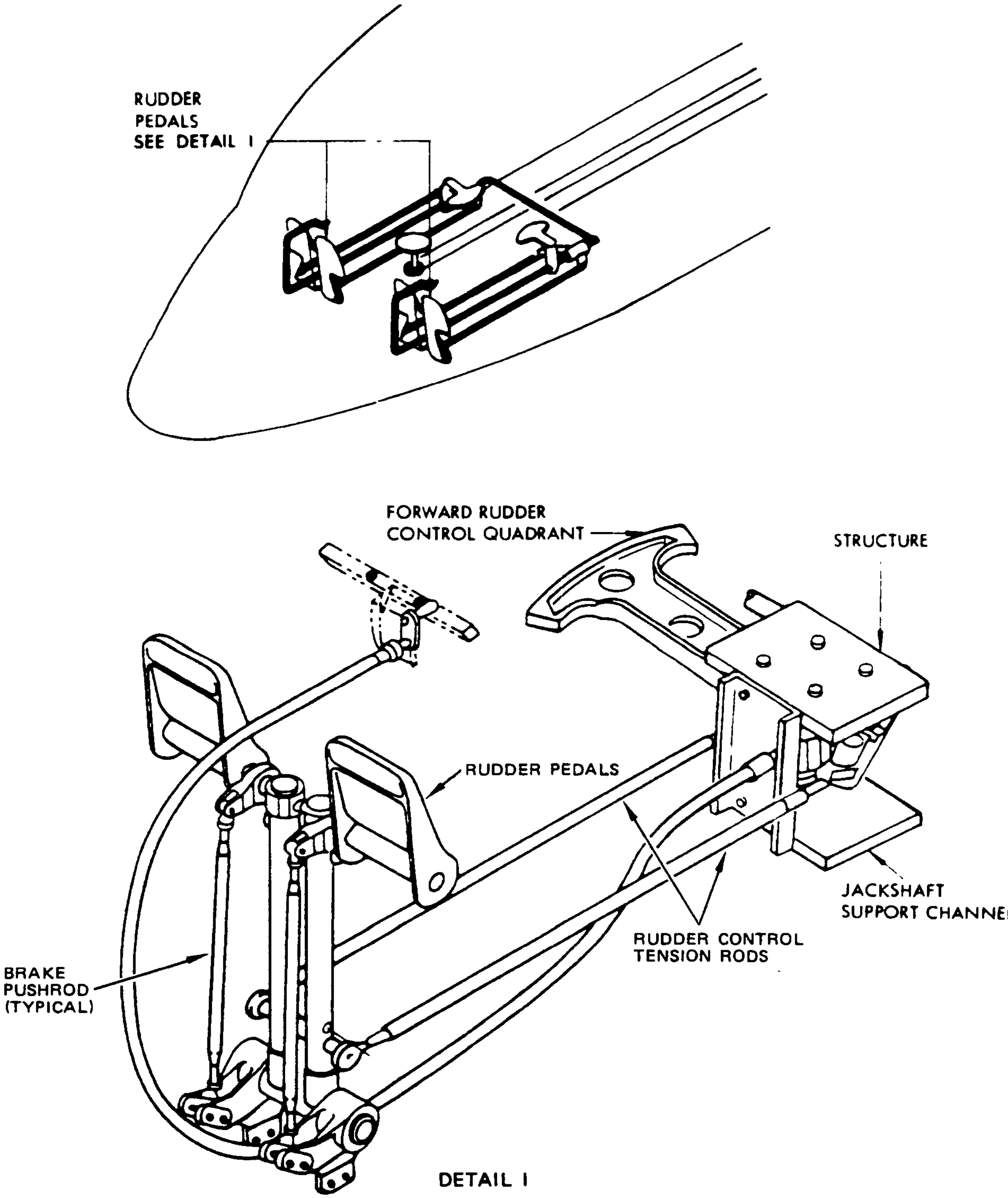
A. Flight control cables are made from thin strands of tinned carbon steel wire. Cables are protected by a thin ribbon of grease between the strands, however instances of corrosion have been reported where the grease film has deteriorated and the cables have been subjected to moisture.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to wipe off the grease with a dry, lint-free cloth and make a periodic inspection to preclude or detect early stages of corrosion.

B. Apply a thin film of grease over the length of the cable as described in 12-20-1 of the Maintenance Manual after the cable has been inspected.

C. Where corrosion has already started, refer to Structural Repair Manual.



Rudder Control Tension Rods
Figure 1

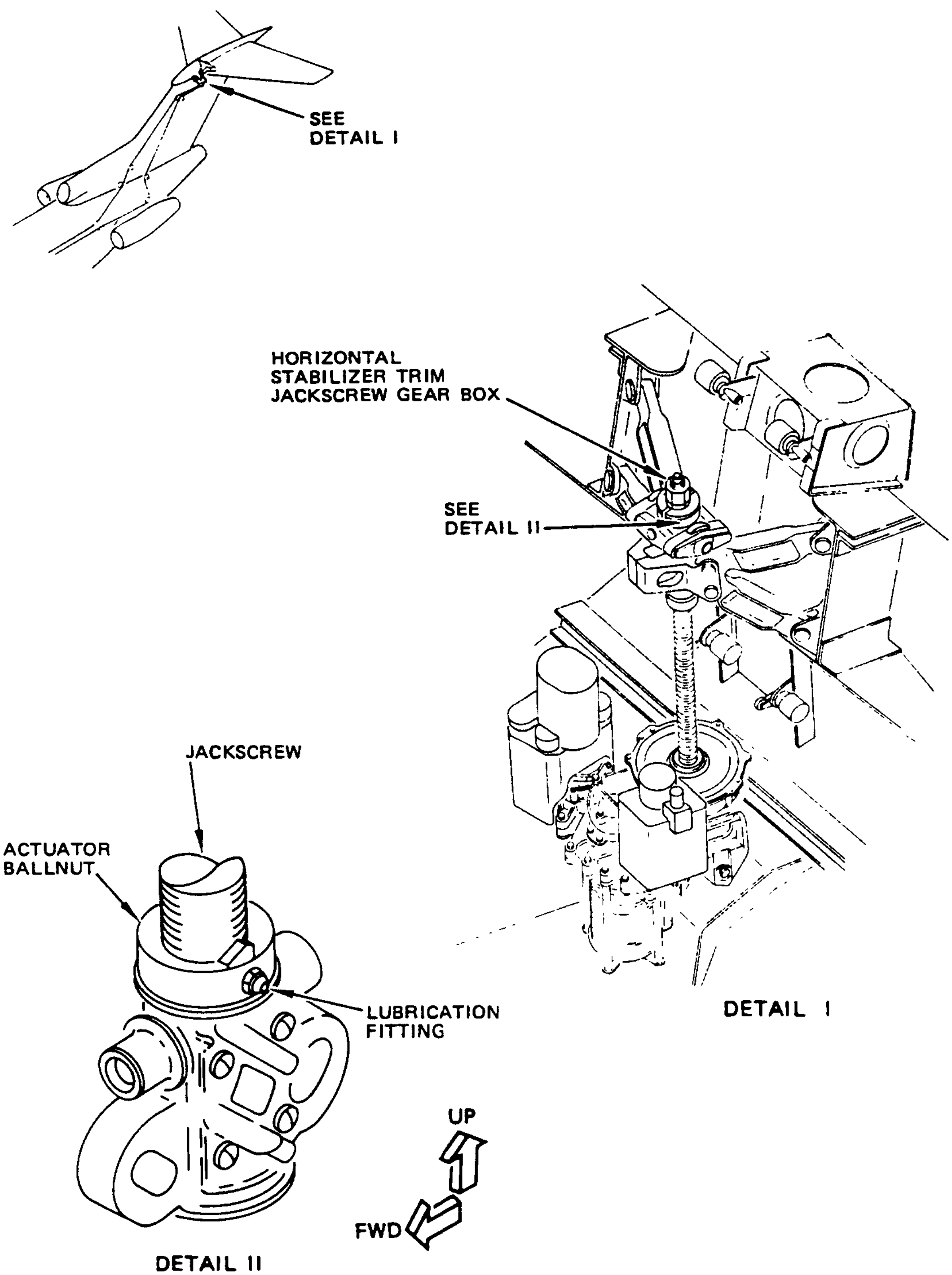
1. General

   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.



Horizontal Stabilizer Controls
Figure 1

1. General

A. Corrosion and resulting deterioration has been reported on the oil lubricators for the horizontal stabilizer trim jackscrew. Oil lubricator reservoirs were replaced with grease lubrication provisions in production airplanes from cum line number 1419. SB 27-180 provides modification procedures for those airplanes not modified in production.

2. Corrosion Prevention

A. Inspect for damaged horizontal stabilizer trim jackscrew oil lubricator on the ball nut assembly. A dry jackscrew and/or evidence of corrosion would indicate a need for corrective action. Incorporation of the lubrication provisions of SB 27-180 will reduce the possibility of corrosion in this area.

CHAPTER

28

FUEL

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Fuel feed line forward shroud area	Corrosion on engine fuel feed forward shroud hose assemblies	28-20-27 Fig. 1	
Supplemental fuel tank distribution manifold	Corrosion pits and cracking of the boost pump check valve and flange of the supplemental body fuel pump plumbing assembly	28-20-27 Fig. 2	

Specific Corrosion Problems - Fuel
Figure 1

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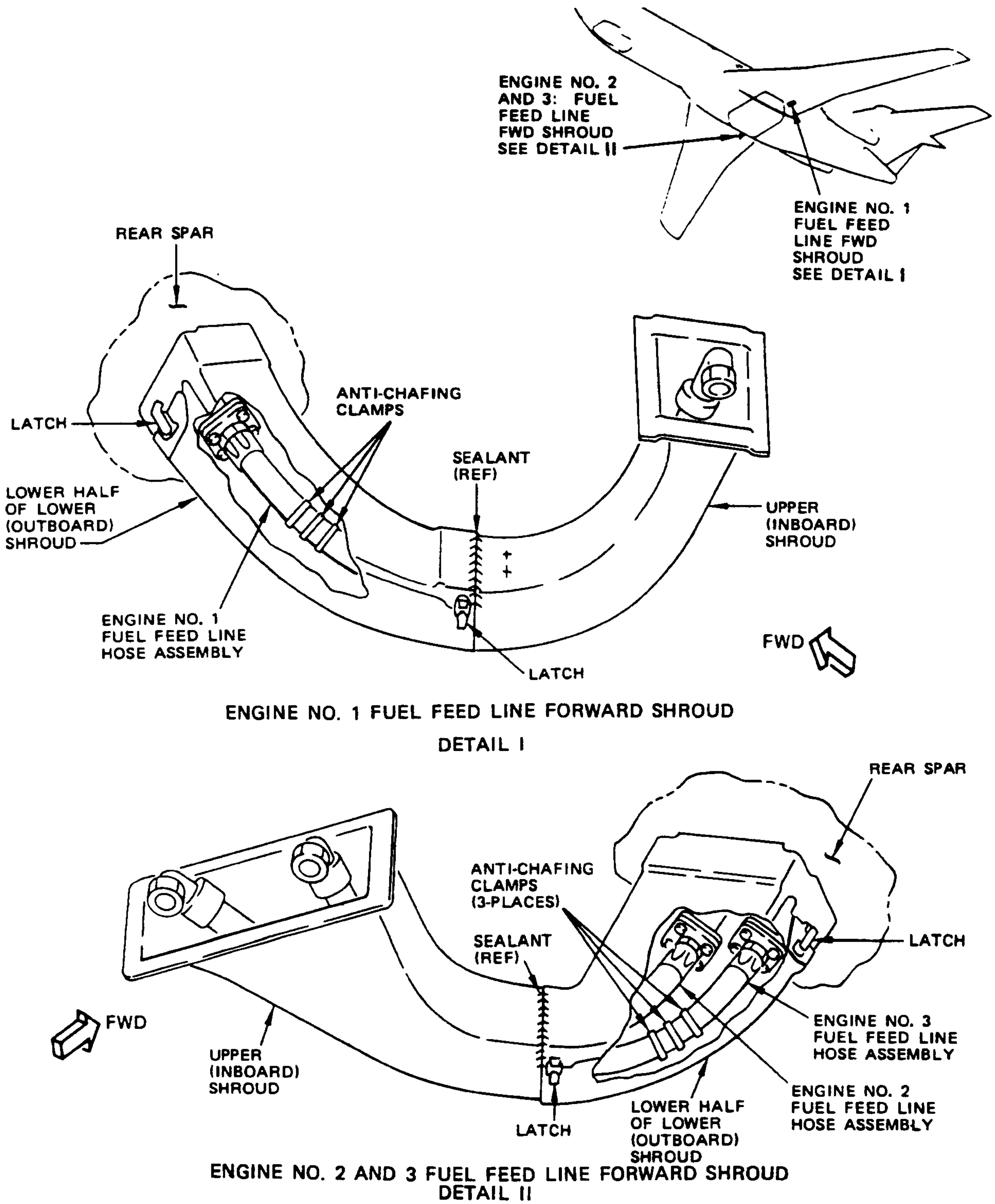


Engine Fuel Feed Forward Shroud Hose Assemblies
Figure 1

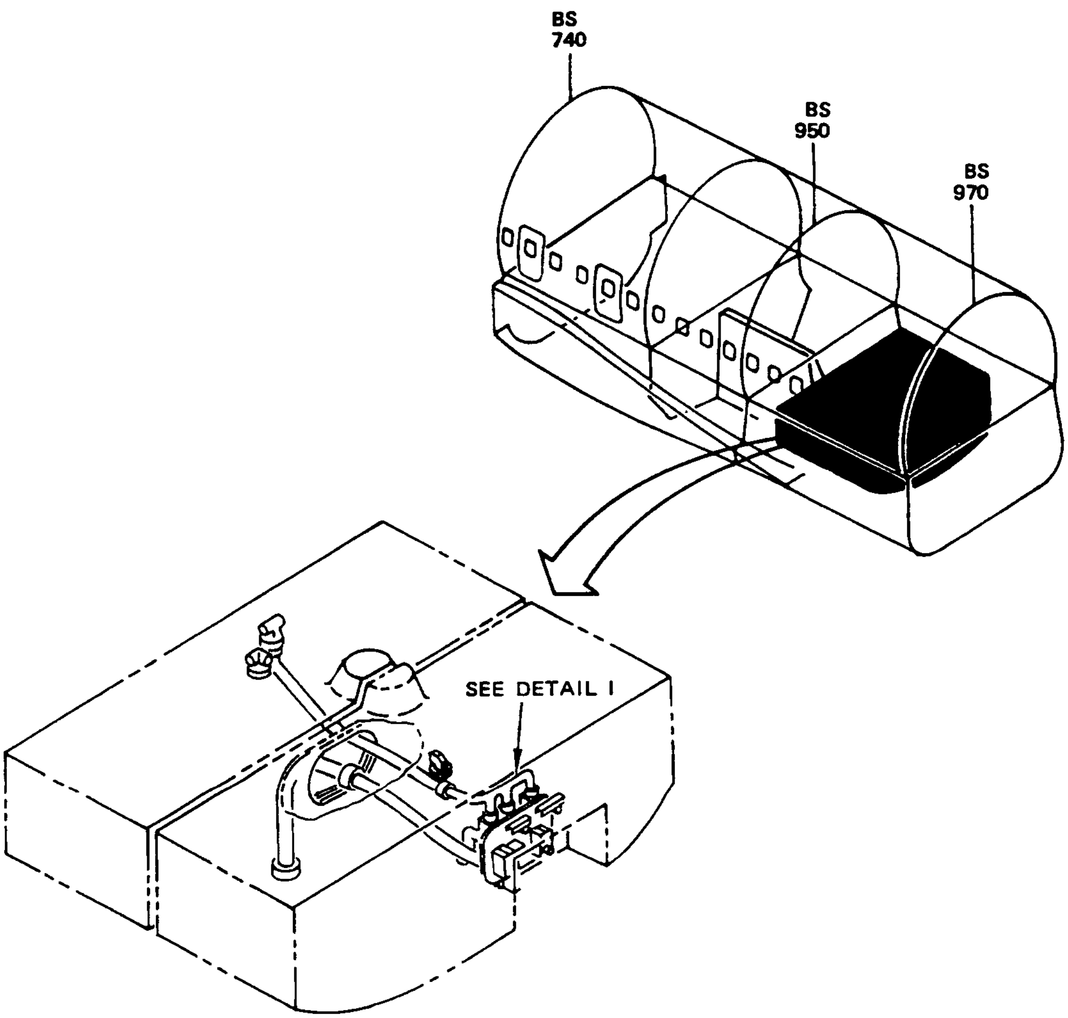
1. General

   A. Corrosion has been reported on the engine fuel feed forward shroud hose assemblies, and on the end fittings. Accumulation of airplane washing fluid in the shrouds has also been reported. Accumulated fluid could initiate corrosion of the wire braid in the hose, particularly where exposed by abrasion. A production change was initiated (effective at cum line number 1238) to install clamps on the hoses to prevent abrasion of the hoses due to contact with shroud. The production change also called for application of sealant on upper part of fuel shroud joint. SB 28-51 was issued to inspect and pressure check the hose assemblies for leakage, abrasion and corrosion. The service bulletin also called for replacement of discrepant hose assemblies and checking of shroud drain lines for adequate drainage.

2. Corrosion Prevention

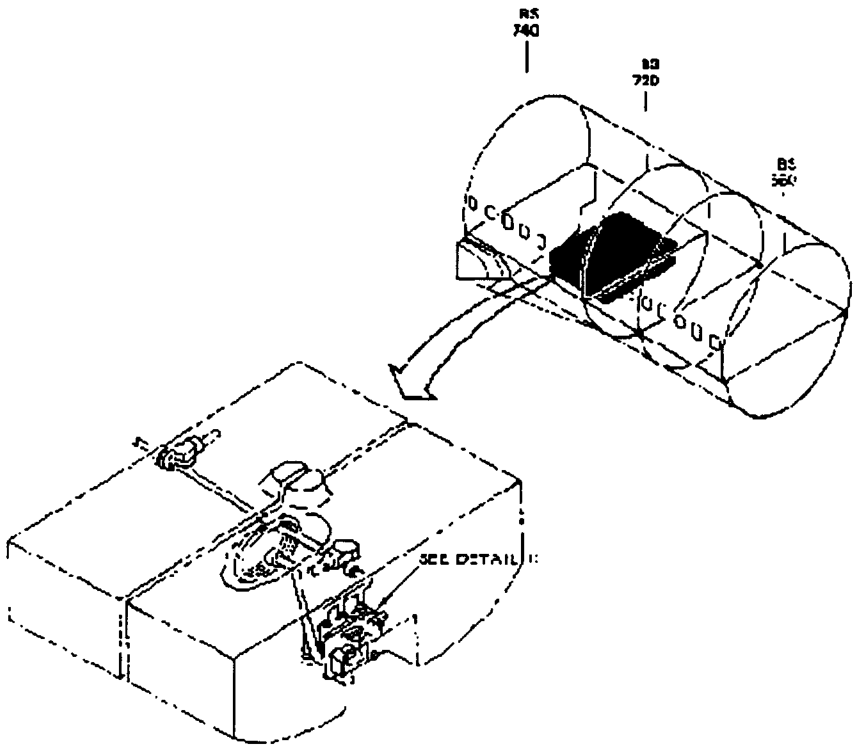
   A. Periodically inspect/check the engine fuel feed line forward shroud hose assemblies per 28-22-62 or 28-22-66 of the 727 Maintenance Manual. Replace any hose assembly as necessary per 28-22-61, 28-22-62, 28-22-65, or 28-22-66 of the 727 Maintenance Manual, as applicable.

   B. Pressure check fuel feed line per 28-22-62 or 28-22-66 of the 727 Maintenance Manual.

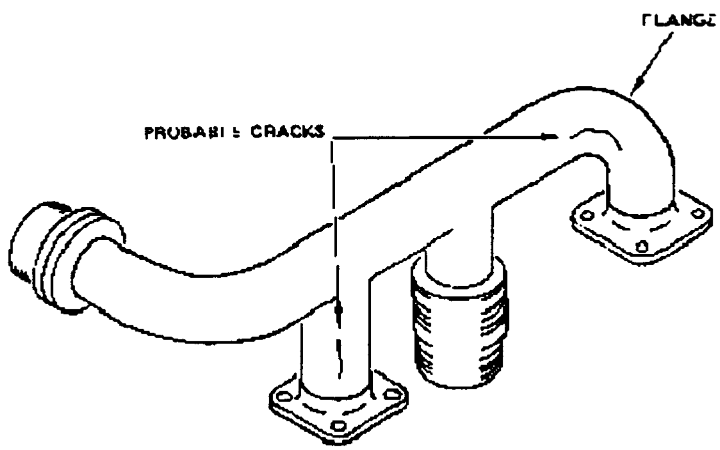


AFT SUPPLEMENTAL FUEL TANK

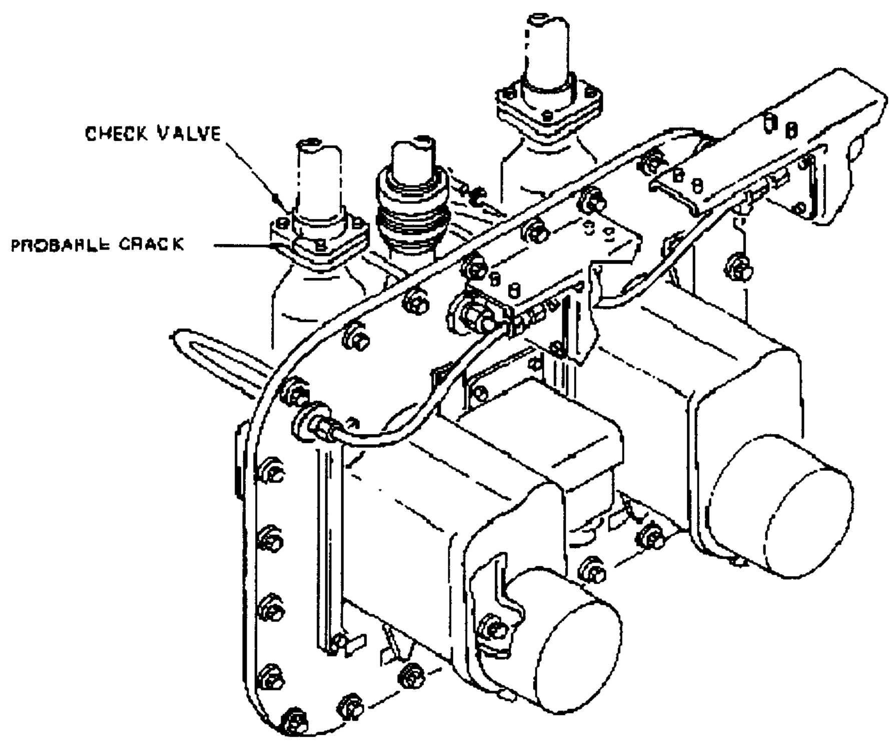
Supplemental Fuel Tanks
Figure 2 (Sheet 1)



Supplemental Fuel Tanks
Figure 2 (Sheet 2)



DETAIL I



DETAIL II

Supplemental Fuel Tanks
Figure 2 (Sheet 3)

1. General

A. Reports of unscheduled fuel transfer into the aft supplemental fuel tank, caused by the cracking of the supplemental body fuel pump pumping assembly, have been received. The cracks have typically occurred in the tube of the flange and located 1/2 inch from the weld area. Crack initiation is associated with corrosion pits, fatigue, and superficial surface scratches.

B. Reports of unscheduled fuel transfer from the forward to the aft supplemental fuel tank, attributed to cracked boost pump check valve, have been received. Cracks occurred where the valve is fastened to the manifold elbow, and started at the valve housing edge and extended across the tab at the radius to the housing. Crack initiation is associated with corrosion pits, fatigue, and superficial surface scratches.

2. Corrosion Prevention

A. Periodically inspect per 20-20-00 Volume I for evidence of corrosion. Remove corrosion per 20-40-00, Volume 1.

B. A revised auxiliary tank plumbing installation procedure which will alleviate stress factors was incorporated in production starting with line position 1745. Refer to the 727 Maintenance Manual, Section 28-14-21, page 429, for improved plumbing installation procedure.

CHAPTER

29

HYDRAULIC POWER

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Hydraulic Lines, Valves and Fittings	Hydraulic lines, valves and fittings are susceptible to corrosion when they are exposed to severe environment	29-10-27 Fig. 1	

Specific Corrosion Problems - Hydraulic Power
Figure 1

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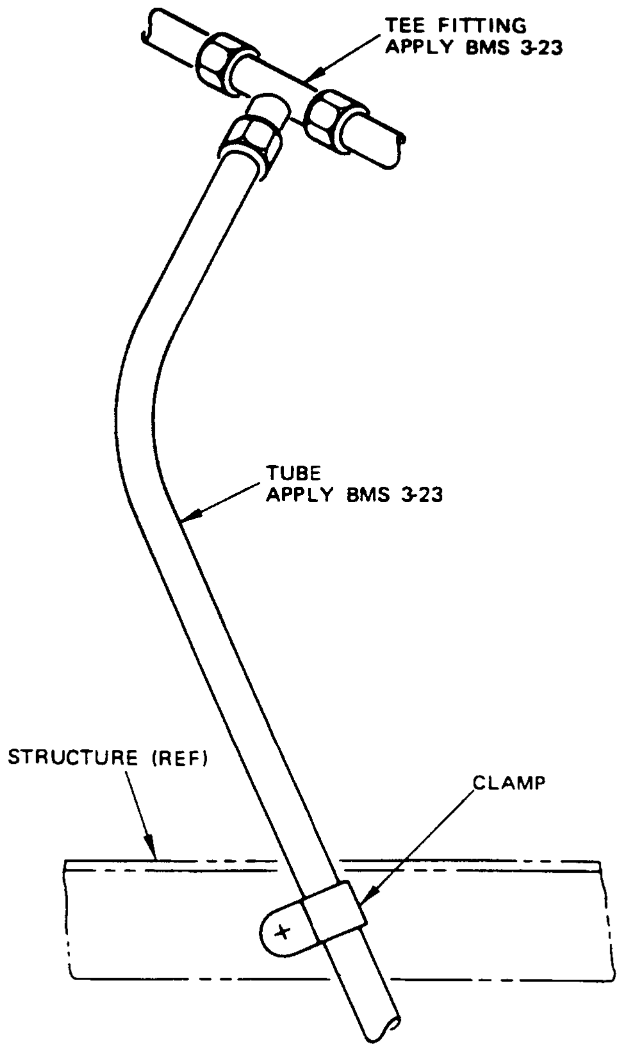

Hydraulic Plumbing
Figure 1

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

CHAPTER

32

LANDING GEAR

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Main Landing Gear	Stress corrosion cracking on hydraulic feeder on trunnion swivel assemblies	32-10-27 Fig. 1	
	Stress corrosion cracking on manual extension gearbox housing		SB 32-245
	Corrosion on uplock hook assembly		SB 32-279
	Stress corrosion cracking on aft trunnion journal		SB 32-214 and SB 32-230
	Stress corrosion cracking on main landing gear trunnion link assembly		
	Stress corrosion cracking on main landing gear downlock torque shaft		
	Stress corrosion on main gear door actuator rod support fitting assembly		SB 32-178, 32A384
	Corrosion on main gear actuator beam support link shaft		SB 32-306 and AD 88-2401
	Corrosion of joints		SB 32-274
	Stress corrosion cracking on the bore of the main gear uplock assy lower actuator crank		SB 32-306
	Stress corrosion cracking on the main gear beam support link.	32-10-27 Fig. 1	SB 32-90
	Corrosion in the area of the main gear drag strut fuse bolt.		SB 32-150 SB 32-157

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Corrosion on the lower segment assembly of the main gear side strut.		
	Corrosion on the main gear shock strut outer cylinder at the trunnion link attach point.		
	Stress corrosion cracking on the main gear manual extension support yoke lower attach lug bearing housing.		SB 32-187
	Stress corrosion cracking on the main gear actuator beam at the clevis.		SB 32-188
	Stress corrosion cracking on the main gear actuator support link assembly.		AD 68-17-1 and SB 32-189
	Heavy corrosion on the internal spline at the trunnion end.		SB 32-184
Nose Landing Gear	Corrosion on landing gear components due to environmental exposure	32-20-27 Fig. 1	
	Stress corrosion on the release mechanism torsion shaft.		SB 32-203 and SB 32-238
	Stress corrosion cracking on right trunnion pins.		
	Pitting corrosion on the exterior surface of trunnions in contact with and adjacent to the bearing.		
	Corrosion on the nose gear attach bracket.		SB 32-89

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Extensive corrosion on the nose gear drag brace lock actuating arm.		SB 32-186
	Corrosion on joints.		SB 32-278
Nose Landing Gear Manual Extension Drum Cable Drum Housing	Stress corrosion cracking of the lugs on the aft cable drum housing (Material changed from magnesium to aluminum at line No. 1176).	32-30-27 Fig. 1	
Main Landing Gear Manual Extension	Corrosion of the MLG manual extension yoke attach bolts.	32-30-27 Fig. 2	

Specific Corrosion Problems - Landing Gear
Figure 1 (Sheet 1 - Sheet 3)

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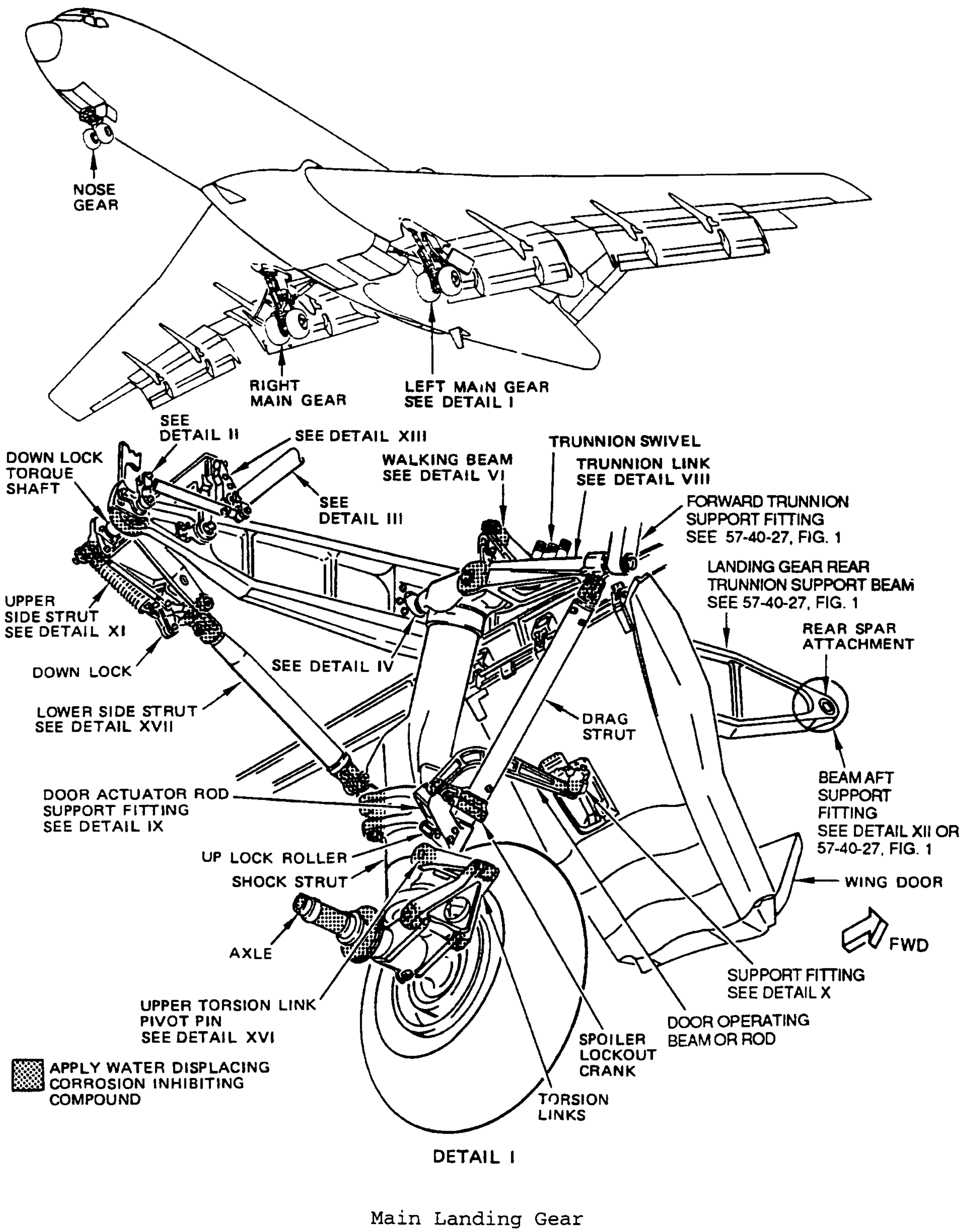
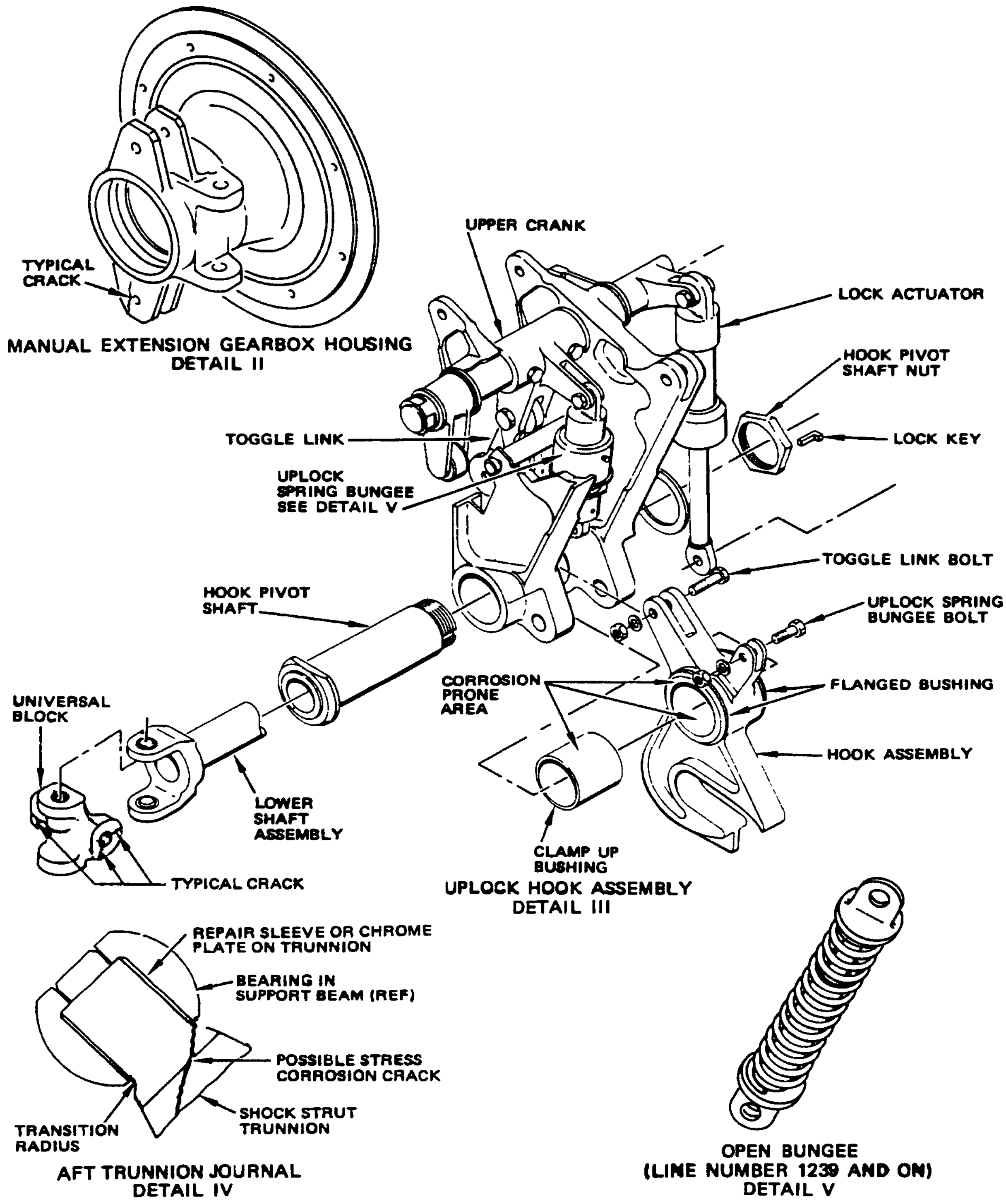
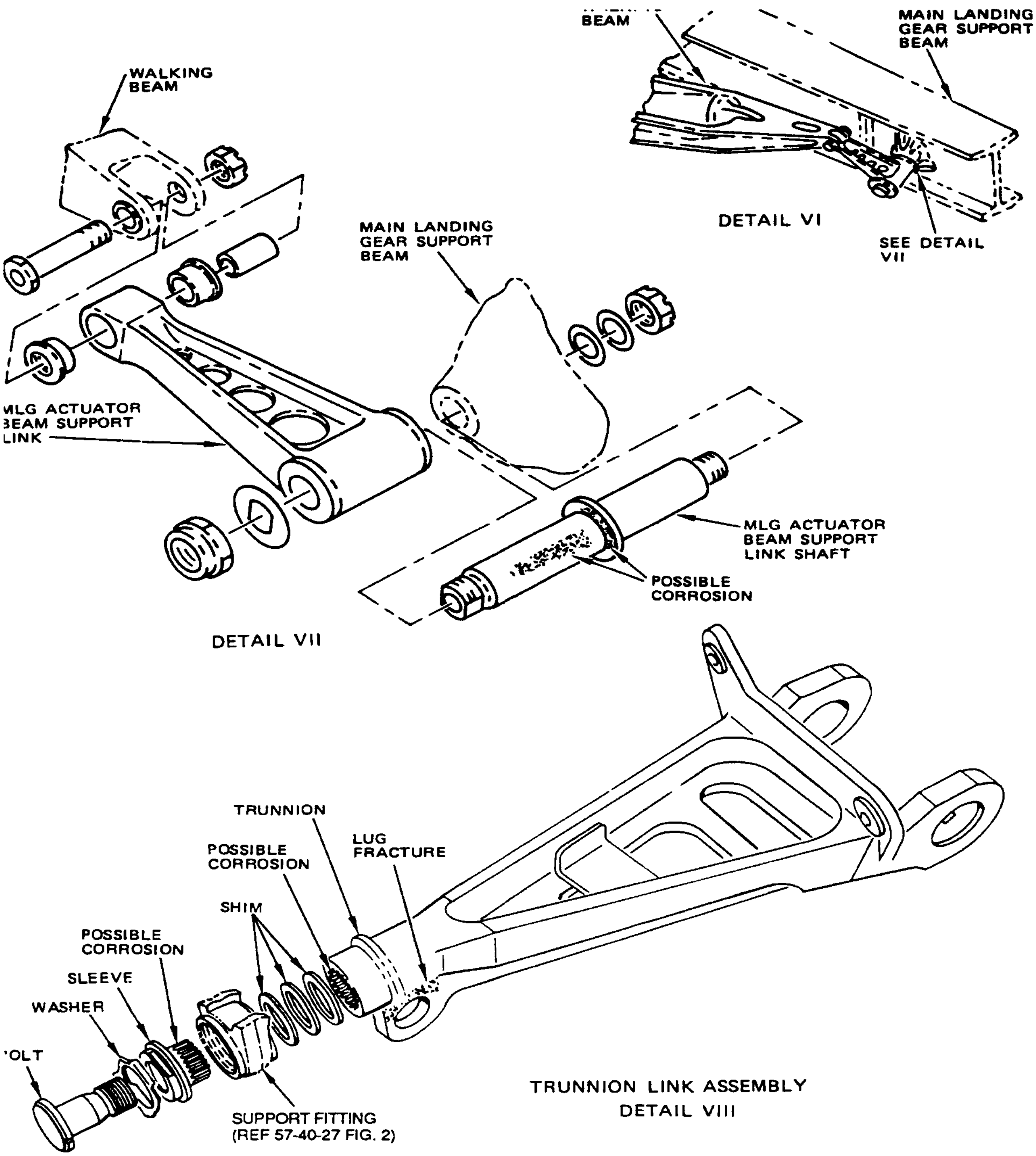


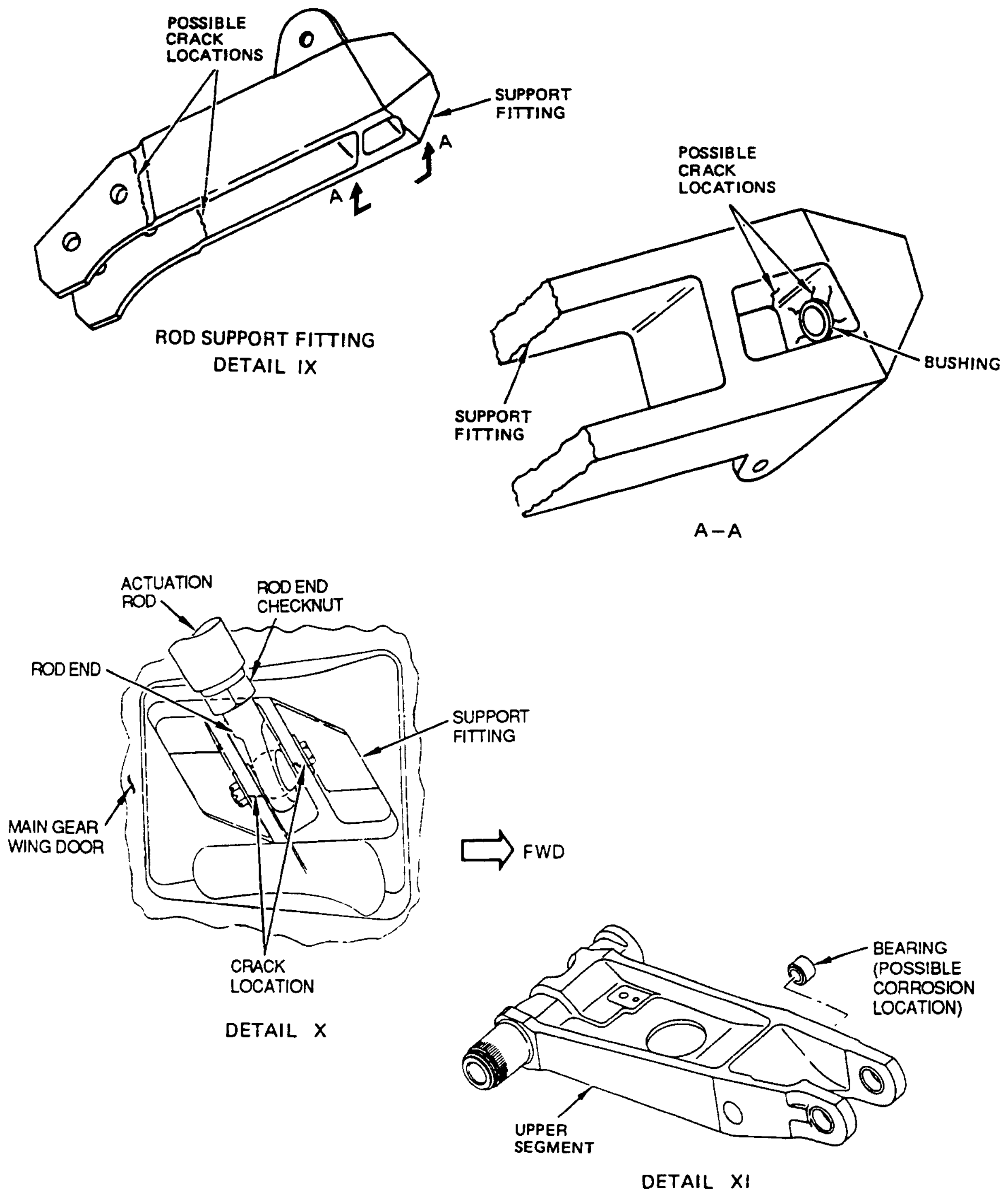
Main Landing Gear
Figure 1 (Sheet 1)



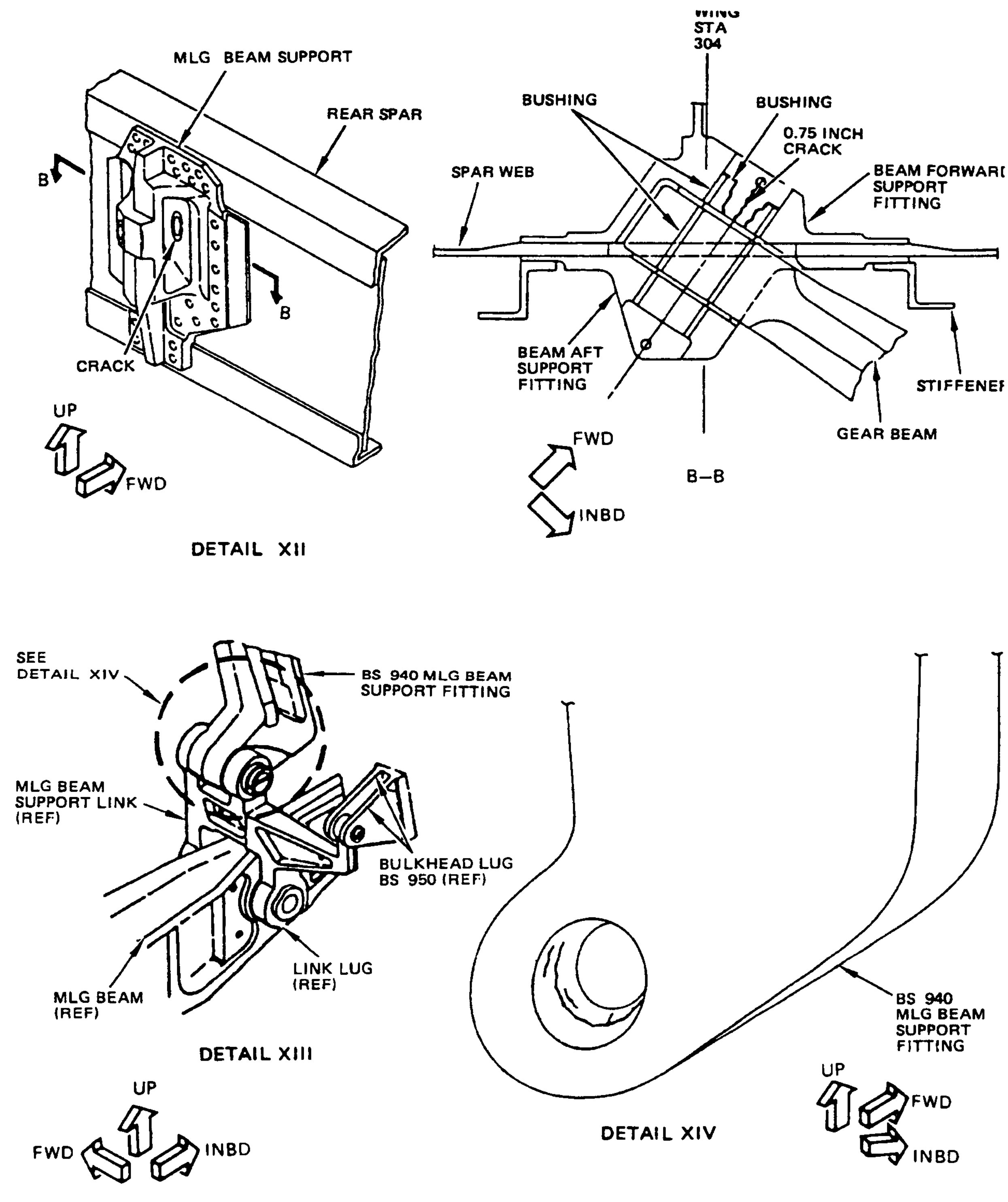
Main Landing Gear
Figure 1 (Sheet 2)



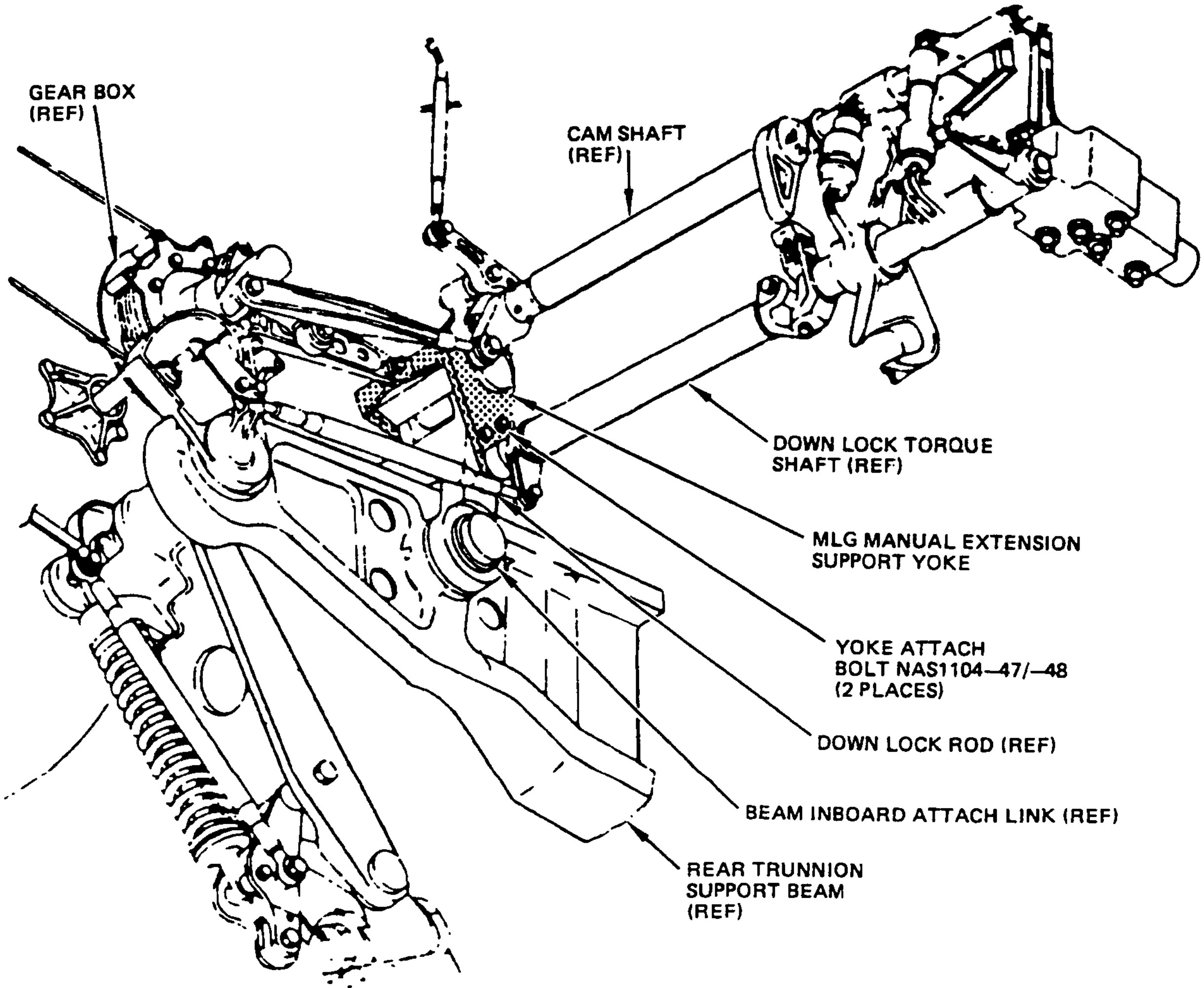
Main Landing Gear
Figure 1 (Sheet 3)



Main Landing Gear
Figure 1 (Sheet 4)

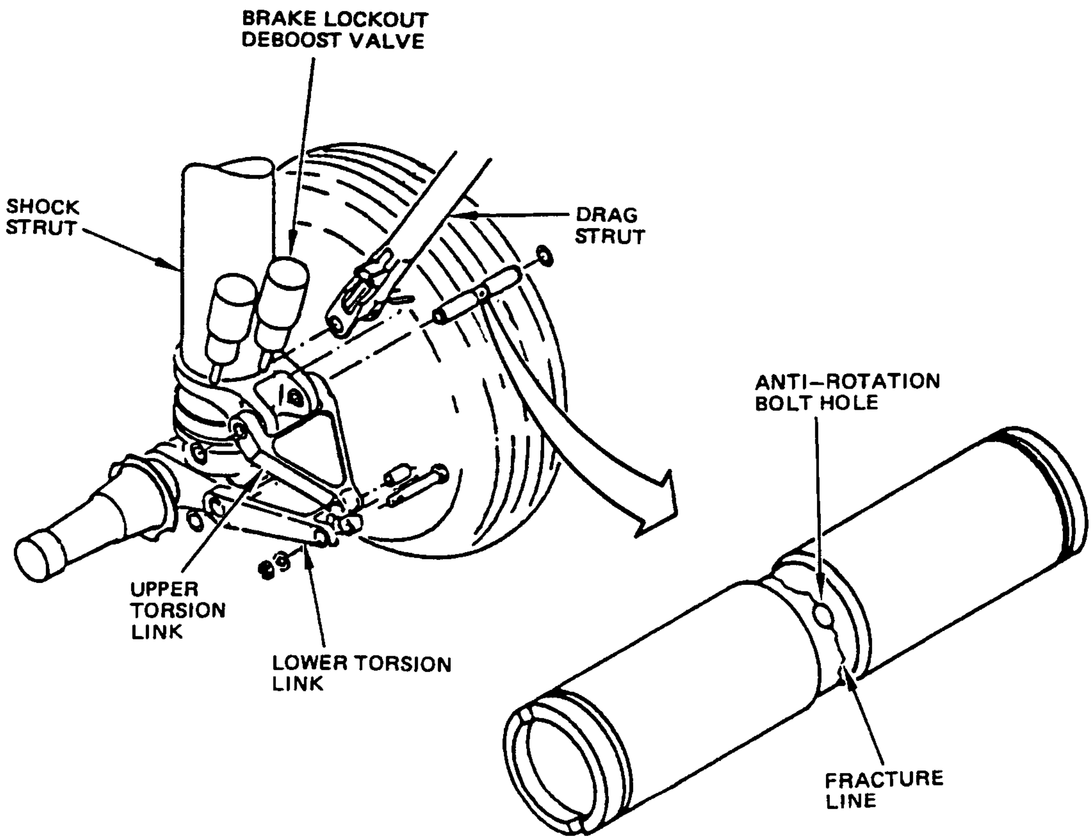


Main Landing Gear
Figure 1 (Sheet 5)



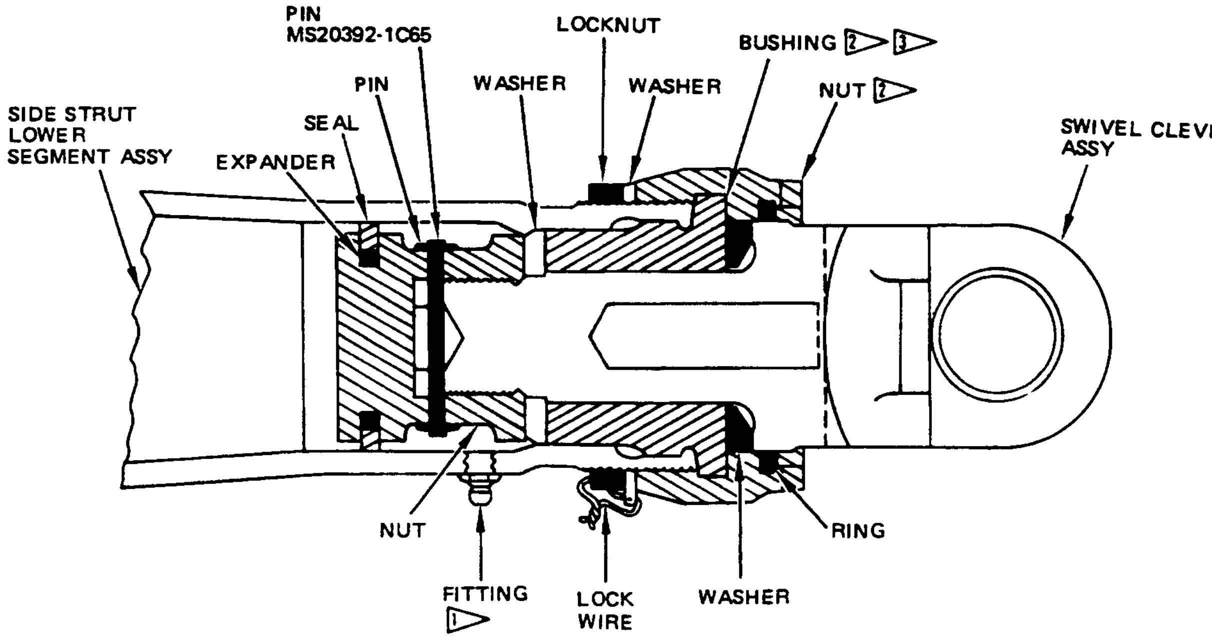
DETAIL XV

Main Landing Gear
Figure 1 (Sheet 6)



DETAIL XVI

Main Landing Gear
Figure 1 (Sheet 7)



DETAIL XVII
CROSS SECTION VIEW
(LOWER SEGMENT ASSEMBLED)

1 LUBE FITTING INSTALLATION PER SB 32-157

2 REPLACEMENT PER SB 32-157

3 LUBRICATE WITH GREASE MIL-G-21164 OR EQUIVALENT PRIOR TO INSTALLATION

Main Landing Gear
Figure 1 (Sheet 8)

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. Stress corrosion cracking of the hydraulic feeder tubes on the trunnion swivel assemblies has been reported and required unscheduled removals. Material change on the tube assemblies was made at cum line number 883 to minimize stress corrosion failures that were experienced earlier.

C. Stress corrosion cracking of the vertical support attaching lugs on the main landing gear manual extension gearbox housings has been reported. Failure of the support lug could prevent manual locking of the main gear in down position. Material change from 7079-T6 to 7075-T73 was made at cum line number 897 and can be incorporated retroactively by incorporating SB 32-279 or SB 32-164 (See Detail II).

D. Corrosion has been reported on the uplock hook assembly in the main landing gear hook mechanism. Corrosion buildup occurred in the area between the ends of the flanged bushings installed in the hook causing the flanged bushings and the clamp-up bushing to bind (See Detail III). A grease fitting will be installed on the hook at cum line No. 1554 and retroactively by incorporating SB 32-245.

   Cracking caused by stress corrosion was also found on the bore of the main gear uplock assembly lower actuation crank. Failure of the crank could cause an out-of-sequence operation of the door sequencing valve which may result in the gear contacting the door, thus jamming the door and gear.

E. Stress corrosion cracks can occur on the aft trunnion of the outer cylinder (See Detail I). On some of these trunnions, a repair sleeve moved forward and hit the transition radius. This rubbed off the protective finish and let corrosion pits start. Stress corrosion cracks that started at the pits then broke the trunnion. Stress corrosion cracks can also occur on trunnions without repair sleeves. SB 32-214 and SB 32-230 give procedures for inspection and repair of these trunnions. Equivalent procedures are in Overhaul Manual 32-12-01 for shock struts removed from the airplane.

F. Stress corrosion has been reported on the main landing gear actuator beam support link shaft. SB 32-284 provides for inspection and rework of the actuator beam support link shaft. Corrosion of the forward face of the flange and shaft have also been reported. Cracks believed to be caused by stress corrosion have been reported on the shaft-to-flange forward radius of the link shaft.

G. Corrosion pits in the bead seat area under the anodizing have been reported on Goodrich main landing gear wheels. The caustic pickling process used by Goodrich subcontractors on wheels sitting around for long periods of time after manufacturing is the contributing factor to corrosion pits.

H. Stress corrosion resulting from abusive grinding of the lug face chrome plate of the main landing gear trunnion link assembly has been reported. Failure of the main landing gear trunnion link assembly could result in the main landing gear folding aft during landing. SL 32-38 provides a summary of the main landing gear trunnion link assembly fractures and current suggested operator action.

I. Stress corrosion cracks can occur on the support fittings at each end of the main landing gear door actuator rod (Details IX, X). This can cause 103S of the main landing gear wing door in flight. SB 32-178 and 32A384 give inspection and modification details for those fittings.

J. Numerous reports of cracks and corrosion on the main landing gear actuator beam support link shafts have been received. All 727 operators should refer to SB 32-306 for replacement or rework information. Revision 2 of SB 32-306 came out to add more recommended changes on the repair of MLG actuator beam for aging 727 airplanes. FAA-AD-88-24-01, amendment 39-6057 came out to include SB 32-306.

K. Corrosion in the upper torsion link pivot shaft anti-rotation bolt hole has resulted in the fracture of the steel shaft.

L. Corrosion has been reported in the shock strut outer cylinder for the metering pin support tube and in the neck of the support tube for airplanes line numbers 1 thru 1357. Refer to SB 32-260 for rework instructions.

M. Stress corrosion cracks have been reported on the main landing gear downlock torque shaft. The cracks have occurred on the shoulder and outside diameter of the shaft.

N. There have been several reports of corrosion in the sealed needle bearings on the downlock link of the side strut upper segment. See Detail XI. Severe corrosion may restrict the extension of the landing gear.

O. Corrosion has been the cause for total fractures of main landing gear shock strut outer cylinders. Corrosion, resulting from the loss of protective finish due to fretting, between the cylinder and the bands used for attaching nameplates and hydraulic tubing, has been suggested as a possible contributing factor to these fractures.

   SB 727-32-0345 recommends application of mylar tape, wrapped around outer cylinder, to form protective barrier between cylinder and bands.

P. Stress corrosion has been the cause of a crack in MLG beam outboard end, forward support fitting at WS 304. The 0.75 inch long crack was at the aft lower edge of the forward hole bore and parallel with the bore axis of the forward support fitting (Fig. 1, Detail XII).

Q. Stress corrosion has been the cause of a crack in MLG actuator beam support link. Failure of the support link can result in the outboard end of the actuator beam to pivot at the trunnion support bracket that can cause considerable damage to the wing and possibly necessitate a gear up landing.

R. Corrosion has been reported in the area of the main gear drag strut fuse bolt. Bolt corrosion makes drag strut removal difficult and may result in damage to the drag strut and trunnion link assemblies.

S. Corrosion due to moisture collection has been discovered at the lower segment assembly of the main landing gear side strut at the time of strut disassembly.

T. Corrosion has been reported in the main gear shock strut outer cylinder at the trunnion link attach point.

U. Stress corrosion cracking has been reported in the main gear manual extension support yoke lower attach lug bearing housing.

V. Stress corrosion can cause cracks along the forging parting plane of the main gear actuator beam at the clevis where the actuator beam is attached to the actuator beam support link.

W. Stress corrosion cracks can occur in the main gear actuator beam support link assembly. An Airworthiness Directives (AD) 68-17-1 has been issued for the replacement of cracked or broken link assembly.

X. Heavy corrosion can occur on the internal spline at the trunnion link assembly forward end and the external spline of' the sleeve (refer to Detail VIII). The cause of corrosion was lack of lubrication on the splines.

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

C. Inhere 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

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(1) Shock Struts (Oleo). Apply corrosion inhibitor 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 inhibitor.

(2) Axles. Apply corrosion inhibitor 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 wiring.

(3) Side Struts. Apply corrosion inhibitor 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.

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

(5) Torsion Links. Apply corrosion inhibitor to surface areas with broken finish systems. All lugs, lug faces and connecting pins should be sprayed with corrosion inhibitor.

(6) Door Operating Beam. Apply corrosion inhibitor to surface areas with broken finish systems. All lugs, lug faces and connecting pins should be sprayed with corrosion inhibitor.

(7) Walking Beam. The walking beam should be treated at the same time as the rear trunnion support beam (Ref 57-40-27, Fig. 2).

(8) Trunnion Link. The trunnion link should be treated at the same time as the rear trunnion support beam (Ref 57-40-27, Fig. 2).

(9) Trunnion. The trunnion should be treated at the same time as the rear trunnion support beam (Ref 57-40-27, Fig. 2). Visual inspect the chrome plated surface of the trunnion journal for cracks each time the main gear is removed from the airplane. Inspect the surface by viewing the surface from 45 degrees with the aid of a bright light and without magnification (Ref 32-12-01, Overhaul Manual).

(10) Trunnion Swivel Assemblies - Examine assemblies for evidence of corrosion, particularly on airplanes thru cum line No. 882. Apply corrosion inhibitor to assemblies with broken finish systems.

(11) Manual Extension Gearbox Housing - Examine the gearbox housing for evidence of corrosion, particularly at the vertical support for airplanes thru line number 896 where stress corrosion cracks may occur. Apply water-displacing corrosion inhibiting compound to the support lug area. Refer to SB 32-279 for the inspection procedures for airplanes thru cum line number 896.

(12) Uplock Hook Assembly - For airplanes thru line number 1553, examine hook assembly for evidence of corrosion. Install lubrication fitting per SB 32-245 at the first opportunity consistent with maintenance schedule and lubricate on scheduled basis. On subsequent airplanes, only lubrication on a scheduled basis is required.

(13) Main Landing Gear Actuator Beam Support Link Shaft. Install support link shaft in landing gear support beam with wet sealant BMS 5-95, or equivalent and apply fillet seal all around areas common to support beam, shaft flange and shaft attachment fasteners (see Details VI and VII).

(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.

F. Frequency of Application

(1) Periodic inspection is required to areas identified as susceptible to corrosion and should be consistent with schedules in the MPD. 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 MPD.

G. Improved Corrosion Protection

(1) From line number 1239, new open bungees with CRES compression springs, rods and slider end fittings with Karon non-lubricated bearings have been installed in production to replace the existing closed bungees on the main landing gear uplocks for improved corrosion protection (see Detail III).

(2) From line number 1160, the Oilite bushings on the main landing gear spoiler lockout crank have been replaced by grooved Al-Ni-Br bushings with lube fittings for improved corrosion protection (see Detail I). For line numbers 1 thru 1159 refer to SB 32-226 for addition of lubrication fitting to the lower lockout crank.

(3) Improved corrosion protection for main landing gear joints was incorporated on line number 1637 and on, plus airplanes incorporating SB 32-274.

(4) On airplane line number 883 thru 1125, to improve the resistance of MLG universal block against stress corrosion, the existing block material has been changed from a 7079-T6 aluminum to a 7075-T3 aluminum. However, starting line 1126 and on, and airplanes incorporating SB 32-237 received a steel part which is not interchangeable with the aluminum part.

(5) On airplane line number 1 thru 1832, refer to SB 32-306 Revision 1 for replacing or reworking the support link assemblies to a lube-type configuration and reworking the flanged journal bushings.

(6) SB 32-90 provides rework and replacement procedures for the main gear actuator on beam support link. Compliance with this SB is recommended to improve the service life of the main gear actuator beam support link.

(7) SB 32-150 provides rework procedures to improve corrosion protection of the main gear drag strut fuse bolts. Compliance with this SB is recommended.

(8) SB 32-157 supersedes SB 32-130 and provides rework procedures to alleviate the condensation entrapment in the lower segment of the main gear side strut (refer to Detail XVII). Compliance with this SB is recommended.

(9) SB 32-161 provides inspection and replacement procedures to reduce the possibility of cracking in the core of the main gear uplock assembly lower actuator crank. Compliance with this SB is recommended.

(10) SB 32-179 provides modification procedures to reduce the possibility of corrosion in the bushing bore of the main gear shock strut. Compliance with this SB is optional based on operators experience.

(11) SB 32-187 provides inspection and modification procedures to reduce the possibility of cracking in the main gear manual extension support yoke. Compliance with this SB is recommended.

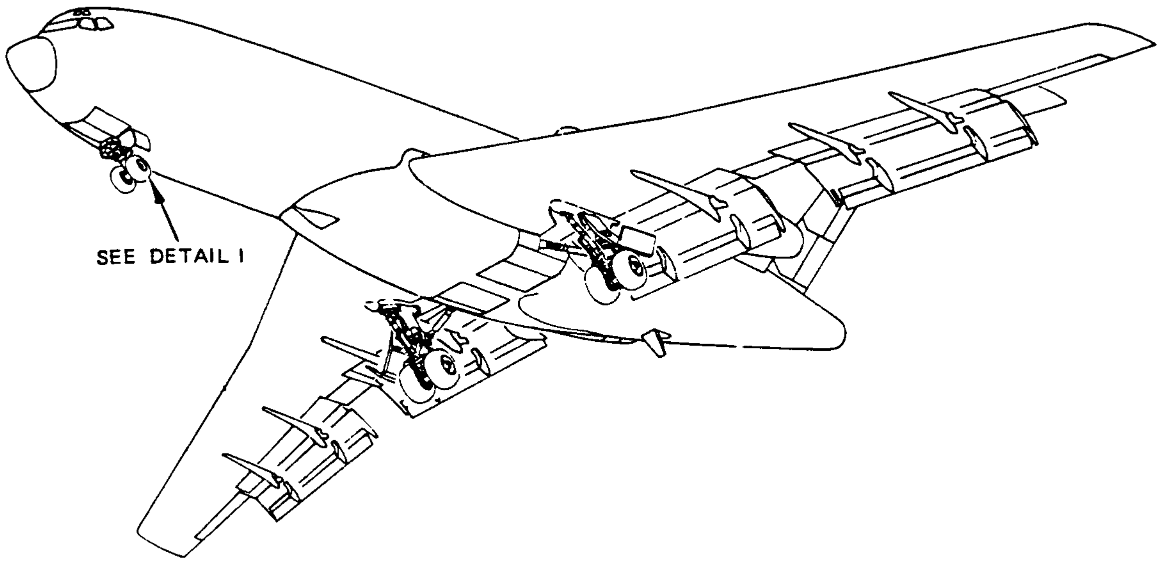
(12) SB 32-188 provides inspection and replacement procedures to reduce the possibility of cracking in the main gear actuator beam outboard and clevis. Compliance with this SB is recommended.

(13) SB 32-189 provides inspection and replacement procedures to reduce the possibility of cracking in the main actuator support link. Compliance with this SB is recommended.

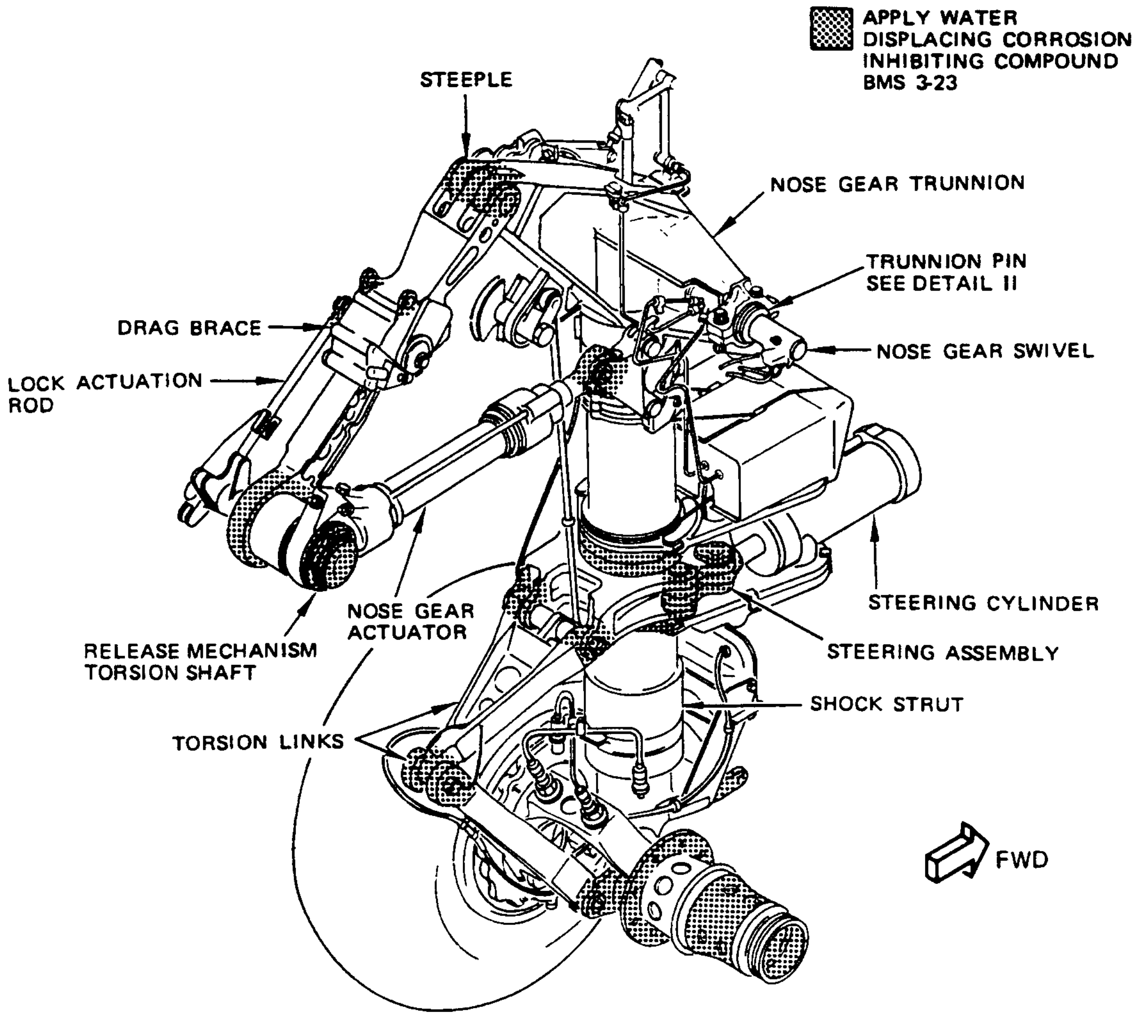
(14) SB 32-194 provides inspection procedures on the internal splines in the main landing gear trunnion link assembly for the presence of corrosion. Compliance with this SB is recommended.

(15) At line number 935, PRR 23158-16 changed to a clearance fit the bushings on the support fitting at the landing gear end of the door operating beam. This change can be incorporated on earlier airplanes with SB 32-178.

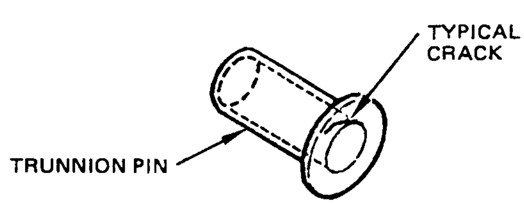
(16) At line number 938, PRR 23158-127 changed to 7075-T73 the aluminum alloy of the support fitting at the wing door end of the door operating beam. This change can be incorporated on earlier airplanes with SB 32A3811. This is also the subject of Structural Items Interim Advisory 727-248.



Nose Landing Gear
Figure 1 (Sheet 1)



DETAIL I



DETAIL II

Nose Landing Gear
Figure 1 (Sheet 2)

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 the lugs at the fittings.

B. Specific problems have been encountered with stress corrosion failures of the release mechanism torsion shaft, which have resulted in inability to lower the nose landing gear. These failures have been associated with shafts that have not been reworked, or have been reworked in a manner which did riot provide adequate corrosion protection. Approved rework procedures are contained in SB 32-203. Shafts with a greater torsional strength and improved corrosion protection were introduced at line No. 938 and may be incorporated retroactively by SB 32-205. SB 32-238 provides shaft inspection procedures for airplanes thru cum line number 937 except on those airplanes on which SB 32-205 or SB 32-223 has been incorporated. Provisions for lubrication of the release mechanism torsion shaft assembly area were incorporated on line number 1095 and on, plus airplanes incorporating SB 32-223.

C. Corrosion has been reported on the outer surface of the nose landing gear drag brace release mechanism pin, and the inner race of the upper drag brace link bushing. A new drag brace pin, utilizing chrome plate on the outside diameter in lieu of cadmium plating will be incorporated starting line 1800.

D. Stress corrosion cracks have been reported on the NLG right trunnion pins. Triese cracks occurred at the base of the integral flange of the 4330 steel pin (Fig. 1, Detail I1).

E. Pitting corrosion has been reported on the exterior surface of trunnions in the area in contact with and adjacent to the bearing. Corrosion is attributed to galvanic action of dissimilar metals occurring where the CRES steel and the anodized aluminum cylinder are in contact.

F. Corrosion has been reported the cause of a crack in the nose gear attach bracket which secures nose gear actuator to shock strut. If the bracket were to fail in flight, manual gear operation would be necessary when attempting to extend the nose gear.

G. Extensive corrosion has been reported in the nose gear drag brace lock actuating arm.

H. Refer to the Introduction of this manual for a discussion of tile 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

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(1) Shock Struts (Oleo). Apply corrosion inhibiting compound to exterior area 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.

(2) Drag Brace. 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 inhibitor.

(3) 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.

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

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

(6) 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.

(7) Cables. For treatment, refer to 27-00-27, Fig. 2.

(8) Steeple. Apply corrosion inhibiting compound to surface areas with broken finish systems. Lugs and lug faces should be sprayed with corrosion inhibitor.

(9) 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 inhibitor.

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

(11) 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.

(12) In cases where cleaning is accomplished with steam or high pressure water and detergent, reapplication of corrosion inhibiting compound is recommended.

F. Improved corrosion protection

(1) Improved corrosion protection for nose landing gear joints was incorporated on line number 1768 and on, plus airplanes incorporating SB 32-278.

(2) SB 32-89 provides inspection and replacement procedures to the nose gear actuator attach bracket. Compliance with this SB is recommended to increase the service life of the bracket.

(3) SB 32-124 provides modification procedures to improve corrosion resistance of steering cylinder trunnions. Compliance with this SB is optional based upon operator's experience.

(4) SB 32-186 provides modification procedures to increase the service life of the nose gear drag brace assembly. Compliance with this SB is recommended.

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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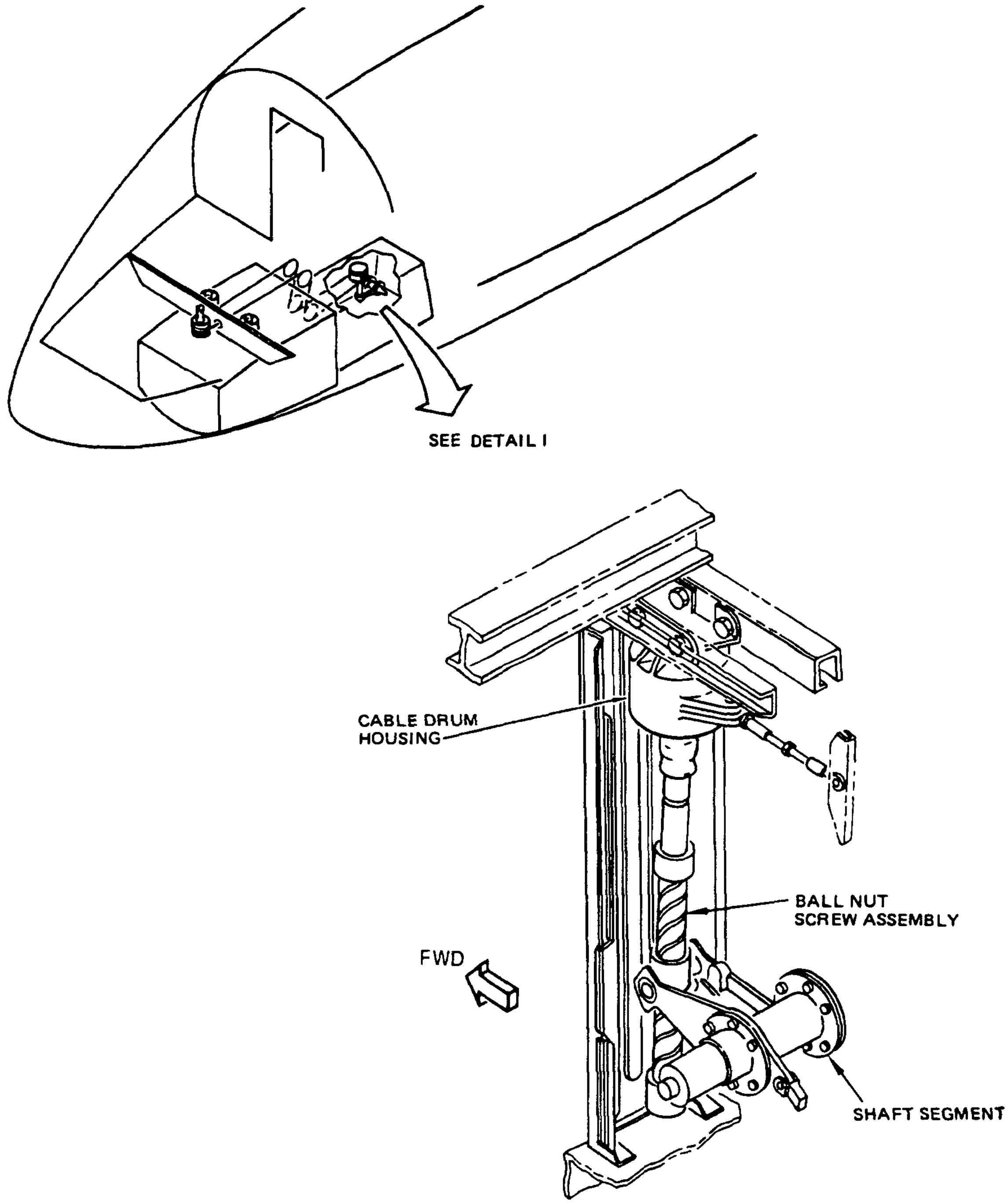


Nose Landing Gear Manual Extension Jackscrew
Figure 1

1. General

A. The nose gear manual extension mechanism consists of two cable drums, cables, a ball nut screw assembly, a crank, shaft segment and a lock actuator crank.

B. Stress corrosion cracking of the lugs on aft cable drum housing has been reported. A material change from magnesium to aluminum housing was made at cum line number 1176 to improve the service life.

C. Corrosion has been reported on the nose gear ball screw thread grooves.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make periodic inspections of the lugs on the cable drum housing and the ballnut screw assembly to preclude or detect early stages of corrosion.

B. Where extensive corrosion exists refer to Structural Repair Manual.

C. For minor corrosion, to minimize the down time of the airplane, the corrosion products should be cleaned off followed by the restoration of the finish system as described in Volume 1, 20-50-00 and 20-60-00.

CAUTION: OBSERVE PRECAUTIONS OF VOLUME 1, 20-60-00 FOR SPRAYING CONTROL CABLES WITH CORROSION INHIBITOR.

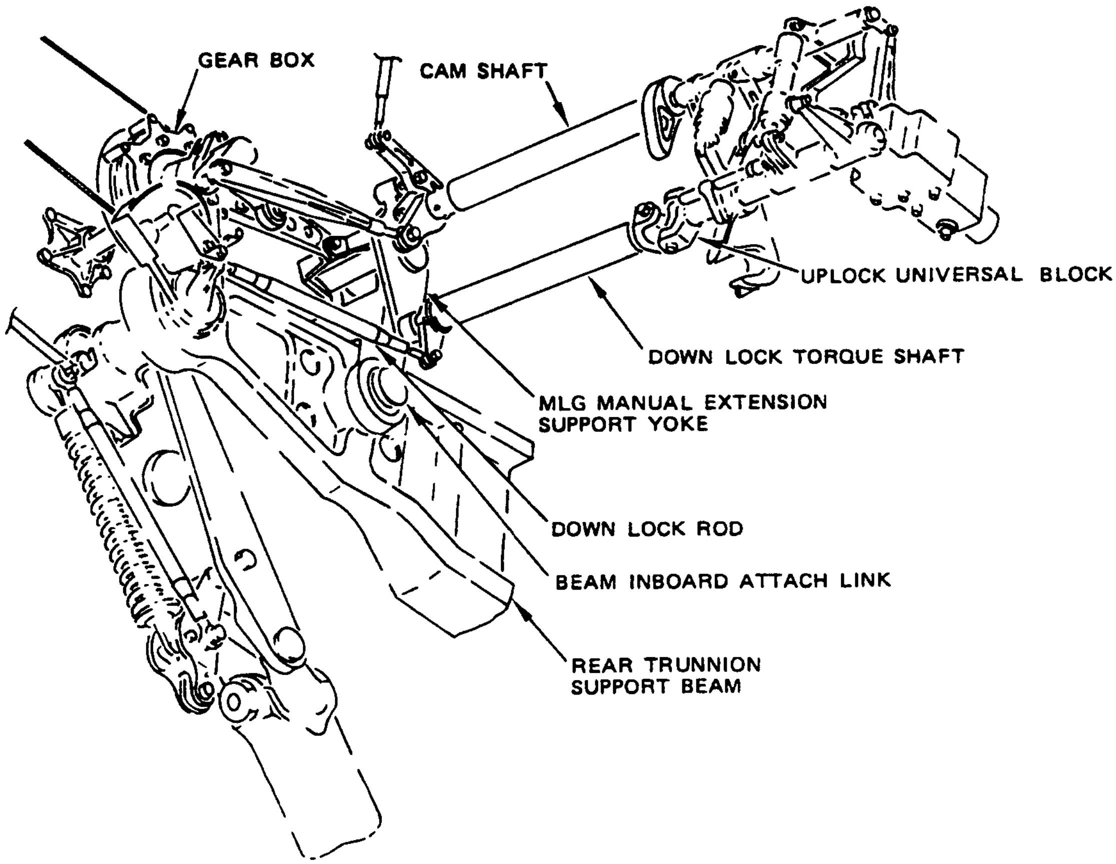
D. Apply water-displacing corrosion inhibiting compound on the cable drum housing, especially in the area of the lugs.

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

E. For treatment of cables refer to 27-00-27, Fig. 2.

F. After water-displacing corrosion inhibiting compound treatment relubricate parts as necessary.

G. At periodic intervals inspect the condition of the corrosion inhibitor and reapply as necessary.



Main Landing Gear Manual Extension
Figure 2

1. General

   A. Corrosion of the main landing gear manual extension yoke attach bolts shanks has been reported. The corroded bolts sheared allowing the yoke to pivot and the down lock torque shaft to rotate about the fixed down lock rod, momentarily positioning the door control valve in the door open position. This action could result in an out of sequence condition during gear extension or retraction which could cause the gear to hang up on a partially closed door or doors cycling open and closed during taxi. Service Bulletin 32-251 replaces 1/4 inch bolts with 5/16 inch stainless steel bolts.

   B. Stress corrosion cracks and breakage have been reported on the main landing gear uplock universal blocks. Refer to SB 32-248 for inspection procedures of airplanes cum line numbers 001-882.

2. Corrosion Prevention

   A. Make periodic inspections of the main landing gear manual extension support yoke attach bolts to preclude or detect early stages of corrosion.

   B. For minor corrosion the corrosion products should be cleaned off or bolts replaced.

   C. When replacing support yoke attach bolts apply chemical film treatment (Alodine or Iridite) to bolt holes and install bolts using corrosion inhibiting compound.

CHAPTER

35

OXYGEN

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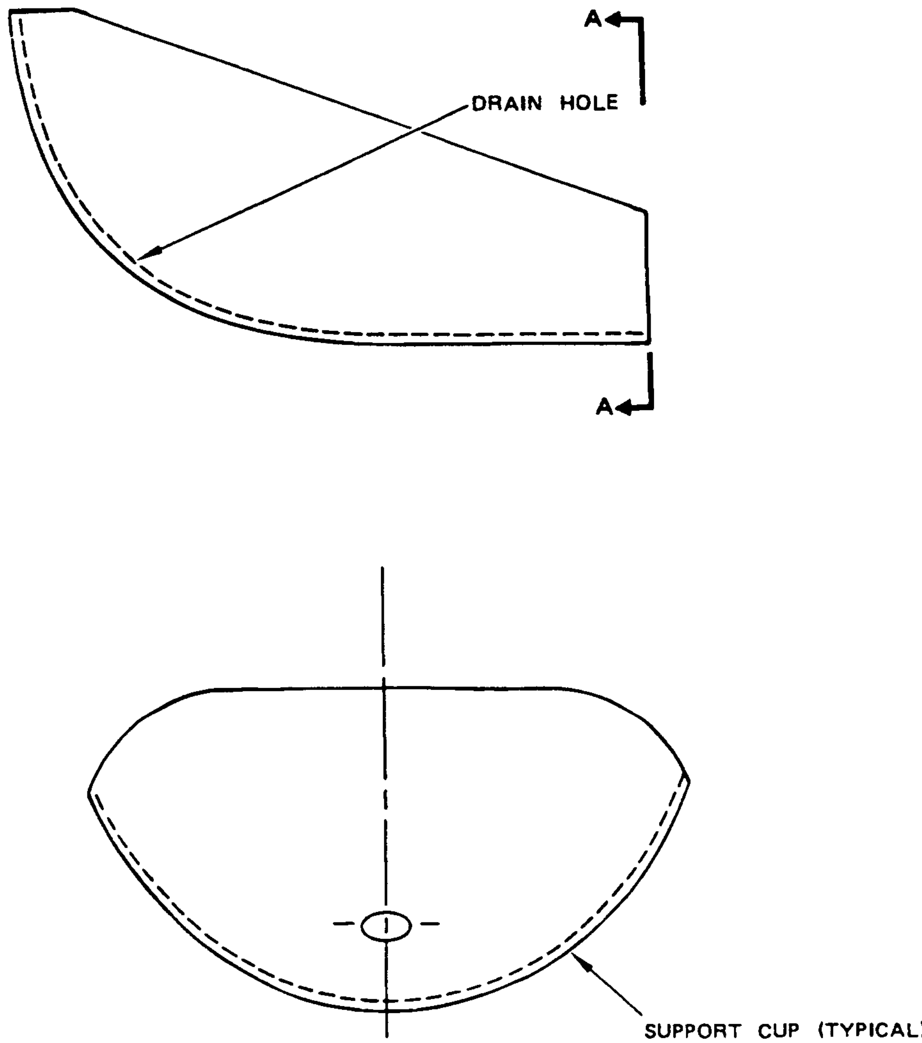

SECTION A-A

Oxygen Bottle and Support Cup
Figure 1

1. General

   A. Surface corrosion has occurred on oxygen bottles and support cups.

2. Corrosion Prevention

   A. Periodically inspect each oxygen bottle and support cups for corrosion.

   B. If corrosion exists on the bottle or cup, refer to Structural Repair Manual for details of corrosion removal.

   C. Support cups which do not incorporate drain holes should be modified as follows:

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

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

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

CHAPTER

39

ELECTRICAL/ ELECTRONICS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Electrical/ Electronics Racks	Corrosion on surfaces of racks and shelves.	39-20-27	

Specific Corrosion Problems - Electrical/Electronics
Figure 1

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ELECTRICAL/ELECTRONICS

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 THE BMS 3-23, 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 20-10-24 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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DOORS

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AREA	CORROSION PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Entry Doors	Torque tube bearings on handle mechanism housing	52-10-27 Fig. 1	
	Torque tubes adjacent to door in body		
	Tracks in roller guide plate		
Ventral Airstairs	Airstairs interior structure	52-10-27 Fig. 2	
	Lower control pulley		Material improve-ment at line #938 and on
Escape Hatches	Handle and torque tube	52-20-27 Fig. 1	
Cargo Doors	Hinge support tees	52-30-27 Fig. 1	
Forward Access and Equipment Access Doors	Internal Structure	52-40-27 Fig. 1	
Service Doors	Window frame	52-60-27 Fig. 1	

Specific Corrosion Problems - Doors
Figure 1

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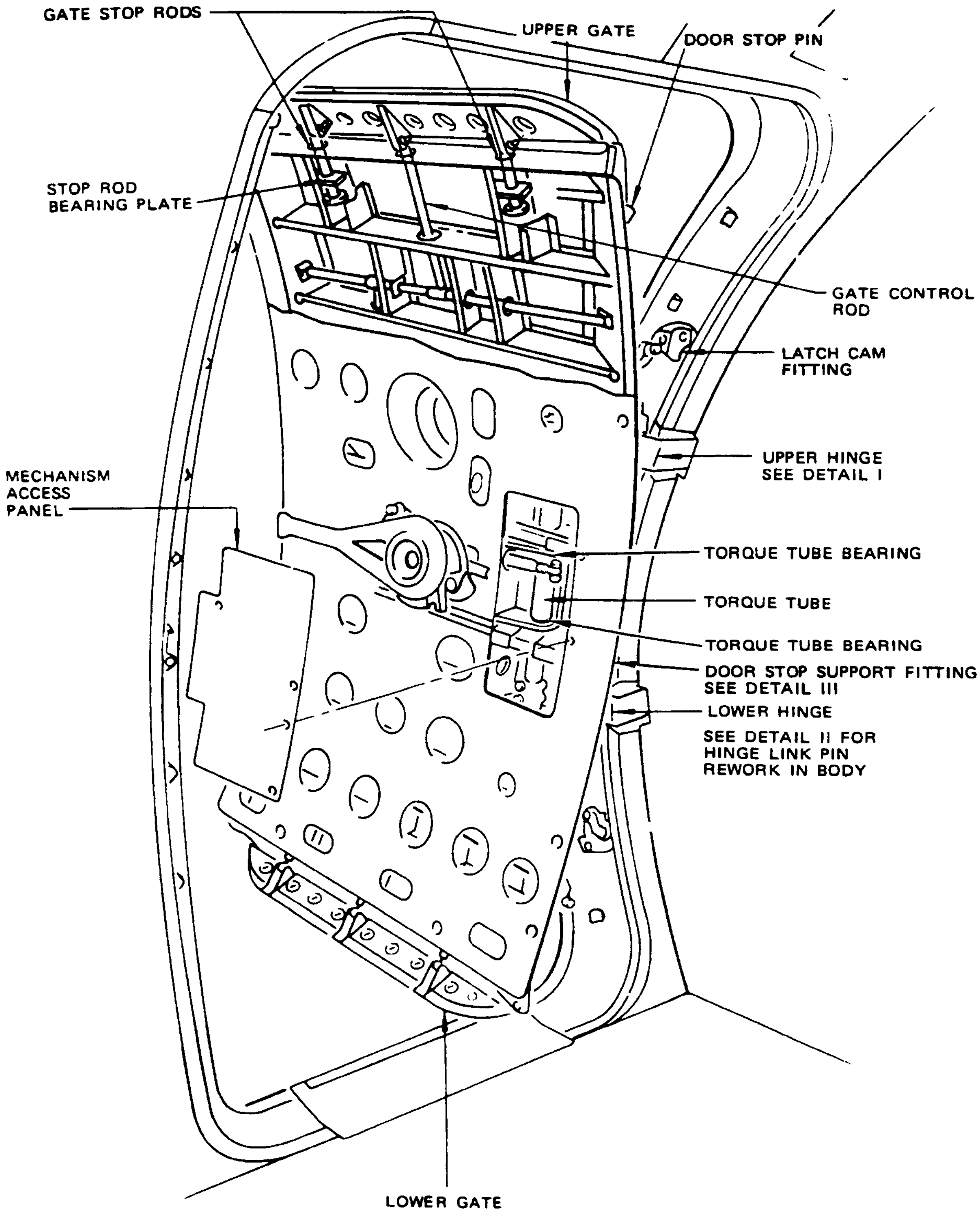
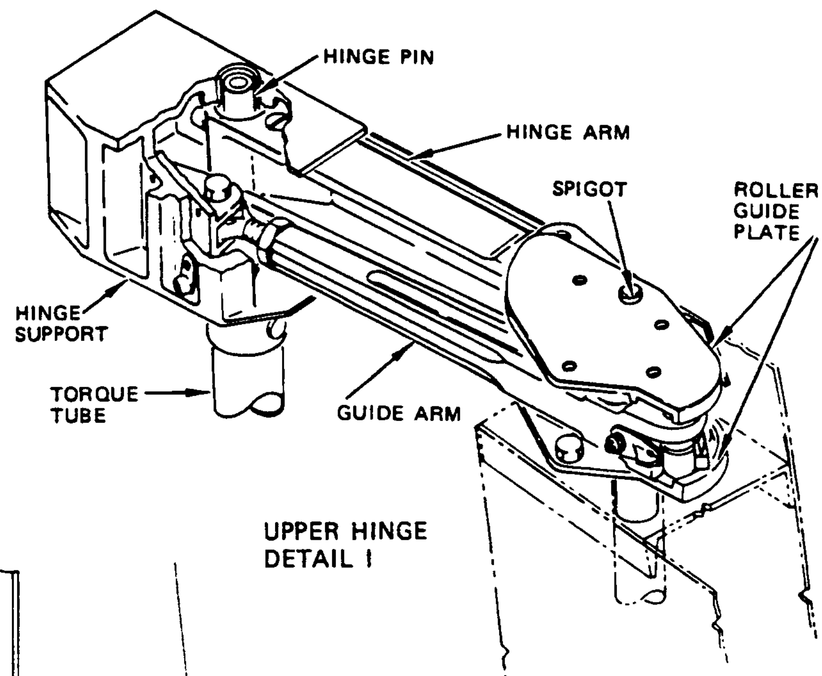
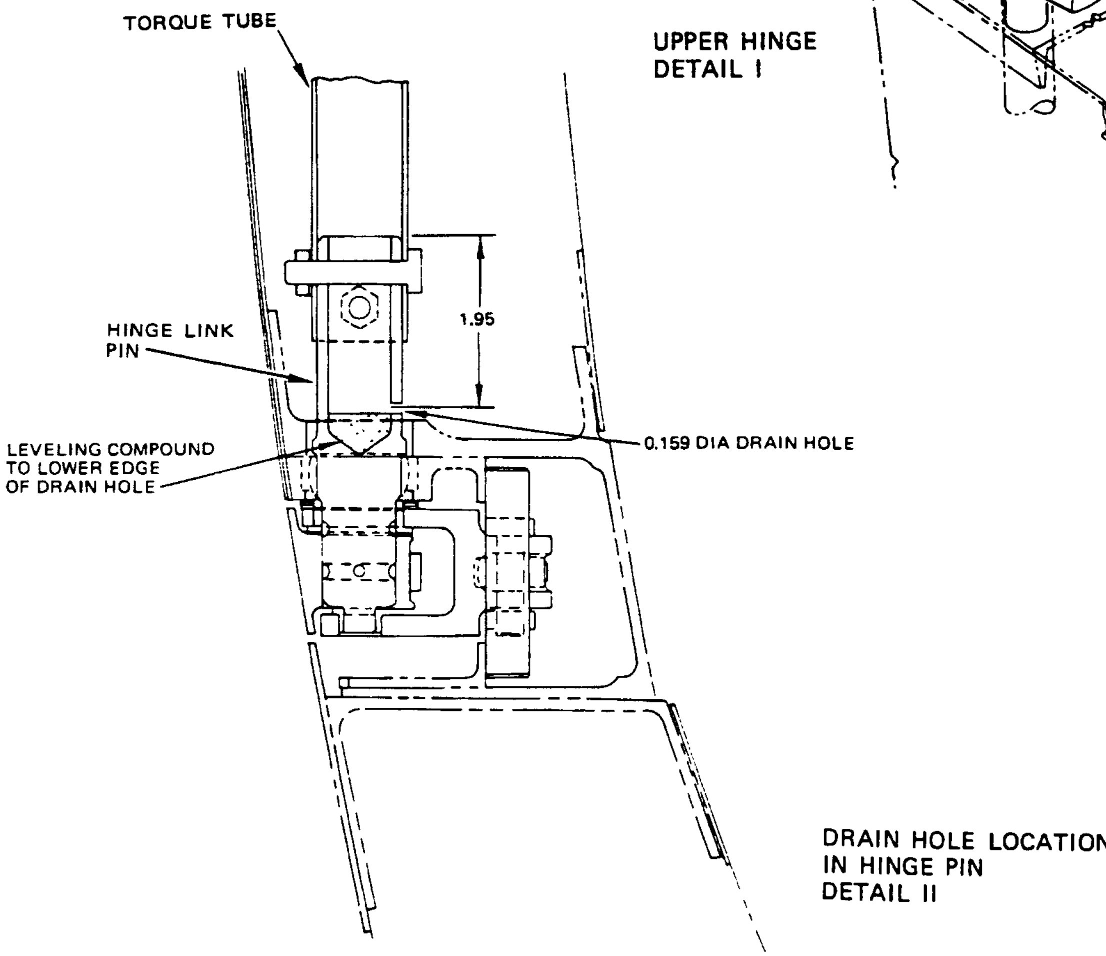
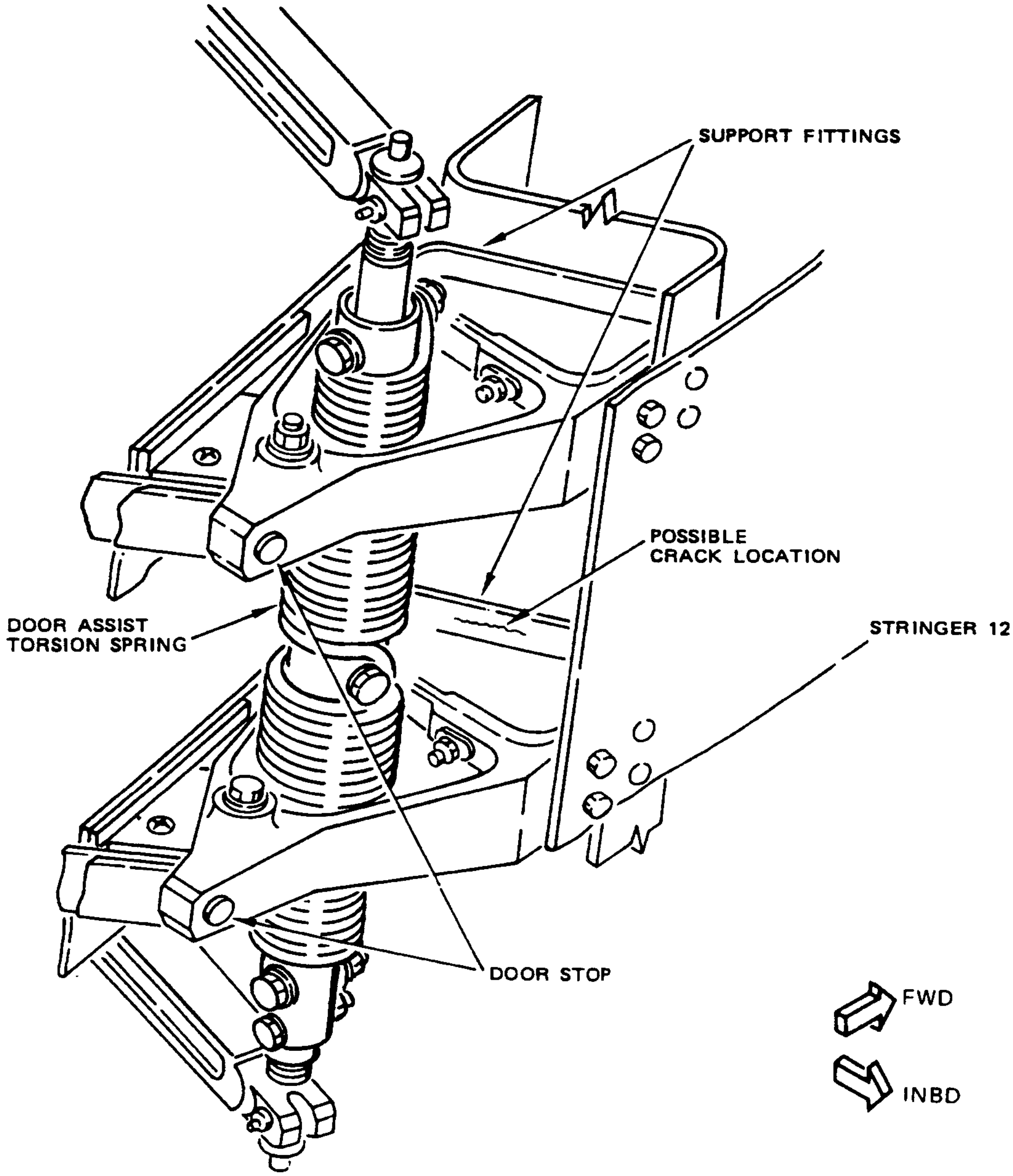


Entry Doors
Figure 1 (Sheet 1)





Entry Doors
Figure 1 (Sheet 2)



DOOR STOP SUPPORT FITTING
DETAIL III

Entry Doors
Figure 1 (Sheet 3)

1. General

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

B. The horizontally mounted torque tube bearings on the handle mechanism housing provide a natural moisture trap between the inner and outer races. As a result reports of corrosion occurring in these bearings have been received.

C. Corrosion has been reported on the door torque tubes situated adjacent to the door in the body. In particular the lower hinge link pin attached to the torque tube on the aft galley door has been found with considerable amounts of water, which led to the introduction of a drain hole in production.

D. The tracks in the roller guide plate of the upper hinge assembly have shown signs of wear and corrosion due to hardened grease with debris or sand forming an abrasive mixture.

E. Stress corrosion cracks have been reported on the forward entry door stop support fitting. The cracks were through the holes of the fitting to frame fasteners (Detail III).

F. Stress corrosion cracks have occurred on aft service door internal beam fittings. Inspection and replacement on applicable airplanes is described in SB 52-129.

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. Regularly examine the doors per Volume 1, 20-20-00, to ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for broken finishes is to replace the finish. Since in some cases, it is impractical or impossible to use this approach between overhaul cycles, the following treatment is recommended:

CAUTION: DO NOT APPLY WATER DISPLACING CORROSION INHIBITING COMPOUND TO SILICONE RUBBER OR RUBBER SEALS, CUSHIONED CLAMPS, ACTUATOR RODS, CONTROL CABLES OR LUBRICATED PARTS.

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

(2) The external surface areas of doors should be treated same as the exterior surfaces of the fuselage (Ref 53-30-27, Fig. 1).

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

(4) Clean out drains and drain paths.

(5) Apply water displacing corrosion inhibiting compound to interior structure of door with special attention given to lower corners and aft service door beam fittings.

(6) Apply 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 12-25-1, 12-25-11 and 12-25-31 of the Maintenance Manual.

(8) Reinstall line and restore door to normal.

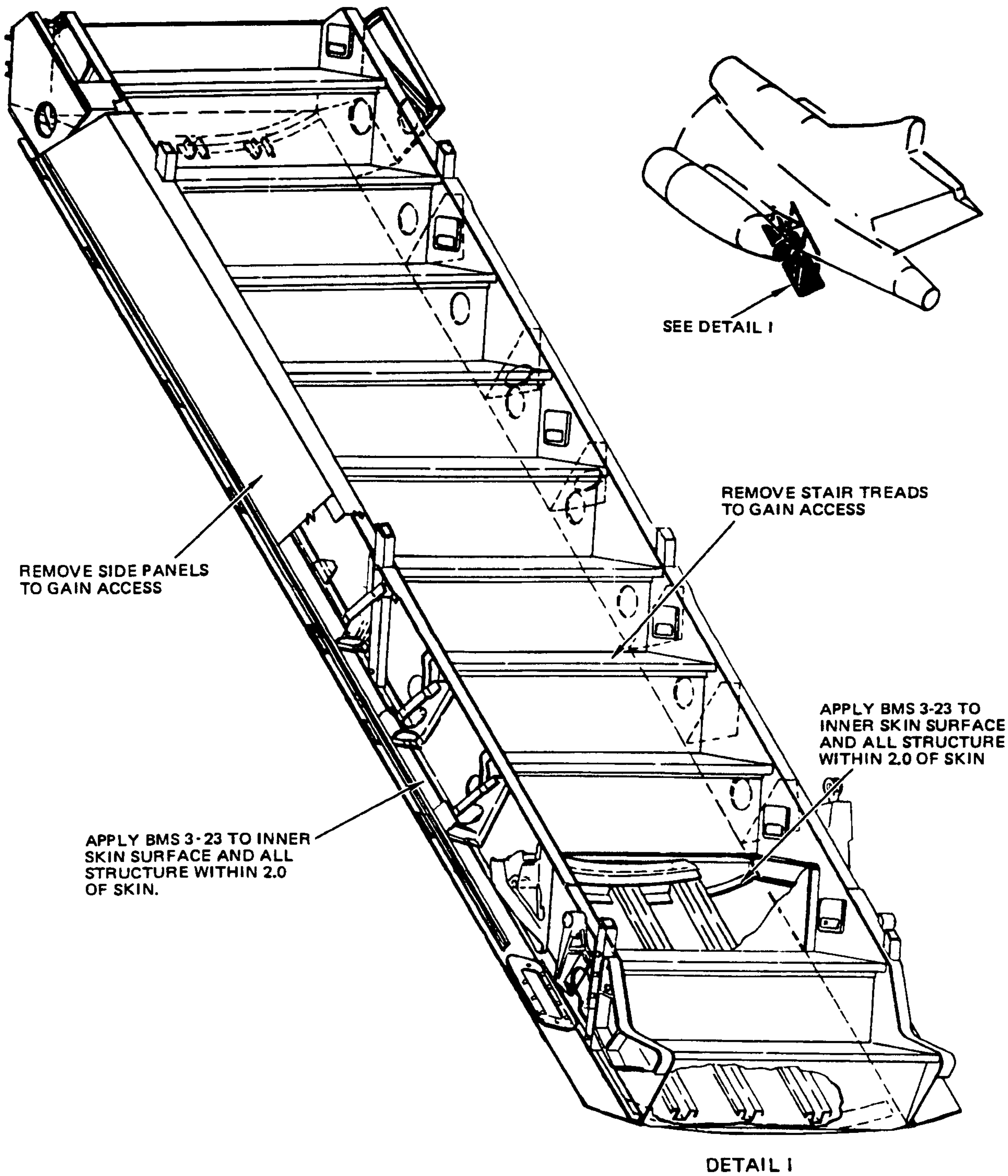
B. Frequency of Application. Regularly examine the structure and condition of the corrosion inhibitor. Reapply corrosion inhibitor as required. Local areas where gouges or scratches have occurred should be treated at the first opportunity consistent with the maintenance schedule.

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

D. Gain access to the horizontally mounted torque tube bearings on the entry and service doors and fill cavity between bearing inner and outer races with MIL-G-23827 grease or equivalent. Examine and refill cavity at periodic intervals.

E. Periodically examine the tracks in the roller guide plate of' the upper hinge assembly, and remove debris and hardened grease. Apply thin film of lubricant in the track.

F. Examine the door torque tubes in the body periodically for evidence of corrosion. Apply water displacing corrosion inhibiting compound as a preventive measure. In the case of the aft galley door lower hinge link pin ensure that the drain hole in the pin is unobstructed. Airplanes which do not have this drain hole may be reworked to detail II.



Ventral Airstairs
Figure 2

1. General

A. Extensive exfoliation corrosion of the vertical airstair structure has been reported. In the reported incident 25-40 pounds of slurry (sand, oil and carbon deposits) was found along the length of the airstairs ventral skin. The structure most adversely affected was the tread and riser sidewall attach angles on the lower half of the stairs.

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. Should corrosion be found, refer to Structural Repair Manual for corrosion removal procedure.

B. On airplanes through line number 1215, at a convenient maintenance period, remove the stair treads and left and right side panels. Apply BMS 3-23 corrosion preventive to the inner surface of the skin and all structure within 2 inches of the skin as well as the tread and riser sidewall attach angles, after corrosion cleanup and structural damage evaluation.

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

C. To help prevent the accumulation of slurry in, and subsequent corrosion of the airstair structure, the following is recommended:

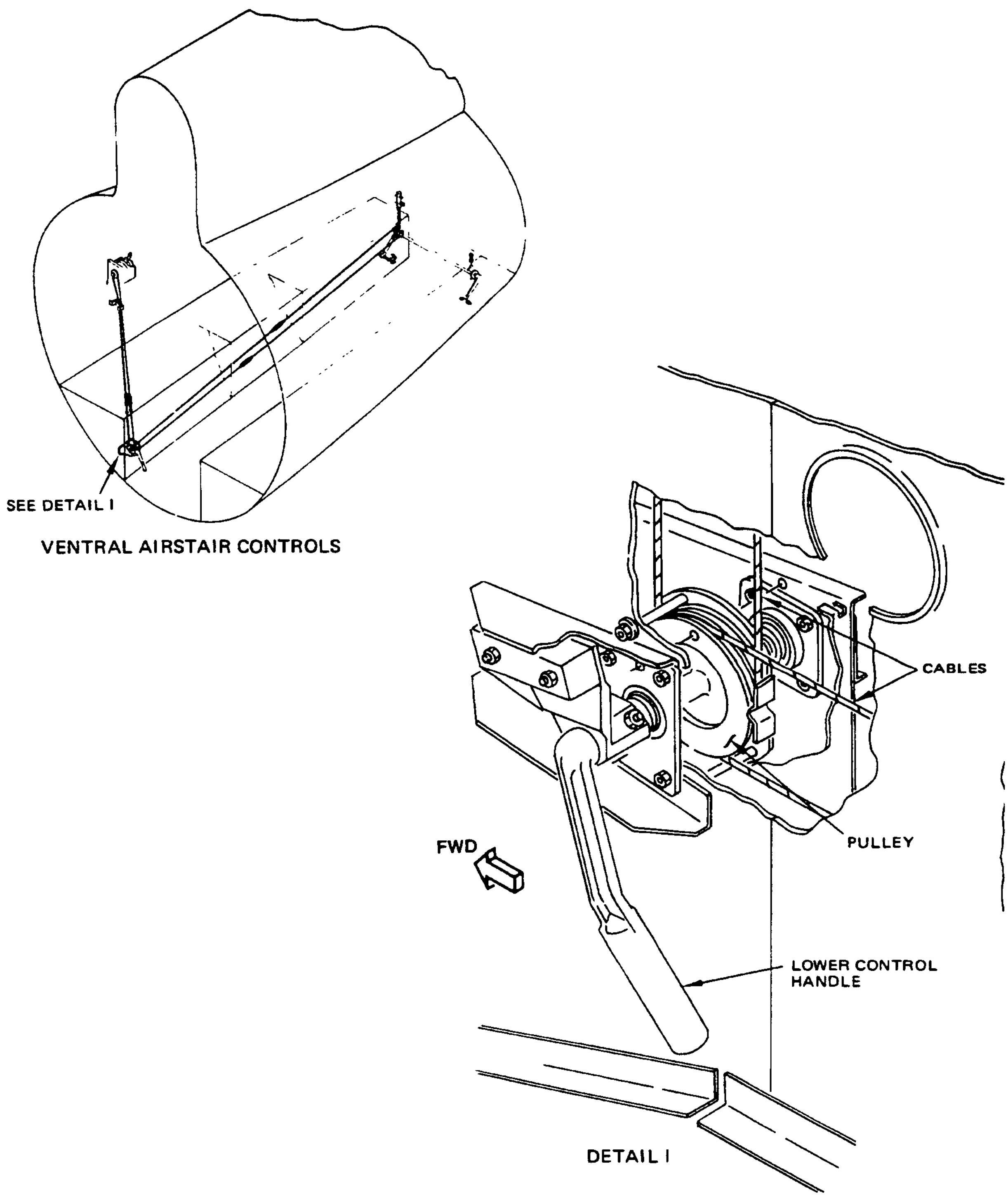
(1) Enlarge the drain hole at the upper or forward end to 0.625-inch diameter.

(2) Check both sets of drain holes in the lower or aft end of the stairs at regular intervals. The set of holes 1.5 inches inside the stairs may become clogged without it being obvious.

D. Due to the unexposed nature of the inner skin surface and structure, perform a sample inspection to determine the condition of the corrosion inhibitor at major overhaul or every one to two years. Reapply BMS 3-23 as necessary.

E. Improved Corrosion Protection

(1) At line number 1216, the inner skin surface and structure within 2 inches of the skin has the protection of BMS 3-23 water displacing corrosion preventive compound.



Ventral Airstair Lower Control Pulley
Figure 3

1. General

A. Cracking of the ventral airstair lower control pulley has been reported. In several instances cracks, which emanate from the pulley flange mounting holes, have resulted in fracture of the pulley. These cracks have been attributed to stress corrosion in the 7079 aluminum alloy pulleys, Pt. No. 65-26978-1. From line number 938 pulleys manufactured from 7075 aluminum alloy have been installed.

2. Corrosion Prevention

A. The basic prevention policy is to make periodic inspections to ensure that the finish on the pulley remains intact and that there is no evidence of corrosion.

B. Where corrosion is evident, or where a greater degree of corrosion protection is required, replace the pulley with the interchangeable 7075 aluminum alloy pulley PN. 65-26978-4.

CAUTION: OBSERVE PRECAUTIONS OF VOLUME 1, 20-60-00 FOR SPRAYING CONTROL CABLES WITH CORROSION INHIBITOR.

C. Apply BMS 3-23 water displacing corrosion inhibiting compound to the pulley assembly, taking care not to contaminate the cables.

D. Inspect the pulley assembly periodically and reapply BMS 3-23 as required.

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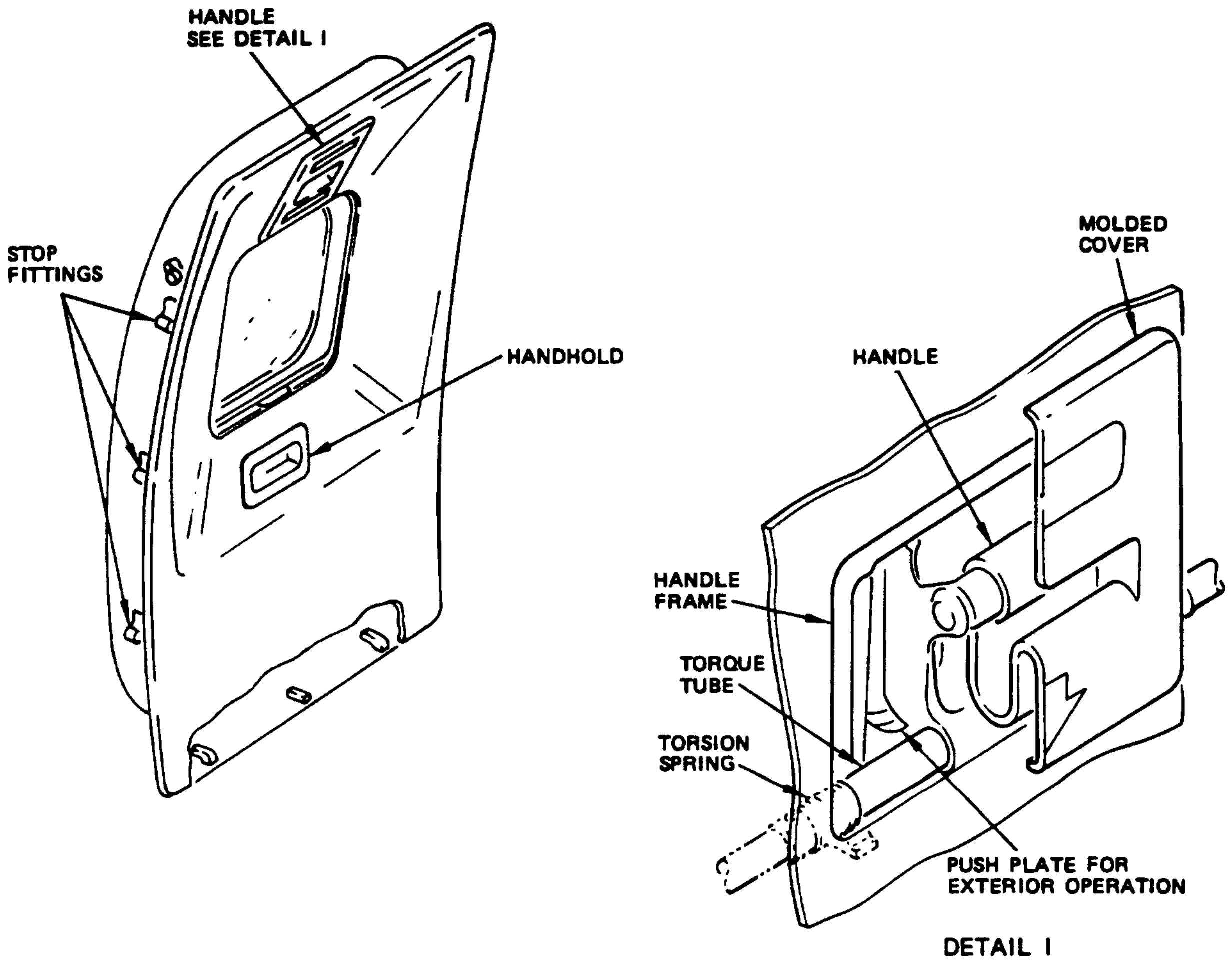

Emergency Exit Hatches
Figure 1

1. General

   A. Corrosion can occur on the internal structure of the hatch, usually in the lower corners, and connection points and mechanisms.

   B. Corrosion can also occur on the handle (Detail 1), especially near the torque tube.

   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. The basic corrosion prevention philosophy is to make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for broken finishes is to replace the finish. Since in some cases, it is Impractical or impossible to use this approach between overhaul cycles, the following treatment is recommended:

CAUTION: DO NOT APPLY BMS 3-23 TO SILICONE RUBBER OR RUBBER SEALS, CUSHIONED CLAMPS, ACTUATOR RODS, CONTROL CABLES OR LUBRICATED PARTS.

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

      (2) The external surface areas of hatches should be treated same as the exterior surfaces of the fuselage (Ref 53-30-27, Fig. 1).

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

      (4) Clean out drains and drain paths.

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

      NOTE: Some hatches may have short cable lengths installed in the mechanism. Care should be taken not to apply BMS 3-23 to these cables.

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

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

      (8) 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.

      (9) Reinstall liner and restore hatch to normal.

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

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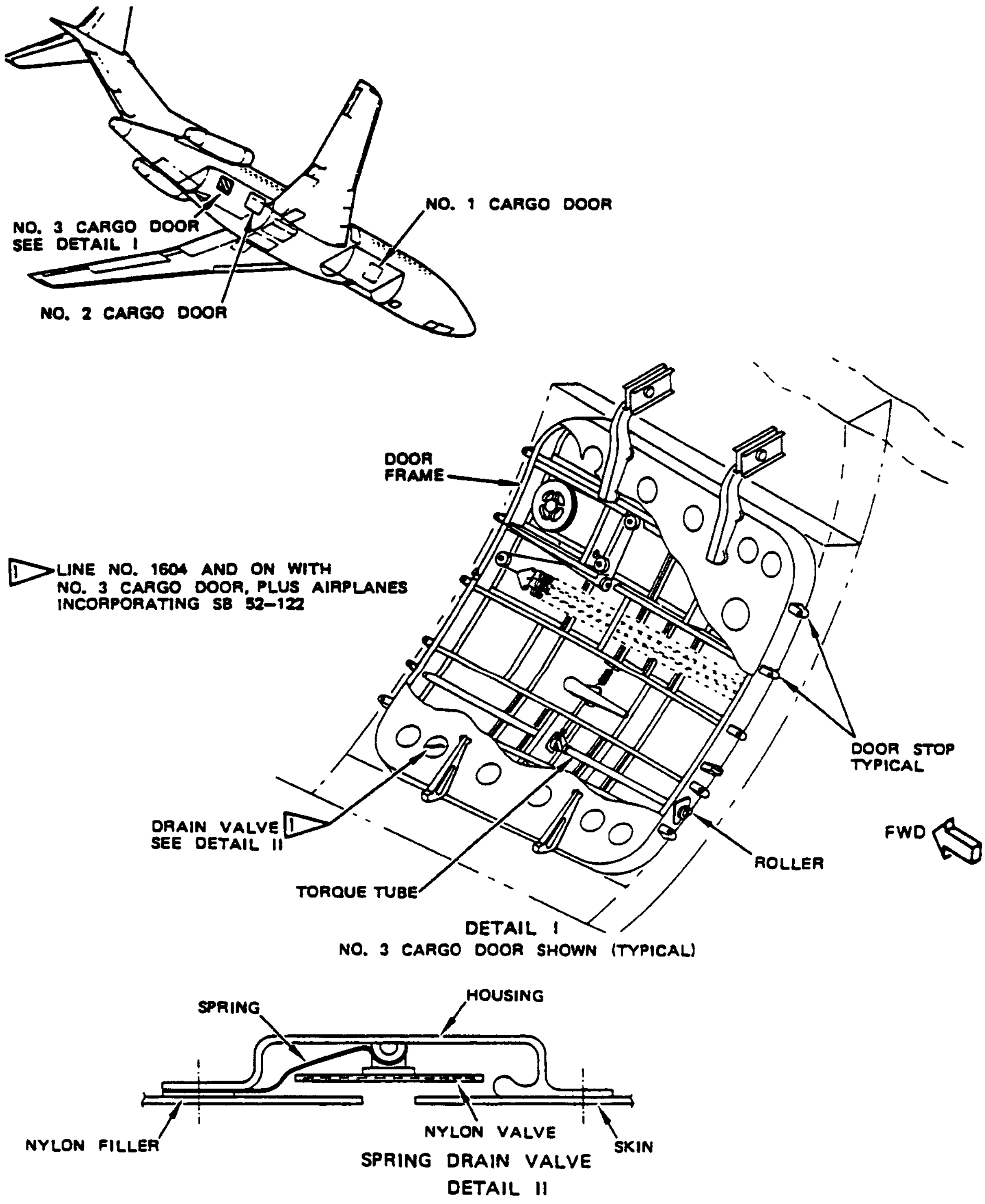
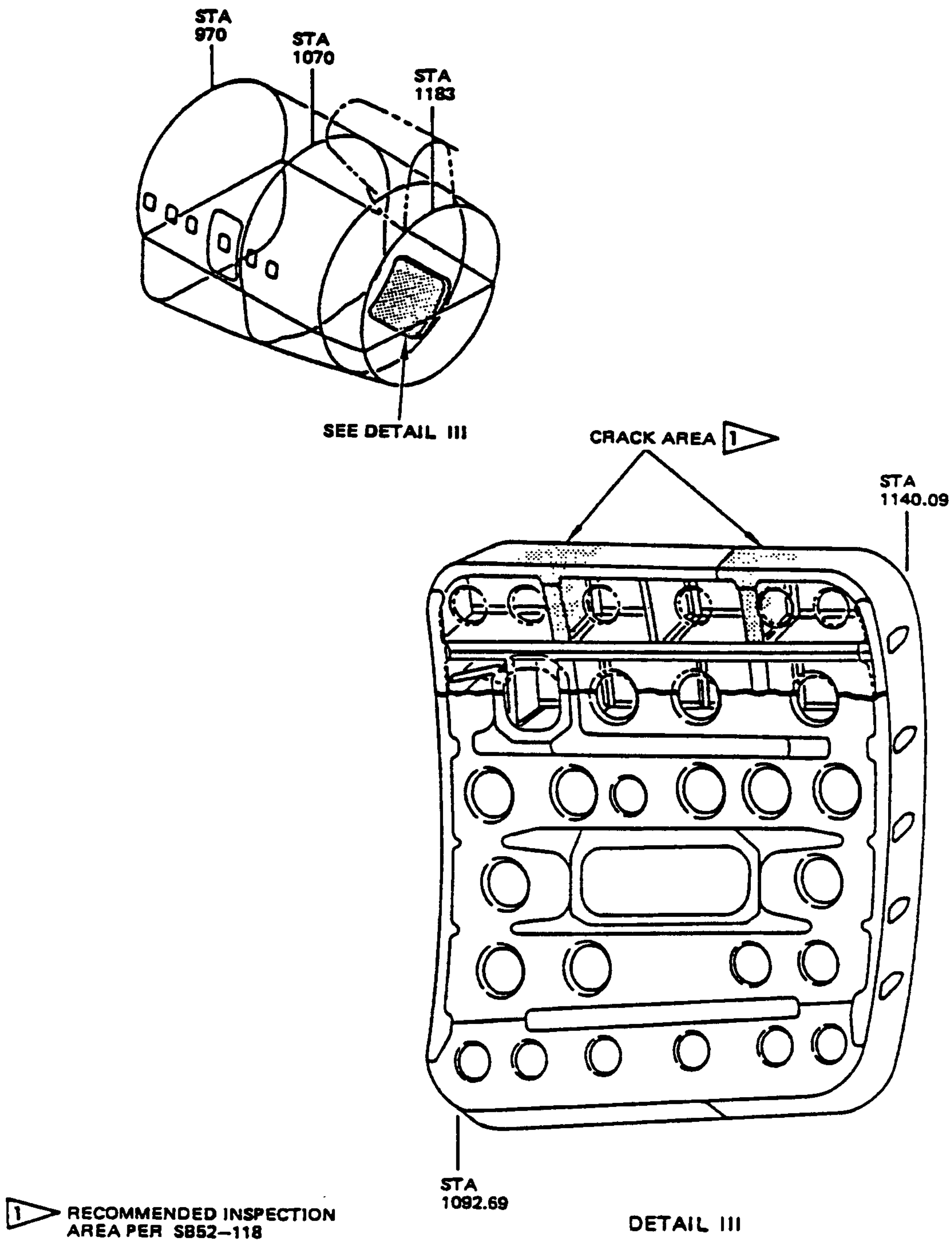


Cargo Doors
Figure 1 (Sheet 1)



Cargo Doors
Figure 1 (Sheet 2)

1. General

   A. Corrosion can occur on the internal structure of the door, connection points and mechanisms.

   B. Stress corrosion cracks can occur on the No. 3 cargo door hinge support tees. The cracks are usually along the upper end of each tee in the radius between the cap and the stem.

   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 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 prevention treatment should be accomplished in the cargo door.

      (2) Treat the door at the same time as the door opening.

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

      (4) Clean out drains and drain paths.

      (5) Apply water displacing corrosion inhibiting compound to interior structure of door with special attention given to lower corners and beam fittings.

      (6) Apply water displacing inhibiting compound to exterior surfaces of door frames and upper and lower web.

(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) Relubricate all lube points per standard servicing procedures.

(9) Reinstall liner and restore door to normal.

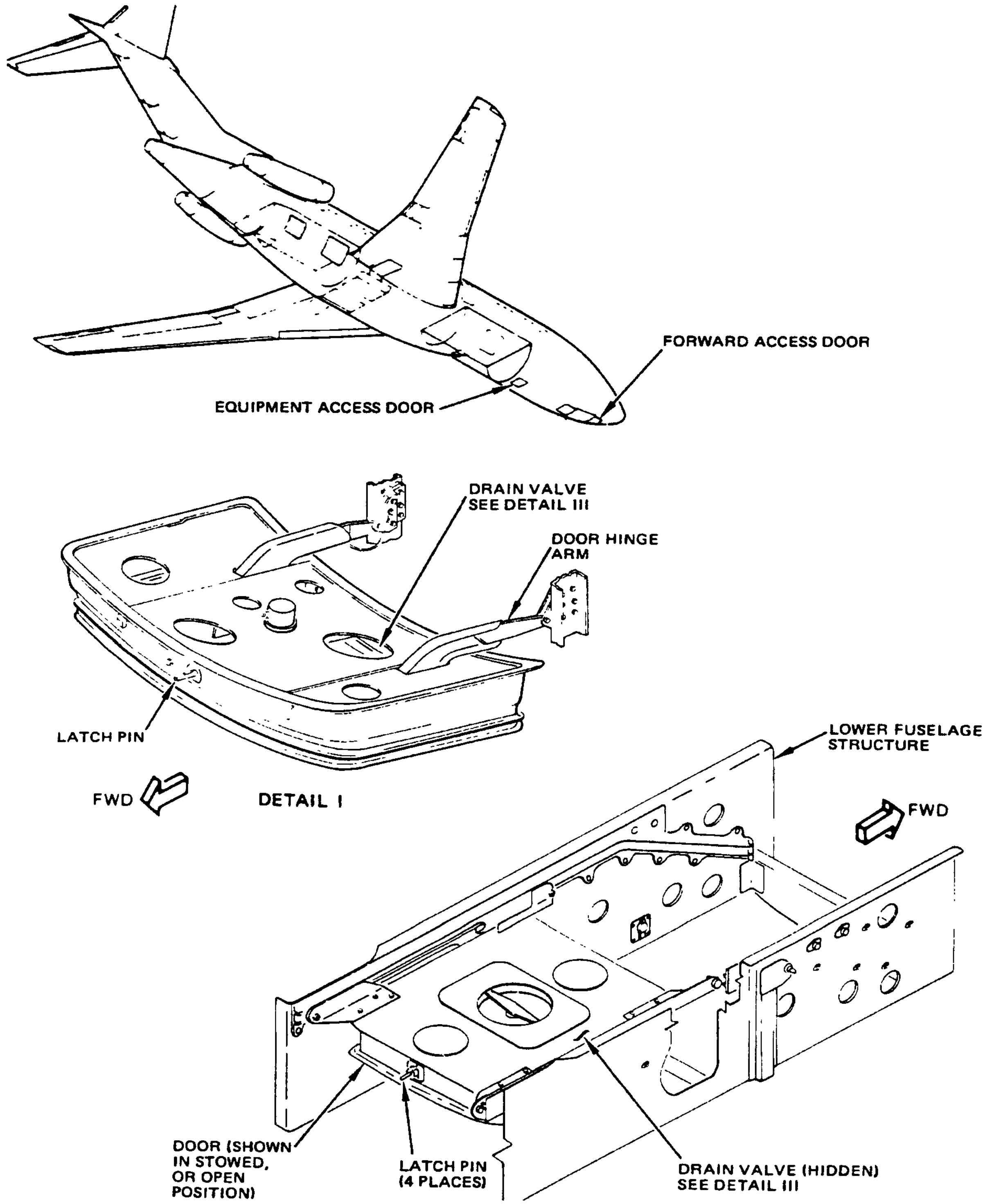
F. Improved Corrosion Protection

(1) SB 52-118 provides inspection and repair procedure on No. 3 cargo door frame. Compliance is recommended, on airplanes prior to line number 1411, to ensure the integrity of the door.

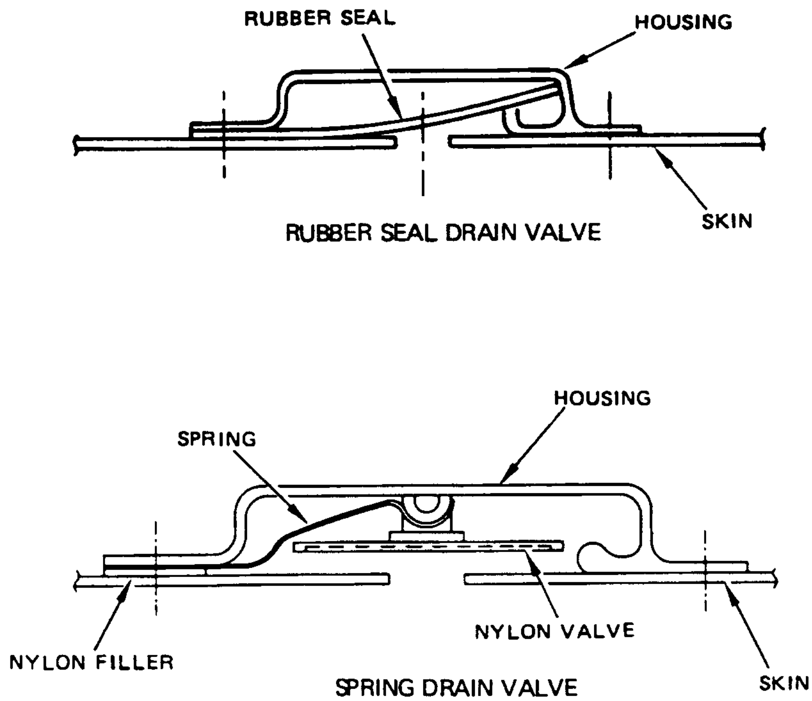
G. Frequency of Application

(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.



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



DETAIL III

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

1. General

A. Corrosion can occur on the internal structure of the door, connection points and mechanisms.

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 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) Treat the door at the same time as the door opening.

(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.

(5) Apply corrosion inhibiting compound (Ref Volume 1, 20-60-00) 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.

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

(7) 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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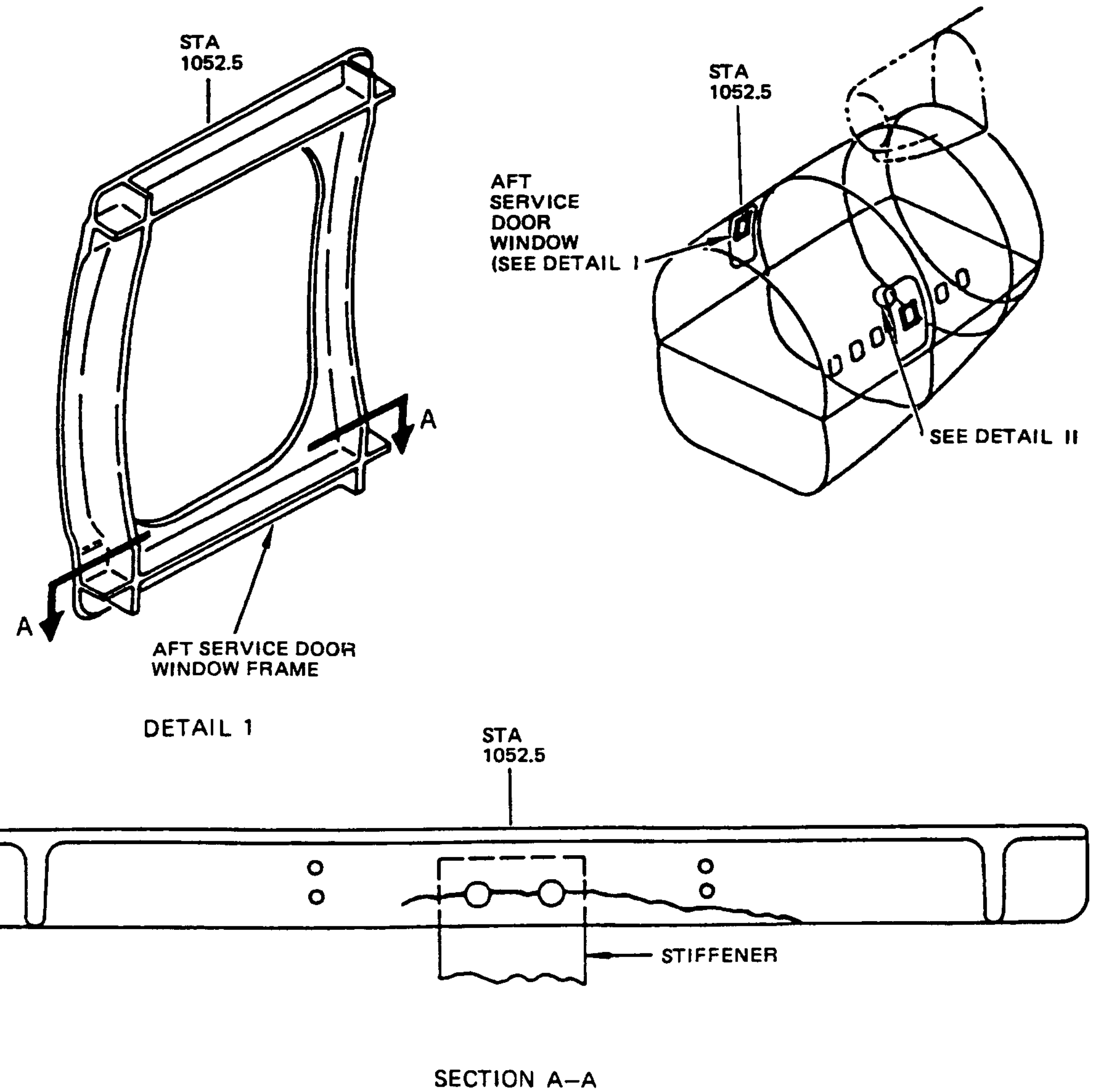

Service Doors
Figure 1

1. General

A. A stress corrosion crack has been reported in the right-hand aft service door window frame. The crack occurred in the lower flange through two stiffener attach rivet holes. The cracked window frame was replaced.

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. 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. 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 first opportunity consistent with scheduled maintenance activity corrosion prevention treatment should be accomplished in the aft service door.

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

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

(4) Clean out drains and drain paths.

(5) Apply water displacing corrosion inhibiting compound to interior structure of door with special attention given to lower corners and beam fittings.

(6) Apply water displacing inhibiting compound to exterior surfaces of door frames and upper and lower web.

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

(8) Reinstall liner and restore door to normal.

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.

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CHAPTER

53

FUSELAGE

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Section 41			
Nose Gear Wheel Well	Corrosion on drag brace support beam	53-10-27 Fig. 1 and text	
	Corrosion on side panel lower chord		
	Corrosion on longitudinal walkway chords		
Door Openings	Corrosion under the doorsills, floor panels, floor beams and doublers	53-10-27 Fig. 2 and text	
Drains	Accumulation of condensation forward of BS 336 causing corrosion	53-10-27 Fig. 3 and text	
Fuselage External Structure	Corrosion of BS 360 frame web, antenna cavity forward web and stiffeners	53-10-27 Fig. 4	
	Corrosion of tension bolts at BS 360 circumferential frames		SB 53-209
Section 43			
Fuselage Structure	Corrosion on stringers S-26L and S-26R between BS 360 and BS 370	53-20-27 Fig 1, 7	
	Corrosion of tension bolts at BS 360 circumferential frames	53-20-27 Fig. 7	
	Corrosion on skin doublers at the crown and side skin panels		
	Corrosion on floor beams at BS 680		

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Exfoliation corrosion on lower body skin at stringer 27.28 and BBL 0 doubler		SB 53A128 and AD 76-13-1
Door Openings	Corrosion on main cargo door latch pin fitting and sill structure	53-20-27 Fig. 2, 6	
	Corrosion on main cargo door aft frame at Sta 620		
	Corrosion on end hinge halves and hinge pins of the main deck cargo door		
	Corrosion in the fwd latch location of the electronic compartment fuselage structure		
Fuselage External Structure	Corrosion on faying surfaces of the wing scanning light mounting flange	53-20-27 Fig. 3, 6	
	Corrosion on the toilet service area	53-20-27 Fig. 6	
	Exfoliation corrosion on lower skin at approximately 18 inches aft of EE access door	53-20-27 Fig. 5, 6	
Drains	Plugged drain holes	53-20-27 Fig. 4, 6	
Interior Cargo Compartment1 Structure	Corrosion along stringers 27 and 28 under the air conditioning fairing	53-20-27 Fig. 6	
	Corrosion on the lower lobe skin panel between stringer 28 and cargo floor intercostal from BS 1-00-720		SB 53A203 and AD 89-23-13

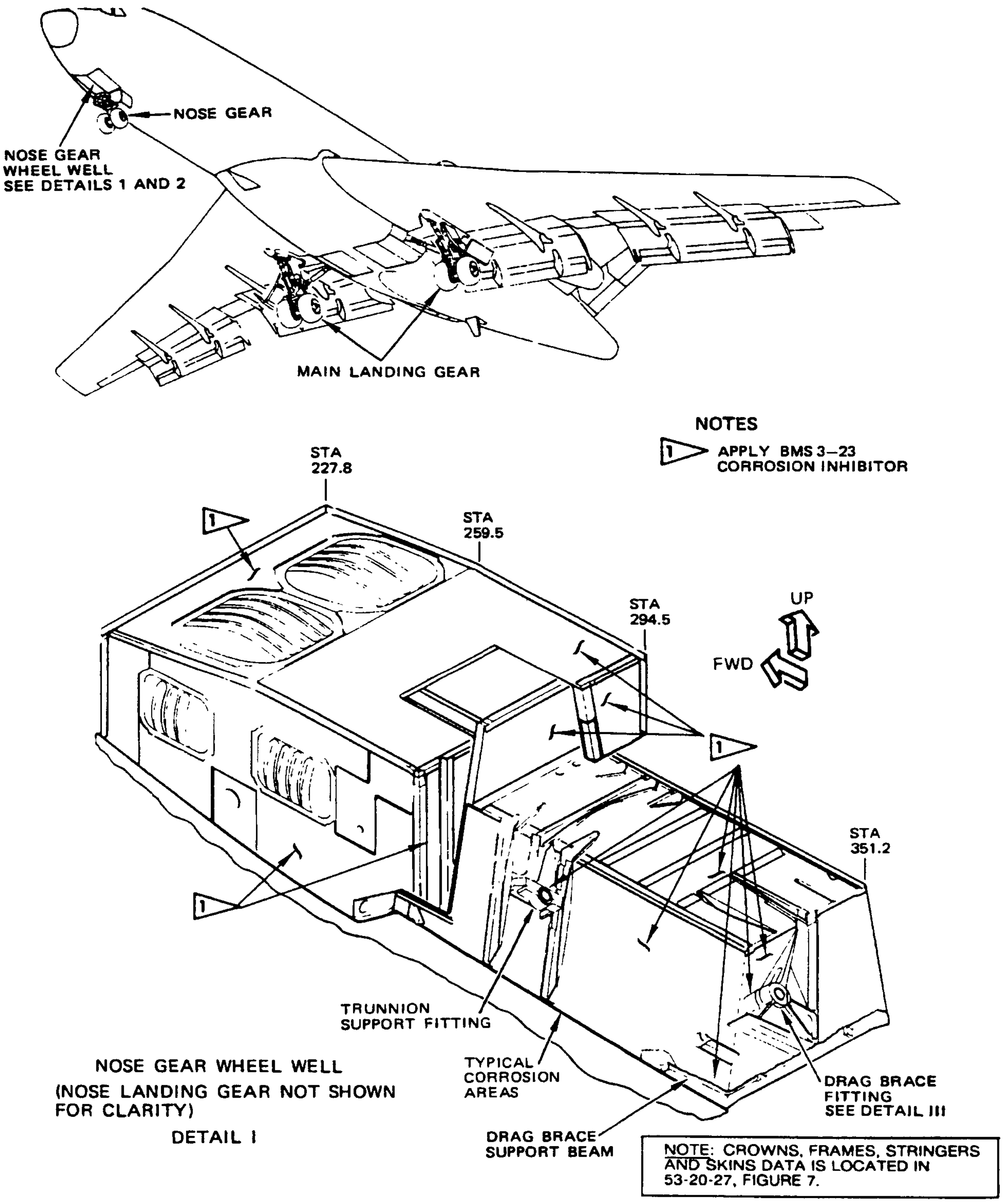
AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Area of concern is the strap bonded to the inner surface of the skin		
Section 46			
Fuselage Structure	Corrosion at BS 740 bulkhead flange and fittings	53-30-27 Fig. 1	
	Corrosion at fwd flange of BS 870 bulkhead forging and fitting		SB 53-77, SB 53-116, SB 53-194
	Stress corrosion cracks on BS 1050, stringer S-27R, splice fitting	53-30-27 Fig. 1	SB 53-158
	Stress corrosion cracks in the jacking point bearing channels at BS 1183	53-30-27 Fig. 1	
	Corrosion of tension bolts at BS 1183 circum- ferential frames	53-30-27	
	Stress corrosion cracks in the clevis for the side load beam joint inboard of the bottle pin		
	Stress corrosion cracking in the aft horizontal tang	53-30-27 Fig. 1,8	
	Corrosion on floor beams between BS 880-0130	53-30-27 Fig. 3,8	SB 53-132
	Stress corrosion cracks on terminal forging	53-30-27 Fig. 8	
	Corrosion on the stringer fitting forward of BS 1183 bulkhead	53-30-27 Fig. 1, 8	

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Stress corrosion cracks on the tension tiebolts connecting fwd and aft longeron tension tie fittings	53-30-27 Fig. 8	
	Stress corrosion cracking on the landing gear side strut bearing bore	53-30-27 Fig. 1	SB 53-179
Door Openings	Stress corrosion cracks in the web attach flanges of the bulkhead side forgings at BS 950		SB 53-126
	Corrosion in the inner surfaces of the emergency exit openings	53-30-27 Fig 3,8	
Main Gear Wheel Well	Corrosion in the main landing gear attach fitting	53-30-27 Fig. 5, 8	
	Stress corrosion cracks on the main landing gear side strut bearing boss		
	Corrosion in the landing gear beam swing link lug bore	53-30-27 Fig. 5, 8	
	Broken bolts attributed to stress corrosion at stringer 18A	53-30-27 Fig. 1,8	
	Corrosion of aluminum lockbolt collars		
	Corrosion on BS 930 frames area		
	Stress corrosion cracks on the fwd and aft lugs at BS 950 frame		
	Stress corrosion cracks on BS 930 frame at stringer 18A		

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Fuselage External Structure	Corrosion on fuselage skin and external doubler under the wing to body fairing	53-30-27 Fig. 8	
	Corrosion on skin at antenna mount	53-30-27 Fig. 2	
Drains	Plugging of drain holes	53-30-27 Fig. 7,8	
	Sticking of the flapper valve in drain valve assembly		
Section 48			
Fuselage Structure	Corrosion on the tailskid cavity	53-40-27 Fig. 1	
	Corrosion on the spar chord at the fin rear spar terminal fitting BS 1342		
	Severe corrosion on the surface of the fractured center engine rear support fitting	53-40-27 Fig. 1	
	Corrosion of tension bolts at BS 1183 circumferential frames	53-40-27 Fig. 1	SB 53-209
Seat and Cargo Tracks	Corrosion of passenger seat and cargo tracks	53-50-27 Fig. I	
Galley and Lavatories	Corrosion of structures under galleys and lavatories	53-60-27 Fig. 1	
Fuselage Skin Lap Joints	Corrosion on faying surface of lap splices	53-60-27 Fig. 1	

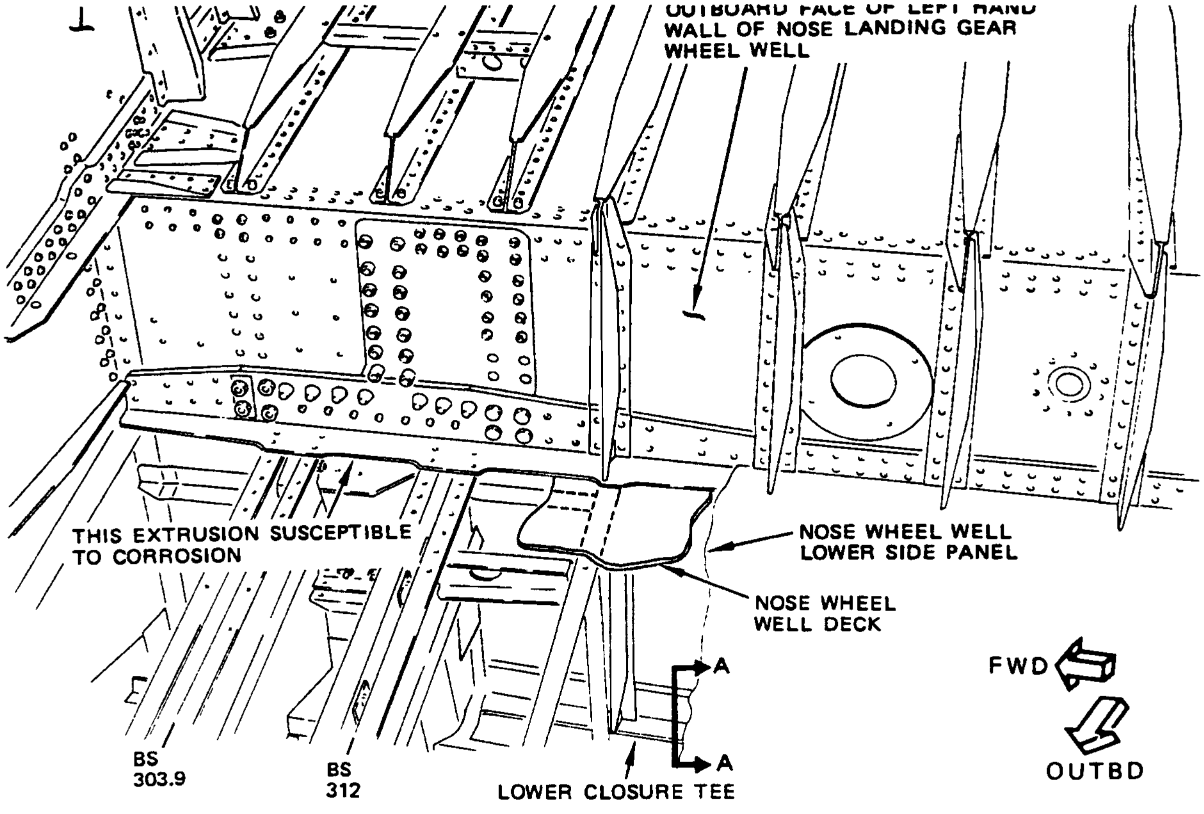
AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
	Corrosion of bonded skin panels from BS 950 thru 1183	53-70-27 Fig. I	SB 53-72,SB 53-82, SB 53-109

Specific Corrosion Problems
Figure 1

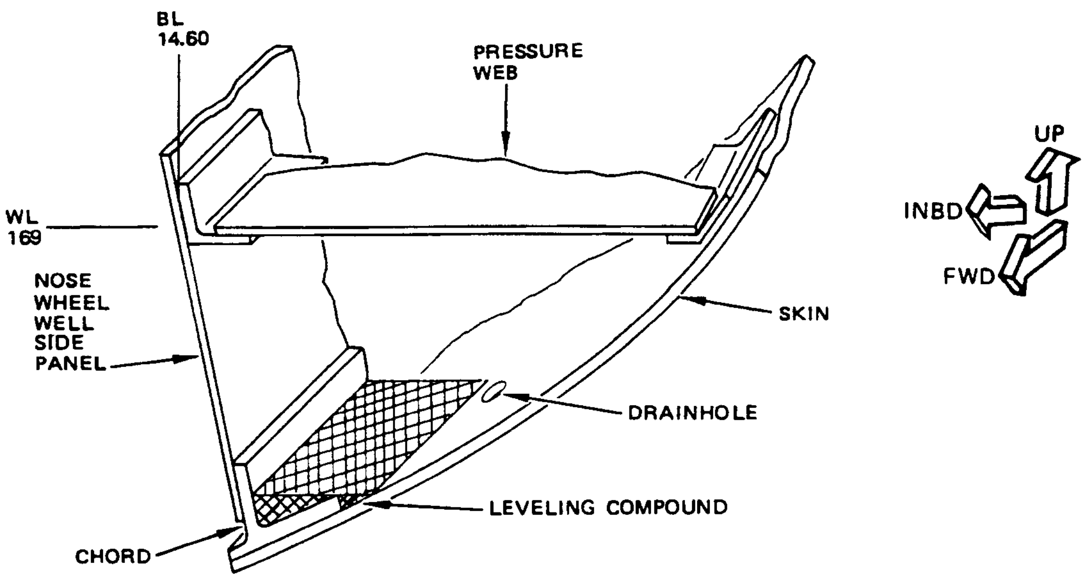


Section 41 - Nose Gear Wheel Well

Figure 1 (Sheet 1)

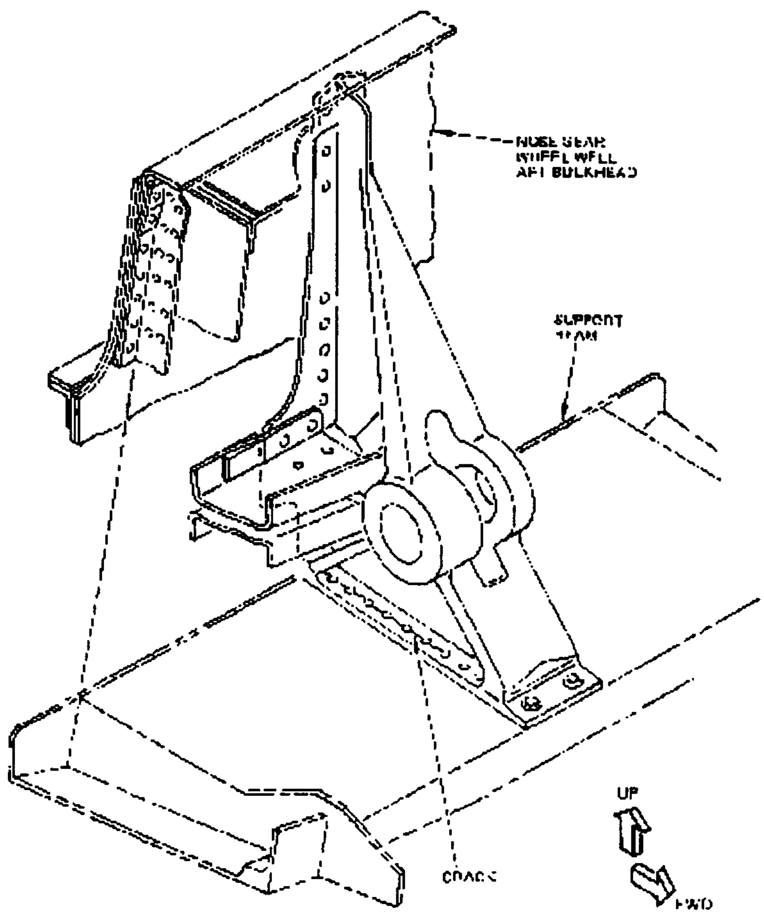


DETAIL II



SECTION A–A

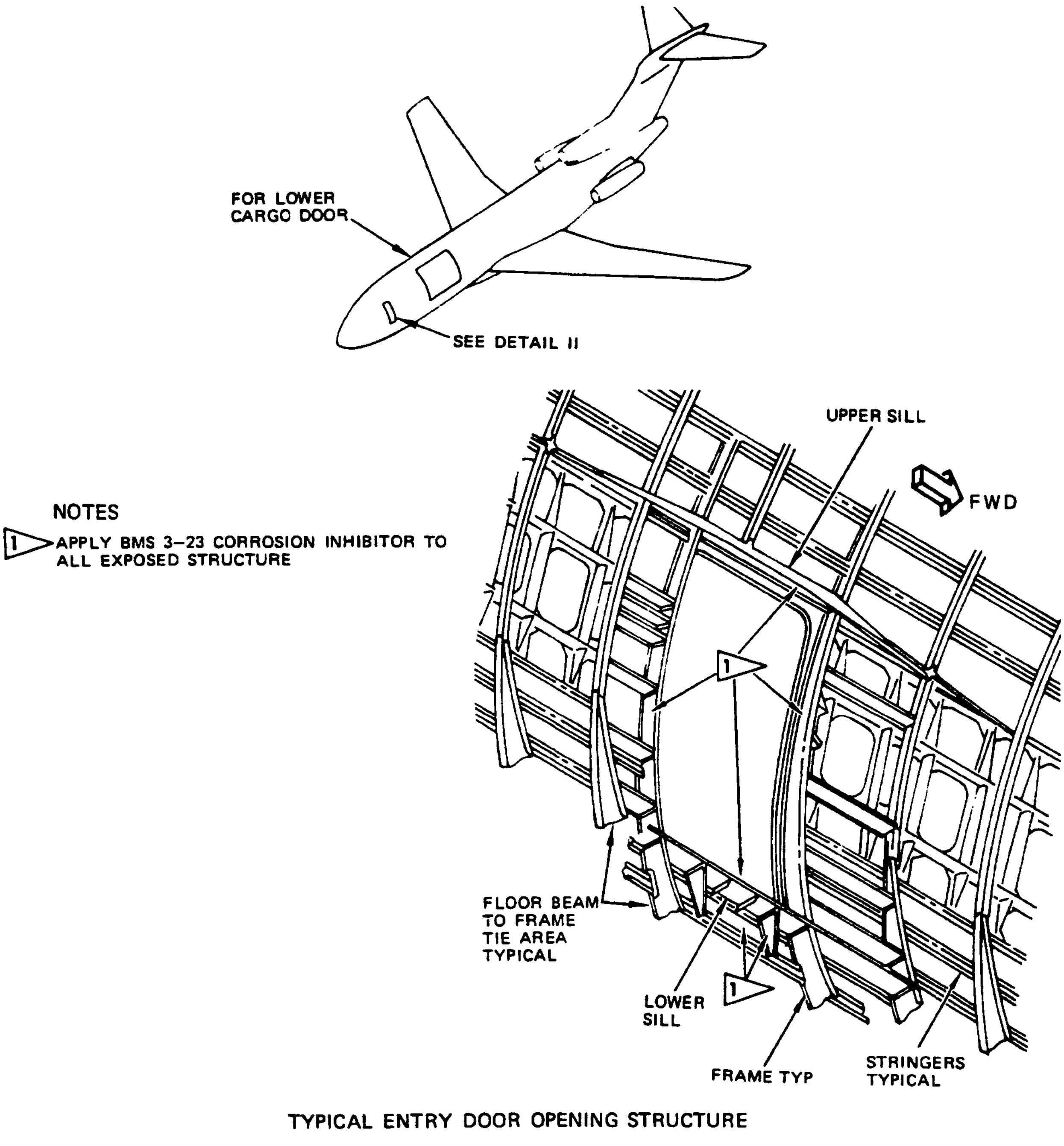
Section 41 - Nose Gear Wheel Well
Figure 1 (Sheet 2)



DETAIL III

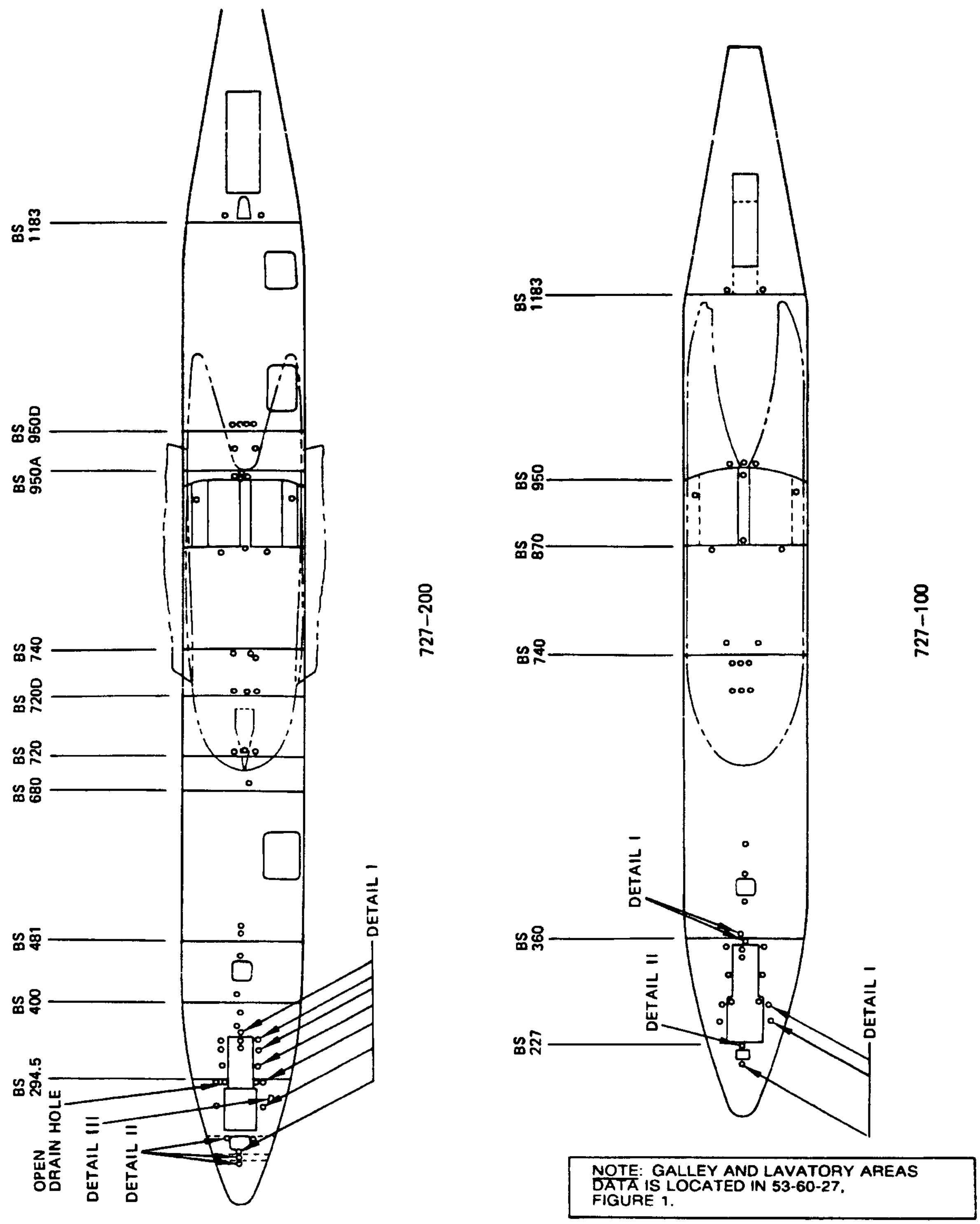
Section 41 - Nose Gear Wheel Well

Figure 1 (Sheet 3)



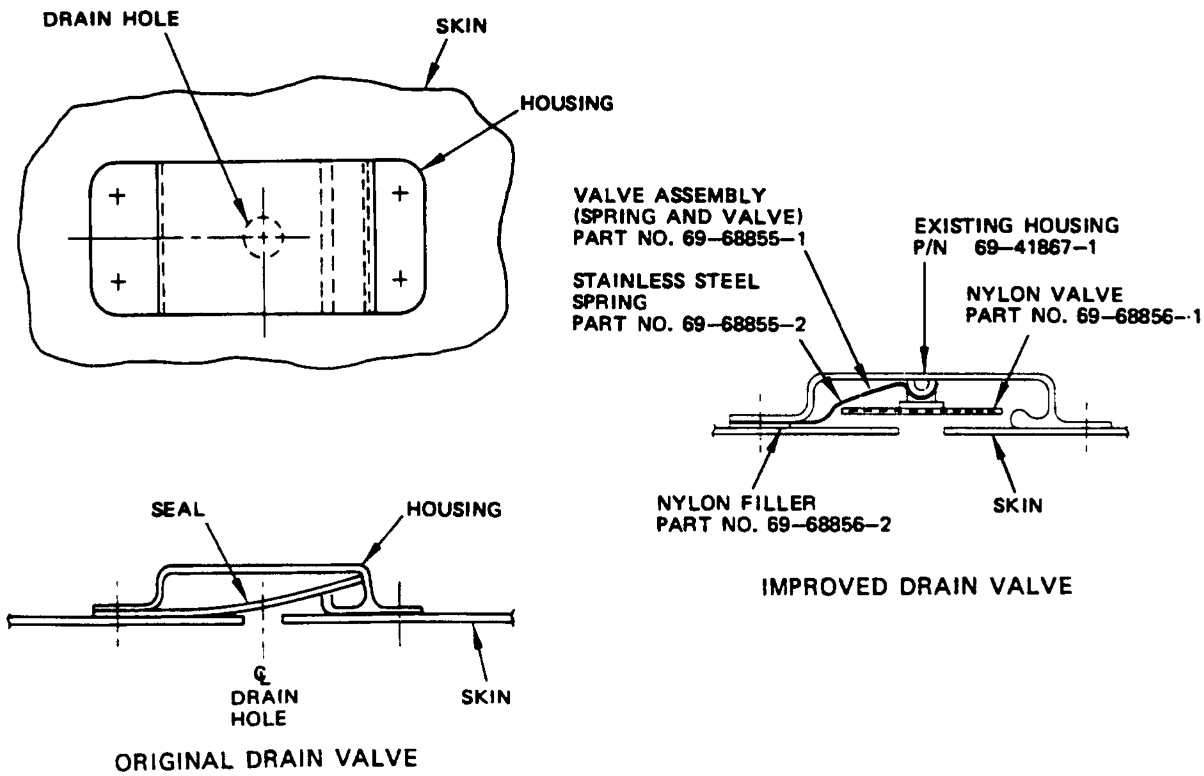
NOTE: LOWER LOBE STRUCTURE DATA IS LOCATED IN 53-20-27, FIGURE 7 AND 53-30-27, FIGURE 8.

Section 41 - Door Openings
Figure 2

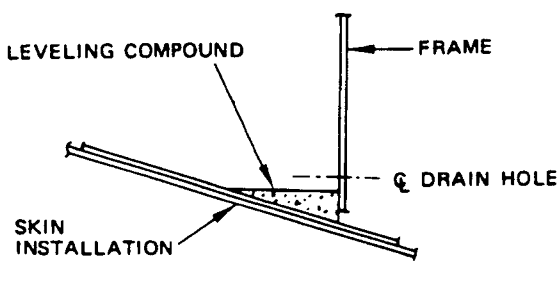


Section 41 - Fuselage Drain Hole

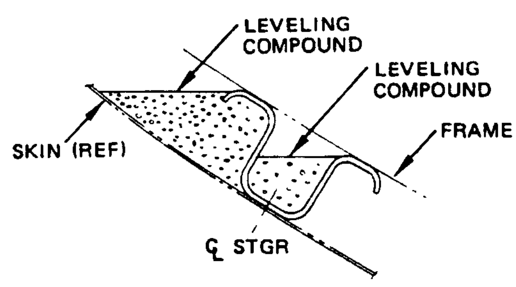
Figure 3 (Sheet 1)



TYPICAL DRAIN VALVE INSTALLATIONS
DETAIL I



DETAIL II



DETAIL III

Section 41 - Fuselage Drain Hole
Figure 3 (Sheet 2)

1. General

A. The fuselage is of semimonocoque construction divided in five sections. The first forward section is Section 41 extending from stations 130 to 360. The fiberglass radome is hinged at the top of the forward pressure bulkhead. Aft of the forward pressure bulkhead are the flight compartment and nose gear wheel well. Structural openings in Section 41 include flight compartment and entry doors. Additional stringers, frames, and skin double reinforced windows and doors.

B. The fuselage skin was installed with butt joints and longitudinal lap joints that were generally flush riveted. The faying surfaces at skin laps and circumferential skin splices are either bonded or fay surface sealed. All non-aluminum fasteners which penetrate the exterior skin are installed with wet sealant.

C. The stringers, frames and skins have been found susceptible to corrosion due to moisture entrapment between the skin and insulation blankets. Corrosion can readily start where protective finishes have been broken or deteriorated.

(1) Bad corrosion can occur on the BS 360 frame web, and the related stiffener.

(2) Corrosion can occur on alloy steel tension bolts at the BS 360 circumferential frames.

D. The nose gear wheel well is a rigid box structure consisting of a ceiling, sidewalls, and end walls and is located in the forward fuselage. The nose gear attachment fittings are located in the wheel well. 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 susceptible to corrosion. A coverplate has been added over the trunnion opening on the nose wheel well side panel, left and right sides.

(1) Corrosion has been reported on the nose gear drag brace fitting in the bore and on the lug surfaces of the attachment (Fig. 1, Detail III).

(2) Corrosion has been reported on the nose wheel well side panel chord (closure tee), outboard horizontal flange between BS 294.5 and BS 312, and also the lower shear tie of the frame at BS 303.9 was damaged (Fig. 1, Detail II).

NOTE: MAIN GEAR WHEEL AND KEEL BEAM DATA IS LOCATED IN 53-30-27, FIGURE 5.

(3) Corrosion has been reported on the longitudinal walkway chords common to the NLG wheel well between BS 294.5 and 351.2. Four corroded chords were on the left side and 11 on the right side (Fig. 1, Detail I).

E. The crew entry door openings and structure in Section 41 consists of floor beams, frames, doublers, fittings, stiffeners, intercostals, reveals, and scuff plates (Fig. 2).

(1) The primary corrosion area is under the door sill, floor panels, floor beams and doublers or triplers at the door opening. Contaminants are tracked in by passengers, crew members, cargo and service personnel or by driven rain/snow when door is opened.

(2) 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 contact the skins.

F. 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 the overboard drains (Fig. 3).

(1) To prevent accumulation of condensation forward of BS 336, drain valves were installed on each side, adjacent to the nose wheel well, on airplane line numbers 795 and on, plus airplanes incorporating SB 53-91.

(2) Severe corrosion has been reported on BS 360 frame web, antenna cavity forward web and associated stiffeners. Operators with airplanes prior to line number 1567 having a Doppler antenna cavity should confirm the presence of a drain valve at BS 360 and Doppler antenna cavity forward web.

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 on 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 per Volume 1, 20-20-00 to make sure that protective finishes stay serviceable. Refer to SB 53-209 for details about the tension bolts at BS 360 circumferential frames.

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 down time 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 first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished in the external drains, wheel well opening, and door opening.

(2) Nose Wheel Well Opening:

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

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

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

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

(d) Apply BMS 3-23 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.

(e) Apply corrosion inhibitor to nose gear drag brace attachment fitting, nose gear trunnion support fittings and miscellaneous other fittings. Ensure that all lugs and lug faces are treated.

(f) Regrease ail grease fittings in the treatment area.

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

(3) Doors and Window Openings

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

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

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

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

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

(f) Open plugged drains, if any.

(g) Clear all drain paths.

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

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

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

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

(l) 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 is recommended. Special attention should be given to flanges of floor beams, doorsills and floor beam to fuselage frame splices.

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

(n) When you install the floor panels, install the fasteners with BMS 3-24 grease.

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 BM6 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) Nose Wheel Well Structure

(a) On early 727-100 airplanes (line numbers 1 thru 412) the nose landing gear drag brace support beam under the aft nose landing gear wheel well fairing is susceptible to stress corrosion. Support beam forgings or built-up structure with materials less susceptible to corrosion were installed on airplanes line number 413 and on.

(b) At line number 1515, PRR 24180-3 and 24381 added BMS 5-92 leveling compound and drain holes as shown in Section A-A. This can be added to other airplanes with SB 53-157. At line number 1626, the side panel lower chord was changed from 7075-T6511 to 7075-T73.

(c) On airplanes line numbers 1515 to 1544, Service Bulletin 53-157 installs coverplates over openings under trunnions.

(d) Some operators use Dinitrol AV (BMS 3-26) corrosion inhibiting compound as an alternative to LPS-3 (BMS 3-23) compound.

(e) For airplane line numbers 1 thru 412, SB 53-108 gives inspection and other procedures for cracks in the drag brace support beam.

(2) Drain Holes

(a) On airplane line numbers 1567 and on, a production change added a drain valve at BS 360 and Doppler antenna cavity forward web. SB 53-161 provides procedure to install the drain valve. Compliance with this SB is recommended to ensure a clear passage way for condensation.

(3) For corrosion on alloy steel tension bolts at the BS 360 circumferential frames. SB 53-209 gives inspection and replacement procedures.

NOTE:Nose Gear Wheel Well data is located in 53-10-27, Fig. 1.

Nose Gear Wheel Well
Figure 4

NOTE: Seat and Cargo Tracks data is located in 53-50-27, Fig. 1.

Seat and Cargo Tracks
Figure 5

NOTE:Door Openings data is located in 53-10-27, Fig. 2; 53-20-27, Fig. 2; and 53-30-27, Fig. 4.

Door Openings
Figure 6

NOTE:Structure in Vicinity of BS 870 Bulkhead and Stringer 18A data is located in 53-30-27, Fig. 1.

Structure in Vicinity of BS 870 Bulkhead and Stringer 18A
Figure 7

NOTE: Frames at BS 930 and BS 950 Above Main Deck data is located in 53-30-27, Fig. 1.

Frames at BS 930 and BS 950 Above main Deck
Figure 8

NOTE: Main Deck Floor Beam Data is located in 53-30-27, Fig. 3

Main Deck Floor Beam
Figure 9

NOTE: BS 740 Bulkhead Flanges and Fittings data is located in 53-30-27,Fig. 1.

BS 740 Bulkhead Flanges and Fittings
Figure 10

NOTE: Fuselage Stringer Fittings Data is located in 53-30-27, Fig. 1

Fuselage Stringer Fittings
Figure 11

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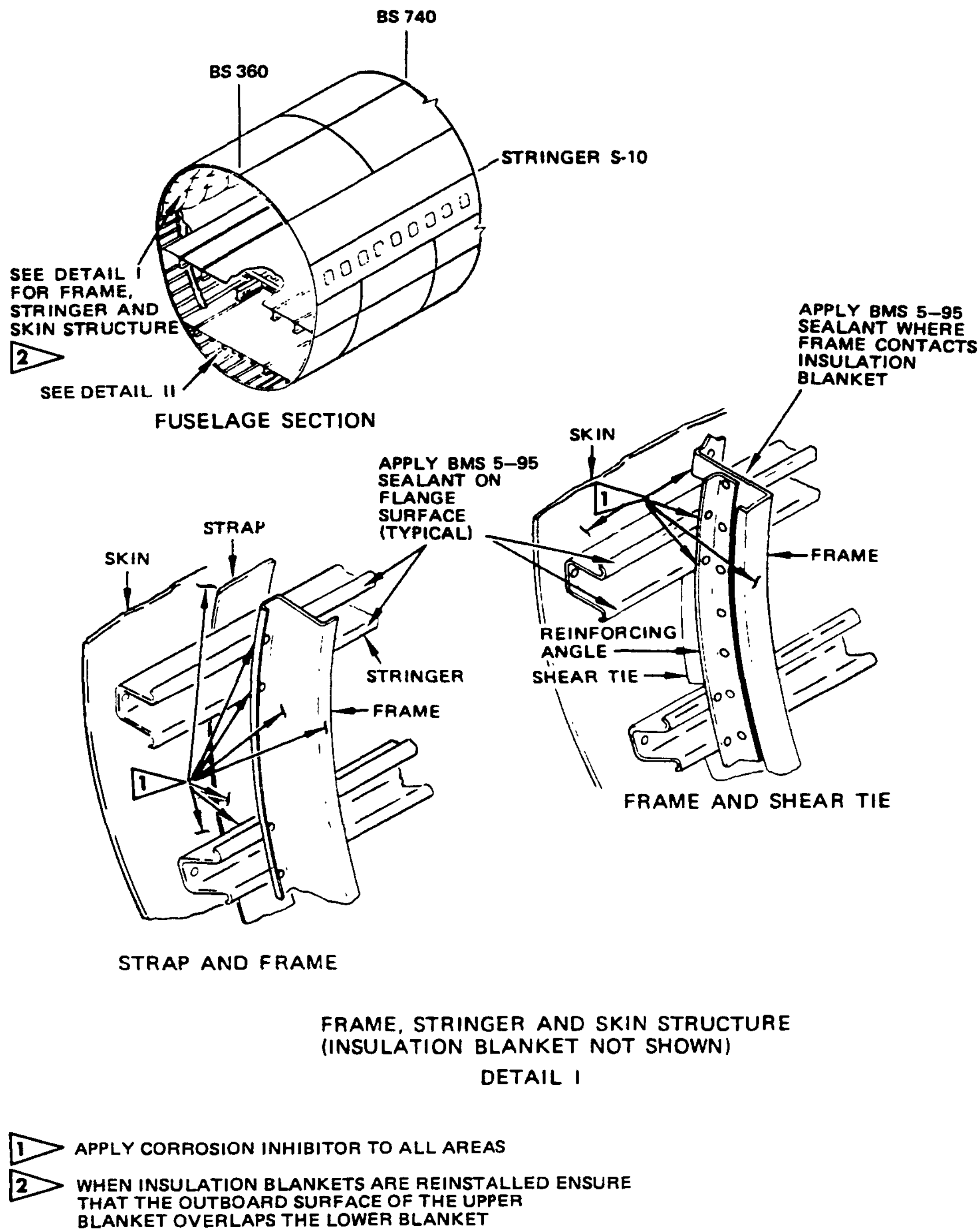
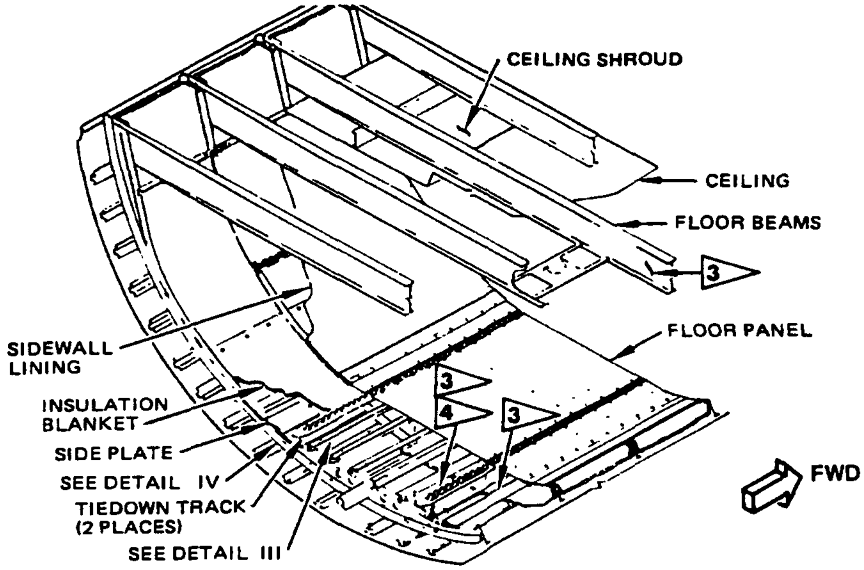
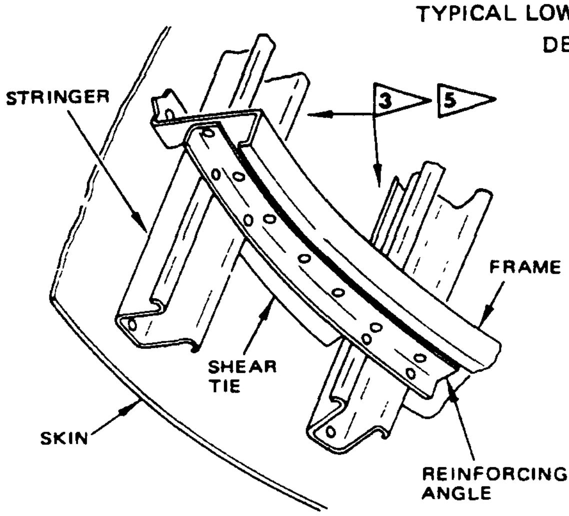


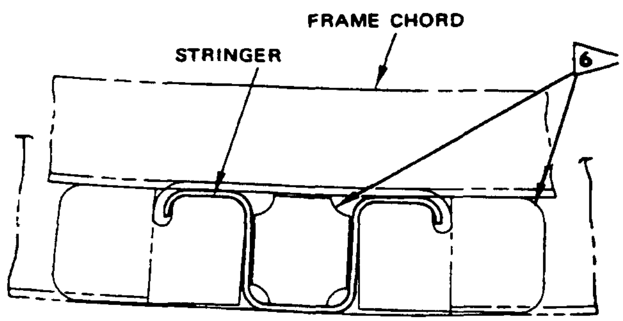
Section 43 - Fuselage Structure
Figure 1 (Sheet 1)



TYPICAL LOWER LOBE STRUCTURE
DETAIL II



DETAIL III



DAMS FOR "HOSE-OUT OPTION"
DETAIL IV

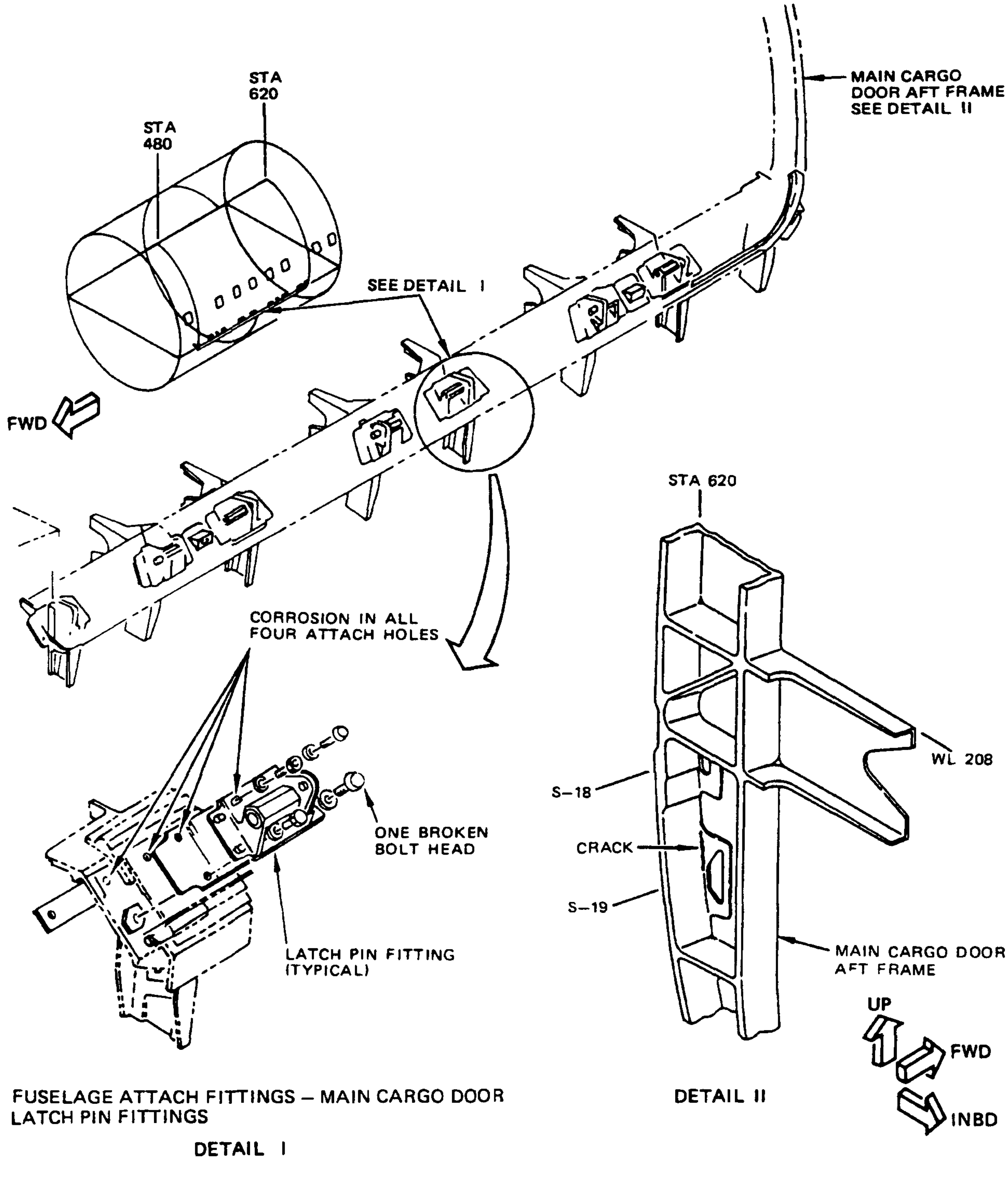
3 APPLY WATER DISPLACING CORROSION INHIBITOR TO ALL EXPOSED STRUCTURE

4 DOUBLERS ARE INSTALLED ON THE INTERIOR BODY SKIN ALONG BBL 0 BELOW THE FORWARD CARGO COMPARTMENT AND AIR CONDITIONING BAY BETWEEN BODY STATIONS 380 AND 720. THE SKIN/DOUBLER ASSEMBLY WILL BE REPLACED WITH INTEGRAL MACHINED SKINS AT LINE NUMBER 1089

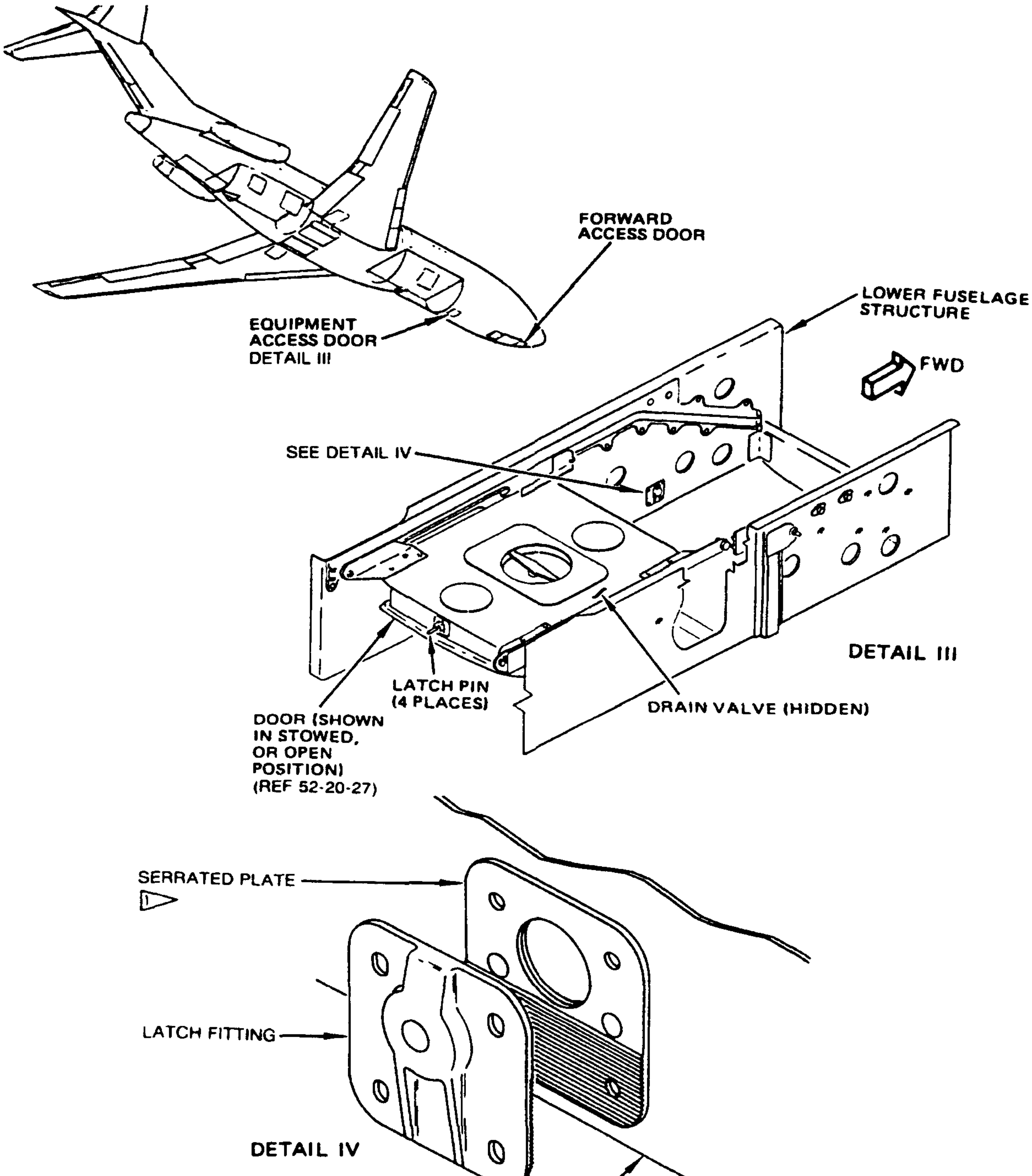
5 TREAT SKIN, FRAMES AND STRINGERS BELOW S-24

6 DAMS ARE PROVIDED TO COMPARTMENTIZE AREAS FOR OPTIONAL HOSE OUT OPERATIONS. URETHANE FOAM DAMS HAVE BEEN REPLACED WITH METAL DAMS IN THE LOWER LOBE AT AIRPLANE CUM LINE NUMBER 117

Section 43 - Fuselage Structure
Figure 1 (Sheet 2)

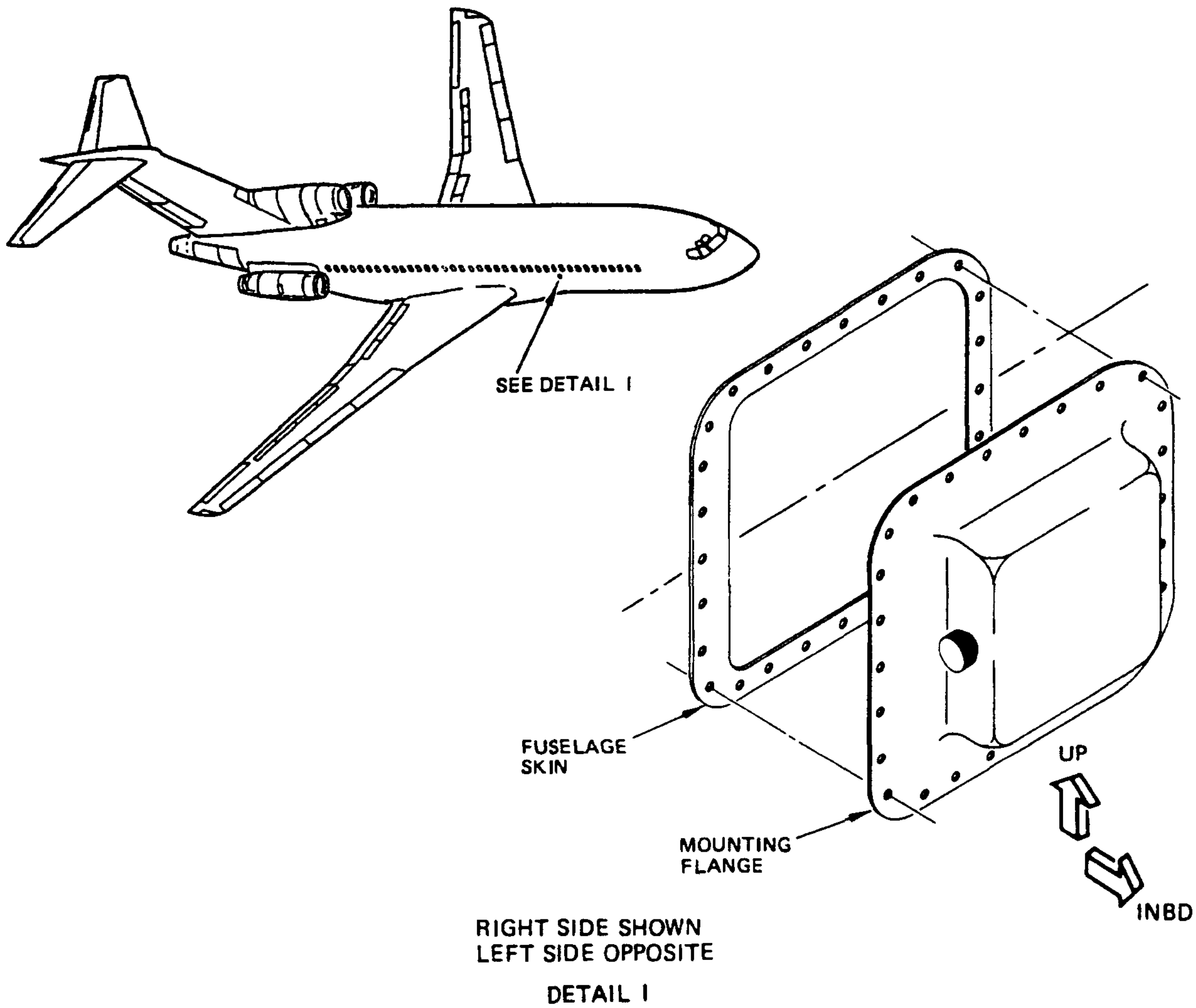


Section 43 Doors and Windows Openings
Figure 2 (Sheet 1)

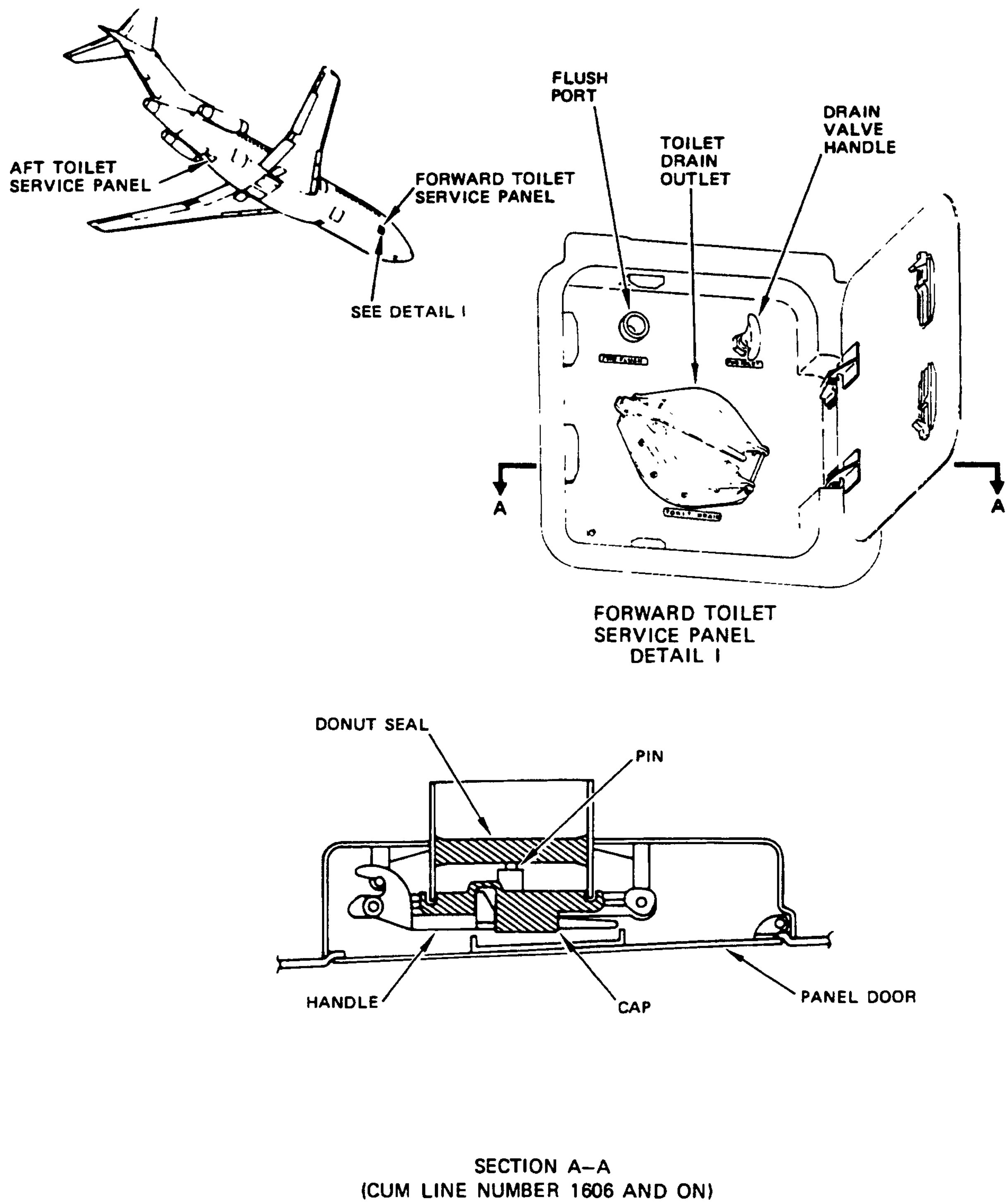


1 INSTALL WITH FAY SURFACE SEAL AND APPLY A SMALL AMOUNT OF GREASE TO THE SERRATED FACE OF THE PLATE

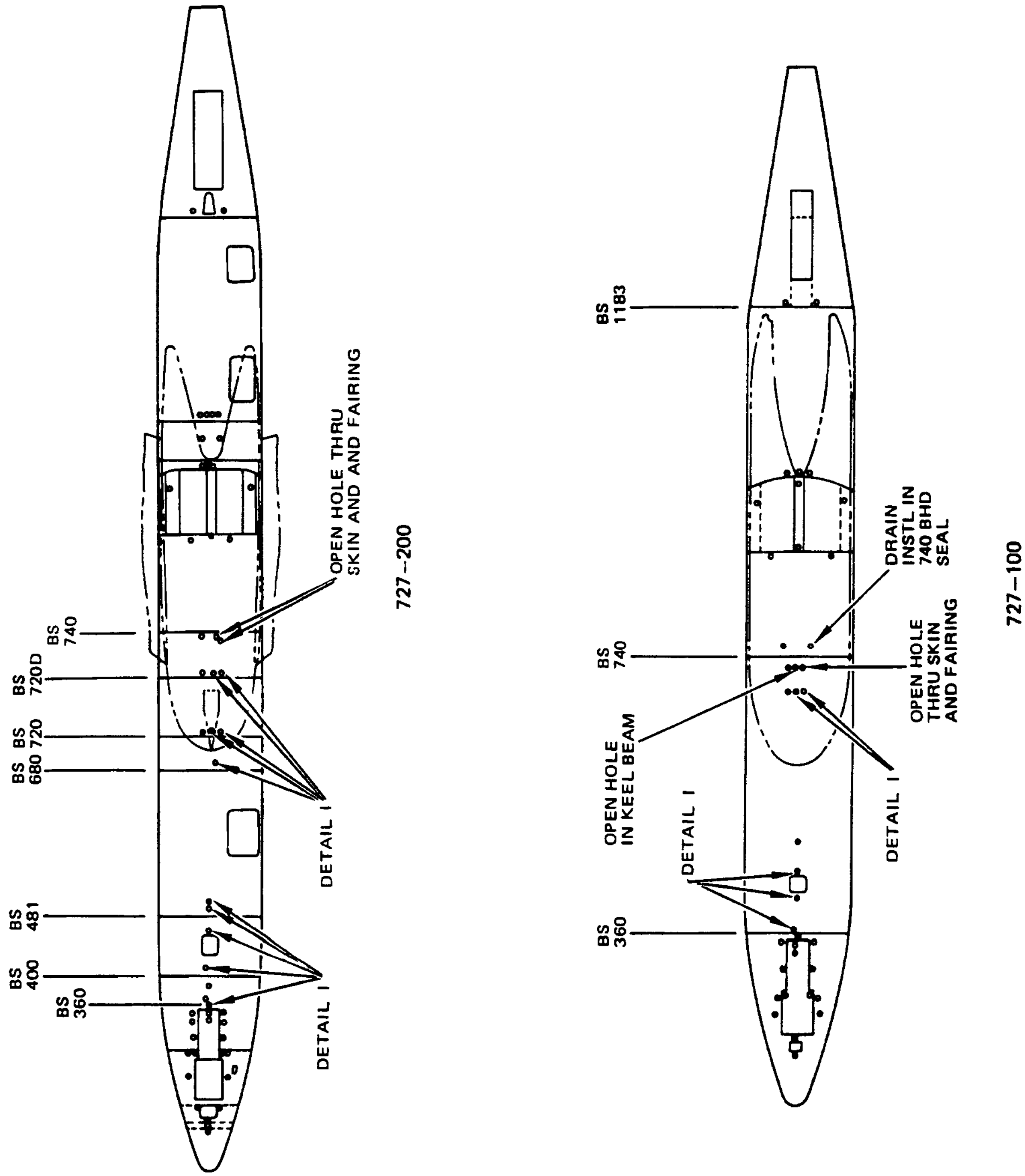
Section 43 Doors and Windows Openings
Figure 2 (Sheet 2)



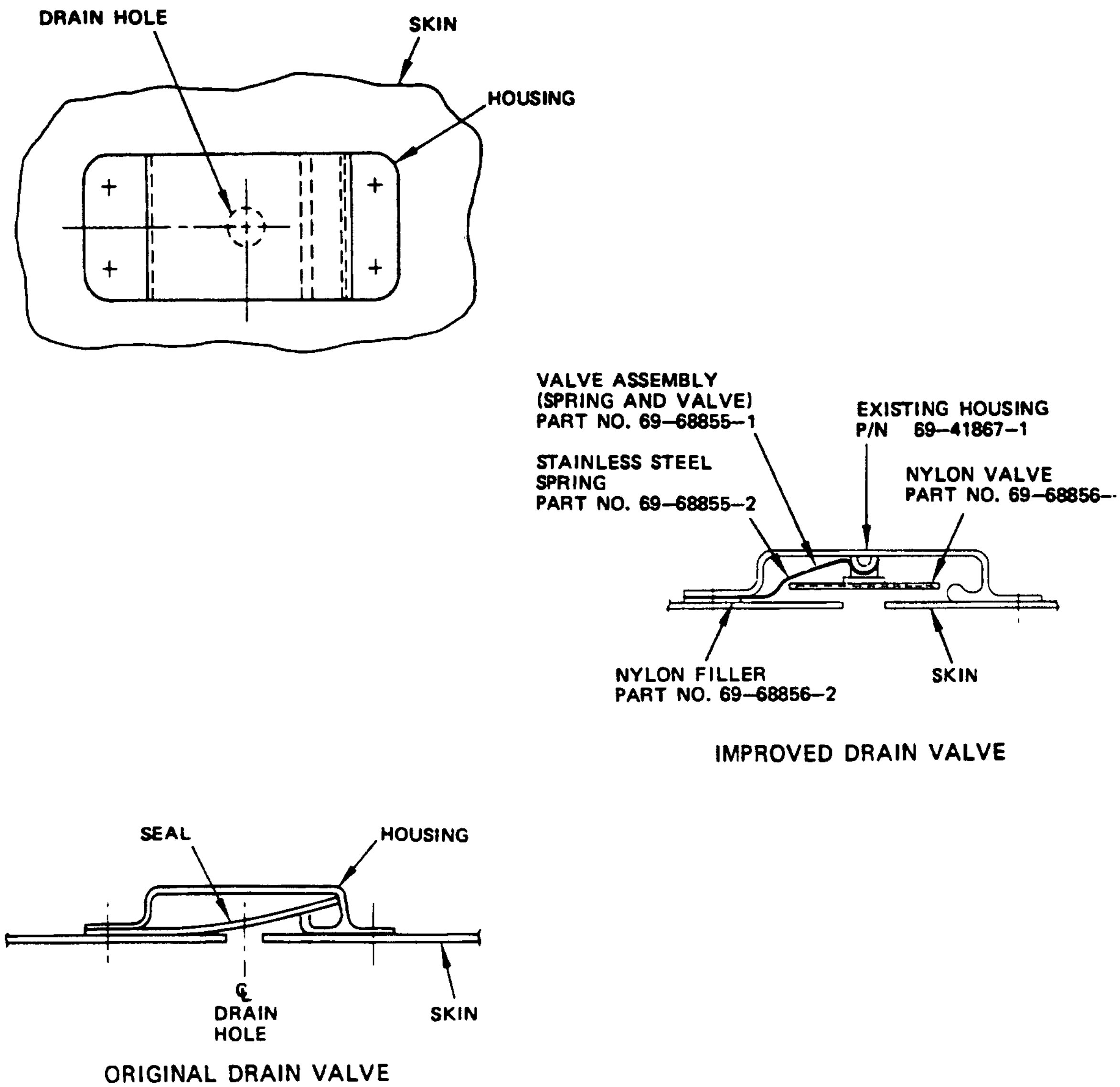
Section 43 Wing Scanning Light
Figure 3



Section 43 - Toilet Service Panels
Figure 4

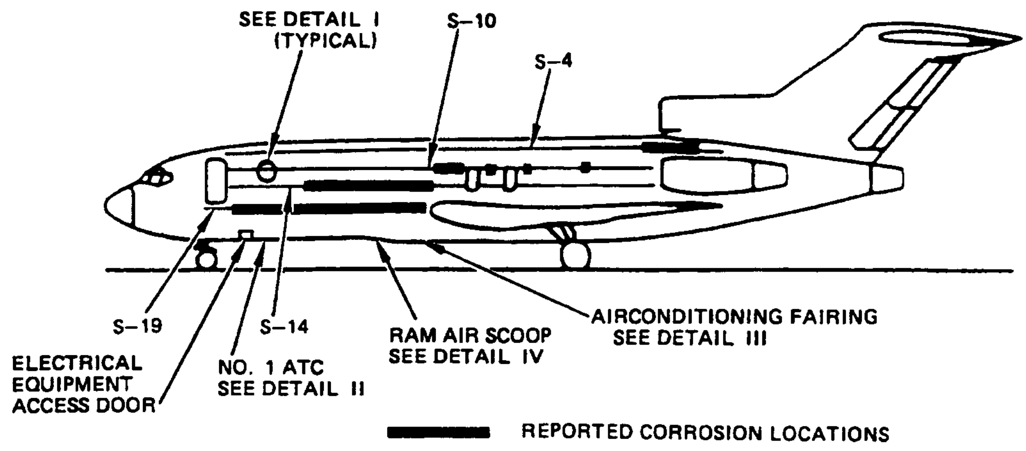


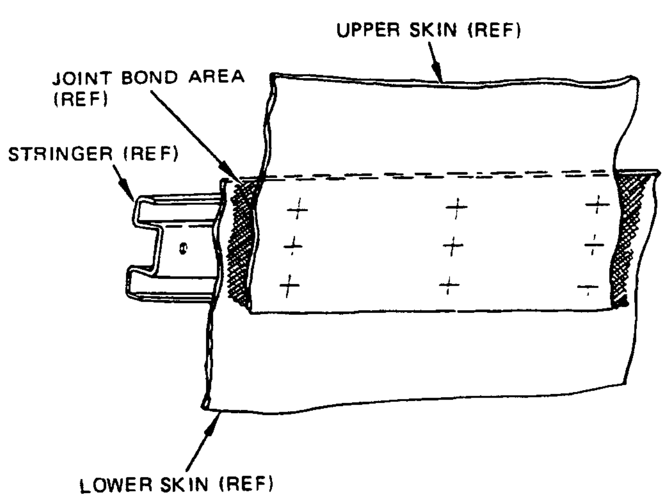
Section 43 Fuselage Drain Holes
Figure 5 (Sheet 1)



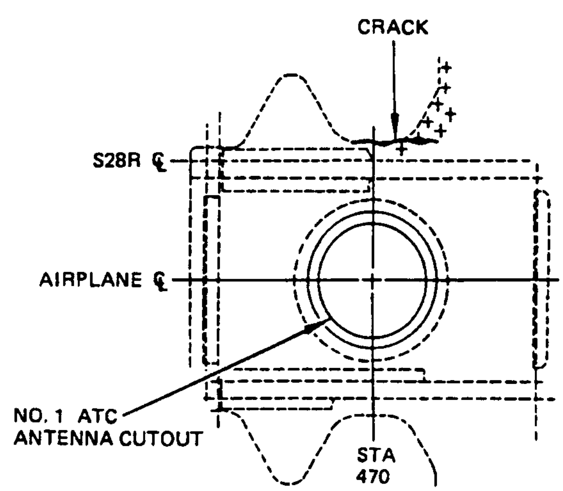
TYPICAL DRAIN VALVE INSTALLATIONS
DETAIL I

Fuselage Drain Holes
Figure 5 (Sheet 2)



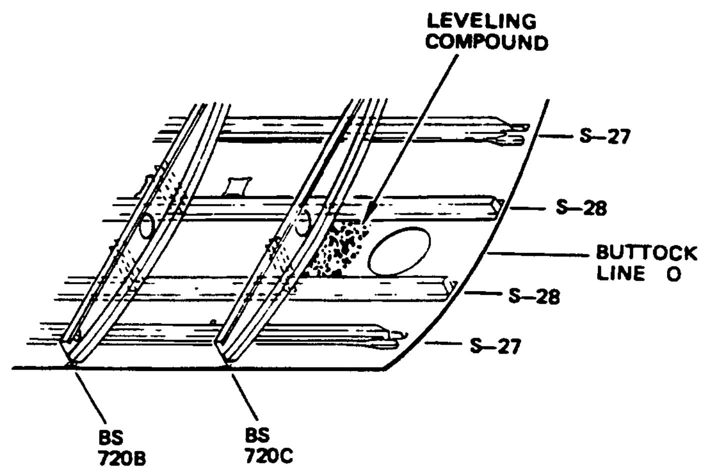


DETAIL I

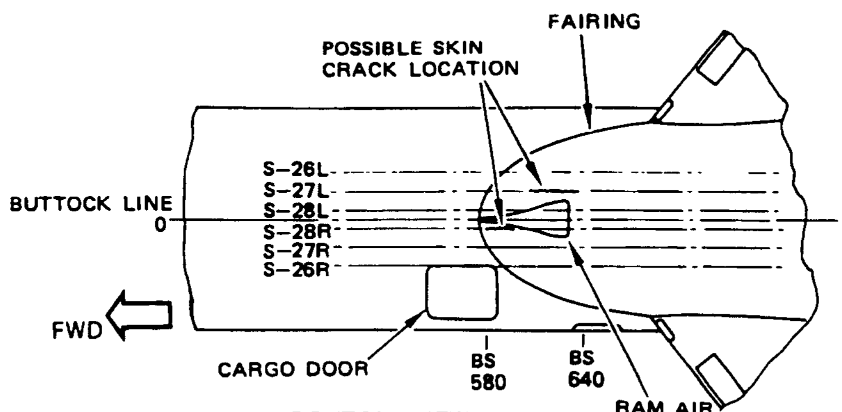


BOTTOM VIEW
DETAIL II

Section 43 Fuselage Skin
Figure 6 (Sheet 1)



DETAIL III



BOTTOM VIEW
DETAIL IV

Section 43 Fuselage Skin
Figure 6 (Sheet 2)

1. General

A. The section 43 extends from stations 360 to 740. The upper lobe contains the passenger compartment with doors and windows. The lower lobe includes the No. 1 cargo compartment and is approximately 45.0 by 53.5 inches and located at the right side of the fuselage. Structural openings in Section 43 include the galley door, cargo door, and passenger windows. Additional stringers, frames, and skin doubler reinforced windows and doors openings.

B. The fuselage skin was installed with butt joints and longitudinal lap joints that were generally flush riveted. Skins should be treated concurrently with fuselage structure.

C. The stringers, frames, and skins have been found susceptible to corrosion due to moisture entrapment between the skin and insulation blankets. Corrosion can readily start where protective finishes have been broken or deteriorated (Fig. 1, Detail I).

(1) 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 on contact skin.

(2) Exfoliation corrosion can occur on stringers S-26L and S-26R between BS 360 and 740.

(3) Corrosion can occur on alloy steel tension bolts at the BS 360 circumferential frames.

(4) Numerous reports of exfoliation corrosion on the body skin between the skin and the spacers of the ground service air conditioning duct at BS 740 have been received. Operators with airplane line numbers 1 thru 1335 should refer to SB 53A128 for inspection and SB 53-142 for sealing information.

(5) Corrosion at BS 521 skin butt joint from stringer S-2L to S-4R has been reported on 727-100 cargo airplanes. In all of the reported incidents the upper strap under the joint was either severely corroded or partly corroded away. Refer to SB 53-167 for inspection, repair, and rework.

(6) Corrosion has been reported on the faying surfaces of the wing scanning light mounting flange and the fuselage skins (Fig. 3).

(7) Corrosion has been reported at the stringer 4, 10, 14, and stringer 19 body skin lap joints (Fig. 6, Detail I).

(8) 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.

(9) Corrosion has been reported on floor beams at BS 680. Operators have reported extensive corrosion on the upper chord of the floor beam at BS 1130 between LBL 15 and LBL 31.

(10) Exfoliation corrosion has been reported on the lower skin, located approximately 18 inches aft of the electrical equipment access door and 2 inches outboard of stringer S-28R (Fig. 6, Detail II).

(11) SB 53-144 gives inspection and repair procedures for the lower body skin panel between BS 360 and 481 on airplane line numbers 1 thru 1217. The service bulletin recommends this on all 727-200 airplanes on or before 20 years of service.

D. The lower lobe structure includes the E/E bay area, cargo area, and all doors opening. 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 (Fig. 1, Detail II).

(1) A particular area of concern is the strap bonded to the inner surface of the skin at BBL.O in the forward cargo compartment. Sealing applied in accordance with SB 53-73 did not supply a complete answer to the problem, consequently the application of water displacing corrosion inhibiting compound was recommended instead. It has been found that where corrosion products are already present, they tend to absorb the compound thus preventing adequate penetration, therefore it is not always completely effective as a preventive modification. Extensive corrosion and cracks have been found on some airplanes which can cause serious loss of cabin pressure. SB 53-A128 has, therefore, initiated a periodic inspection of the area together with the reapplication of corrosion inhibitor.

(2) Corrosion and cracks have been experienced along stringers 27 and 28 under the air conditioning fairing, caused by moisture entrapment on the stringer-to-skin faying surface. These cracks, if undetected, can propagate resulting in a serious loss of cabin pressure. SB 53-A128 initiates inspection and preventive maintenance procedures for this area.

(3) Corrosion has been reported on the lower lobe skin panel, BS 360 to 481 between S-26 left side and right side. Corrosion is attributed to disbanding of the skin and doublers with resultant entrance and entrapment of moisture between the faying surfaces. Production changes to a machined skin panel are installed on airplanes from cum line number 1217 and can be made retroactively by incorporating SB 53-144. Revision 1 of this service bulletin came out to add more recommended changes on the repair of skin panel for aging 727 airplanes.

(4) Corrosion has been reported above the air conditioning fairing at BS 720C, Buttock Line 0. Two areas approximately six and seven inches long were corroded through the skin adjacent to or under the existing leveling compound material. Corrosion was due to separation of the leveling compound from the skin, permitting moisture entry and entrapment. Skin panel material was machined 2024-T3 clad aluminum alloy. Refer to SB 53-A128 for rework information.

(5) Cracks caused by corrosion of the skin inner surface under the stringers located under the air conditioning fairing has been reported. Cracking occurred along the line of rivets common to S-27L, between BS 610 and 640 and S-28R between BS 580 and 600 (Detail II).

(6) Corrosion has been found on the lower body skin area between stringer 28 and the cargo floor intercostal from BS 750-720.

E. Doors and windows openings in Section 43 are reinforced by additional stringers, frames, and skin doublers. The doors also have additional reveals and scuff plates (Fig. 2).

(1) The primary corrosion area is under the doorsill, floor panels, floor beams, and doublers or triplers at door openings.

(2) Corrosion has been reported in the end hinge halves and hinge pins of the main deck cargo door. The dry lube film on the hinge pins was deteriorated and allowed moisture and contaminants to attach the metal parts (Fig. 2, Detail I).

(3) Corrosion in the structure around the lower compartment forward cargo door has been reported. The extruded channel under the threshold has been a known problem.

(4) Corrosion has been reported between body crown skin and main cargo door cutout reinforcement doubler at BS 521 skin splice between S-3L and S-4R along S-3L from BS 507 to BS 535 on 727-100.

(5) Corrosion has been reported on the main cargo door latch pin fitting and the sill structure. The heads on some of the attach bolts were broken or missing.

(6) Corrosion has been reported in the forward latch location of the electronic compartment external access door on the fuselage frame web.

(7) A crack caused by stress corrosion has been found on the main cargo door latch fitting. This latch fitting is made of 7079-T6 material.

F. 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 structures and leveling compounds are used to provide drainage paths to lead the overboard drains (Fig. 5).

G. Corrosion has been reported on the toilet service area due to leakage from the 4.0-inch diameter service panel toilet drain as a result of the omission of the expandable donut seal during routine servicing. On airplane line number 1606 and on, a new Keiser-Roylyn drain cap was provided and will not close unless the donut seal is in place (Fig. 4).

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. 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 per Volume 1, 20-20-00 to make sure that protective finishes stay serviceable. Refer to SB 53-209 for details about the tension bolts at BS 360 circumferential frames.

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 system.

E. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished in the fuselage structure, door and window openings, drain holes, toilet service panel.

(2) Fuselage Stringers, Frames, and Skin

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON INSULATION BLANKETS. THE COMPOUNDS REDUCE THE WATER-REPELLENT QUALITY OF THE BLANKETS.

(a) Remove insulation blankets to expose stringers, frames, and skin. Dry blankets thoroughly if found wet.

(b) Remove floor from panels to gain access to bilge area.

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

(d) Replace broken or damaged finishes.

(e) Apply water displacing corrosion inhibiting compound to all exposed surface in the upper lobe and under the cargo floor and to the sidewalls beneath the upper lobe entry and cargo doors.

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

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

(h) SB 53-144 provides inspection, repair, and modification procedures for the lower lobe skin panel BS 360 and BS 481 between S-26 left and right side.

(i) When you install the floor panels, install the fasteners with BMS 3-24 grease.

(3) Doors and Windows Openings

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

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

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

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

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

(f) Open plugged drains, if any.

(g) Clear all drain paths.

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

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

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

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

(l) 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 is recommended. Special attention should be given to flanges of floor beams, doorsills and floor beam to fuselage frame splices.

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

(n) When you install the floor panels, install the fasteners with BMS 3-24 grease.

(o) Electronic compartment access doorstops.

1) Treatment with grease of the doorstop is recommended to reduce corrosion effects in the fuselage frame web at the electronic compartment external access door.

2) Remove the doorstop and serrated plate.

3) Inspect for evidence of corrosion, broken or damaged finishes.

4) Replace broken or damaged finishes.

5) Reinstall the serrated plate with a fay surface seal. Apply a small amount of grease to the serrated face of the plate and install the doorstop attaching bolts coated with grease (Aeroshell Grease 14 or equivalent).

(4) Section 43 Drain Holes

(a) Clean out drains and drain paths. The use of a pipe cleaner or thin wooden dowel to remove debris and contaminants to clear the drain hole is recommended.

(b) Check the flappers on the pressurized skin drains for alignment and freedom of movement.

(c) Repair or replace drain valve flapper if it is inoperative or damaged. It is recommended that the silicone rubber flapper valves be replaced on an attrition basis.

NOTE: The improved valves can be used only with existing housing P/N 69-41867-1.

(d) Check overboard drains more frequently in severe conditions to minimize the risk of corrosion due to moisture corrosion.

(5) Forward Toilet Service Panel

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

(b) Remove damaged or broken fillet seals.

(c) Apply water displacing corrosion inhibiting compound along all edges and fastener heads. Allow carrier solvents to evaporate and wipe off excess.

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

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

(f) Apply water displacing corrosion inhibiting compound over fillet seals and immediate areas after sealant has cured.

(6) Fuselage External Structure

(a) Inspect skin and scanning light assy mounting flange for evidence of corrosion. On airplanes without a faying surface seal or if corrosion is evident, remove the scanning light assy. Reinstall scanning light assy with BMS 5-95 sealant at the faying surface between the mounting flange and fuselage skin.

(b) Conduct maintenance check on drain cap seals as indicated in MM 12-17-0. Service experience has indicated that leakage from deteriorated seals in the toilet drain tube has 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.

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 1121, 1123 and on, the tightly sealed covers were replaced with unsealed covers to permit water to enter the blanket arid drain with equal facility. The blanket serves as drain paths into the lower lobe drain masts. Water repellent blanket is used.

(2) On airplane line numbers 1555 and on, BMS 5-95, class F, chromate-loaded sealant was applied to inboard flange of stringers and to portions of frames that come in contact with insulation blankets.

(3) On airplane line number 1512 and on, BMS 5-95 sprayable sealant was applied to the lower cargo compartment side plates after assembly prior to the enamel topcoat.

(4) Dams have been provided to compartmentalize areas for optional hose out operations. These dams aid in cleaning out harmful contaminants accumulated in the lower lobe. On airplane line number 1117 and a retrofit SB 51-18, a production change to aluminum dams has been accomplished.

(5) On airplane line number 875 and on, production change fay sealed the skin and substructure in the bilge area. This reduces the corrosion caused by spills and moisture accumulation. On airplane line number 922 and on, additional corrosion protection has been provided by spraying of the entire bilge area with a corrosion preventive compound.

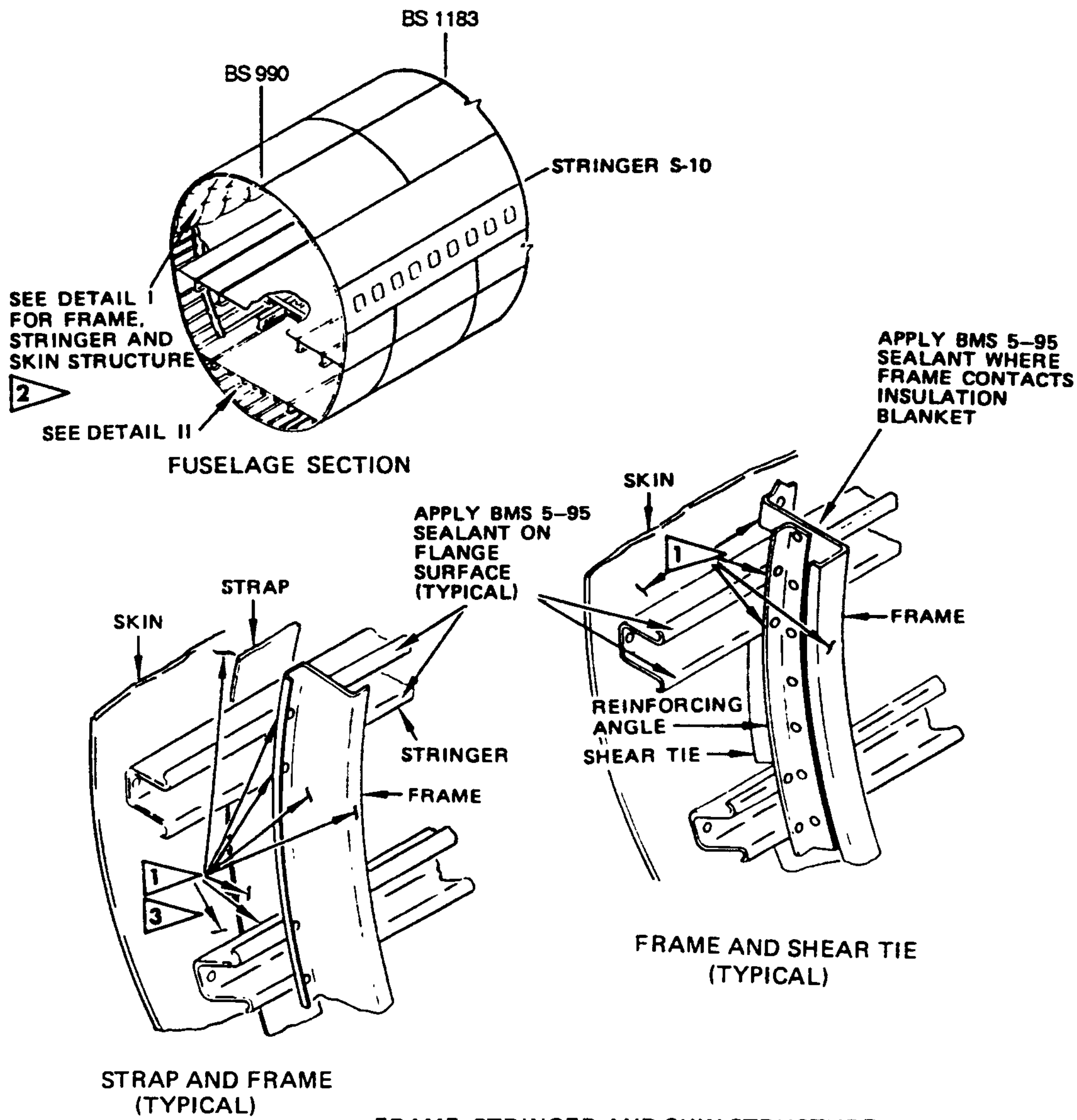
(6) On airplane line number 982 and on, production change provided supports for insulation blankets to reduce the possibility of moisture entrapment between insulation blankets and airplane skins in the bilge area. SB 25-181 provides procedures to install supports for insulation blankets on previous airplanes.

(7) On airplane line number 1 thru 765, SB 53A128 gives instruction for corrosion inspection and repair of forward lower body skin at stringer 27, 28 and along BBL 0 doubler. SB 53A128 now includes procedures for forward lower body skin for aging 727 airplanes.

(8) Refer to SB 53A203 for the inspection and repair of corrosion on the forward lower body skin between stringer 28 and the cargo floor intercostal from BS 700 to 720. Airworthiness Directive 89-23-13, amendment 39-6388 came out to include SB 53A203.

(9) Refer to SB 53A177 for the inspection and replacement of main cargo door latch support fitting. This service bulletin recommends the replacement of the fitting with 7075-T3 material fitting on aging 727 airplanes.

(10) For corrosion on alloy steel tension bolts at the BS 360 circumferential frames, SB 53-209 gives inspection and replacement procedures.



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

DETAIL I

NOTES

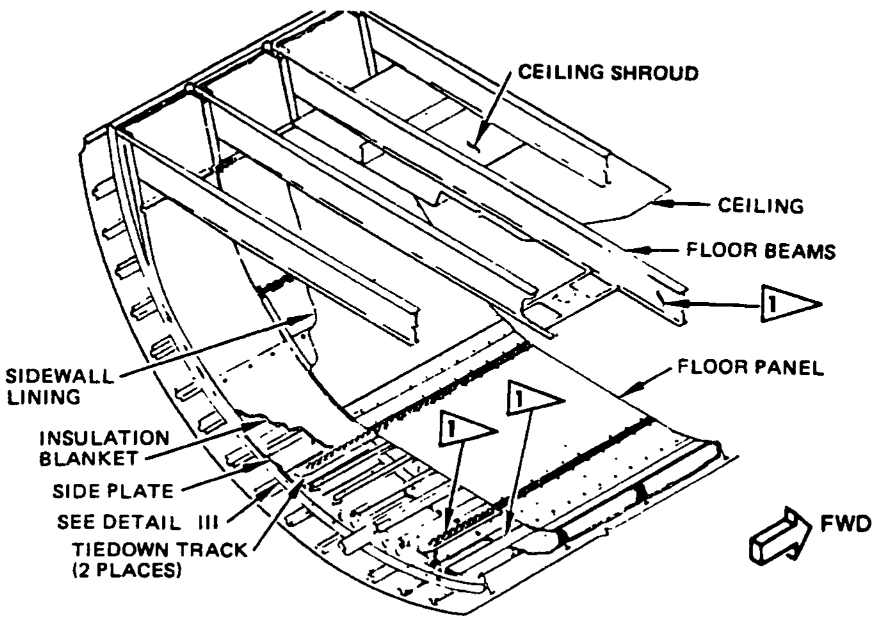
1 APPLY CORROSION INHIBITOR TO ALL AREAS

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

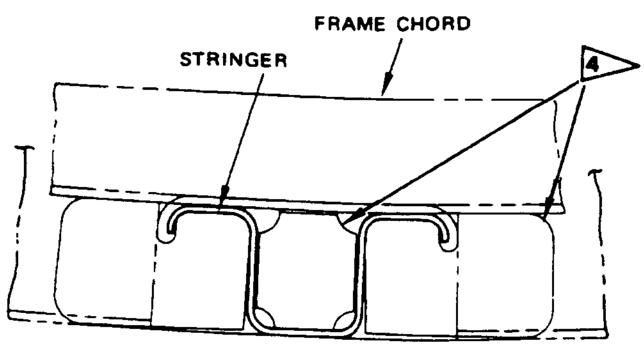
3 TREAT SKIN, FRAMES AND STRINGERS BELOW S-24

NOTE: FUSELAGE SKIN-EXTERNAL SURFACES DATA IS LOCATED IN 53-70-27, FIGURE 1.

Section 46 - Fuselage Structures
Figure 1 (Sheet 1)



TYPICAL LOWER LOBE STRUCTURE
DETAIL II



DAMS FOR "HOSE-OUT OPTION"
DETAIL III

NOTES

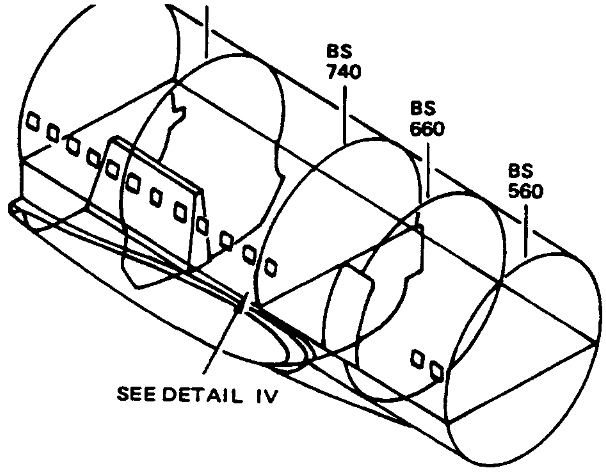
1 APPLY CORROSION INHIBITORS TO ALL AREAS

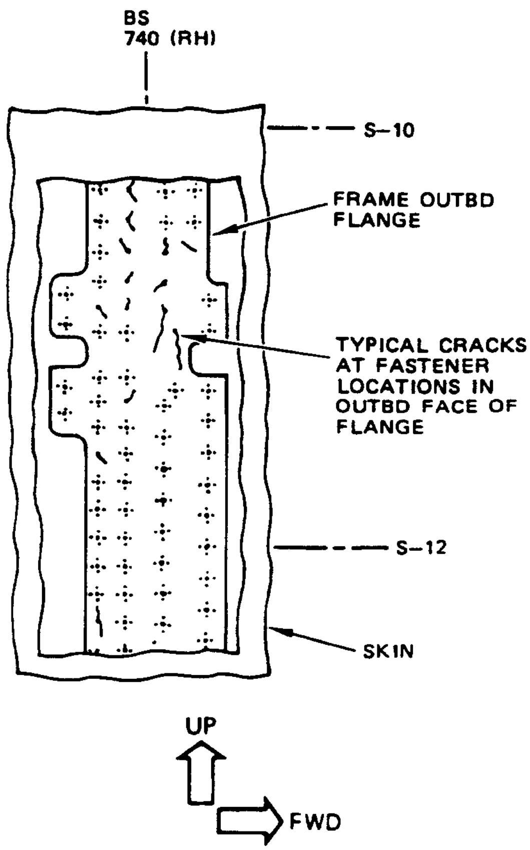
2 ENSURE THAT OUTBOARD SURFACE OF THE UPPER BLANKET OVERLAPS THE LOWER BLANKET

3 TREAT SKIN, STRINGERS, AND FRAMES BELOW S-24

4 DAMS ARE PROVIDED TO COMPARTMENTIZE AREAS FOR OPTIONAL HOSE OUT OPERATIONS URETHANE FORAM DAMS HAVE BEEN REPLACED WITH METAL DAMS IN THE LOWER LOBE AT AIRPLANE LINE NUMBER 1117

Section 46 - Fuselage Structure
Figure 1 (Sheet 2)

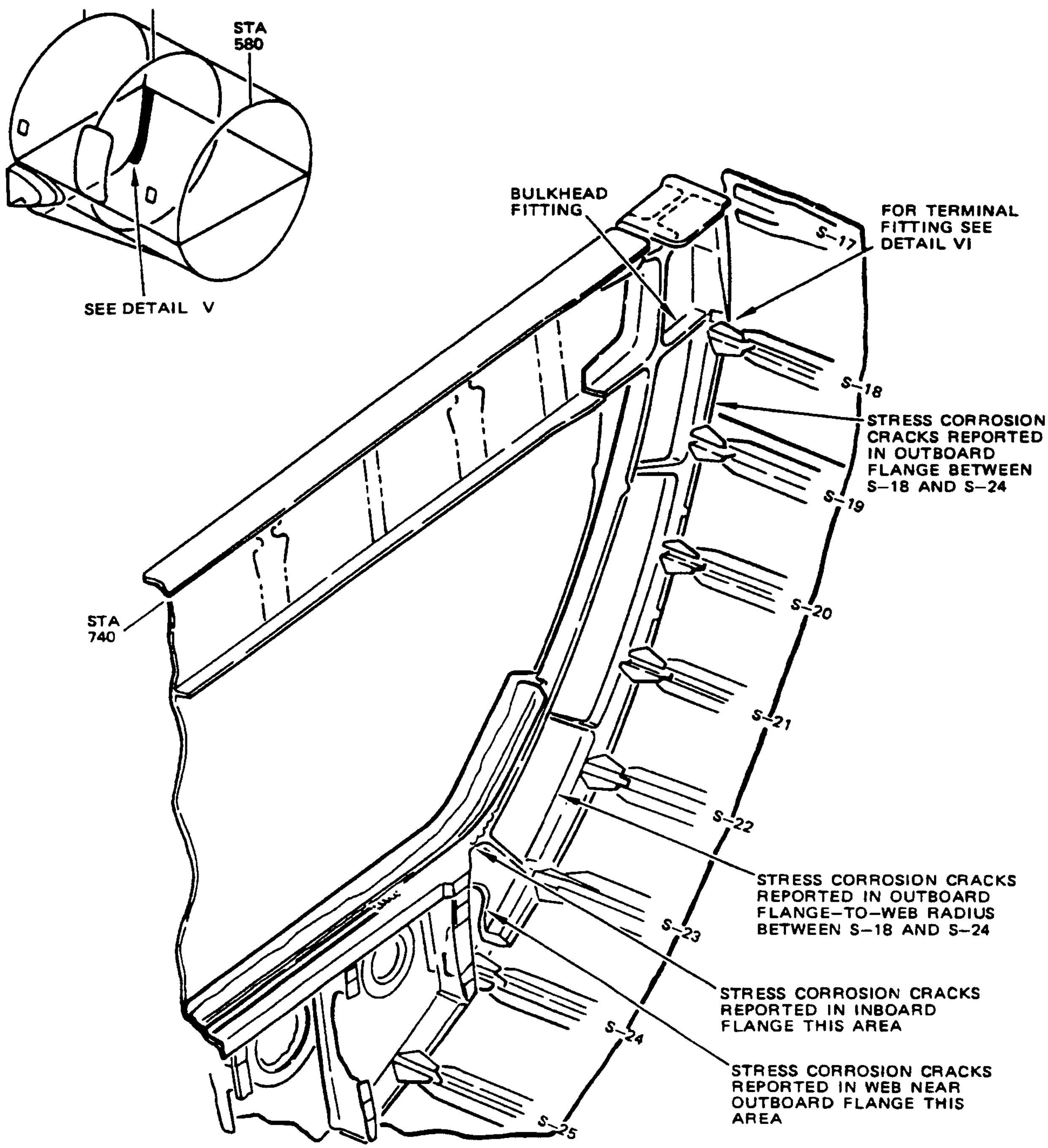




TERMINAL FORGING FLANGE
DETAIL IV

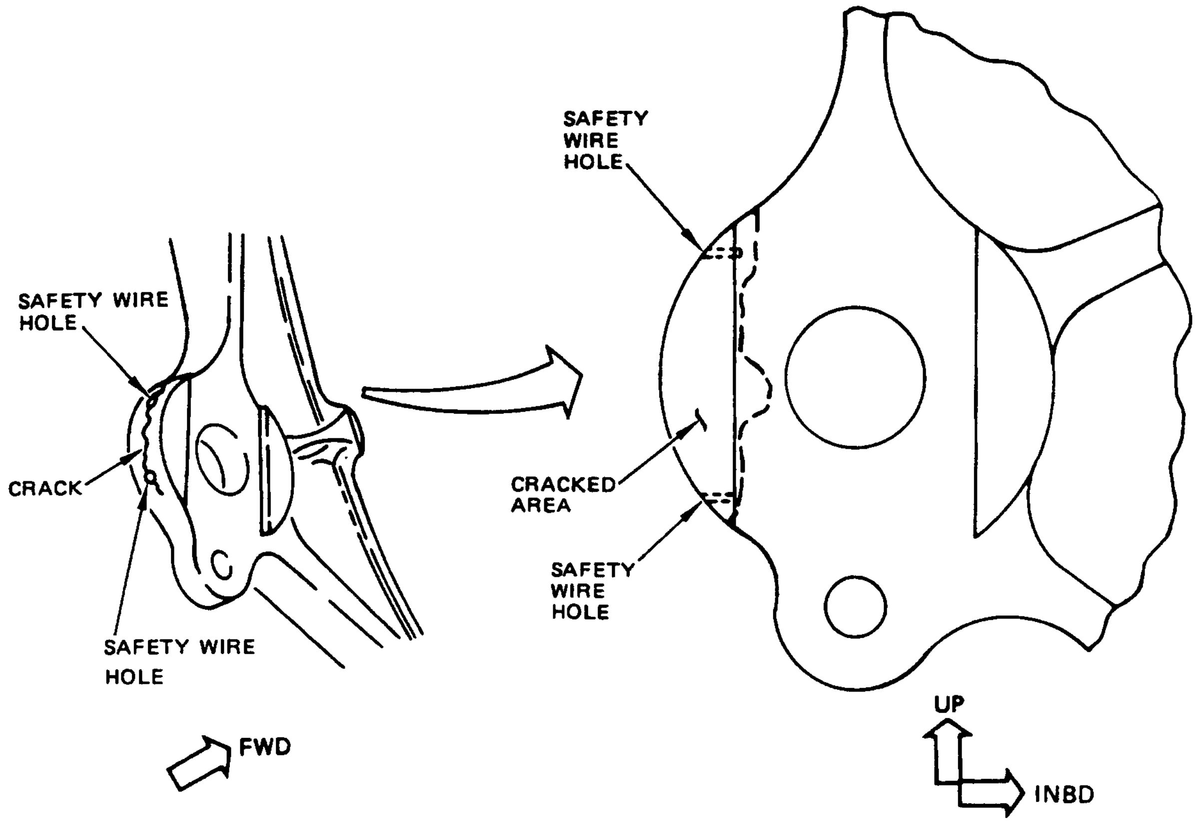
BS 740 BULKHEAD FLANGE AND FITTINGS

Section 46 - Fuselage Structure
Figure 1 (Sheet 3)



BS 740 BULKHEAD FLANGE AND FITTINGS
LH SIDE SHOWN
RH SIDE OPPOSITE
DETAIL V

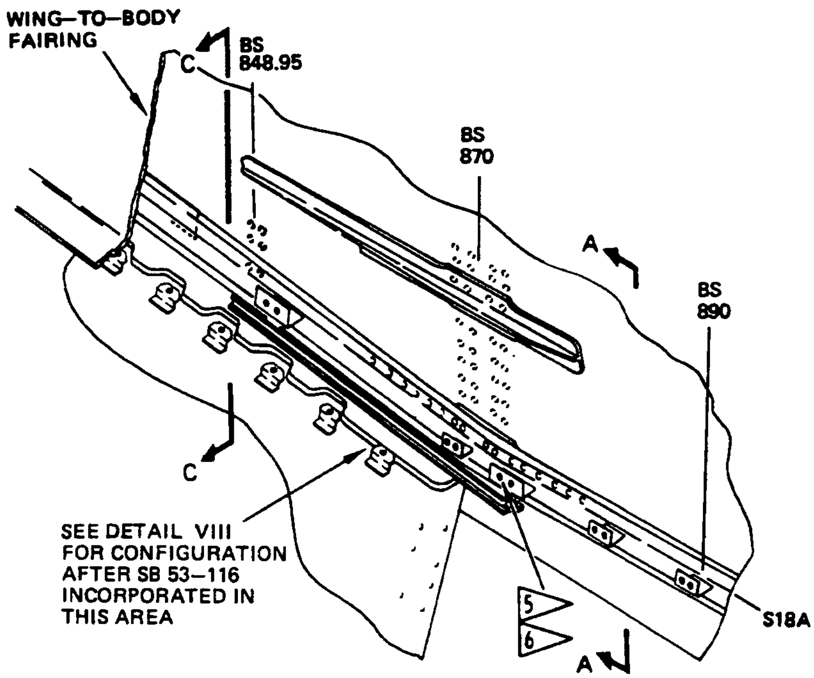
Section 46 - Fuselage Structure
Figure 1 (Sheet 4)



BS 740 BULKHEAD FLANGE AND FITTINGS

DETAIL VI

Section 46 - Fuselage Structure
Figure 1 (Sheet 5)

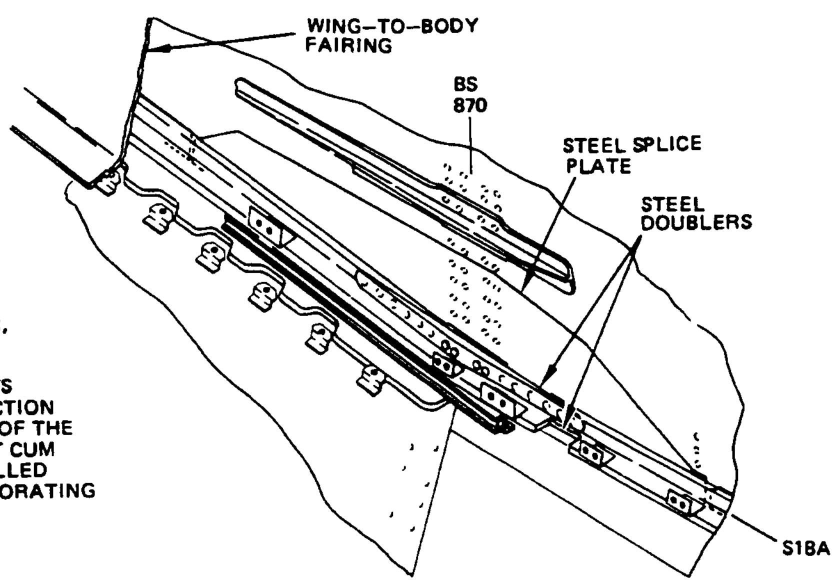


DETAIL VII
LEFT SIDE VIEW

NOTES

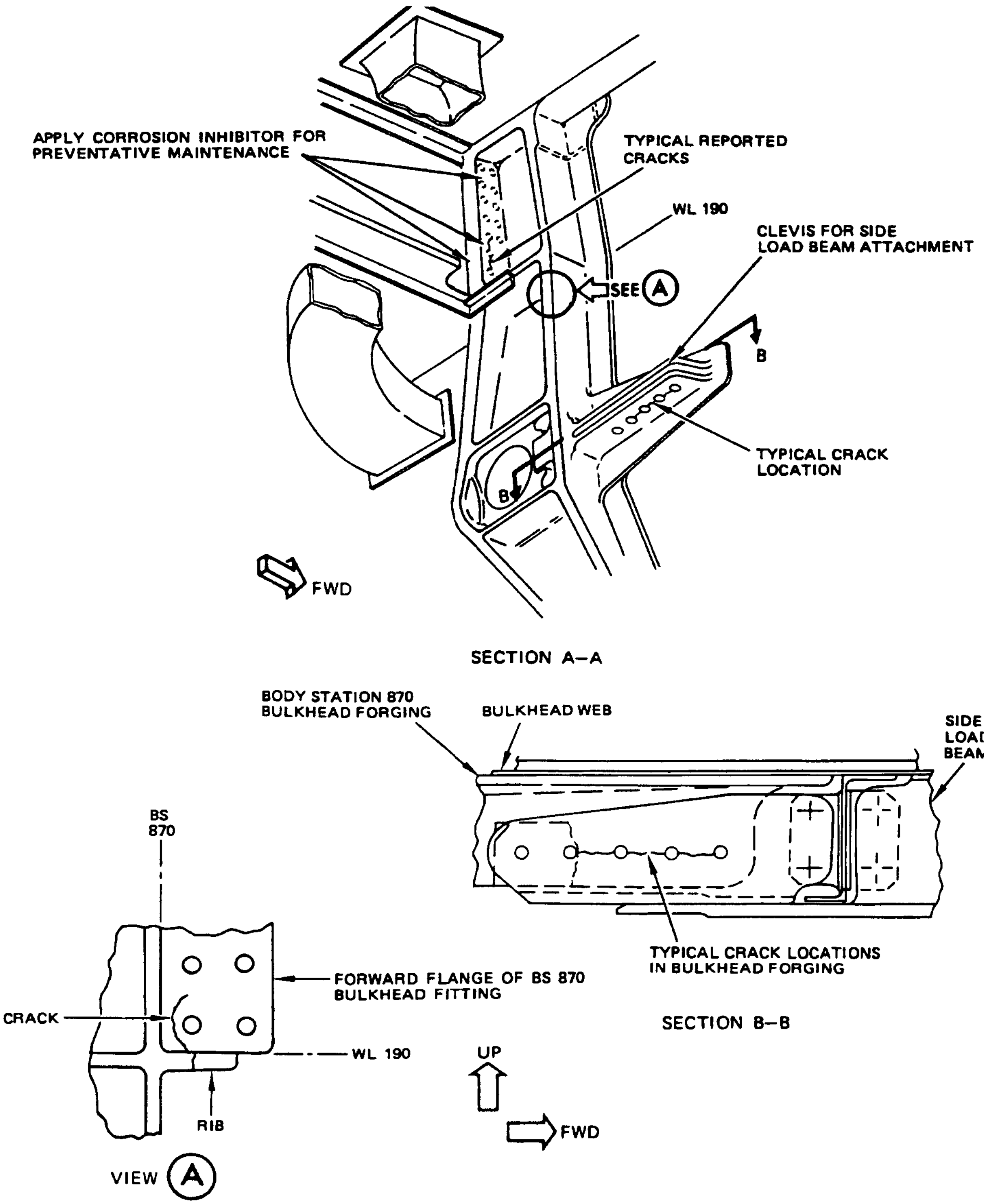
5 TYPICAL CRACK LOCATION AT LOWER FASTENER HOLE COMMON TO STRINGER, SKIN AND FRAME FORGING

6 FOUR TAPERED SHANK BOLTS WERE INSTALLED IN PRODUCTION THROUGH THE AFT FLANGE OF THE FRAME COMMON TO S-18A AT CUM LINE 654 AND CAN BE INSTALLED RETROACTIVELY BY INCORPORATING SB 53-50

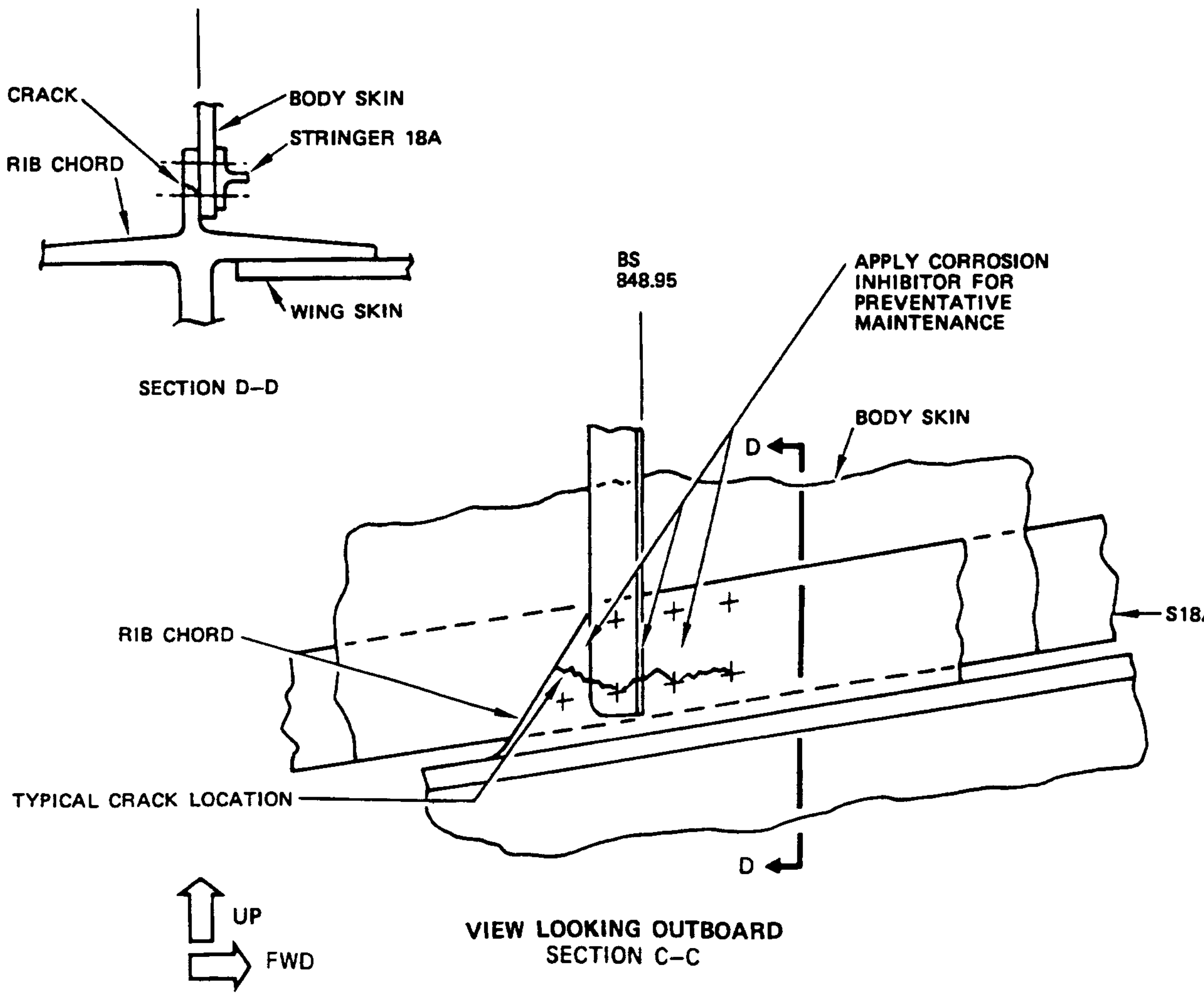


DETAIL VIII
AFTER INCORPORATION
OF SB 53-116
(SUPERSEDES SB 53-50)

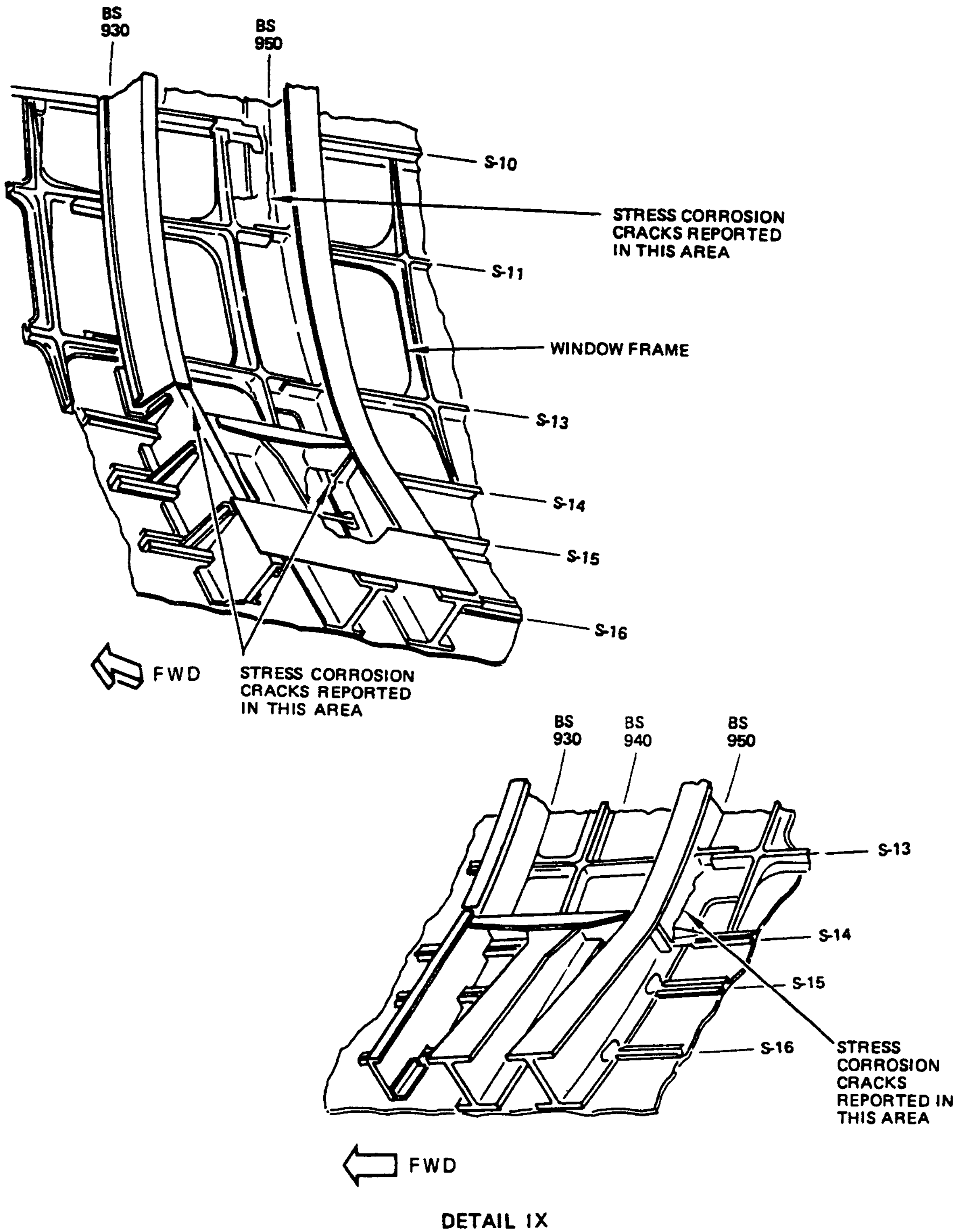
Section 46 - Fuselage Structure
Figure 1 (Sheet 6)



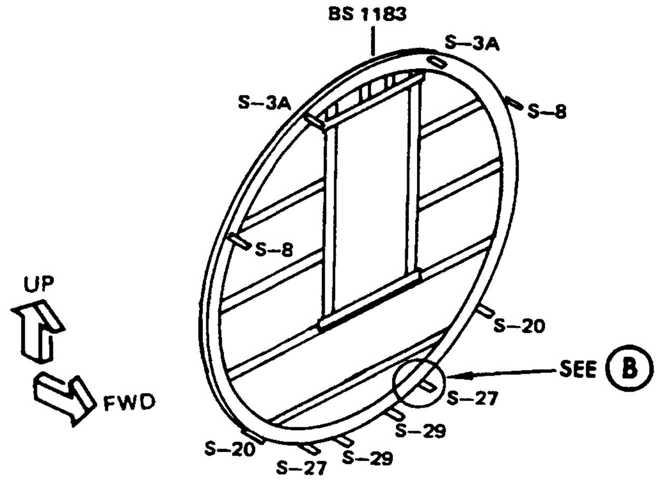
Section 46 - Fuselage Structure
Figure 1 (Sheet 7)

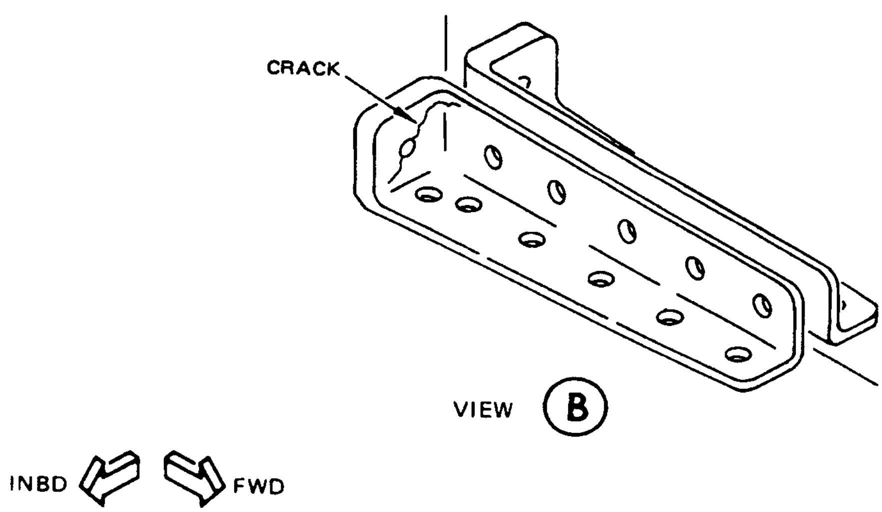


Section 46 - Fuselage Structure
Figure 1 (Sheet 8)



Section 46 - Fuselage Structure
Figure 1 (Sheet 9)

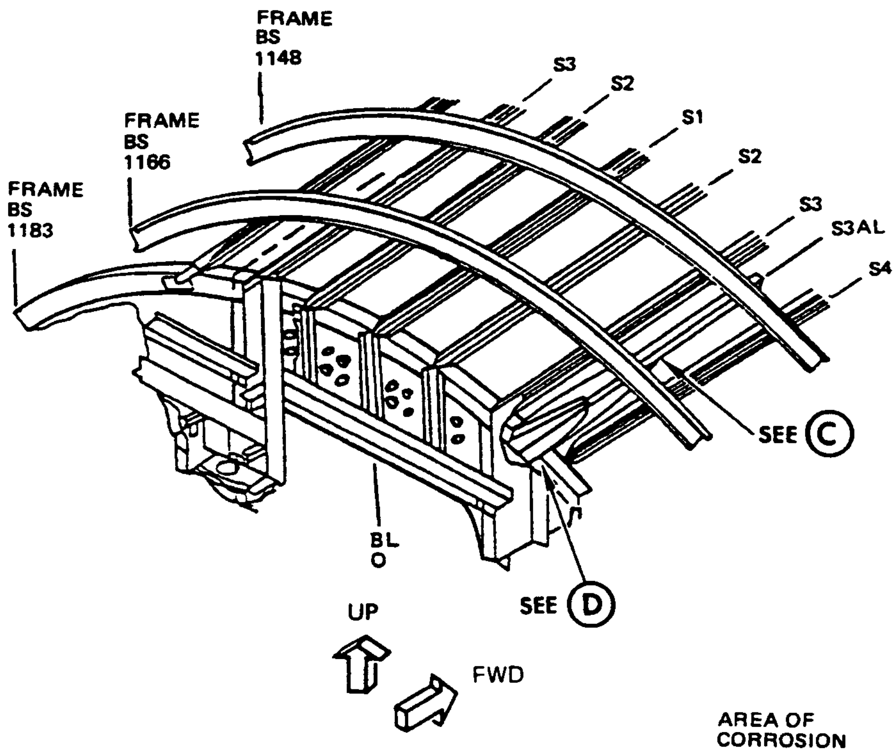


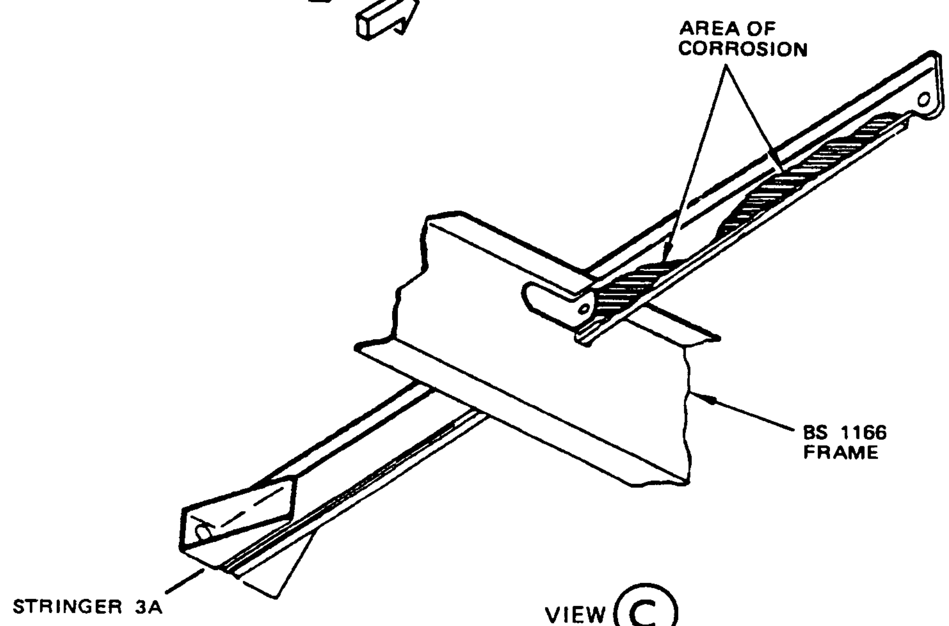


TORQUE BOX FITTINGS
AT BS 1183

DETAIL X

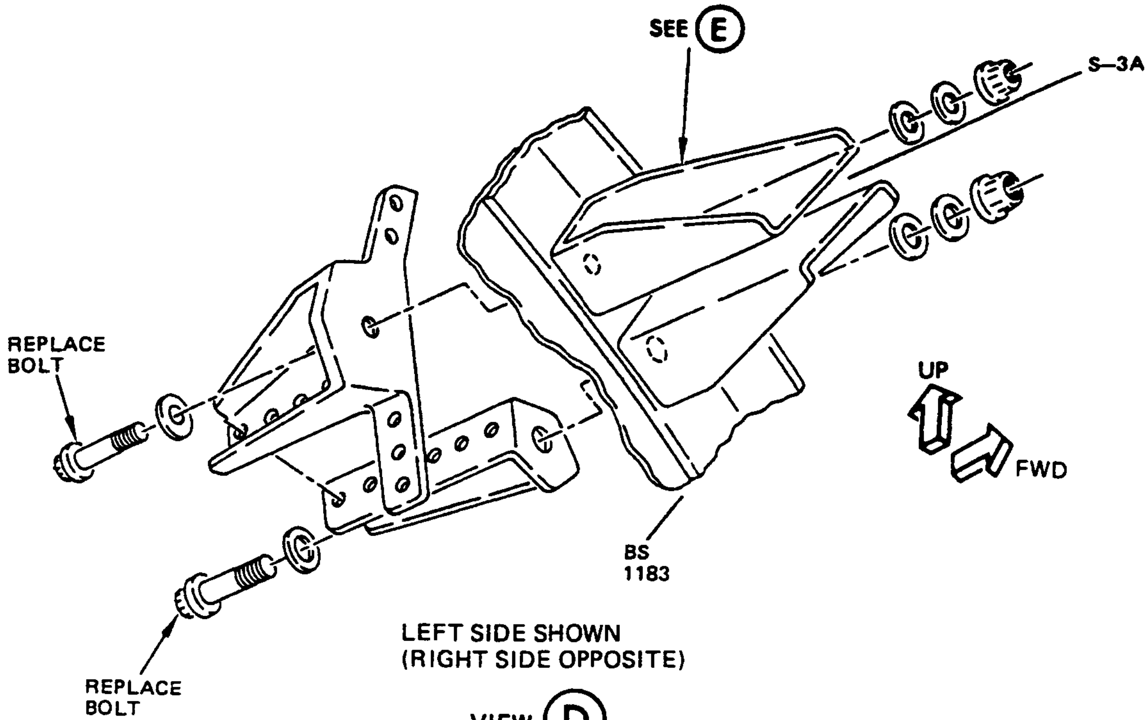
Section 46 - Fuselage Structure
Figure 1 (Sheet 10)





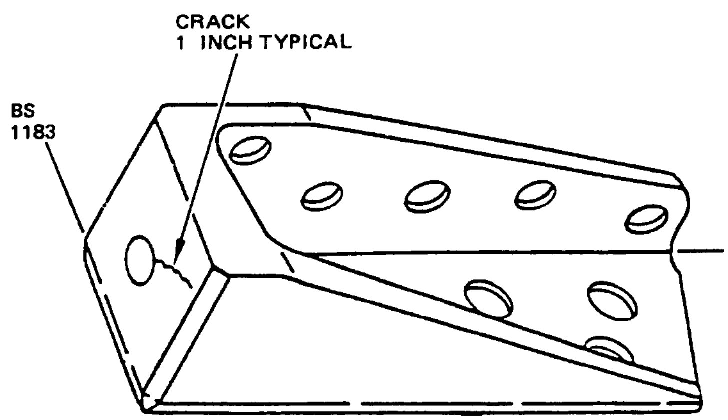
FRAME BS1183, BS1166
DETAIL XI

Section 46 - Fuselage Structure
Figure 1 (Sheet 11)



LEFT SIDE SHOWN
(RIGHT SIDE OPPOSITE)

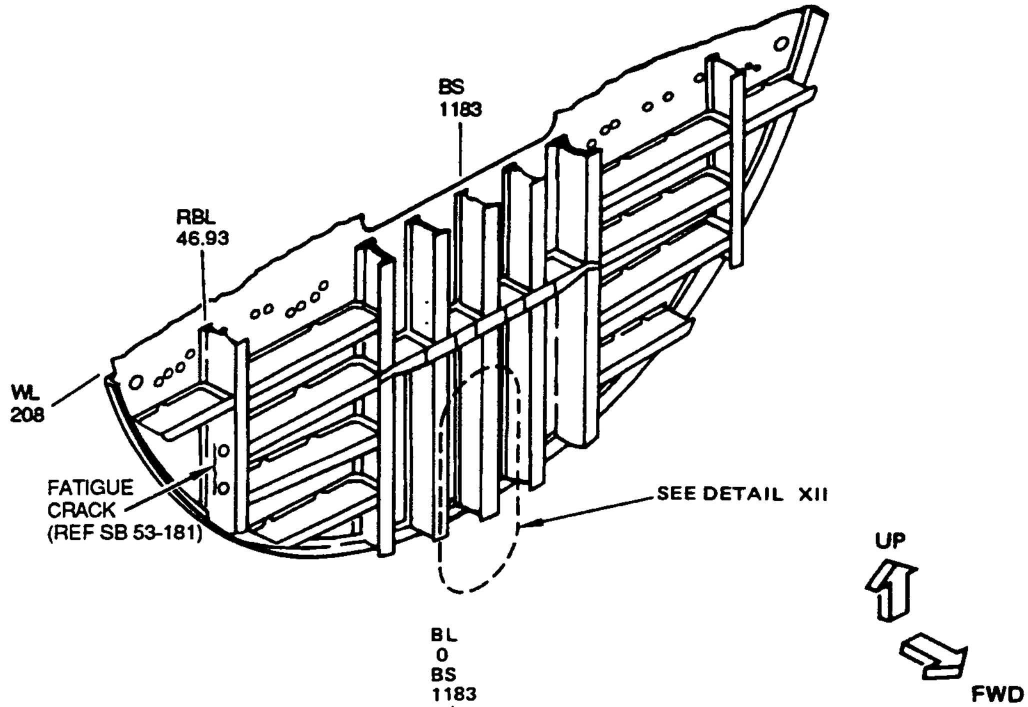
VIEW D

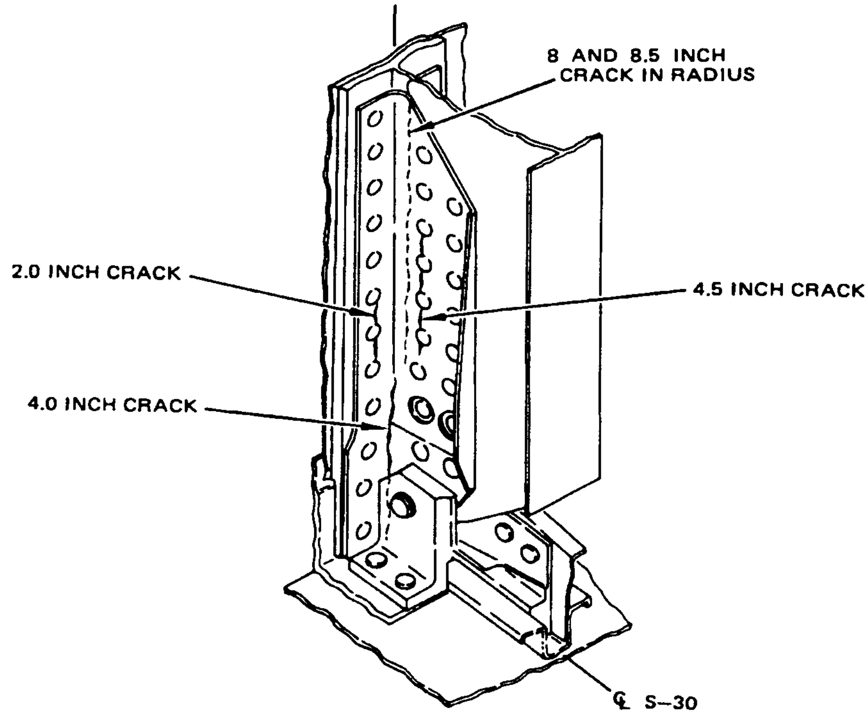


INBOARD AND OUTBOARD FITTINGS
(INBOARD FITTING SHOWN)

VIEW E

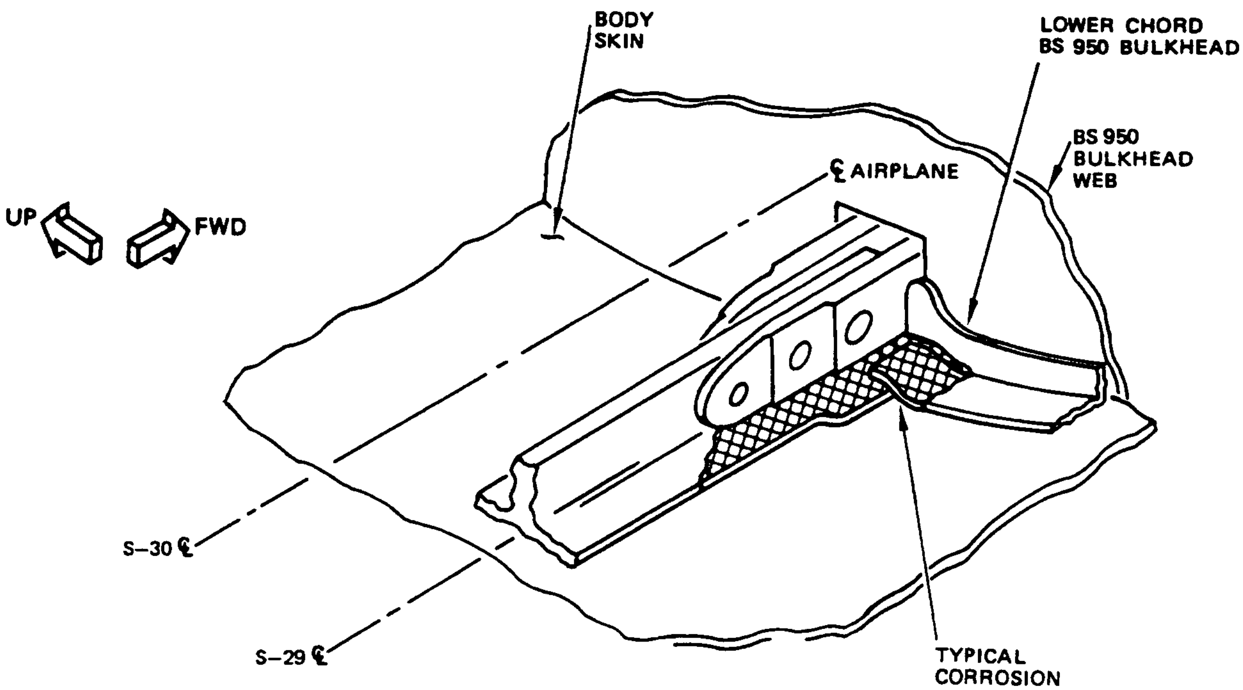
Section 46 - Fuselage Structure
Figure 1 (Sheet 12)





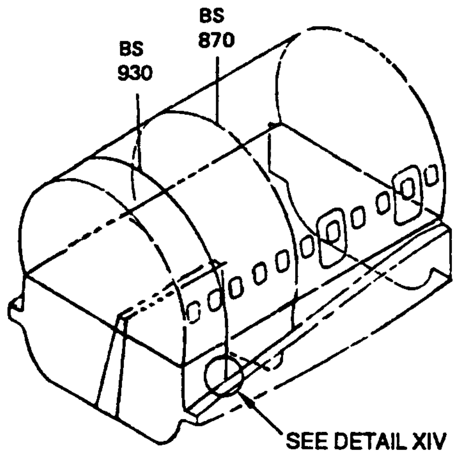
DETAIL XII

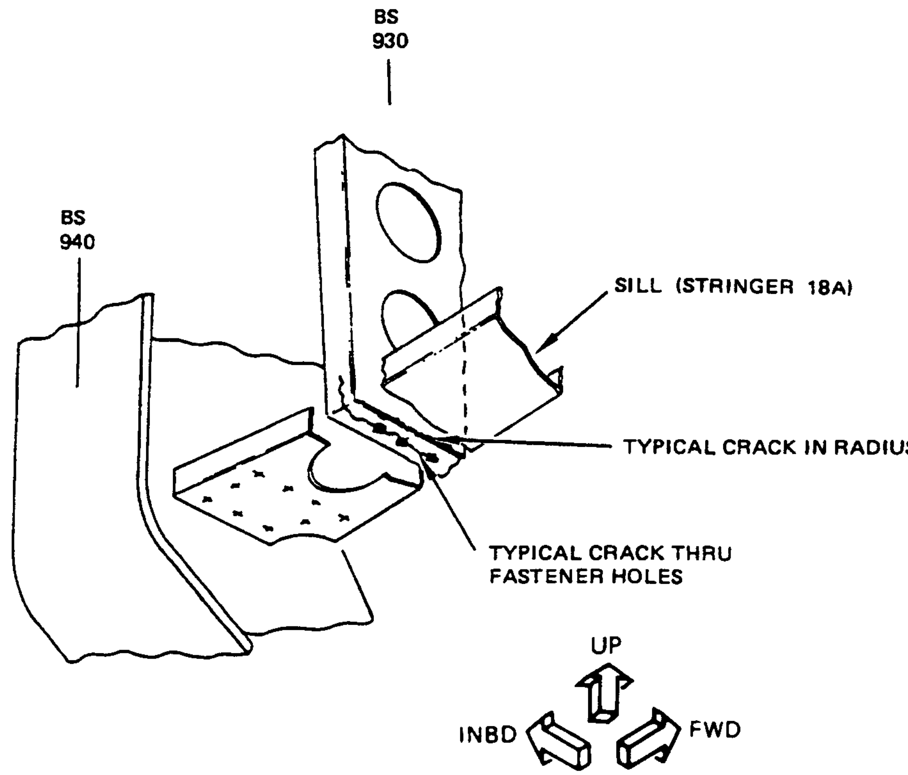
Section 46 - Fuselage Structure
Figure 1 (Sheet 13)



DETAIL XIII

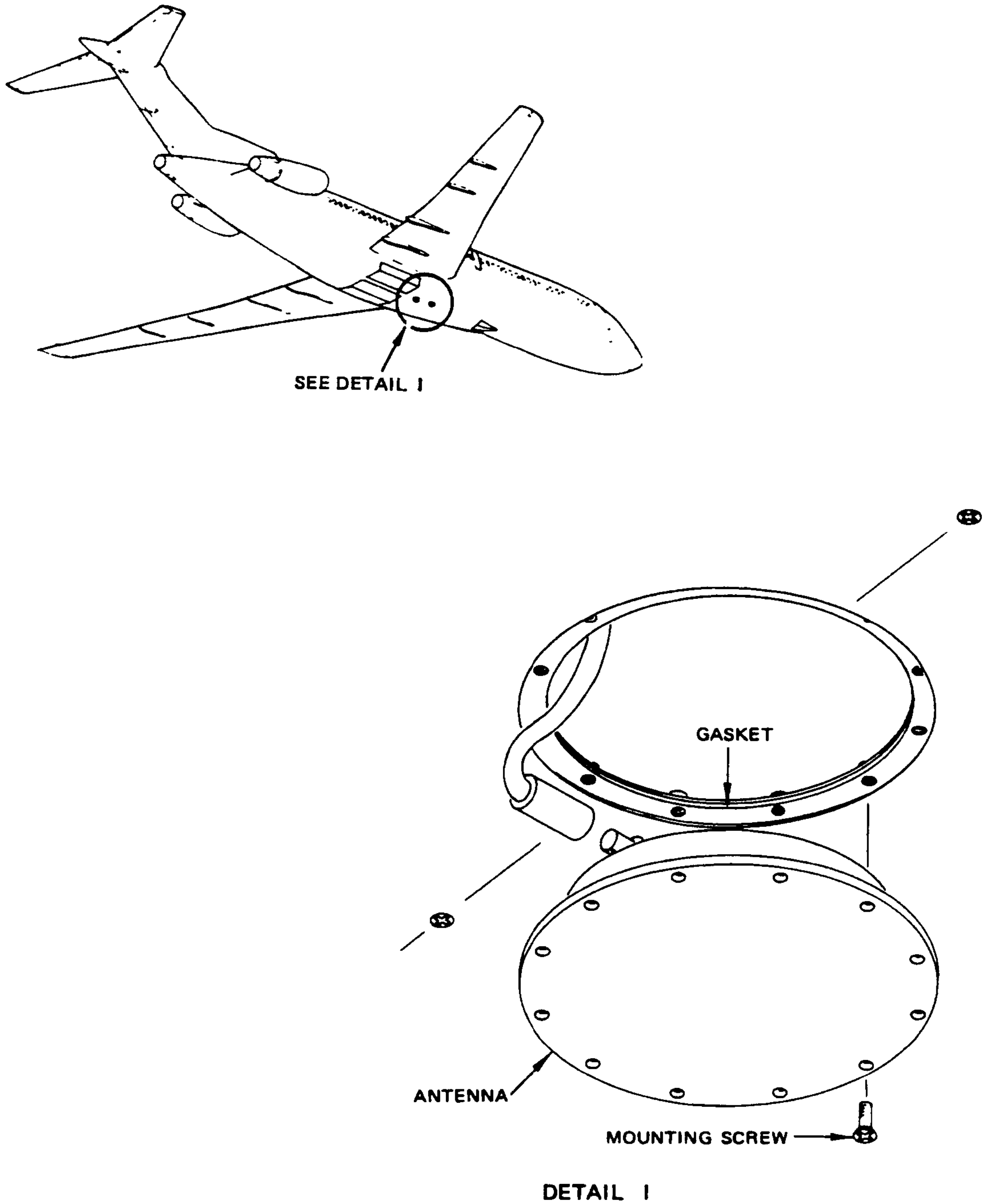
Section 46 - Fuselage Structure
Figure 1 (Sheet 14)





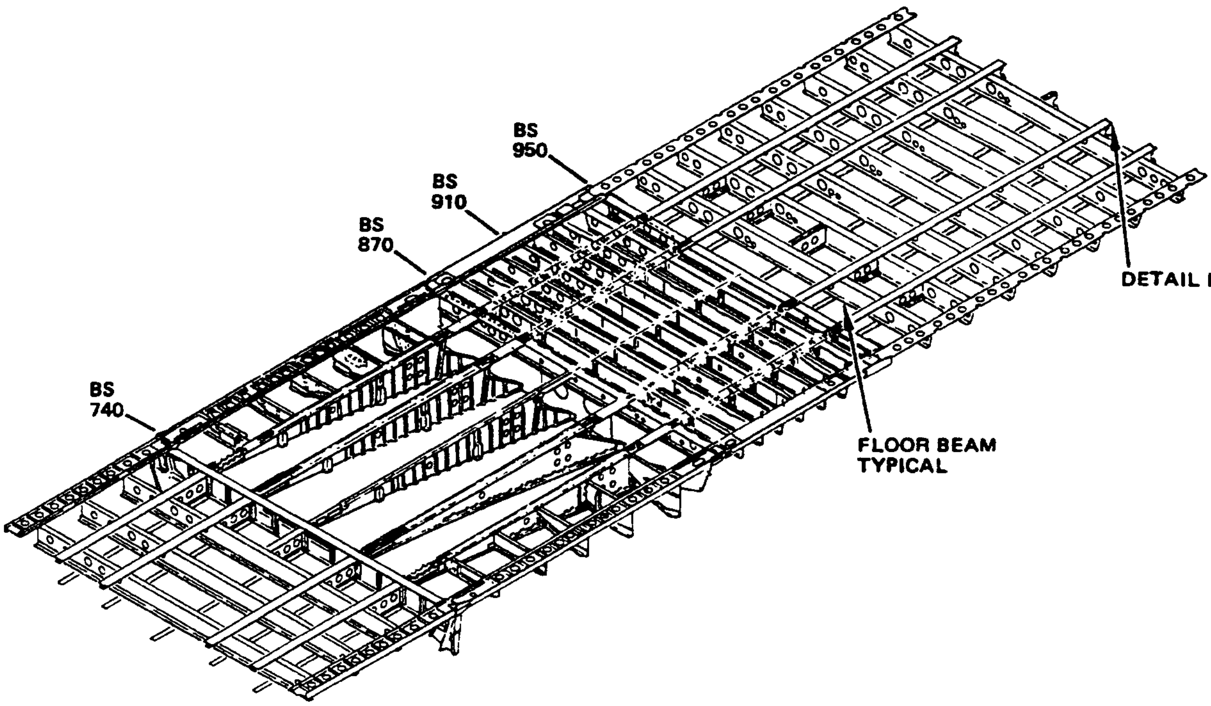
DETAIL XIV

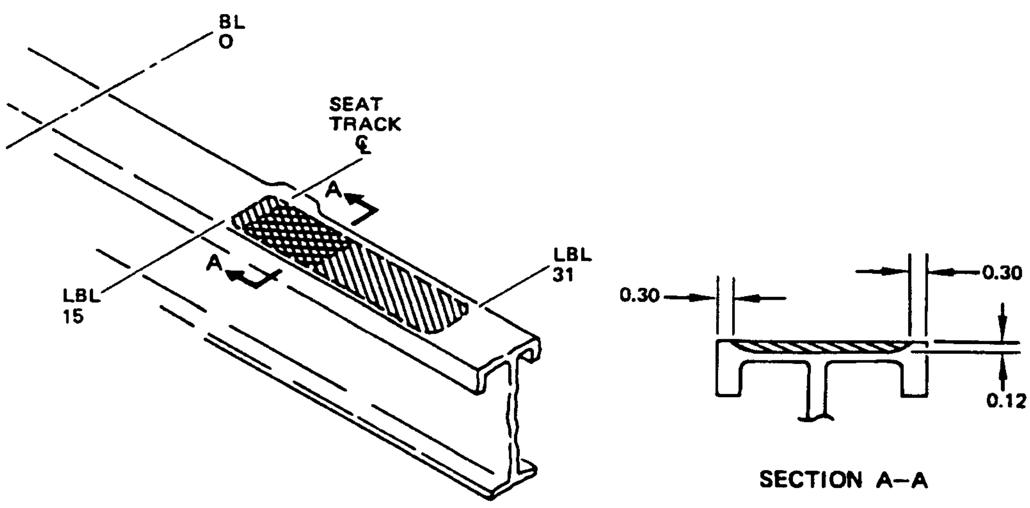
Section 46 - Fuselage Structure
Figure 1 (Sheet 15)



NOTE: FUSELAGE SKIN-EXTERNAL SURFACES DATA IS LOCATED IN 53-70-27, FIGURE 1.

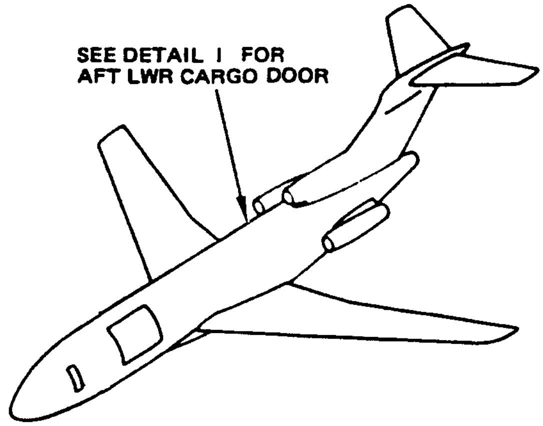
Section 46 - Skin at Antenna Mount
Figure 2



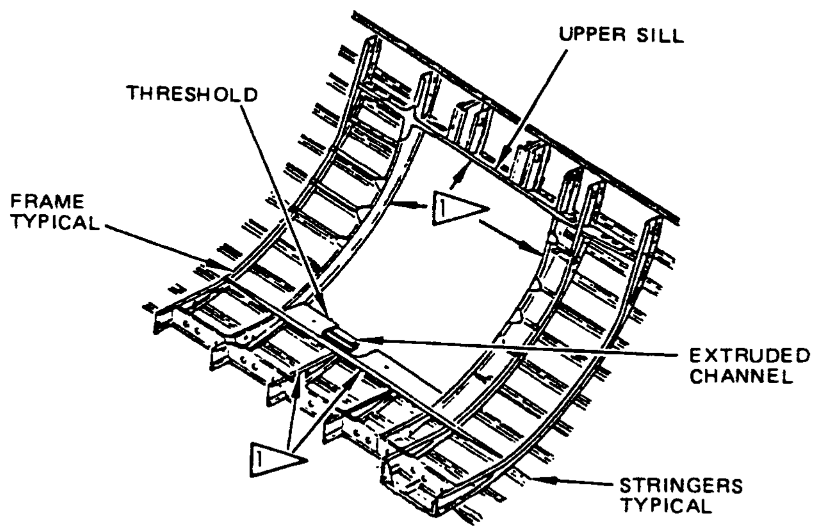


NOTE: FUSELAGE SKIN-INTERNAL TREATMENT DATA IS LOCATED IN 53-70-27, FIGURE 1.

Section 46 - Main Deck Floor Beams
Figure 3



[1] APPLY BMS 3-23 CORROSION INHIBITOR TO ALL EXPOSED STRUCTURE

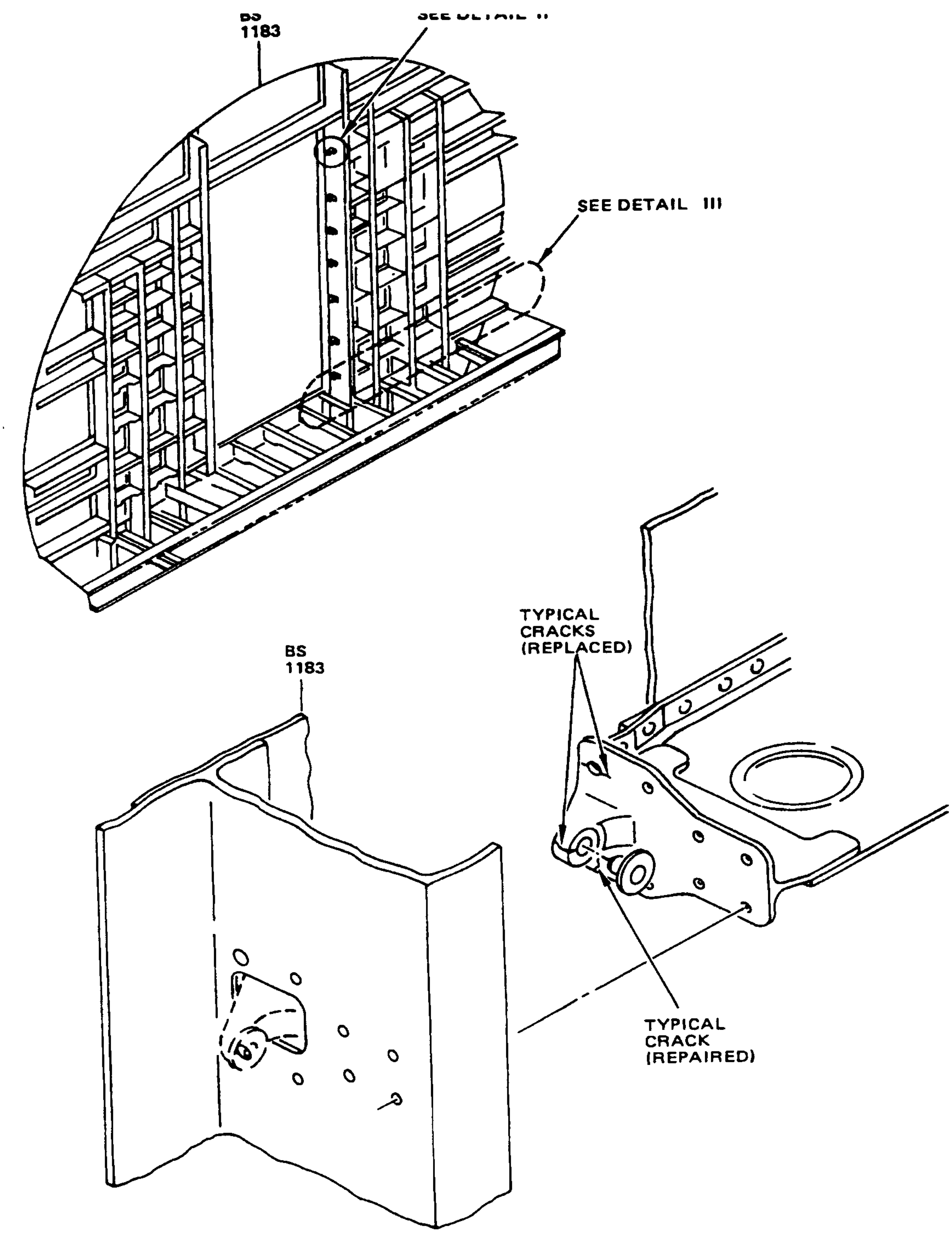


TYPICAL CARGO COMPARTMENT CARGO DOOR OPENING STRUCTURE

DETAIL I

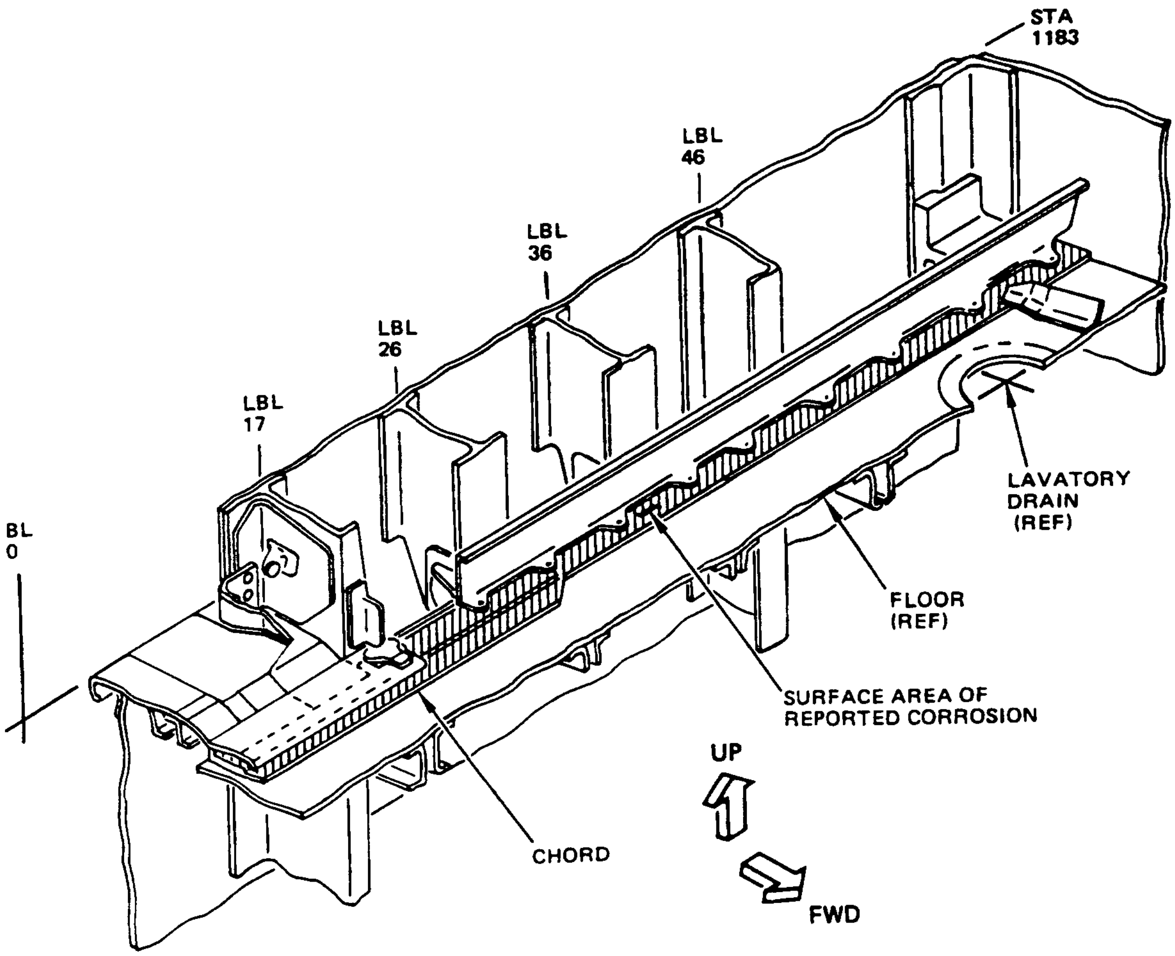
NOTE: SKIN AT ANTENNA MOUNT DATA IS LOCATED IN 53-30-27, FIGURE 2.

Section 46 - Door and Window Openings
Figure 4 (Sheet 1)



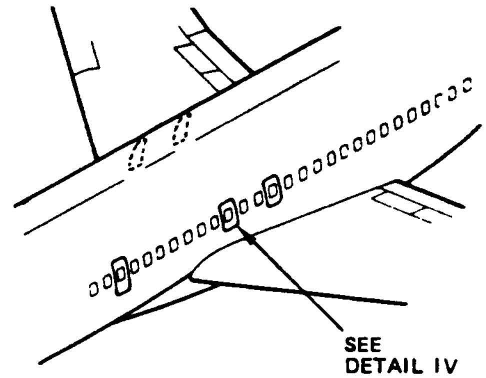
DETAIL II

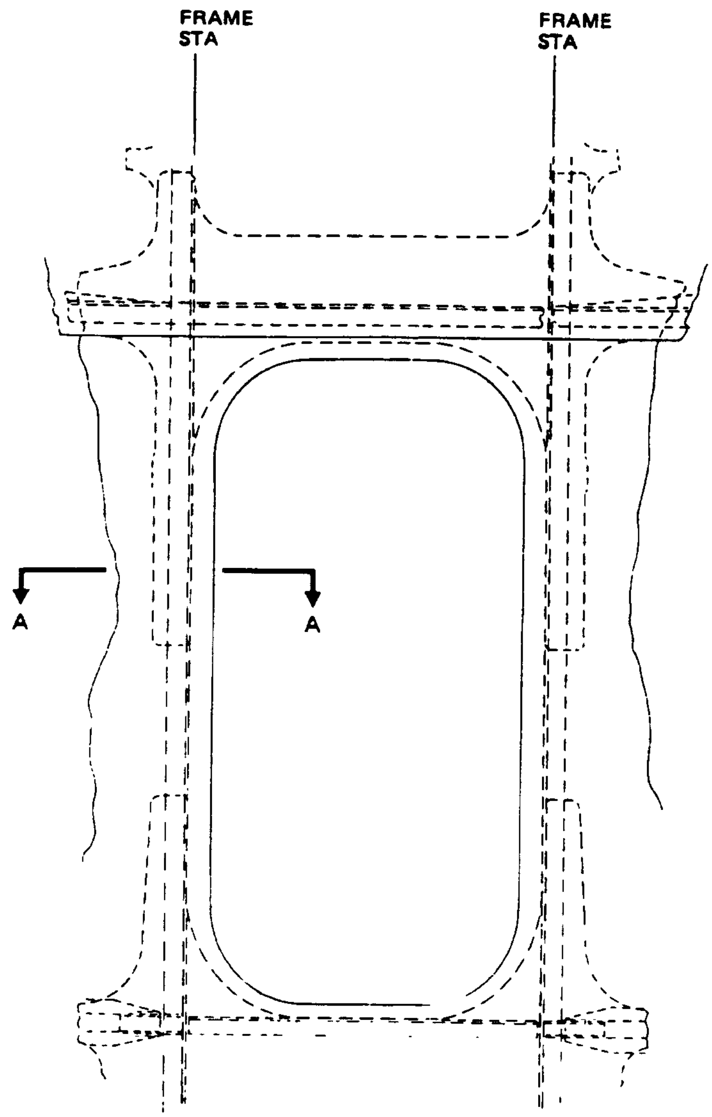
Section 46 - Door and Window Openings
Figure 4 (Sheet 2)



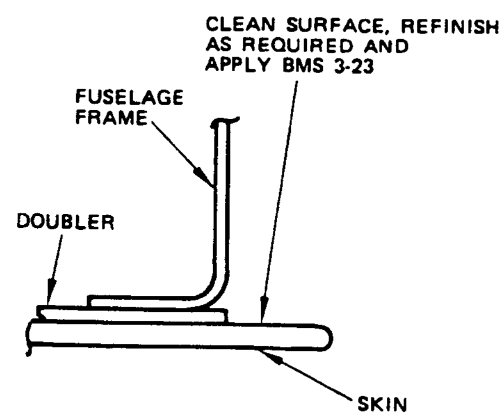
DETAIL III

Section 46 - Door and Window Openings
Figure 4 (Sheet 3)



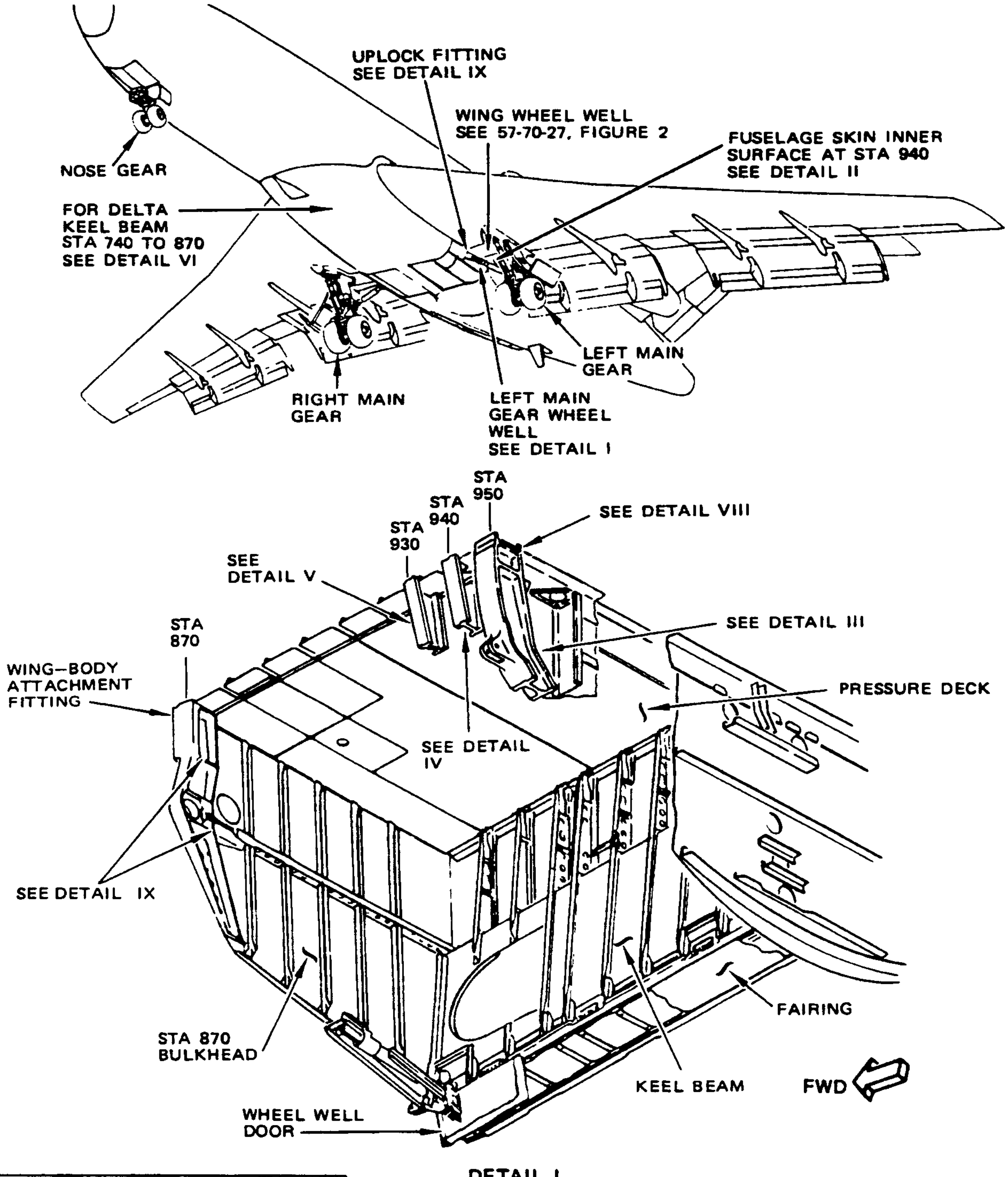


DETAIL IV



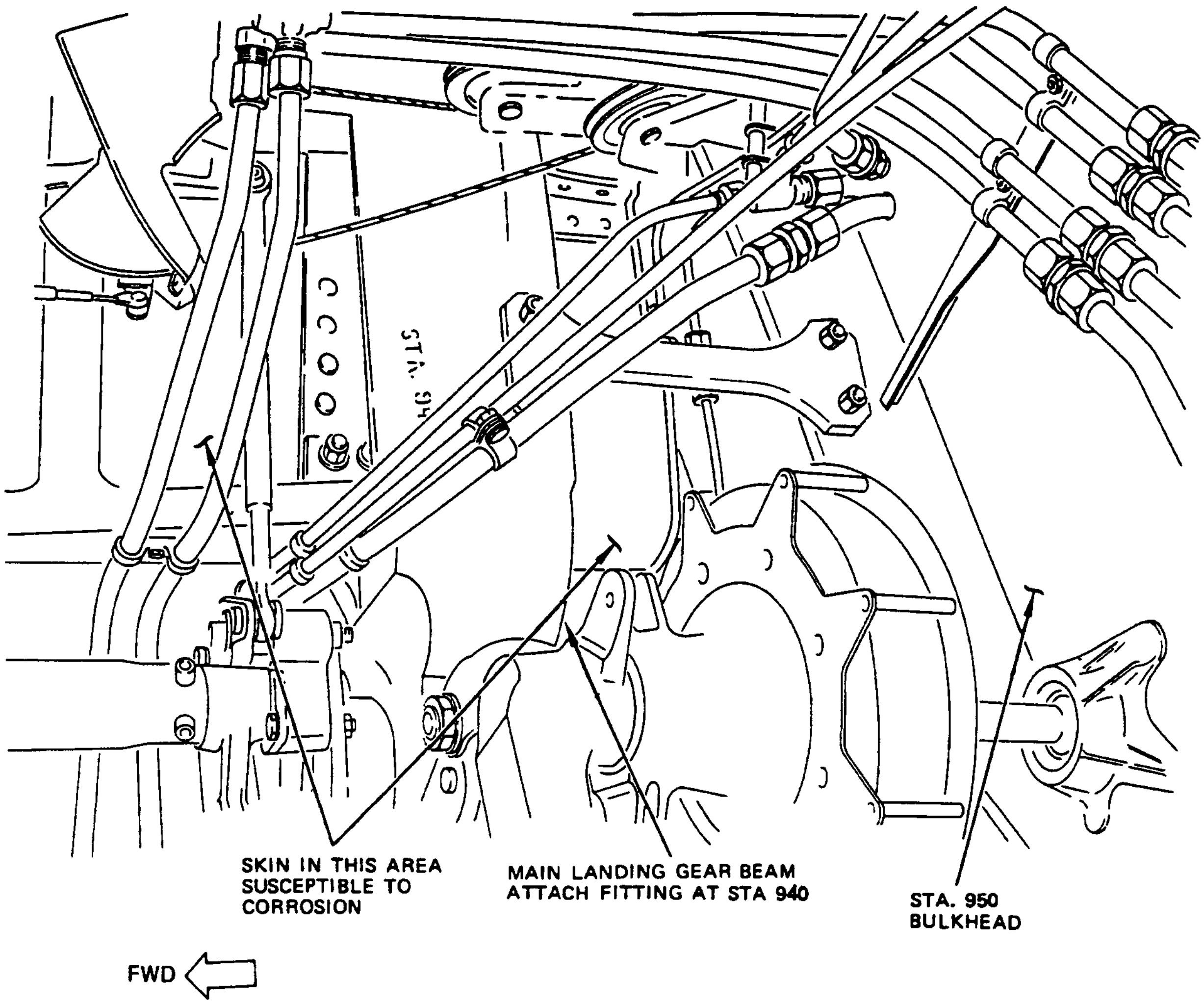
SECTION A-A

Section 46 - Door and Window Openings
Figure 4 (Sheet 4)



NOTE: FUSELAGE SKIN-EMERGENCY EXIT CUT OUT DATA IS LOCATED IN 53-30-27, FIGURE 4.

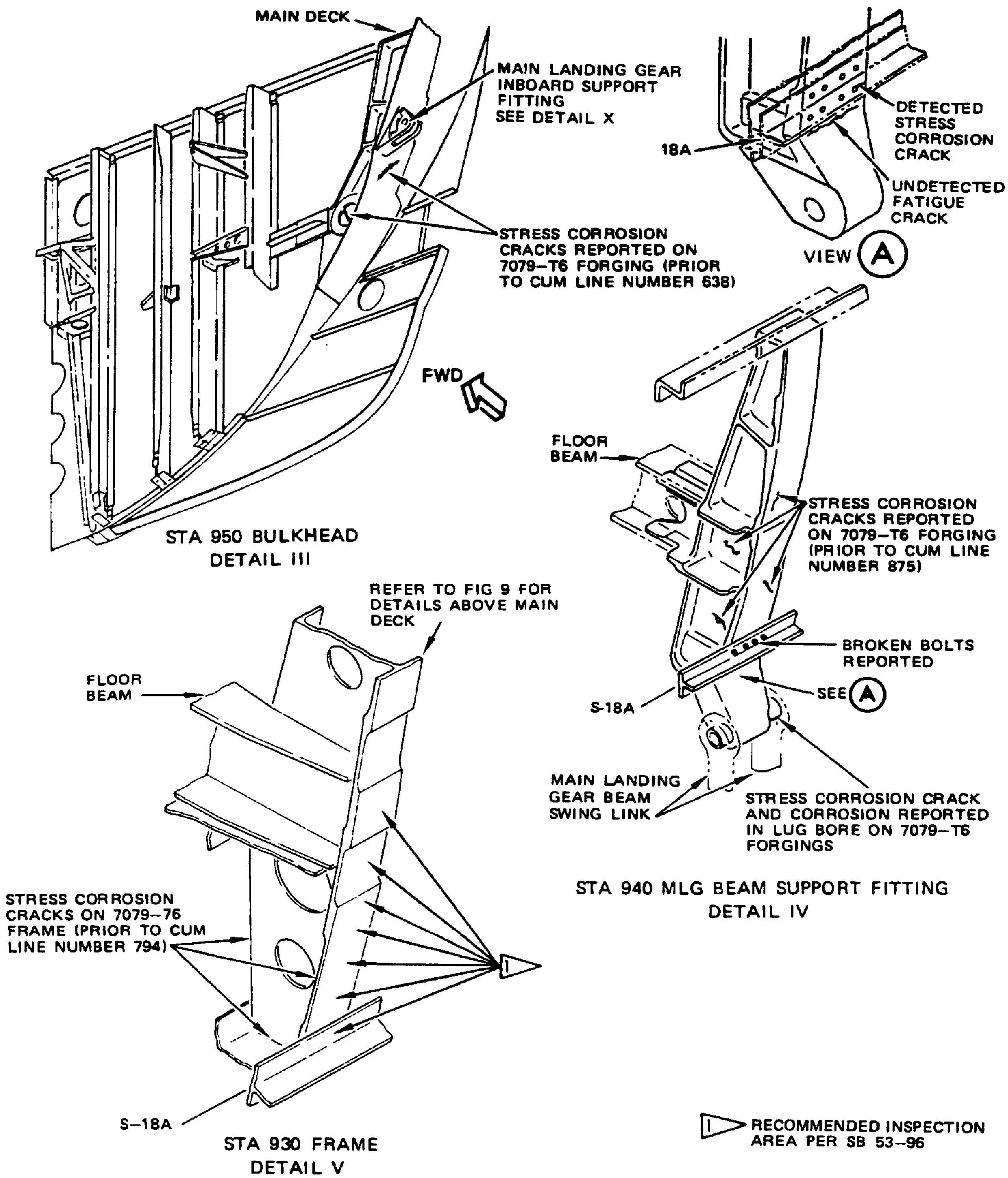
Section 46 - Main Gear Wheel Well and Keel Beam
Figure 5 (Sheet 1)



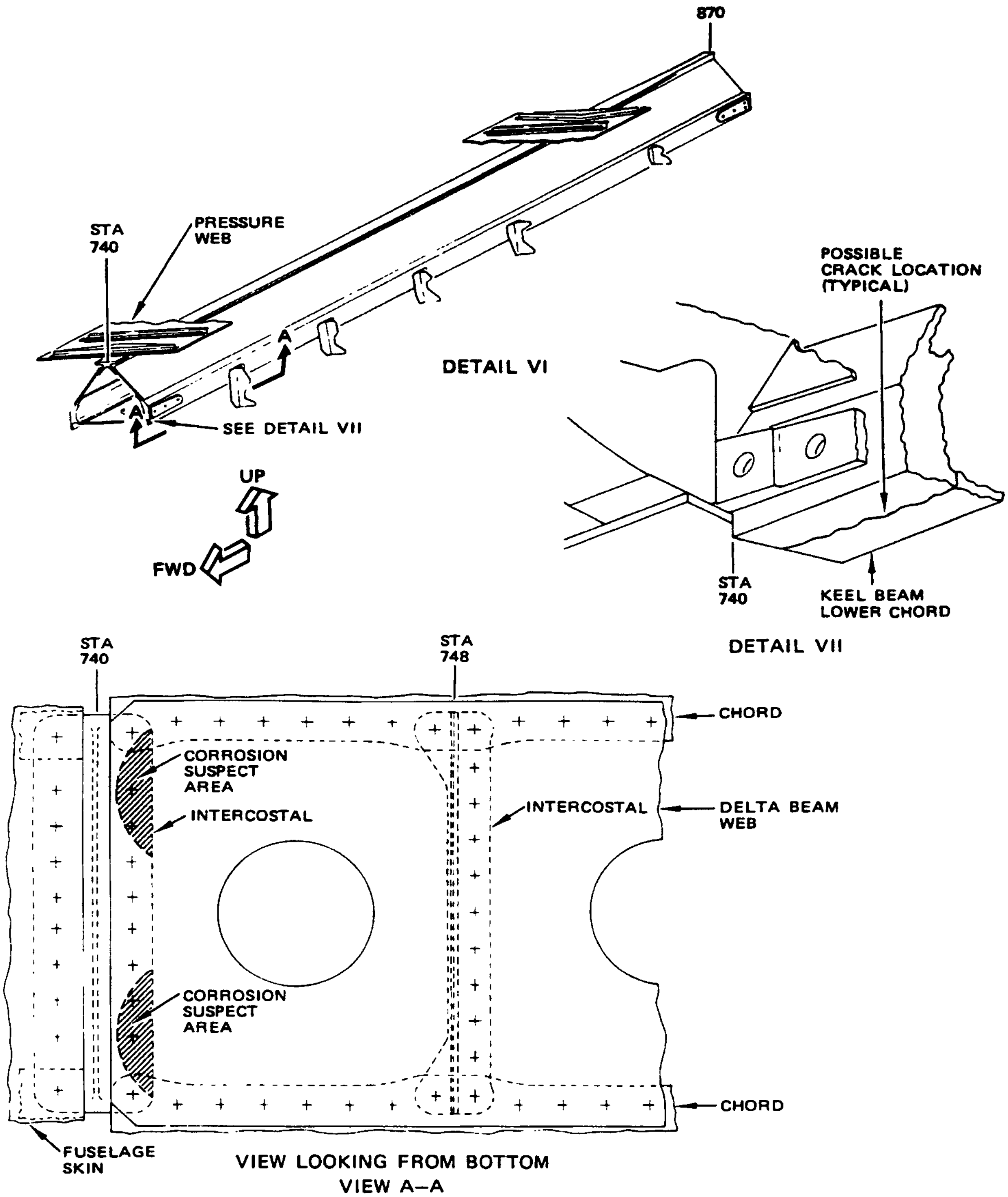
VIEW LOOKING OUTBOARD ON RIGHT SIDE
OF MAIN LANDING GEAR WHEEL WELL

DETAIL II

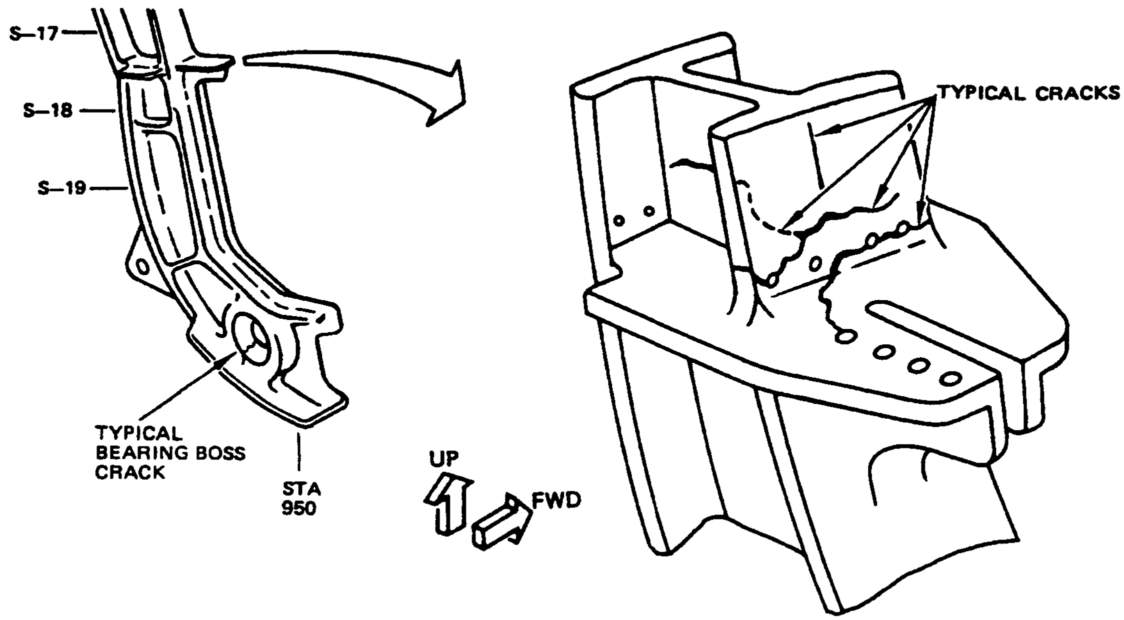
Section 46 - Main Gear Wheel Well and Keel Beam
Figure 5 (Sheet 2)



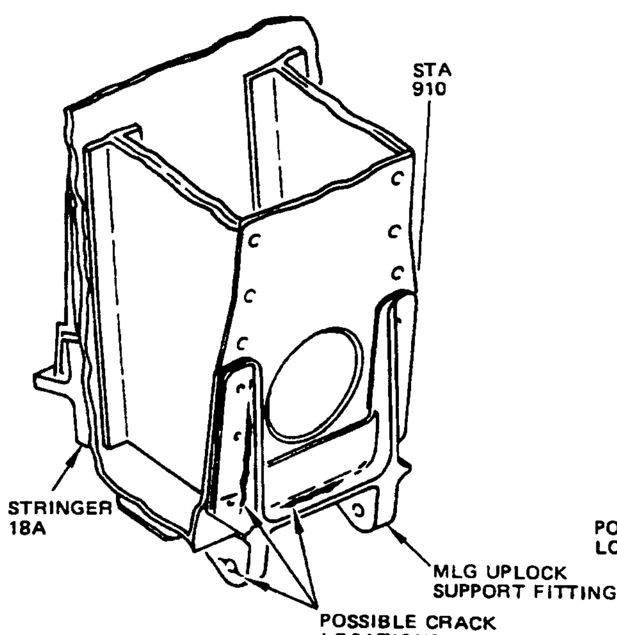
Section 46 - Main Gear Wheel Well and Keel Beam
Figure 5 (Sheet 3)



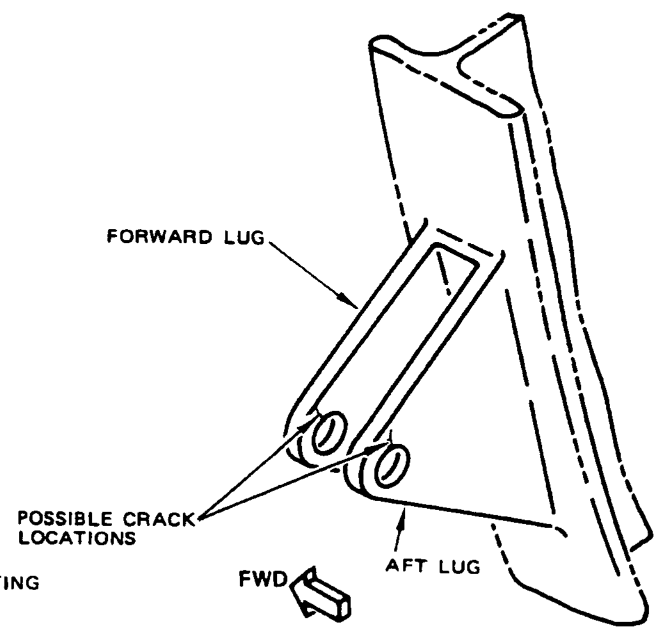
Section 46 - Main Gear Wheel Well and Keel Beam
Figure 5 (Sheet 4)



DETAIL VIII

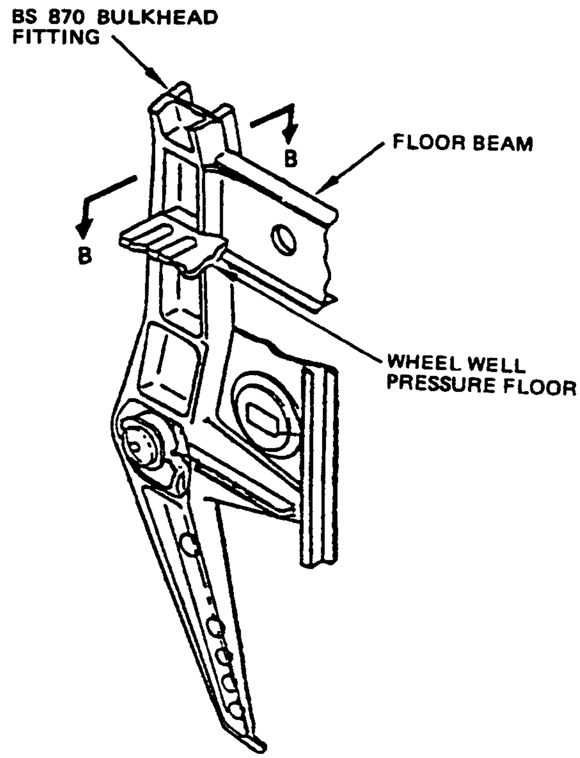


DETAIL IX
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

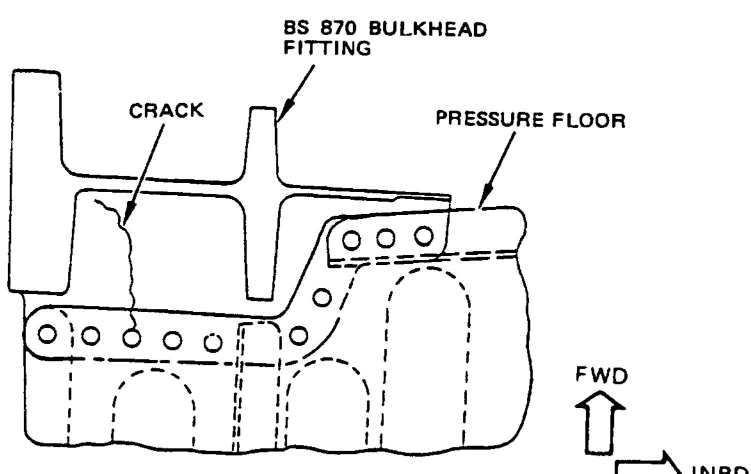


LANDING GEAR
INBOARD SUPPORT FITTING
DETAIL X

Section 46 - Main Gear Wheel Well and Keel Beam
Figure 5 (Sheet 5)

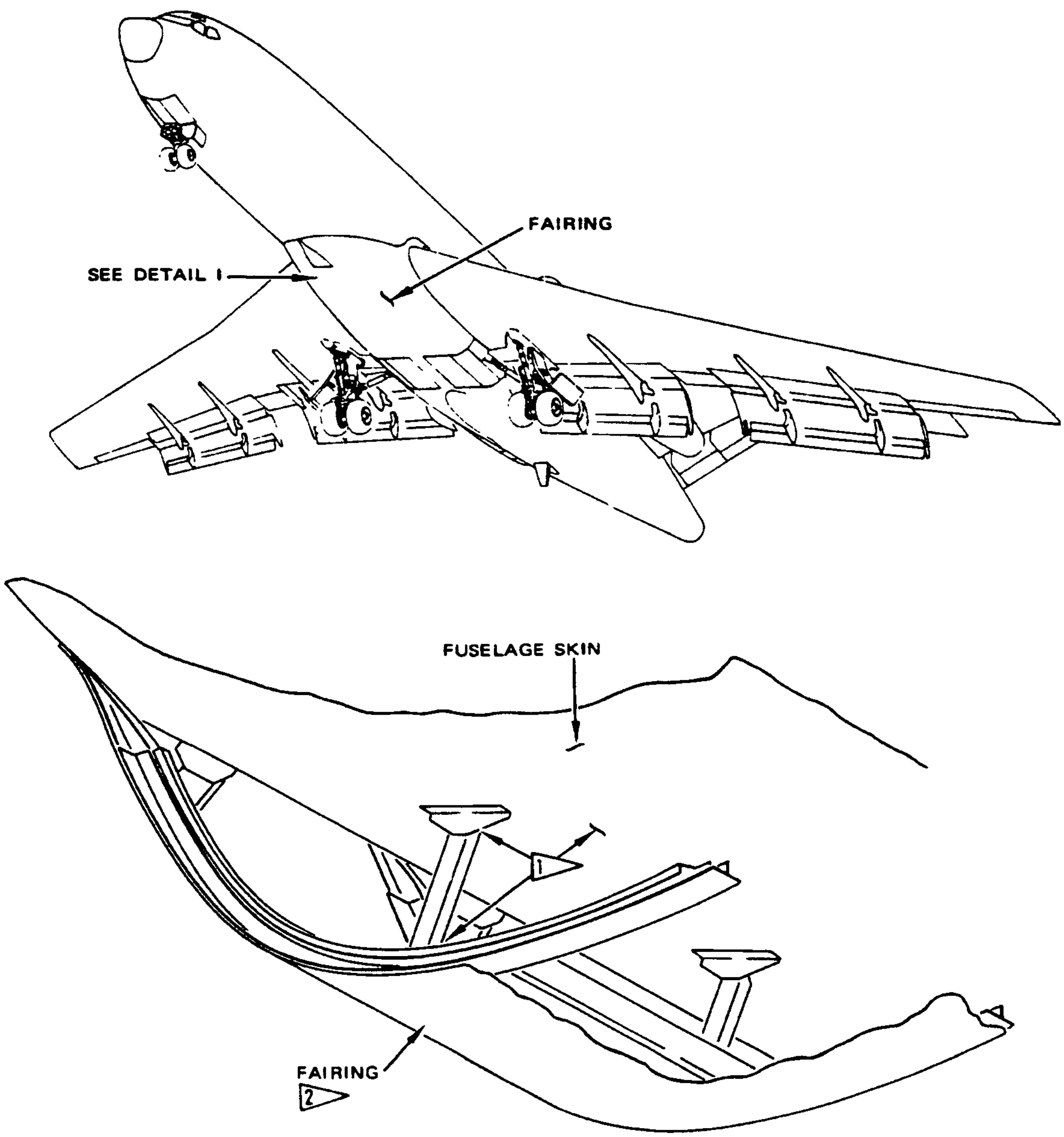


DETAIL IX



SECTION B-B

Section 46 - Main Gear Wheel Well and Keel Beam
Figure 5 (Sheet 6)



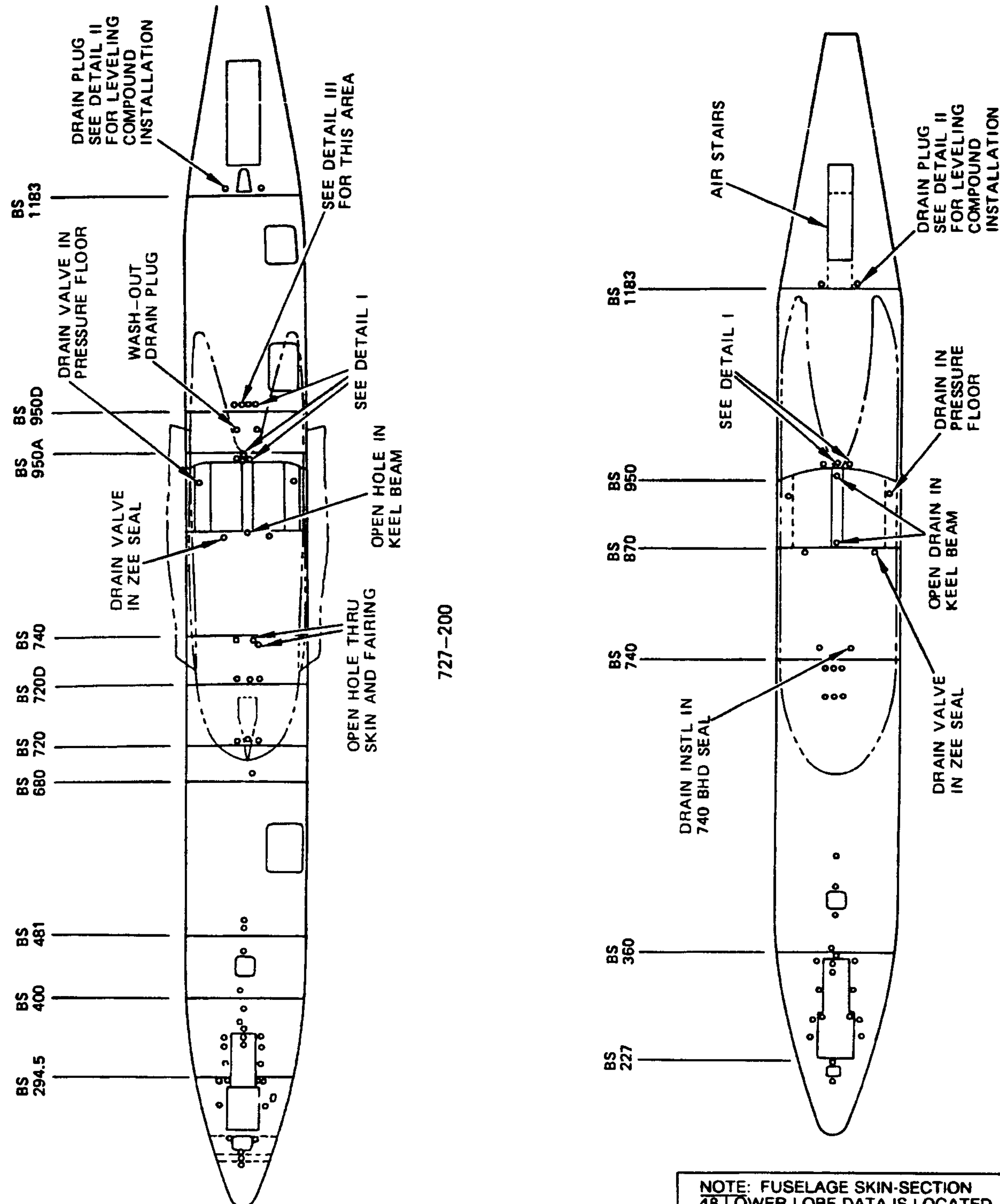
NOTES

1 APPLY BMS 3-23 CORROSION INHIBITOR

2 ON SOME AIRPLANES FAIRING IS ALUMINUM, OTHERS USE FIBERGLASS, HONEYCOMB CONSTRUCTION

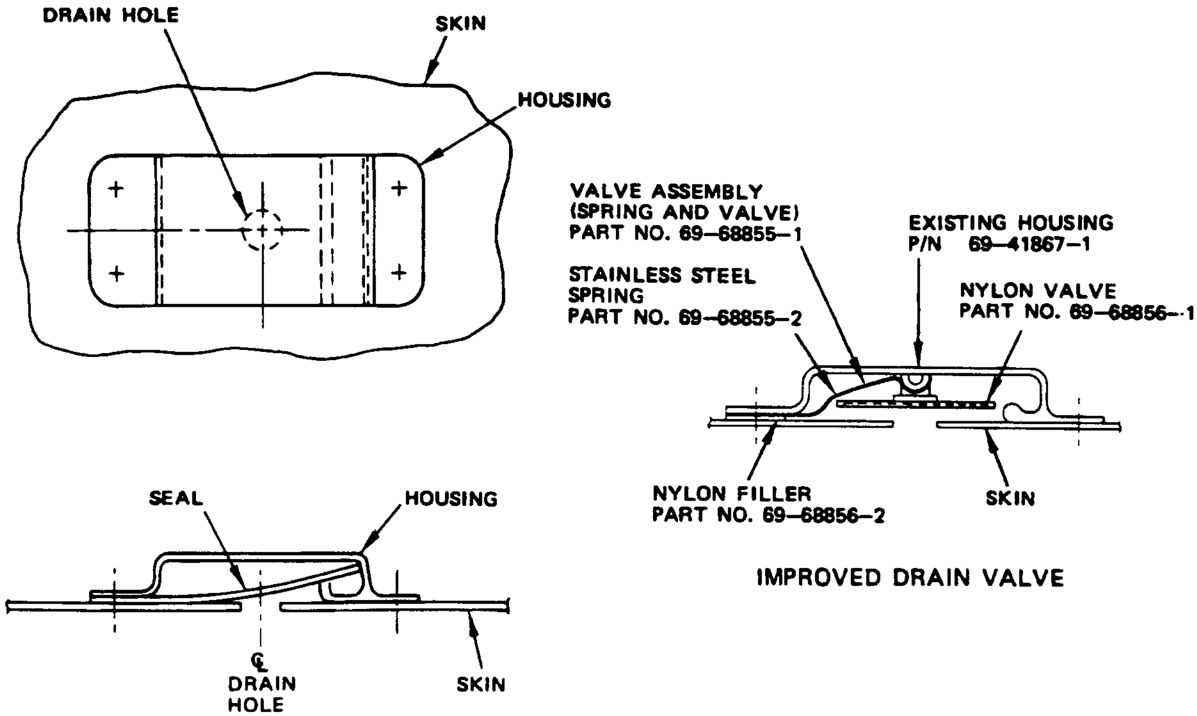
NOTE: FUSELAGE SKIN-SECTION 48 LOWER LOBE IS LOCATED IN 53-40-27, FIGURE 1.

Section 46 - Wing to Body Fairing Cavity
Figure 6

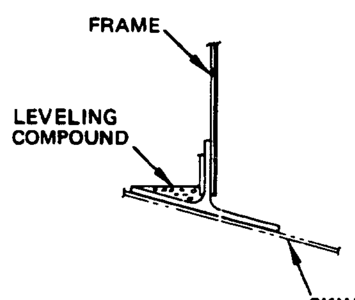


NOTE: FUSELAGE SKIN-SECTION 48 LOWER LOBE DATA IS LOCATED IN 53-20-27, FIGURE 7.

Section 46 - Fuselage Drain Holes
Figure 7 (Sheet 1)

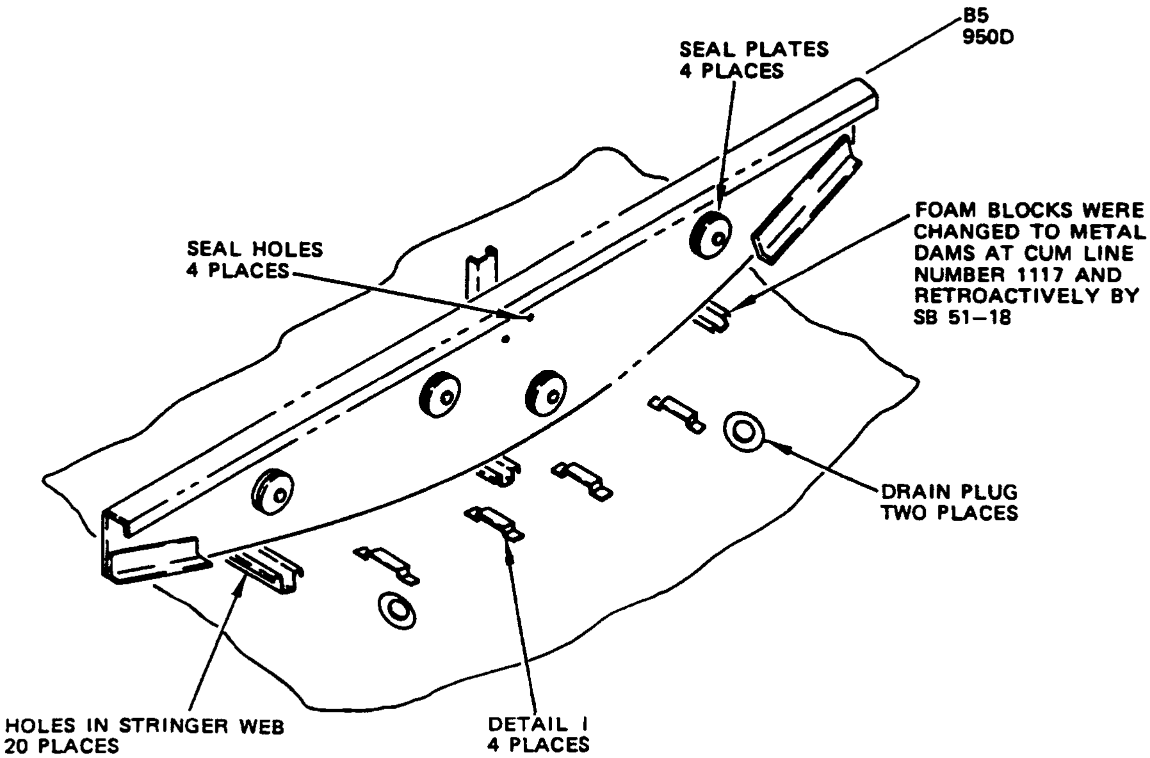


TYPICAL DRAIN VALVE INSTALLATIONS
DETAIL I



DETAIL II

Section 46 - Fuselage Drain Holes
Figure 7 (Sheet 2)



APPLICABLE TO AIRPLANES INCORPORATING SB 51-21
AND TO AIRPLANES WITH BOTH CARGO COMPARTMENT HOSE-OUT
REQUIREMENTS AND AUXILIARY BODY FUEL PROVISIONS

DETAIL III

Section 46 - Fuselage Drain Holes
Figure 7 (Sheet 3)

1. General

A. Section 46 extends from stations 740 to 1183. The upper lobe contains the passenger compartment with doors and windows. The lower lobe includes the No. 2 and 3 cargo compartments located at the right side of the airplane, and the main gear wheel well. Structural openings in the passenger compartment are left and right emergency exit doors, service doors, cargo doors, and main gear wheel well. Additional stringers, frames, and skin doubler reinforced windows and doors openings.

B. The fuselage skin was installed with butt joints and longitudinal lap joints that were generally flush riveted. Skins should be treated concurrently with fuselage structure.

C. The stringers, frames, and skins have been found susceptible to corrosion due to moisture entrapment between the skin and insulation blankets. Corrosion can readily start where protective finishes have been broken or deteriorated (Fig. 1).

(1) 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 contact skin (Fig. 1, Detail I).

(2) Stress corrosion cracks have occurred in the 7079-T6 bulkhead fittings at BS 740 between S-18 and S-24. Cracks were detected in the outboard flange below the pressure deck, and in the inboard flange, web, and web-to-outboard flange radius at the lower extremity of the fitting. Material changes (to 7075-T73) introduced on airplanes from line number 875 left side and 877 right side decreased the risk of this problem. A preventive modification introduced by SB 53-62 will reduce the risk of stress corrosion cracking on airplanes with 7079-T6 fittings (Fig. 1, Detail V).

(3) Stress corrosion cracks occurred on the BS 740 front spar bulkhead terminal fitting. The fitting is made of 7079-T6 aluminum (Fig. 1, Detail V).

(4) Stress corrosion cracks were found in the 7079-T6 aluminum alloy terminal forging at fastener locations between stringers 10 and 13. All cracks occurred in the outboard face of the outboard flanges and were concealed by the skin. Crack depth ranges from 1/8 to 15/32 of an inch below the outer skin surface. None of the cracks penetrated through to the inboard faces of the flanges.

NOTE: TOILET SERVICE PANELS DATA IS LOCATED IN 53-20-27, FIGURE 4.

(5) Stress corrosion cracks occurred in the upper vertical flange of the BBL 70.5 rib upper chord BS 848-95. Corrosion occurred on fasteners and in fastener holes in this area (Fig. 1, Detail VII, Section C-C, D-D).

(6) Stress corrosion cracks occurred on the BS 870 frame flange with fatigue cracks in the skin and stringer in the frame and stringer 18A joint area. Stress corrosion cracks have also been reported in the clevis for the side load beam joint inboard of the bottle pin. A stress corrosion crack occurred on the aft horizontal tang which attaches to the wheel well pressure floor. The crack started at a fastener hole and ran forward to the radius between the fitting web and outboard flange.

(7) Corrosion of stringer 18A has been reported by some operators. White epoxy enamel was applied in production in this area from line number 709.

(8) Stress corrosion and cracks occurred in several BS 870 fittings. There were radial cracks in one or more of the four flange bolt holes common to stringer 18A, and were vertical through the aft row of holes (Fig. 1, Detail VII, View A). Other cracks were between stringer 9 and 11. The fitting material is 7079-T6 aluminum alloy.

(9) A stress corrosion crack occurred in the web of the BS 870 frame. The crack was 10 inches long by 2 inches deep, extended above and below stringer 10, split the web at the forging parting plane, and extended from the lightening holes at the center of the web outboard to the skin.

(10) Corrosion has been reported in the floor beams between BS 880-930. Stress corrosion cracks were found on the lower chords of floor beams extending for several inches. Reinforcing straps were added under the pressure web along the floor beams at BS 900, 910 and 920 on airplane line numbers 1103 and on, plus airplanes incorporating SB 53-124. On airplane line number 1205 and on, plus airplanes incorporating SB 53-132 the floor beam lower flanges between BS 880 to 930 were reinforced (Fig. 3, Detail 1).

(11) Stress corrosion cracks have been reported on the 7079-T6 frame at BS 930 between stringers S-14 and S-18A. Material changes introduced at line number 794 will reduce the probability of this problem occurring on these airplanes. SB 53-130 (superseding 53-96) provides modification procedures to reduce the risk of stress corrosion cracking on earlier airplanes up to airplane line number 793 (Fig. 1, Detail IX).

(12) A stress corrosion crack occurred on the lower horizontal flange of the right and left side fitting of the BS 930 frame assembly.

(13) A stress corrosion crack occurred on the BS 940.0 fitting in the area of attachment to stringer 18A. SB 53-118 gives instructions for inspection and repair of this fitting.

(14) Corrosion has been reported at the forward end of the stringer 29R between BS 950 and 950A. The forward six inches of the stringer outboard flange and the end of BS 950 bulkhead lower chord, which overlaps the stringer flange, were entirely corroded away.

(15) Stress corrosion cracks have been reported in the jacking point bearing channels at BS 1183 (Fig. 1, Detail XII).

(16) A stress corrosion crack occurred on the 7079-T6 frame at BS 950 between stringers S-10 and S-16. Material changes introduced on all 727-200 airplanes at line number 638 reduces the probability of this problem occurring. SB 53-126 provides modification procedures to reduce the risk of stress corrosion cracking from earlier airplanes up to airplane line numbers 638 (Fig. 1, Detail IX).

(17) A stress corrosion crack occurred on the landing gear side strut bearing bore at four BS 950 bulkhead fittings (Fig. 1, Detail IX).

(18) Stress corrosion cracks occurred in the web attach flanges of the bulkhead side forgings at BS 950. The cracks started at the fastener holes in the attach flange.

(19) Many areas of corrosion have been found on cold bonded skin, doublers and triplers in the skin panels under the aft cargo compartment floor. Some of the skin panels located between stringers 26-L and 26-R from BS 950 to BS 1183 have to be replaced. Replacement of affected skin panel with a non-bonded skin panel can stop corrosion problems.

(20) Stress corrosion cracks have been reported in the BS 1050, stringer S-27R splice fitting. The cracks extended through the center of the attach holes to the edge of the fitting; also some cracks have been reported in each of the four flanges common to the stringer. On airplane line numbers 742 thru 1592, SB 53-158 provides procedure for inspection and modification on airplanes without the No. 3 cargo door.

(21) Moderate to severe intergranular corrosion occurred on stringer 3A longeron chord, between BS 1148 and BS 1183. The inboard leg of one longeron was approximately 90 percent corroded away. The cause of corrosion could be wet insulation blankets that touched the longerons (Detail XII).

(22) Stress corrosion cracks have been reported on stringer fittings forward of the BS 1183 pressure bulkhead. Prior to line number 897 these fittings were made with 7079-T6 aluminum alloy, line numbers 897 thru 929 have either 7079-T6 or 7075-73 forgings. Airplanes after line number 929 have 7075-T73 fittings (Fig. 1, Detail XI).

(23) Corrosion has been reported at the BS 1176.9 reinforcement chord forward of the BS 1183 bulkhead installation. The cause of corrosion has been attributed to fluid leakage from the lavatories.

(24) Corrosion can occur on alloy steel tension bolts at the BS 1183 circumferential frames.

(25) Varying degrees of corrosion has been reported on faying surfaces of the antenna and body skin on exterior mounted ATC, DME, VHF, 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 (Fig. 2).

(26) Stress corrosion cracks have been reported on the tension tie bolts connecting forward and aft longeron tension tie fittings at LH and RH stringer 3A and BS 1183. SB 53-178 provides instruction to replace existing bolts with new improved bolts made of Inconel 718 alloy steel material. SB 53-178 supersedes SB 53-88 and modify procedures in SB 53-95.

D. The lower lobe structure includes the E/E bay area, cargo area, and all doors opening. 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.

E. Door and window openings in Section 46 are reinforced by additional stringers, frames, and skin doublers. The doors have additional reveals and scuff plates (Fig. 4).

(1) The primary corrosion area is under the door sill, floor panels, floor beams and doublers or triplers at door openings. Contaminants are tracked in by passengers, crew members, cargo and service personnel or by driven rain/snow when door is opened.

(2) The inner surfaces of the emergency exit skin openings have experienced corrosion problems due to accumulation of moisture and contaminants in the seal areas (Fig. 4, Detail IV).

F. The main gear wheel well in the fuselage section is made up of separate wells separated by the aft keel beam. The wheel well in the fuselage extends into the inboard end of the wing trailing edge structure. The wing wheel well houses the landing gear trunnion and the upper portion of the landing gear shock strut in the stowed position (Fig. 5).

(1) The surface inside the wheel well are exposed to air contaminants and runway splash and are subject to corrosion.

(2) Specific corrosion problems have been encountered on the inner surface of the machined fuselage skin panels in the vicinity of the main landing gear beam attach fitting at BS 940 as shown in detail II.

(3) Stress corrosion cracks have been found in the station 870 bulkhead at S-18A with attendant fatigue cracks in the skin and stringer. In addition, cracks have been found at the clevis joint attaching the side load beam.

(4) Several reports of stress corrosion cracks on the outboard flange below the main floor and on the main landing gear side strut bearing boss of the body station 950 bulkhead forging have been received. Material change of the 7079-T6 or 7079-T611 forging to 7075-T73 was initiated in production at cum line number 638. Forging modifications on the 7079 forgings can be made by incorporating SB 53-126.

(5) The main landing gear beam support fitting at body station 940 has stress corrosion cracking problems in the web, outboard flange and in the landing gear beam swing link lug bore. A production change at cum line number 875 introduced a less corrosion susceptible material in 7075-T73. Rework instructions are provided in SB 53-118 to alleviate the corrosion problem.

(6) In addition to the forging cracks at station 940, bolts common to S-18A stringer have been reported broken. Broken bolts have been attributed to stress corrosion and/or fatigue. Production changes to cold work the subject holes, install bolts wet with BMS 5-95 sealant and seal the ends of the bolts with sealant were initiated at cum line number 1247. Retroactive accomplishment of the production changes may be made by incorporating SB 53-118 or 53-141 as applicable. On some configurations the holes are oversized for larger fastener installation.

(7) At Body Station 930, the 7079-T6 frames have been experiencing stress corrosion cracking on the flanges below the pressure deck. Material change from 7079-T611 to 7075-T73 was introduced in production at cum line number 875. Inspection and preventive modification procedures for airplanes with 7079-T6 frames are outlined in SB 53-130.

(8) Corrosion of aluminum lockbolt collars were found on the lower surface inside the wheel well keel beam.

(9) Exfoliation corrosion has been reported on the lower flange of the keel beam lower chord. This corrosion may cause cracks to initiate and propagate along the lower flange as shown in Figure 5, detail VII.

(10) Stress corrosion cracks have been reported on the BS 940 fitting in the area of its attachment to stringer 18A. Detection of crack (when fitting was in place) was difficult because crack coincided with lower edge of skin and stringer 18A.

(11) Stress corrosion cracks have been found in the LH Body Station 950 bulkhead fitting. Two cracks, located at WL 209 (floor level), completely severed the inboard flange and web of the 7079-T6 aluminum alloy fitting, and extended to the outboard flange.

(12) Stress corrosion cracks have been reported in the main landing gear uplock support fittings of airplanes prior to cum line number 1279. Service Bulletin 53-103 replaces 7079 fittings with 7075-T73 fittings.

(13) Stress corrosion cracks on the forward and aft lugs of the main landing gear inboard support fitting on the BS 950 bulkhead have been reported. Crack direction was vertical with crack length from 0.20 to 0.50 inches.

(14) Stress corrosion cracks have been reported on the BS 930 frame in the area of its attachment to S-18A. These cracks originated at fastener holes common to sill at S-18A and those that occurred in the forging end flange radius.

(15) Corrosion was found on the upper surface of the outboard flange along the entire length of left and right keel beam chords and very bad corrosion was also found in the machined pocket at the aft end. Replacement of the keel beam chord was necessary on some airplanes because of very bad corrosion.

G. 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. Aft of this area, the fairing covers the center wing section (Fig. 6).

(1) On early 727-100 series airplanes, corrosion damage has been reported on the fuselage skin, however a production improvement, effective on airplane cum line 766, revised the finish by applying one coat of BMS 10-11 primer and one coat of polyurethane sealant over the body skin and fairing attaching angles. 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.

(2) 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.

H. 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 structures and leveling compounds are used to provide drainage paths to lead the overboard drains (Fig. 7).

(1) A drain valve assembly which precludes sticking of the flapper valve or the plugging of the drain holes (Detail I) was incorporated on line number 1270 and on.

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 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 per Volume 1, 20-20-00 to make sure that protective finishes stay serviceable. Refer to SB 53-209 for details about the tension bolts at the BS 1183 circumferential frames.

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 system.

E. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished in the fuselage structure, door and window openings.

(2) Fuselage Stringers, Frames and Skins

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON INSULATION BLANKETS. THE COMPOUNDS REDUCE THE WATER-REPELLENT QUALITY OF THE BLANKETS.

(a) Remove insulation blankets to expose stringers frames, and skin. Dry blankets thoroughly if found wet.

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

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

(d) Replace broken or damaged finishes.

(e) Apply water displacing corrosion inhibiting compound to all exposed surface in the upper lobe and under the cargo floors and to the sidewalls beneath the upper lobe service and cargo doors.

(f) Allow solvents 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.

(h) SB 53-77, SB 53-116, and SB 53-194 give inspection procedures for cracks in the BS 870 bulkhead structures. This is now recommended for all aging 727 airplanes.

(i) Monitor the condition of the corrosion inhibitor in the forward flange area of BS 870 bulkhead, the side load beam joint area and the BBL 70.5 rib upper chord area.

(j) Incorporate SB 53-126 to reduce the probability of stress corrosion cracking on 7079-T6 frames at BS 950.

(k) Examine the floors between BS 880-930 per one of the following applicable service bulletins and provide preventive modifications as described.

1) SB 53-124 provides inspection, modification and repair procedures on the main wheel pressure floor.

2) SB 53-132 provides inspection and reinforcement procedures on the floor beam lower flanges BS 880-930.

3) SB 53-134 provides inspection and reinforcement procedures on the floor beam, BS 910.

(l) It is recommended to incorporate SB 53-62 to reduce the probability of stress corrosion cracking on 7079-T6 fittings at BS 740.

(m) SB 25-181 provides procedures to support the insulation blankets to reduce the possibility of moisture entrapment between insulation blankets and airplane skin in the bilge area.

(n) When you install the floor panels, install the fasteners with BMS 3-24 grease.

(3) Door and Window Openings

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

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

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

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

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

(f) Open plugged drains, if any.

(g) Clear all drain paths.

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

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

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

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

(l) 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. Pay special attention to flanges of floor beams, doorsills and floor beam to fuselage frame splices.

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

(n) When you install the floor panels, install the fasteners with BMS 3-24 grease.

(4) Main Gear Wheel Well and Keel Beam

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

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

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

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

(d) 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, on fastener heads, frames, forgings and the fuselage skin inner surface in the vicinity of the main landing gear beam attach fitting.

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

(f) Gain access to interior of the keel beam in the wheel well and clean up superficial corrosion. Replace damaged lockbolts and/or collars as required and treat cavity with water displacing corrosion inhibiting compound.

NOTE: Access panels are provided on right side of all 727-200 airplanes and on some 727-100 Access also can be made by removing APU and pneumatic ducts.

(g) Gain access to delta keel beam between BS 740 and 870 and apply water displacing corrosion inhibiting compound at edge of horizontal intercostal and keel beam web. Treatment is applicable at all intercostal locations. Access to inside of keel beam can be made through the web lightening holes.

NOTE:Access to the delta keel beam required the scheduling removal of the wing-to-body fairing.

(h) In case the wheel well is cleaned with steam or high pressure water and detergent, reapplication of corrosion inhibitor is recommended.

(5) Fuselage External Surfaces

(a) Examine the skin and antenna periodically for evidence of corrosion products. Where corrosion is evident, the antenna should be removed for a more thorough inspection.

(b) Refer to Structural Repair Manual for corrosion removal procedure.

(c) Whenever an antenna is removed, apply BMS 3-23 to the faying surfaces. Tests conducted at Boeing have shown that antenna performance will not be affected by the film of BMS 3-23.

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 Maintenance Planning Document.

G. Improved Corrosion Protection

(1) Fuselage Stringers, Frames, and Skins

(a) On airplane line number 875 and on, fay seal of the skin and substructure in the bilge area was accomplished. This reduces the corrosion caused by spills and moisture accumulation. Further corrosion protection has also been provided at airplane line number 922 by the spraying of the entire bilge area with corrosion inhibiting compound.

(b) On line numbers 1121 and 1123 and on, the tightly sealed covers were replaced with unsealed covers to permit water to enter the blankets serve as drain paths into the lower lobe drain masts. Water repellent filler is used.

(c) On airplane line number 1512 and on, BMS 5-95 sealant sprayable sealant was applied to the lower cargo compartment side plates after assembly prior to the enamel topcoat for improved corrosion protection.

(d) On airplane line number 1554 and on, BMS 5-95, Type F, chromate loaded sealant was applied to inboard flanges at stringers and to portions of frames that come in contact with insulation blankets.

(e) On airplanes before line number 869, SB 53-83 gives inspection and modification procedure on forging web attach flanges at BS 950.

(f) For airplanes line number 1 thru 547, SB 53-85 gives procedure to inspect and repair cold bonded skin, doublers and triplers in the skin panels under the aft cargo compartment. SB 53-85 now recommends these changes on the repair of skin panels for all aging 727 airplanes.

(g) For airplanes line number 433 thru 1216, SB 53-159 gives procedure to inspect and repair delamination and corrosion of aft lower body hot-bonded skin panels. SB 53-159 now recommends these changes on the repair of skin panels for all aging 727 airplanes.

(h) At line number 654, PRR 22917 replaced with tapered shank fasteners the four straight shank bolts common to the BS 870 frame flange and stringer S-18A (Fig. 1, Detail VII). This change could be incorporated on some airplanes before line numbers 654 with SB 53-50, but SB 53-116 supersedes SB 53-50.

(i) Before line number 876, the frame at station 870 was made from 7079-T6 material. At line number 876, this frame was replaced by 7075-T73 aluminum alloy to decrease the risk of stress corrosion (Fig. 1, Detail VII).

(j) At line number 1064, at BS 870, the skin splice was moved approximately 36 inches forward and the cross sectional area of stringer 18A was increased at selected stress areas to decrease the risk of cracks at the S-18A joint.

(k) At line number 809, shoulder bolts at the clevis joint in BS 870 were used to eliminate the clamping action of the lock bolts previously used.

(l) For corrosion on alloy steel tension bolts at the BS 1183 circumferential frames, SB 53-209 gives inspection and replacement procedure.

(2) Door and Window Openings

(a) On airplane line numbers 1121 and 1123 and on, the tightly sealed covers are replaced with unsealed covers to permit water to enter the blanket and drain with equal facility. The blankets serve as drain paths into the lower lobe drain masts. Water repellent blanket filler is used in this concept.

(b) At airplane line number 1554, BMS 5-95, class F, chromate loaded sealant was applied to inboard flanges of stringers and to portions of frames that touch the insulation blankets.

(c) At airplane line number 1550, BMS 5-95 fay surface sealant was applied between the entry and galley doorway scuff plate and support structure, and the screws through the scuff plate are installed with BMS 5-95 sealant.

(3) Main Gear Wheel Well and Keel Beam

(a) On airplanes before line number 874, SB 53-96 gives modification and repair procedure on the lower end of frame forging at BS 930.

(b) At line number 874, PRR 23158-12 changed to 7075-T73 aluminum the main gear support fitting at BS 940. This change can be incorporated on earlier airplanes with SB 53-1A. SB 53-118 now recommends these changes for all aging 727 airplanes.

(c) On airplanes before line number 869, SB 53-163 gives inspection procedures on inboard flange and web of BS 950 fitting between WL 208 and 215 for cracks. SB 53-163 now recommends this procedure for all aging 727 airplanes.

(d) SB 53-179 gives inspection, repair or replacement procedures for the left and right keel beam chord. SB 53-179 now recommends this procedure for the repair of keel-beam-lower chord for all aging 727 airplanes.

(4) Section 46 Drain Holes

(a) At line number 1567, a production change added a drain valve at BS 360 and Doppler antenna cavity forward web. This change can be incorporated on earlier airplanes with SB 53-161.

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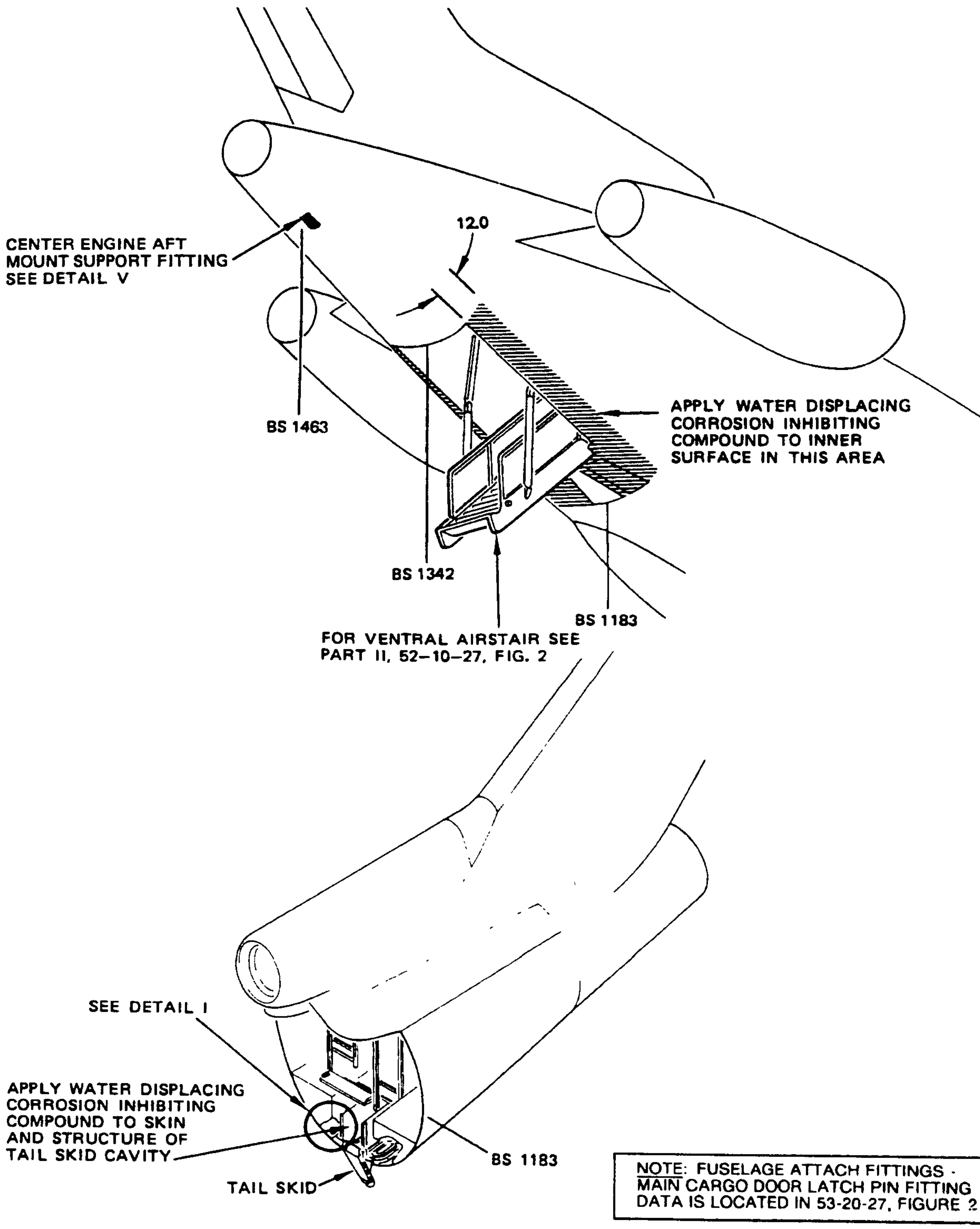
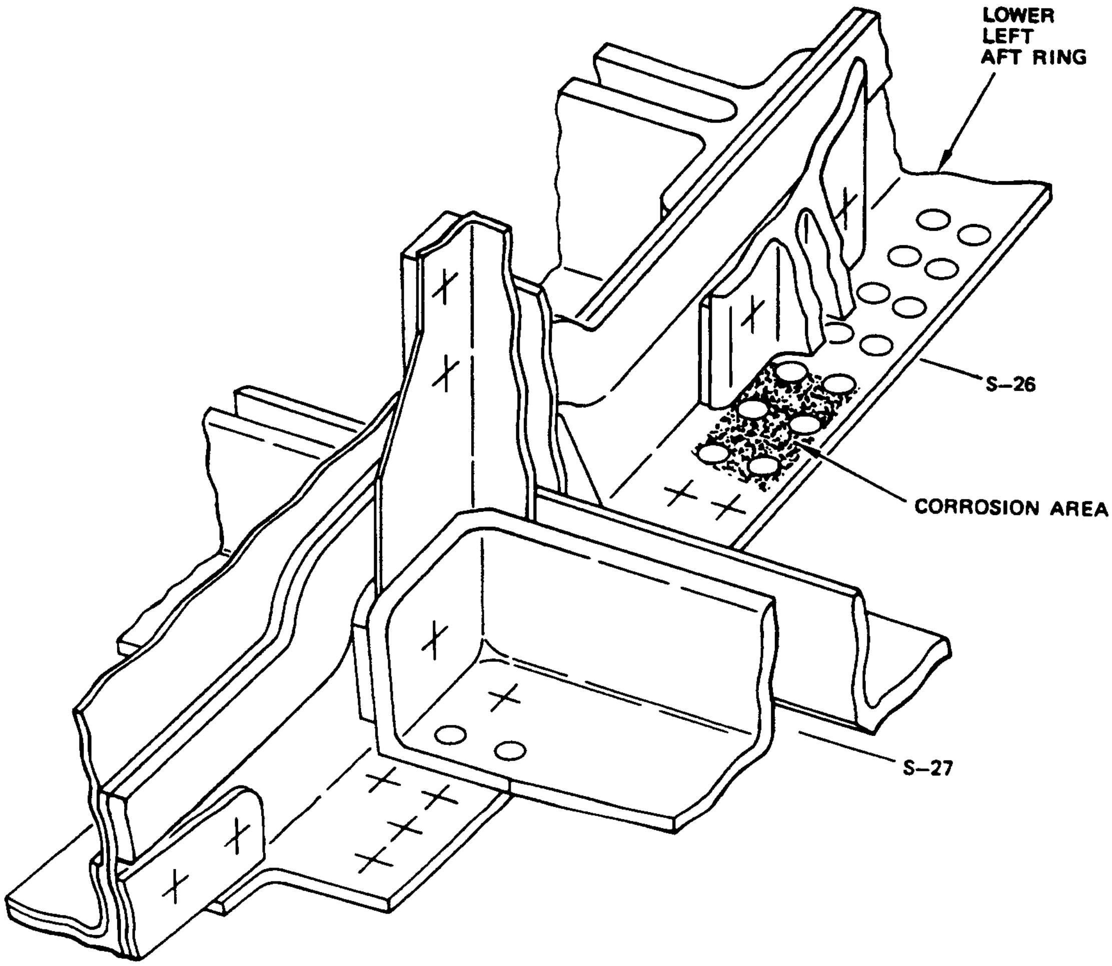


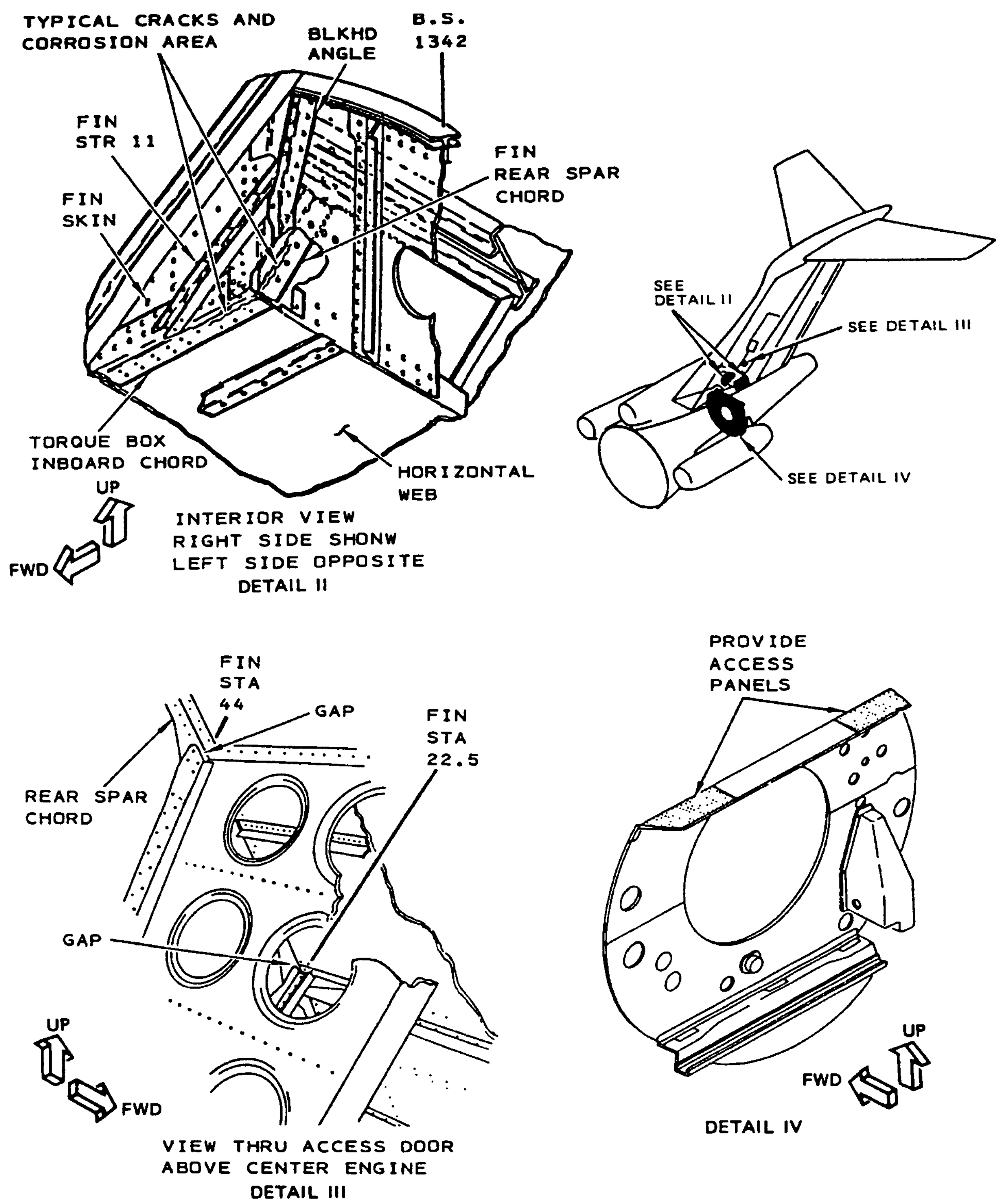
NOTE: FUSELAGE ATTACH FITTINGS - MAIN CARGO DOOR LATCH PIN FITTING DATA IS LOCATED IN 53-20-27, FIGURE 2

Section 48 - Fuselage Structure
Figure 1 (Sheet 1)

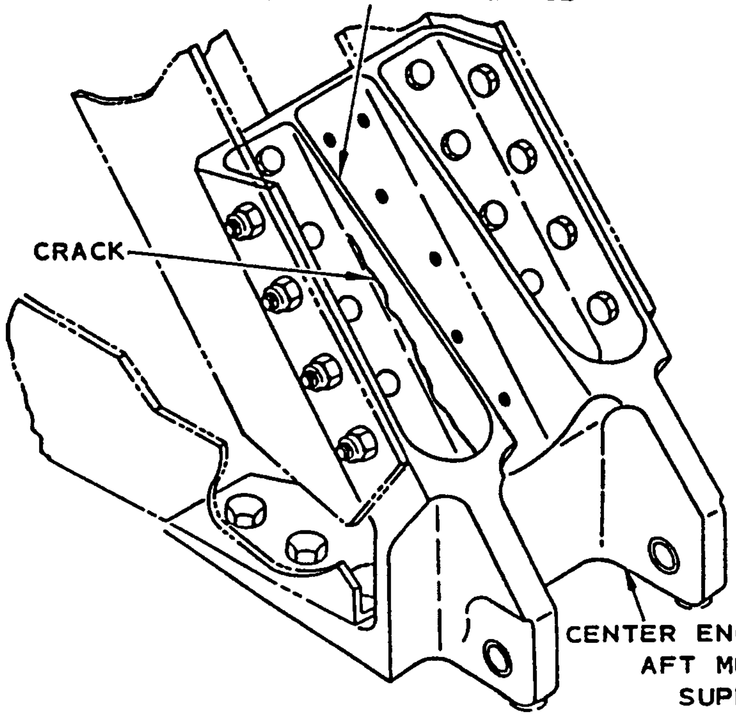


DETAIL I

Section 48 - Fuselage Structure
Figure 1 (Sheet 2)



Section 48 - Fuselage Structure
Figure 1 (Sheet 3)



DETAIL V

Section 48 - Fuselage Structure
Figure 1 (Sheet 4)

1. General

A. The last section of the fuselage is section 48, extending from stations 1183 to the rear. Aft of the pressure bulkhead at BS 1183 is the tail skid, aft airstair, and the structural surround of the No. 3 engine.

B. The fuselage skin was installed with butt joints and longitudinal lap joints that were generally flush riveted. Skins should be treated concurrently with fuselage structure.

C. The stringers, frames, and skins have been found susceptible to corrosion due to moisture entrapment between the skin and insulation blankets. Corrosion can readily start where protective finishes have been broken or deteriorated.

(1) Corrosion has been reported on the left lower aft ring between and around rivet heads and between stringers S-26L and S-27L at the BS 1183 pressure bulkhead.

(2) Corrosion can occur on alloy steel tension bolts at the BS 1183 circumferential frames.

(3) Corrosion has been reported in the tail skid cavity.

(4) Corrosion has been reported at the spar chord in the area of attachment to the fin rear spar terminal fitting at BS 1342. Removal of the center engine or installation of special access doors is required for repairs. SB 55-76 provides instructions to gain access through center engine farewell, without removing the engine, for repair or replacement of the fin rear spar chord (Fig. 1, Detail Il).

(5) Severe corrosion has been reported in the surface of the fractured Center Engine Rear Support Fitting (Fig. 1, Detail V).

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. After you clean areas, make the inspections per Volume 1, 20-20-00 to make sure that protective finishes stay serviceable. Refer to SB 53-209 for details about the tension bolts at the BS 1183 circumferential frames.

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 system.

D. 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.

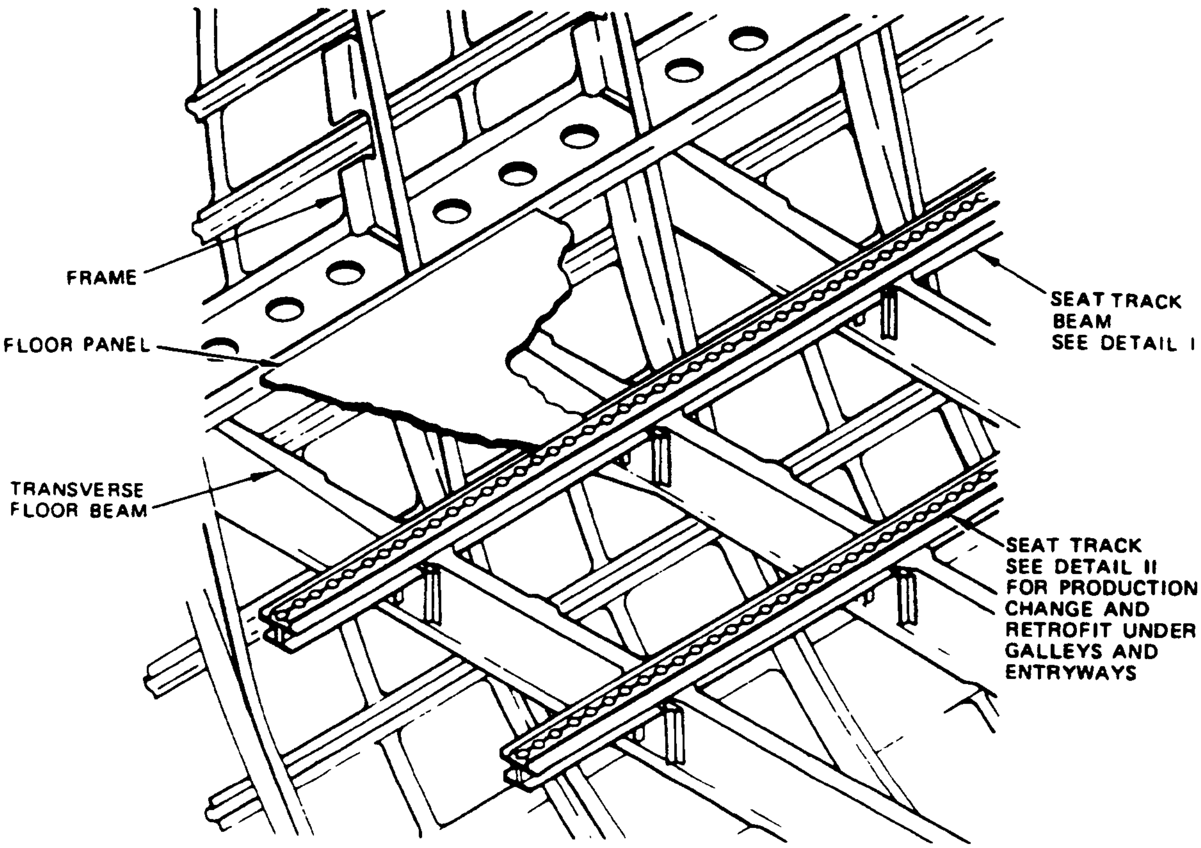
E. Improved Corrosion Protection

(1) On airplane line number 1216 and on, water displacing corrosion preventive compound has been applied to the inner surface of the lower skin between BS 1183 and BS 1342 in the vicinity of' the aft airstairs and tail skid.

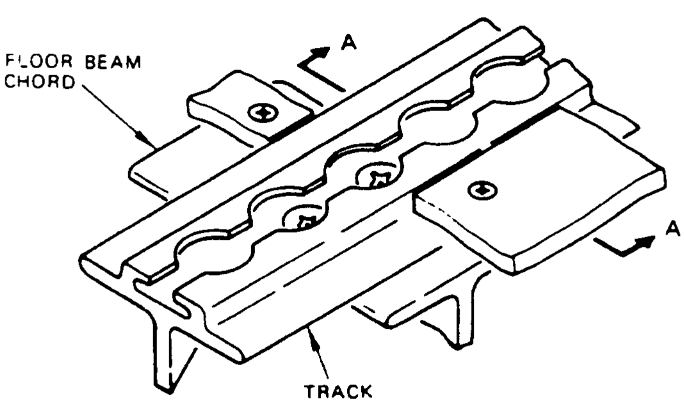
(2) On airplane through line number 1215, apply water displacing corrosion inhibiting compound to the inner skin surface and all structure within 3 inches of it, for a distance of 12 inches outboard of the ventral airstair aperture. This area, which extends from BS 1183 to BS 1342, includes the tail skid aperture and the adjacent access panels.

(3) Drainage fittings for the lower torque box area are located just aft of the bulkhead at BS 1183.

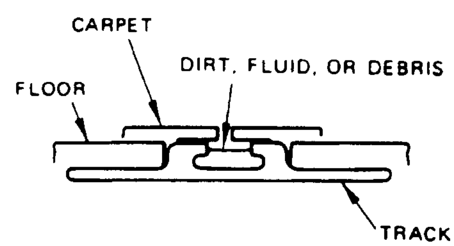
(4) For corrosion on alloy steel tension bolts at the BS 1183 circumferential frames, SB 53-209 gives inspection and replacement procedures.



TYPICAL FLOOR STRUCTURE

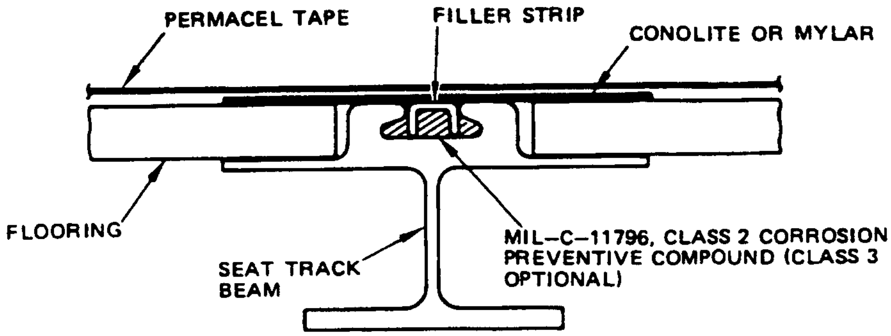


DETAIL I

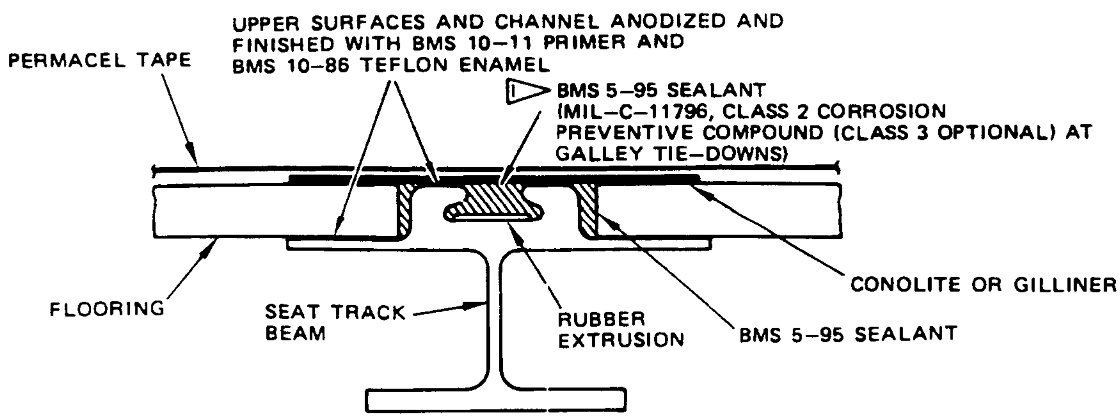


SECTION A-A

Seat and Cargo Tracks
Figure 1 (Sheet 1)



SEALING OF SEAT
TRACKS UNDER GALLEYS AND ENTRYWAYS
ON LINE NUMBER 1598 AND ON



SEALING OF SEAT TRACKS
UNDER GALLEYS AND ENTRYWAYS ON
LINE NUMBERS 1268 THRU 1597

DETAIL II

NOTES

1 MIL–C–11796, CLASS 2 COMPOUND (CLASS 3 OPTIONAL) INSTALLED IN THE TRACK IN LIEU OF BMS 5–95 AND RUBBER STRIP OFFERED AS OPERATOR OPTIONS. ALSO PHENOLIC EXTRUSION INSTALLED IN TRACKS IN WORK AREA BETWEEN GALLEYS

Seat and Cargo Tracks
Figure 1 (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 the floor, the seat and cargo tracks tend to collect dirt and spilled liquids. Dirt holds the moisture and promotes corrosion. The areas near galleys, lavatories and entrances are particularly susceptible to 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 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. Improved Corrosion Protection

(1) Production techniques currently used to combat the occurrence of corrosion include the use of dams, inserts and filling of unused portions of the seat tracks with sealant or grease. Improved surface treatments are also being used for corrosion prevention.

F. Prevention Treatment

(1) At earliest opportunity consistent with the scheduled maintenance activity, corrosion prevention treatment should be accomplished in the seat and cargo tracks.

(2) For track treatment and inspection, remove mylar or vinyl tape and inserts to expose track channel. Check to ensure that tape is not broken.

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

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

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

(6) Repair or replace damaged or broken dams.

(7) 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.

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

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

G. Improved corrosion protection

(1) Retrofit corrosion improvement protection for seat tracks under galleys and entry ways.

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

(b) 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).

(c) 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 entry way areas to be protected.

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

NOTE:A typical extruded plastic section is BAC 1522-148.

(e) Partially fill the track grove 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.

(f) 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).

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

(2) A production change for improved corrosion protection was incorporated on the seat tracks under the galleys and lavatories on line number 1594 and on. This change consisted of the use of MIL-C-11796, Class 2 (Class 3 optional) corrosion prevention compound in lieu of BMS 5-95 sealant in the seat track.

(3) Seat tracks extending its galleys, lavatories and entrances are usually filled with sealant or grease and protected with mylar or vinyl tape under the carpeting. Where the sealant or grease has been removed, damaged or broken due to service, replacement of sealant or grease is not recommended unless the track is thoroughly cleaned and carefully inspected for corrosion. The application of sealant or grease may cover up corrosion that may have already started.

(4) Dinatrol AV (BMS 3-26) corrosion inhibiting compound has been adopted by some operators in lieu of LPS-3 as a standard for corrosion control.

H. 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) Since the tracks are an especially corrosion prone area, it is recommended that the tracks be inspected every 6 months where accessible. The corrosion inhibitor should be reapplied as necessary.

(3) In entrance ways, lavatories and galleys where carpeting covers the tracks, the area can be monitored both from the top or from underneath as access allows.

(4) Where known spills of liquids or large quantities of water have wetted the carpeting, the carpeting should be dried to preclude the occurrence of corrosion. The carpet should be lifted to inspect for moisture seepage onto the tracks at earliest opportunity maintenance schedule will allow.

I. 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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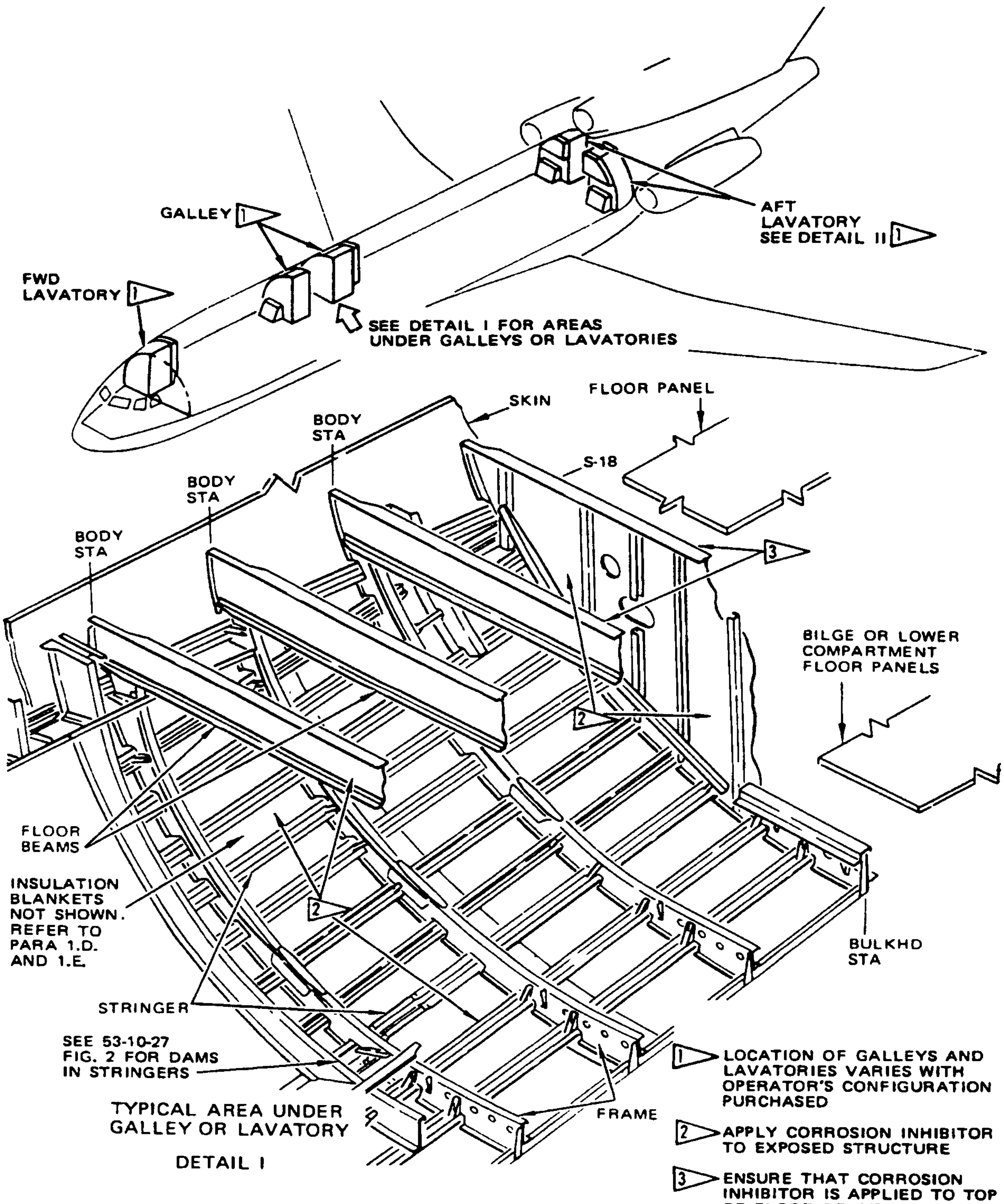
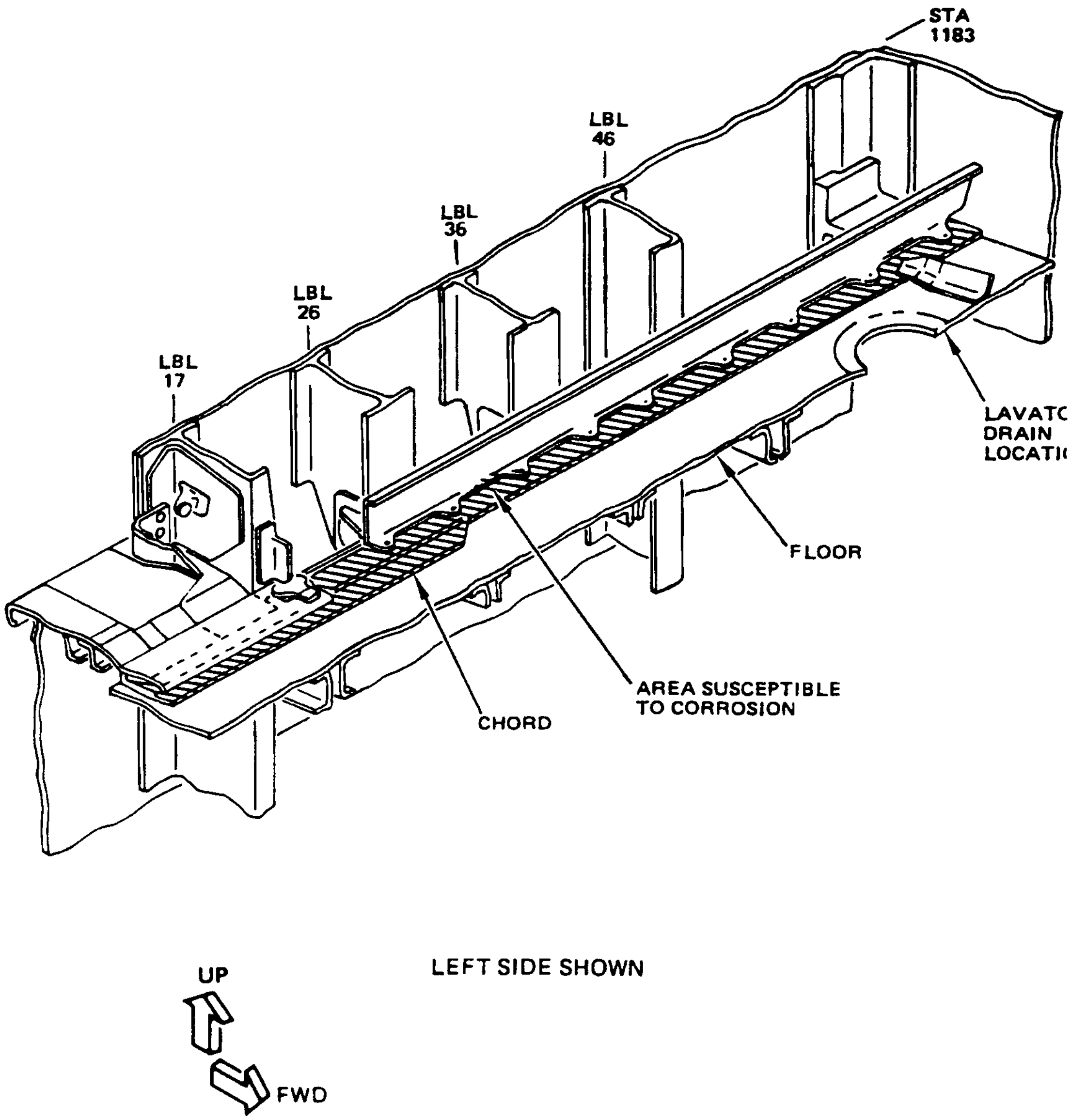
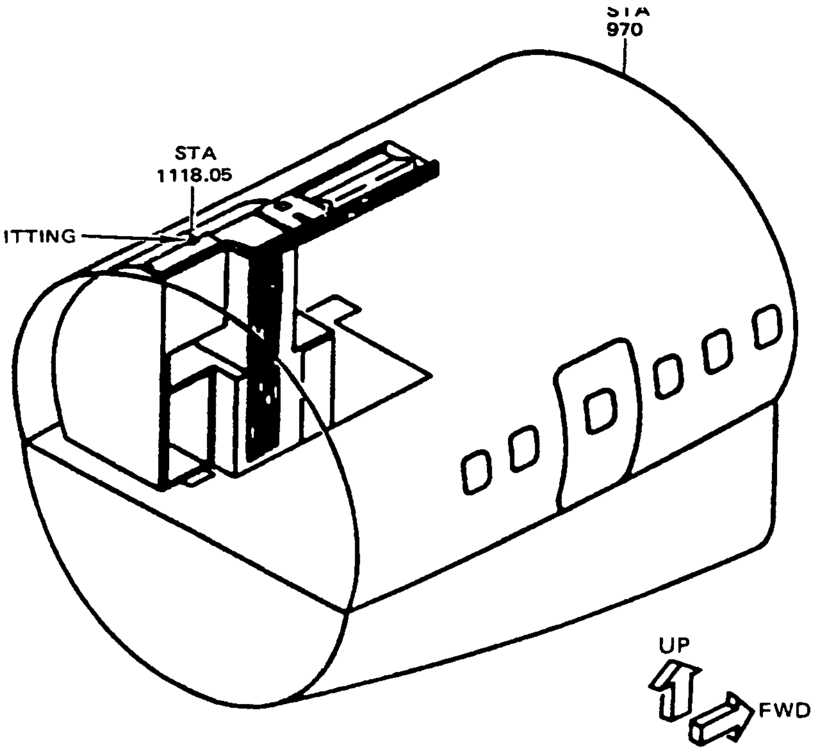


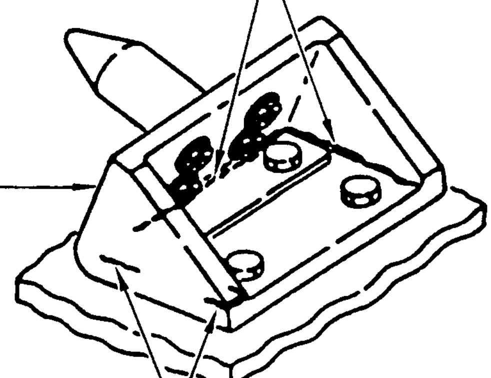
Galley and Lavatory Areas
Figure 1 (Sheet 1)



DETAIL II

Galley and Lavatory Areas
Figure 1 (Sheet 2)





Galley and Lavatory Areas
Figure 1 (Sheet 3)

1. General

A. The 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 that are in the galley or lavatory areas are particularly susceptible because of exposure to traffic debris and spillage which collect inside the track.

B. Corrosion has been found on the horizontal extrusions of the outboard face of the nose wheel well which support the nose wheel well deck (Detail II). Corrosion in this area may be caused by spillage from the forward lavatory or from water entering the forward entry door while open. Access to the area, which is forward of the electronic equipment, is through the electronic bay access door.

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

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. Corrosion has occurred on the BS 1183 bulkhead reinforcement chord between LBL 38 and LBL 65.

F. A stress corrosion crack has been found on the galley upper support fitting. The fitting was cracked along the base flange inner radii on three sides. The fitting was cracked through in some places. Cracks were discovered during galley removal for cabin refurbishment (Fig. 1, Detail III).

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. 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 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 nose wheel well deck (Detail II) to gain access to the nose wheel well side panel chord.

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

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

(7) Open plugged drains, if any.

(8) Clear all drain paths.

(9) In the nose wheel torque box add 1/2-inch diameter drain holes immediately forward of frames at BS 294.5 and at BS 303-9. Locate drain holes similar to drain hole forward of frame at BS 312.

(10) Using BMS 5-95 sealant as leveling material, provide drain paths to allow proper drainage.

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

(12) Replace or repair broken or damaged leveling compounds used for drainage with BMS 5-95 sealant.

(13) Apply water displacing corrosion inhibiting compound to all exposed structure under galleys and lavatories. Exposed structure of bulkheads should also be included. Special efforts should be made to apply corrosion inhibitor to the top of the main deck floor support structure where moisture may be trapped under the floor panels, to the nose wheel well deck, at the intersection with the nose wheel well and to nose wheel well torque box closure tee outboard horizontal flanges, especially between BS 294.5 and BS 312. 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 982 and can be provided retroactively by incorporating SB 25-181. 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.

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

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

NOTE: On airplanes through cum line number 1120 and cum line number 1122 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. However, the blankets to be reworked must be fabricated with water-repellent fillers. Other airplanes not identified were delivered with optional material, either water-repellent or non-water-repellent. As no known visual method is available to distinguish one filler from the other, it is suggested that replacement rather than rework be considered for all original equipment blankets in airplane other than those identified as having water-repellent fillers.

F. Improved Corrosion Protection

(1) On airplane line numbers 1630 and on, drains have been provided under the toilet tanks for the forward and aft lavatories. The drains have been routed to drain into the toilet drain lines. Also, a seal, at floor level, has been provided at the aft inboard corners of the aft lavatories to close a hole approximately 1 inch across under the lavatory aisle partition.

(2) For improved corrosion protection on line number 1554 and on, BMS 5-95, class F, sealant was applies to inboard flanges of stringers and to portions of frames that contact insulation blankets.

(3) Insulation blankets on line numbers 1121, 1123 and on, replace the tightly sealed covers with unsealed covers to permit water to enter the blanket and drain. The blankets serve as drain paths into the lower lobe drains. Water repellent blanket filler is used.

(4) On airplanes to cum line 1554, 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.

(5) Dinitrol AV (BMS 3-26) corrosion inhibiting compound has been adopted by some operators, in lieu of LPS-3, as a standard for corrosion control.

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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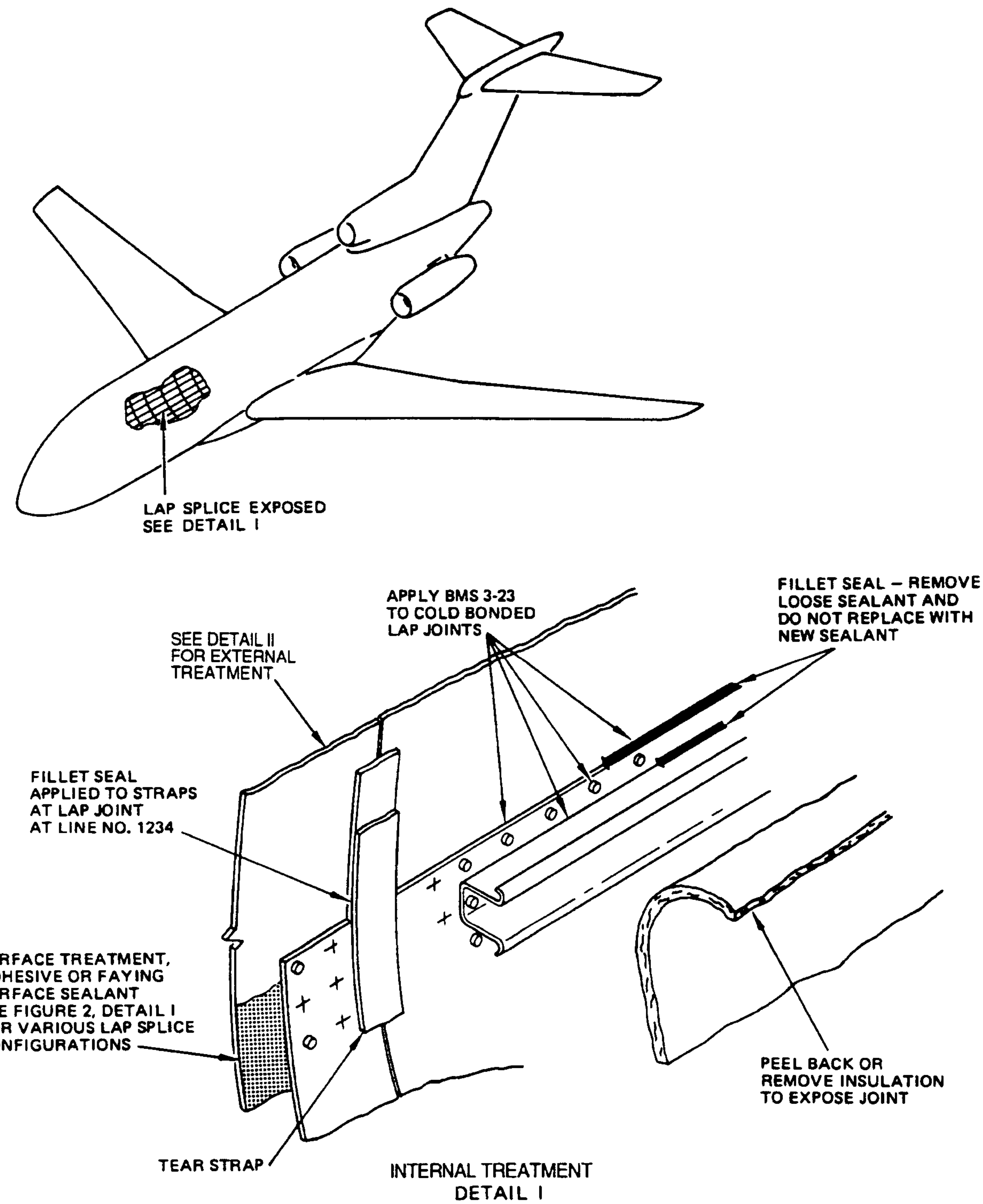


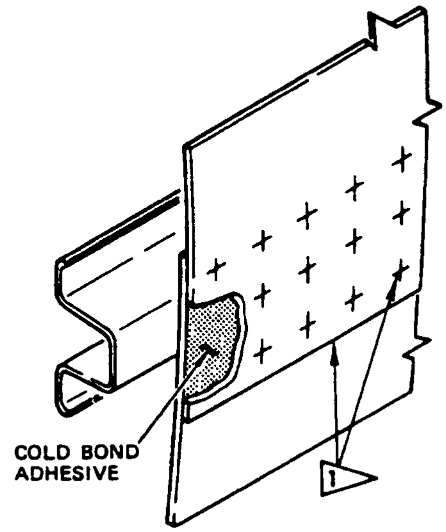
Fuselage Skin Lap Joints
Figure 1 (Sheet 1)

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

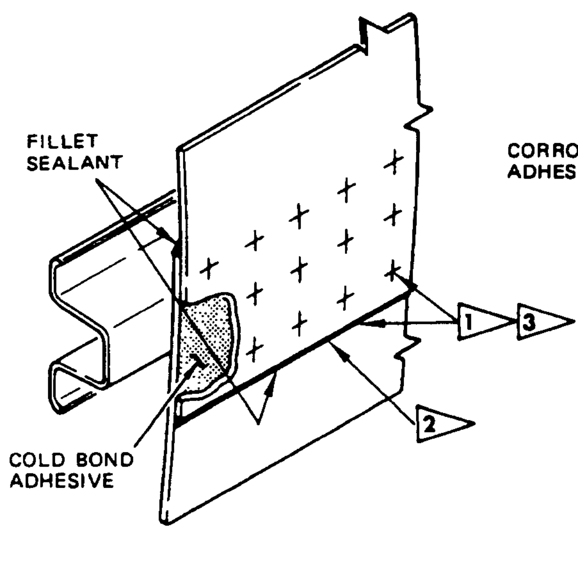
2 SOME AIRPLANES HAVE FILLET SEALS AT THE INTERIOR OR EXTERIOR EDGE OF LAP, AT THE HEEL OF THE STRINGER, AND BRUSH COATING OF FASTENER HEADS

3 DO NOT REPLACE BROKEN FILLET SEALS. REMOVE LOOSE SEALS.

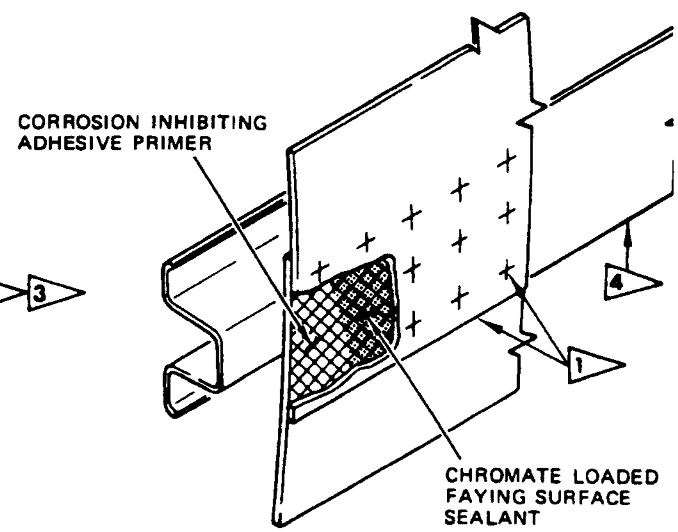
4 STRAP HOT BONDED TO UPPER SKIN FOR SKIN THICKNESS 0.056 AND UNDER.



COLD BOND LAP SPLICE



COLD BOND LAP SPLICE FILLET SEALED



LAP SPLICE WITH FAYING SURFACE SEAL

EXTERNAL TREATMENT

DETAIL II

Fuselage Skin Lap Joints

Figure 1 (Sheet 2)

1. General

A. The longitudinal lap splices of fuselage skins are located at stringers 4, 10, 14, 19/20 and 24/26. Rivets hold the lapped skins together, with a cold bond process at the joint up to line number 849 except at stringer 14. We made several changes on the lap splice because of splice delamination problems. The first change added corrosion inhibiting adhesive primer (CIAP) to the skin panels of the bond area. A later change kept the cold bonding process and added fillet seal of the interior and exterior laps and along the heels of the stringer. The bucked head of the rivets were brush coated. Preventive maintenance procedures on these cold-bonded joints are the subject of SB 53-72 and SB 53-82.

B. The faying surface of the cold-bonded lap splices can get corrosion. Over a long time, exposure to moisture or high humidity can cause deterioration of the cold bonding adhesive. Then the joint can come apart and open the area to the agents that cause corrosion.

C. We use Corrosion Inhibiting Adhesive Primer (CIAP) for all structural bonded assemblies. From airplane line number 766 (delivered in October 1969), first application of CIAP was at the cold-bonded body longitudinal lap joints and all bonded body skin assemblies. All 727 airplanes delivered after March 1972 have CIAP on all structural bonded assemblies.

D. Corrosion has been found between body skins and cold bonded doublers at circumferential skin lap joints. Delamination of the cold bonded doublers causes corrosion between the skin and doublers which lets moisture go through between faying surfaces of the skin and bonded doublers.

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 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 system.

E. Prevention Treatment (Fig. 1)

(1) Internal Treatment

(a) The treatment of internal surfaces described should be made at the 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.

(b) Apply water displacing corrosion inhibiting compound into lap joints, rivet heads, and/or heel of stringers as noted in the methods described below.

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) Loose sealant should be removed but not replaced. Broken sealant should be removed but not 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.

(2) External Treatment

(a) For corrosion prevention, apply BMS 3-23 into lap joints and on lap joint rivet heads. On fillet sealed splices, apply BMS 3-23 along the edge of panel and on lap joint rivet heads. Broken seals should not be replaced.

(b) 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 will only trap the corrosion producing elements.

(3) Operators who wash frequently with detergent and those who operate in severe zones should adjust their frequency of application of corrosion inhibiting compound.

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 number 1503 and on, a production change added fillet seal of RTV 174 at the interior skin lap joints between BS 1183 and BS 1342 at stringers 10 and 14 (left and right), and a pressure fillet seal of BMS 5-95 sealant at all exterior skin lap joints between BS 178 and BS 1342.

(2) Some operators have recently reported that structural components inside newly delivered airplanes were not protected by primer or paint. In all reported cases, however, subsequent investigations revealed that the components were in fact protected with a coat of BMS 5-89 CIAP.

(3) Refer to SB 53-72 for inspection, repair and modification of body skin longitudinal lap joints. This is now recommended for all 727 airplanes.

(4) Refer to SB 53-82 for inspection and repair of bonded tear straps at the upper skins. This is now recommended for all 727 airplanes.

(5) Refer to SB 53-84 for inspection, repair and modification of skin bonded circumferential doublers. This is now recommended for all 727 airplanes.

(6) Refer to SB 53-109 for inspection and repair of the skin and cold bonded doublers at BS 1080 circumferential joint between stringer 10L and 10R. This is now recommended for all 727 airplanes.

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CHAPTER

54

NACELLES/ PYLONS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Center Engine Air Intake Duct	Deterioration of finish on the inside of the duct due to erosion can lead to corrosion of the duct skin	54-10-27 Fig. 1	
Engine Inlet Duct	Erosion and subsequent corrosion of the inlet duct forward of the acoustic panels	54-10-27 Fig. 2.	
Engine Mounts	Corrosion at the forward and aft engine mounts	54-40-27 Fig. 1	
	Stress corrosion and cracks on aft engine mount support fittings		SB 54-17
Center Engine Inlet Duct Housing Attach Fittings	Corrosion on inlet duct attach fittings	54-40-27 Fig. 2	SB 53-139 or 54-11

Specific Corrosion Problems - Nacelles/Pylons
Figure 1

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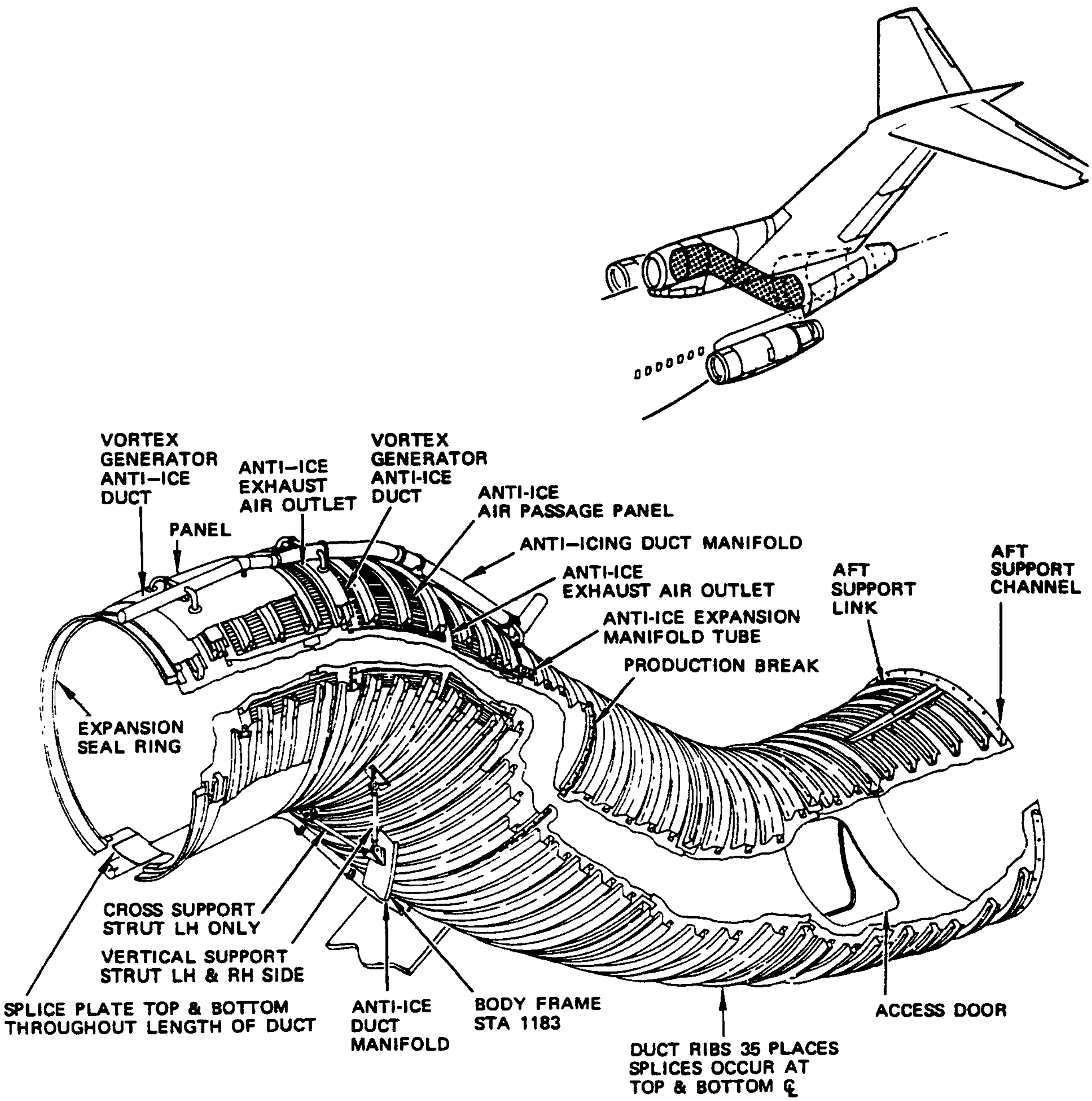


Center Engine Inlet Duct
Figure 1

1. General

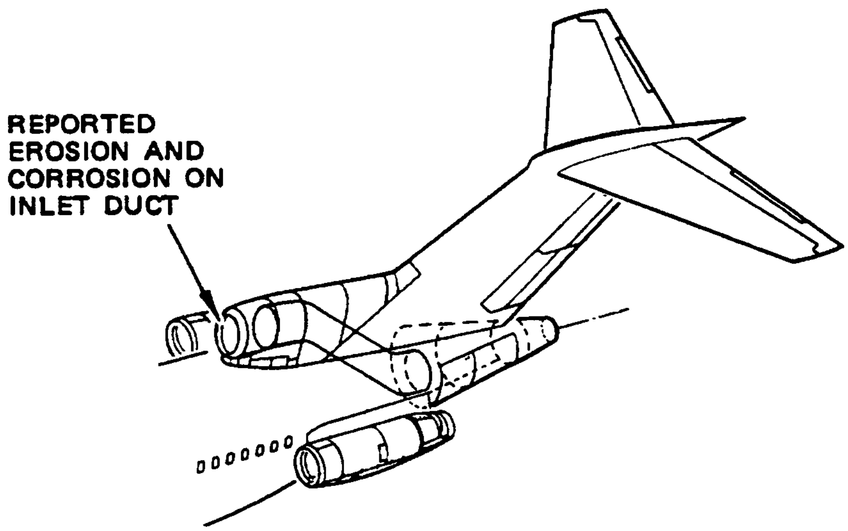
A. Corrosion of the center engine air intake duct has been encountered on some airplanes. Deterioration of the cladding on the inside of the duct due to erosion can lead to corrosion of the duct skin.

B. On the outer surface of the duct, adhesive bonding is used in addition to fasteners to attach the structure. Up to and including line number 869, BMS 5-10 cold-bond adhesive was used. At line number 870, corrosion inhibiting adhesive primer and ME 5-51 or BMS 5-80 hot-bond adhesive was introduced because it is less susceptible to corrosion.

2. Corrosion Prevention

A. Inspect the inside duct surface periodically to ensure that the finish has not been damaged. Restore any damaged finish at the first available opportunity as shown in Volume 1, 20-60-00.

B. Whenever access is available to the duct outer surface, the opportunity should be taken to inspect for evidence of corrosion. Damaged finish should be restored and the outer surface of the duct sprayed with BMS 3- corrosion inhibiting compound, paying -particular attention to the bonded mating flanges of the structure. Reapplication of BMS 3-23 at approximately 2-year intervals is recommended.



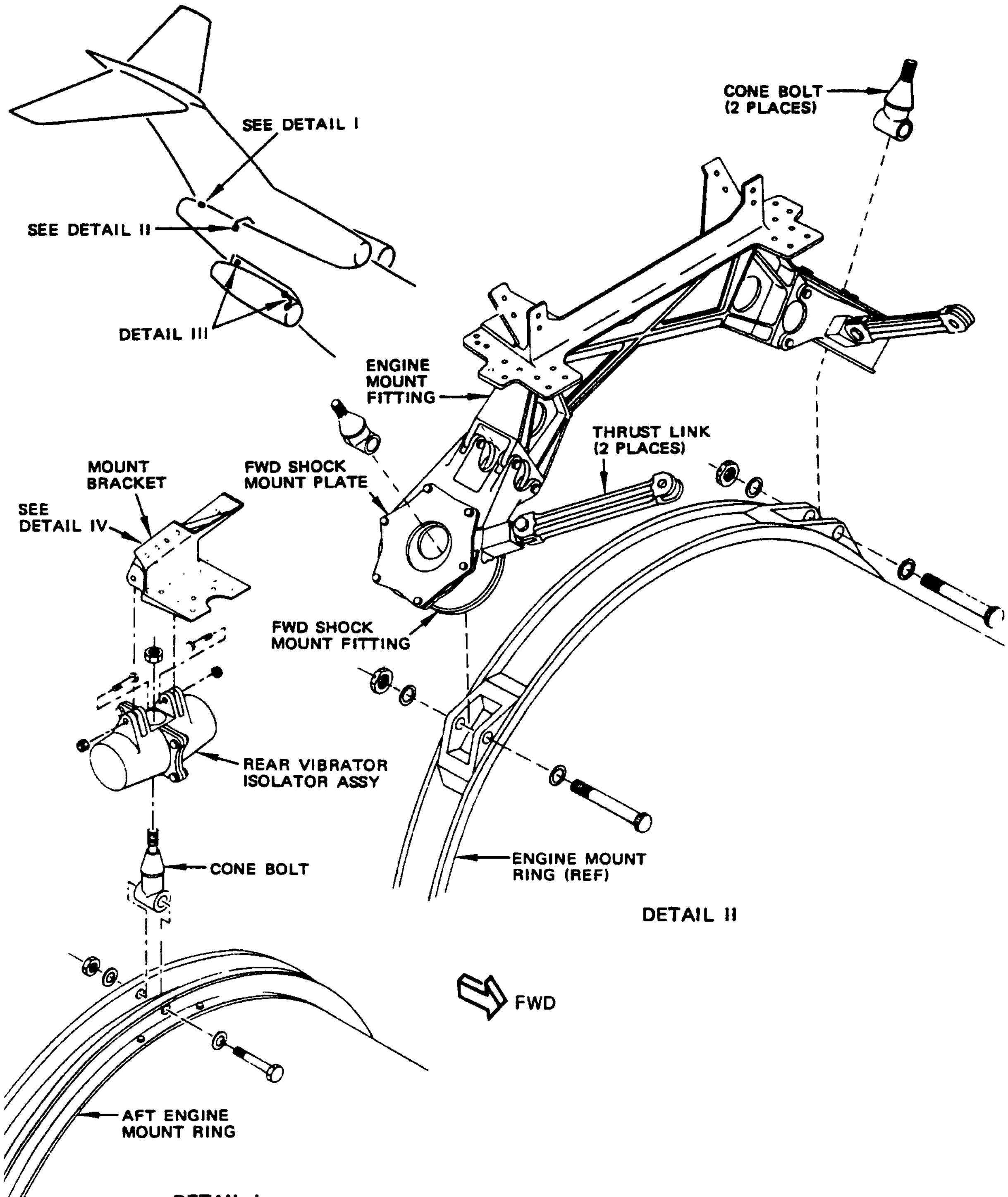
Engine Inlet Duct
Figure 2

1. General

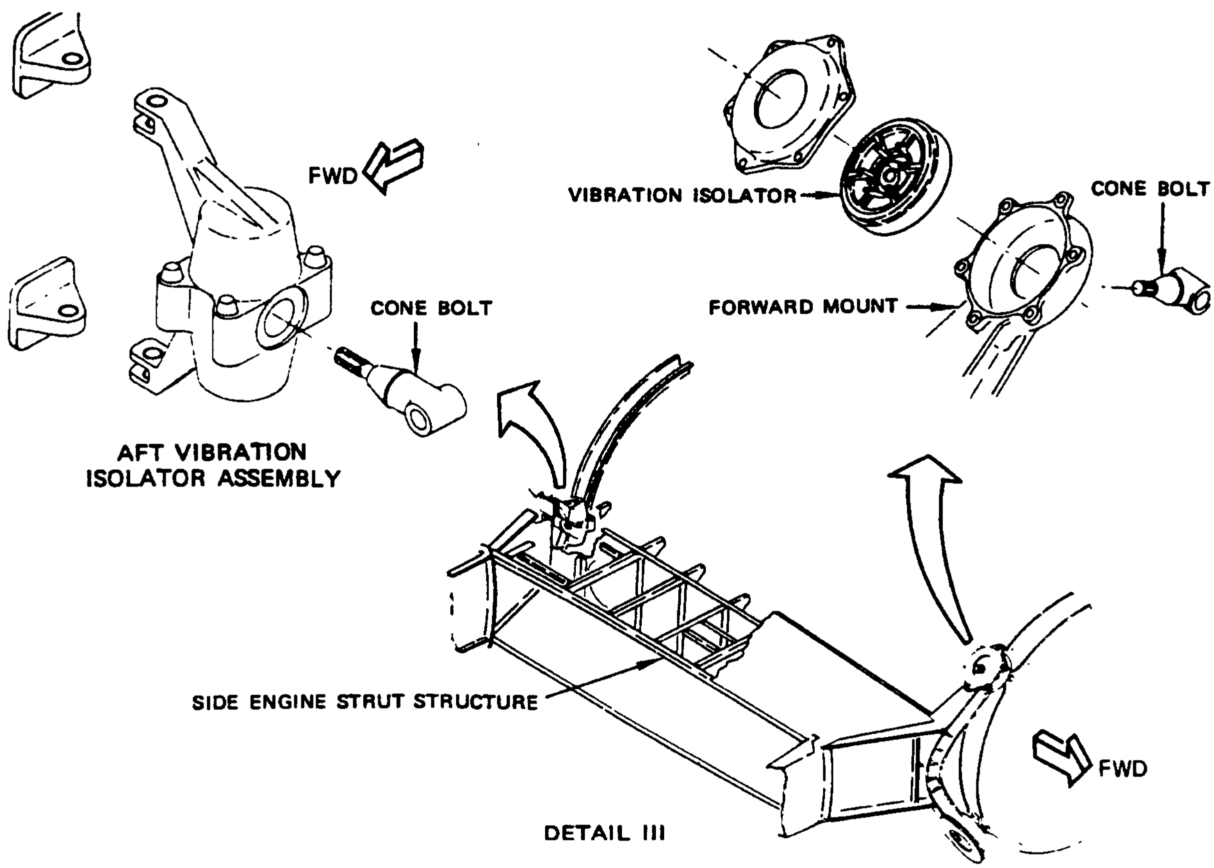
A. Erosion and subsequent corrosion has been experienced on the Number 2 engine air intake duct on the inlet side forward of the acoustic panels.

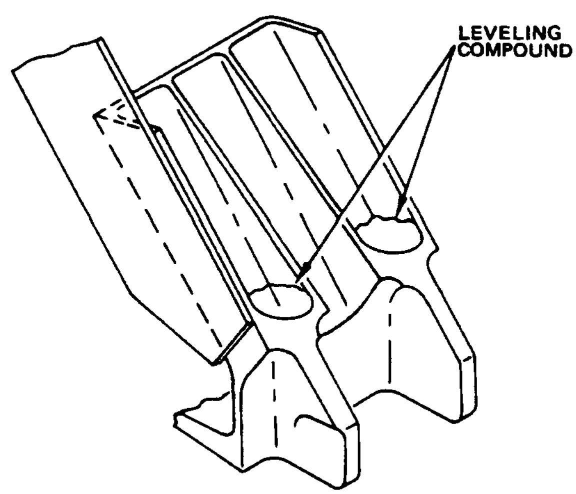
2. Corrosion Prevention

A. Inspect the inside duct surface on all engine inlet ducts periodically to ensure that the surface finish has not been damaged. Restore any damaged finish at the first available opportunity Structural Repair Manual.

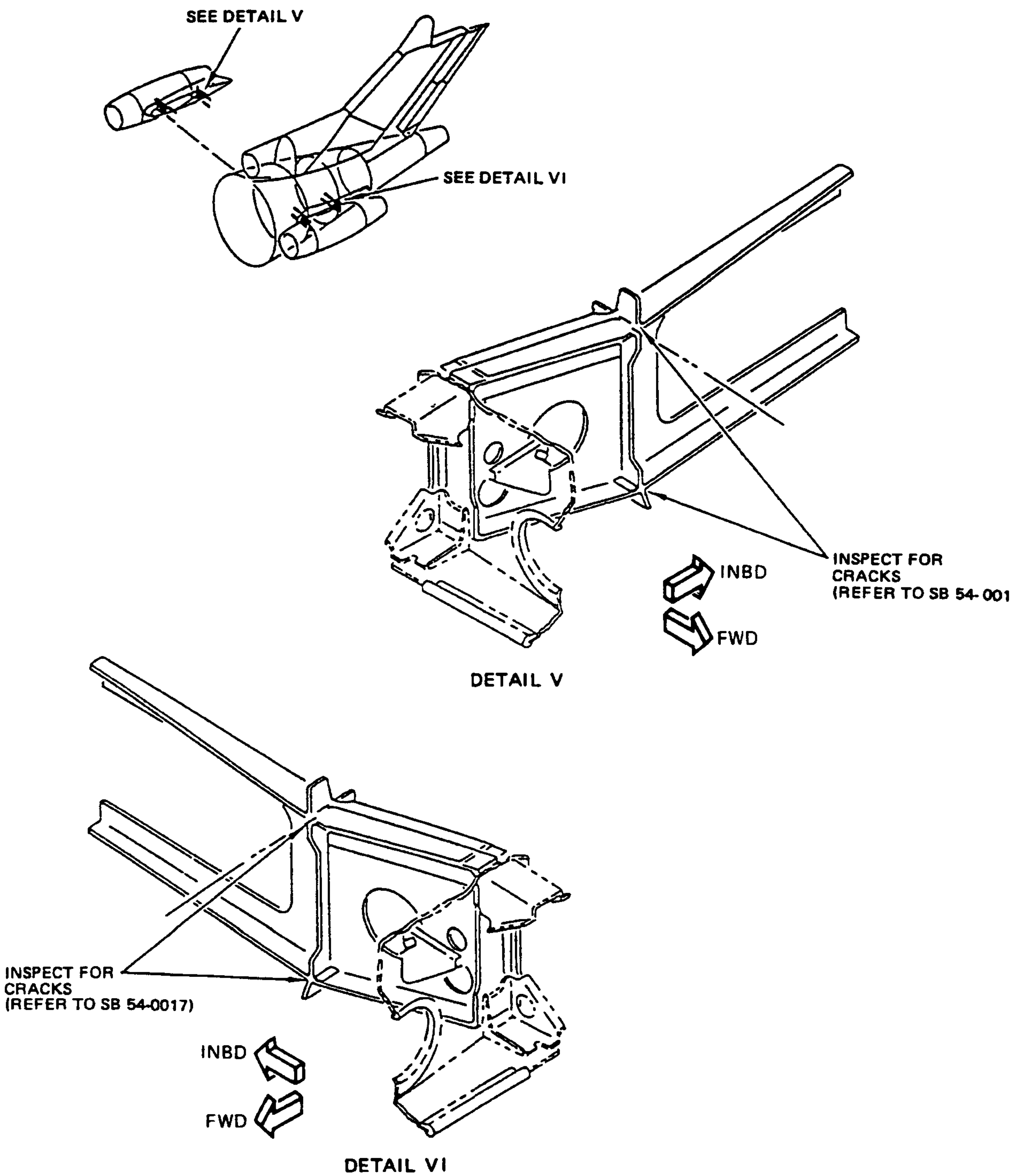


Forward and Aft Engine Mounts
Figure 1 (Sheet 1)





Forward and Aft Engine Mounts
Figure 1 (Sheet 2)



Forward and Aft Engine Mount
Figure 1 (Sheet 3)

1. General

A. Corrosion has been found on some airplanes at forward and aft engine mounts.

B. Corrosion has been found on some rear vibrator isolator assembly mount brackets.

C. Cracks have been found on the aft engine mount support fittings. Cracks were in the inboard and outboard of the body skin, in the upper and lower flanges as well as in the web. On one fitting, the crack badly damaged the upper horizontal flange and continued down the web into the lower horizontal flange. The crack started at the two fastener holes in the upper flange and continued through tide flange as a result of stress corrosion and fatigue.

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 of course at overhaul. The opportunity to carry out additional inspections arises at any time 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 at this time.

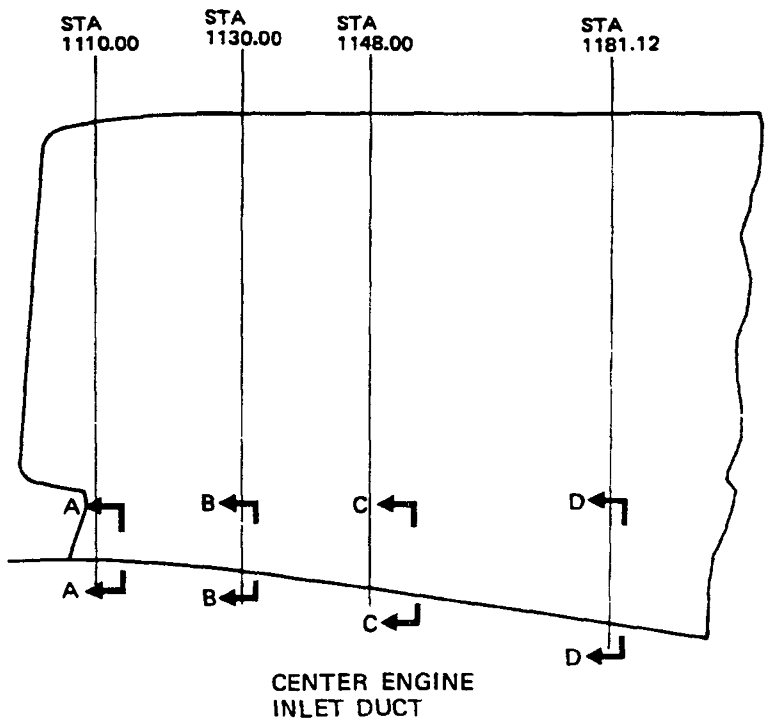
B. The various components of the engine mounts should be inspected for signs of corrosion and for damaged finish. Damaged finish should be restored to prevent the initiation of corrosion.

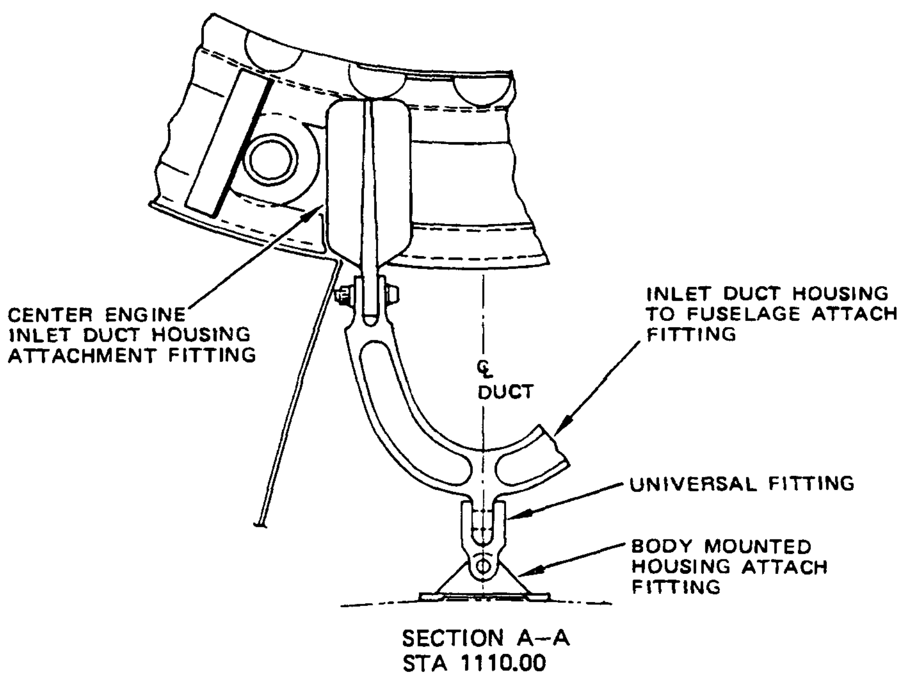
C. The cone bolts must be coated with Ease-Off 990 antiseize compound prior to engine installation. Failure to use antiseize compound can result in corrosion and an ultimate stress corrosion failure.

D. A production change starting at cum line number 1678, adds leveling compound to the center engine mount bracket in order to eliminate a moisture trap which may cause corrosion.

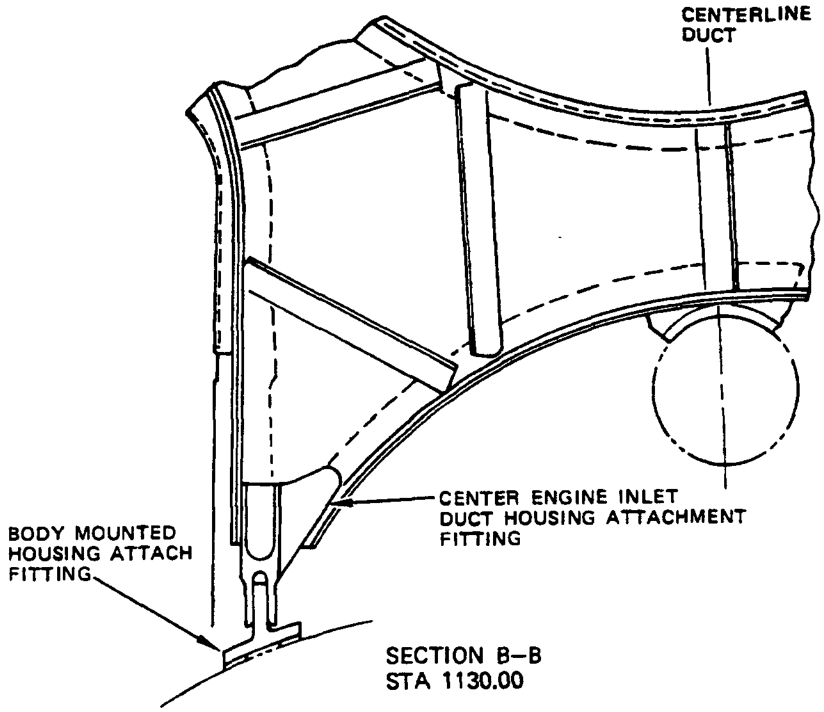
E. If corrosion is discovered, refer to Structural Repair Manual.

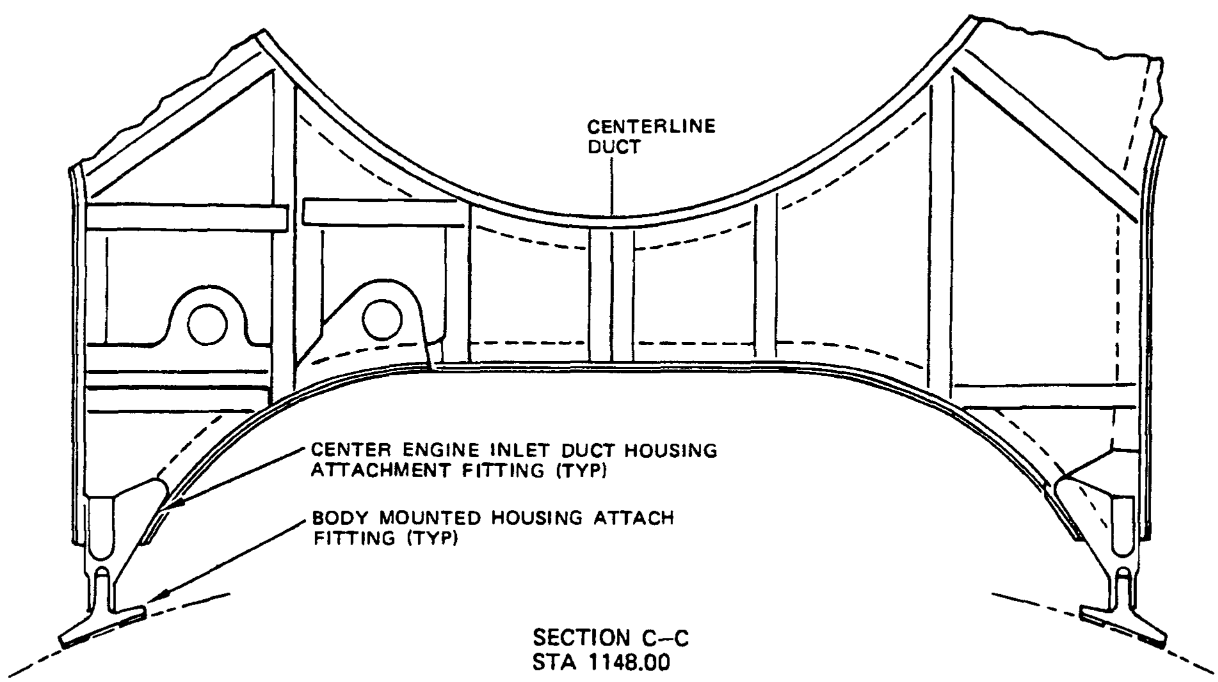
F. SB 54-0017 gives an inspection procedure on the engines No. 1 and 3 aft mount support fitting. Inspection with this service bulletin can increase the reliability of the aft engine mount support fitting.



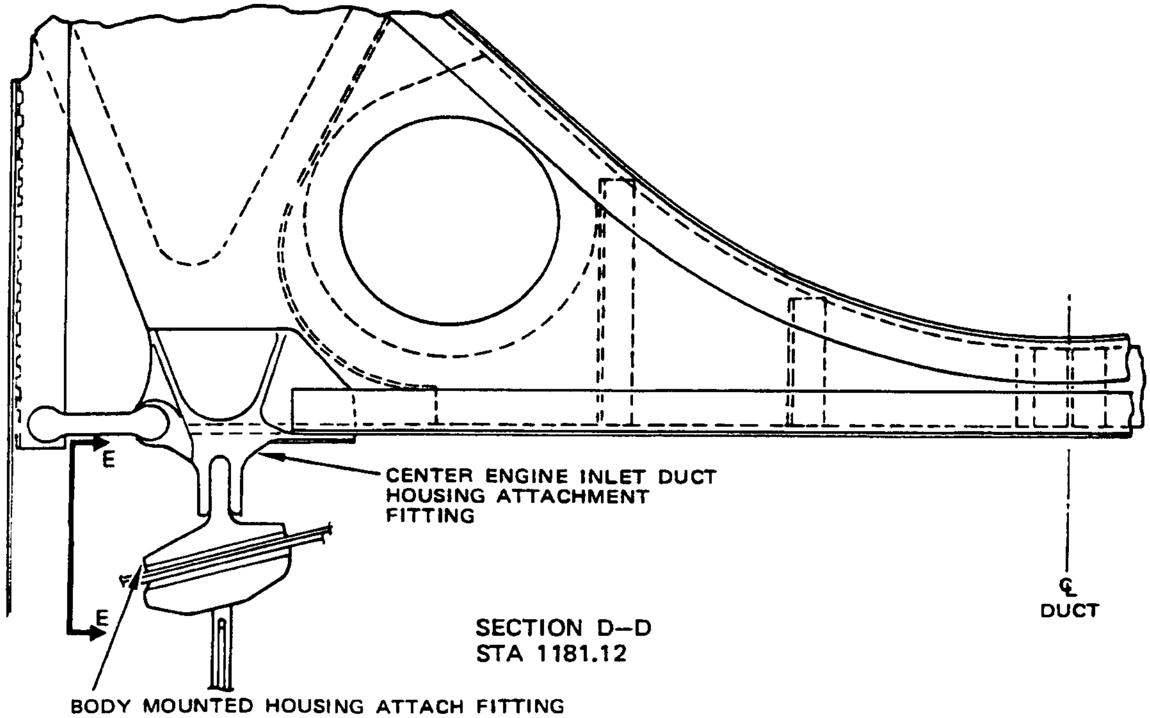


Center Engine Inlet Duct Housing Attach Fittings
Figure 2 (Sheet 1)

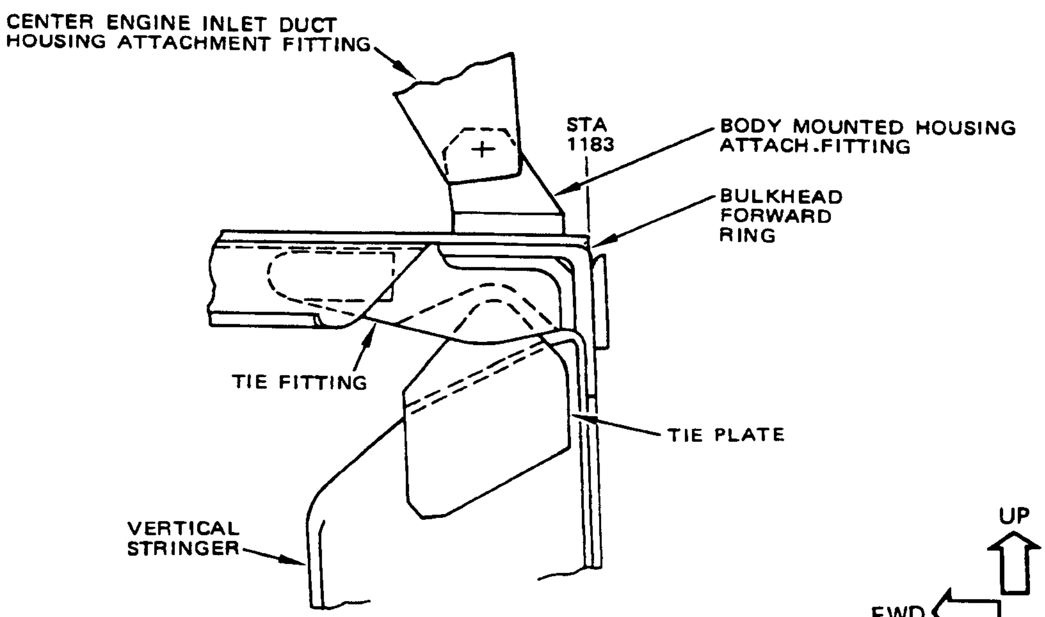




Center Engine Inlet Duct Housing Attach Fittings
Figure 2 (Sheet 2)



SECTION D–D
STA 1181.12



SECTION E–E

Center Engine Inlet Duct Housing Attach Fittings
Figure 2 (Sheet 3)

1. General

A. Stress corrosion cracking has been reported in the center engine inlet duct housing attachment fittings at STA 1110, STA 1130, STA 1148 and STA 1181. Stress corrosion cracking occurred in fittings made from 7079 material. Material changes were made on airplanes from cum line number 782 and can be installed retroactively by incorporating SB 54-11.

B. Stress corrosion cracking has been reported in the body mounted center engine inlet duct housing attach fittings at STA 1110, STA 1130 and STA 1148. Stress corrosion cracking occurred in fittings made from 7079 material. Material changes in the fittings at STA 1130 and STA 1148 were made on airplanes from cum line number 821. Material changes were made in the fittings at STA 1110 on airplanes from cum line number 848. Material changes to the fittings can be made retroactively by incorporating SB 53-139.

C. Stress corrosion cracking may occur in the 7079 material tie fittings which are part of the body mounted center engine inlet duct housing attach fitting installation at STA 1183. Material changes were made in the tie fittings on airplanes from cum line number 886 and can be made retroactively by incorporating SB 53-139.

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 early stages of corrosion.

B. Apply water displacing corrosion inhibiting compound to the center engine inlet duct housing attachment fittings at STA 1110, STA 1130, STA 1148 and STA 1181. SB 54-11 provides inspection and replacement procedures for airplanes with fittings made from 7079 material.

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

C. Apply corrosion inhibiting compound to the body mounted center engine inlet duct housing attach fittings at STA 1110, STA 1130 and STA 1148. SB 53-139 provides inspection and replacement procedures for airplanes with fittings made from 7079 material.

D. Apply corrosion inhibiting compound to the tie fittings at STA 1183 which are part of the body mounted center engine inlet duct housing attach fitting installation. SB 53-139 provides inspection and replacement procedures for airplanes with fittings made from 7079 material.

E. If fittings are found cracked or excessively worn, replace according to procedures in the applicable service bulletin.

CHAPTER

55

STABILIZERS

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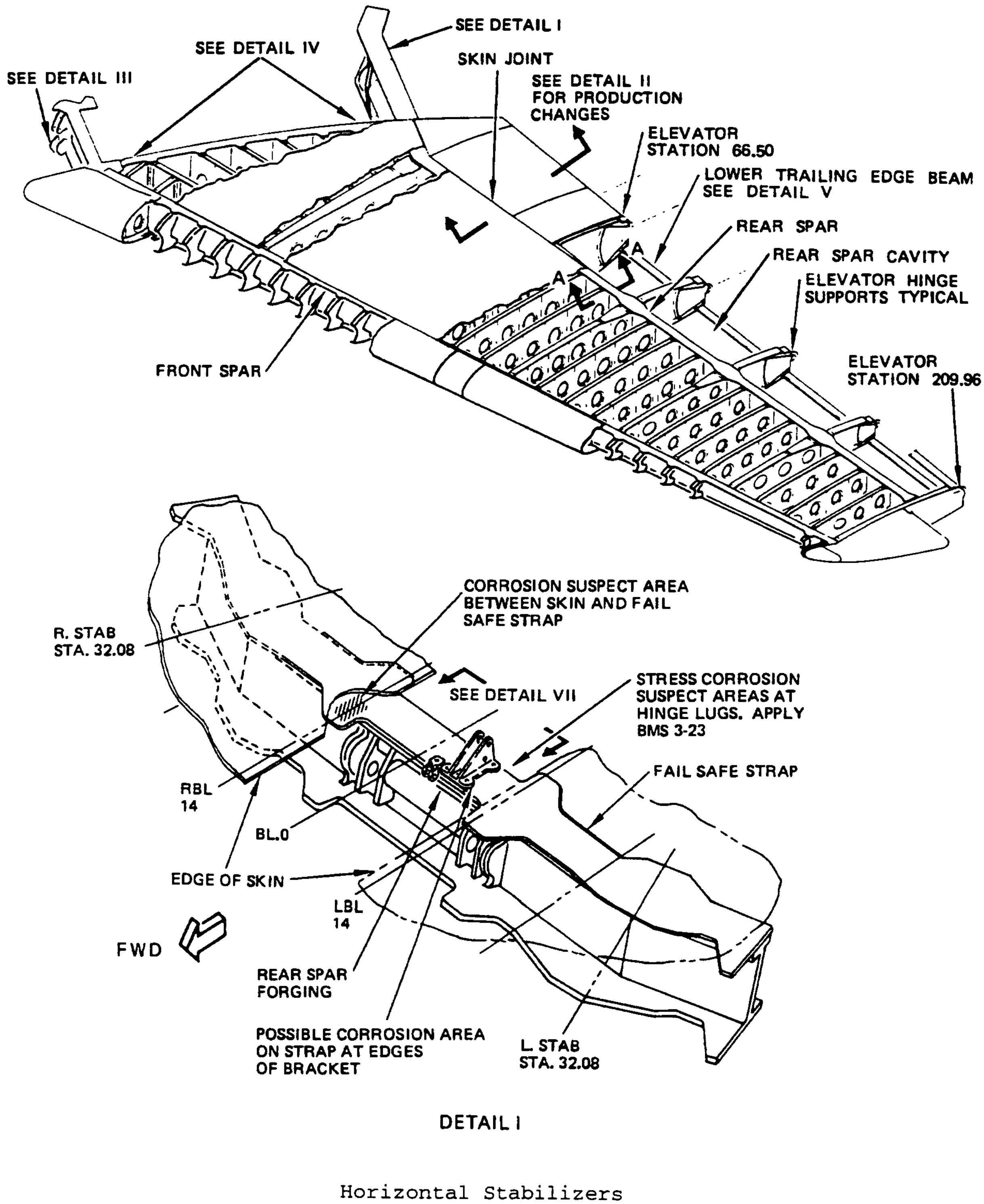
STABILIZERS

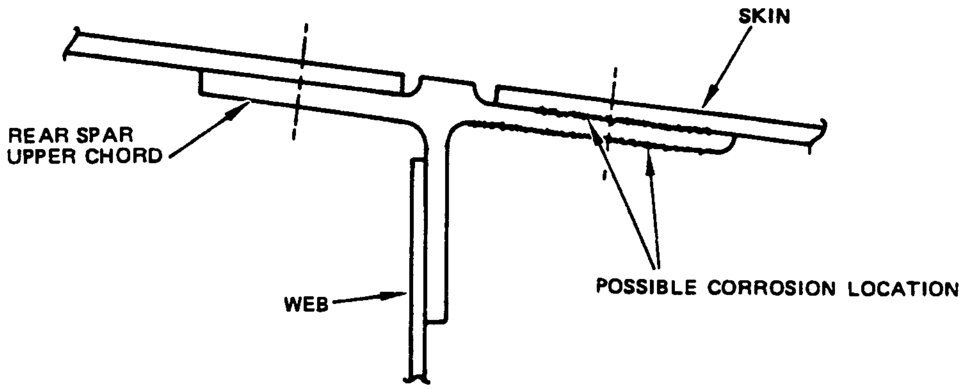
AREA	PROBLEM	INDEX PREVENTON VOLUME 2	TERMINATING ACTION (IF ANY)
Horizontal Stabilizer	Corrosion on rear spar and Filiform corrosion on inspar skin	55-10-27 Fig. 1	
	Stress corrosion cracking of center section rear spar fitting		
	Stress corrosion cracking of elevator hinge supports		
	Stress corrosion cracking of lugs on center section front spar		
	Stress corrosion cracking on jackscrew support arm and jackscrew gimbal support fitting		
	Stress corrosion cracking in chords of horizontal stabilizer inboard closure rib		
	Corrosion of rear spar, rear spar lower chord, upper chord, forward upper failsafe angle	55-10-27 Fig. 1	SL 55-7
	Stress corrosion cracks on upper and lower chords of inboard closure rib Corrosion on trailing edge beam		SB 55-81
	Corrosion on outer hinge pins		SB 55A59, SB 55-86
Elevator	Corrosion on skin and balance panels	55-20-27 Fig. 1	
	Stress corrosion cracking of actuator fitting		SB 55-53
Vertical Stabilizer	Corrosion on skin, rear spar and attach fittings	55-30-27 Fig. 1	
	Stress corrosion cracking of lower front spar forgings	55-30-27 Fig. 1	SB 55-48

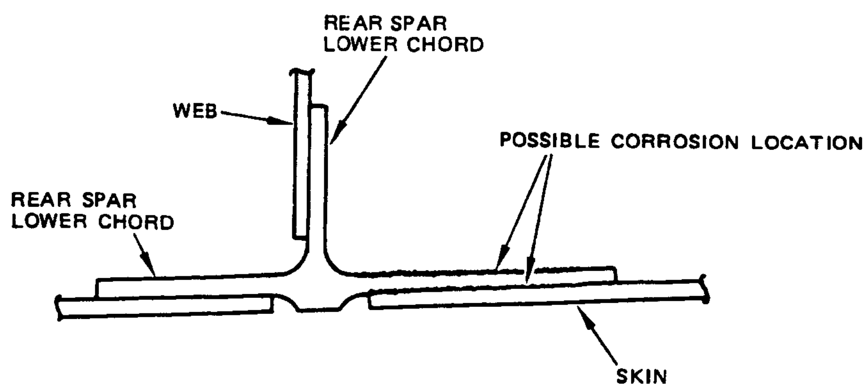
AREA	PROBLEM	INDEX PREVENTON VOLUME 2	TERMINATING ACTION (IF ANY)
	Stress corrosion cracking of jackscrew shear tie fittings		SB 55-64
	Corrosion on tension tie rib lugs and clevises		SB 55-71
	Stress corrosion on upper closure rib fittings		SB 55-56
	Stress corrosion on front spar upper terminal fittings		SB 55-60
	Stress corrosion cracks on upper and lower chords of inboard closure rib		SB 55-81
	Stress corrosion cracks on rudder thrust hinge ribs		SB 55-68
	Stress corrosion cracks on clevis lugs of rudder tab control rod support fitting		SB 55-51
	Stress corrosion cracks in stringers at fastener attachments to inspar rib reported		SB 55-75
	Corrosion of the terminal fittings in the bulkhead at BS 1342.4.	55-30-27 Fig. 1	
Rudder	Corrosion on spars and skin	55-40-27 Fig. 1	
	Corrosion on rudder tab bays		SB 55-25
	Stress corrosion of rudder center hinge support fittings		SB 55-500
	Stress corrosion of upper and lower rudder tab actuating rod support fitting		SB 55-49

SPECIFIC CORROSION PROBLEMS - STABILIZERS
Figure 1



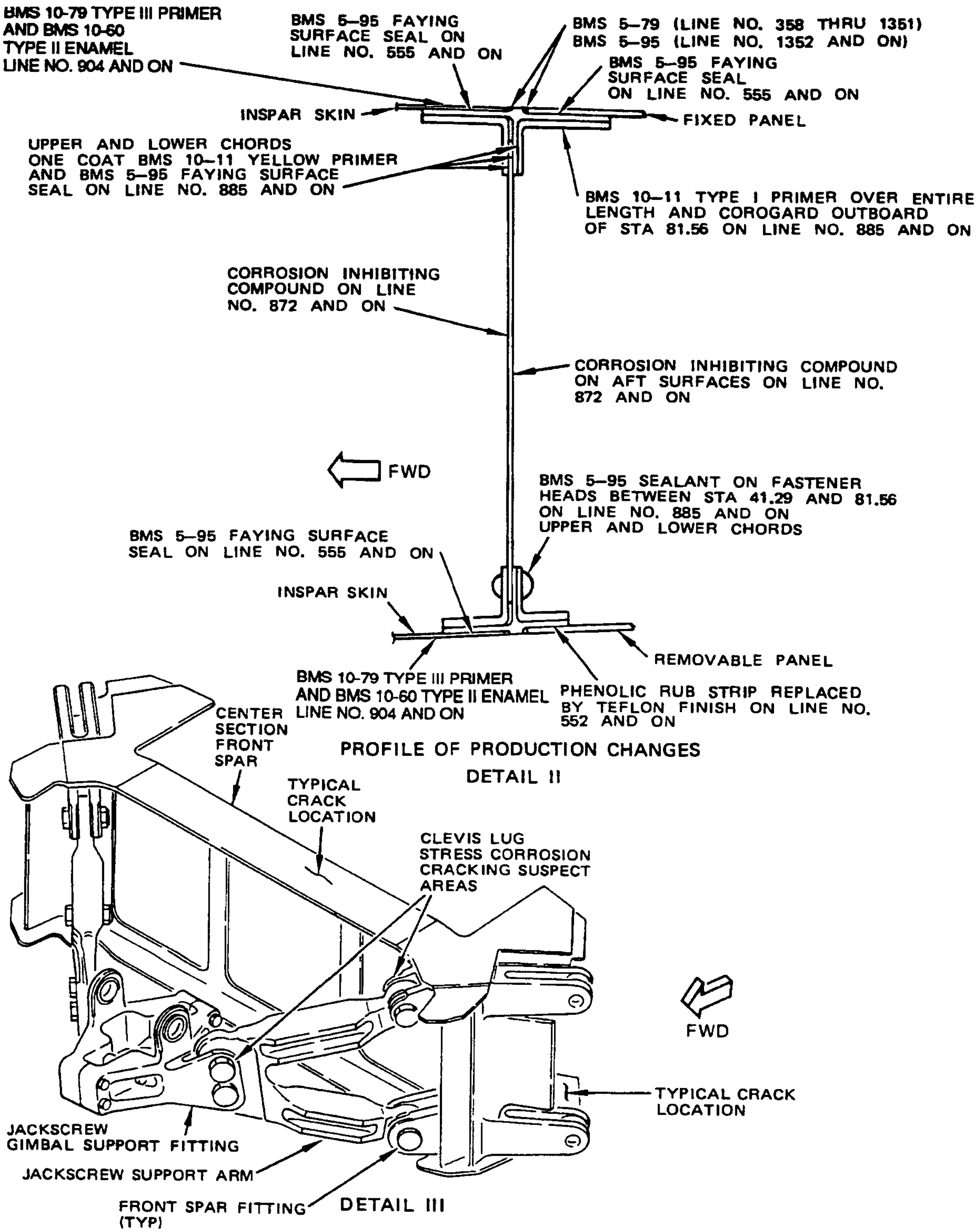
Horizontal Stabilizers
Figure 1 (Sheet 1)



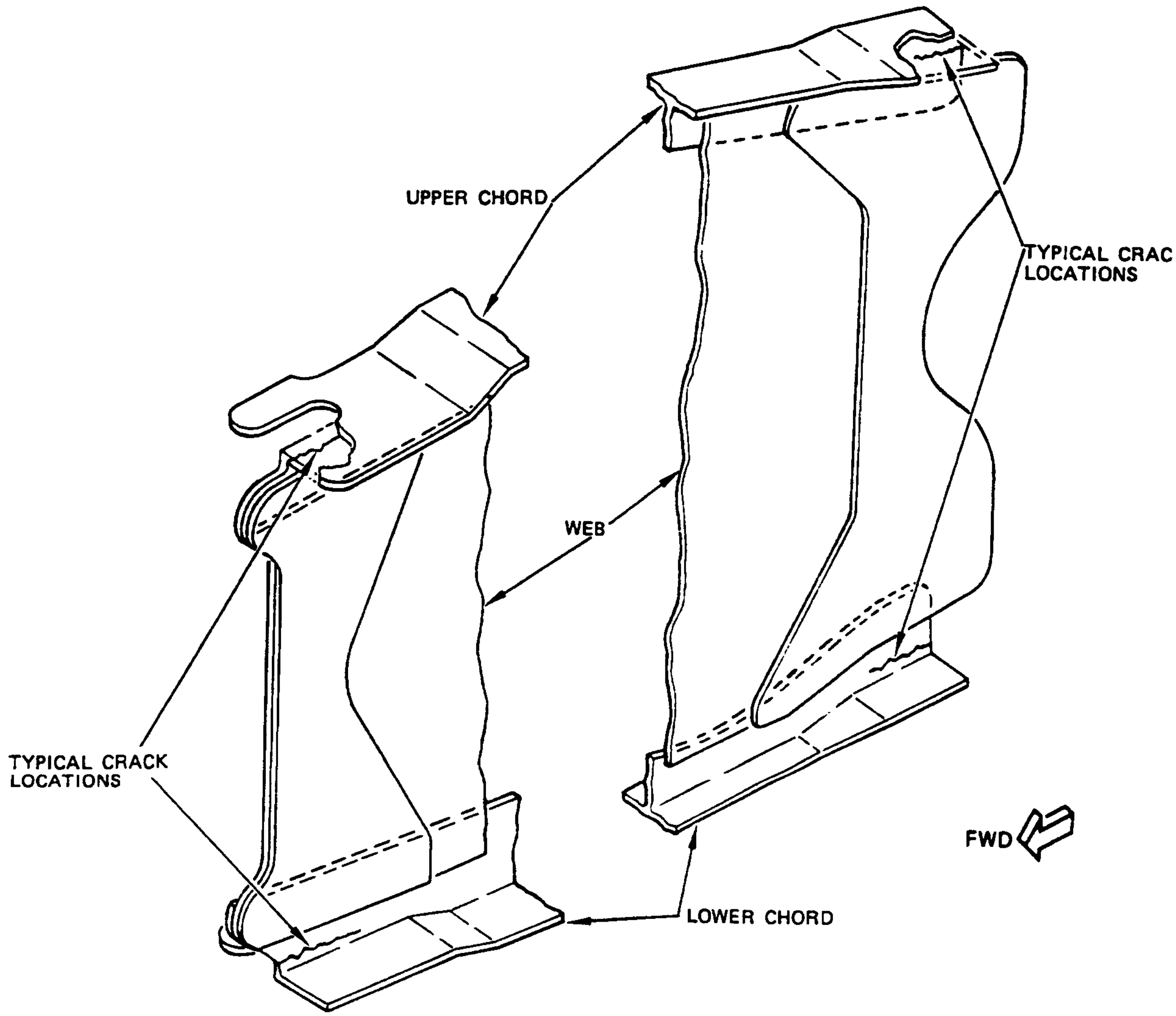


SECTION A-A

Horizontal Stabilizer
Figure 1 (Sheet 2)

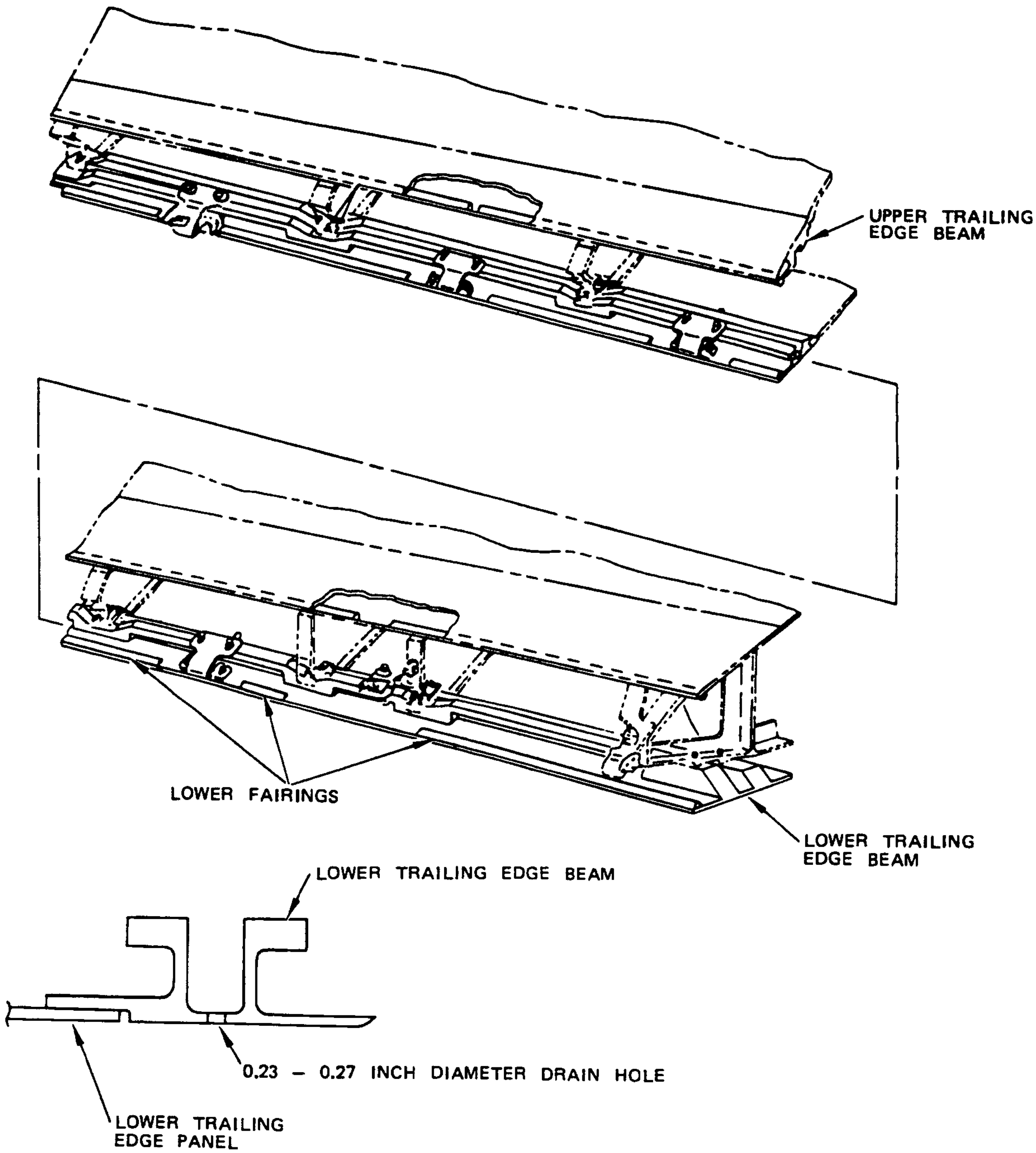


Horizontal Stabilizer
Figure 1 (Sheet 3)



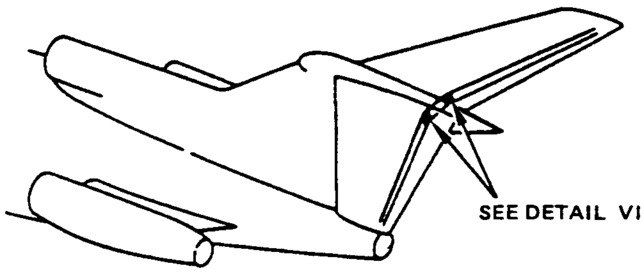
HORIZONTAL STABILIZER INBOARD CLOSURE RIB
DETAIL IV

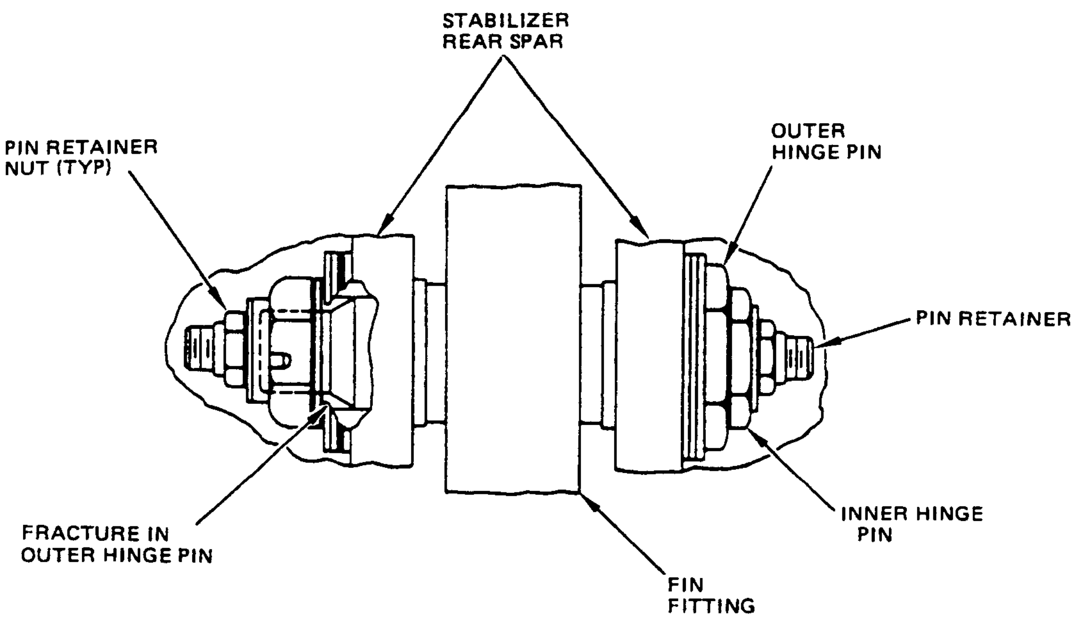
Horizontal Stabilizer
Figure 1 (Sheet 4)



DETAIL V

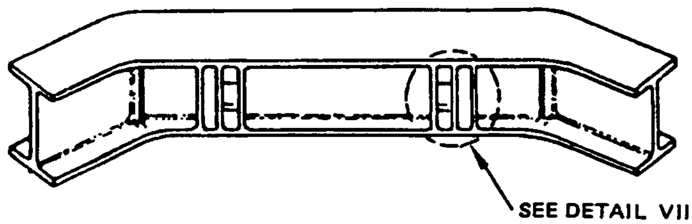
Horizontal Stabilizer
Figure 1 (Sheet 5)



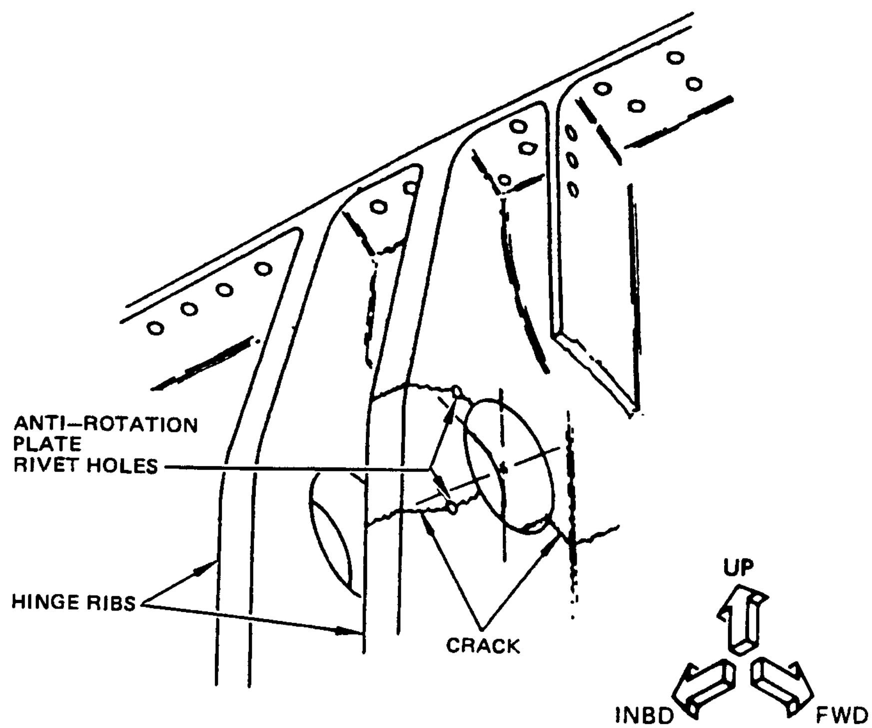


DETAIL VI

Horizontal Stabilizer
Figure 1 (Sheet 6)



DETAIL VII



DETAIL VIII

Horizontal Stabilizer
Figure 1 (Sheet 7)

1. General

A. Corrosion has been encountered on the horizontal stabilizer rear spar and filiform corrosion has occurred on the inspar skin. Production improvements on line number 906 and on include wet installation of non aluminum fasteners using primer or sealant and an improved finish on the inspar skin, using Alodine 1200, BMS 10-79 epoxy primer and BMS 10-60, type Il polyurethane enamel. See detail I1 for a profile of production changes.

B. Reports of stress corrosion cracking of the horizontal stabilizer center section rear spar fitting have been received. Cracks have occurred in the flanges and in the hinge lugs on the aft side of the rear spar fitting. The 7079-T6 forging was replaced by 7075-T73 material on line number 642 and on. Further production changes on line number 1352 and on include the shot-peening; of the rear spar lower chord and the forward and aft lower fail safe angles. Faying surface seals and tile application of BMS 10-11 type I primer after assembly were initiated.

C. Evidence of corrosion has also been reported on the center section rear spar fail safe strap at the edge of the stabilizer upper skin near BL 14. Production changes on line number 1352 and on included the addition of faying surface seal and the application of BMS 10-11 type 1 primer after assembly of the upper and lower fail safe straps except for the outboard 24 inches of the upper fail safe strap raised section.

D. Stress corrosion cracking of the clevis lugs on the horizontal stabilizer center section fittings has been reported. The fittings attach the stabilizer to the gimbal support fitting. The 7079-T6 front spar fitting was replaced with a 7075-T73 fitting on line number 875 and on.

E. The jackscrew support arias are susceptible to stress corrosion particularly around the attach lugs. Material changes were made to the jackscrew support arm on airplanes line number 890 and on. SB 55-A73 provides inspection and preventive maintenance procedures for airplanes thru line number 889.

F. Stress corrosion cracking has been experienced in the jackscrew gimbal support fitting around the clevis lugs. The 7079-T6 aluminum alloy fitting was replaced with 7075-T73 material on line number 885 and on. SB 55-A73 provides inspection and preventive maintenance procedures for airplanes thru line number 884.

G. Stress corrosion cracking has been experienced on the elevator hinge supports. The 7079-T6 forging has been replaced by 7075-T73 material on line number 890 and on to minimize stress corrosion susceptibility.

H. Stress corrosion cracking has been reported in the upper and lower chords of the horizontal stabilizer inboard closure rib (left and right sides of the airplane). The cracks have originated at either the forward or aft end of the chord. At line number 1480, PRR 24361 replaced the 7075-T6 aluminum chords were replaced with 7075-T73 chords. This change can be incorporated on other airplanes with SB 55-81.

I. Corrosion on the upper and lower chords, and the tailgate angles of the rear spar has been reported. The corrosion was on the upper chord between the upper inspar skin and upper trailing edge panels. Corrosion has also occurred on the faying surface of the chords and skins, and faying surfaces of the chords and forward and aft failsafe angles. Lower chord corrosion has been reported in the radius between the land (raised area) and the aft flange lower surface. Service letter 55-7 provides corrosion inspection instructions and splice replacement information for the rear spar, rear spar lower chord, upper chord, forward upper and forward failsafe angle.

J. Stress corrosion cracks have been reported in the horizontal stabilizer center section front spar fitting. The cracks were located in the aft horizontal flange of the upper chord and in the section of the lower chord where the center section closure rib attaches.

K. Corrosion on the upper and lower trailing edge beams has been reported. Faying surface sealing was added between the trailing edge beams and nylon fairings, and between the upper trailing edge beam and trailing edge panels on airplane line number 1537 and on.

L. Stress corrosion cracks have been reported in the horizontal stabilizer outer hinge pins. SB 55A59 tells how to repair the pins and install a pin retainer. This is also the subject of Airworthiness Directive 74-10-08, Amendment 39-2073. Also, SB 55-86 gives more data about this area.

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 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. Prevention Treatment

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(1) Regularly examine the stabilizer for damaged finish and evidence of corrosion. See that lower trailing edge beam drain holes are clear. Six 0.23-0.27 diameter drain holes should be located along the center of the horizontal stabilizer lower trailing edge beam between approximately elevator stations 76 and 206. If drain holes are not installed, drill any omitted holes per Service Letter 55-3.

(2) Apply corrosion inhibitor annually to all surfaces of rear spar outboard of the center section rear spar fitting, including elevator hinge support ribs and hinge fittings except in elevator balance panel bays. In elevator balance panel bay areas, apply to face of rear spar only (overspray permitted on sidewalls a maximum of 2.0 inches aft of rear spar).

(3) Apply corrosion inhibitor annually to the fastener heads and skin joint on the upper and lower surfaces at the rear spar.

(4) Examine all accessible areas of the center section front spar fitting, particularly in the area surrounding the clevis lugs, for evidences of corrosion and cracking. If no corrosion is evident, apply compound to all accessible areas of the fitting. Inspection and preventive maintenance procedures for the 7079-T6 fittings (airplanes thru line 874) are detailed in SB 55-A69.

(5) Examine the jackscrew support arms which connect to the jackscrew gimbal support fitting and to the stabilizer for evidence of corrosion or cracking. If no corrosion is evident, apply BMS 3-23 or equivalent compound to all accessible areas of the jackscrew support arms. Inspection and preventive maintenance procedures for airplanes thru line number 884 with 7079-T6 arms are detailed in SB 55-A73.

(6) Examine the jackscrew gimbal support fitting for evidence of corrosion and cracking particularly in the area surrounding the clevis lugs which attach to the jackscrew support arms. If no corrosion is evident, apply BMS 3-23 or equivalent compound to all accessible areas of the jackscrew gimbal support fitting. Inspection and preventive maintenance procedures for airplanes thru line number 889 with 7079-T6 fittings are detailed in SB 55-A73.

(7) Examine all accessible areas of the center section rear spar fitting, particularly in the area surrounding the hinge lugs for evidence of corrosion or cracking. If cracks are evident, refer to SB 55-62 for repair on airplane prior to line No. 641. Remove superficial corrosion from fail safe straps, apply Alodine 1200 and one coat of BMS 10-11, type 1 primer (Ref Volume 1, 20-50-00 and 20-60-00). Follow local application of primer with one coat of BMS 10-11, type 1 to entire upper and lower fail safe straps and rear spar center section fitting except do not apply primer to outboard 24 inches of upper fail safe strap raised section. Prior to application of new primer reactive old primer. After application of primer apply BMS 3-23 or equivalent compound to entire upper and lower fail safe straps and rear spar center section fitting.

(8) Every 2 years, remove the leading edge, and using a suitable extension tube, spray the forward side of the rear spar with BMS 3-23 or equivalent compound. Pay particular attention to the upper and lower spar chords.

(9) Examine upper and lower chords of horizontal stabilizer closure rib for evidence of corrosion or cracking. If cracks are evident, refer to SB 55-81 for repair on airplane prior to line No. 1479. See Detail IV for typical crack locations. If neither corrosion or cracking is evident, restore finish, if required, and apply BMS 3-23 or equivalent compound to all accessible areas of the upper and lower chords.

(10) Examine upper and lower trailing edge beams for evidence of corrosion.

D. 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.

E. Improved corrosion protection

(1) Some operators use BMS-26 corrosion inhibiting compound as a standard for corrosion control to replace BMS 3-23 compound.

(2) At line number 174, PRR 21781 applied BMS 10-11, type 1 primer and BMS 10-11, type 2 enamel to the exposed inspar skin and trailing edge skin panels on the upper surface of the horizontal stabilizer. This change was made available for earlier airplanes with SB 55-22. But at line number 904, the primer was changed to BMS 10-60, type III and the enamel was changed to BMS 10-60, type II for the upper skin, and this primer and enamel was added to the lower skin of the horizontal stabilizer. These latest changes can be incorporated on all earlier airplanes with SL 20-13 and 51-27.

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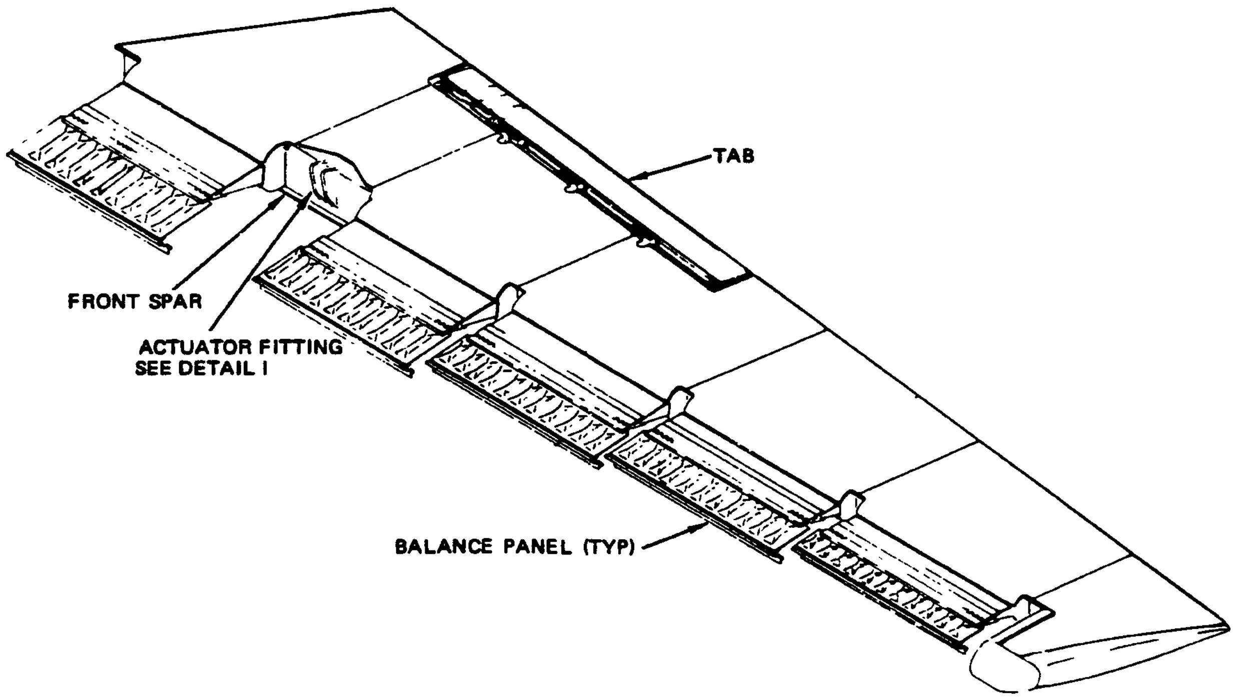

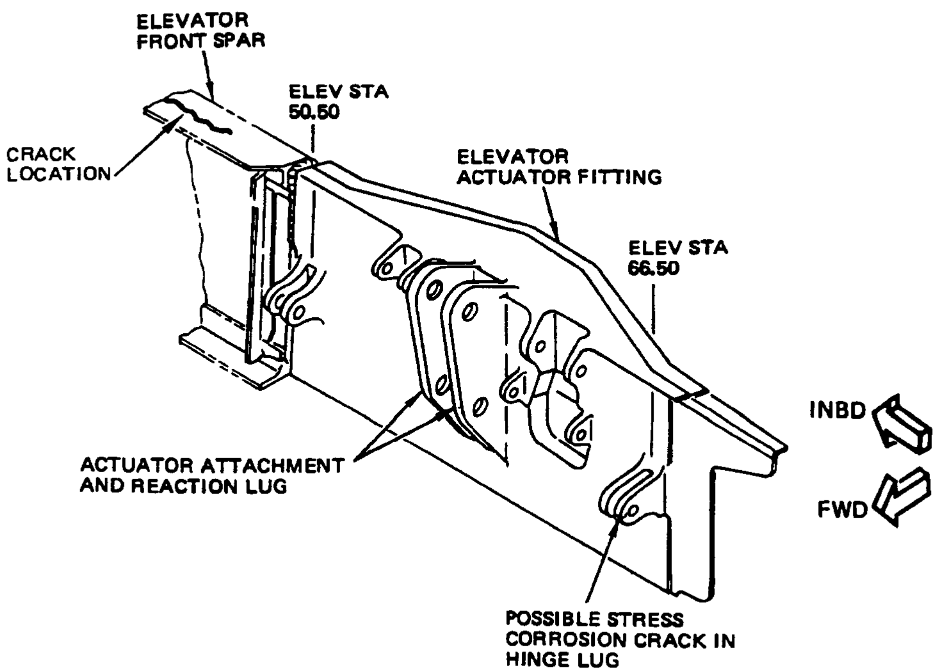

DETAIL I

Elevators
Figure 1 (Sheet 1)

1. General

A. Corrosion has been reported on the elevator balance panels and the elevator skin, especially in the region of the static dischargers. The silver-filled adhesive used to electrically bond the static dischargers has been replaced with BMS 5-79 sealant and electrically bonding with rivets with airplanes starting at line number 864.

B. Stress corrosion cracking of the hinge lug on the actuator fitting has been reported (Detail I). Material change of the actuator fitting has been incorporated in production at cum line number 854 for the left side and cum line number 858 for the right side.

C. Stress corrosion has been the cause of cracks in the upper inboard horizontal flange of three elevator actuator fittings (Detail I).

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) Apply water displacing corrosion inhibiting compound to exposed areas of the elevator spar, with particular attention to the attachment and hinge points, except on seals and seal wiping areas.

(2) SB 55-53 provides preventive modification procedures for stress corrosion cracking of the hinge lug on the actuator fitting.

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.

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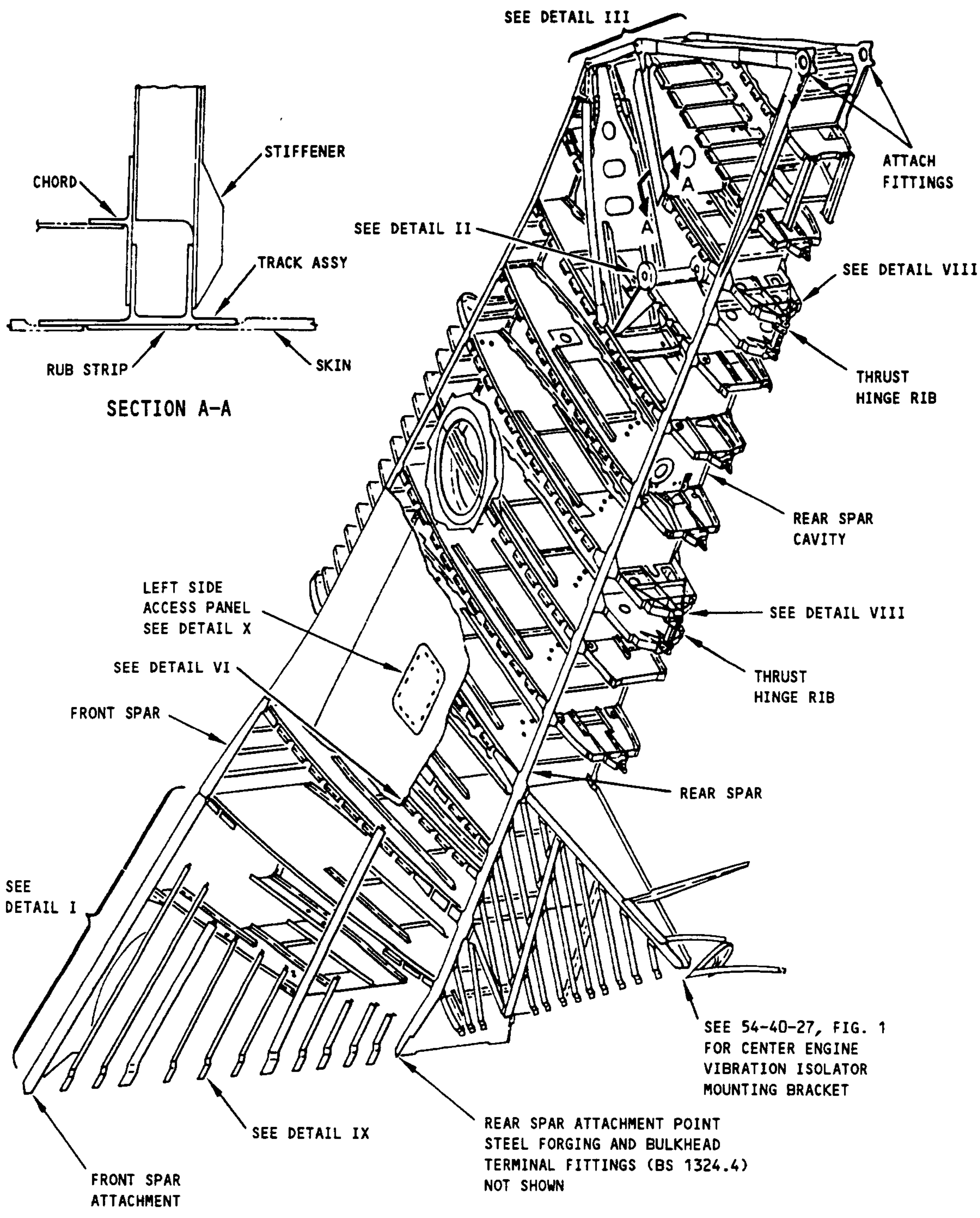
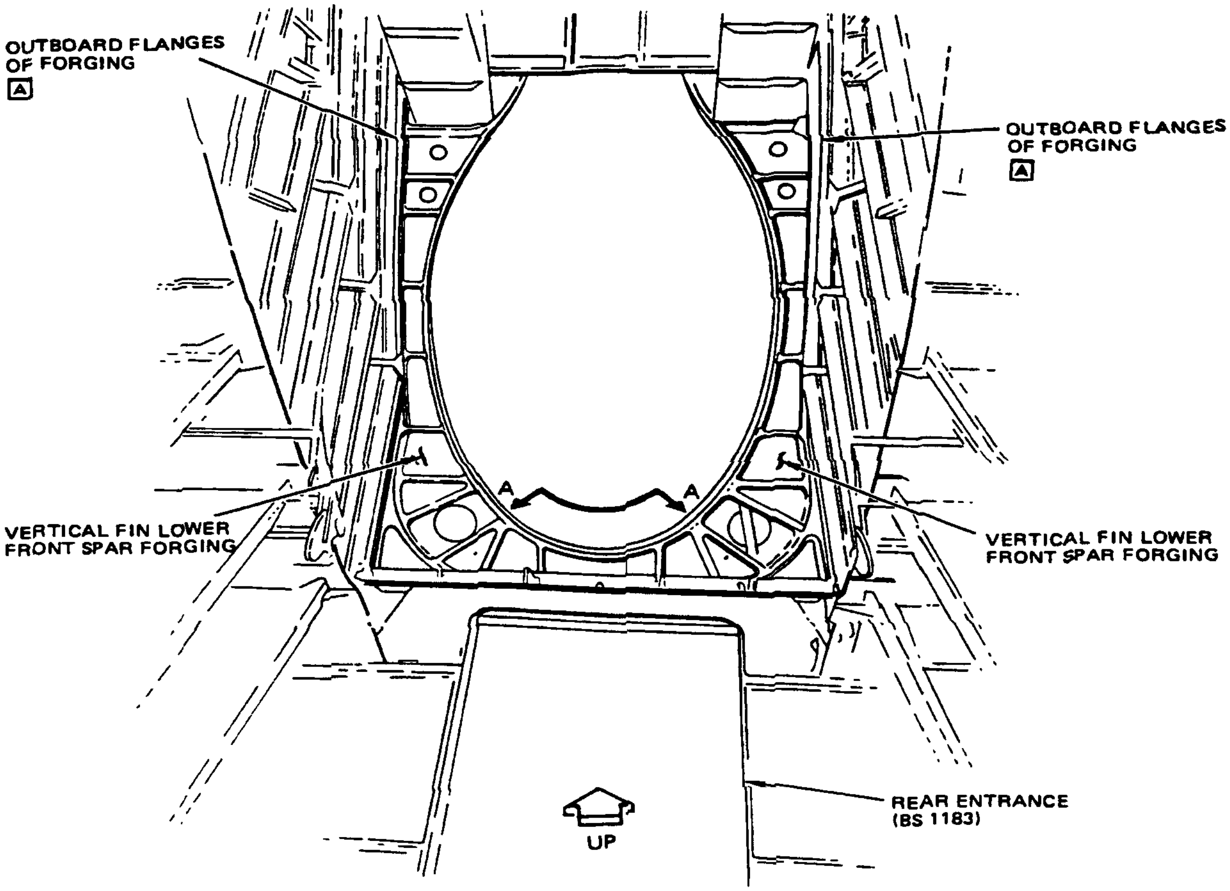


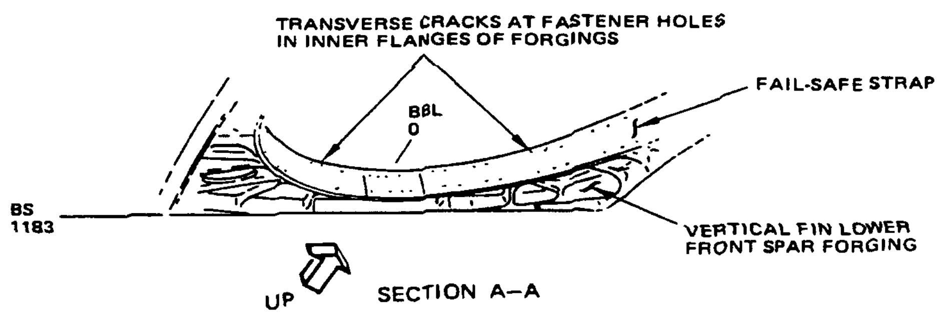
Vertical Stabilizer
Figure 1 (Sheet 1)



DETAIL I
REAR VIEW
LOWER FRONT SPAR

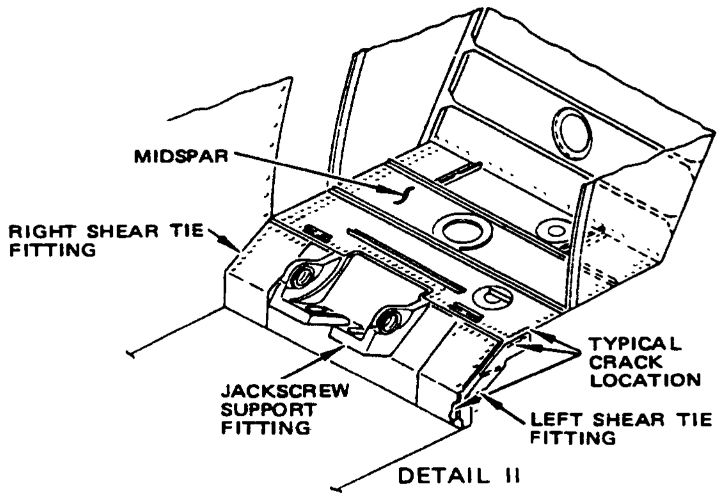
NOTES

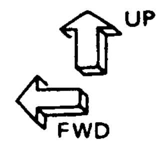
[A] NUMEROUS STRESS CORROSION CRACKS AT FORGING FASTENER HOLES COMMON TO FIN SKIN



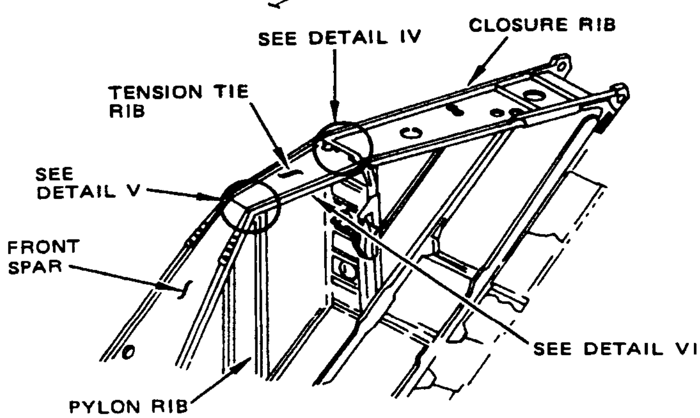
SECTION A-A

Vertical Stabilizer
Figure 1 (Sheet 2)

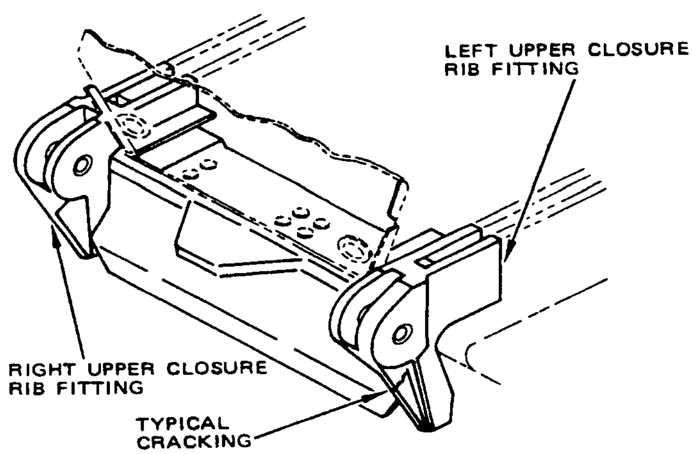




DETAIL II

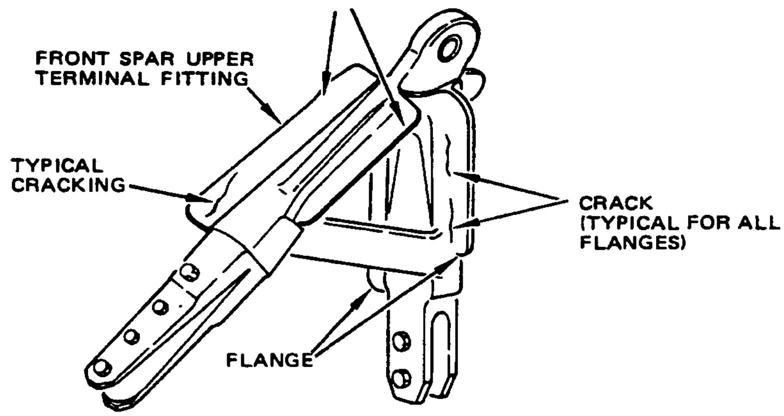


DETAIL III

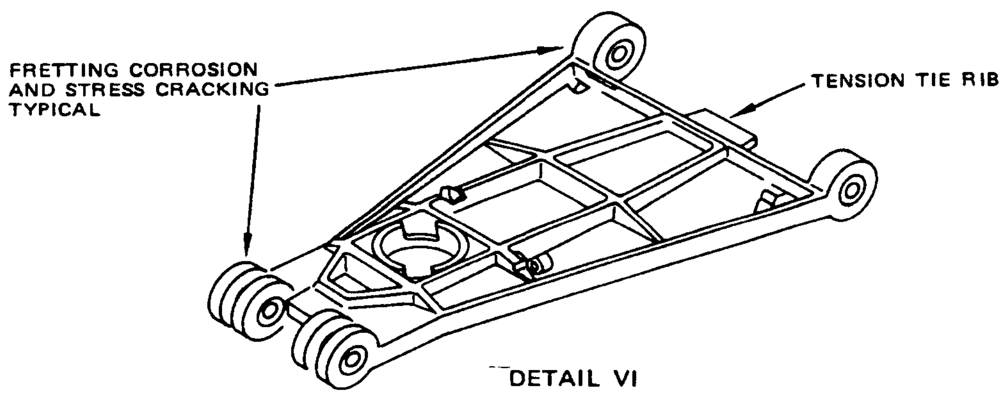


DETAIL IV
FITTINGS SHOWN ONLY

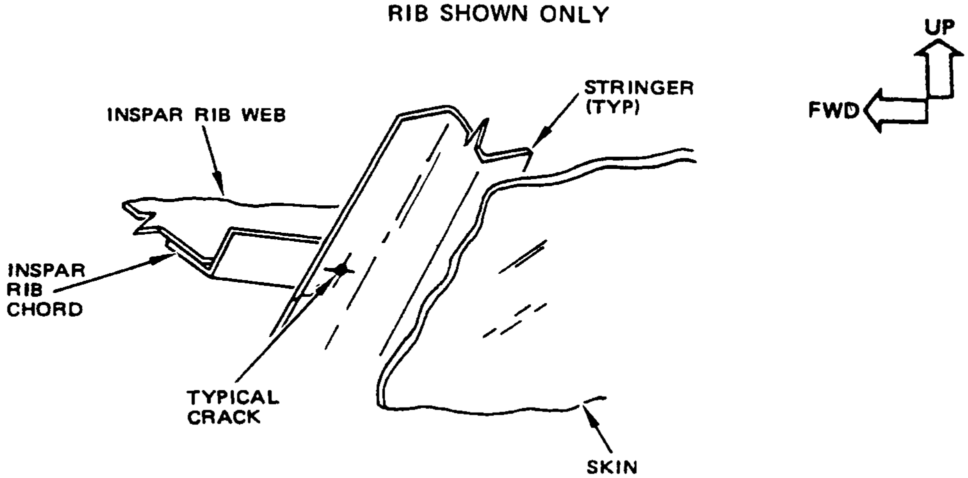
Vertical Stabilizer
Figure 1 (Sheet 3)



DETAIL V
LEFT SIDE SHOWN – RIGHT SIDE
OPPOSITE FITTING SHOWN ONLY

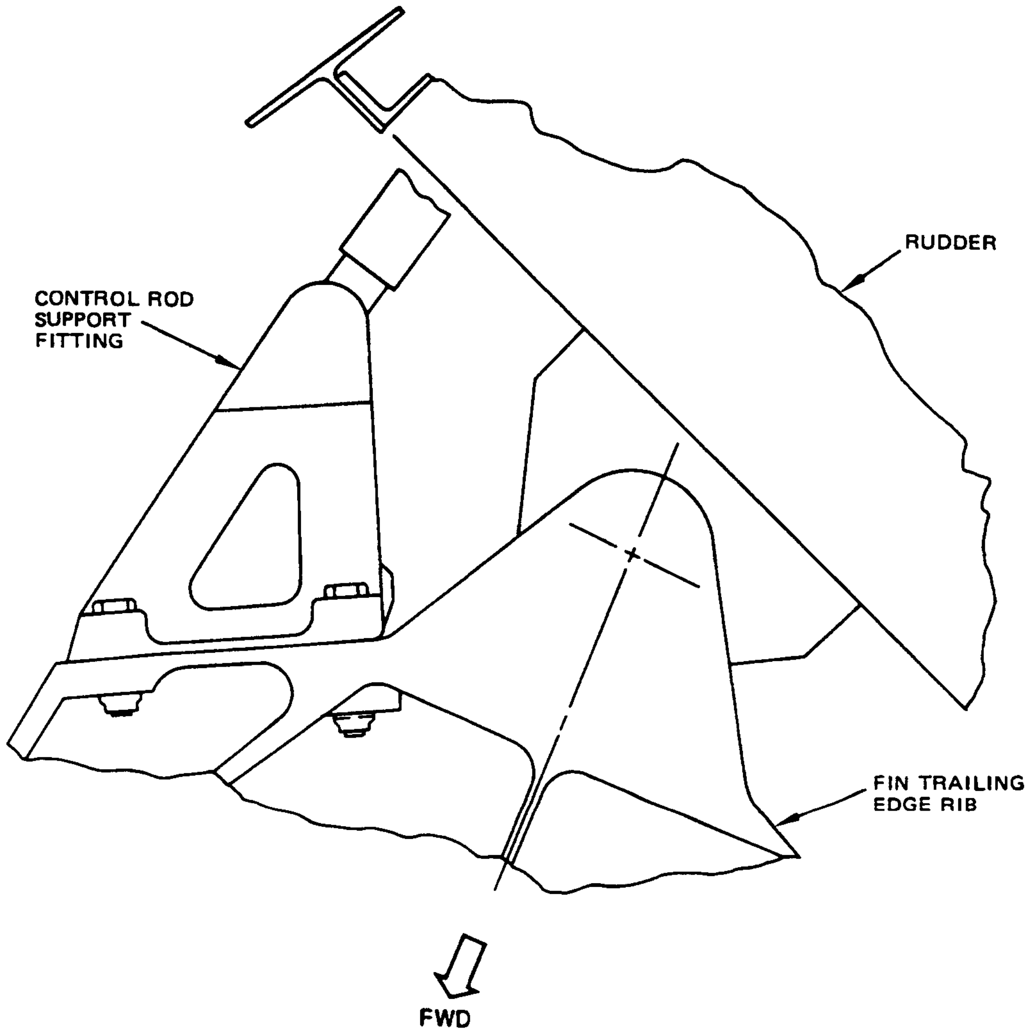


DETAIL VI
RIB SHOWN ONLY



DETAIL VII

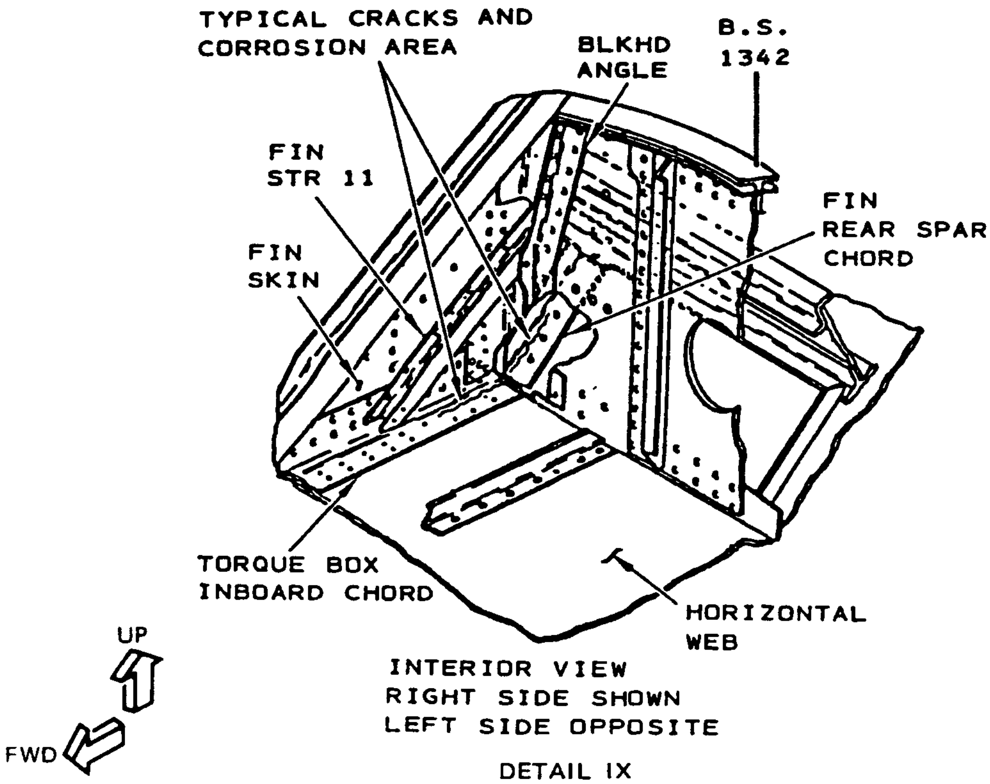
Vertical Stabilizer
Figure 1 (Sheet 4)



DETAIL VIII

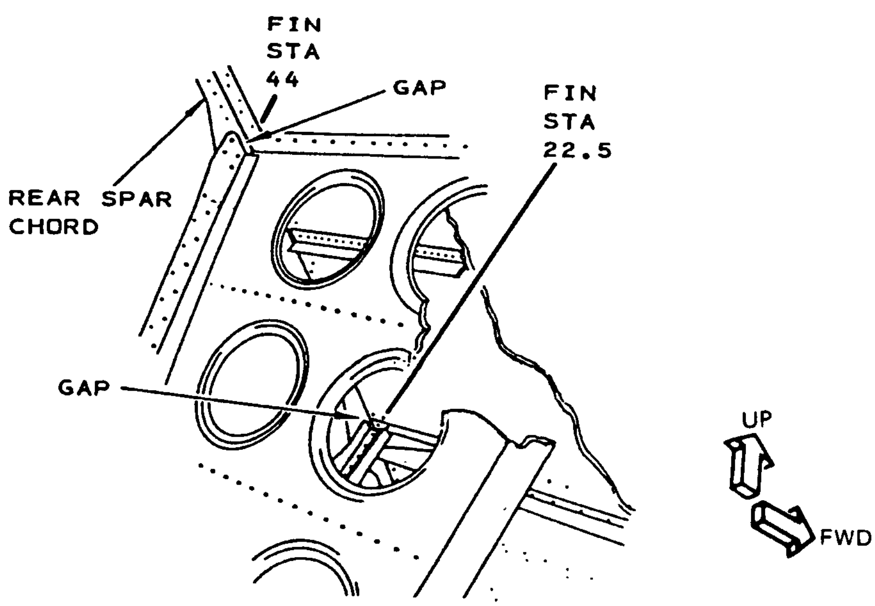
RUDDER TAB CONTROL ROD SUPPORT FITTING (TYPICAL UPPER AND LOWER)

Vertical Stabilizer
Figure 1 (Sheet 5)



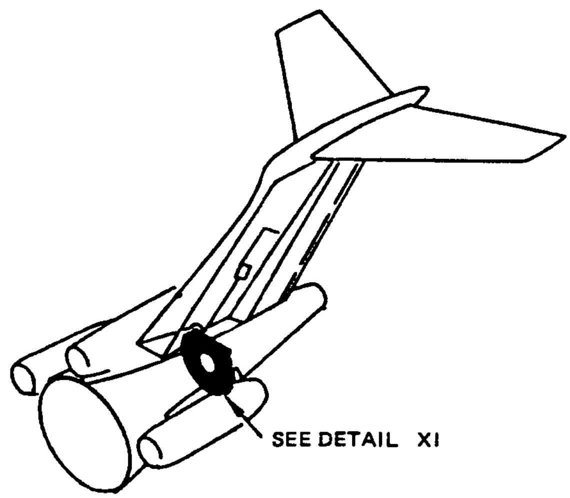
INTERIOR VIEW
RIGHT SIDE SHOWN
LEFT SIDE OPPOSITE

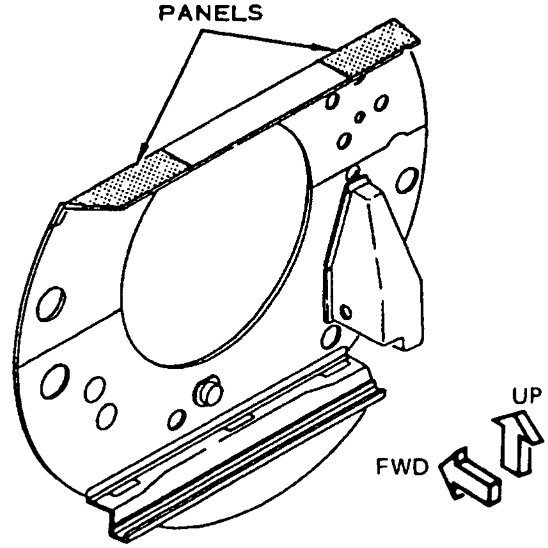
DETAIL IX



VIEW THRU ACCESS DOOR
ABOVE CENTER ENGINE
DETAIL X

Vertical Stabilizer
Figure 1 (Sheet 6)





DETAIL XI

Vertical Stabilizer
Figure 1 (Sheet 7)

1. General

A. Corrosion has been reported on the vertical stabilizer skin, on the rear spar and in the vicinity of the attach fittings.

B. Production improvements were introduced at line number 906 including the wet installation of non aluminum 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.

C. Stress corrosion cracks have been reported in the lower front spar forgings in the area of the fail-safe strap and on the outboard flanges of the forgings. Material change in the forging has been incorporated at cum line number 865.

D. Specific corrosion problems have been encountered with the steel forgings attaching the rear spar to the fuselage. This area is covered by fairing and is not readily accessible for walk around inspections. The corrosion problem is attributed to the accumulation of moisture. An improved protective finish (Sermetel W) is being provided at cum line 1242. In addition, leveling compounds are being added to pockets of the attach fitting and rear spar chord transition fittings to provide for drainage.

E. Corrosion at the nutplate locations for the access panel on the left side has been noted. The nutplates are installed with an aluminum filler and secured with blind rivets. Damage has occurred between the filler and frame.

F. Corrosion has been reported in the jackscrew support shear tie fittings made from 7079-T6 material. Cracks occurred in the horizontal flange, the vertical flange and the sloping flange of the fitting. Material change in the fittings had been incorporated from cum line number 889 and can be made retroactively by incorporating SB 55-64.

G. Fretting corrosion and stress corrosion cracking has been reported in the tension tie rib lugs and clevises. Corrosion is attributed to the 7079 material and the working of the clevis and lug joints. Ribs with reworked lugs and clevises have been incorporated from cum line number 1353 and can be modified retroactively by incorporating SB 55-71 (supersedes SB 55-63).

H. Stress corrosion cracking has been reported in the upper closure rib fittings made from 7079 material. Cracks are attributed to stress corrosion and incorrect shimming between fitting and structure. Material changes in the fittings has been incorporated from cum line number 866 and can be made retroactively by incorporating SB 55-56 (supersedes SB 55-31).

I. Stress corrosion cracking has been reported in the front spar under terminal fittings made from 7079-T6 material. Material changes in the fittings have been incorporated from line number 857 and can be made retroactively by incorporating SB 55-60.

J. Cracks have been reported in the stringers at fasteners which attach to the inspar rib chords. This is attributed to fatigue and stress corrosion. Production improvements were introduced at cum line number 1360. SB 55-75 provides inspection and preventive measures for those airplanes not modified in production.

K. Corrosion has been reported on the aluminum structure beneath the stainless steel rub strip on the fin around the stabilizer slot. For improved corrosion protection, production changes were made at cum line number 1591 to add BMS 10-11 Type I primer finish to the track assembly and to fay surface seal the surface below the rub strip.

L. Stress corrosion cracks have been reported in the rudder thrust hinge ribs. For improved protection, the 7079 material was replaced with 7075 material at cum line number 906 or by SB 55-68.

M. Stress corrosion cracks have been reported in the clevis lugs of the rudder tab control rod support fitting. Replacement of upper and lower 7079 fittings with 7075 material was incorporated into production at cum line number 908 or by SB 55-51.

N. Stress corrosion cracks have been reported in the fin front spar upper terminal fittings. Cracked fittings were repaired with repair plates.

O. Corrosion has been reported on the lower part of the fin rear spar terminal fitting at BS 1342. Chords cracked within specified limits or corroded may be repaired. Removal of center engine or installation of special access door is required for repairs. SB 55-76 provides instructions to gain access through center engine firewall.

P. Corrosion has been reported of the terminal fittings in the bulkhead at BS 1342.4. SB 55-0088 provides instructions for inspection, repair or replacement of the lower terminal fitting.

Q. 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 Part 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. Following cleaning of suspected areas, a thorough inspection as described in Part I, 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 SRM 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 Part 1, 20-60-00). The finish system should be restored at the first opportunity consistent with the maintenance system.

E. Prevention Treatment

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(1) Apply corrosion inhibiting compound to the lower front spar forgings with particular attention to areas where fasteners are installed. SB 55-48 provides for the installation of access holes if required. Incorporation of preventive modification portion of SB 55-48 on airplanes with 7079-T6 forgings will minimize stress corrosion problems in this area.

(2) Apply corrosion inhibiting compound to the rear spar attach fittings with particular attention to pockets in the forgings where moisture can accumulate.

(3) Remove left side access panel and apply corrosion inhibiting compound to faying surfaces at access panel nutplate locations.

(4) Apply corrosion inhibiting compound to horizontal, vertical, and sloping flanges of the jackscrew support fitting. SB 55-64 provides inspection and replacement procedures for airplanes with fittings made from 7079 material.

(5) Apply corrosion inhibiting compound to the lugs and clevises of the tension tie rib. Incorporation of SB 55-71 (supersedes SB 55-63) on applicable airplanes will minimize stress corrosion problems in this area.

(6) Apply corrosion inhibiting compound to the upper closure rib fittings at the aft end of the tension tie rib. SB 55-56 (supersedes SB 55-31) provides inspection, corrosion treatment and replacement procedures for airplanes with fittings made from 7079 material.

(7) Apply corrosion inhibiting compound to the front spar upper terminal fittings at the forward end of the tension tie rib. SB 55-60 provides inspection, corrosion treatment and replacement procedures for airplanes with fittings made from 7079 material.

(8) Incorporation of the preventive measures (stringer to rib chord gap check and reshimming) of SB 55-75 will minimize stress corrosion cracking in this area.

(9) SB 55-76 gives inspection, repair and modification procedures for the fin rear spar and torque box near BS 1342. SB 55-76 now recommends this procedure for all aging 727 airplanes.

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.

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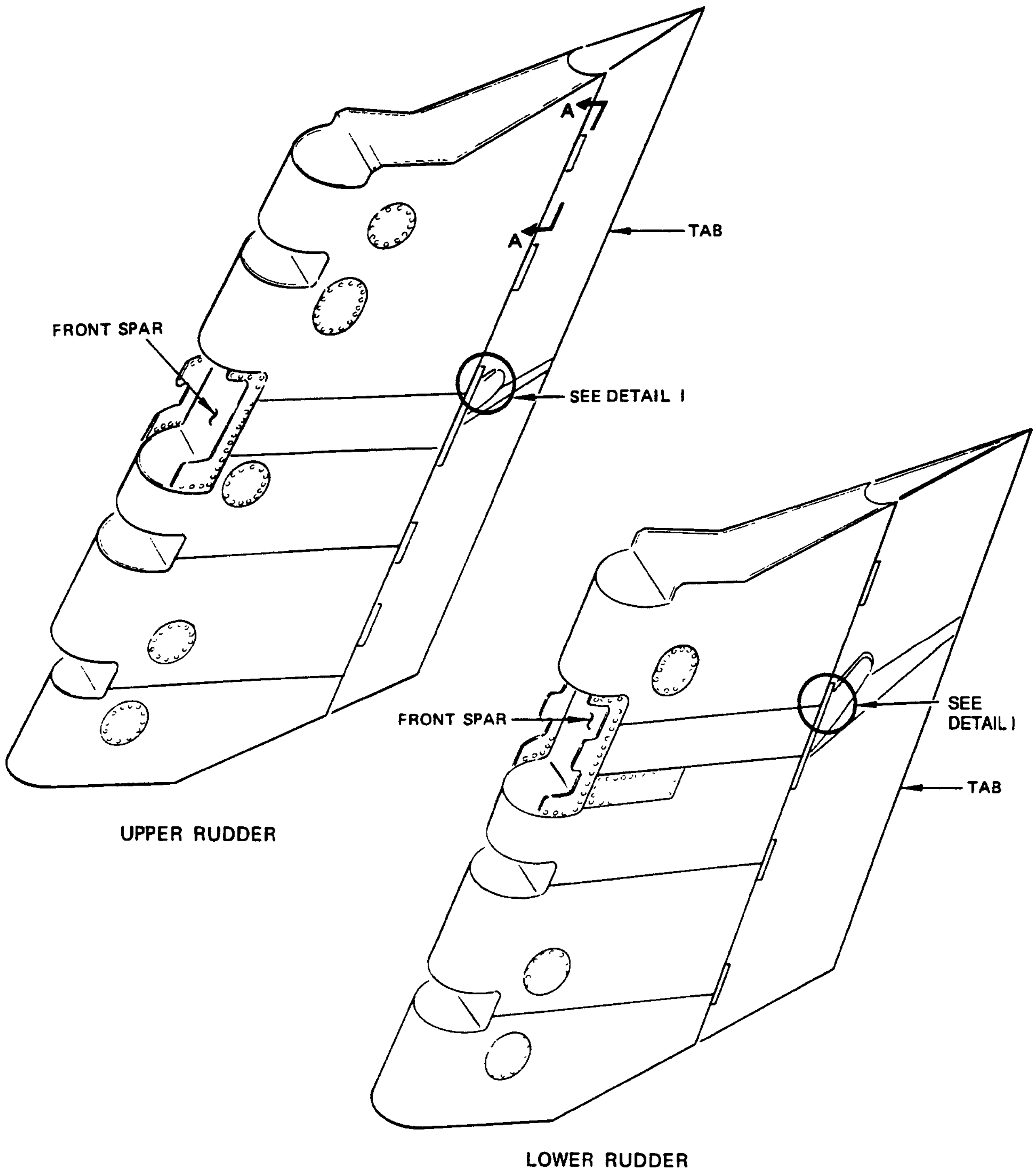
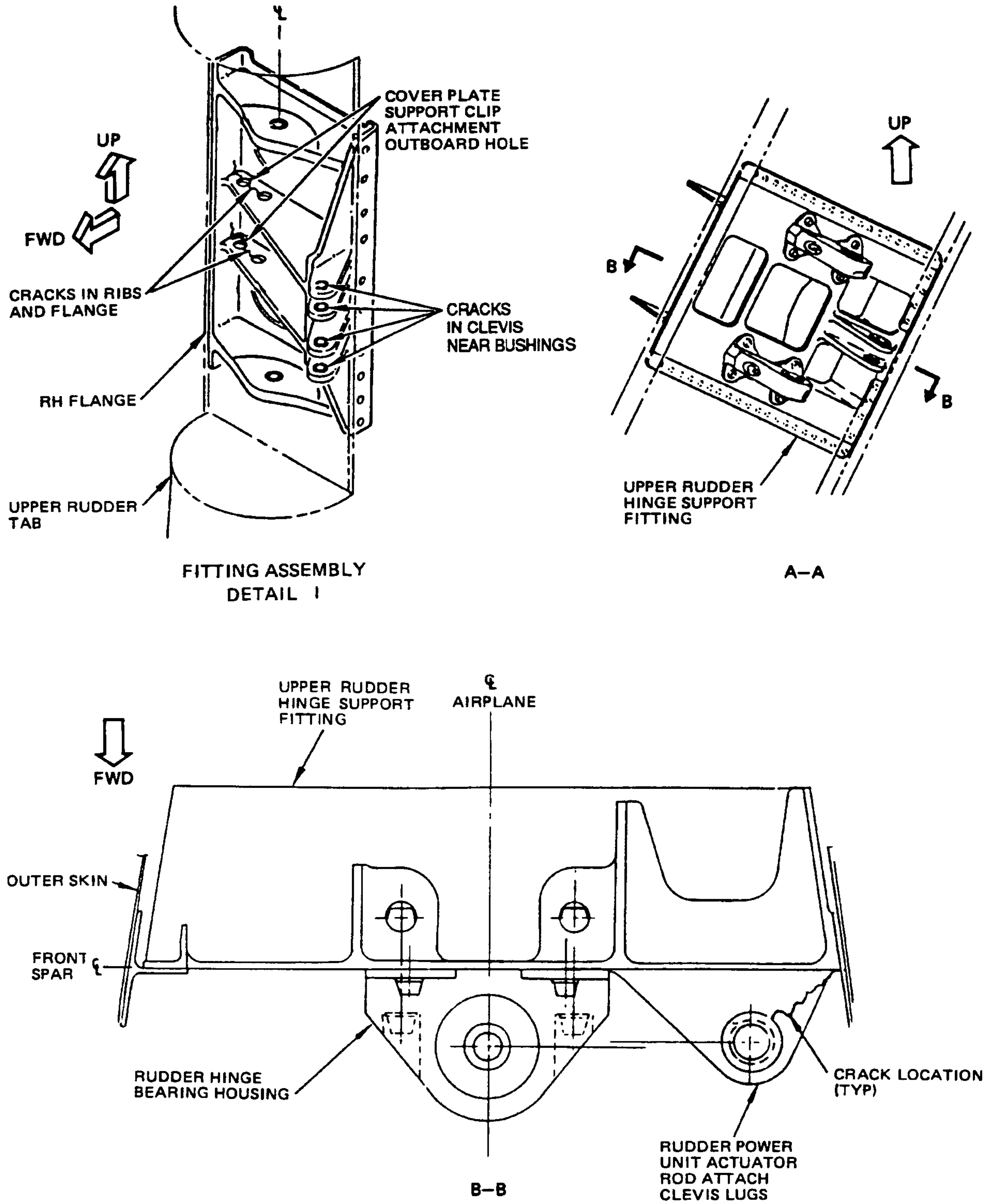


Rudder
Figure 1 (Sheet 1)



Horizontal Stabilizer
Figure 1 (Sheet 2)

1. General

A. Corrosion has been reported on the rudder spars and skin. Corrosion has also been reported on tabs of aluminum honeycomb construction where the ingress of moisture has initiated corrosion in the core material.

B. Corrosion in the area of the rudder fairings that form the rudder tab bays has been reported. The rudder tab bay is not easily accessible for cleaning. Corrosion may occur due to environmental contamination and impingement of exhaust gases during reverse thrust of the number 2 engine.

C. Stress corrosion cracking of the upper and lower rudder center hinge support fittings has been reported.

D. Stress corrosion cracks of the upper rudder tab actuator support fitting has been reported. The cracks started at one or the other of the two holes in the fitting ribs for attachment of the coverplate support clips. Cracks also occurred in the clevis lugs because of high interference between the lug bores and the bushings, which caused stress corrosion.

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 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) Periodically inspect the upper and lower rudders and their tabs for deterioration of finish and evidence of corrosion.

(2) Inspect tabs made from aluminum honeycomb for delamination and the ingress of moisture. Accumulation of water may be detected radiographically. Water in the tab will not only promote corrosion, expansion due to freezing will cause delamination, and the weight of the water could have an adverse effect on the rudder balance.

(3) Apply BMS 3-23 to exposed areas of the front and rear spars and to the tab spar. Pay particular attention to the faying surfaces and all attach fittings.

(4) SB 55-25 gives procedures for improved corrosion protection of the rudder tab bay.

(5) SB 55-49 gives procedures for inspection, and modification or replacement of the upper and lower rudder tab actuating rod support fittings.

(6) SB 55-50 gives procedures for inspection and modification of the rudder upper and lower hinge support fitting.

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.

CHAPTER

56

WINDOWS

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I

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Cabin Window Frames	Corrosion on the passenger cabin window frames. Stress corrosion cracking reported in window frame forgings.	56-20-27 Fig. 1	

SPECIFIC CORROSION -PROBLEMS
Figure 1

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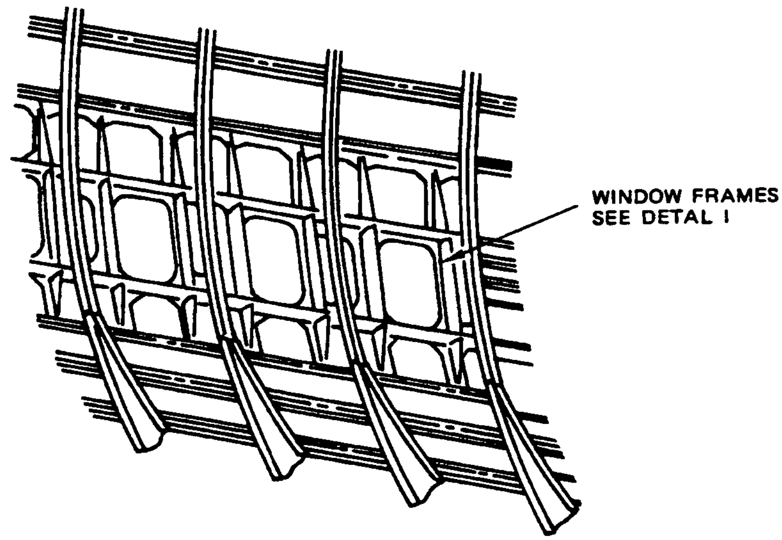
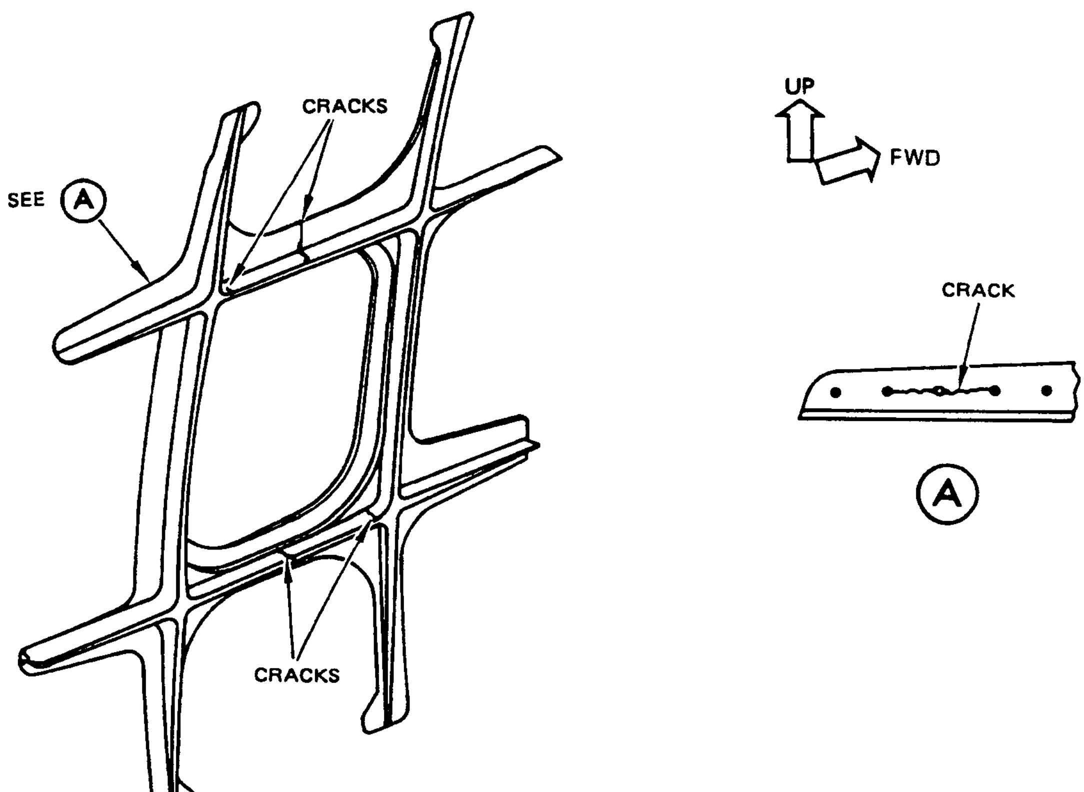


TYPICAL PASSENGER CABIN WINDOW AREA



DETAIL I

Passenger Cabin Window Frames
Figure 1

1. General

A. Corrosion has been experienced by some operators on the passenger cabin window frames. To reduce the possibility of this corrosion, an improved finish system has been introduced in production.

B. Stress corrosion cracking of the horizontal tangs of the window frame forgings has been reported. Cracking initiated at the faying surface of the window frame horizontal tang juncture with the adjacent window frame horizontal tang, and propagated at an angle to the faying surface, rather than perpendicular to it. Generally cracking ran from hole-to-hole in a fore-and-aft direction, or from the first hole to the extreme end of the tang.

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 periodic inspections of the window frames internally and externally for evidence of corrosion on deterioration of finish.

B. Where minor corrosion is evident or the finish is broken, local cleanup and restoration of finish can be achieved. Refer to Structural Repair Manual for details of corrosion removal.

C. To improve the corrosion resistance, application of the improved finish system can be applied to the entire interior surfaces of passenger cabin windows, including those in doors and overwing escape hatches. 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	Corrosion on upper and lower skins, both internally and externally	57-10-27 Fig. 1	
	Corrosion on rear spar at left and right BBL 45.3		
	Corrosion on upper skin below mid cabin galley		
	Corrosion on front spar lower chord and front spar web along the lower portion of the air pressure seal under foam plastic filler		
	Corrosion on vertical leg front spar upper chord at left BBL 60.0		
Outer Wing Front and Rear Spar Chords	Fillet sealed fasteners common to the chord and web at line No. 877 and on	57-20-27 Fig. 1, 3	
	Stress Corrosion on rear spar terminal fittings		SB 57-175
	Corrosion on fwd, upper and aft flanges of the wing rib at WS 760.5		
Fuel Tank Access Cutouts	Corrosion on lower skin faying surface adjacent to the access door clamp ring	Fig. 2, 3	
	Corrosion on fuel tank and boost pump cutouts	57-30-27 Fig. 3	
	Corrosion under bonded O-ring seals of tank access cutout		

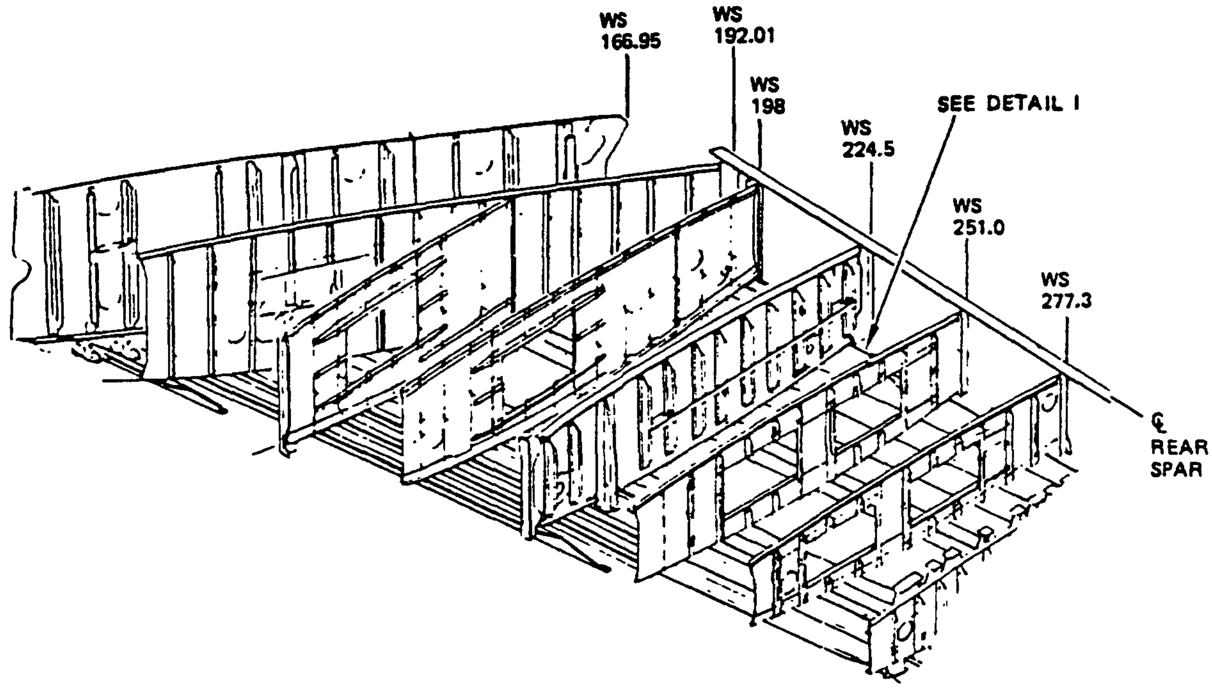
Specific Corrosion Problems - Wings
Figure 1 (Sheet 1)

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Wing Skins	Corrosion on lower skin at flap track areas	57-30-27 Fig. 1	
	Corrosion on upper surface of lower skin beneath the fuel inlet screen at WS 299.5		
MLG Trunnion Support Structure	Stress corrosion on MLG support beam	57-40-27 Fig. 1	SB 57-125
	Stress corrosion on forward trunnion bearing support		SB 57-179
	Stress corrosion cracks on fwd trunnion attach fitting attach holes		
	Stress corrosion cracking on the fwd trunnion support stud		SB 57-74
	Stress corrosion cracking on fwd support fitting		
Trailing Edge Flaps	Stress corrosion cracking on lower flanges of flap tracks	57-50-27 Fig. 1	SB 57-136
	Corrosion on the inboard flap in the vicinity of the attachment to the landing gear beam		SB 57-117, SB 57-178
	Stress corrosion cracking on the outboard carriage support fitting		
	Stress corrosion cracking on the aft track aft attach bolts		SB 57-143
	Stress corrosion cracking on trailing edge outboard flap carriage		
	Corrosion on midflap carriage bearing seats		

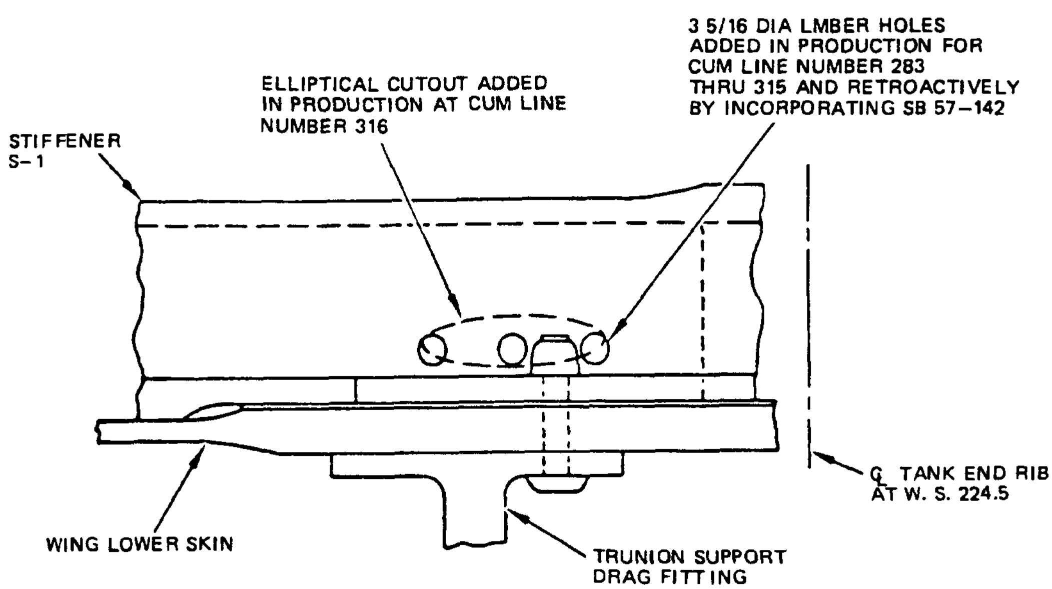
Specific Corrosion Problems - Wings
Figure 1 (Sheet 2)

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Ailerons	Corrosion on exterior skin surfaces	57-60-27 Fig. 1	
	Stress corrosion cracking on hinge lug of actuator fitting		
	Corrosion of inboard aileron tab fitting		
Wing to Body Attachment	Corrosion in the vicinity of the bottle pins	57-80-27 Fig. 1	
	Stress corrosion cracking in the upper vertical flange		
	Stress corrosion fracture on outboard bolt		
Wing Wheel Well	Corrosion of the well structure	57-70-27 Fig. 1	

Specific Corrosion Problems - Wings
Figure 1 (Sheet 3)



INSPAR WING LOWER SURFACE STRUCTURE



DETAIL I

Wing-Fuel/Water Drain Holes at S-1
Figure 2

1. General

A. Entrapment pockets created by the enclosure of an area by structure can allow the accumulation of water in the pocket. Water entrapment can result in corrosion and microbial growth (Ref Volume 1, 20-62-00).

B. Entrapment of water has been reported in a pocket formed by the wing lower skin, lower stiffener S-1, the rear spar and the outboard side of tank end rib at WS 224.50.

C. Interim production changes for cum line numbers 1283 thru 1315 added three 5/16 diameter cold worked holes through stiffener S-1 to allow drainage of the pocket. SB 57-142 has been issued for retroactive accomplishment of this production change. An elliptical cutout in S-1 was introduced in production at cum line 1316.

2. Corrosion Prevention

A. At the earliest convenient maintenance interval or whenever access to the interior of the outboard wing tank is available inspect the area just outboard of WS 224.5 tank end rib between stiffener S-1 and rear spar for evidence of water accumulation.

B. If microbial growth and/or corrosion is evident refer to Volume 1, 20-62-00 for rework.

C. Add drain holes through stiffener S-1 per SB 57-142.

D. Restore integral fuel tank finish (Ref Volume 1, 20-60-00).

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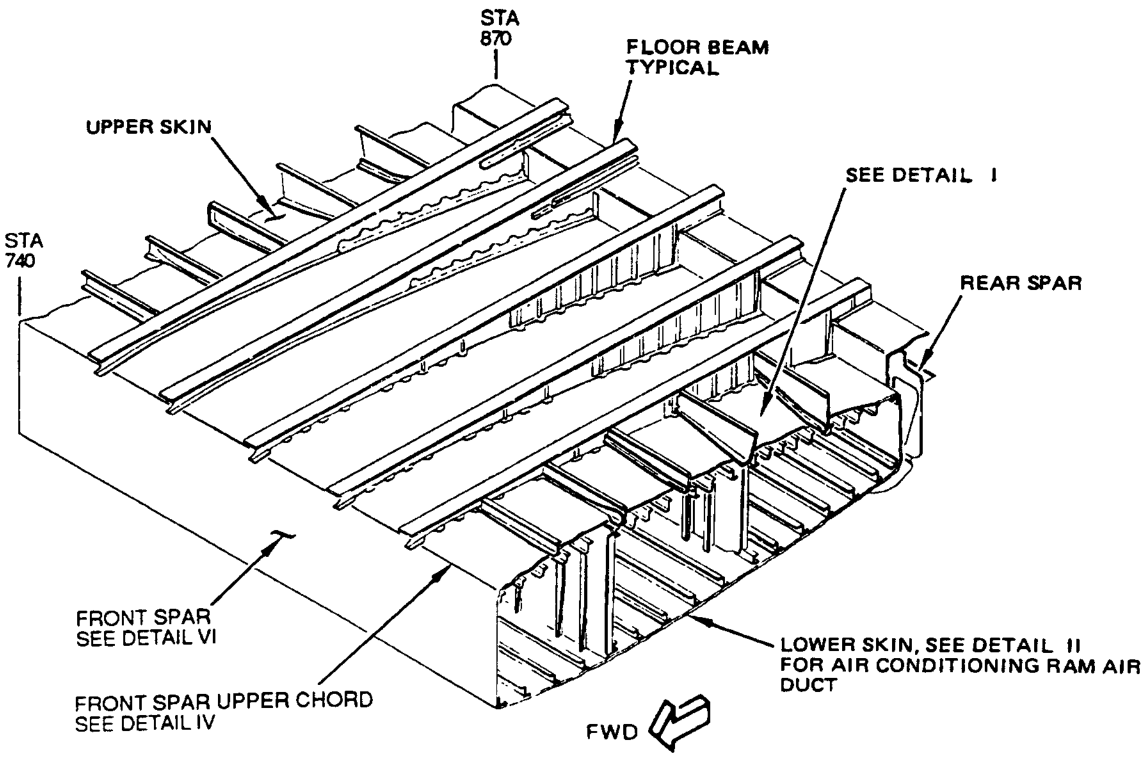
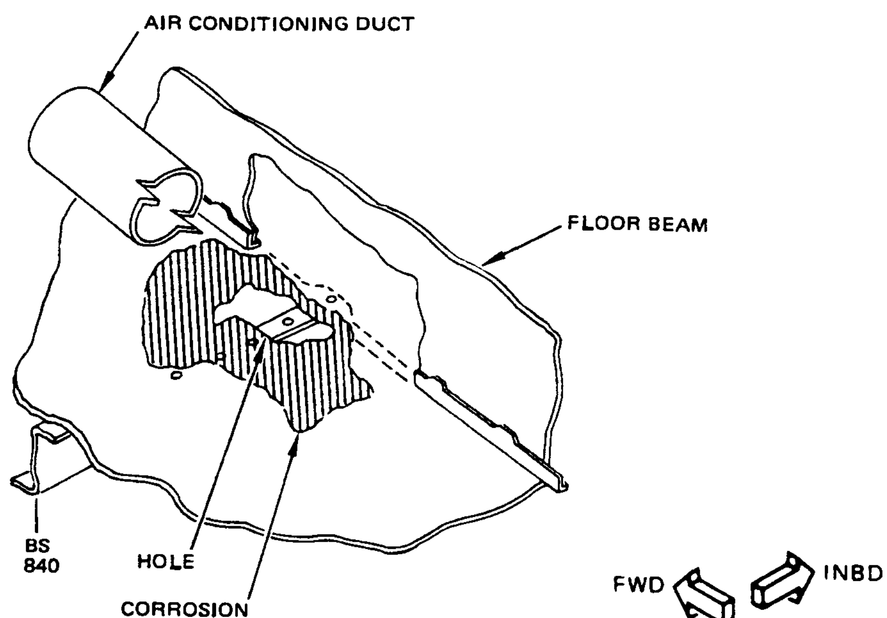
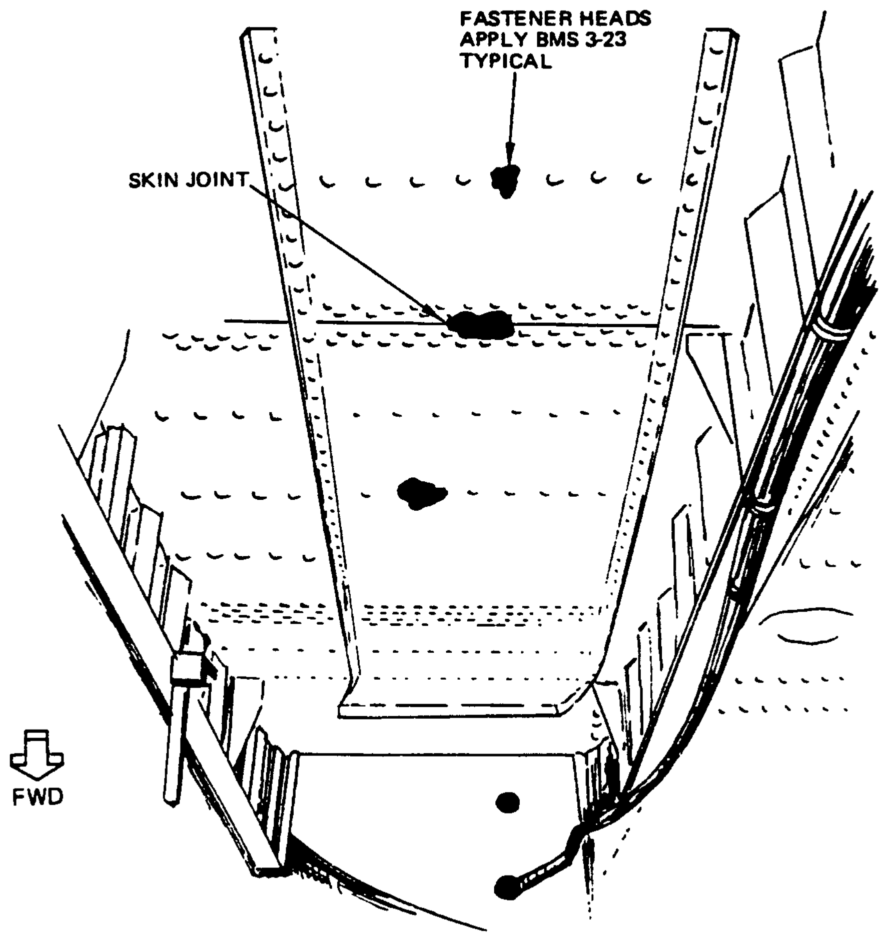




DETAIL I

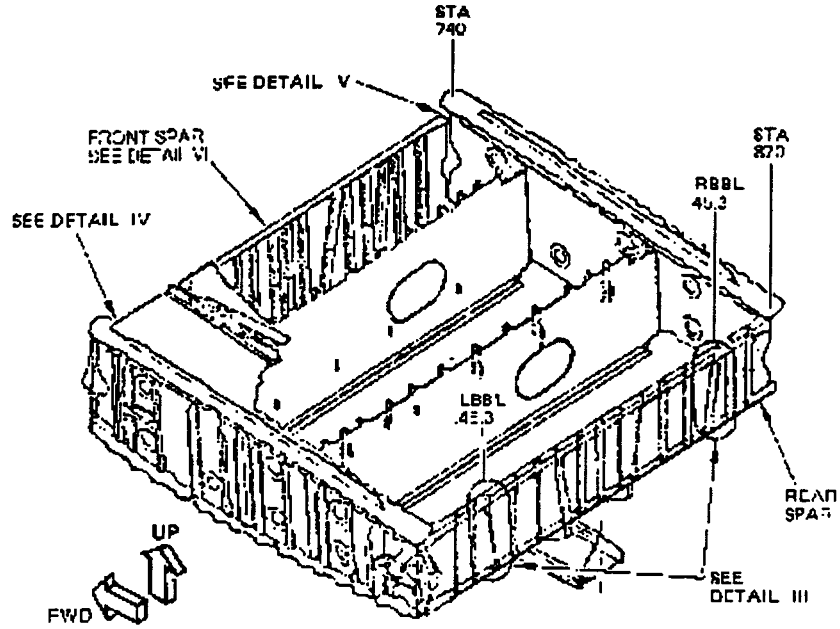
Center Wing Section
Figure 1 (Sheet 1)

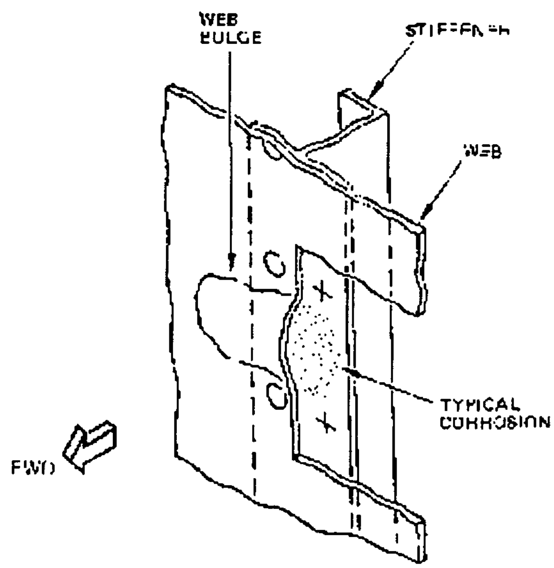


AIR CONDITIONING RAM AIR DUCT

DETAIL II

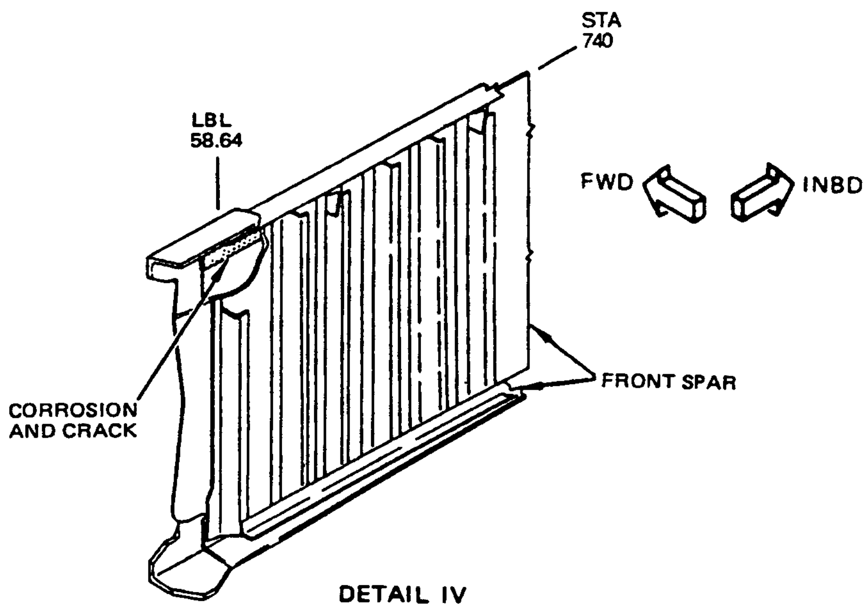
Center Wing Section
Figure 1 (Sheet 2)



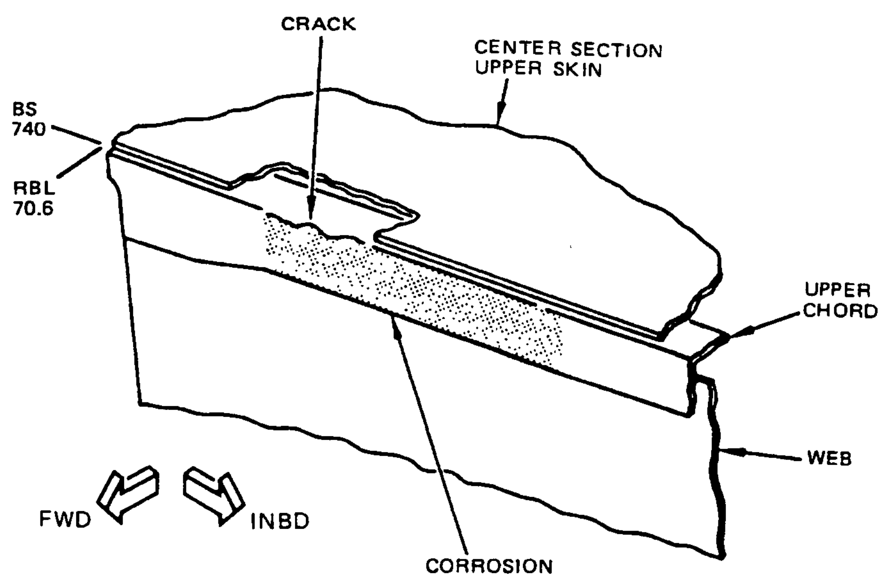


DETAIL III

Center Wing Section
Figure 1 (Sheet 3)

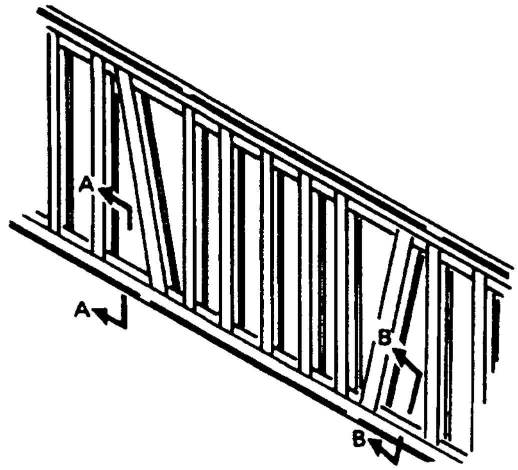


DETAIL IV

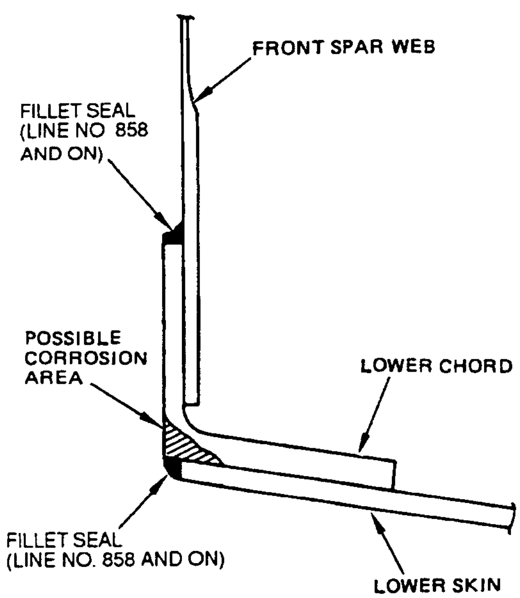


FRONT SPAR
DETAIL V

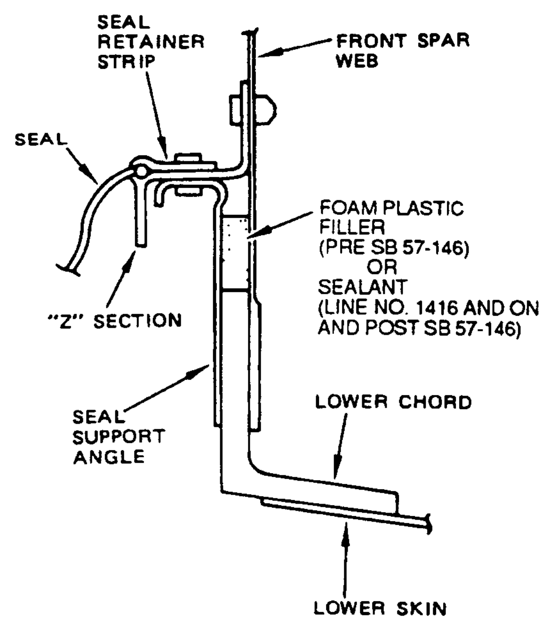
Center Wing Section
Figure 1 (Sheet 4)



FRONT SPAR
DETAIL VI



A–A



B–B

AT AIR PRESSURE SEAL INSTALLATION

Center Wing Section
Figure 1 (Sheet 5)

1. General

A. The center wing consists of skins, primary structure, fillets, fairings, and attach fittings.

B. Corrosion has occurred on the wing center section upper and lower skins, both internally and externally. Inspection, repair and corrosion inhibitor application is described in SB 57-170 for all 727 airplanes.

C. A special area of concern on early airplanes is the center section to outboard wing splice area. The introduction of a new paint system and application of corrosion inhibitor on later airplanes has alleviated the problem.

D. Corrosion of the center section rear spar at left and right Body Buttock Line 45.3 has been reported. The corrosion was located between the spar web aft face and the web lower edge. Corrosion was attributed to condensation runoff from the center section upper face.

E. Corrosion has been reported on the center section upper skin located below the mid-cabin galley, possibly due to water spilling from the mid-cabin galley.

F. Corrosion has occurred on the center section upper skin, possibly as the result of water soaked insulation on the air conditioning duct. The corrosion resulted in a hole which allowed cabin pressure to compress the fuel cell bladder (Detail I).

G. 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.

H. The skins are susceptible to corrosion due to moisture accumulation. Corrosion can readily start where protective finishes have deteriorated.

I. 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.

J. Corrosion has been reported on the wing center section front spar lower chord. Corrosion was at the heel of the chord extending into the upper surface of the lower skin.

K. Corrosion has been reported in the wing center section front spar web along the lower portion of the air pressure seal. The corrosion is attributed to accumulation of moisture in the seal support structure filler and penetration of moisture into the faying surfaces of the spar web and lower chord.

L. Exfoliation corrosion has been reported on the upper and lower chords of the center section rear spar on airplanes which have been extensively used in the main deck cargo mode. This exfoliation corrosion has been attributed to corrosive spills which may have occurred in the region of the pressure seal and leaked through the seal to the rear spar chords.

M. Corrosion and cracking has occurred on the vertical leg of the wing center section front spar upper chord at approximately left body buttock line 60.00 (Fig. 1, Detail IV).

N. Corrosion has been found on the wing center section rear spar, BBL 45.3 left and right stiffeners. The corrosion was between the spar web aft face and the stiffener attaching flange and was located 8 to 18 inches above the web lower edge. Corrosion is attributed to condensation runoff from the center section upper surface which follows a path directed down the rear spar and along the BBL 45.3 canted stiffeners (Fig. 1, Detail III).

O. Corrosion has been found on the forward face of the wing center section upper front spar chord vertical leg. Corroded areas were 6.00 and 20.0 inches long covering the chord from top to bottom. Both chords had 3.0 inch long spanwise cracks. One chord was corroded completely through the vertical leg (Fig. 1, Detail V).

P. 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. Refer to SB 57-140 and 57-170 for more details.

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 when scheduled maintenance work allows access to the wing center section and wing to body joints, apply corrosion preventive treatment.

(2) Apply BMS 3-23 corrosion inhibiting compound on the upper and lower external surfaces of the structure. Pay particular attention to fastener heads, joints, faying surfaces, and center section to outboard wing splice areas.

(3) When you clean with steam and high pressure water and detergent, apply the corrosion inhibiting compound again.

(4) The preferred treatment for broken finishes is to replace the finish with BMS 10-79 primer and two coats of Aeroflex coating. Corogard may be used as an optional finish. It is chemically but not cosmetically compatible with Aeroflex.

(5) Refer to SB 51-17 for airplanes before line number 904 that do not have a corrosion resistant paint system such as Corogard or Aeroflex on the air conditioning ram air duct.

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) At line number 858, a production change added fillet seals to the heel and vertical leg of the front spar chords.

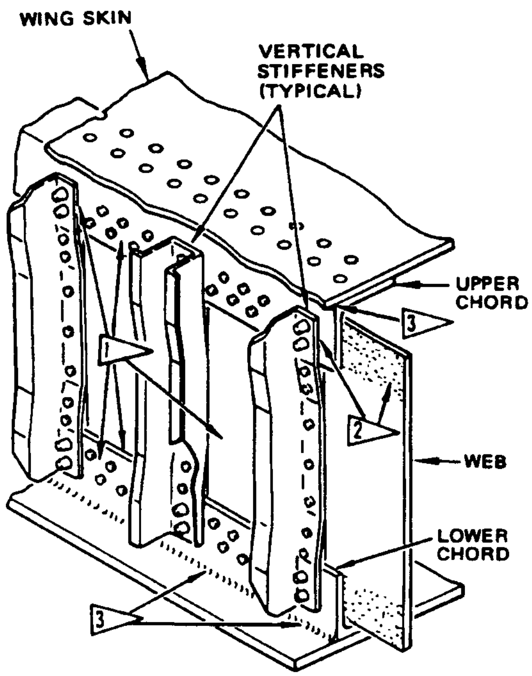
(2) At line number 888, a production change replaced the rear spar terminal fittings. This change can be made on other airplanes with SB 57-175.

(3) At line number 904, PRR 23508-4 and 22630 added corrosion resistant coatings to the air conditioning ram air duct. This change can be made on other airplanes with SB 51-17.

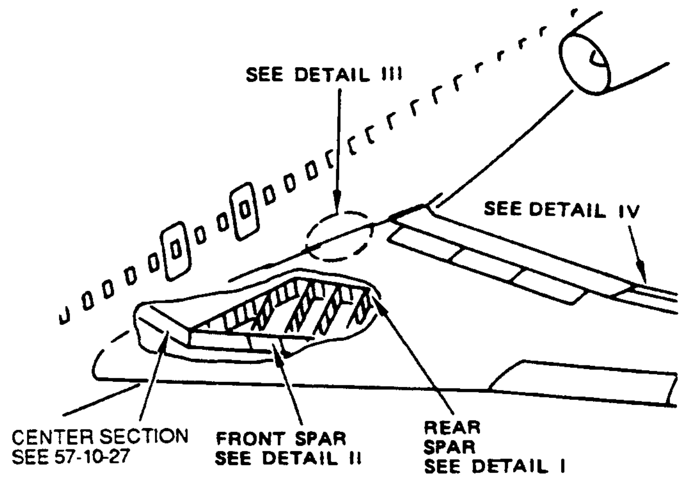
(4) At line number 1114, a production change added corrosion inhibiting compound to the front spar. This change can be made on other airplanes with SB 57-140.

(5) At line number 1378, a production change added more corrosion resistant coatings on the center section lower surfaces near the ram air duct.

(6) At line number 1416, PRR 23467 replaced a foam plastic filler with sealant in the front spar. This change can be made on other airplanes with SB 57-146.



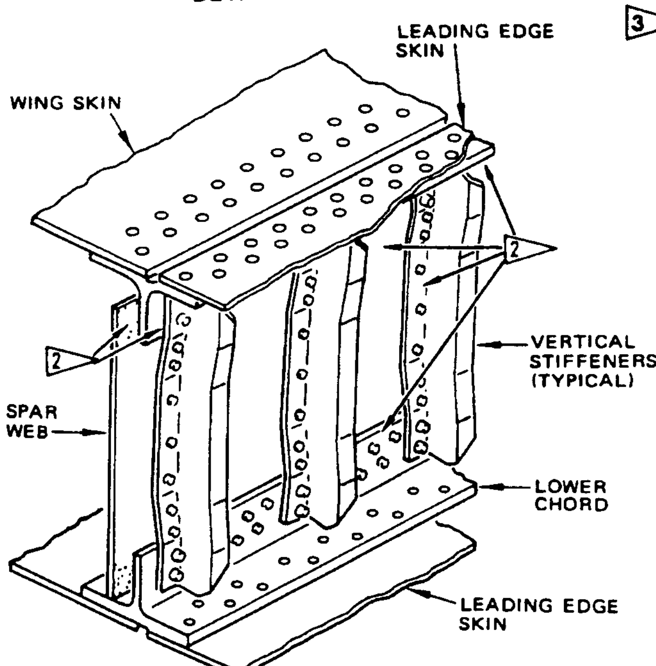
DETAIL I



1 APPLY CORROSION INHIBITOR TO ALL EXPOSED STRUCTURE

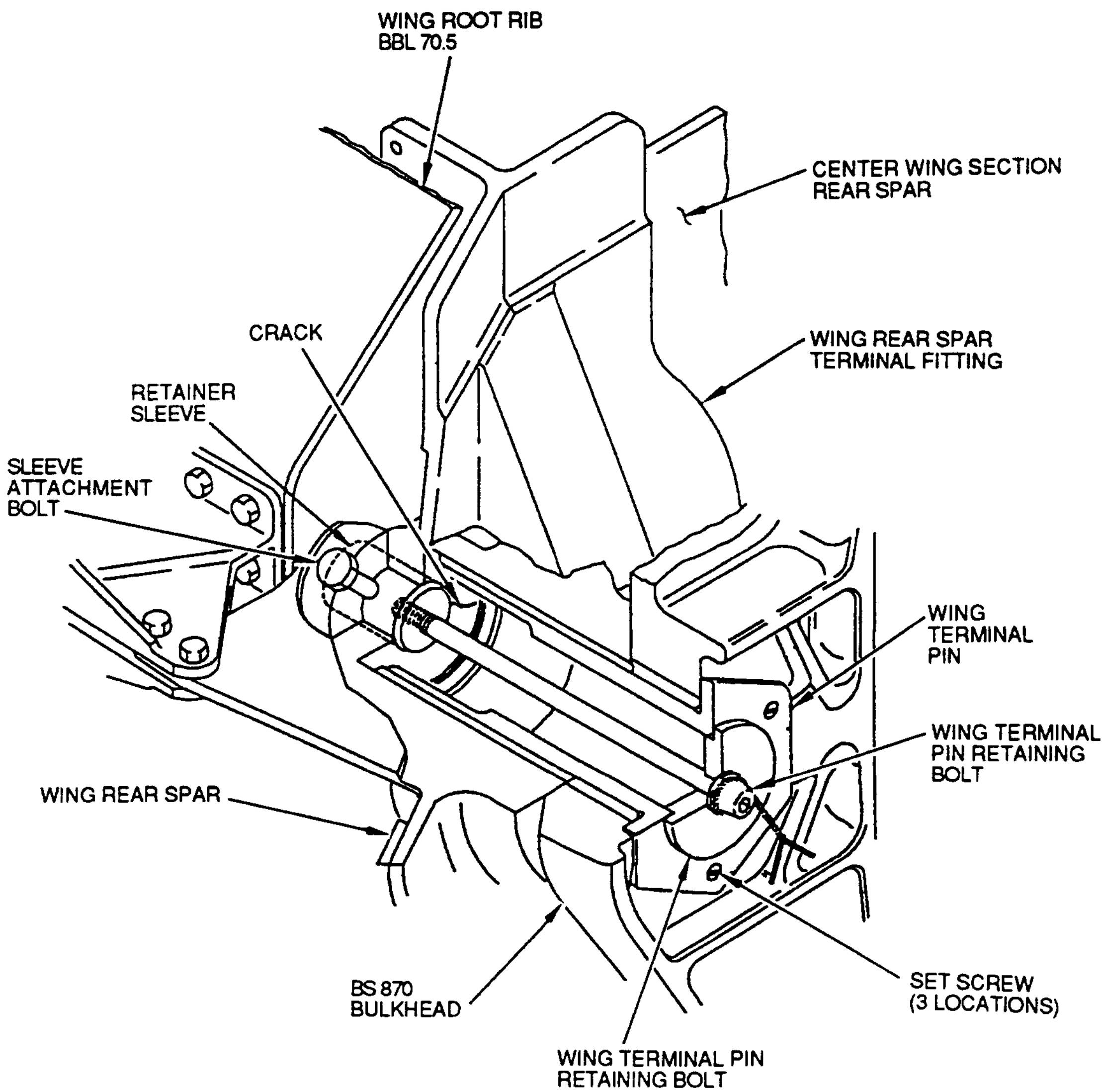
2 CONTINUOUS FAY SURFACE SEAL WEB TO CHORDS AND FAY SURFACE SEAL STIFFENER ENDS TO SPAR CHORD ON LINE NUMBER 877 AND ON

3 CONTINUOUS FILLET SEAL AT HEEL OF UPPER AND LOWER CHORDS ON LINE NUMBER 877 AND ON



DETAIL II

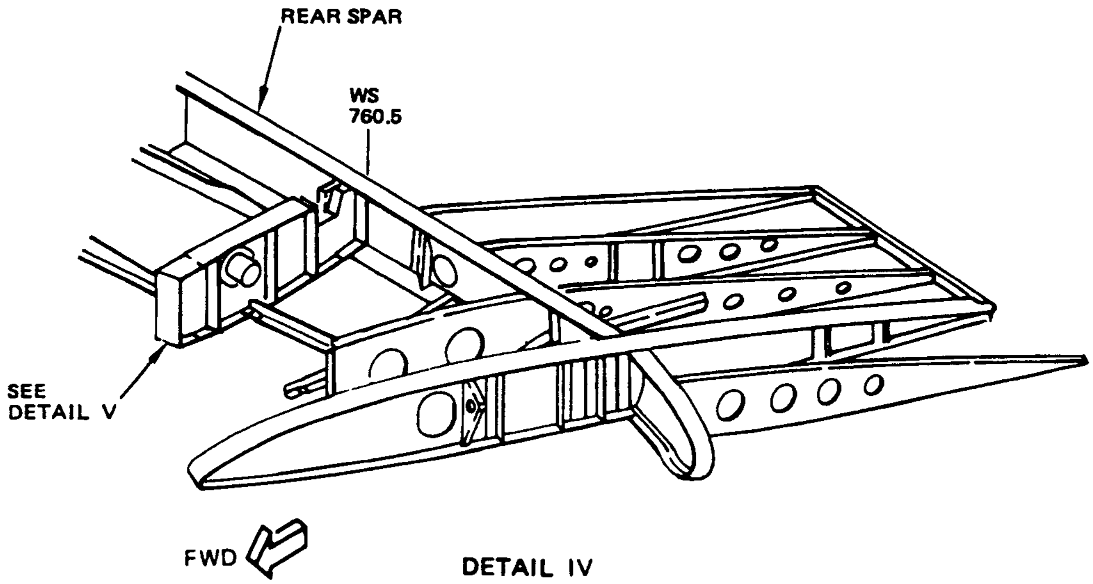
Outer Wing Front and Rear Spars
Figure 1 (Sheet 1)

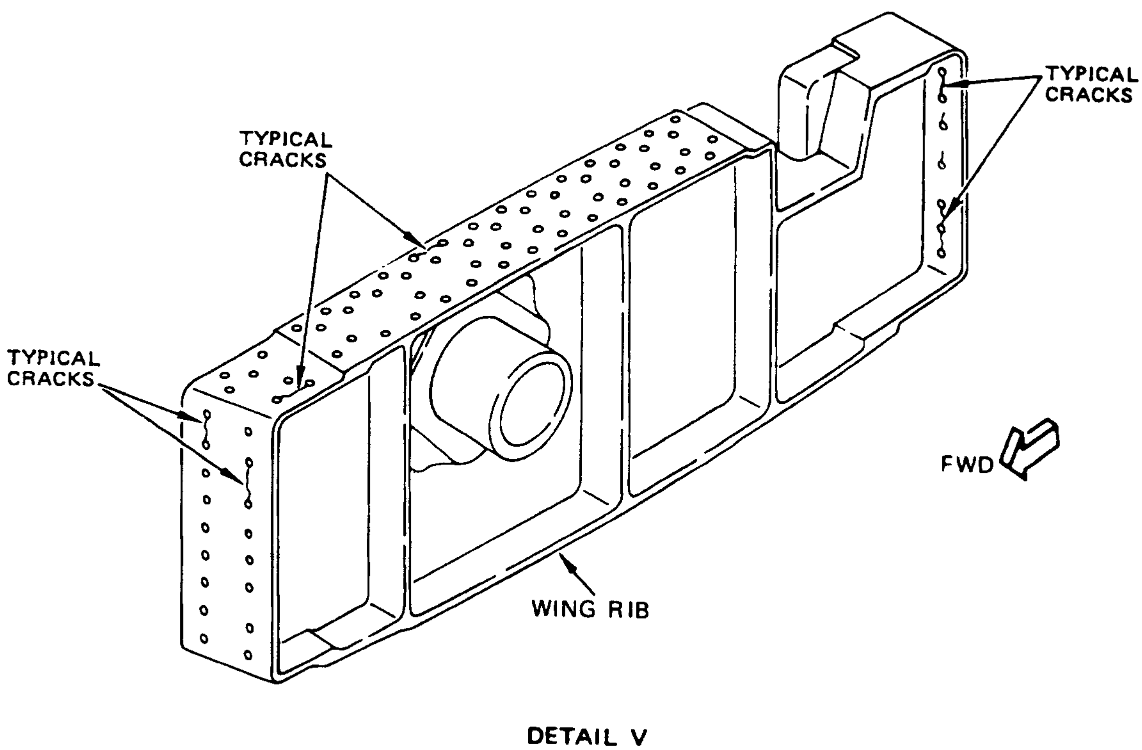


WING REAR SPAR TERMINAL FITTING
(LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE)

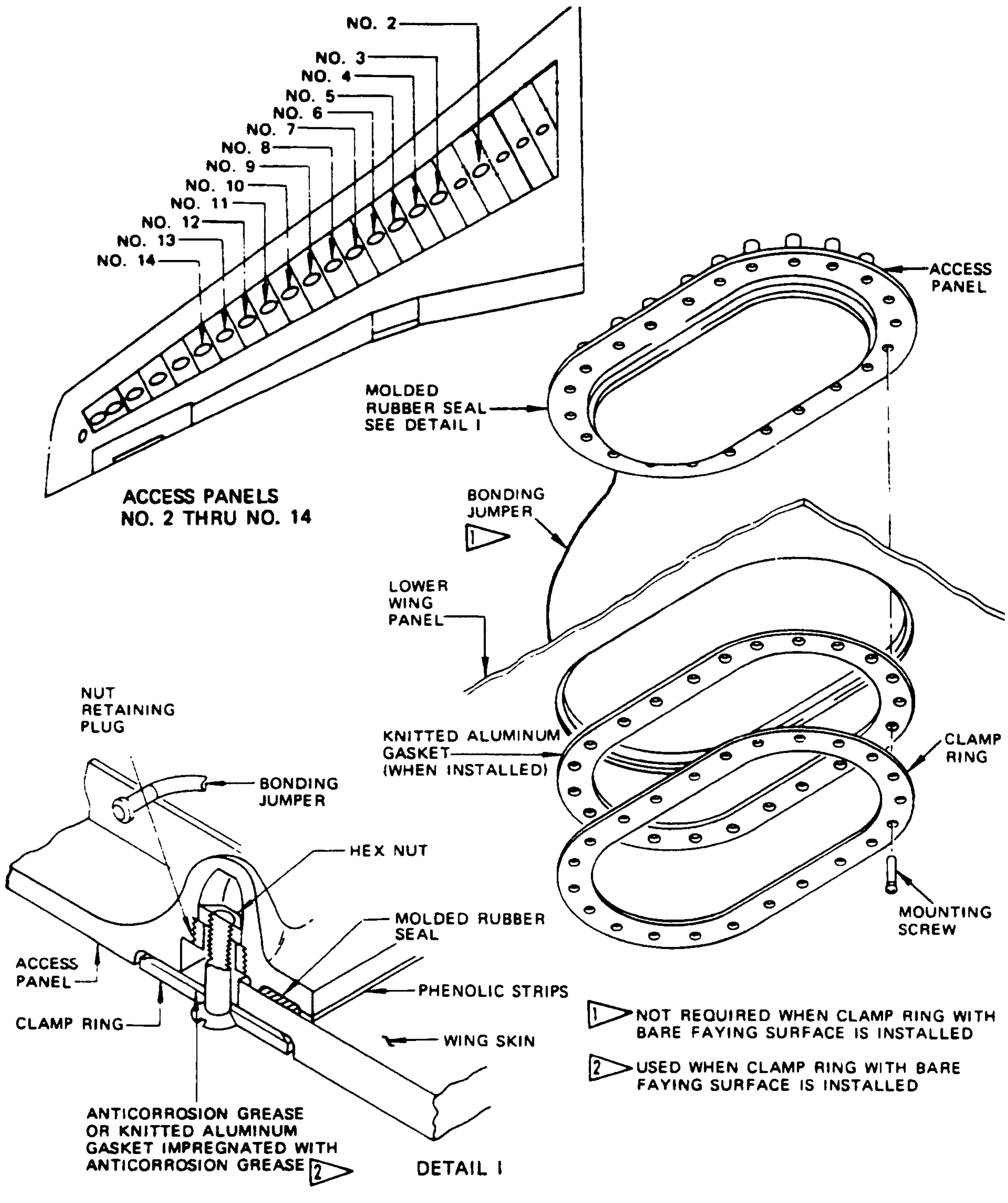
DETAIL III

Outer Wing Front and Rear Spars
Figure 1 (Sheet 2)





Outer Wing Front and Rear Spars
Figure 1 (Sheet 3)



Outer Wing Fuel Tank Access Panels
Figure 2

1. General

A. The outer wing consists of spars, skins, ribs, stringers, and an integral fuel tank structure.

B. The front and rear spars on the left and right wing boxes are the 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 are provided with chords along the upper and lower edges. Vertical stiffeners are attached to the vertical faces of the spars, both internally and externally (Fig. 1).

C. When the flight control surfaces move, the outboard wing spars become open to thrust reverser soot, runway dirt and debris and the weather, all of which cause corrosion.

D. In the outboard wing spar chords, corrosion can start at the fasteners common to the chord and web. Fastener heads common to spar chords and webs were fillet sealed on line number 877 and on. 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 on airplane line number 877 and on. The spar chord material was changed on line number 937 and on for added corrosion resistance.

E. Stress corrosion can cause cracks in the rear spar terminal fittings (Detail III). SB 57-175 gives procedures for inspection, repair and replacement of these fittings.

F. Stress corrosion cracks can occur in the forward, upper and aft flanges of the wing rib at WS 760.5 (Fig. 1, Details IV and V).

G. Intergranular corrosion can occur in the wing lower skin around the reserve and main tank access door cutouts (Fig. 2). This is caused by exposed aluminum end grain and fretting between the access panel and the wing lower skin.

(1) 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.

(2) Corrosion has been reported at the seven fuel tank and boost pump cutouts. Corrosion was found on the wing inside surface under the access door, along the edge of the cutout and in the radius of the machined recess.

(3) Corrosion has been reported occurring under the bonded O-ring seals of wing fuel tank access cutout.

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. 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. Improved Corrosion Protection

(1) At line number 877, a production change sealed the heads of fasteners between the spar chords and webs, and added continuous fay seals between spar chords, webs, and stiffeners. The change also added continuous fillet seals at the heel of the upper and lower chords.

(2) At line number 937, a production change installed spar chords with a different material for better corrosion resistance.

F. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished along the front and rear spar.

(2) Replace damaged or broken finishes.

(3) Apply corrosion inhibiting compound to the forward surface area of the front spar with particular attention to spar chord and web points, and faying surfaces of stiffeners and brackets.

(4) If you clean the spars or spar cavities with steam or high pressure water and detergent, apply the corrosion inhibitor again.

(5) 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 bolt heads.

(6) Regrease all grease fittings in treatment area.

(7) Operators operating airplane line numbers 1 thru 936 in adverse climatic conditions should refer to SB 57-145 (supersedes SB 57-49 and SB 57-88) for improved front and rear spar finish.

(8) 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. Refer to SB 57-101 for details.

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.

H. Improved Corrosion Protection

(1) At line number 877, a production change sealed the heads of fasteners between the spar chords and webs, and added continuous fay seals between spar chords, webs, and stiffeners. The change also added continuous fillet seals at the heel of the upper and lower chords.

(2) At line number 937, a production change installed spar chords with a different material for better corrosion resistance.

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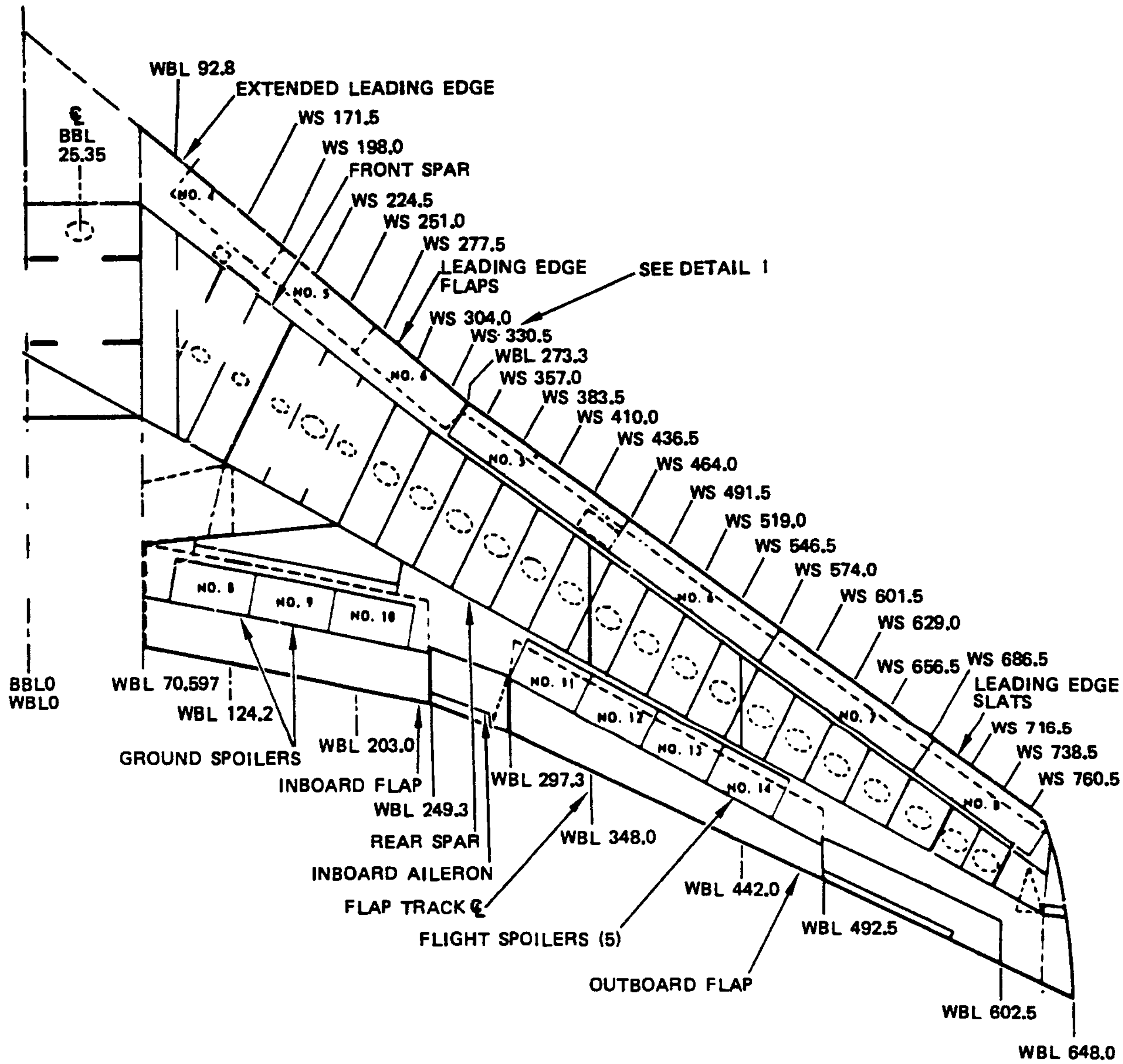
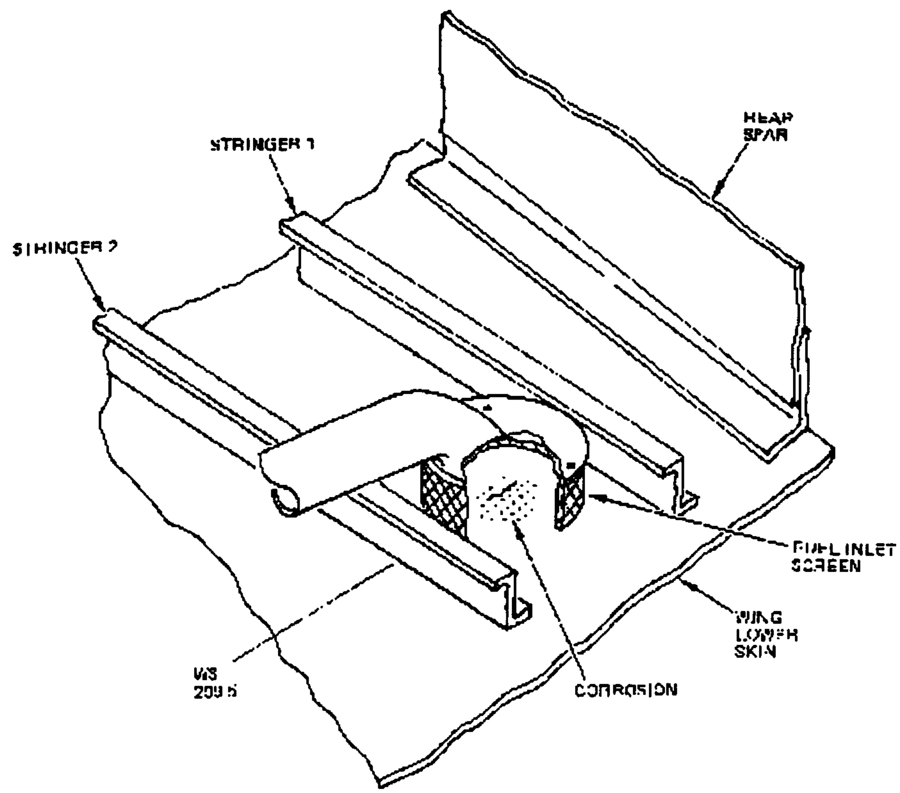


Wing Skins
Figure 1 (Sheet 1)



DETAIL I

Wing Skins
Figure 1 (Sheet 2)

1. General

A. The exterior surfaces of the upper and lower inspar skins of the wing can get corrosion at fastener locations. The small gap between the countersunk skin and the head of the flush fastener lets the paint crack around the fastener head, which than lets in moisture and contamination.

B. Corrosion has occurred on the wing lower skin at trailing edge flap track attach points and shim areas. Flap tracks are installed at WBL 124.20, 203, 348 and 442.

C. Corrosion has occurred on the upper surface of the wing lower skin beneath the fuel inlet screen at WS 299.5. Refer to Detail 1.

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 the first opportunity consistent with the maintenance activity, corrosion prevention treatment should be accomplished in the wing skin surface.

(2) For the lower wing surface where titanium fasteners are installed, a new paint scheme is being applied on airplane line number 1184 and on. The area around the fasteners is masked off and BMS 10-79 primer is applied, spray coated with a chromate-loaded polysulfide sealant, BMS 5-95, class F and followed by an overcoat of polyurethane enamel, BMS 10-60, Type II. It is recommended that operators with airplanes without protective finishes in the areas noted above or with broken protective finishes apply the new finish at the earliest time maintenance schedule will allow. All corrosion products must be removed before finish application.

(3) It is recommended that operators consider applying BMS 10-79, Type III primer and Aeroflex G12E25 as an alternative to the original primer and corogard when the corrosion system for areas of the airplane, such as the inspar skin of the wing, 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 MPD.

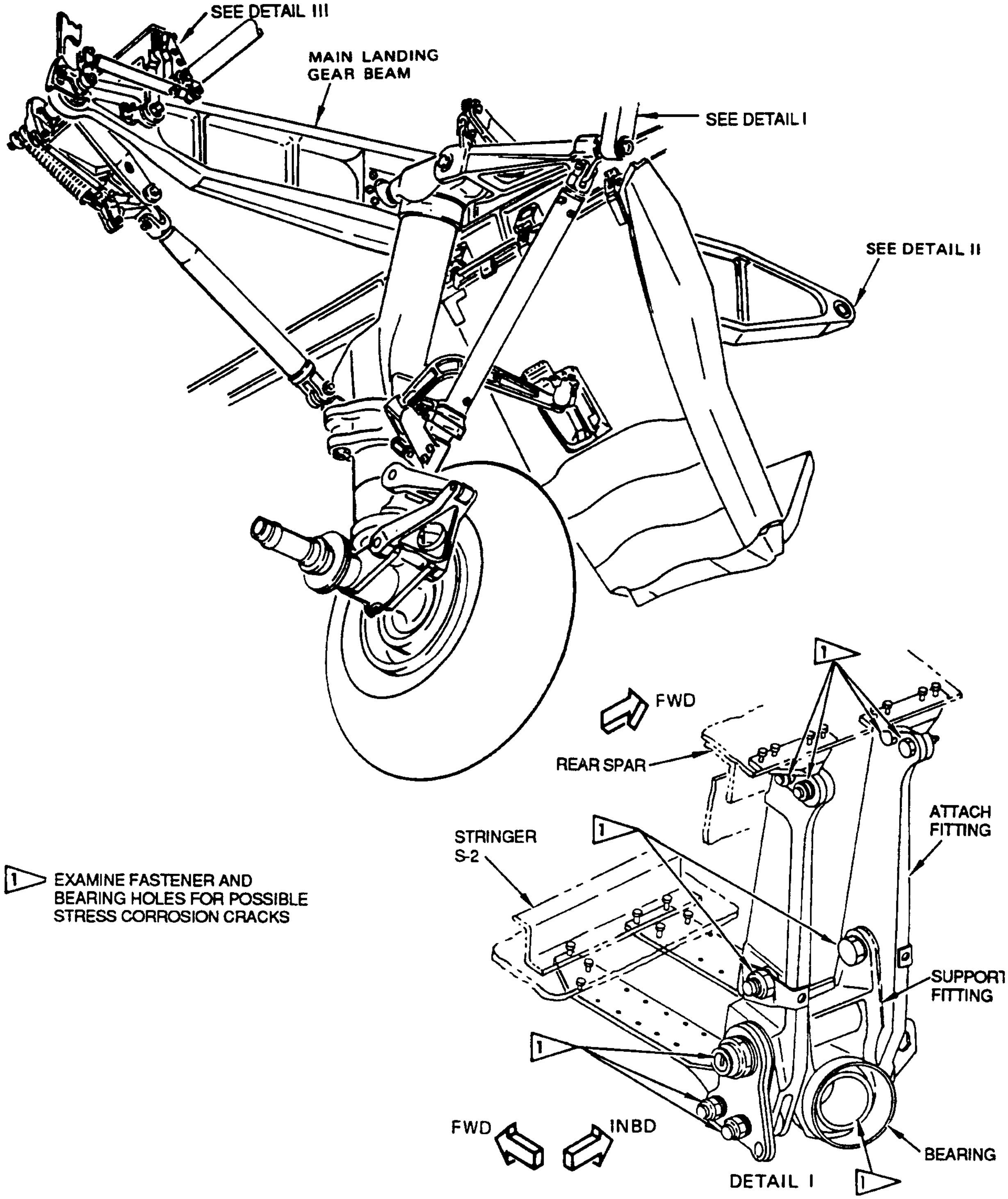
G. Improved Corrosion Protection

(1) The upper skin on earlier airplanes was painted with BMS 10-11 primer and Corogard. Subsequently, the BMS 10-11 primer was replaced with BMS 10-20 primer. An alternate finish system for the upper skin is BMS 10-20 primer (applied to anodized aluminum surface) followed by a spray coating of BMS 5-95, Class F sealant and topcoated with BMS 10-60, Type II polyurethane enamel. At line number 904, the finish system for the upper skin was changed to BMS 10-79, Type III primer followed by BMS 10-100 enamel. This can be incorporated on earlier airplanes with SL 20-13 and 51-27.

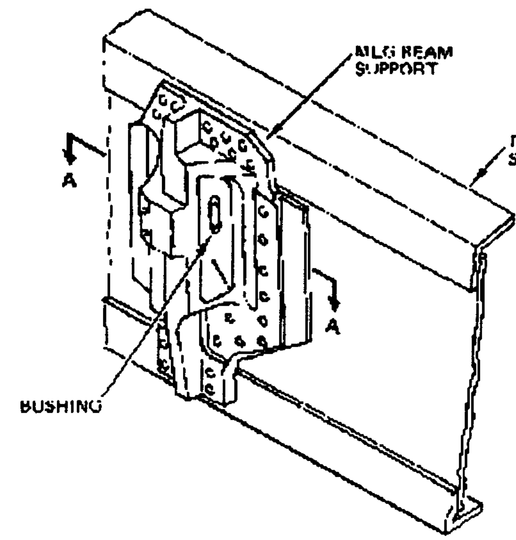
(2) The lower inspar skin on earlier airplanes was painted with BMS 10-11 primer and BMS 10-60 polyurethane enamel. The taper bolts at S-6 and S-8 were painted with BMS 10-11 epoxy enamel. At line number 904, the lower skin finish system was changed to BMS 10-79 primer and BMS 10-60 polyurethane enamel. At line number 1257, the BMS 10-79 primer was replaced with BMS 5-95 sprayable sealant. This can be incorporated on earlier airplanes with SL 20-13 and 51-27.

(3) With the introduction of the 70-degree shear head radius lead-in bolts (PT bolts), the area over the bolts was covered with Corogard under the polyurethane enamel.

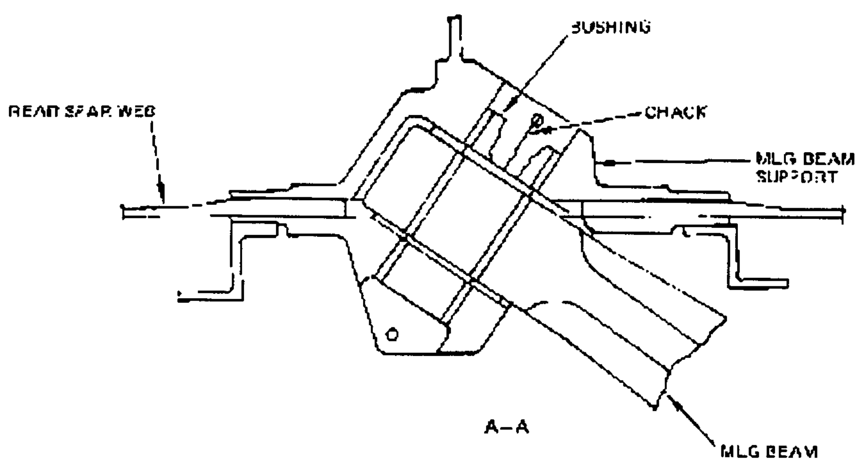
(4) At line number 1184, the Corogard strips over the PT bolts were replaced with BMS 5-95 sealant for improved corrosion protection. Wet installation of these bolts with BMS 5-95 chromate-loaded sealant was initiated on line number 1500 and on.



Main Landing Gear Trunnion Support Structure
Figure 1 (Sheet 1)

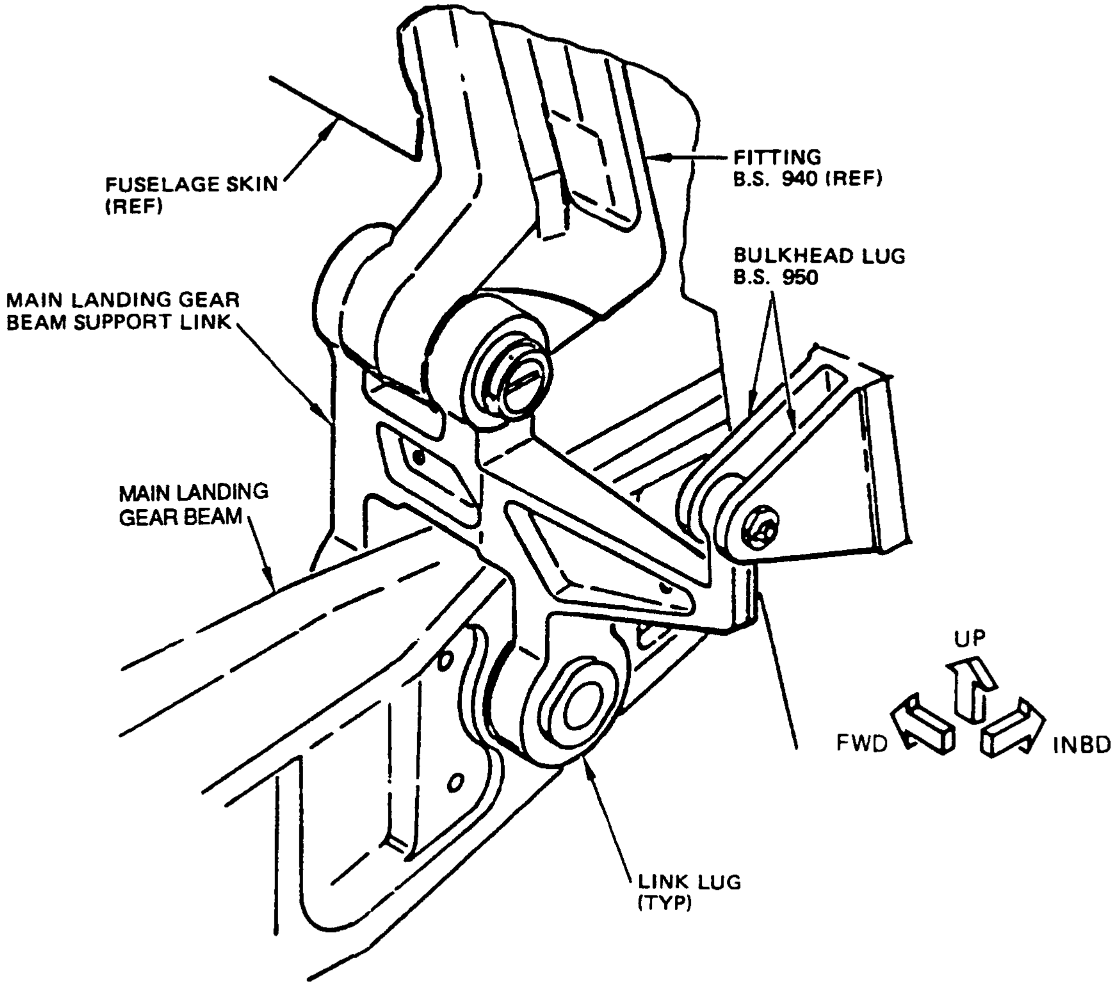


DETAIL II



A–A

Main Landing Gear Trunnion Support Structure
Figure 1 (Sheet 2)



DETAIL III

Main Landing Gear Trunnion Support Structure
Figure 1 (Sheet 3)

1. General

A. The main landing gear trunnion support structure includes a fitting attached to the aft surface of the rear spar and the main landing gear beam which houses the bearing for the rear trunnion.

B. The main landing gear beams were susceptible to stress corrosion which resulted in a change in material which has been incorporated in production and retroactively by SB 57-125. Further life extension of the new beams was obtained by shot-peening on line number 906 and on, plus airplanes incorporating SB 57-128.

C. At the time the new landing gear beams were installed, an improved lubricated trunnion bearing was also introduced.

D. Stress corrosion cracks can occur near the attach and bearing doles on the forward trunnion fitting. Improved fittings have been installed on airplanes line number 817 and on, and the resistance to stress corrosion cracking on existing 7079-T6 fittings can be increased by shot-peening as described in SB 57-132, and installing oversize bushings. More data is given in SB 57-179.

E. Corrosion can occur on the splines of the forward trunnion bearing. SB 57-129 gives procedures for modifications that permit lubrication of this bearing.

F. Operators who have not yet done so should evaluate SB 57-114, -120, and -122 for impact on their airplanes. SB 57-114 concerns corroded and deteriorated chrome plating inside the main landing gear beam bushing. SB 57-120 concerns corrosion of the main landing gear aft trunnion support beam. SB 57-122 concerns stress corrosion of the main landing gear trunnion support beam.

G. Stress corrosion cracking has been reported on the forward trunnion support stud. The circumferential cracks occur at the shear plane at either end of the stud. SB 57-74 replaces the plated stud with a corrosion resistant steel stud.

H. A crack has been reported in the forward support fitting for the MLG beam at WS 304. The crack was attributed to stress corrosion. See Detail I1.

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 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.

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

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(1) At earliest opportunity consistent with maintenance activity, corrosion prevention treatment should be applied to the MLG trunnion support structure.

(2) Periodically examine the main landing gear beam and the forward support for evidence of corrosion and deterioration of finish (Ref SB 57-102).

(3) Apply BMS 3-23 to all areas of the forward trunnion support fitting paying particular attention to fasteners and faying surfaces. Apply liberally to permit penetration between the fitting and the rear spar.

(4) Apply BMS 3-23 to all surfaces of the support beam including the connection points.

(5) To help find signs of the start of corrosion, regularly examine MLG beam trunnion bearing hole per SB 57-119 on airplanes before line number 818.

(6) SB 53-33 gives repair procedures on MLG beam support link and link attachment lugs at BS 950 bulkhead for airplanes before line number 735. This will help prevent cracks on these parts.

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.

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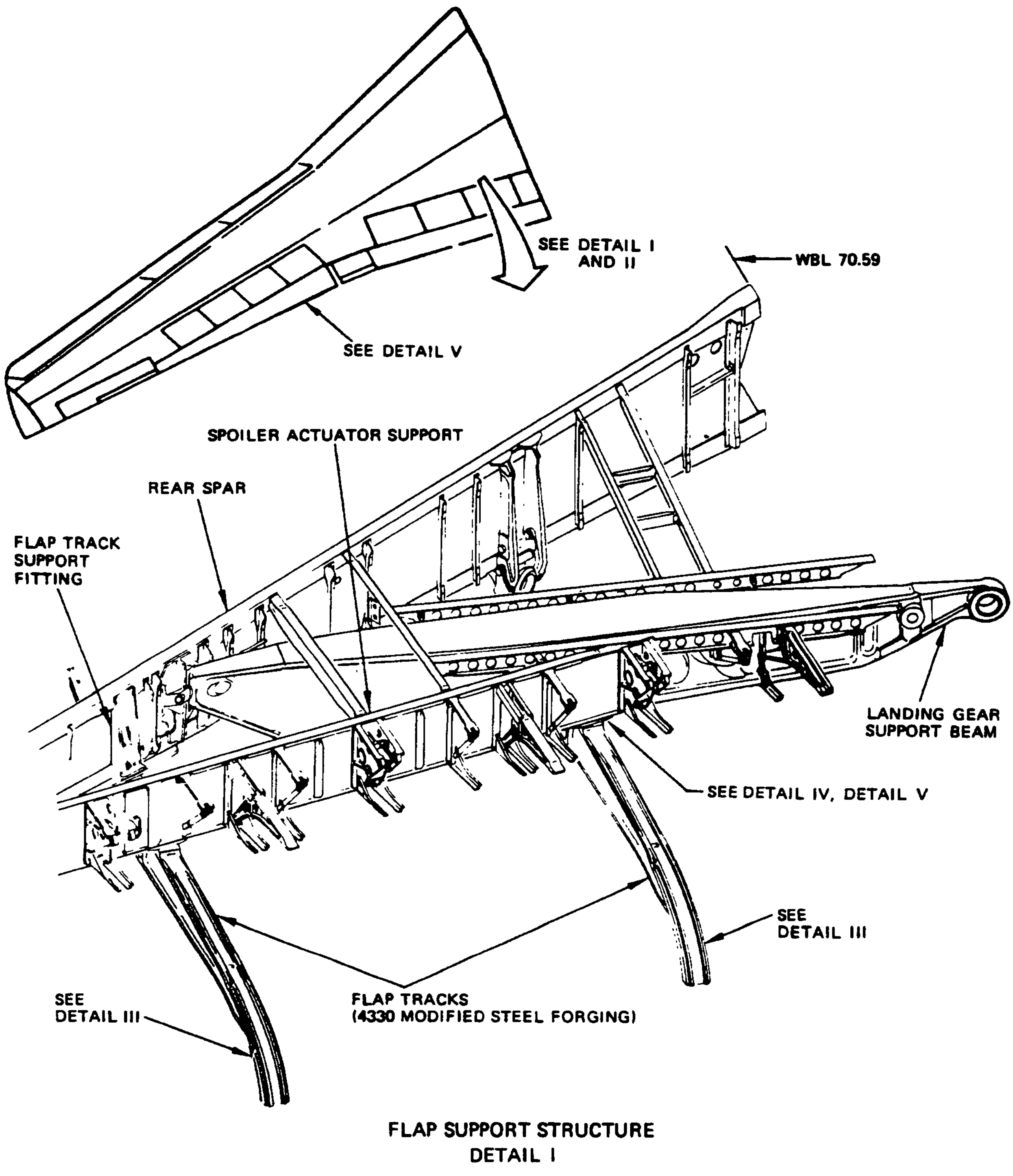
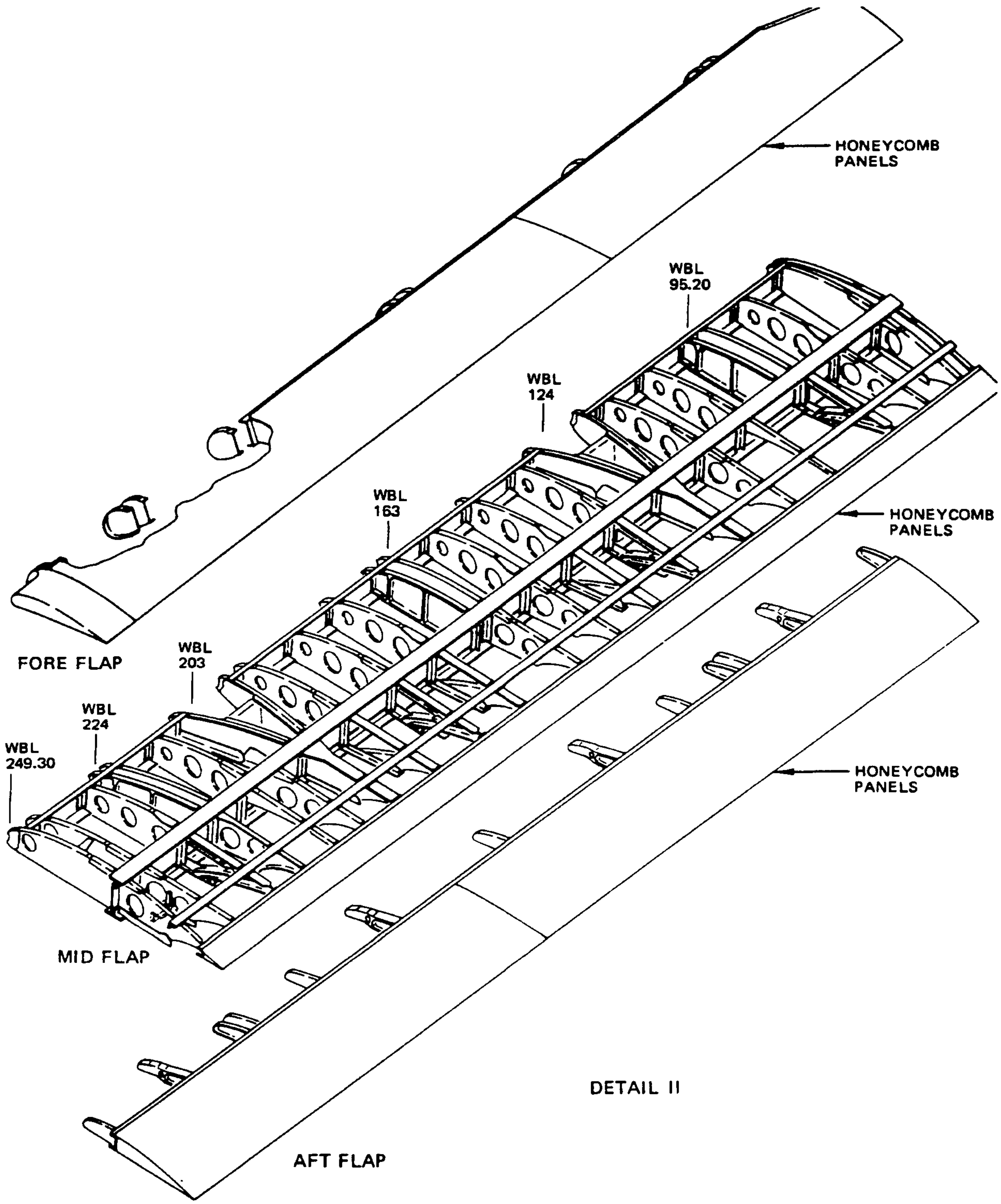
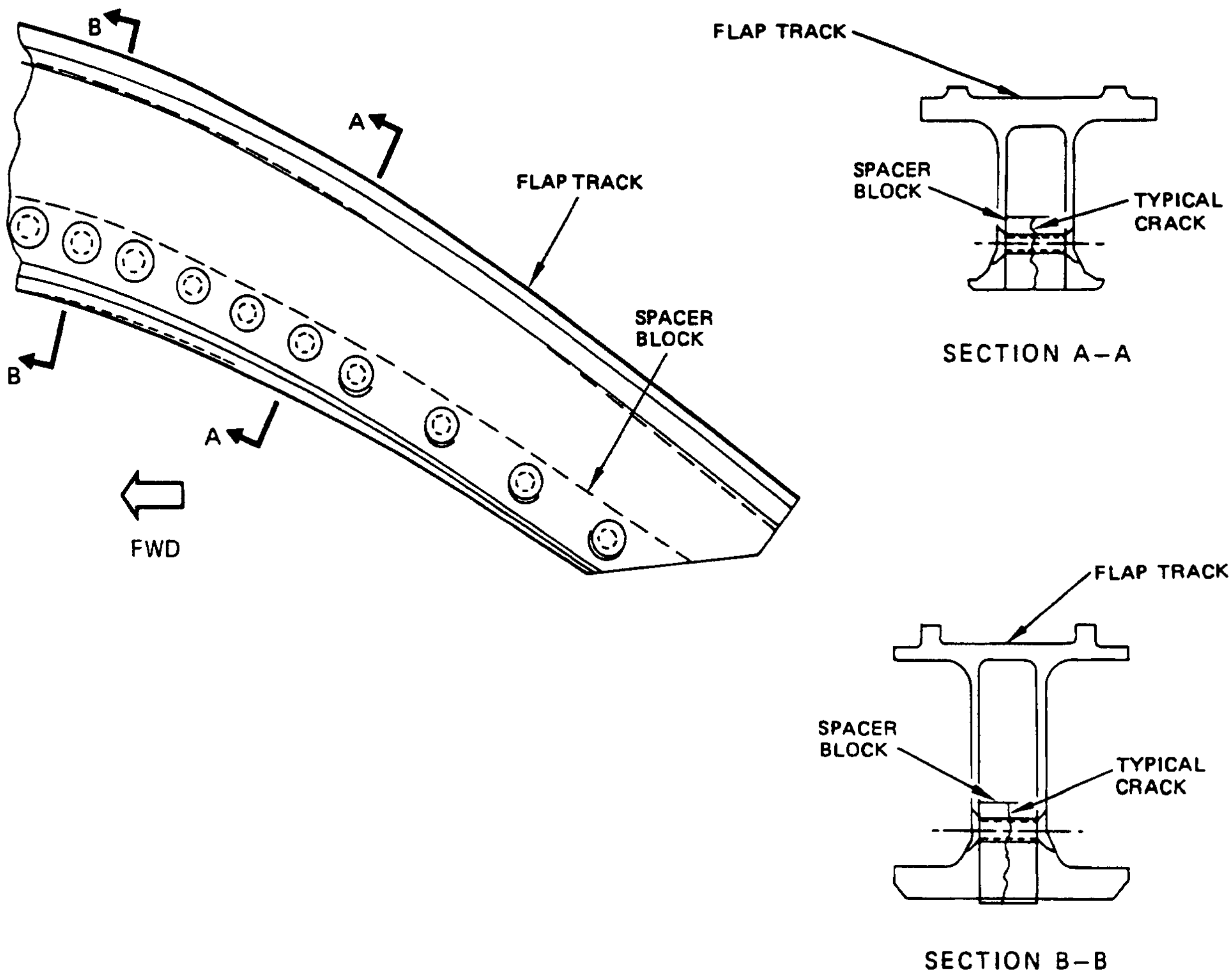


FLAP SUPPORT STRUCTURE
DETAIL I

Trailing Edge Flaps
Figure 1 (Sheet 1)



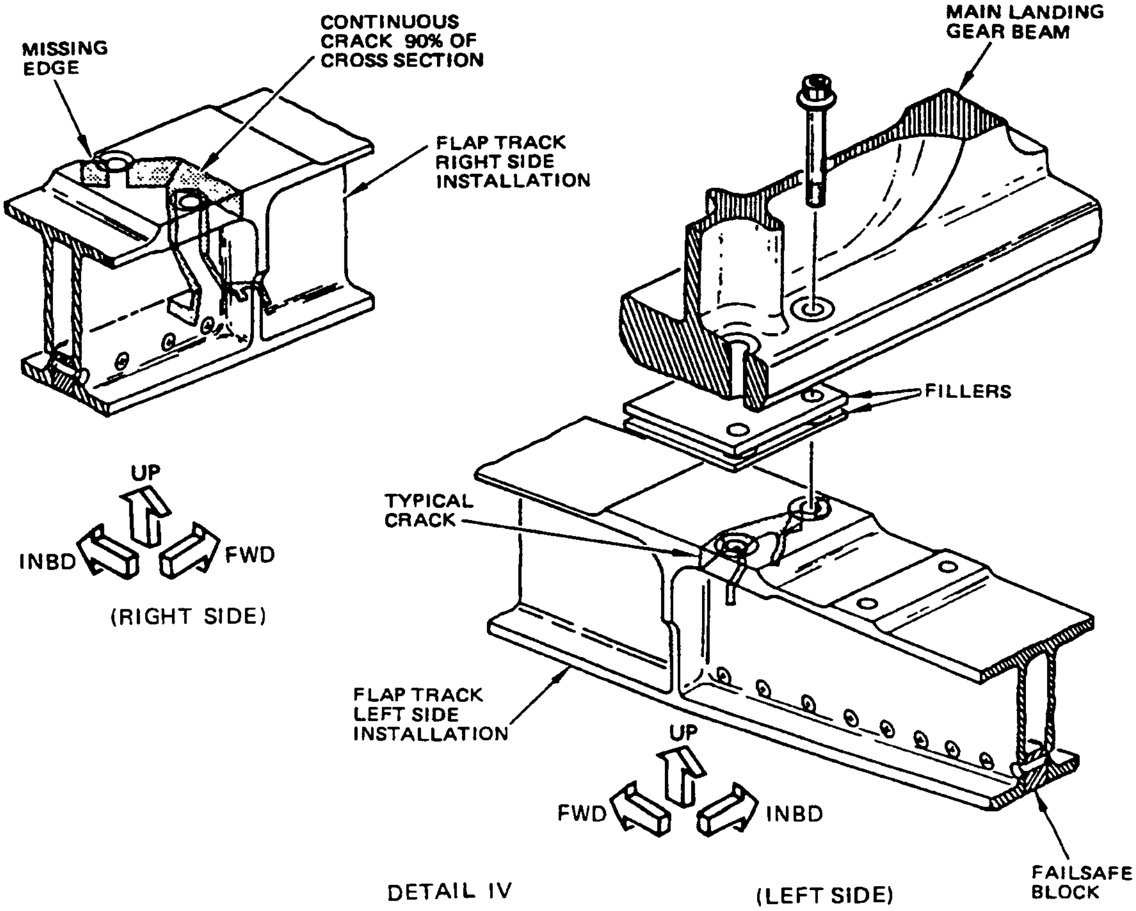
Trailing Edge Flaps
Figure 1 (Sheet 2)

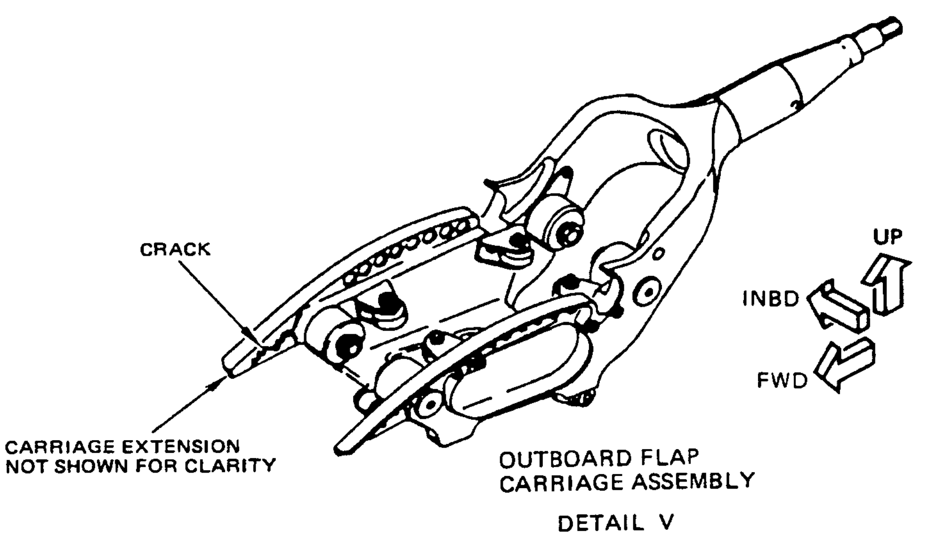


DETAIL III

INBOARD FLAP TRACK SHOWN
OUTBOARD TRACK SIMILAR

Trailing Edge Flaps
Figure 1 (Sheet 3)





Trailing Edge Flaps
Figure 1 (Sheet 4)

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. Stress corrosion cracking of the 7079-T6 aluminum alloy spacer blocks between the lower flanges of the flap tracks has been reported (Detail III). The 7079-T6 material has been replaced with 2024-T351 in production at cum line number 938 and can be installed retroactively by incorporating SB 57-136.

C. Corrosion and cracking of the inboard flap have been reported in the vicinity of the attachment to the landing gear beam. Production changes, introduced at line number 845, were made to improve the joint and these may be incorporated retroactively by SB 57-117.

D. Stress corrosion cracking of the 7079-T6 aluminum alloy outboard carriage support fitting has been reported. The crack extended from the hole for the carriage assembly spindle to the edge of the fitting. Corrosion was found between the forging and the aft flap skin in the area beneath the aft bearing support boss. Fitting material was changed to 7075-T73 aluminum alloy at cum line number 877.

E. Stress corrosion cracking and eventual breakage has been reported in the aft flap track aft attach bolts. Corrosion resistant bolts were added in production at cum line number 1299 and by SB 57-143.

F. Stress corrosion cracks have been reported in the inboard track of the inboard trailing edge flap. Earlier reports of cracks on this track resulted in installation of an improved track. Cracks have been found in the improved tracks. The cracks propagated both inboard and outboard until upper flange was severed. The cracks also propagated down both vertical webs. The most severe case severed the inboard web and inboard lower flange and 75% down the outboard leg for a total crack area of 90% of the track cross section (Detail IV).

G. Stress corrosion cracking has been reported in the trailing edge outboard flap carriage. The crack was found extending 2.0 inches from the lower edge of the forward end of the carriage right hand upper chord web, up and aft through one of two holes in the web where a carriage extension was attached and terminated in the second hole (Detail V)

H. Corrosion has been found on the midflap carriage bearing seats which support the inboard and outboard midflaps. Corrosion occurs mainly on the portion of the forward bearing seat which passes through the forward bearing of the midflap support fitting, and makes removal of the carriage from the midflap assembly difficult.

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 periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Hissing 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

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

(1) At earliest opportunity consistent with the scheduled maintenance activity, corrosion prevention treatment should be accomplished on the trailing-edge flaps.

(2) Flap Tracks. Apply BMS 3-23 annually to areas which are corrosion prone. Apply BMS 3-23, Type II to the internal surfaces of the trailing edge flaps at every D check.

(3) Flap Track Spacer Block. On airplanes with 7079-T6 material spacer blocks, apply BMS 3-23 at inspection intervals noted in SB 57-136.

(4) Broken finishes on flap skin panels and movable flap track fairings should have BMS 3-23 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.

(5) After application of BMS 3-23, all grease fittings in the treated areas should be regreased.

(6) Examine the underside of the outboard carriage support fittings beneath the aft bearing boss for evidence of corrosion. The potential for stress corrosion or fittings manufactured from either material can be reduced by applying BMS 3-23.

(7) In cases where cleaning is accomplished with steam or high pressure water and detergent, reapply BMS 3-23 to all components noted in par. A.

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) SB 27-81 provides modification procedure for the inboard and outboard midflap carriage. The modification is recommended to prevent corrosion and relieve interference between flap support bearing retainers and support fitting.

(2) The requirements of SB 57-117 are superseded by SB 57-0178. SB 57-0178 gives procedures for modification and repair for the TE flap track, to decrease the risk of corrosion common to the inboard 5/8 inch mounting bolt location. SB 57-0178 now recommends these changes to the TE flap track for all aging 727 airplanes.

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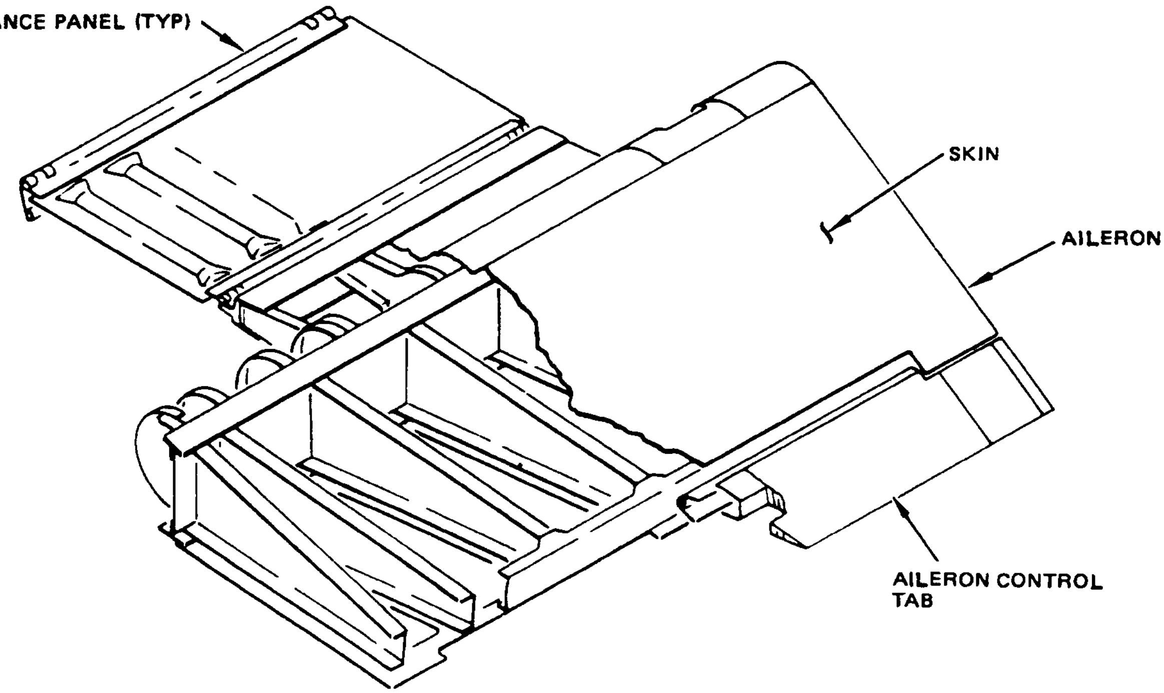
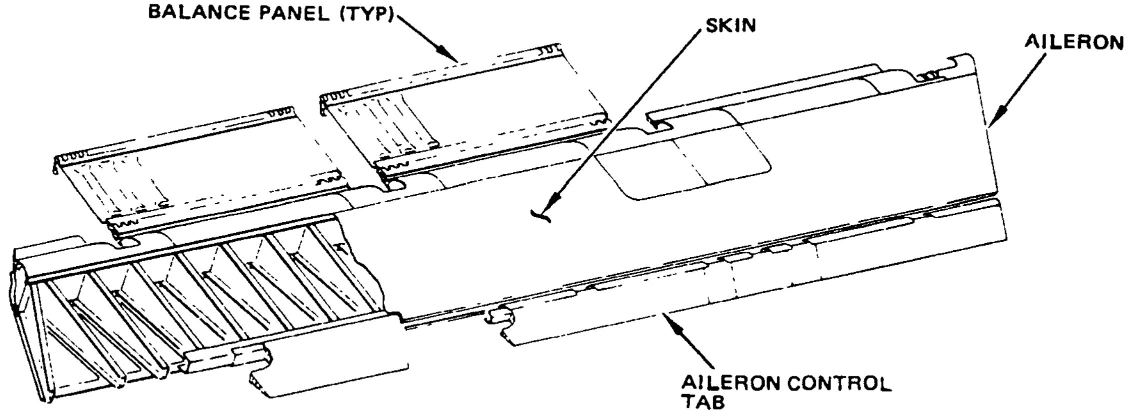


INBOARD AILERON



OUTBOARD AILERON

Ailerons
Figure 1

1. General

   A. Corrosion has been reported on the exterior skin surfaces of the ailerons particularly on airplanes with low utilization which are parked outside. Smoke, industrial waste products and other ground air contaminants contribute to corrosion on airplanes that were not washed on a regular basis.

   B. Stress corrosion cracking of the hinge lug on the actuator fitting has been reported. Material change of the actuator fitting has been incorporated in production at cum line number 854 for the left side and cum line number 858 for the right side.

   C. Corrosion can occur on magnesium tab fittings on the inboard aileron.

   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 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.

   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

   CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

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

      (2) Periodically inspect the ailerons for damaged finish and evidence of corrosion. Pay particular attention to the attachment and hinge points.

(3) Apply water-displacing compound to exposed areas of the aileron spar, attachment and hinge points, except on seals and seal wiping areas.

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.

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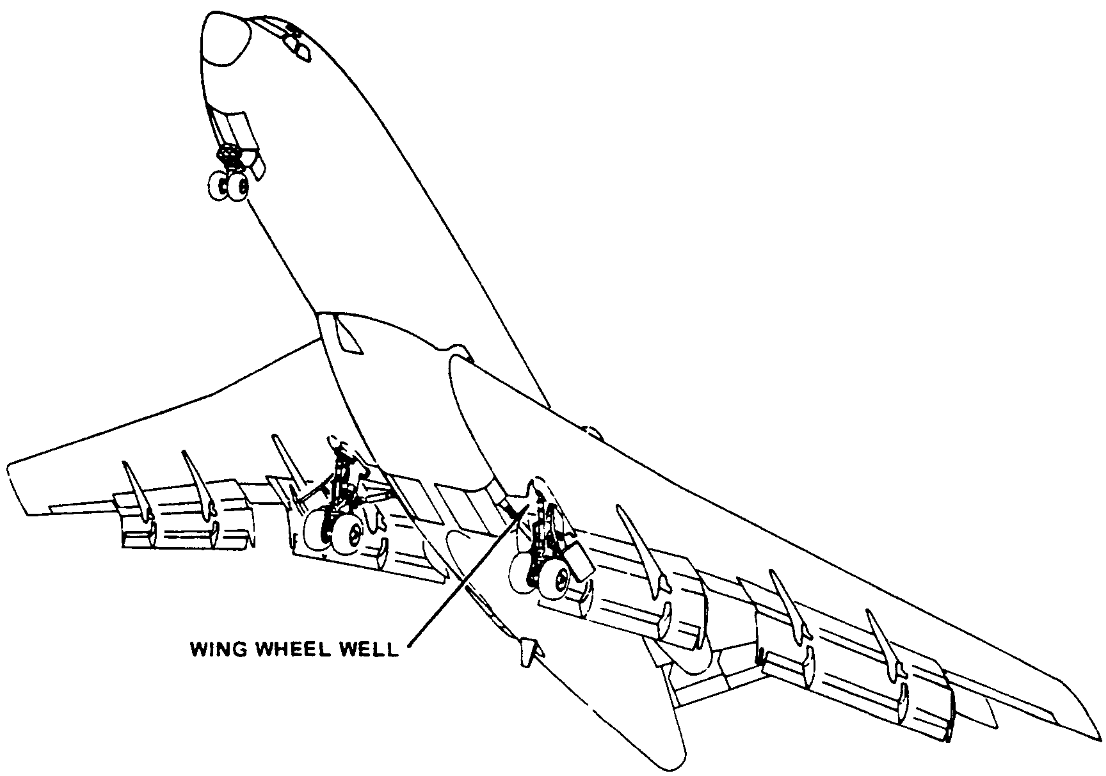

Wing Wheel Well
Figure 1

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 struts 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. 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

CAUTION: DO NOT APPLY CORROSION INHIBITING COMPOUNDS ON GREASE JOINTS OR SEALED BEARINGS. THESE COMPOUNDS DISSOLVE GREASE AND OTHER LUBRICANTS. THEY ARE PENETRATING COMPOUNDS AND CAN GET AROUND THE SEALS AND INTO THE BEARINGS.

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

(2) The wing wheel well should be treated at the same time with the torque box and trunnion support fitting.

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

(4) Replace damaged or broken finish.

(5) 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.

(6) Regrease all fittings in the treatment area.

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.

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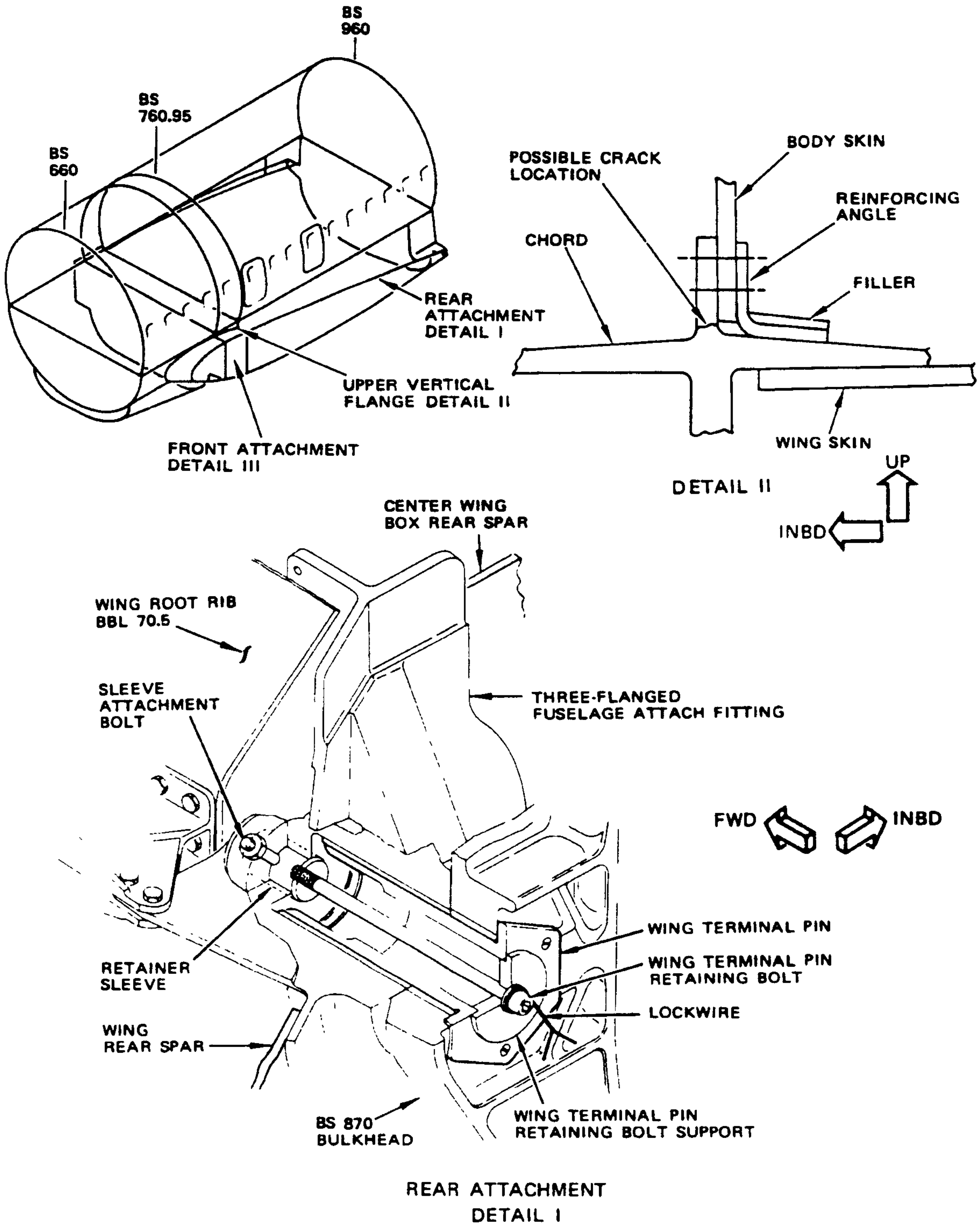
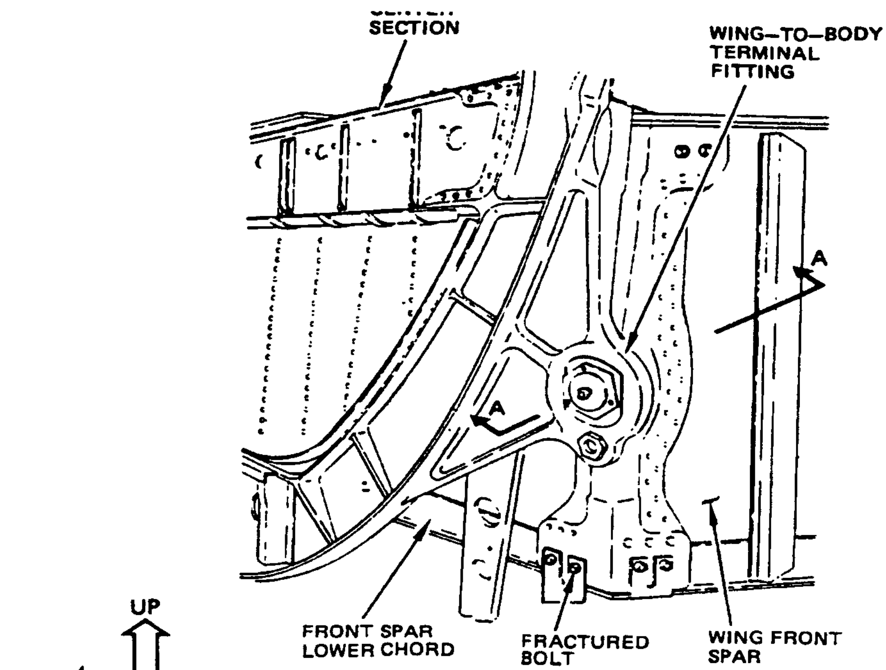
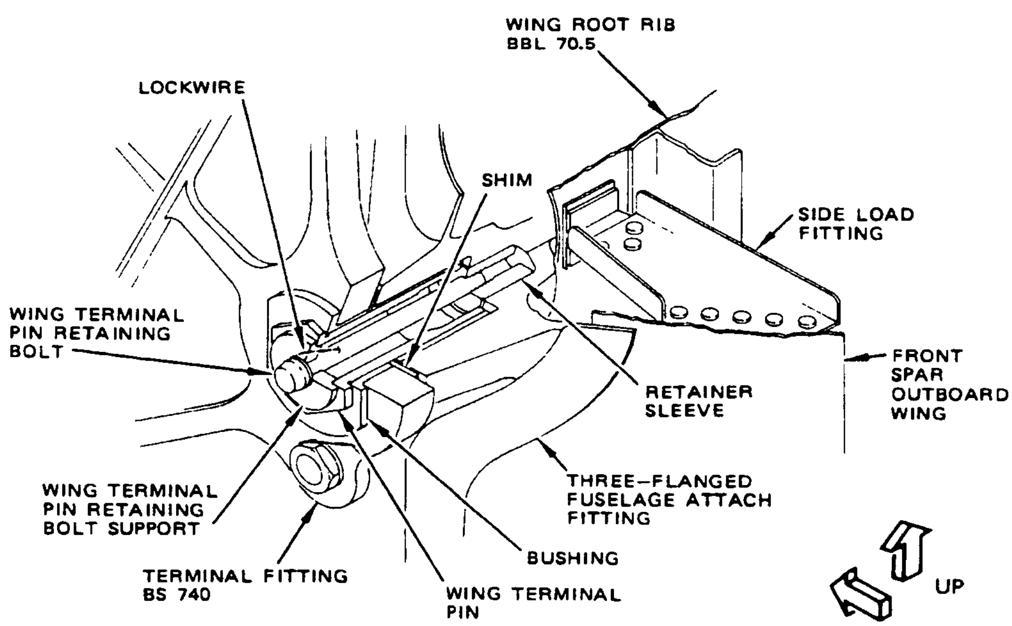


Wing to Body Attachment
Figure 1 (Sheet 1)



FRONT END ATTACHMENT
DETAIL III



SECTION A–A

Wing to Body Attachment
Figure 1 (Sheet 2)

1. General

A. Corrosion can occur near the bottle pins which attach the wing to the fuselage.

B. Stress corrosion cracks can occur in the upper vertical flange of the left BBL 70.5 rib upper chord. One crack ran along the radius of the frame (Detail II).

C. Stress corrosion can break the outboard bolt at the attachment of the left wing terminal fitting to the center section (Detail III).

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 the 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 system.

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.

F. Prevention Treatment

(1) At first opportunity consistent with scheduled maintenance activity, corrosion treatment should be applied to the wing to body attachment.

(2) Install bottle pins with MIL-C-16173, grade 3 corrosion preventive compound.

(3) Apply BMS 3-23 corrosion prevention compound to the exposed portion of the bottle pin and the adjacent structure, paying particular attention to crevices and faying surfaces.

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

76

ENGINE CONTROLS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Engine Control Cables	Carbon steel cables in hot areas in the vicinity of engines corrode due to deterioration of lubricant	76-10-27 Fig. 1	Corrosion resistant steel cables introduced at C/L 916 and by SB 76-17 and 76-A21.

Specific Corrosion Problems - Engine Controls
Figure 1

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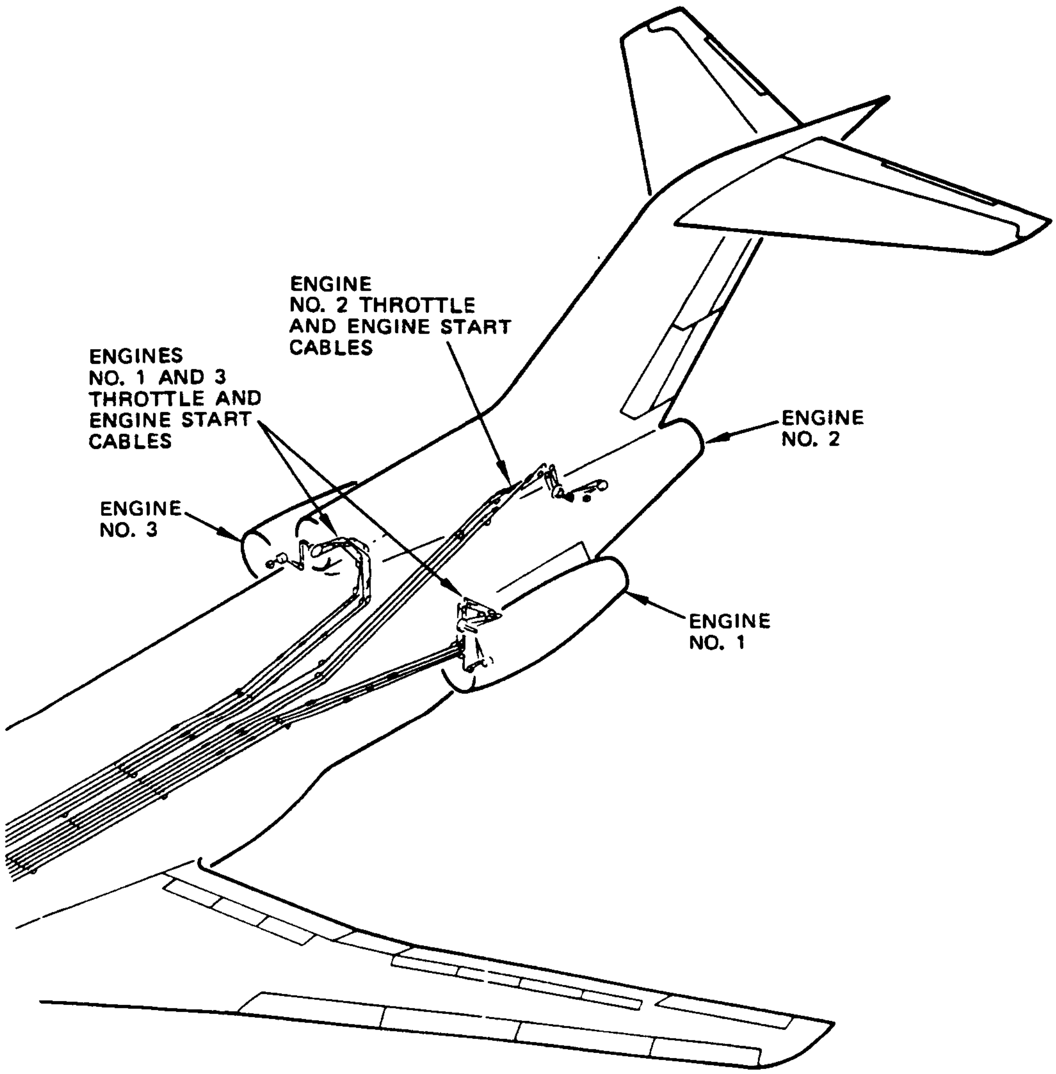

Engine Control Cables
Figure 1

1. General

A. Carbon steel engine control cables have exhibited deterioration of the lubrication and resultant corrosion in high temperature areas near the engines. Corrosion resistant steel cables were introduced at line number 916 and have been incorporated retroactively by SB 76-17.

B. Corrosion of these cables has resulted in complete failure in a number of cases which can make it impossible to control engine power.

2. Corrosion Prevention

A. Carbon steel engine control cables should be inspected periodically for corrosion or broken wires in accordance with SB 76-A21. This service bulletin provides frequencies and inspection procedures.

B. Terminating action for these inspections is replacement of the cables in accordance with SB 76-17 or partial replacement as described in SB 76-A21. Cable replacement or partial replacement is required where cables are found damaged.

C. For lubrication of these cables refer to 12-20-1 of the 727 Maintenance Manual.