GENERAL INFORMATION
(VOLUME 1)
SPECIFIC INFORMATION
(VOLUME 2)
MODELS 707 AND 727 THROUGH 777

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CHAPTER

06

DIMENSIONS AND AREAS

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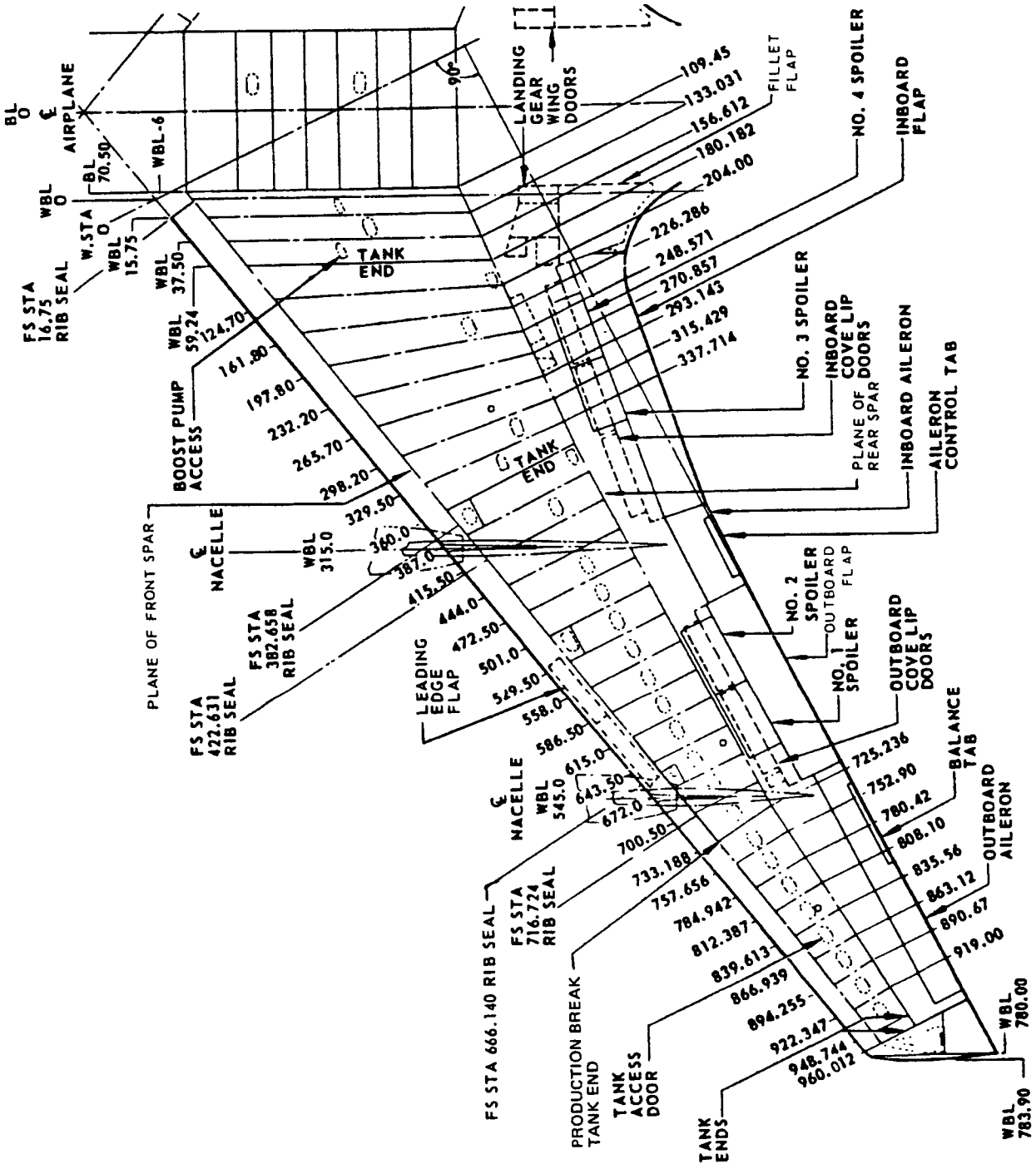
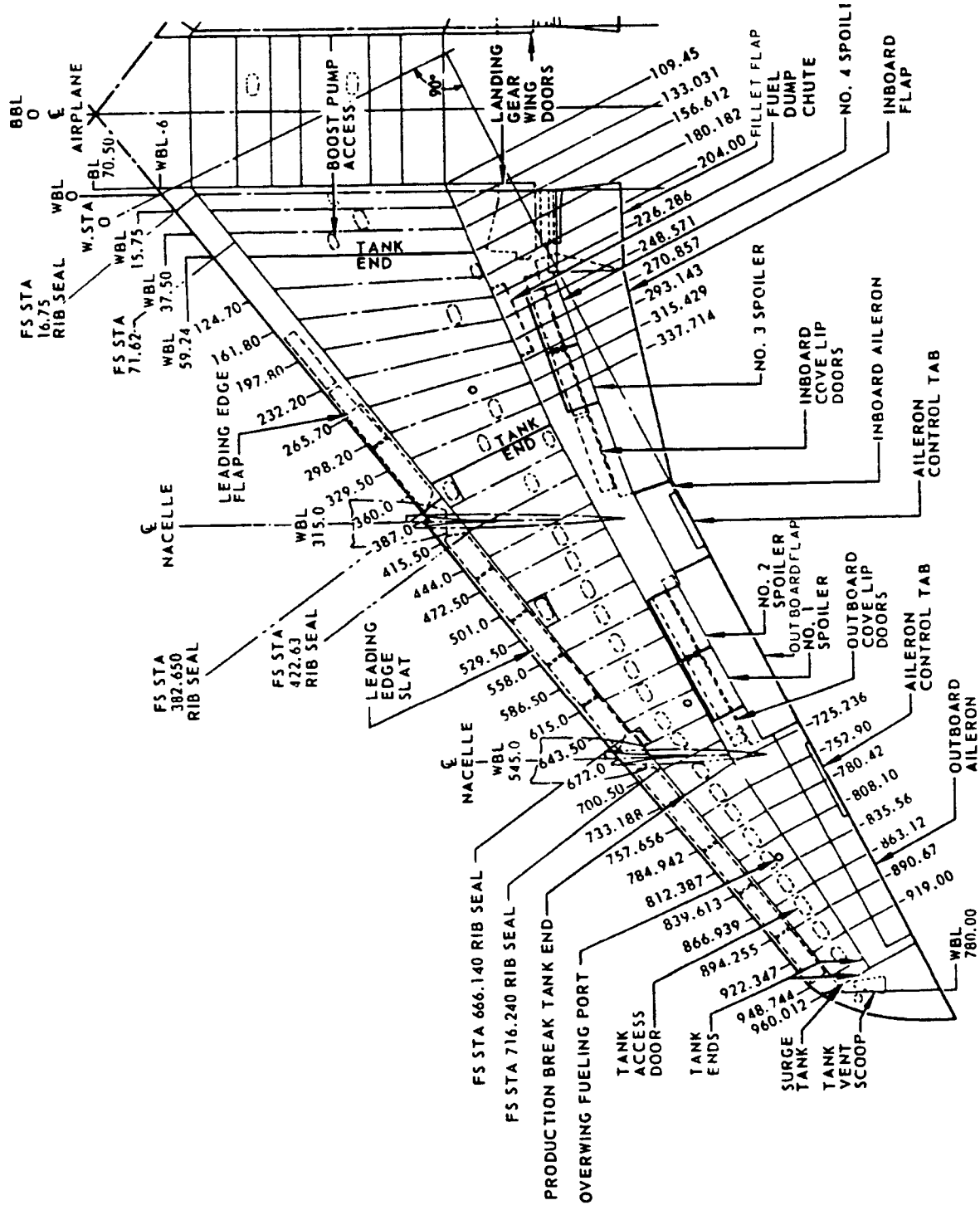
AWG	American Wire Gage
BBL	Body Buttock Line
BRP	Body Reference Plane
BS or B STA	Body Station
CMM	Component Maintenance Manual
CRES	Corrosion Resistant Steel
CRT	Cathode Ray Tube
DIA	Diameter
DME	Distance Measuring Equipment
EDM	Electric Discharge Machine
ELEV STA	Elevator Station
ENG STA	Engine Station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

Abbreviations and Symbols
Figure 1



707 INTERCONTINENTAL (TURBOJET)

Wing Station Diagram
Figure 2 (Sheet 1)



707 INTERCONTINENTAL (TURBOFAN)

Wing Station Diagram
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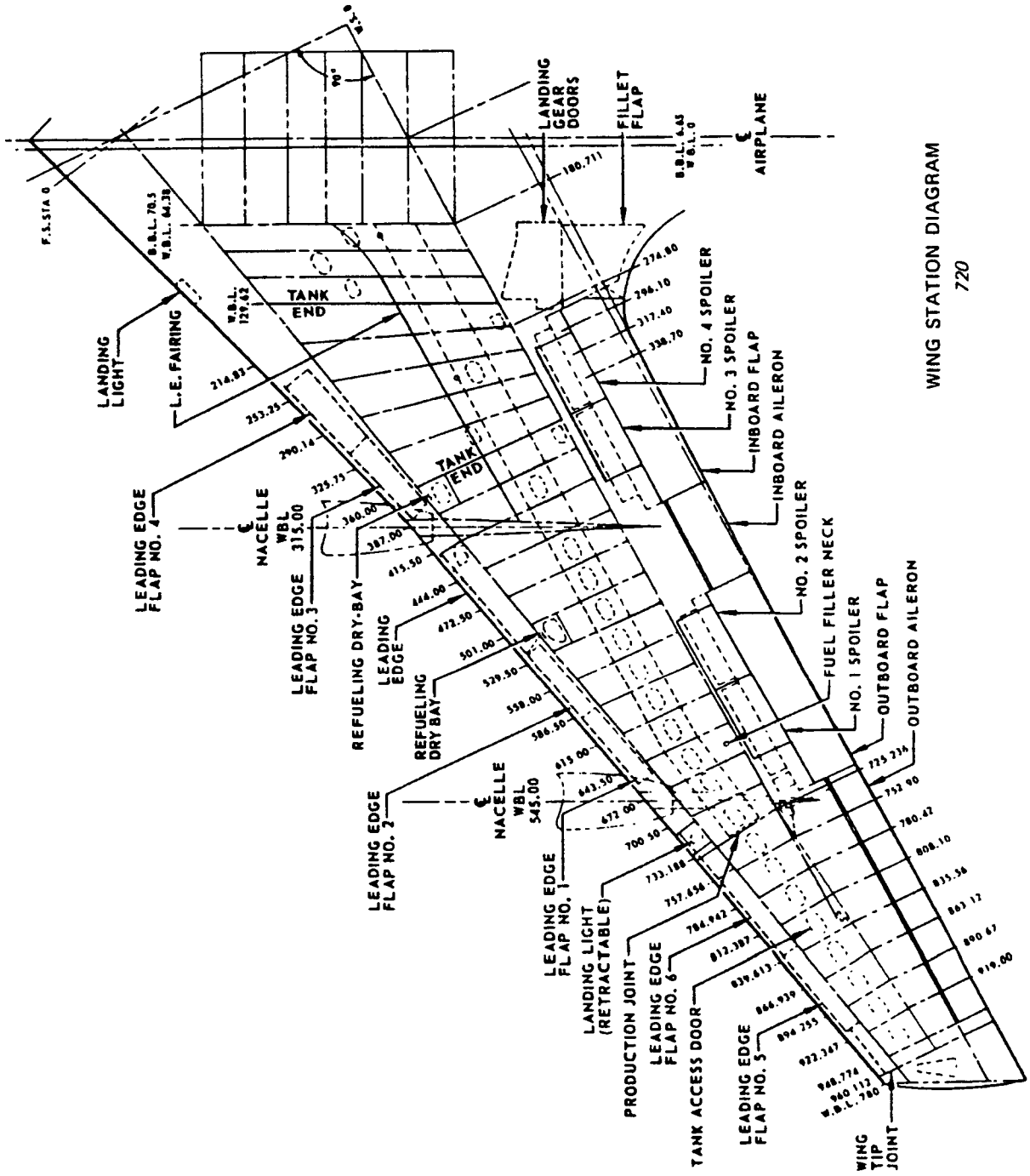

Wing Station Diagram
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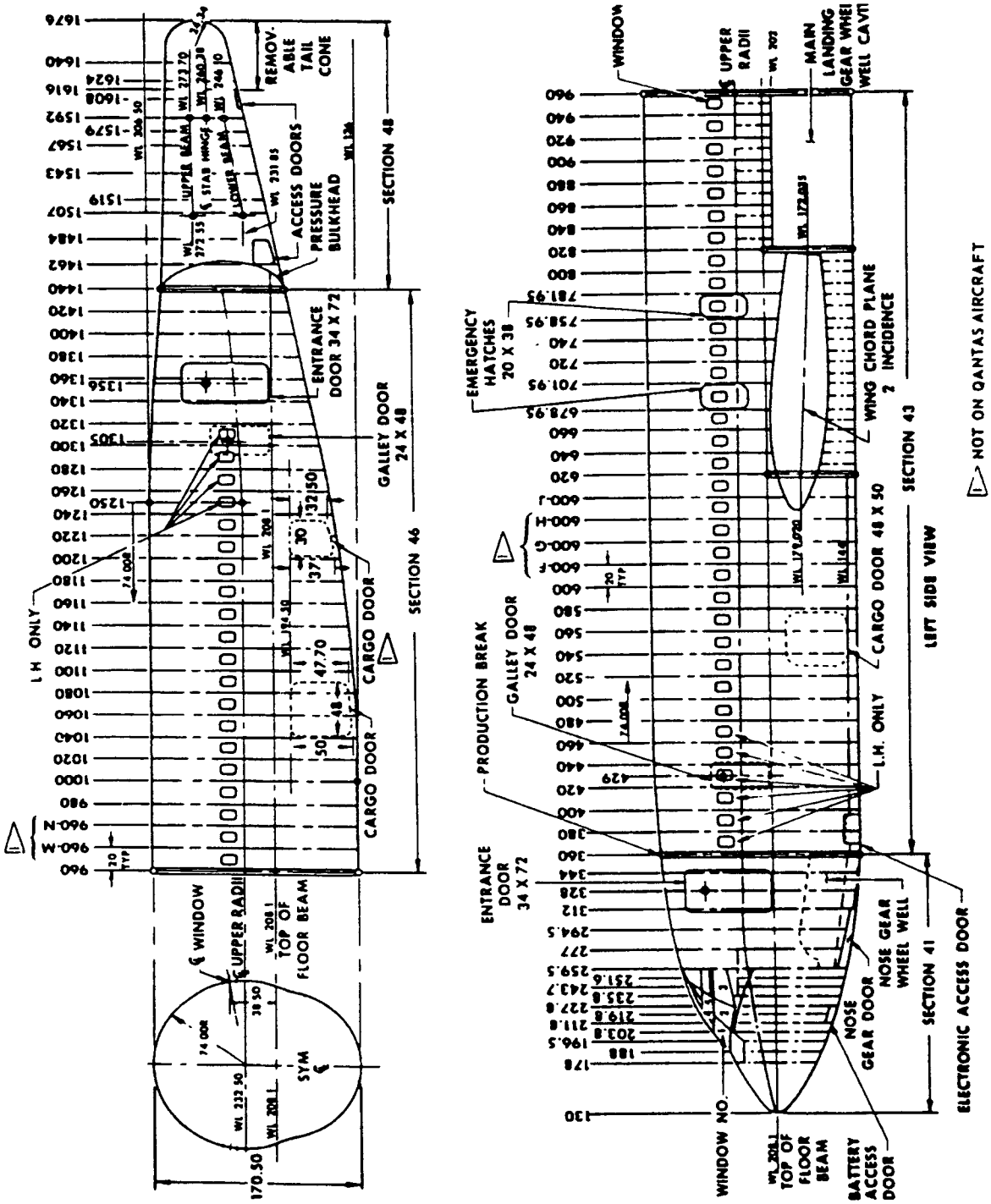

Fuselage Station Diagram
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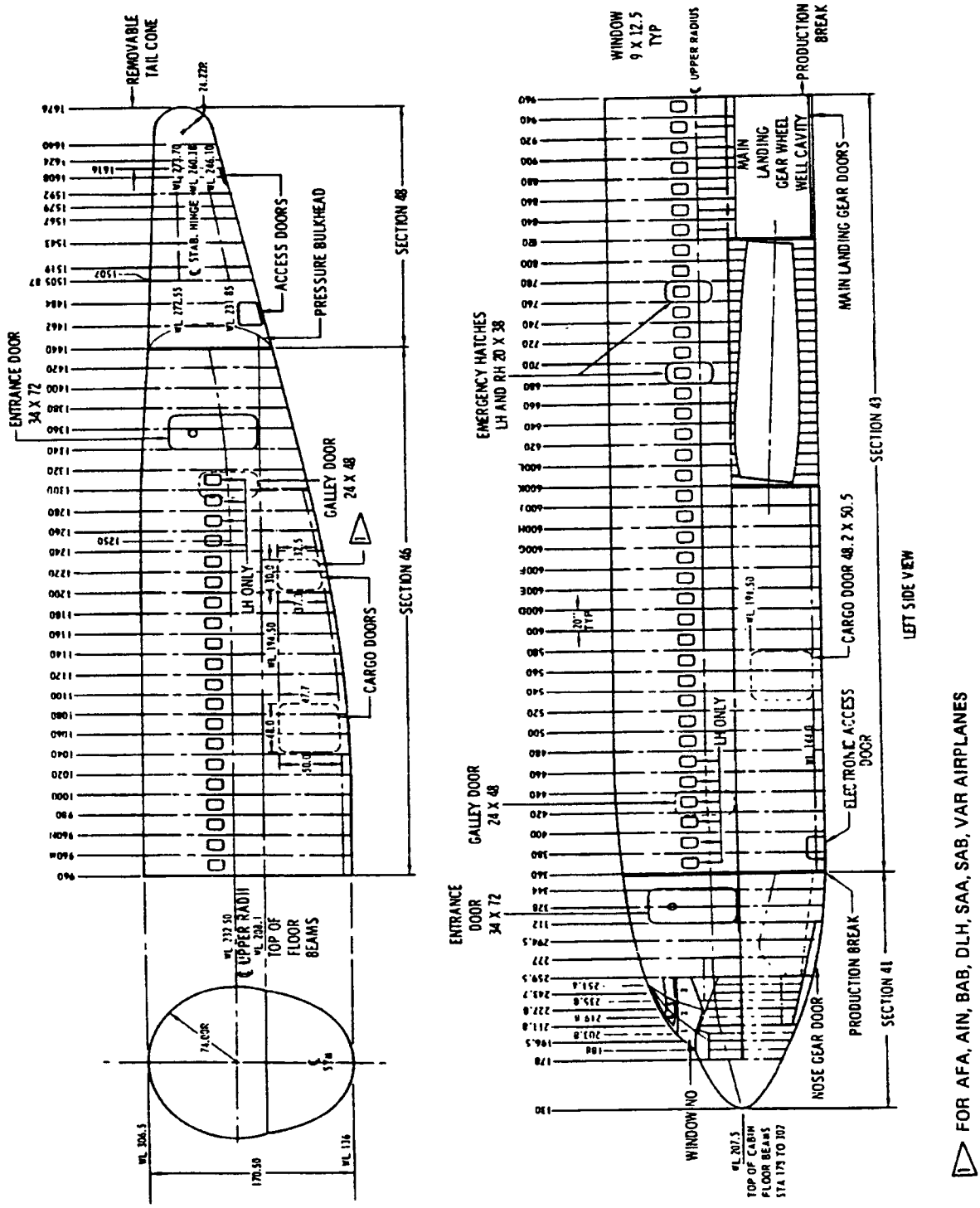

Fuselage Station Diagram
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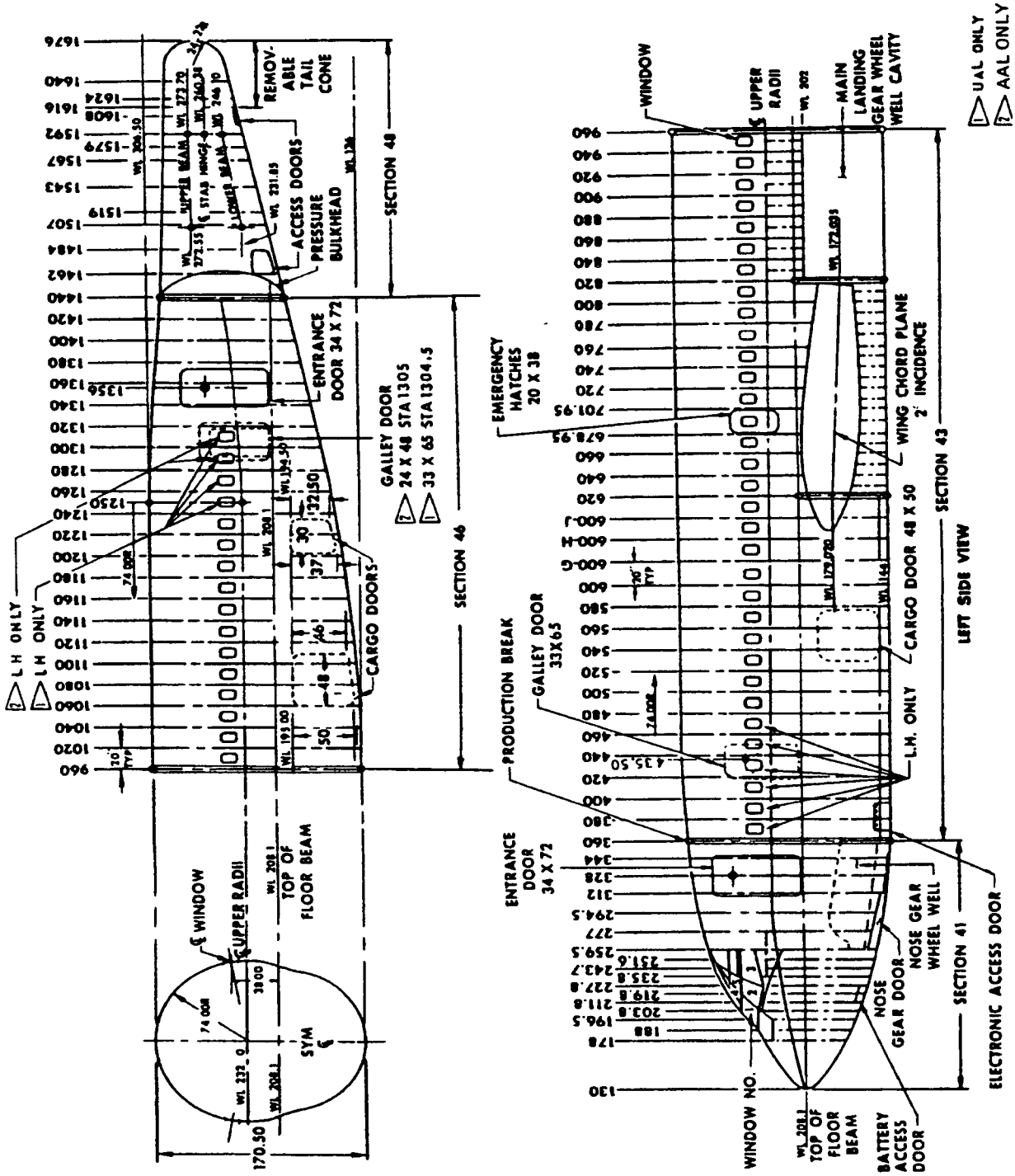

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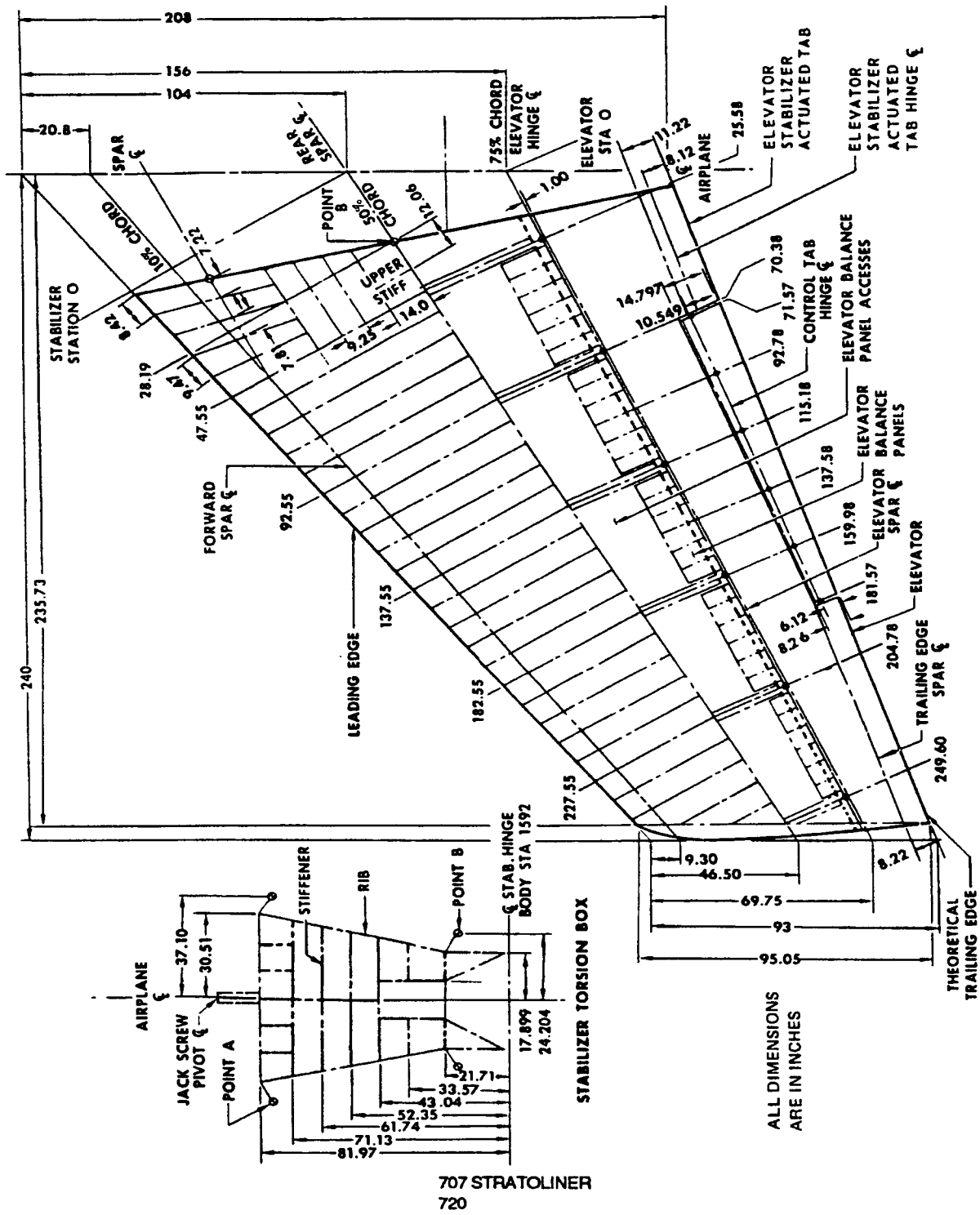
Fuselage Station Diagram
Figure 3 (Sheet 3)



Horizontal Stabilizer and Elevator Station Diagram
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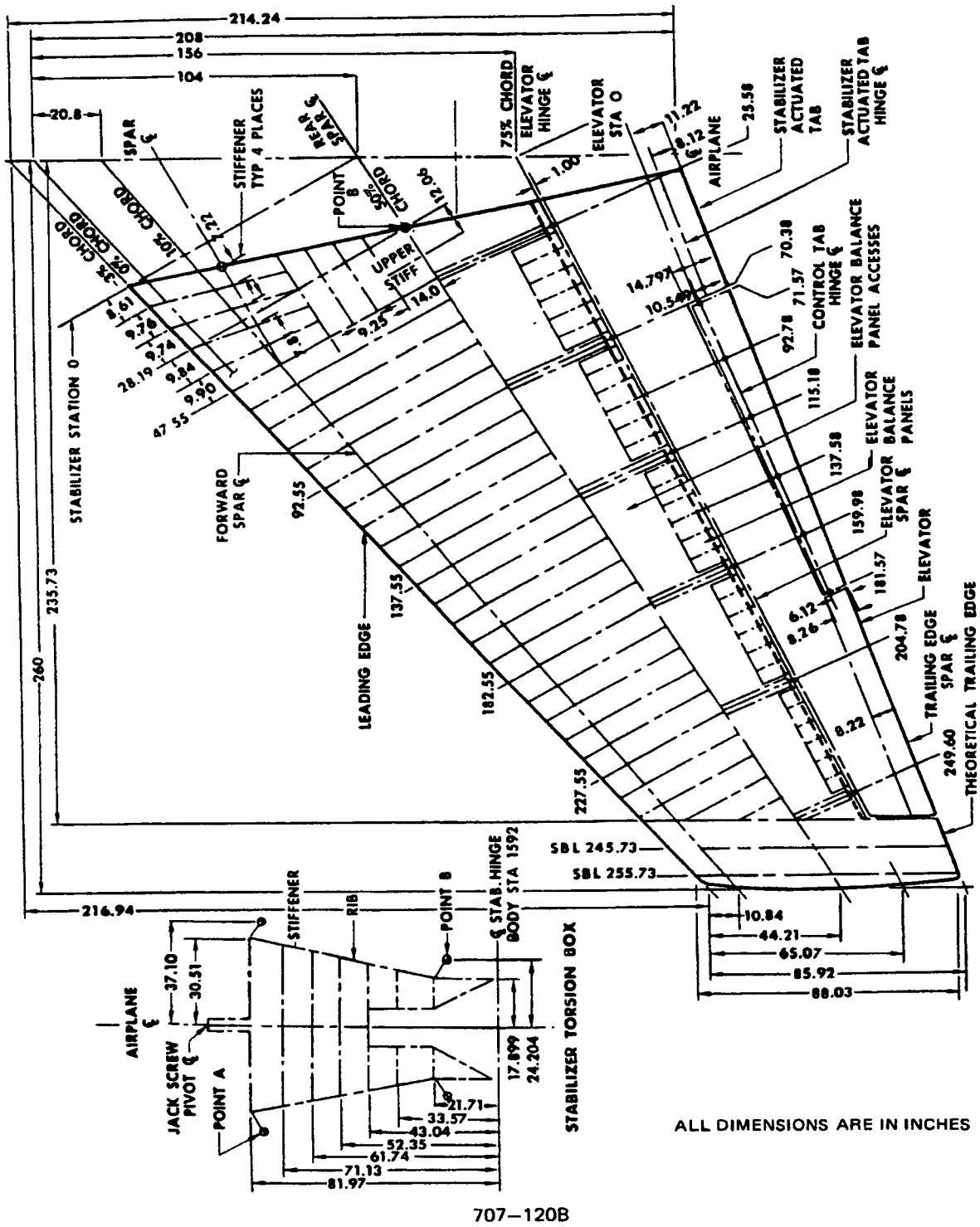
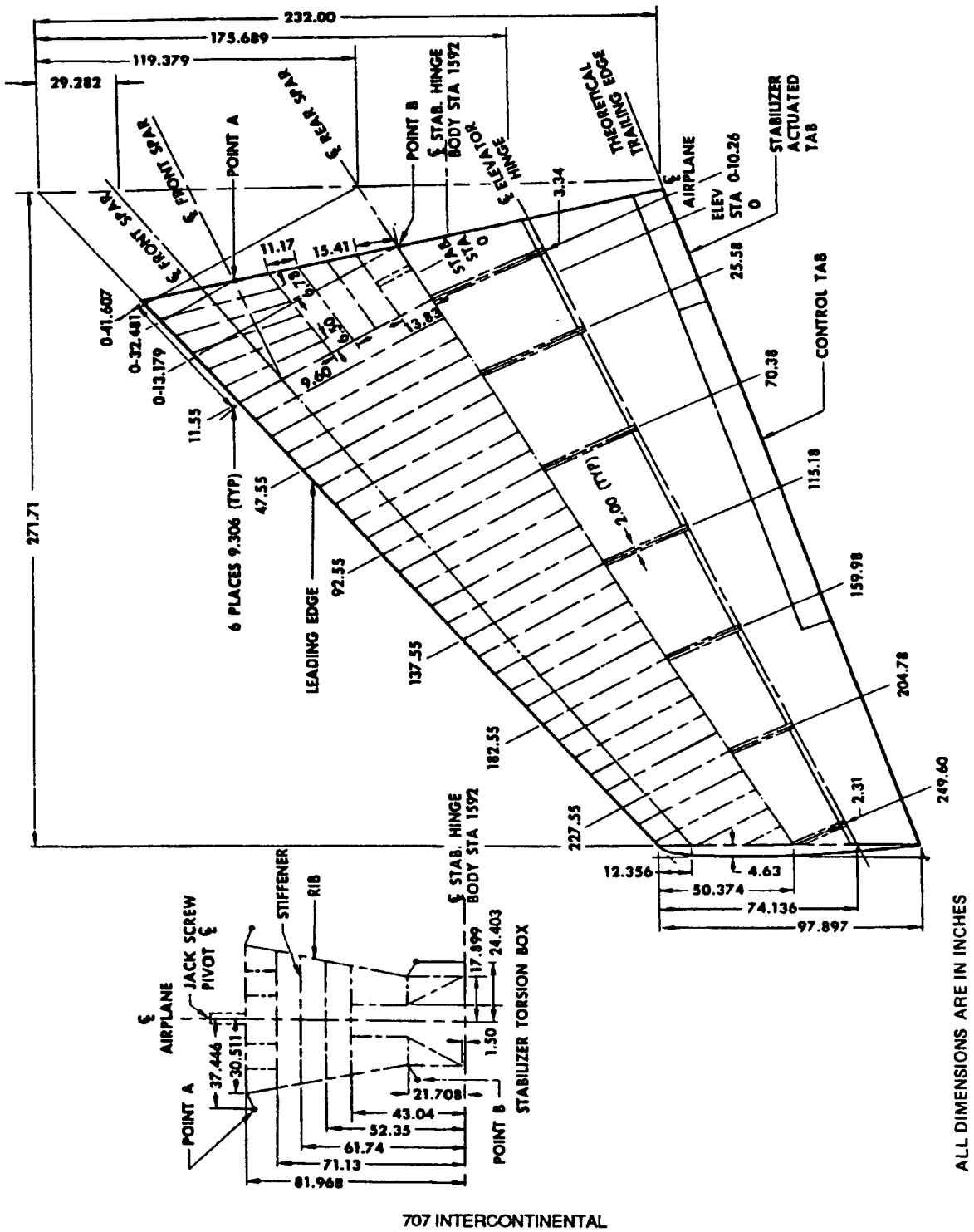
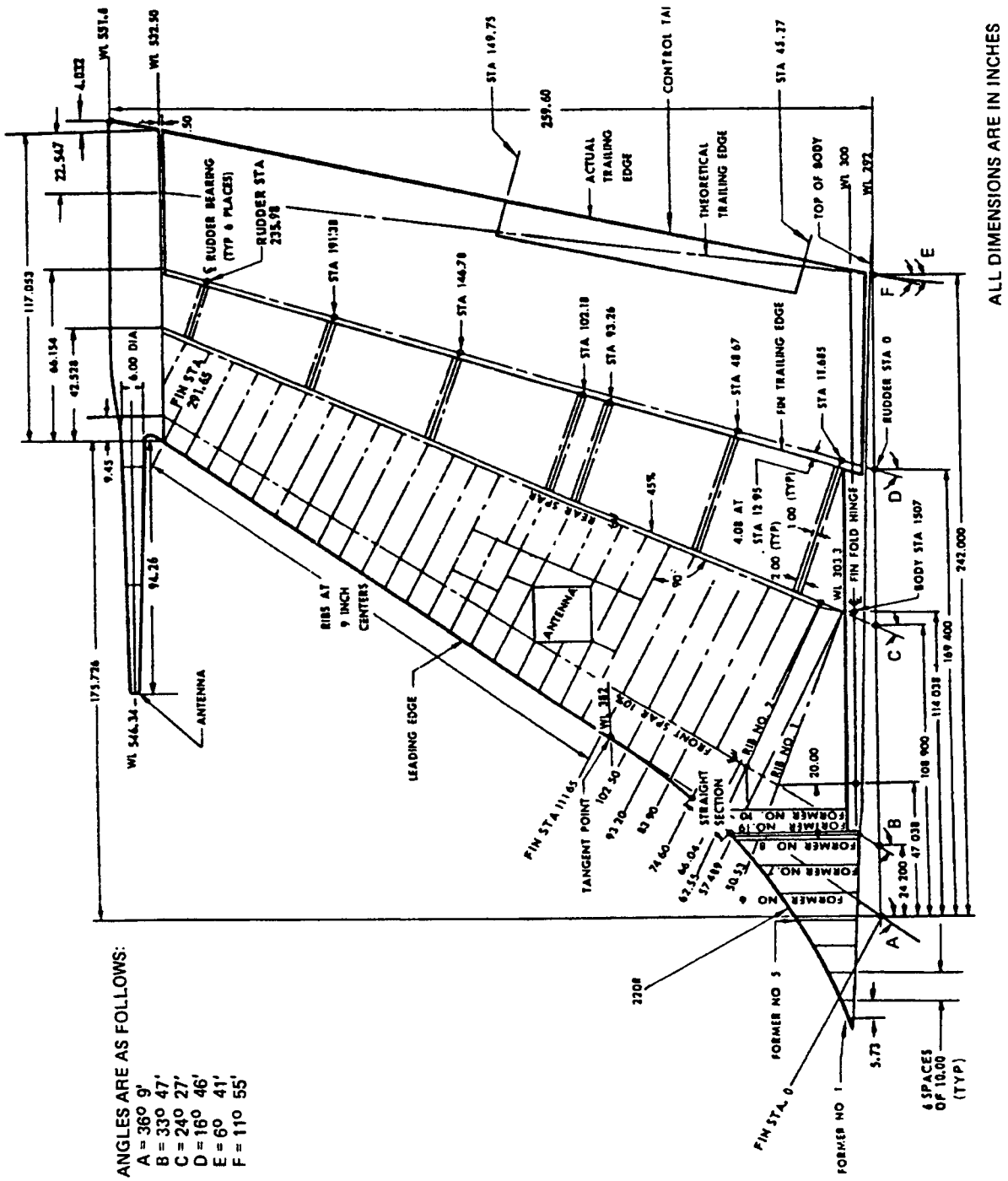


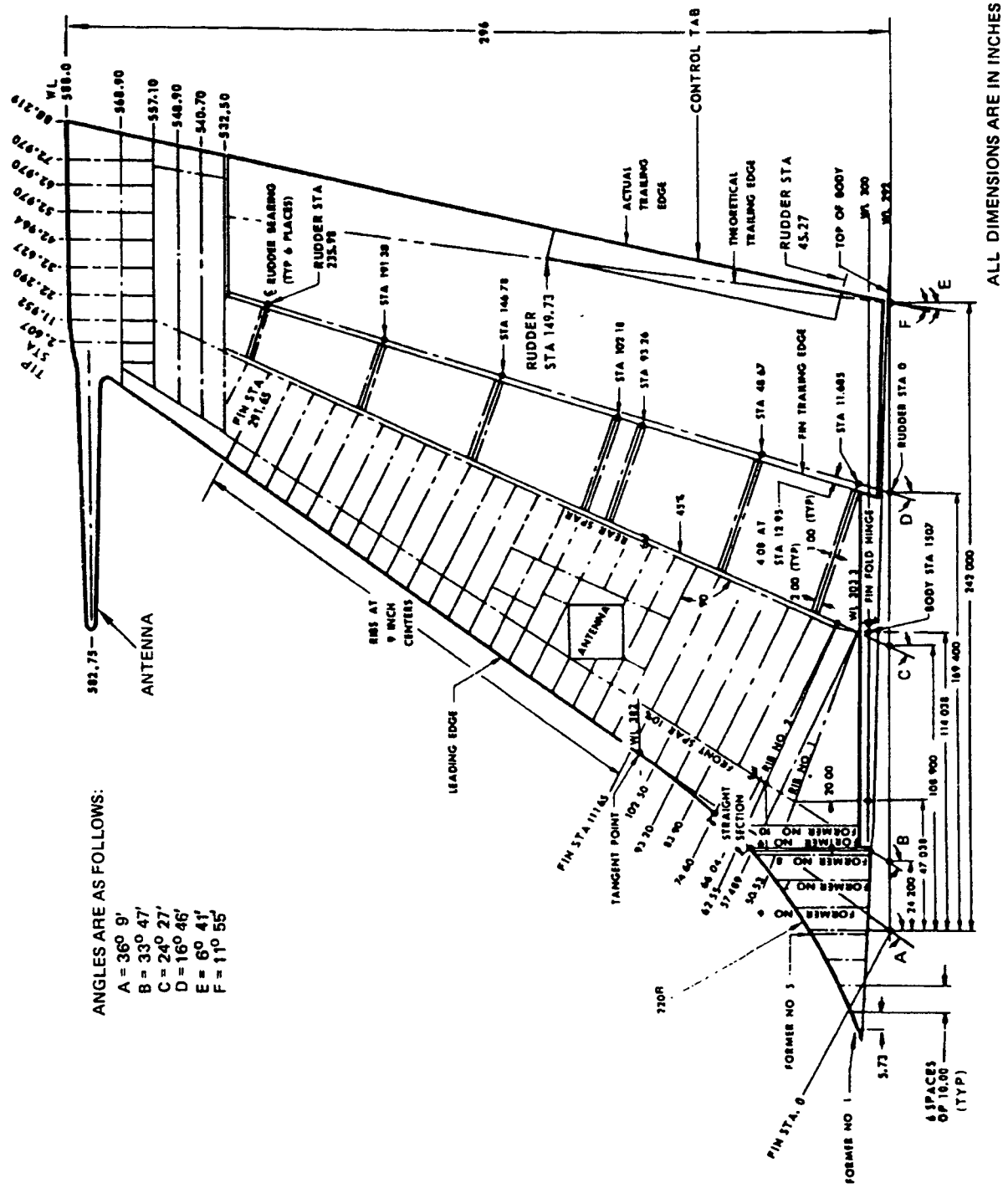
Horizontal Stabilizer and Elevator Station Diagram
Figure 4 (Sheet 2)



Horizontal Stabilizer and Elevator Station Diagram
Figure 4 (Sheet 3)

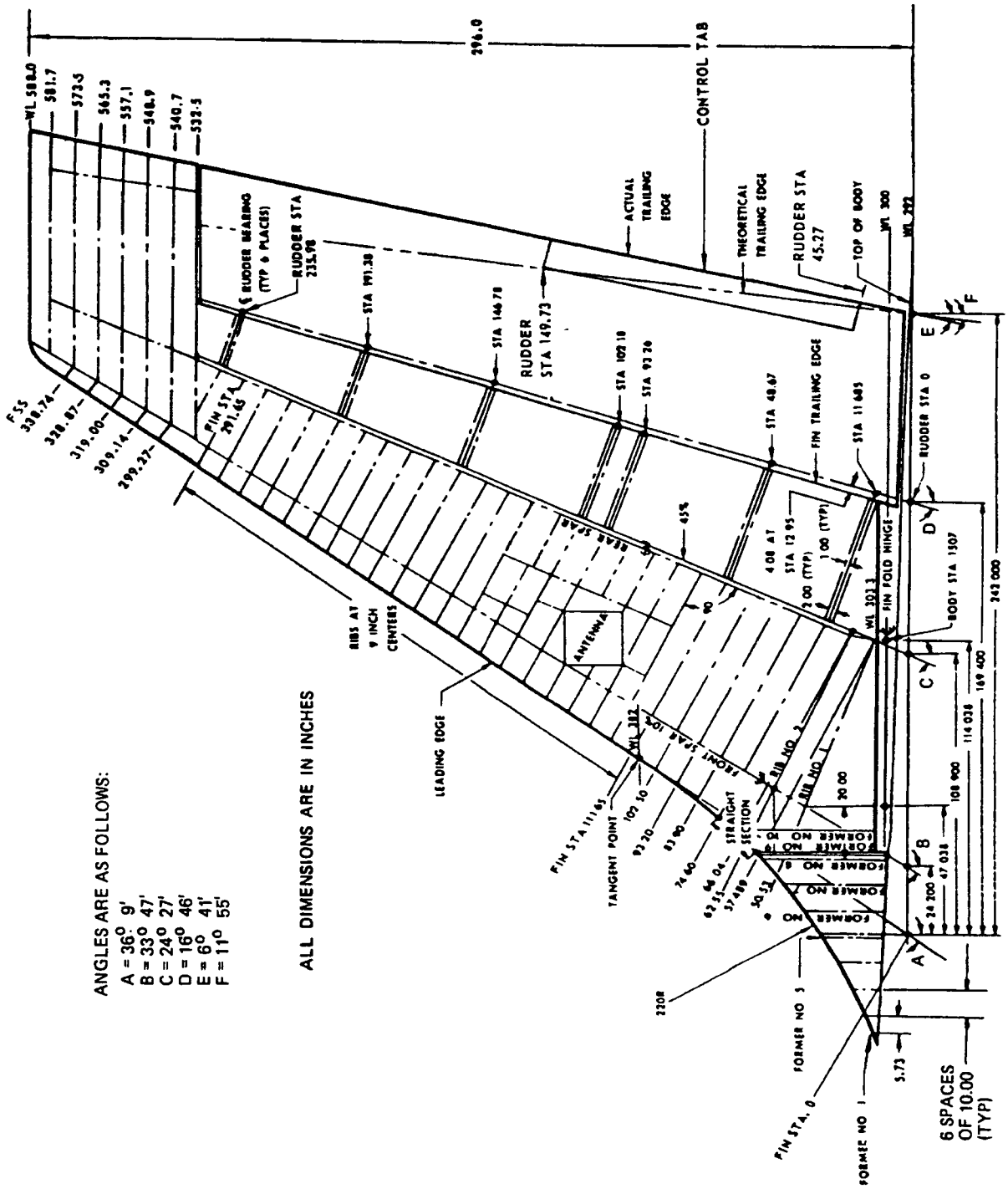


Vertical Fin and Rudder Station Diagram
Figure 5 (Sheet 1)



707 AIRPLANES WITH EXTENDED VERTICAL FIN
(EXCEPT AAL, UAL)

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



707 AIRPLANES WITH EXTENDED VERTICAL FIN (AAL, UAL)
720B

Vertical Fin and Rudder Station Diagram
Figure 5 (Sheet 3)

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CHAPTER

27

FLIGHT CONTROLS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
General	Control cables can get corrosion if the protective grease is not there, particularly if open to moisture	27-00-07 Fig. 2	
Rudder	Corrosion on rudder tension control rods	27-20-07 Fig. 1	
Elevator Aft Control Quadrant Installation	Corrosion on Lower Support at BS 1592 due to blocked drain hole can cause high elevator control forces	27-30-07 Fig. 1	
Fillet Flap Transmission Assembly	Stress corrosion cracking of transmission mount. Stress corrosion cracking of transmission support assembly. Corrosion at inboard and outboard splined ends of flap drive shaft	27-50-07 Fig. 1	SB 3053 SB 3251
Leading Edge	Corrosion found in wells for actuator and carriage attachment fittings	27-80-07 Fig. 1	
	Stress corrosion cracks in leading edge flap torque tube castings	27-80-07 Fig. 1	

Specific Corrosion Problems - Flight Controls
Figure 1

1. General

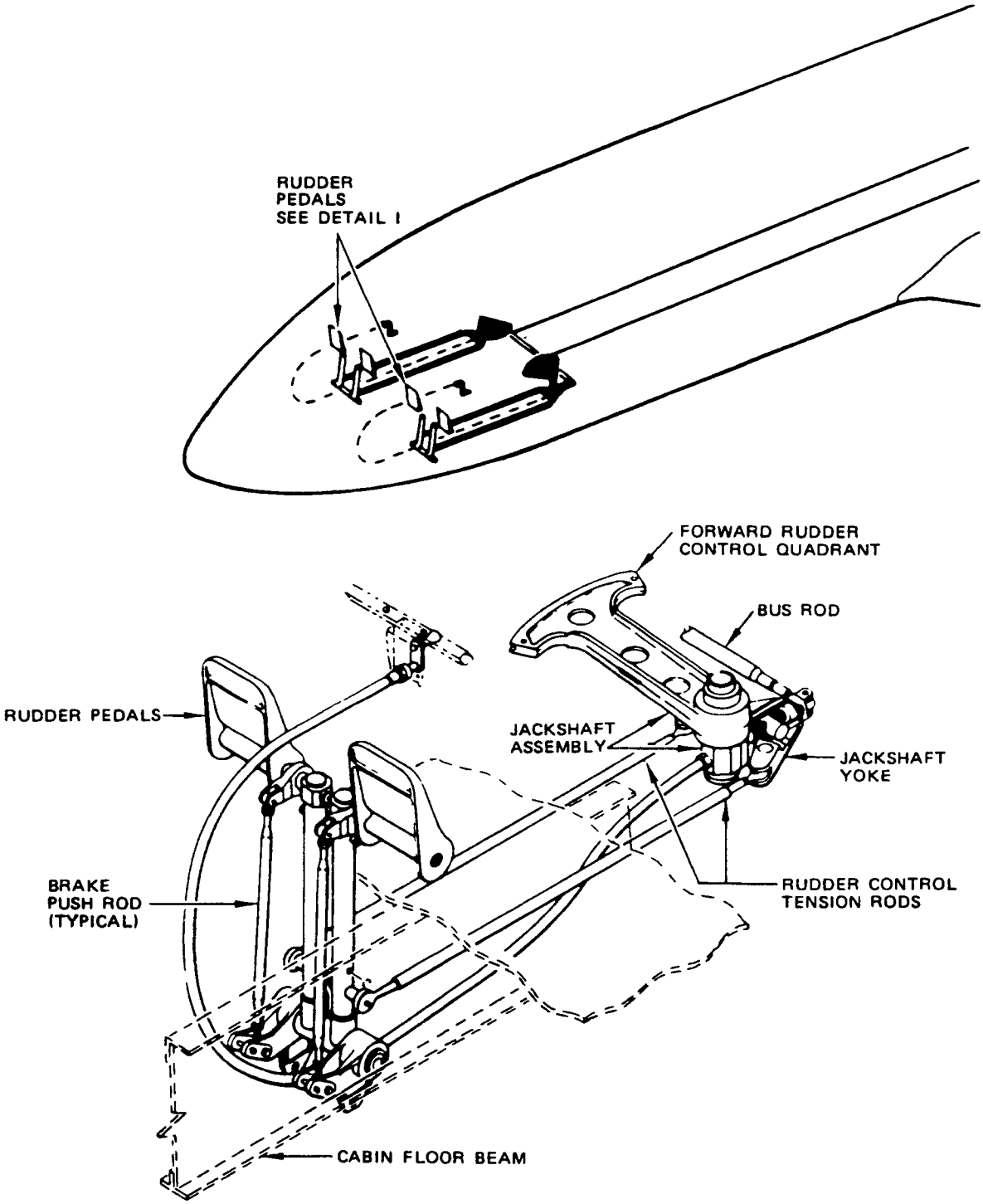
A. Control cables are made of thin strands of tinned carbon steel wire. Cables are protected by a thin ribbon of grease between the strands. Corrosion can occur if the grease film is not there and the cables are open to moisture.

2. Corrosion Prevention

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

B. Apply a thin film of grease over the length of the cable per 27-1-1 of the Maintenance Manual after you examine the cable.

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



DETAIL I

Rudder Control Tension Rods
Figure 1

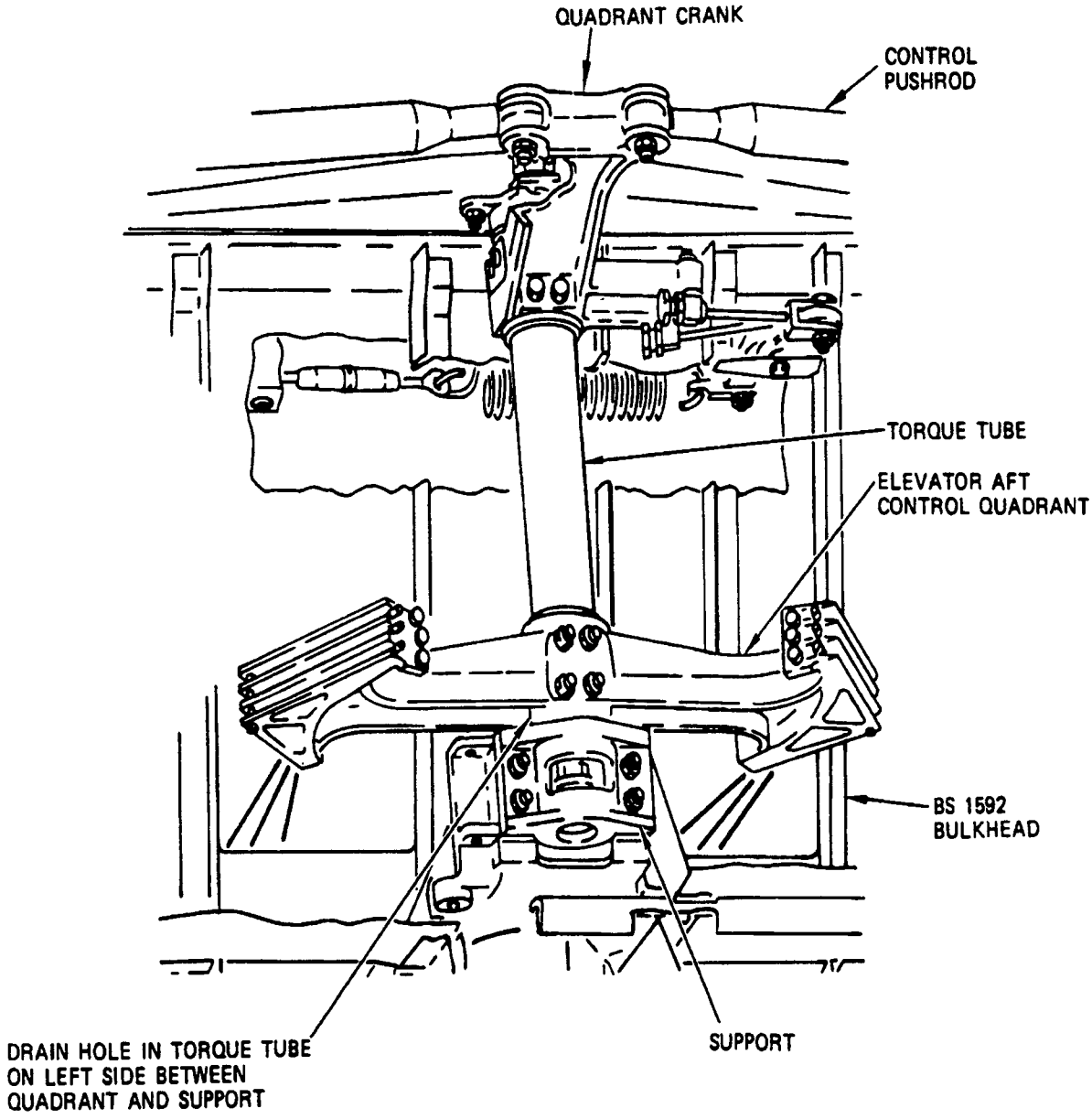
1. General

   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.



AFT CONTROL QUADRANT INSTALLATION

REAR VIEW

Elevator Aft Control Quadrant Installation
Figure 1

1. General

A. Corrosion can occur on the elevator control quadrant support located at BS 1592. Corrosion can cause high elevator control forces. Corrosion deposits, caused by a clogged drain hole in the torque tube, did not let the quadrant assembly move freely. To make better the corrosion resistance of the support, we replaced the dry film lubricant in the bore with two coats of primer and protective paint finish, from line number 922.

B. Corrosion can occur at the attachment holes, around bolt heads and at faying surfaces of the magnesium elevator control quadrant support.

2. Corrosion Prevention

A. At regular times, examine the elevator control quadrant installation for corrosion. Make sure that the drain hole is not obstructed.

B. Remove corrosion products, if you find them. Repair any damaged finishes to provide corrosion protection.

CAUTION: OBEY THE PRECAUTIONS OF VOLUME 1, 20-60-00 WHEN YOU USE CORROSION INHIBITING COMPOUND NEAR CONTROL CABLES.

DO NOT APPLY CORROSION INHIBITING COMPOUND TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONED CLAMPS BECAUSE IT WILL CAUSE THE SEALS OR CUSHIONS TO SWELL.

C. Shield the control cables and apply water displacing corrosion inhibiting compound to the quadrant crank, torque tube, quadrant assembly and support bracket.

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

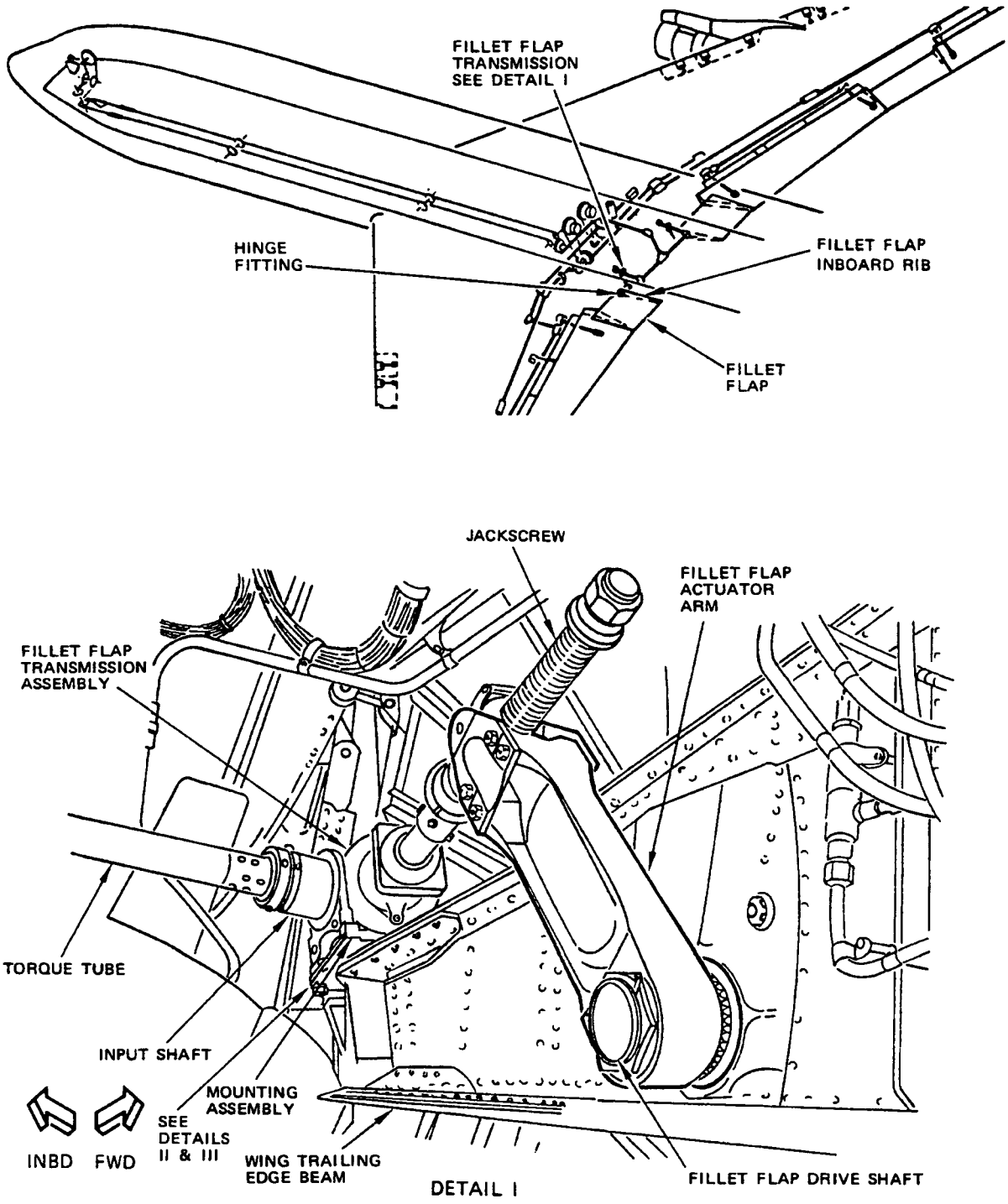
D. For treatment of cables, refer to Volume 2, 27-00-07, Fig. 2.

E. Lubricate the installation with MIL-G-23827 grease.

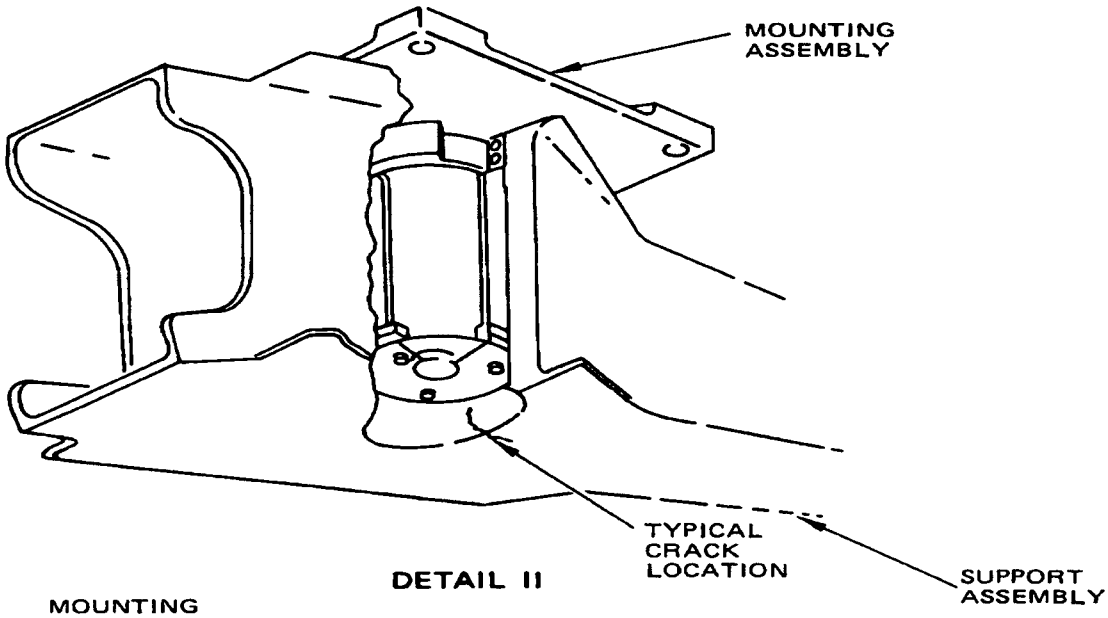
F. Refer to Structural Repair Manual for corrosion removal procedures.

3. Frequency of Application

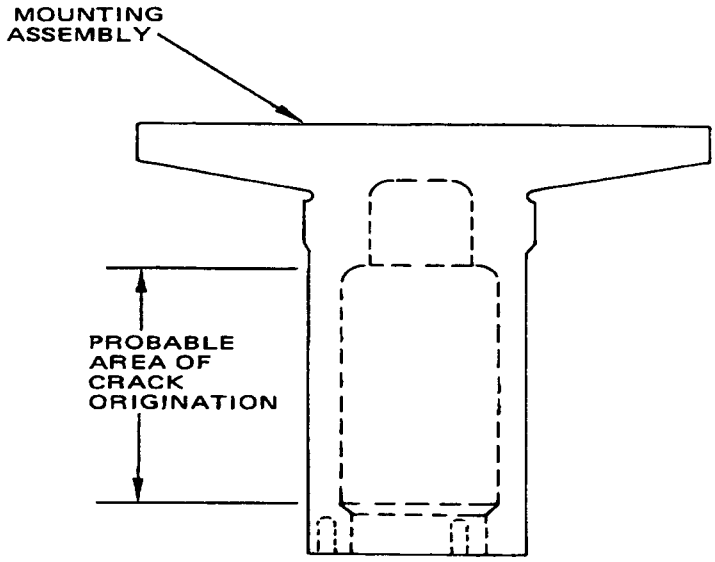
A. At regular times, examine the condition of the corrosion inhibiting compound. Apply more, when necessary.

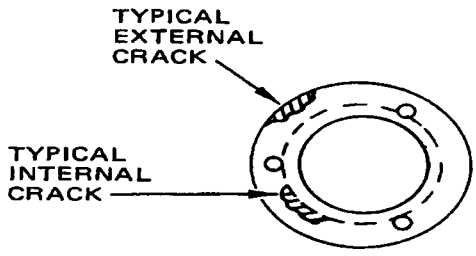


Fillet Flap
Figure 1 (Sheet 1)



DETAIL II





DETAIL III

Fillet Flap
Figure 1 (Sheet 2)

1. General

A. The fillet flap transmission assembly is mounted on the trailing edge beam in the main gear wheel bay. Corrosion problems have been associated with 707-300B and -300C airplanes. Stress corrosion cracks in the bearing bore of the flap drive screw support fitting have also been reported.

B. Stress corrosion cracking of the transmission mount assemblies have been reported. A material change which is less susceptible to stress corrosion cracking was incorporated in production at cum line 856.

C. Stress corrosion cracking of the transmission support assembly has been reported. This fitting, which supports the mount noted in par. 1.B., has been replaced by a new fitting made from an improved alloy from cum line 886. This replacement of existing fittings on earlier airplanes may be accomplished by SB 3251.

D. On Intercontinental airplanes, corrosion has been reported on the mating splines at the fillet flap drive shaft, fillet flap actuator arm, and fillet flap inboard rib hinge fitting. Cracks in the splined end of the fillet flap actuator arm have been reported and are attributed to corrosion originating on the splines. Lubrication provisions were installed on the flap actuator arms on airplanes from cum line number 504 and can be provided retroactively by incorporating SB 27-2398. Lubrication provisions were installed on the fillet flap inboard rib hinge fittings on airplanes from cum line number 759 and can be provided retroactively per par. 2.1.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make periodic inspections to preclude or defect the early stages of corrosion. White powdery or any discolored deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required.

B. Where the fillet flap transmission is found raised off its normal position on the trailing edge beam corrosion damage should be suspected. Refer to Structural Repair Manual for details of corrosion removal.

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

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

D. For line numbers through 855, it is recommended that the transmission mounting be removed for inspection at the earliest opportunity maintenance schedule will allow. Inspection of the support fitting per SB 3251 is also suggested for airplanes up to line number 885.

E. Inspect the flap transmission mounting for evidence of corrosion in the stem area. Refer to SB 3053 for details. Use one of the NDT methods per operator's standard procedure for evidence of stress corrosion cracking.

F. Refer to Structural Repair Manual for rework instructions.

G. Apply water displacing corrosion inhibiting compound to the structure in the area surrounding the flap transmission mounting installation.

NOTE: Do not apply corrosion inhibitor to jack screw, ends of transmission box or into splined ends of torque tubes.

H. On Intercontinental airplanes without lubrication provisions installed for the mating splines of the fillet flap drive shaft, actuator arm and inboard rib hinge fitting, inspect splines for evidence of corrosion. It is recommended that the inspection be performed at the first convenient opportunity consistent with scheduled maintenance activity. The inspection requires the disassembly of the drive shaft from the actuator arm and from the inboard rib hinge fitting. It is recommended that the lubrication provisions be incorporated at the time of inspection. If no corrosion is discovered, apply water displacing corrosion inhibiting compound to all surfaces and pack the spline cavities with corrosion preventive compound MIL-C-11796, Class 3, or MIL-G-23827 grease (preferred) or equivalent. If corrosion is discovered, refer to Structural Repair Manual for rework instructions.

NOTE: Lubrication provisions are identified by lube fittings, one in the splined end of the actuator arm and one in the forward part of the inboard rib hinge fitting.

I. On Intercontinental airplanes without lubrication provisions installed in the fillet flap inboard rib hinge fittings, a lube fitting can be installed as follows:

(1) Closely follow the accomplishment instructions of SB 27-2398 except, instead of the fillet flap being supported while its actuator arm is removed, the fillet flap is removed in accordance with Maintenance Manual 27-16-1.

(2) Drill a 0.1250-0.1265 inch hole through the fillet flap inboard rib hinge fitting, P/N 65-20993-1 (left) and -2 (right). Refer to Dwg 65-20993, for location details of the hole.

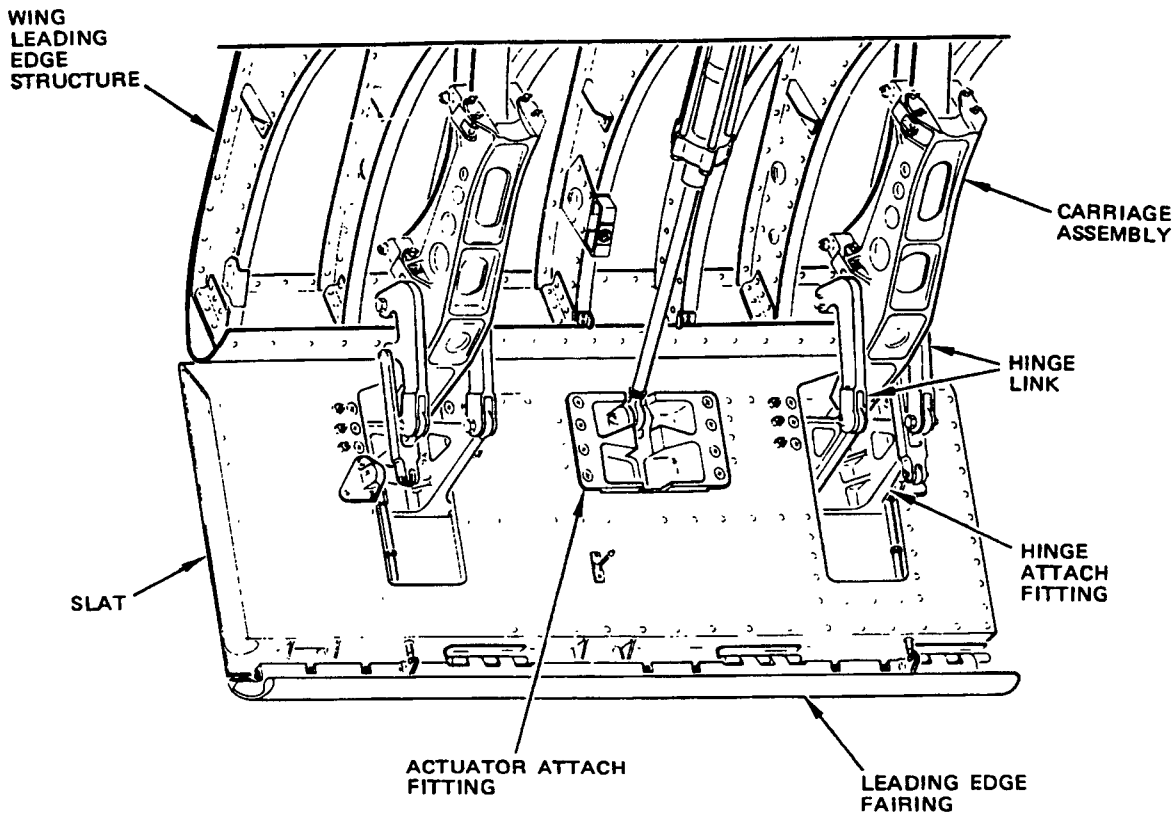
(3) Install an NAS516-1 lube fitting in hole.

(4) This makes the 65-20993-1 hinge fitting into a 65-20993-3 fitting assembly, and the 65-20993-2 fitting into a 65-20993-4 assembly. Identify the parts to agree.

J. For treatment of hydraulic tubing, tubing supports and fittings, refer to 29-10-07, Fig. 1.

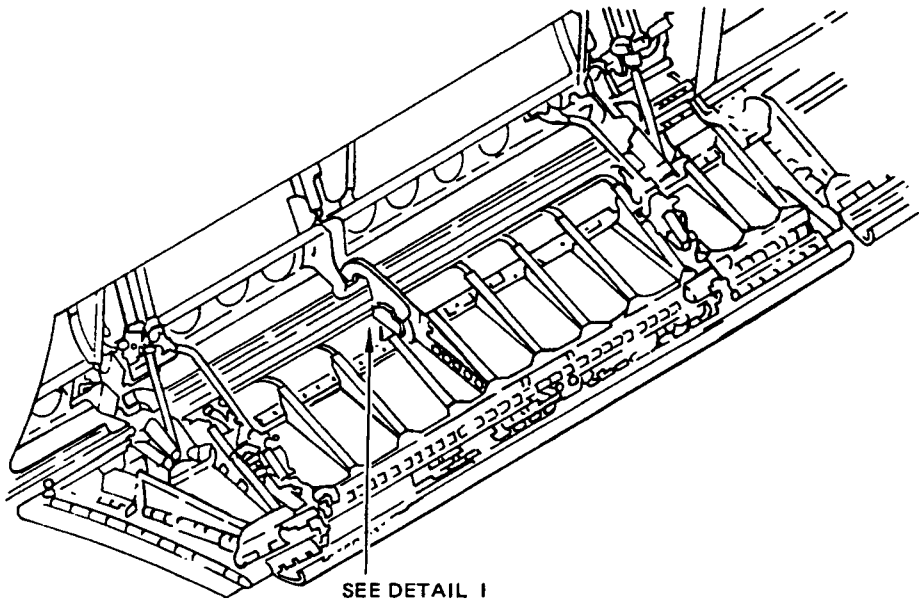
K. Apply grease at all grease fittings, and lubricate all surfaces usually serviced in the area.

L. Examine the area at regular maintenance intervals and reapply corrosion inhibitor as necessary.

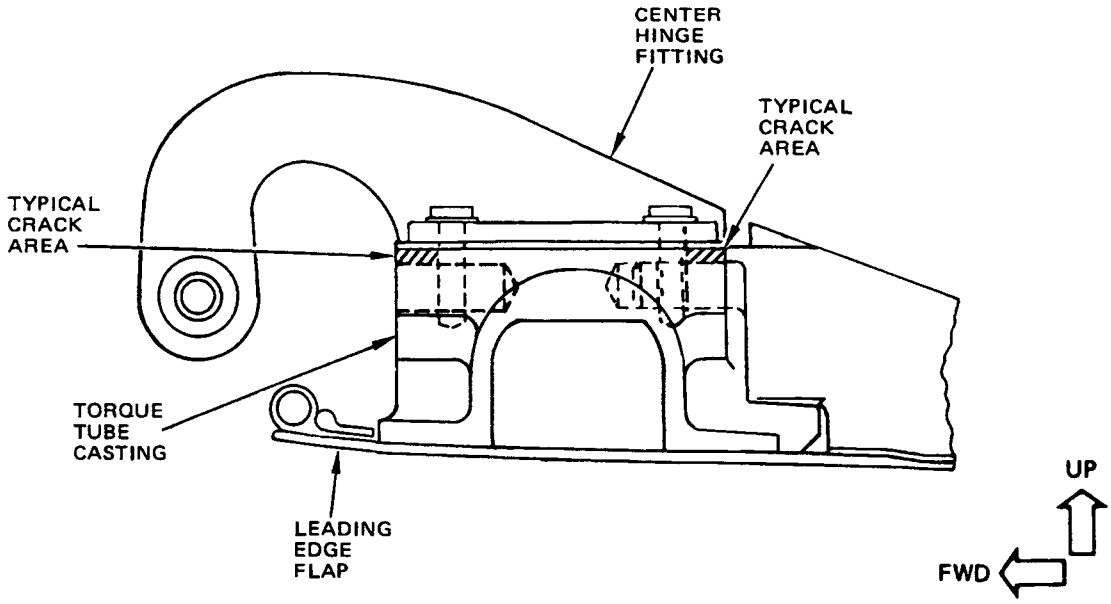


OUTBOARD SLAT SHOWN
INBOARD SLAT SIMILAR

Leading Edge Slats and Flaps
Figure 1 (Sheet 1)



LEAD EDGE FLAP



DETAIL I

Leading Edge Slats and Flaps
Figure 1 (Sheet 2)

1. General

A. The leading edge slats on Intercontinental airplanes are exposed to severe weather elements and corrosive atmosphere during its normal flight envelope.

B. Corrosion has been reported in the wells for the actuator and carriage attachment fittings. Production changes were initiated to improve the paint system on all detail parts and to install fasteners attaching the fittings wet with BMS 5-95 sealant. Sealing in the wells was minimized to allow the parts to "breathe".

C. Stress corrosion cracks on the lugs of the slat hinge support fittings and flap torque tube castings have been reported.

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

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. White powdery deposits are evidence of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent or minimize the occurrence of corrosion in these highly susceptible areas.

B. At first opportunity when scheduled maintenance work allows access to the actuator or carriage fittings, corrosion prevention treatment should be accomplished. Refer to 27-16 of the Maintenance Manual for procedures to extend flap/slat system.

C. Remove gap filling or fillet seals around the attachment fittings and visually inspect for evidence of corrosion.

D. Where extensive corrosion exists (large amounts of white deposits) and evidence of stress corrosion cracks on the lugs of the hinge attach fittings, refer to Structural Repair Manual.

E. For minor corrosion, to minimize the down time of the airplane, clean off corrosion and restore finish (Ref Volume 1, 20-50-00). Apply water displacing corrosion inhibiting compound.

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

F. Apply corrosion inhibitor to lugs and lug faces of hinge and actuator fittings.

NOTE: Do not reinstall gap-filling and fillet seals around fittings.

G. Relubricate all grease fittings and restore system to normal.

H. Establish a regular maintenance schedule to minimize the risk of future corrosion.

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.	29-10-07 Fig. 2	

Specific Corrosion Problems - Hydraulic Power
Figure 1

1. General

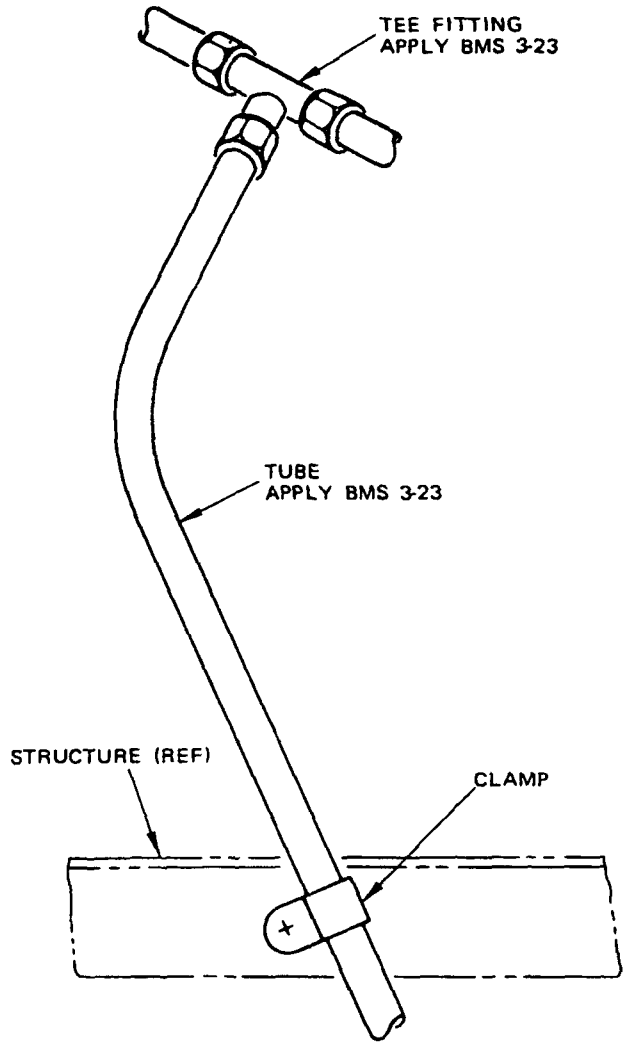
   A. Control cables are made of thin strands of tinned carbon steel wire. Cables are protected by a thin ribbon of grease between the strands. Corrosion can occur if the grease film is not there and the cables are open to moisture.

2. Corrosion Prevention

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

   B. Apply a thin film of grease over the length of the cable per 27-1-1 of the Maintenance Manual after you examine the cable.

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



Hydraulic Plumbing
Figure 1 (Sheet 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. Tubing clamped in known vibration areas has a coating of teflon-filled polyurethane applied where it will come into contact with clamps. 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 deterioration of the polyurethane coating. A loose nylon clamp may be an indication that the coating has worn thin and needs replacement.

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

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

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

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

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

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

CHAPTER

32

LANDING GEAR

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Main Landing	Landing gear components susceptible to corrosion due to environmental exposure. Stress corrosion cracking of side struts. (Material changed at line number 860. Improved fairing on line number 919 and by SB 3287.) Corrosion pitting of left main landing gear actuator rod-end bearing bore and trunnion actuator attach lugs. Corrosion and stress corrosion of gear lock support fitting.	32-10-07 Fig. 1	
Nose Landing Gear	Landing gear components are susceptible to corrosion due to environmental exposure.	32-20-07 Fig. 1	
Nose Gear Door Control Valve Crank	Stress corrosion cracking of magnesium actuation crank.	32-30-07 Fig. 1	

Specific Corrosion Problems - Landing Gear
Figure 1

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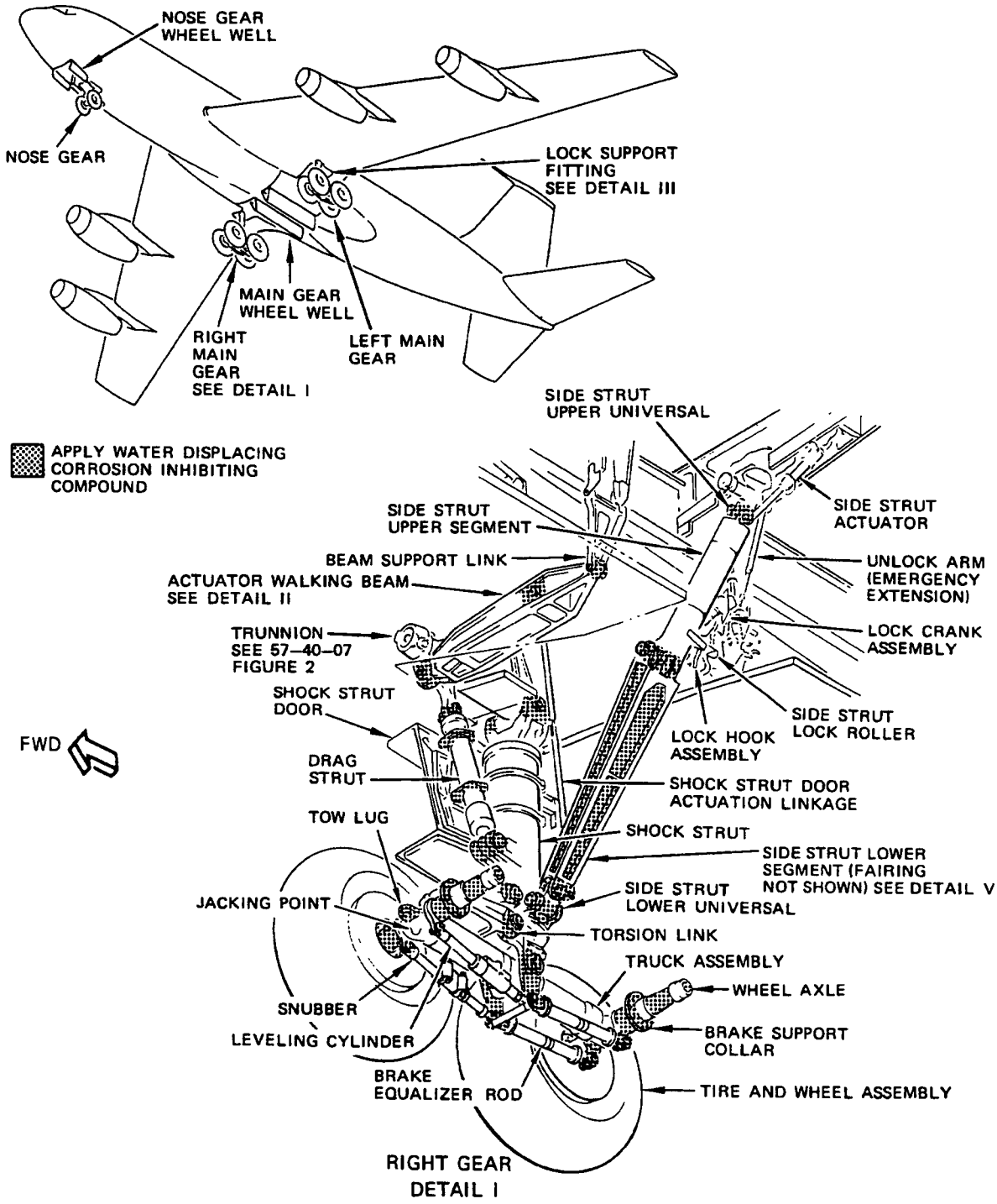
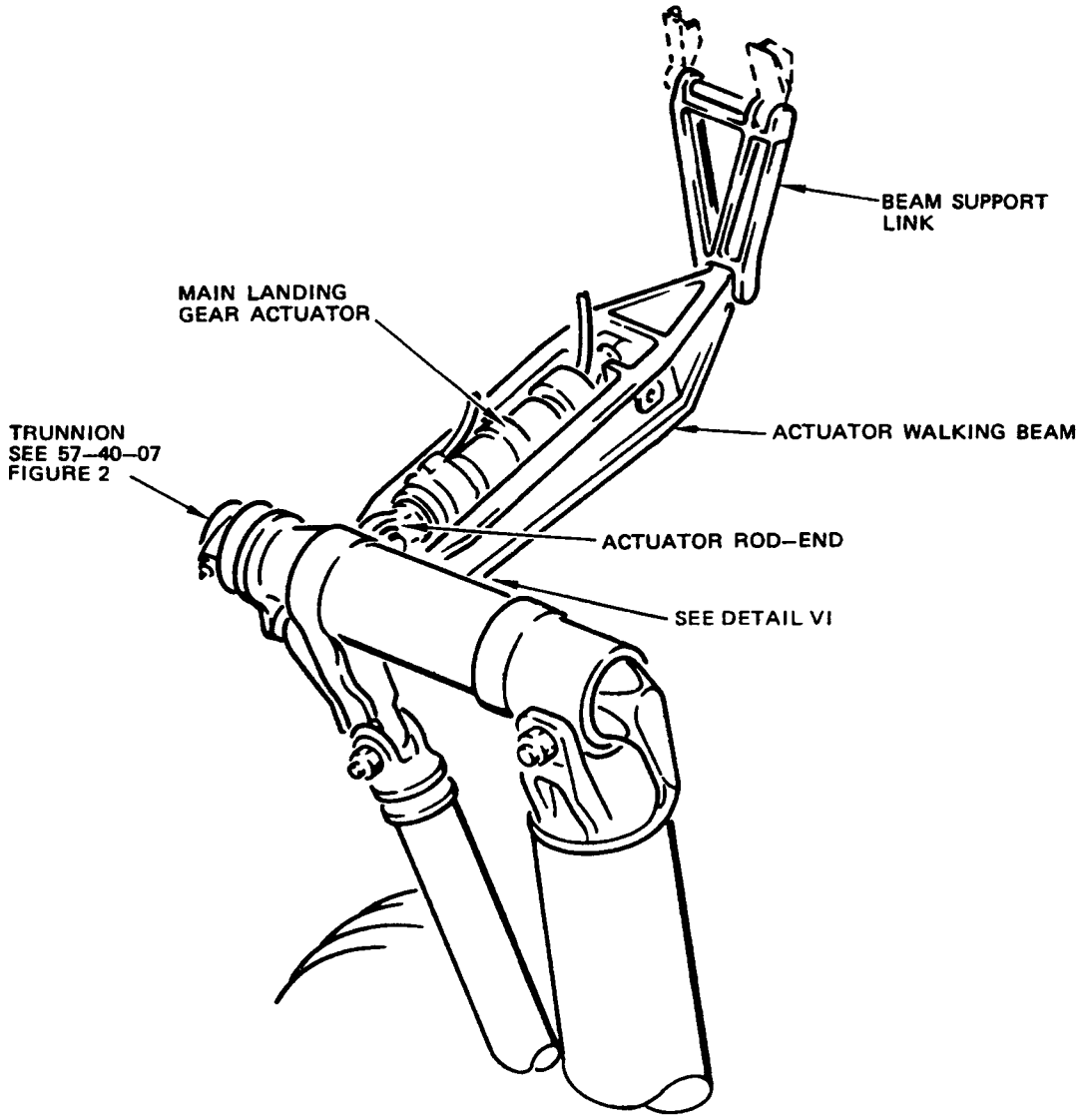
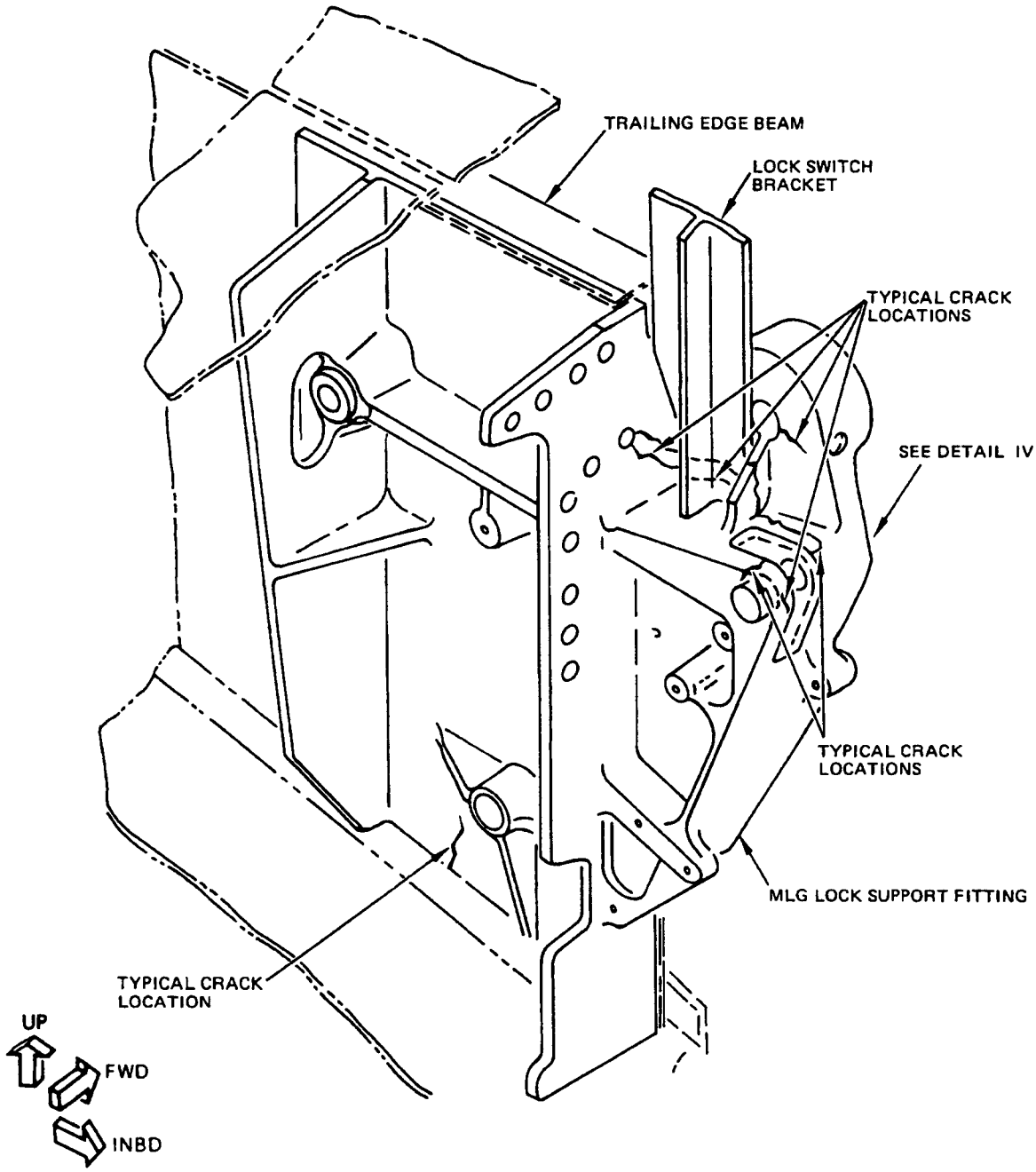


Main Landing Gear
Figure 1 (Sheet 1)



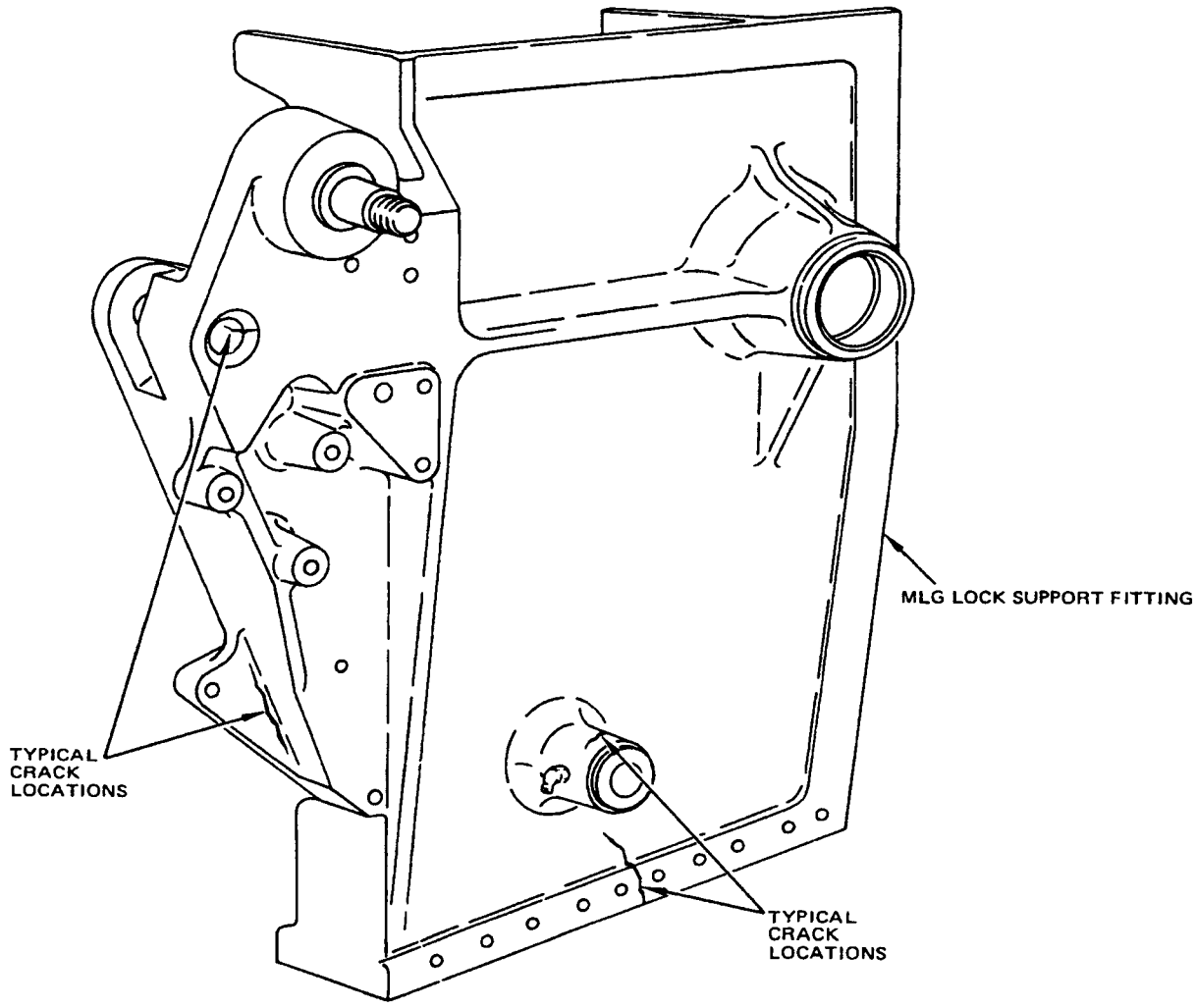
ACTUATOR
DETAIL II

Main Landing Gear
Figure 1 (Sheet 2)



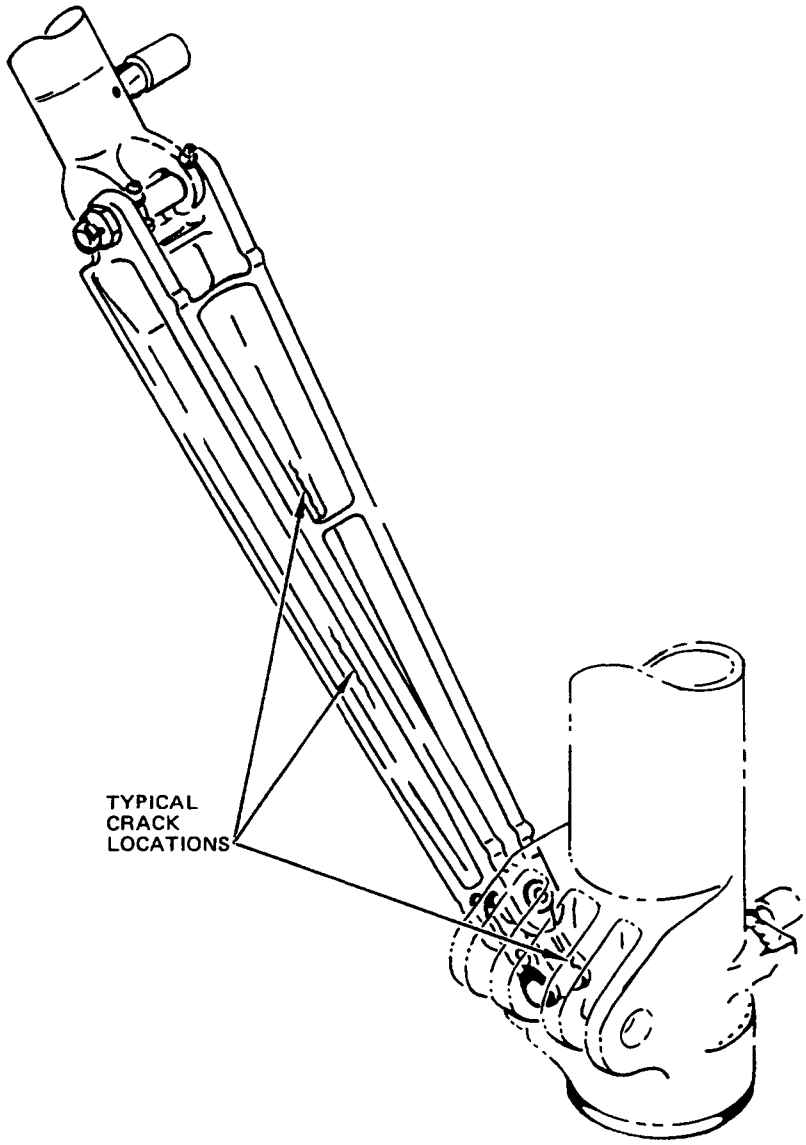
MAIN LANDING GEAR LOCK SUPPORT FITTING
DETAIL III

Main Landing Gear
Figure 1 (Sheet 3)



MAIN LANDING GEAR LOCK SUPPORT FITTING
DETAIL IV

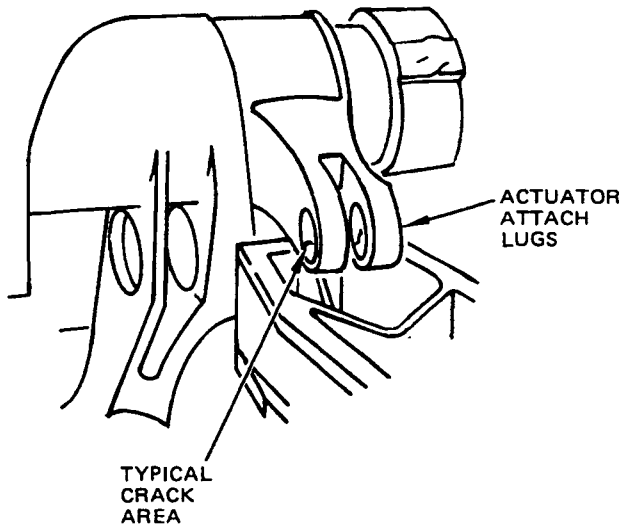
Main Landing Gear
Figure 1 (Sheet 4)



MAIN LANDING GEAR
LOWER SIDE STRUT

DETAIL V

Main Landing Gear
Figure 1 (Sheet 5)



DETAIL VI

Main Landing Gear
Figure 1 (Sheet 6)

1. General

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

B. Specific corrosion problems have been encountered on the main landing gear lower side struts. Stress corrosion cracks were found under the area covered by the wrap around fairing and in some instances, at the strut lower lugs. See Detail V. Material change of the side strut from 7075-T6 to 7075-T73 was incorporated in production at on line number 860 and on. In addition, an improved lower side strut fairing has been installed on airplanes line number 919 and on, plus airplanes incorporating SB 3287. The new fairing does not cover the areas susceptible to stress corrosion cracking.

C. Reports have been received of corrosion on the interior of the tubular drag strut.

D. Corrosion pitting has been reported in the left main landing gear actuator rod-end bearing bore. Pitting was responsible for the bearing fracturing into several pieces, even though the bearing grease fitting was reportedly operable and the bearing sufficiently greased.

E. Corrosion and stress corrosion cracks have reported on the main landing gear lock support fittings, Details III and IV. The fittings were forged from 7075-T6 or 7079-T6 alloy. A material change to 7075-T73 was introduced at line number 842. Inspection and rework of corroded fittings may be accomplished by incorporating SB 2837.

F. Cracks have been reported in the unbushed actuator lug holes on the main landing gear trunnion. Cracks were the result of corrosion pitting. For airplanes prior to line number 443, refer to SB 2258 for procedures detailing inspection and installation of bushings. See Detail VI.

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 ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for broken finishes is to restore the finish. Refer to Volume 1, 20-60-00 for protective finish systems. Since in some cases, it is impractical or impossible to use this approach between overhaul cycles, the following treatment is recommended.

NOTE: The application of corrosion inhibiting compounds is recommended even though the finishes have been restored.

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

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

D. After application of corrosion inhibitor, all grease fittings in the treated areas should be regreased.

E. In cases where cleaning is accomplished with steam or high pressure water and detergent, reapply corrosion inhibitor to the components indicated in par. F.

CAUTION: DO NOT APPLY CORROSION INHIBITOR TO SILICONE RUBBER OR RUBBER SEALS. CORROSION INHIBITOR MAY CAUSE THE SEALS TO SWELL.

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

F. For corrosion prevention, perform preventive measures to the following components (detail I):

(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.

(a) Frequency of Application. Under normal conditions, corrosion inhibitor should be reapplied annually, or as required by washing cycles.

(b) Outer Cylinder. The inner surface of the outer cylinder should have an application of corrosion inhibitor at each overhaul.

(2) Truck Beam. Apply corrosion inhibitor to exterior surface areas with broken finish systems. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibitor. Make suitable nozzle extension and spray inside of truck beam with corrosion inhibitor.

(a) Frequency of Application. The corrosion inhibitor should be reapplied annually, or as required by washing cycles. Local areas where gouges or scratches have occurred should be treated at first opportunity consistent with the maintenance schedule.

(3) Trunnion. The trunnion shall be treated at the time the torque box is treated (Ref 57-40-07, Fig. 2).

(4) 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 removing antiskid system transducer and protecting electrical connectors.

(a) Frequency of Application. The corrosion inhibiting compound should be reapplied annually, or as required by washing cycles. Local areas where gouges or scratches have occurred should be treated at first opportunity consistent with the maintenance schedule.

(5) Side Struts. Apply corrosion inhibiting compound to surface areas with broken finish systems on both the upper and lower side struts. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibiting compound. Remove the lower strut fairing (for airplanes

thru line number 918 except those incorporating SB 3287). Spray all webs with corrosion inhibiting compound.

(a) Frequency of Application. The corrosion inhibiting compound should be applied annually, or as required by washing cycles.

(6) Drag Strut. Apply corrosion inhibiting compound to exterior surface areas with broken finish system. All lugs, lug faces, connecting pins and fasteners should be sprayed with corrosion inhibiting compound. Spray corrosion inhibiting compound on the strut door attachments. Corrosion of the interior surfaces can be prevented by the internal application of MIL-C-16173, Grade I or MIL-C-11796, Class I corrosion preventive compounds. This protection can be applied after removing the plug in the 0.75 inch diameter hole and through the unplugged 0.25 inch diameter hole in the opposite end of the tube. As this treatment requires removal of the drag strut it should be undertaken at a convenient time when the strut is removed for other reasons.

(7) Walking Beam. Apply corrosion inhibiting compound to surface areas with broken finish systems. All lugs, lug faces and connecting pins should be sprayed with corrosion inhibiting compound.

(a) Frequency of Application. The corrosion inhibiting compound should be applied annually, or as required by washing cycles.

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

(a) Frequency of Application. The corrosion inhibiting compound should be reapplied annually, or as required by washing cycles.

G. 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.

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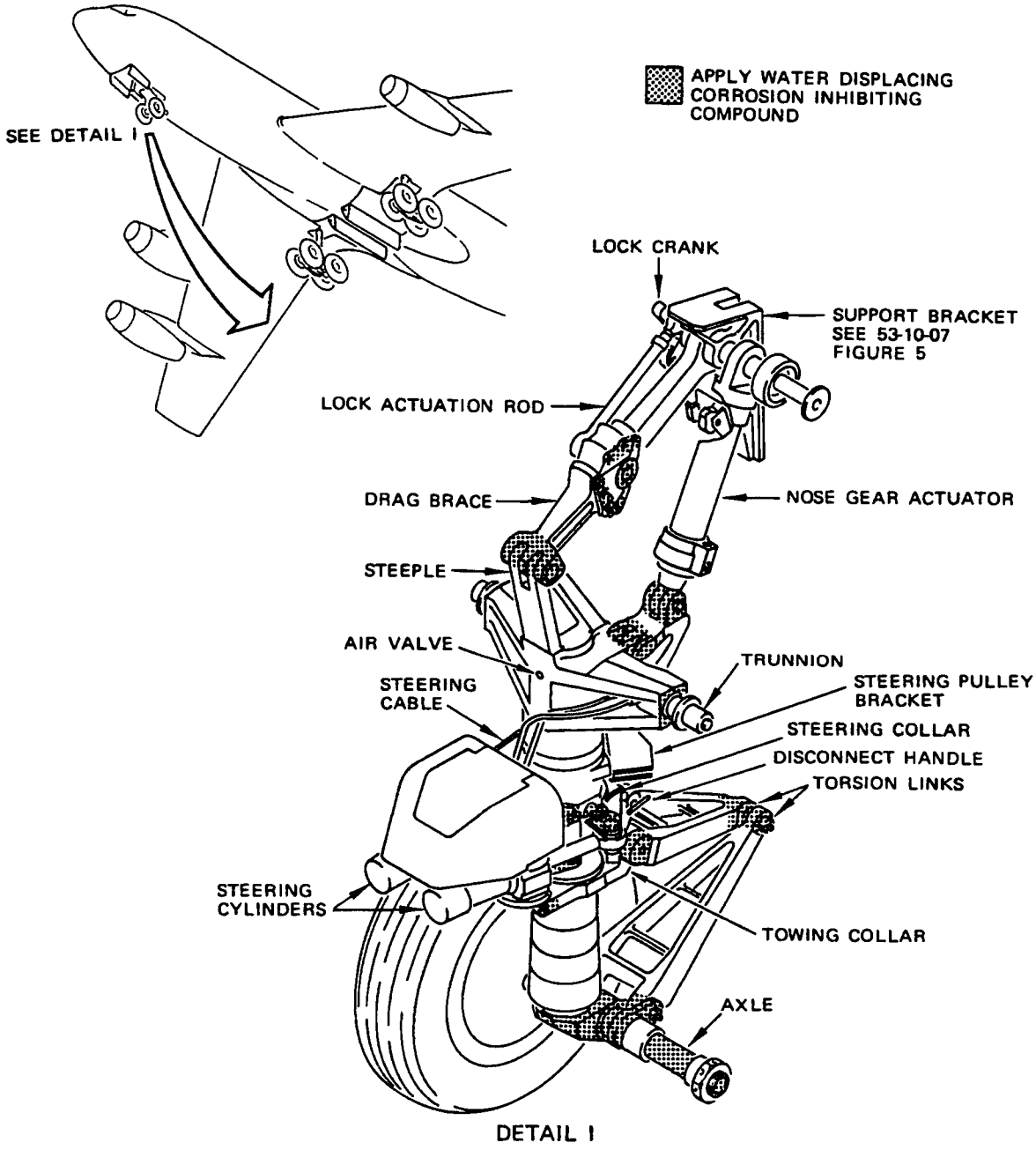


Nose Landing Gear
Figure 1 (Sheet 1)

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. Stress corrosion problems have also been reported on the nose landing gear outer cylinder. The heat-treat of the material used for the cylinder was improved at line number 139 and from line number 869 and on (except for line number 871), a change in material was introduced to combat the problem. Service Bulletin 2005 introduces an inspection, rework limits and shot peening for cylinders not of the latest material. Service Bulletin 2066 introduces cylinders with beefed up armpit areas that were incorporated in production at line number 382.

C. Specific corrosion problems have been encountered on the outer cylinder in the steering knuckle and towing collar areas. Additionally corrosion has been found on the steering knuckle itself.

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

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for broken finishes is to replace the finish with the same protective system as used originally. Since in some cases, it is impractical or impossible to use this approach between overhaul cycles, the following treatment is recommended.

NOTE: The application of corrosion inhibiting compounds is recommended even though the original finishes have been restored.

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

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

D. After application of corrosion inhibitor, all grease fittings in the treated areas should be regreased.

E. In cases where cleaning is accomplished with steam or high pressure water and detergent, the corrosion inhibitor should be reapplied to components indicated in par. F.

F. For corrosion prevention, perform preventive measures to the following components (detail I):

(1) Shock Struts

(a) Outer Cylinder. Apply water displacing corrosion inhibiting compound to the entire exposed area. All lugs, lug faces, connecting pins and fasteners are to be sprayed. 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 cylinder and the inside of tapped holes. Reinstall parts removed after application.

CAUTION: DO NOT SPRAY INTO ELECTRICAL OR ELECTRONIC COMPONENTS OR ELECTRICAL CONNECTORS. APPLY TO FAYING SURFACES ONLY.

(b) Inner Cylinder. Apply water displacing corrosion inhibiting compound to exterior surface areas with broken finish systems. All lugs, lug faces, connecting pins and fasteners shall be sprayed.

(c) Frequency of Application. Water displacing corrosion inhibiting compound should be reapplied annually, or as required by washing cycles.

(2) Trunnion. Apply water displacing corrosion inhibiting compound to exterior surface areas with broken finish systems. Lugs, lug faces, connecting pins, fasteners, and gap between trunnion fitting and trunnion bearing cap should be sprayed.

(a) Frequency of Application. Water displacing corrosion inhibiting compound shall be reapplied annually, or as required by washing cycles.

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

(a) Frequency of Application. Water displacing corrosion inhibiting compound should be reapplied annually, or as required by washing cycles.

(4) Axle. Apply water displacing corrosion inhibiting compound to outside surface areas of the axle except at the journal or bearing surfaces. Make suitable nozzle extension and spray the inside surface of the axle.

(a) Frequency of Application. Water displacing corrosion inhibiting compound should be reapplied annually, or as required by washing cycles.

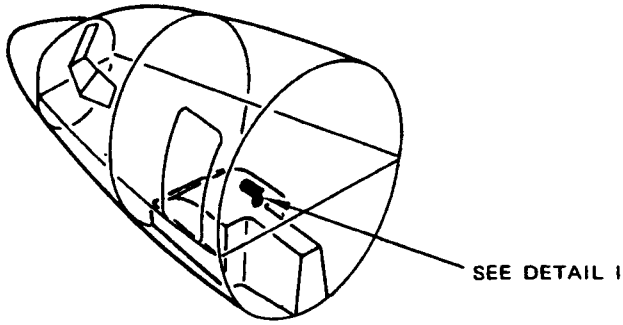
(5) Torsion Links. Apply water displacing corrosion inhibiting compound to surface areas with broken finish systems. Lugs, lug faces and connecting pins should be sprayed with corrosion inhibitor.

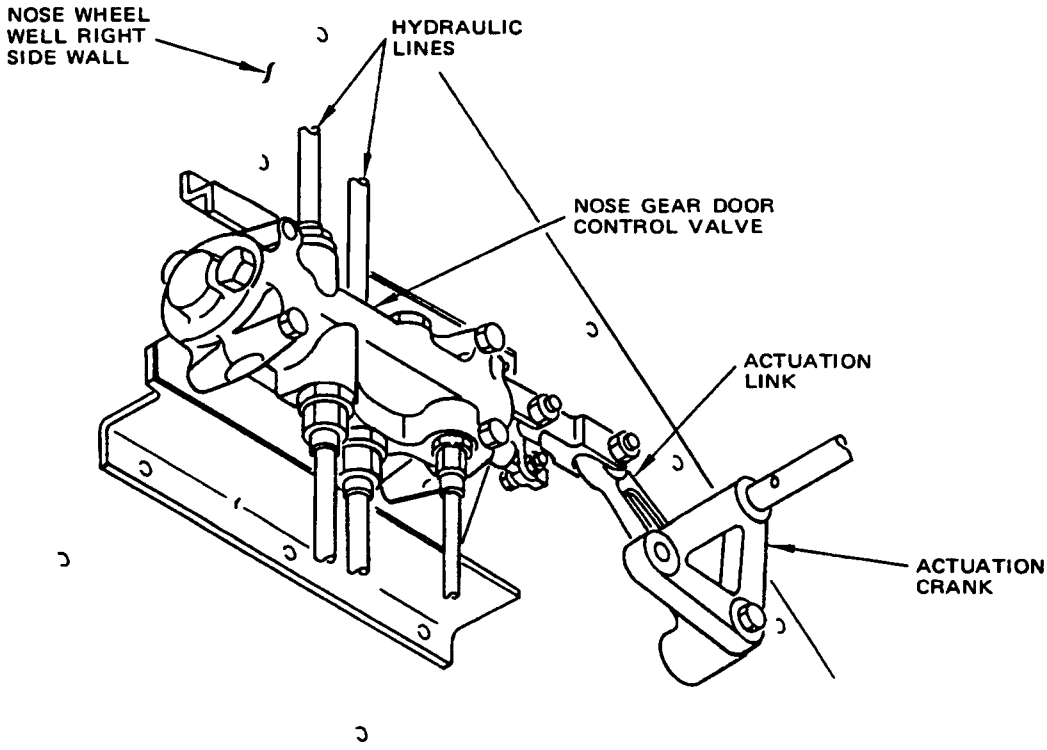
(a) Frequency of Application. Water displacing corrosion inhibiting compound should be reapplied annually, or as required by washing cycles.

(6) Actuator Support Bracket. The support bracket will be treated with the nose wheel well (Ref Volume 2, 53-10-07).

(7) Steering Cables -- Refer to Volume 2, 27-00-07, Fig. 2.

G. 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.





DETAIL I

Nose Gear Door Control Valve Crank
Figure 1 (Sheet 1)

1. General

A. The nose gear door control valve directs hydraulic pressure to the nose gear door actuator. The control valve receives hydraulic pressure from the landing gear up and down lines depending upon the position of the selector valve.

B. Stress corrosion cracking has been reported on the actuation crank. The crank is made from magnesium. Production changes, if any, will be made after results of laboratory analysis of fractured parts and future service experience have been evaluated.

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make periodic inspections to ensure that the protective finish provided at manufacture remain intact.

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.

D. Apply BMS 3-23 on the actuation crank and link.

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

E. All grease fittings in the treated areas should be regreased after application of BMS 3-23.

F. In cases where cleaning is accomplished with steam or high pressure water and detergent, the BMS 3-23 corrosion inhibitor should be replaced.

G. Inspect the condition of the treated components periodically and reapply BMS 3-23 as necessary.

CHAPTER

35

OXYGEN

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Oxygen bottle and support cup	Surface corrosion of bottle and support cup	35-30-07 Fig. 1	

Specific Corrosion Problems - Oxygen
Figure 1

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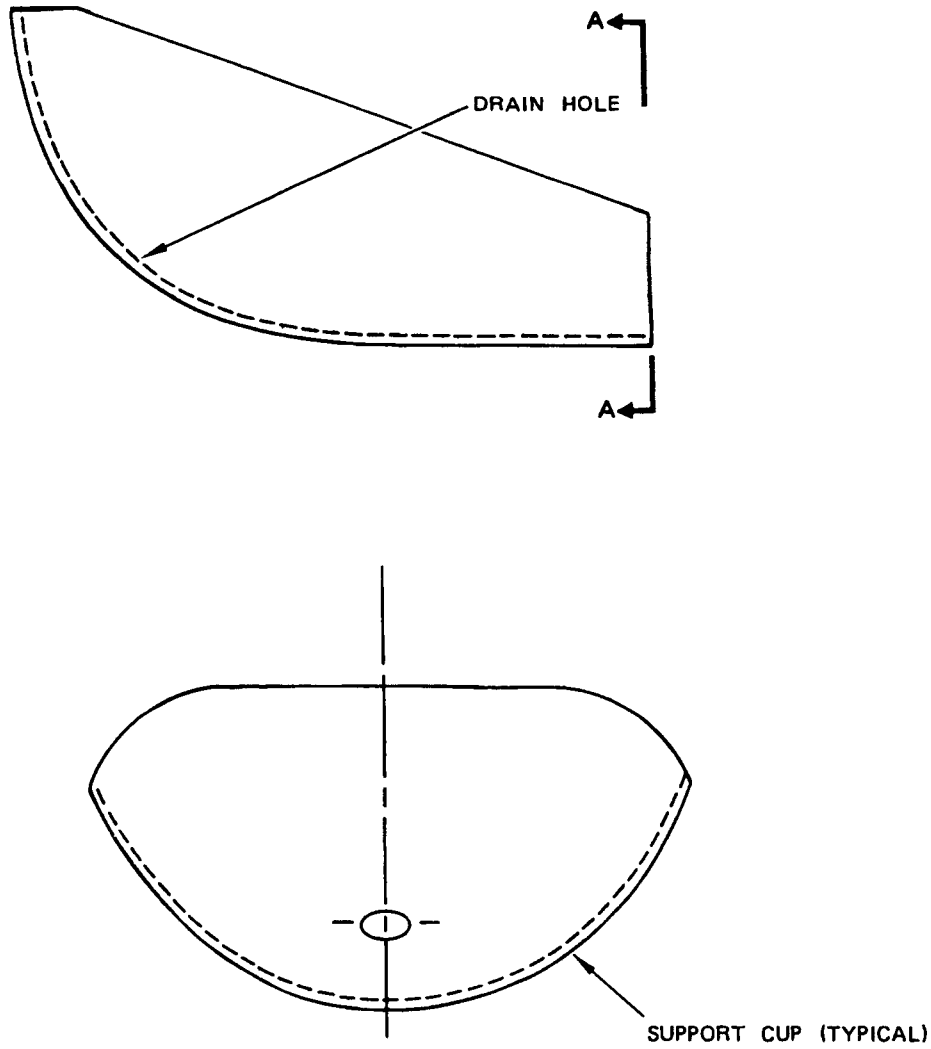

SECTION A–A

Oxygen Bottle and Support Cup
Figure 1

1. General

A. Surface corrosion can occur on oxygen bottles and support cups.

2. Corrosion Prevention

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

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

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

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

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

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

CHAPTER

52

DOORS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Entry Doors	Doors susceptible to corrosion due to exposure to weather in open position.	52-10-27 Fig. 1	
	Stress corrosion cracks of doorstop fittings with material change introduced at line number 936.	52-10-07 Fig. 1	
Emergency Escape Hatches	Hatches are potential source of corrosion due to condensation of moisture. Specific problems on handle and torque tube.	52-20-07 Fig. 1	
Cargo Doors	Doors are potential source of corrosion due to condensation of moisture. Specific problems at the stop fitting tang and lug parting plane.	52-30-07 Fig. 1	

Specific Corrosion Problems - Doors
Figure 1

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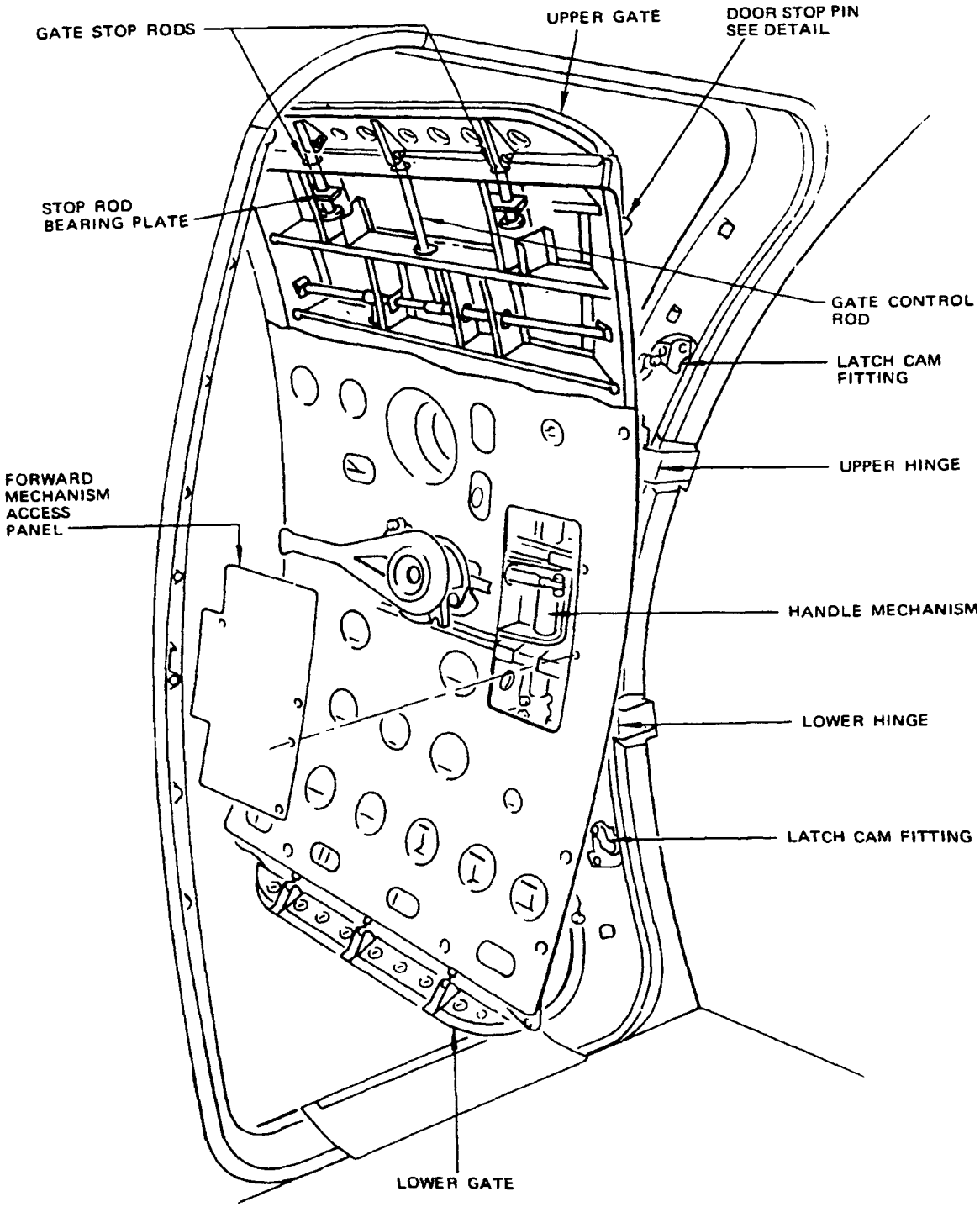
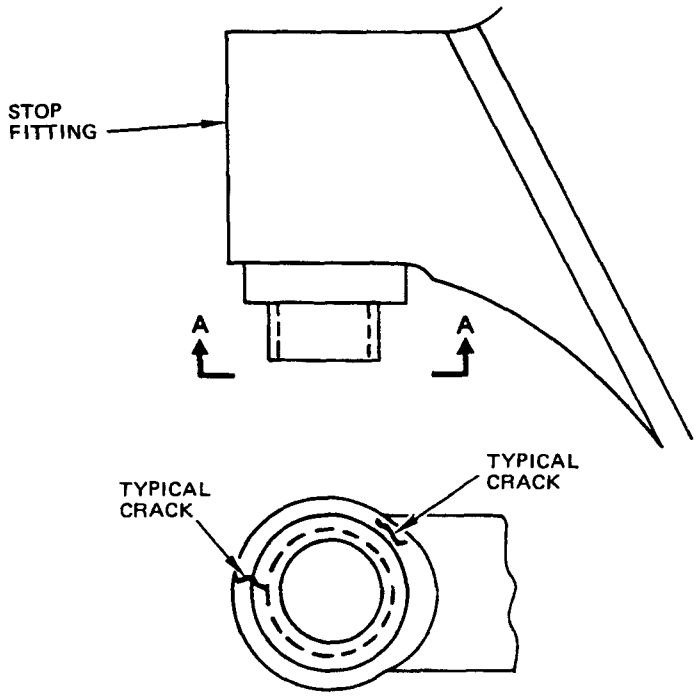


Entry Doors
Figure 1 (Sheet 1)



Entry Doors
Figure 1 (Sheet 2)

1. General

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

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. 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 doors should be treated same as the exterior surfaces of the fuselage (Ref 53-30-07, Fig. 1).

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

(4) Clean out drains and drain paths.

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

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

(7) After application of BMS 3-23, all grease fittings and lubricated parts in treated areas should be relubricated. Refer to 52-1-0 of the Maintenance Manual.

(8) Reinstall liner and restore door 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.

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

D. Stress corrosion cracks have been reported on the doorstop fittings, Detail 1. Fittings of improved material have been introduced at line number 936 with rework of certain cracked fittings provided in SB 3309.

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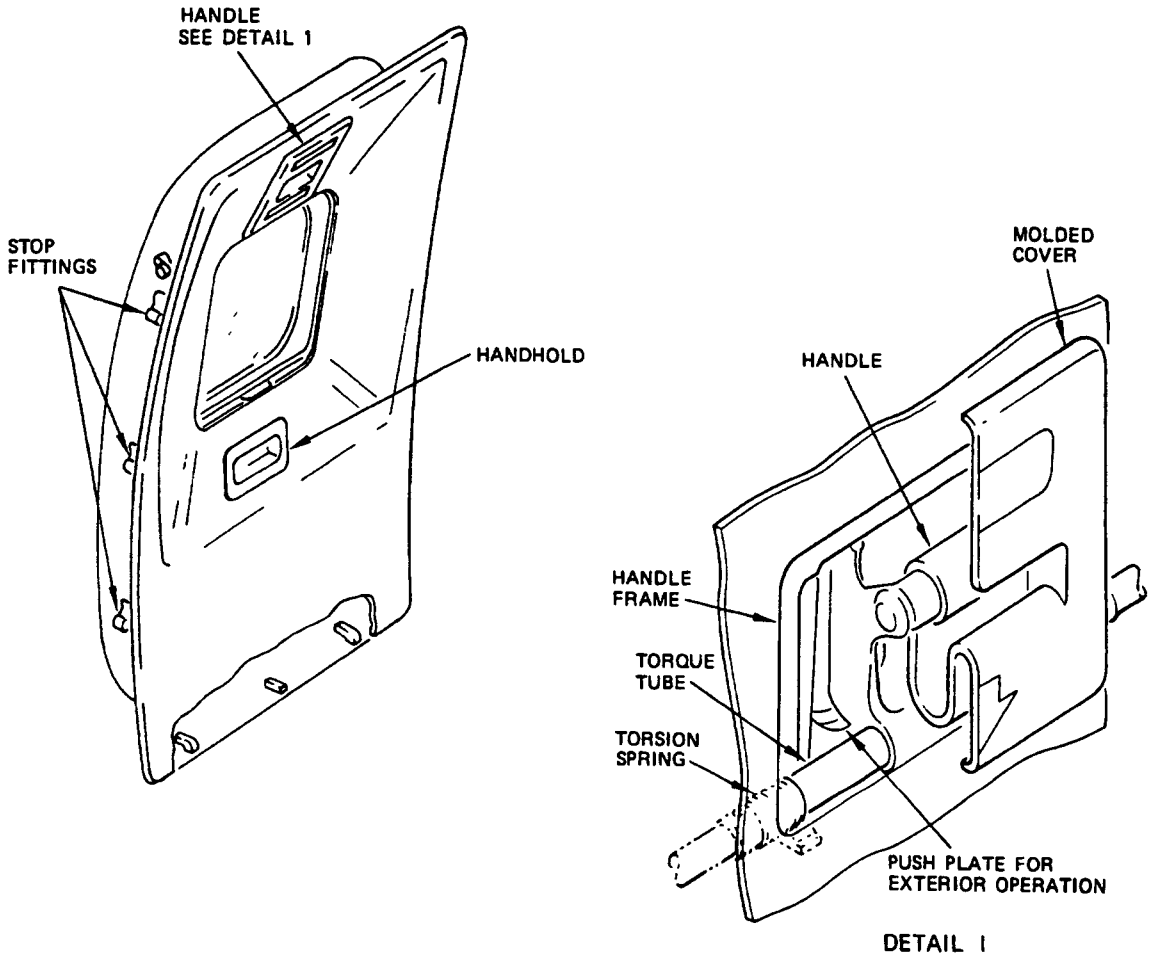


Emergency Escape Hatches
Figure 1

1. General

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

B. Corrosion has been reported on the emergency exit overwing door handle. Corrosion was reported responsible for fracture of the torque tube. The fracture extended from the forward outboard attachment pin hole to the forward edge of the handle (see detail I).

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 53-30-07, 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.

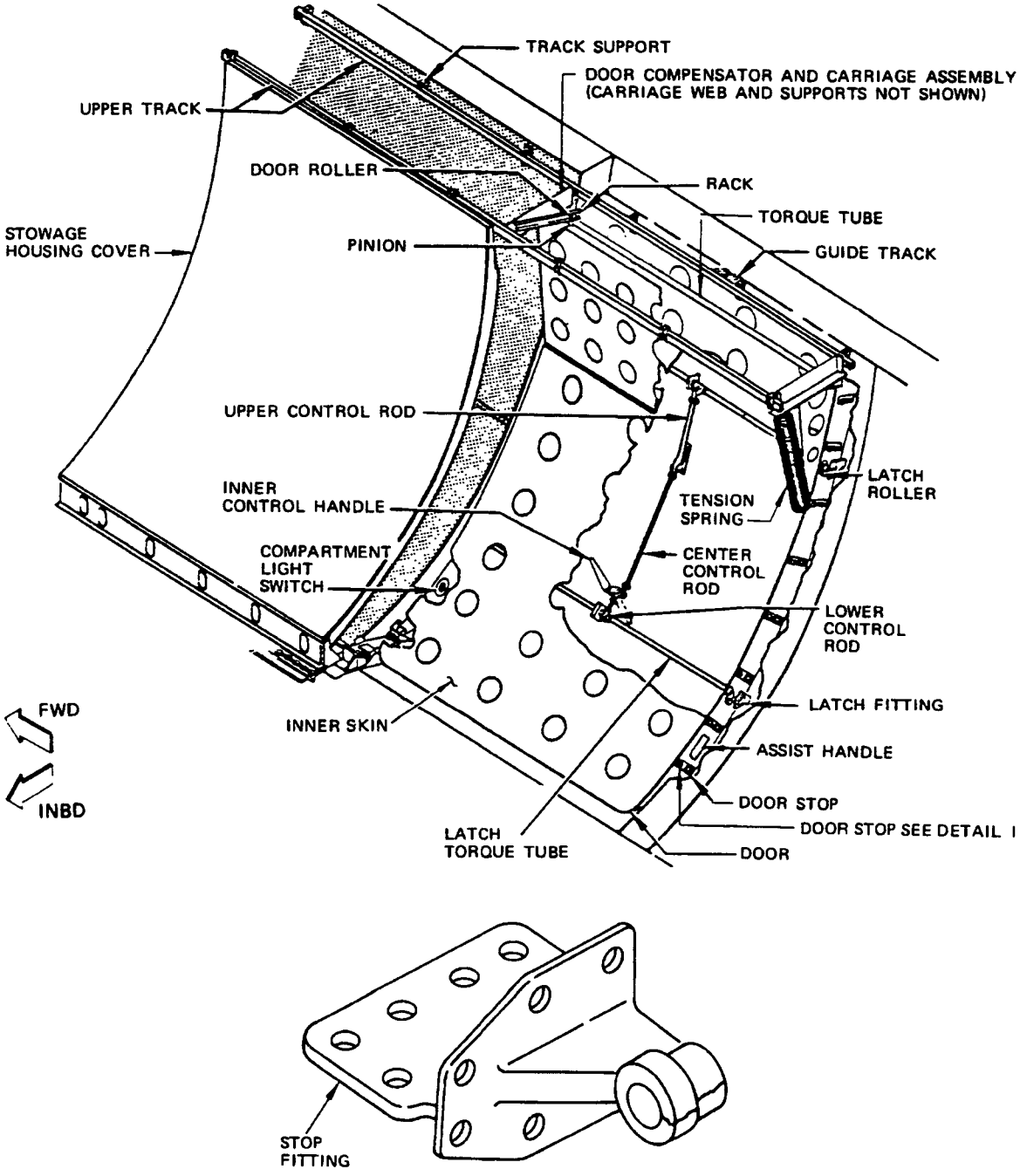
(6) Apply BMS 3-23 to exterior surfaces of frames and upper and lower web.

(7) After application of BMS 3-23, all grease fittings and lubricated parts in treated areas should be relubricated. Refer to 52-6-0 of the Maintenance Manual.

(8) Reinstall liner and restore hatch to normal.

B. Frequency of Application. Periodically inspect the structure and condition of corrosion inhibitor. Reapply the 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.



DETAIL I

Cargo Doors
Figure 1 (Sheet 1)

1. General

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

B. Cracked stop fittings have been found on the lower lobe forward and center cargo doors. Most of the cracks emanated from the knife edge formed by the spotface runout at the fitting tang. See Detail I.

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. 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 doors should be treated same as the exterior surfaces of the fuselage (Ref 53-30-07, Fig. 1).

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

(4) Clean out drains and drain paths.

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

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

(7) After application of BMS 3-23, all grease fittings and lubricated parts in treated areas should be relubricated. Refer to 52-3-0 of the Maintenance Manual.

(8) Reinstall liner and restore door to normal.

B. Frequency of Application. Periodically inspect the structure and condition of the corrosion inhibitor. Reapply the 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. Inspect stop fittings on the forward and center cargo doors per SB 3310 at regular maintenance intervals until fittings are modified to remove sharp edges formed by spot facing. Modified fittings were introduced at line number 884.

CHAPTER

53

FUSELAGE

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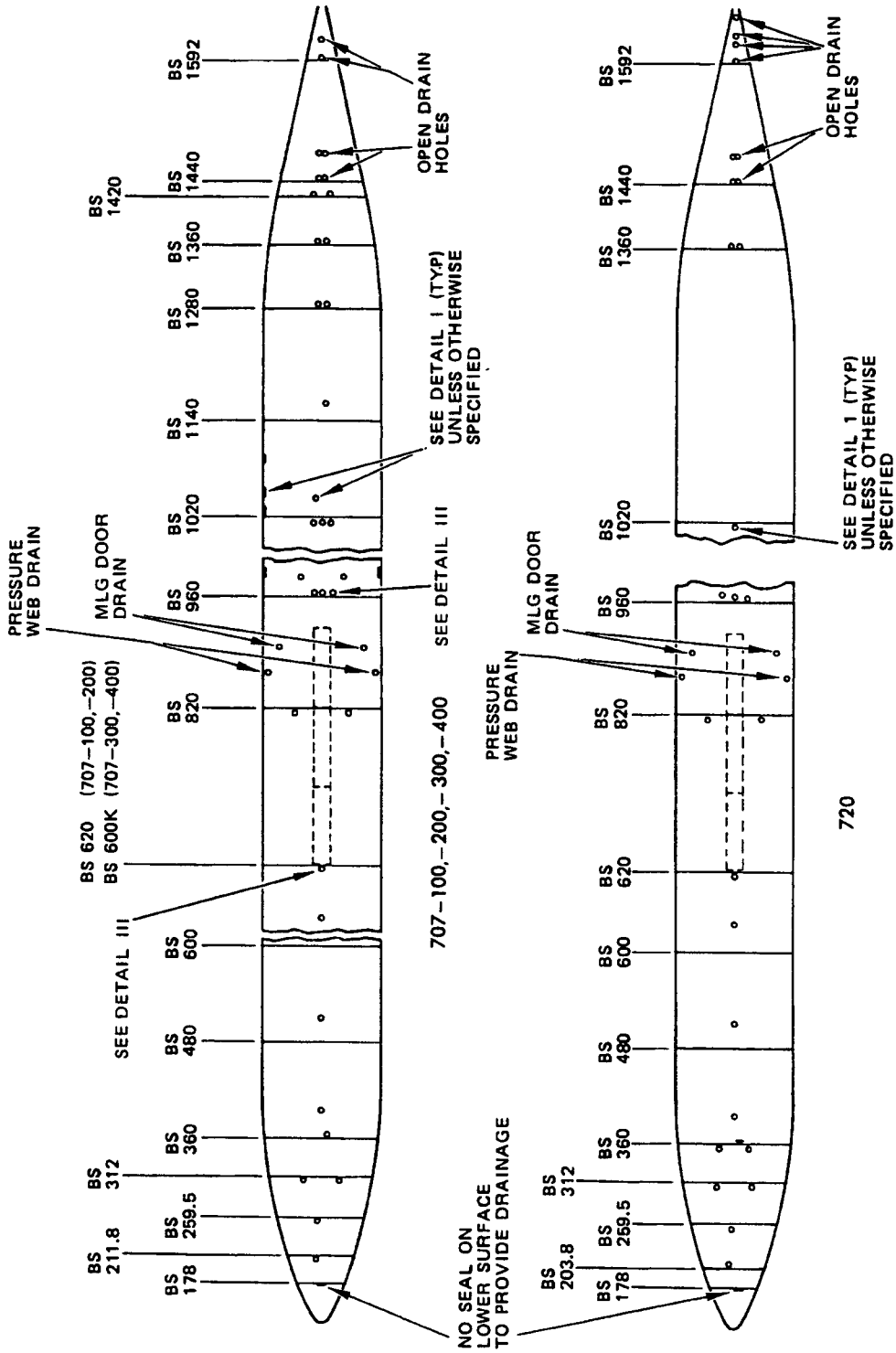
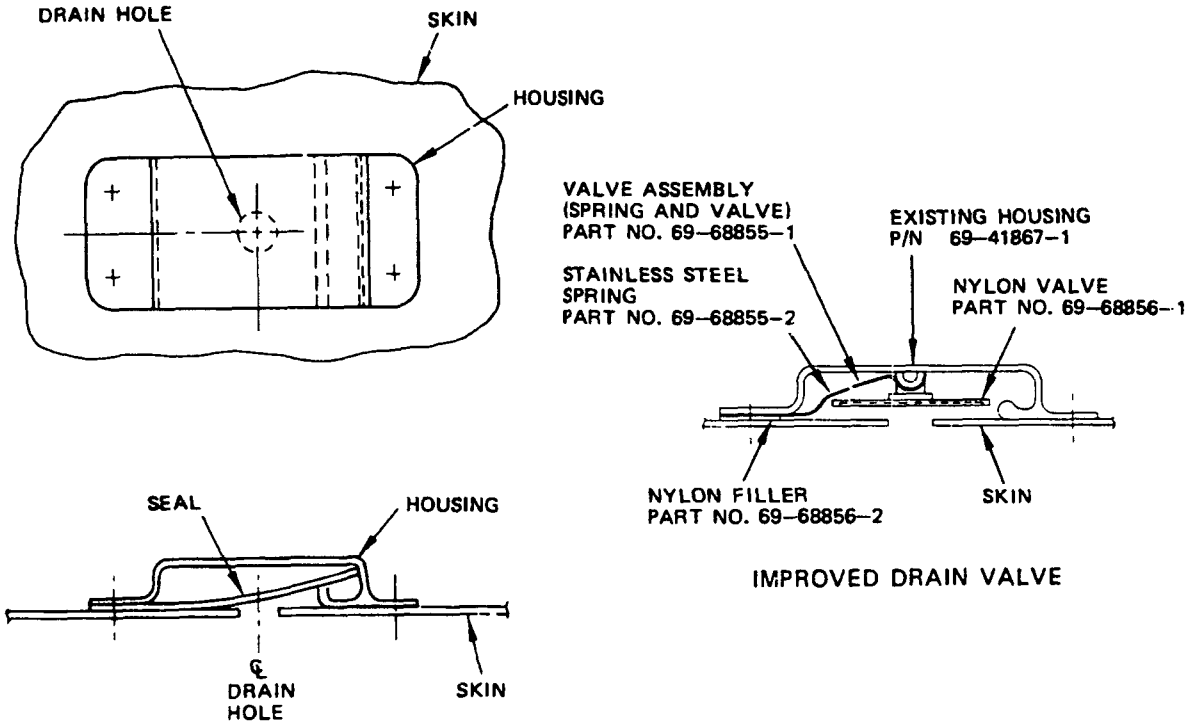
AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Crown Interior	Corrosion of frames, stringers and interior skin surfaces.	53-10-07 Fig. 1	
Lower Lobe Interior	Corrosion of frames, stringers and interior skin surfaces	53-10-07 Fig. 2	SB 3059 SB 3172
	Stress corrosion cracking of the BS 880 floor beam aft flange, pressure web attach angle. Stress corrosion cracking of the BS 820 fitting I-beam		
Galleys and Lavatories	Corrosion of structure under galleys and lavatories because of spillage	53-10-07 Fig. 3 53-10-07 Fig. 6	SB 3172
Main Wheel Well and Keel Beam	Corrosion on the surfaces inside the wheel well because of air contaminants and runway splash	53-10-07 Fig. 4	
Keel Beam	Corrosion on keel beam inboard splice angles at STA 600k.	53-10-07 Fig. 9	
Nose Gear Wheel Well	Corrosion on the surfaces inside the wheel well because of air contaminants and runway splash. Stress corrosion cracking on center web of nose landing gear drag brace support fitting	53-10-07 Fig. 5	
	Stress corrosion cracking of the nose gear trunnion fitting		
	Corrosion and cracks in the BS 360 bulkhead outer chord and web		
Seat Tracks and Cargo Tracks	Corrosion of seat tracks and cargo tracks because of dirt and spillage	53-10-07 Fig. 6	
Doorway Areas	Corrosion on the structure around door openings	53-10-07 Fig. 7	
Aft Pressure Bulkhead	Corrosion on the aft face of the bulkhead. Corrosion at fastener holes at stringer attachment fittings. Stress corrosion cracking of the BS 1440 frame chord horizontal flange between stringers 3 and 4. Corrosion on forward face of bulkhead between stringers 25L and 25R	53-10-07 Fig. 8	
Keel Beam	Stress corrosion cracks on the keel beam upper horizontal flange at BS 820	53-10-07 Fig. 9	
STA 960 Bulkhead	Corrosion and cracking of the lower chord strap and angle. Stress corrosion cracks in the frame forging	53-10-07 Fig. 10	

AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Fuselage Skin Exterior Surface	Filiform corrosion on the exterior painted surfaces of fuselage skin at fastener locations and panel edges. Corrosion on exterior surfaces of unpainted lower lobe skin	53-30-07 Fig. 1	
Skin Lap Splices	Corrosion on the faying surface of lap splices	53-30-07 Fig. 2	
Exterior Mounted Antennae	Corrosion on the faying surfaces between various antenna and the body skin	53-30-07 Fig. 3	
Emergency Exit Cutouts	Corrosion on the inner skin surface around the emergency exit cutout	53-30-07 Fig. 4	
Fuselage Attach Fittings - Main Cargo Door	Corrosion on the bolts and attach fittings of the main cargo door	53-40-07 Fig. 1	
	Stress corrosion cracking of the cargo door lower forward sill latch support forging and main cargo latch support fittings		
Fuselage Attach Fittings - Vertical Fin	Corrosion of the vertical fin terminals, between the inner ends of the two bushings in the fin spar lugs. Stress corrosion in the forward fin terminal fitting outboard tang	53-40-07 Fig. 2	

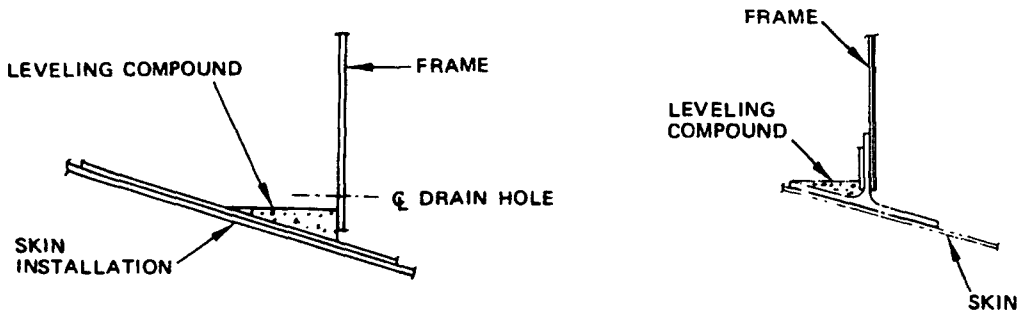
Specific Corrosion Problems - Fuselage
Figure 1



Fuselage Drain Holes
Figure 2 (Sheet 1)

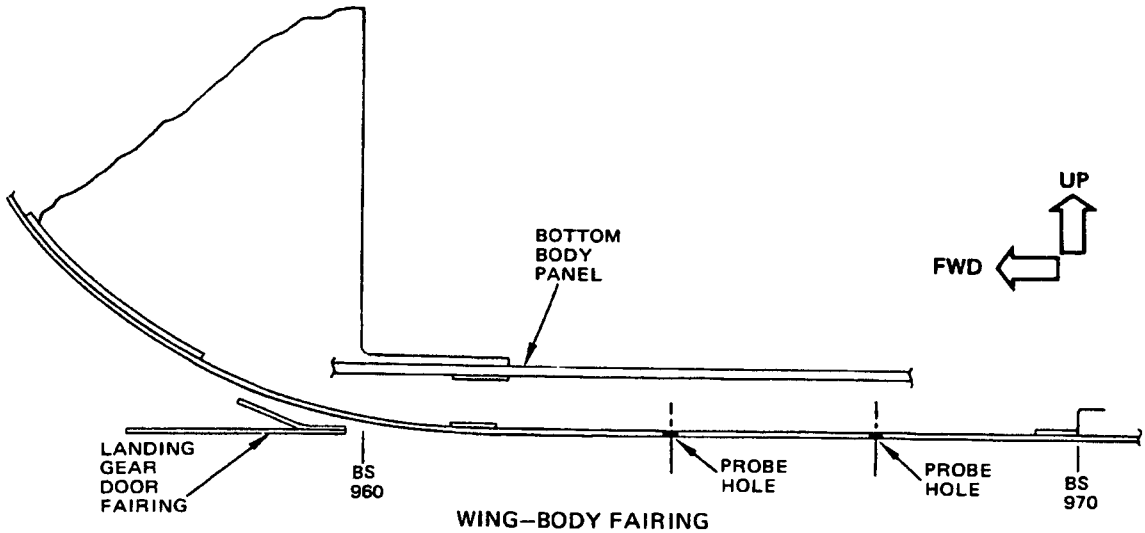


TYPICAL DRAIN VALVE INSTALLATIONS
DETAIL I

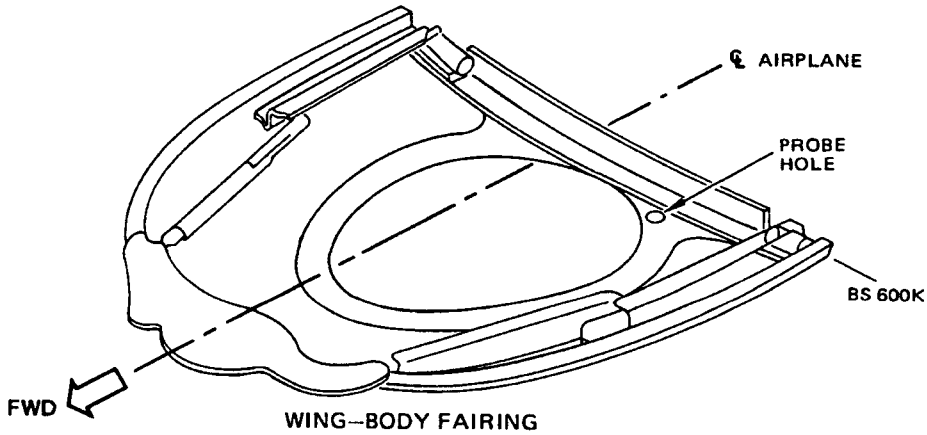


TYPICAL USE OF
LEVELING COMPOUND
DETAIL II

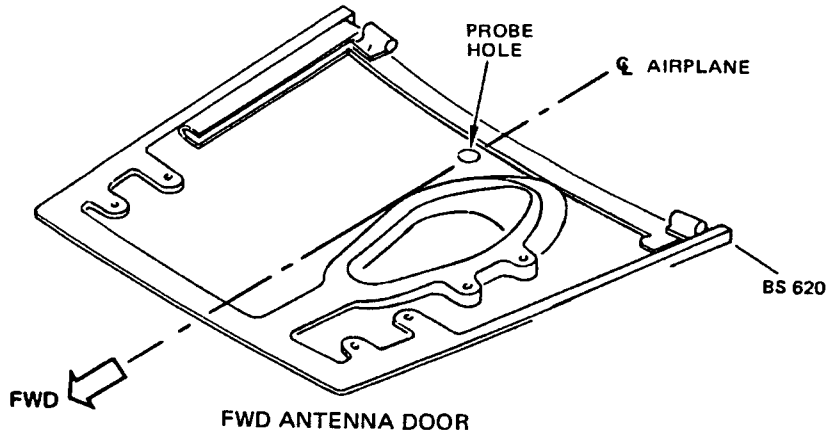
Fuselage Drain Holes
Figure 2 (Sheet 2)



WING–BODY FAIRING



WING–BODY FAIRING



FWD ANTENNA DOOR
DRAIN VALVE PROBE HOLES
DETAIL III

Fuselage Drain Holes
Figure 2 (Sheet 3)

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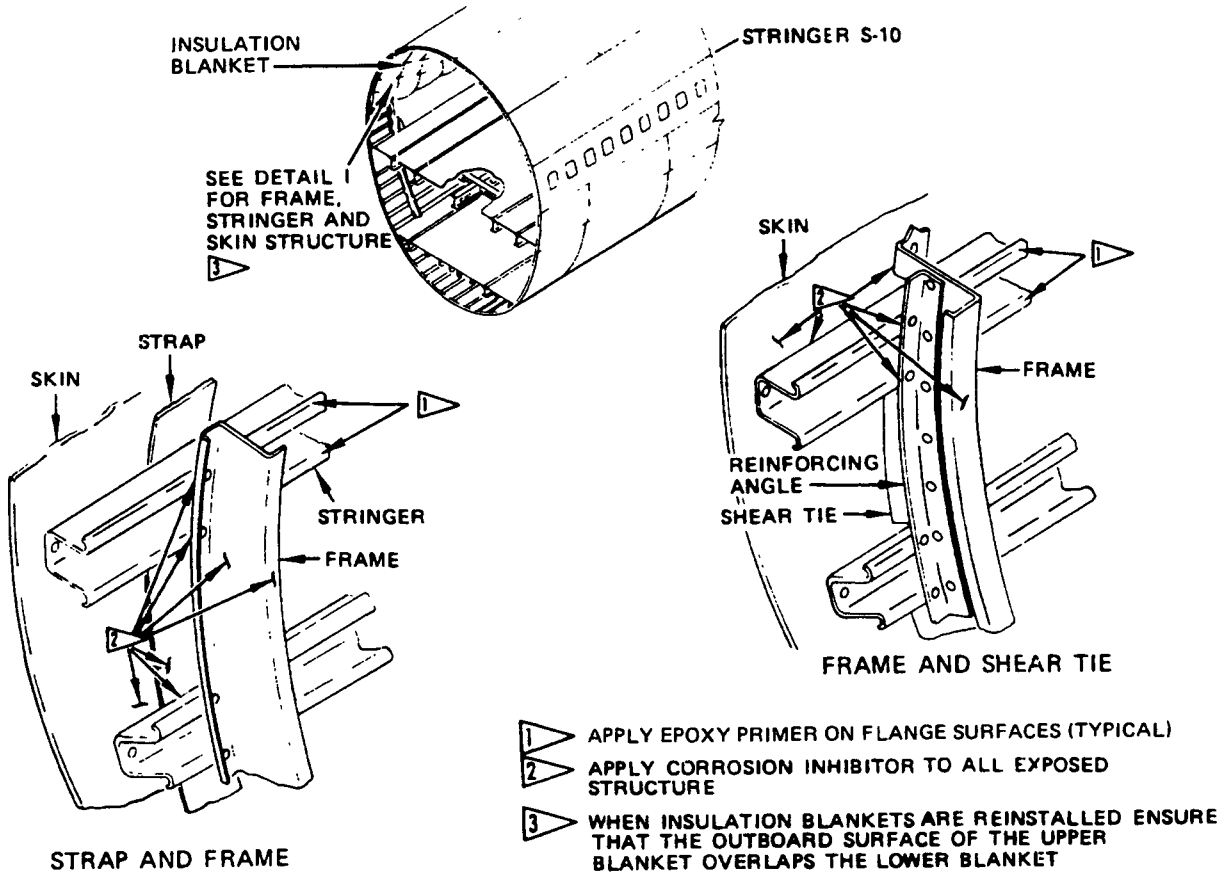


FRAME, STRINGER AND SKIN STRUCTURE
(INSULATION BLANKET NOT SHOWN)
DETAIL I

Crown Frames, Stringers and Skin
Figure 1

1. General

A. The fuselage is of semimonocoque construction that uses aluminum skins, circumferential frames and longitudinal stringers. The fuselage skin is installed with butt joints and longitudinal lap joints that are usually flush riveted.

B. The stringers, frames and skins can get corrosion because of moisture caught between the skin and insulation blankets. Spilled liquids, condensation or moisture through open doors can run along frames or stringers to collect at some dammed location and cause corrosion. Corrosion can also start where protective finishes have been broken or deteriorated.

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

D. Corrosion can occur on the stringers and stringer tie fittings between left and right stringer 9, BS 360 to BS 1400 with the worst between BS 960 and BS 1320. This corrosion could be because of moisture-soaked insulation blankets.

E. Corrosion occurred between BS 320 and BS 360, stringers 22 thru 25 left and right, and in the left and right crown skin at many locations between BS 360 and BS 1440. Much corrosion occurs around the two anti-collision lights. Corrosion also occurred on the BS 1140 frame.

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

2. Corrosion Prevention

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

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

WARNING: DO NOT APPLY CORROSION INHIBITING COMPOUNDS INTO AREAS WHICH COULD POTENTIALLY BE IN CONTACT WITH OXYGEN SYSTEM COMPONENTS.

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

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

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

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

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

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

(2) Alodize bare material.

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

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

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

F. Prevention Treatment

(1) At the first time that scheduled maintenance work permits access to the structure, do corrosion prevention treatment. Treat the skins at the same time as the structure.

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

(3) Open plugged drains.

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

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

(6) 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.

(7) Apply water-displacing corrosion-inhibiting compound to exposed structure with the exception of rivets at the lap joints. The use of spray equipment with nozzle directed into faying surfaces is recommended.

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

NOTE: On airplanes through cum line number 896, 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. Airplanes cum line numbers 736 and 743 and on are known to have been delivered with insulation blankets with water-repellent fillers. Cum line numbers 1 thru 525 are known to have been delivered with insulation blankets using non-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 airplanes other than those identified as having water-repellent fillers.

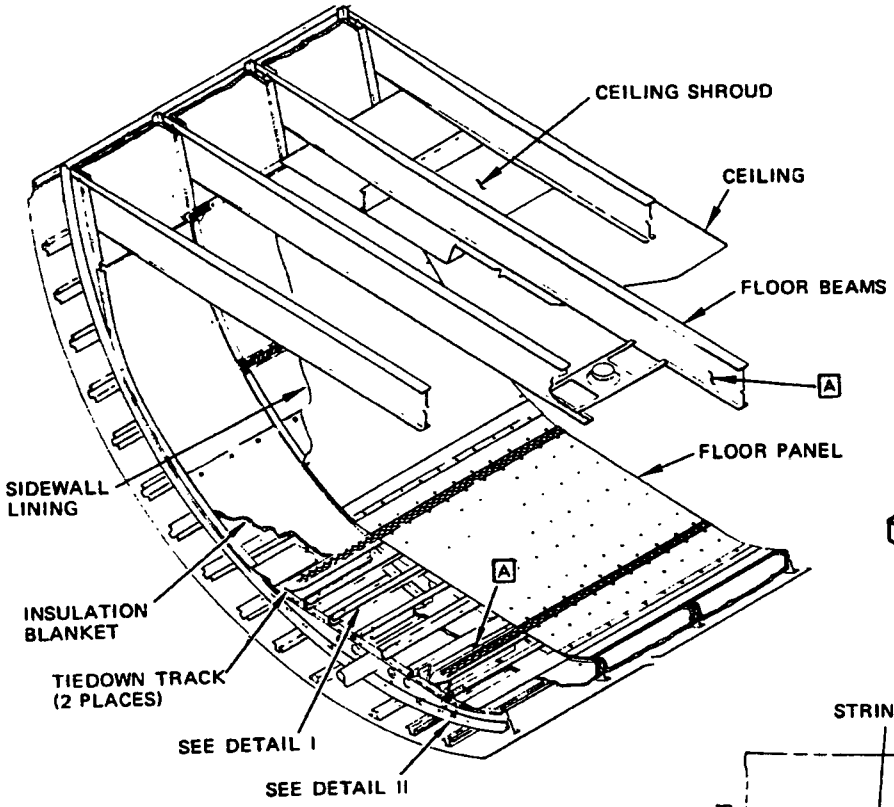
(9) Reinstall blankets so they are taut and so that the outboard surface of the upper blanket overlaps the lower blanket.

G. Frequency of Application

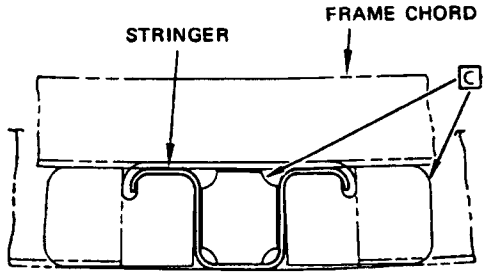
(1) Perform a sample inspection at major overhaul approximately every 5 years to determine the condition of the corrosion inhibitor on the structure and the primer coat on stringer flanges. Reapply the sealant, corrosion inhibitor and primer coat as required.

H. Improved Corrosion Protection

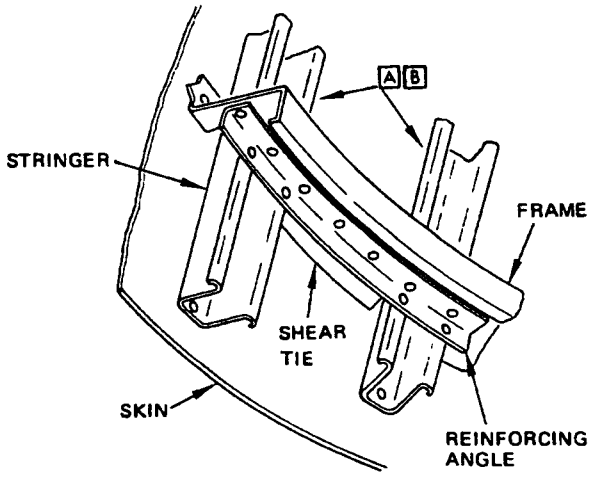
(1) At line number 897, the tightly sealed insulation blanket covers were replaced with unsealed covers to permit water to flow through the blankets. The blankets become drain paths into the lower lobe drain masts. These blankets have water repellent fillers.



TYPICAL LOWER LOBE STRUCTURE



DAMS FOR "HOSE-OUT OPTION"
DETAIL II



SHEAR TIE
DETAIL I

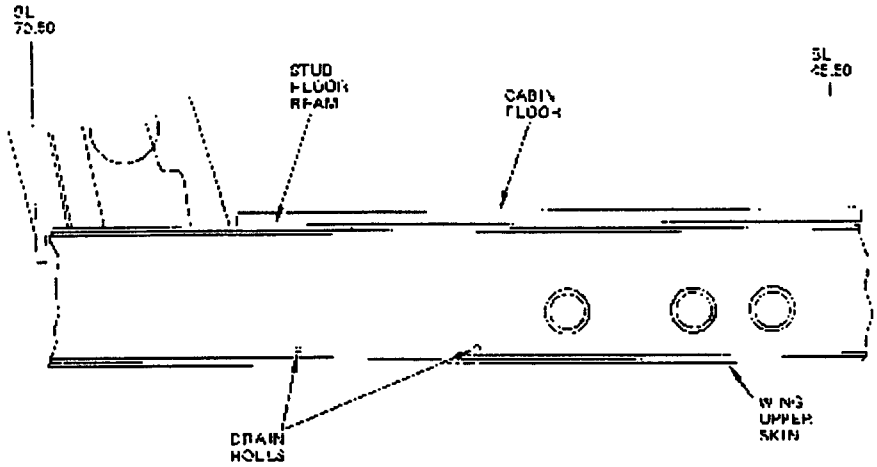
NOTE

[A] APPLY WATER DISPLACING CORROSION INHIBITOR, BMS 3-23 TO ALL EXPOSED STRUCTURE

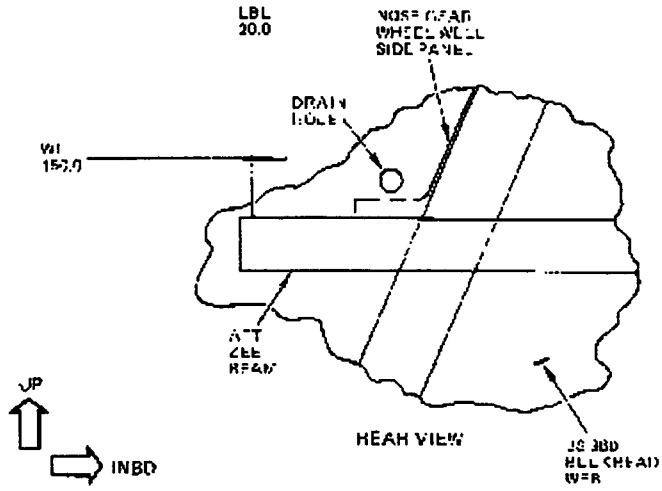
[B] TREAT SKIN, FRAME AND STRINGERS BELOW S-24. DO NOT TREAT SKIN LAP JOINTS

[C] DAMS ARE PROVIDED TO COMPARTMENTIZE AREAS FOR OPTIONAL HOSE OUT OPERATIONS. URETHANE FOAM DAMS HAVE BEEN REPLACED WITH METAL DAMS IN THE FORWARD SECTION (SEC 41) AT AIRPLANE CUM LINE NUMBER 902 AND AFT SECTIONS (SEC 43 AND 46) AT AIRPLANE CUM LINE NUMBER 907.

Lower Lobe Structure
Figure 2 (Sheet 1)



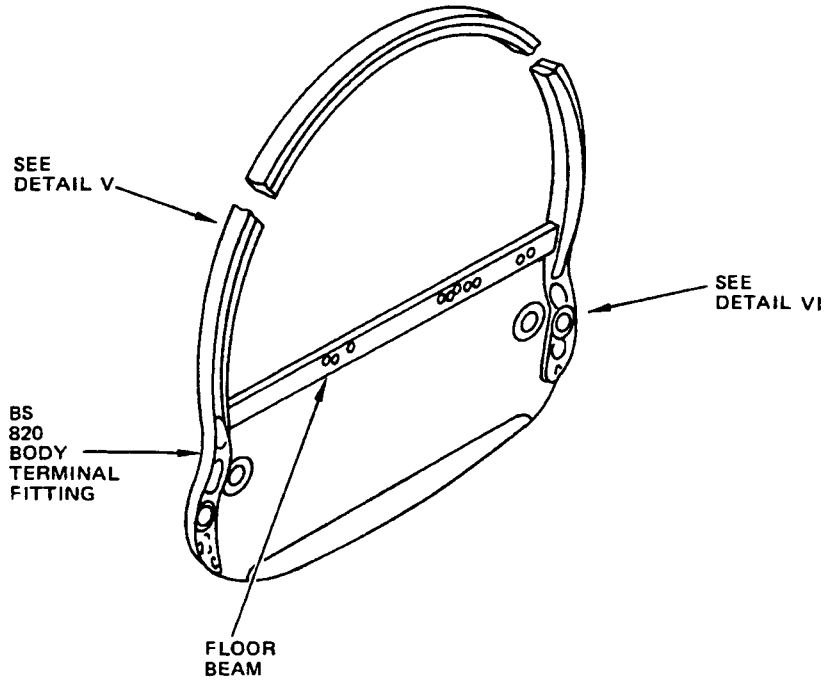
TYPICAL STUB FLOOR BEAM DRAIN HOLE
BS 60UL – BS 80U
DETAIL III

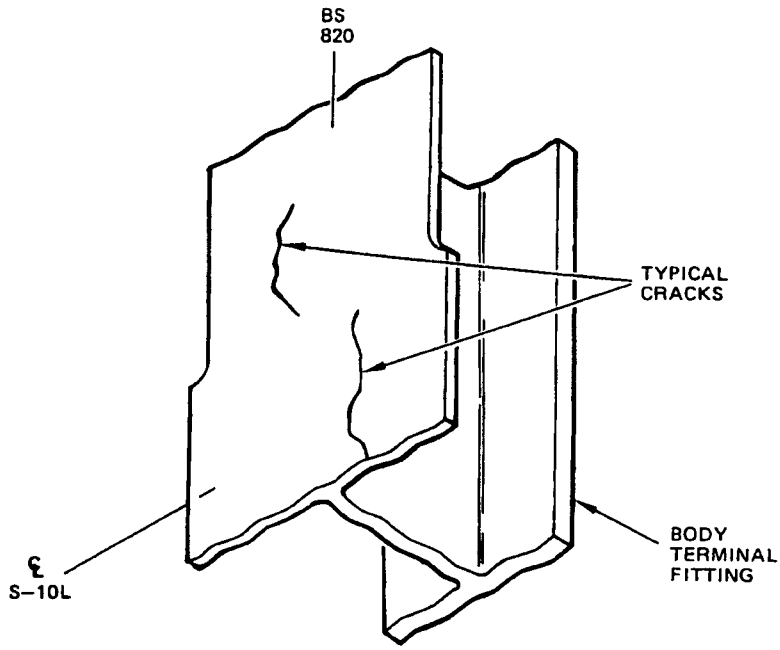


NOSE COMPARTMENT
WALKWAY DRAIN

DETAIL IV

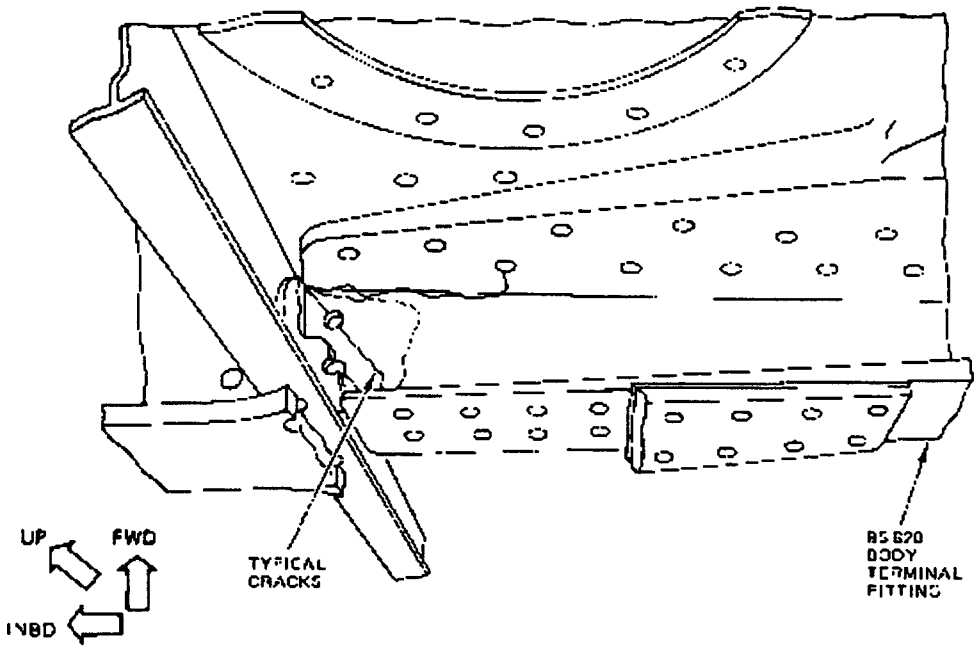
Lower Lobe Structure
Figure 2 (Sheet 2)





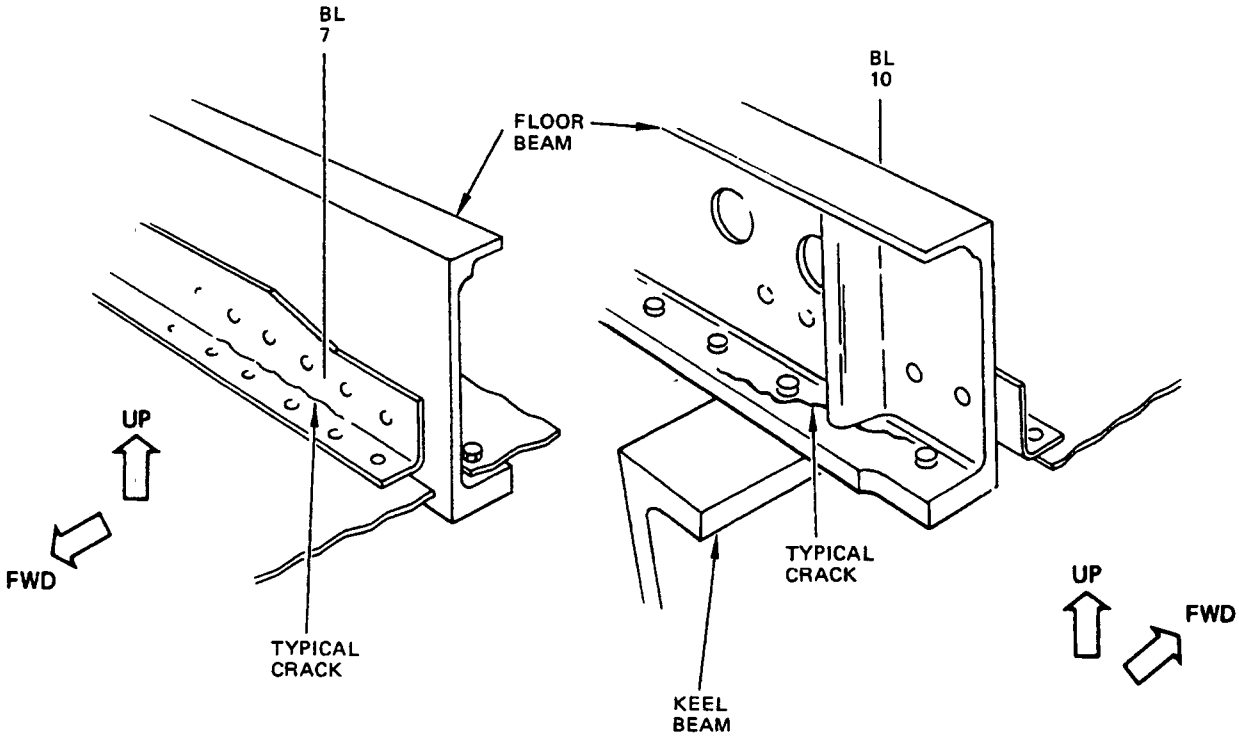
DETAIL V

Lower Lobe Structure
Figure 2 (Sheet 3)



DETAIL VI

Lower Lobe Structure
Figure 2 (Sheet 4)



DETAIL VII

Lower Lobe Structure
Figure 2 (Sheet 5)

1. General

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

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

NOTE: To reduce the possibility of moisture entrapment in the lower fuselage areas, drainage holes in stringers and leveling compound in water entrapment areas were provided on airplanes line number 904 and on, plus airplanes incorporating SB 3172.

C. To aid in cleaning out harmful contaminants accumulated in the lower lobe, dams have been provided to compartmentalize areas for optional hose out operations (Ref Detail II). Urethane foam dams have been replaced with metal dams in section 41 at airplane line number 902 and sections 43 and 46 at airplane line number 907.

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

F. Stress corrosion cracking has been found in the lower aft flange of the BS 880 floor beam. Stress corrosion cracking has also been discovered in the forward side of the BS 880 floor beam pressure web attach angle. The pressure web attach angle cracks were in the radius of the angle at LBL 7 and RBL 7 (Detail VII).

G. Stress corrosion cracking of the fitting I-beam, inboard of the BS 820 left- and right-hand bottle pins, has been reported. Stress corrosion cracking was discovered on airplanes with 14,270 to 29,300 hours (Details V and VI).

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. Skin bulges, missing fasteners, or white powdery deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of moisture or corrosive compounds to minimize the occurrence of corrosion.

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

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

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

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

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

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

(2) Alodize bare material.

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

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

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

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

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

F. Prevention Treatment

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

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

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

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

(5) Open plugged drains, if any.

(6) Clear all drain paths.

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

(8) Apply a coat of B14S 10-11 epoxy primer to the inboard or upper flange surfaces of stringers and allow to dry thoroughly.

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

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

(11) Apply corrosion inhibiting compounds to all exposed structure beneath the upper lobe entry doors, under the cargo floor and sidewalls below S-24. 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 airplanes line number 874 and on, plus airplanes incorporating SB 3059. These supports consist of nylon twine and brackets. Silicone rubber used on earlier installations may deteriorate due to exposure to hydrocarbons such as corrosion inhibitors and should be replaced with nylon twine.

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

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

NOTE: On airplanes through line number 896, 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. Airplane line numbers 736 and 743 and on were delivered with insulation blankets with water-repellent fillers. Line numbers 1 thru 525 were delivered with insulation blankets using non-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 airplanes other than those identified as having water-repellent fillers.

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

G. Frequency of Application

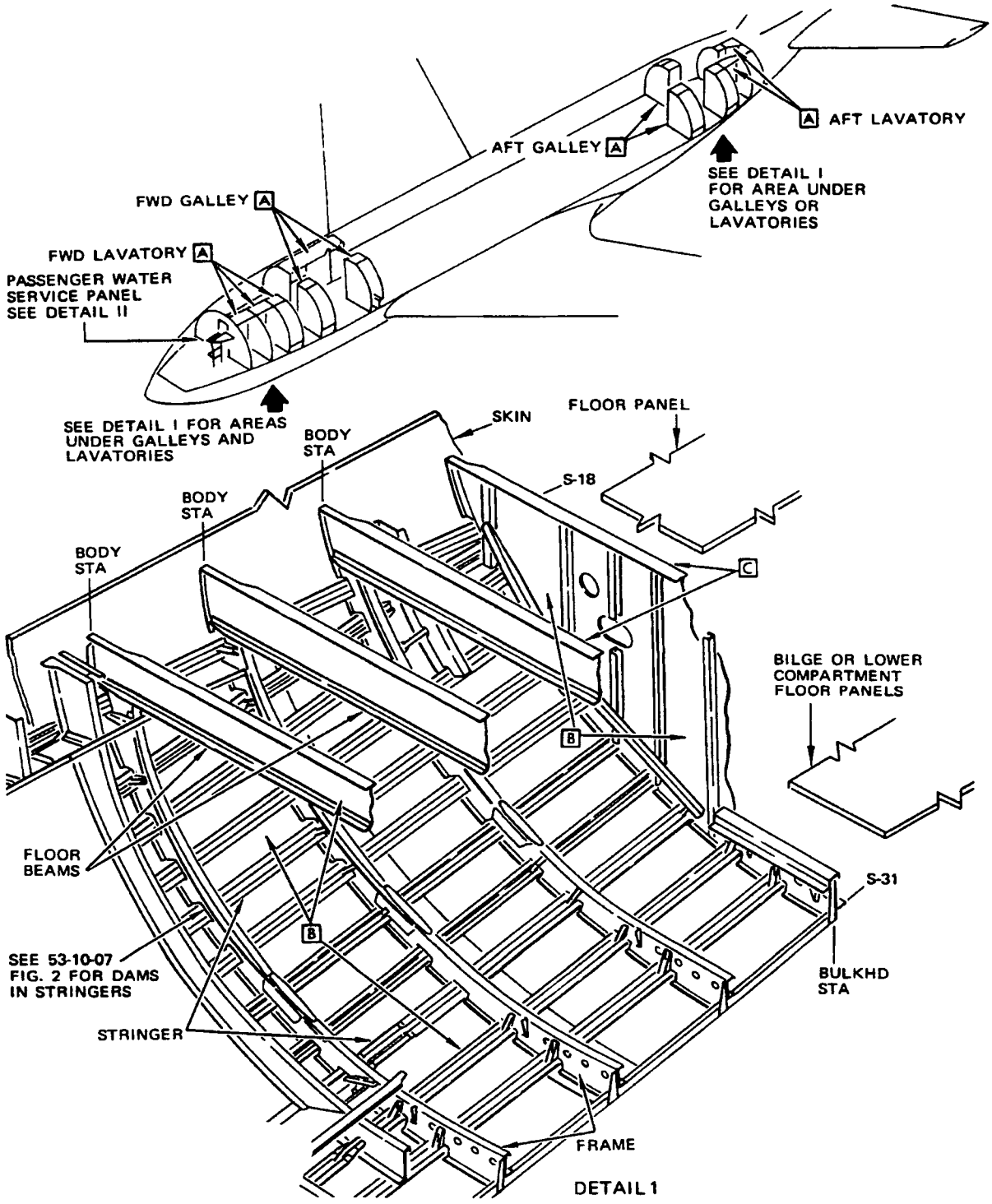
(1) Perform a sample inspection at major overhaul or approximately every 5 years to determine the condition of the corrosion inhibitor on the structure and the sealant coating on stringers and frames. Reapply sealant and corrosion inhibitor if required.

H. Improved Corrosion Protection

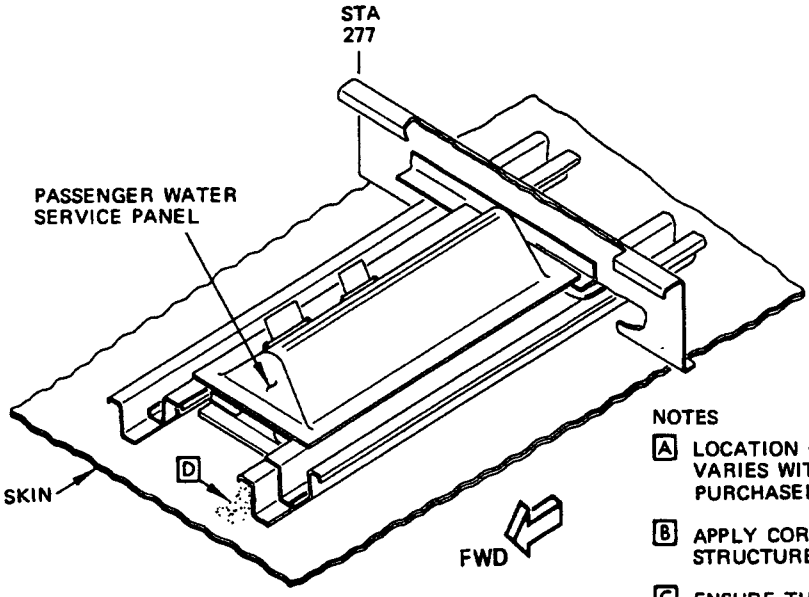
(1) Drain holes were added to the BS 360 nose gear wheel well bulkhead on airplanes line number 36 and on, plus airplanes incorporating SB 468 (Detail IV).

(2) Drain holes were added to the stub floor beams on airplanes line number 71 and on, plus airplanes incorporating SB 539. The stub floor beams are located between BS 600L and BS 800 for the 707-300,-400 and from BS 640 to BS 800 for the 707-100 (Detail III).

(3) At line number 897, the tightly sealed insulation blanket covers were replaced with unsealed covers to permit water to flow through the blankets. The blankets become drain paths into the lower lobe drain masts. These blankets have water repellent filler.



Galley and Lavatory Areas
Figure 3



DETAIL II

NOTES

A LOCATION OF GALLEYS AND LAVATORIES VARIES WITH OPERATOR'S CONFIGURATION PURCHASED

B APPLY CORROSION INHIBITOR TO EXPOSED STRUCTURE

C ENSURE THAT CORROSION INHIBITOR IS APPLIED TO TOP OF FLOOR BEAMS

D LEVELING COMPOUND ADDED FORWARD OF PASSENGER WATER SERVICE PANEL FOR PROPER DRAINAGE AT AIRPLANE CUM LINE NUMBER 904.

Galley and Lavatory Areas
Figure 3 (Sheet 2)

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 its exposure to traffic debris and spillage which collect inside the track.

NOTE: To reduce the possibility of moisture entrapment in the lower fuselage areas drainage holes in stringers and leveling compound in water entrapment areas provided on production airplanes at cum line number 904 and can be provided retroactively by incorporating SB 3172.

B. Corrosion of the aluminum faced floor panels under galleys and lavatories has been alleviated by utilizing fiberglass faced balsa panels on recent airplanes.

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

D. At line number 897, the tightly sealed covers were 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.

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, 20-20-10 to preclude or detect the early stages of corrosion. Skin bulges, missing fasteners or white powdery deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of moisture in order to minimize the occurrence of corrosion.

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

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

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

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

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

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

E. The treatment of seat tracks in the galleys and lavatories should be accomplished per 53-10-07, Fig. 6.

F. Prevention Treatment

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

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

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

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

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

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

(6) Open plugged drains, if any.

(7) Clear all drain paths.

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

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

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

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

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 874 and can be provided retroactively by incorporating SB 3059. These supports consist of nylon twine and brackets. Earlier installations utilizing silicone rubber may deteriorate due to exposure to hydrocarbons present in corrosion inhibiting compounds and should be replaced with nylon twine.

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

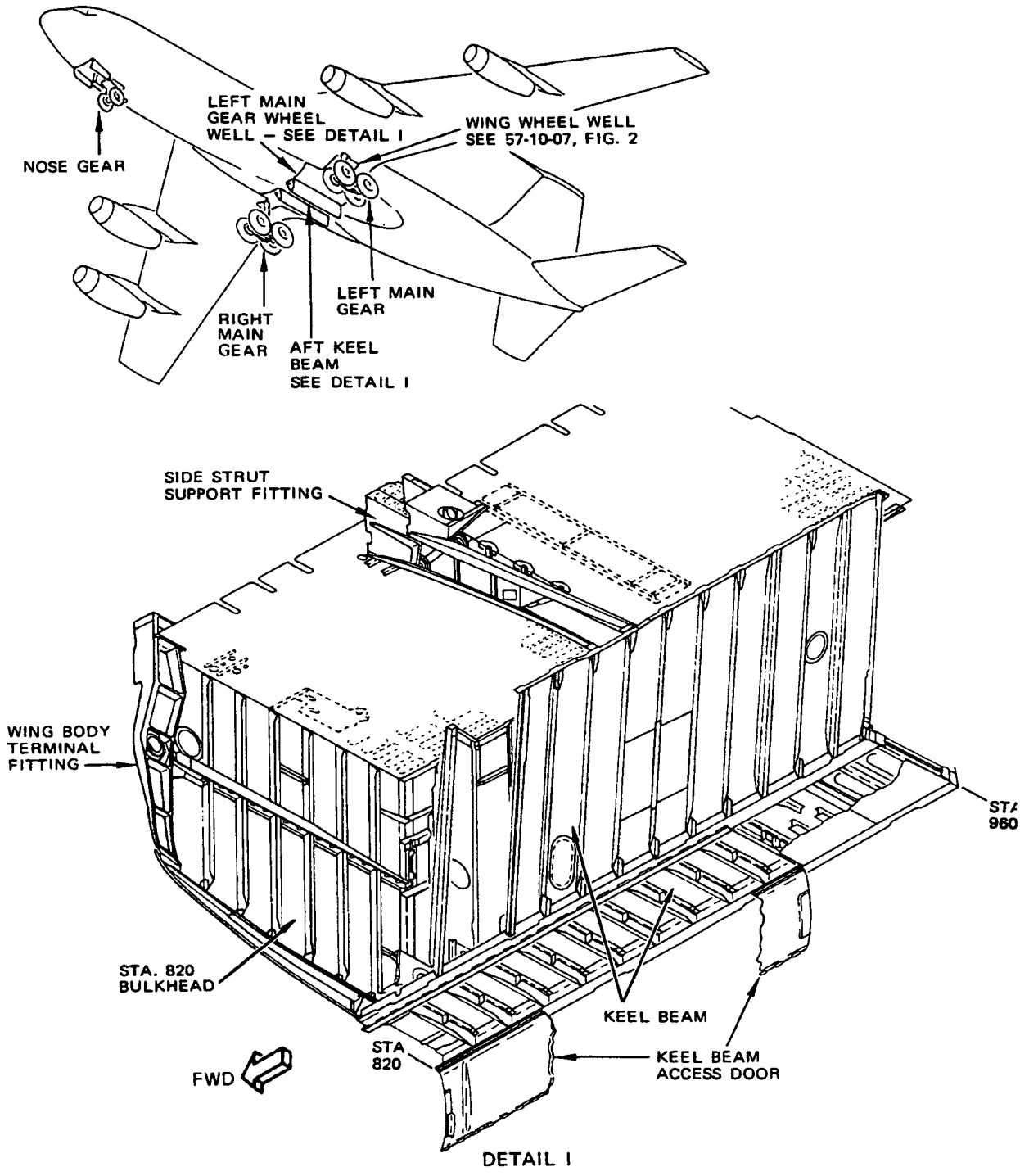
(13) Install blankets so they are taut and so that the outboard surfaces of upper blanket overlap the lower blanket.

NOTE: On airplanes through cum line number 896, 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. Airplane cum line numbers 736 and 743 and on are known to have been delivered with insulation blankets with water-repellent fillers. Cum line numbers 1 thru 525 are known to have been delivered with insulation blankets using non-vrater-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 airplanes other than those identified as having water-repellent fillers.

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

G. Frequency of Application

(1) Perform a sample inspection at major overhaul or approximately every 5 years to determine the condition of the corrosion inhibitor on the structure and the sealant coating on stringers and frames. Reapply sealant and corrosion inhibitor if required.



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

1. General

A. The main gear wheel well in the fuselage section is made up of separate wells on each side of the airplane. The aft keel beam separates the two wells. 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 upper shock strut in the stowed position.

B. The surfaces inside the wheel well are exposed to air contaminants and runway splash and are subject to corrosion. The main landing gear side strut attachment fitting is located approximately in the middle of the cavity and should be protected from corrosive action. The underneath side of the keel beam is also subject to corrosion.

C. The wing wheel well should be treated at the same time as the wing torque box, trunnion and trunnion support fittings (Ref 57-40-07, Fig. 2).

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

2. Corrosion Prevention

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

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

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

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

E. Hydraulic tubing, tubing supports and fittings are to be treated per 29-00-07, Fig. 1.

F. Prevention Treatment

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

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

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

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

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

DO NOT APPLY BMS 3-23 TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONED CLAMPS. BMS 3-23 WILL CAUSE THE SEALS OR CUSHIONS TO SWELL.

(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 faying surfaces and on fastener heads. The use of spray equipment with nozzle directed into faying surfaces is recommended.

(6) Apply BMS 3-23 to main landing gear side strut support fitting, especially at the attachment points of the strut and the actuator. Ensure that all lugs and lug faces are treated.

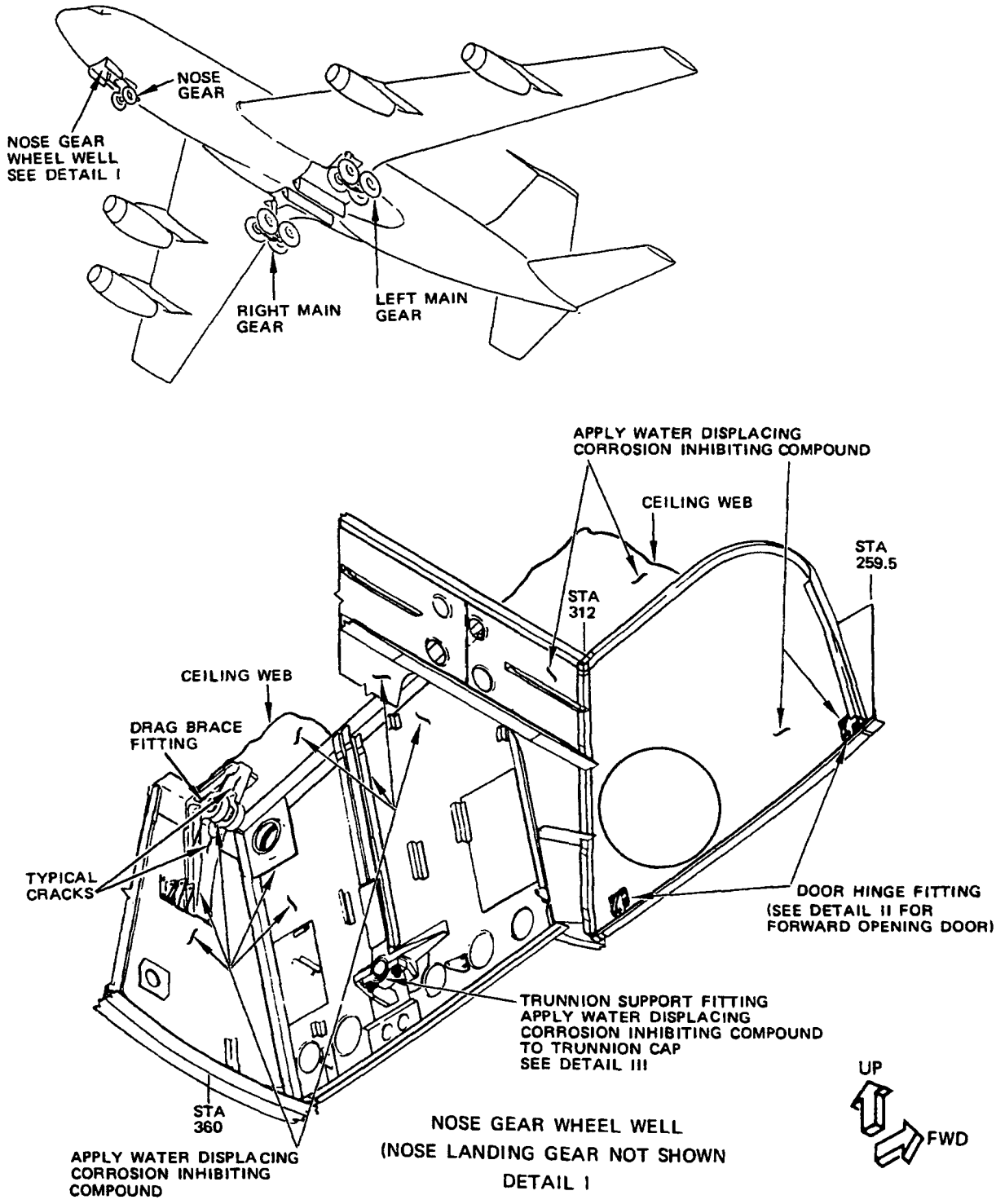
(7) Open keel beam access doors and apply BMS 3-23 on exposed structure and door hinge.

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

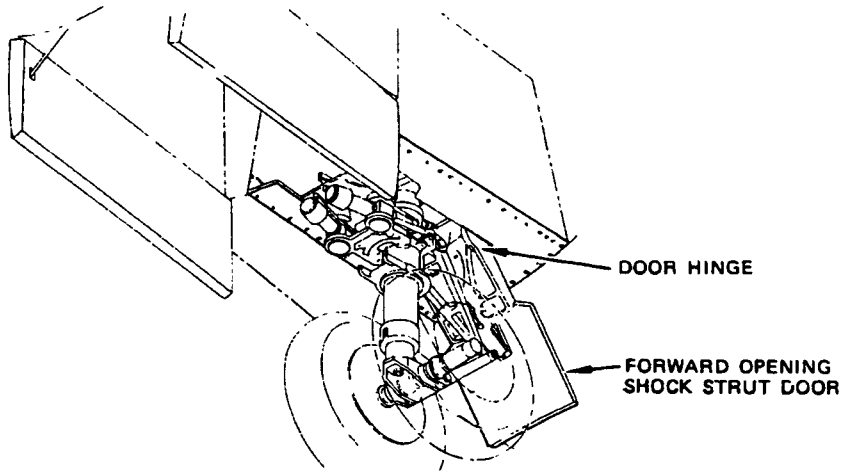
G. Frequency of Application

(1) The corrosion inhibitor should be reapplied annually.

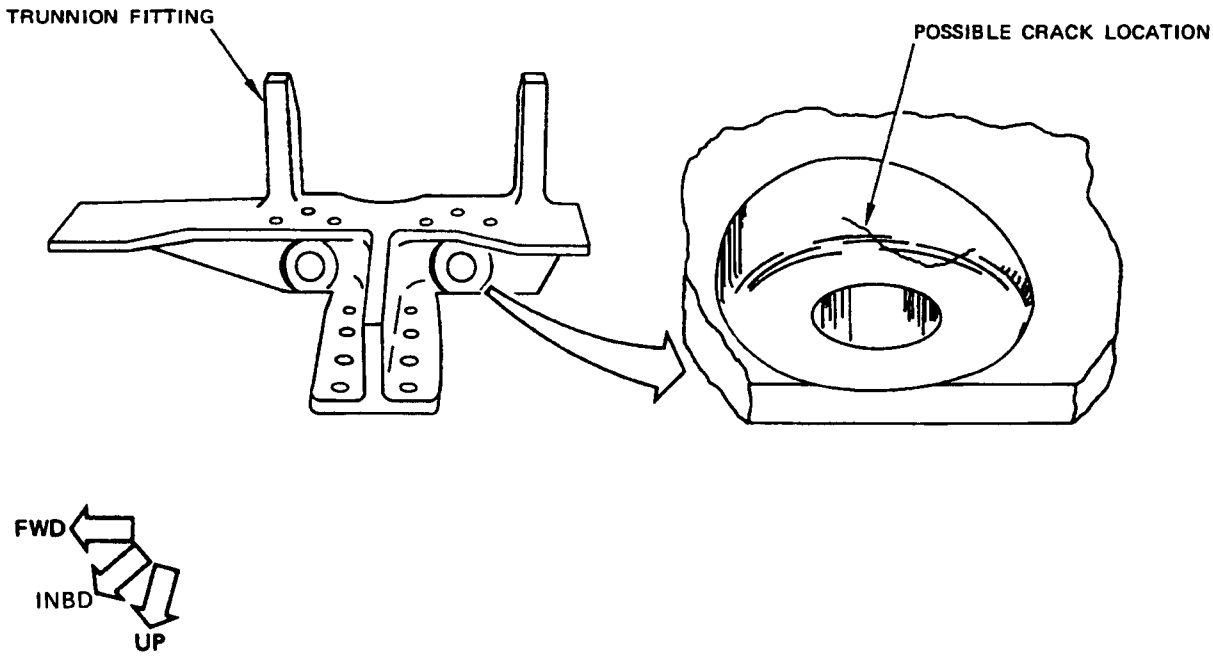
(2) In cases where the wheel well is cleaned with steam or high pressure water and detergent, reapplication of BMS 3-23 is recommended.



Nose Gear Wheel Well
Figure 5 (Sheet 1)



DETAIL II



DETAIL III

Nose Gear Wheel Well
Figure 5 (Sheet 2)

1. General

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

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

C. Corrosion has been reported on the hinge bolts for the forward opening shock strut door installed on some airplanes. In one instance, this permitted the door to drop which restricted the nose wheel steering.

D. Stress corrosion cracking has been reported in the center webs of the drag brace fitting along, parallel to and adjacent to the forging parting plane at BLO.O. The cracks have occurred in fittings made from 7079-T6 aluminum alloy. Material changes were made to 7075-T73 alloy on airplanes from cum line number 864. The center web drag brace cracks along the parting line are not considered critical either to airplane operation or to safety, although could result in a complete separation of the fitting at the parting line.

E. Stress corrosion cracks occurred in the nose gear trunnion fitting (Detail III). The cracks were 1 to 2 inches in length, and they ran fore to aft.

F. Corrosion and cracks occur on the Body Station 360 bulkhead outer chord and web. Problem areas include the forward and the rear faces at stringers 26, 27, 28, left and right sides, and can include webs, mounting bolts, brackets and angles.

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 discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of moisture or corrosive products in the wheel well structure to minimize the occurrence of corrosion.

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

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

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

E. Hydraulic tubing, tubing supports and fittings are to be treated per 29-00-07, Fig. 1.

F. The probability of stress corrosion cracking occurring in the drag brace fitting can be reduced by installing current replacement fittings which are made from 7075-T73 material. If cracks are discovered in the drag brace fitting, refer to Structural Repair Manual for details of corrosion removal.

G. Prevention Treatment

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

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

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

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

CAUTION:TAKE PRECAUTIONS TO PREVENT SPRAYING CONTROL CABLES WITH CORROSION INHIBITING COMPOUND, HOWEVER, OVERSPRAY IS PERMISSIBLE.

DO NOT APPLY CORROSION INHIBITING COMPOUND TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONED CLAMPS BECAUSE IT WILL CAUSE THE SEALS OR CUSHIONS TO SWELL.

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

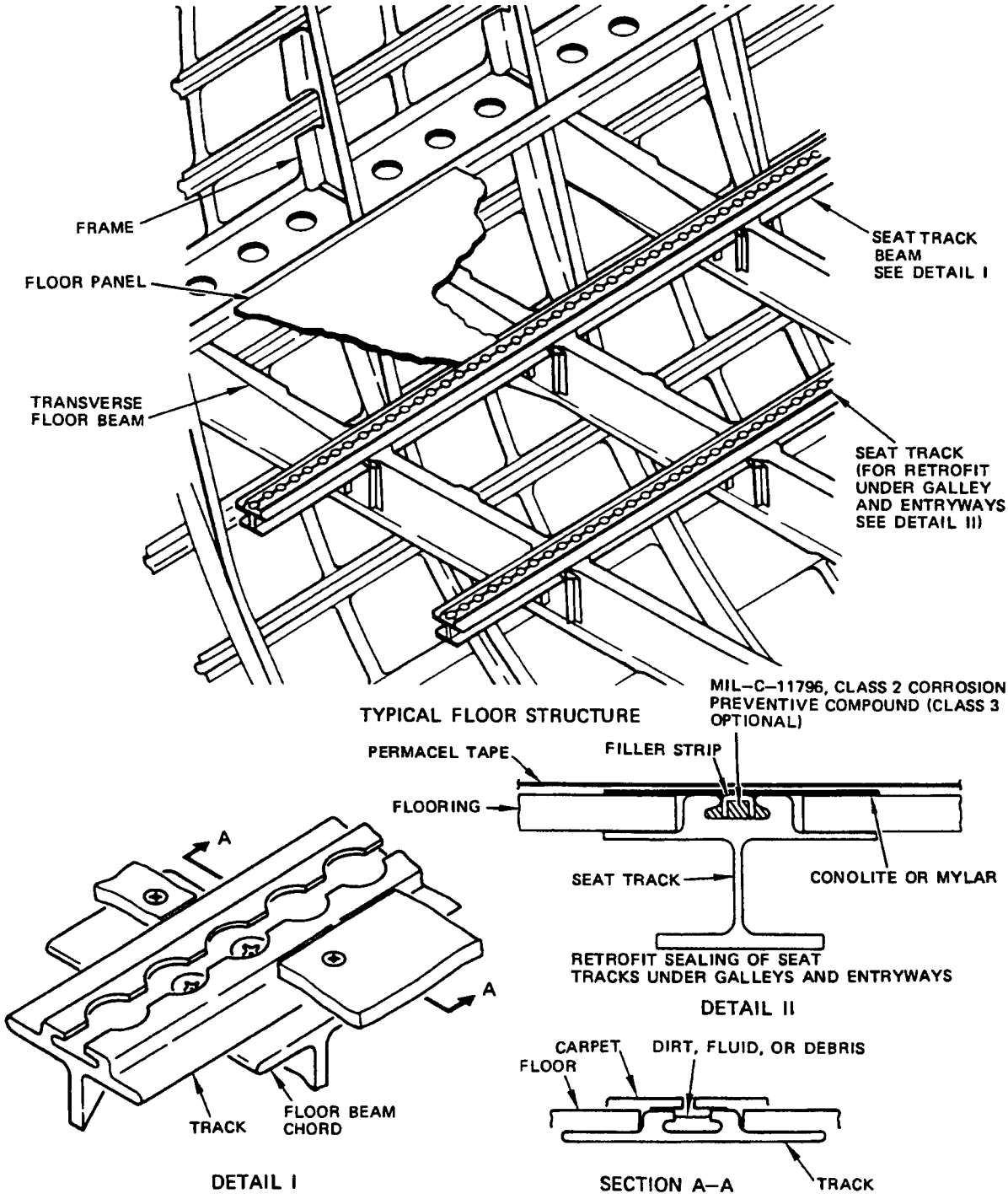
(6) Apply water displacing corrosion inhibiting compound to nose gear actuator attachment fitting, nose gear trunnion support fittings and miscellaneous other fittings. Ensure that all lugs and lug faces are treated.

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

H. Frequency of Application

(1) The corrosion inhibitor should be reapplied annually.

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



Seat and Cargo Tracks
Figure 6 (Sheet 1)

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. 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. Improved surface treatments are also being used for corrosion prevention.

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

2. Corrosion Prevention

A. Make periodic inspection described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. Further inspection recommendations are described herein.

CAUTION: IN THE PORTIONS OF TRACKS FILLED WITH SEALANT IN PRODUCTION AND WHERE THE SEALANT HAS BEEN DAMAGED OR BROKEN DUE TO SERVICE, REPLACEMENT OF SEALANT IS NOT RECOMMENDED UNLESS THE TRACK IS THOROUGHLY CLEANED AND CAREFULLY INSPECTED FOR CORROSION. THE APPLICATION OF SEALANT MAY COVER UP CORROSION THAT MAY HAVE ALREADY STARTED.

B. Seat tracks extending into galleys, lavatories and entrances are usually filled with sealant and protected with mylar or vinyl tape under the carpeting. Periodically, consistent with scheduled maintenance activity and when the carpeting can be lifted to expose the tape a visual inspection should be made to ensure that the tape is not broken. Retrofit corrosion protection for seat tracks under galleys and entryways may be provided as follows (seat tracks under lavatories appear to be satisfactorily provided with corrosion protection):

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

(2) 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).

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

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

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

(5) Fill the track groove with MIL-C-11796, Class 2 or 3 corrosion preventive compound to the top of the track. (Make the corrosion preventive compound hot to make it easy to pour.) Wipe off any unwanted compound.

(6) Apply a 3-inch strip of Conolite or mylar over the treated track. Bond it 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).

(7) Apply Permacel tape or equivalent over all of the floor to keep the moisture out.

C. White powdery or discolored deposits are signs of corrosion. See how much corrosion there is and make a decision between treatment for small corrosion or a full repair.

D. Make it easier to inspect and treat the tracks in the passenger seating areas. Before you start, remove the inserts which are installed in the unused portion of the track.

E. Tracks in the cargo section are usually open, but they could have inserts for cargo handling. Remove these so you can inspect and treat the area below.

F. If you find much corrosion, refer to Structural Repair Manual.

G. Refer to Volume 1, 20-50-00 for how to treat surfaces after repair. Refer to Volume 1, 20-60-00 for how to apply corrosion inhibiting compound.

H. For less important corrosion, clean off the corrosion products and then apply corrosion inhibiting compound on the area. Repair the finish system when the maintenance schedule permits.

I. For track treatment remove mylar or vinyl tape and inserts to expose track channel.

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

K. Open any plugged drains in dammed. portion of the tracks.

L. Clean tracks with aliphatic naphtha for removal of oil and grease.

M. Repair or replace damaged or broken dams.

N. Replace damaged or broken finishes if at all possible. Refer to Volume 1, 20-50-00 and 20-60-00 for protective finish systems.

CAUTION: CARPETING SOAKED WITH CORROSION INHIBITORS ARE POTENTIAL FIRE HAZARDS. CARPETING INADVERTENTLY SOAKED SHOULD BE ALLOWED TO DRY BEFORE REINSTALLING.

O. 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.

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

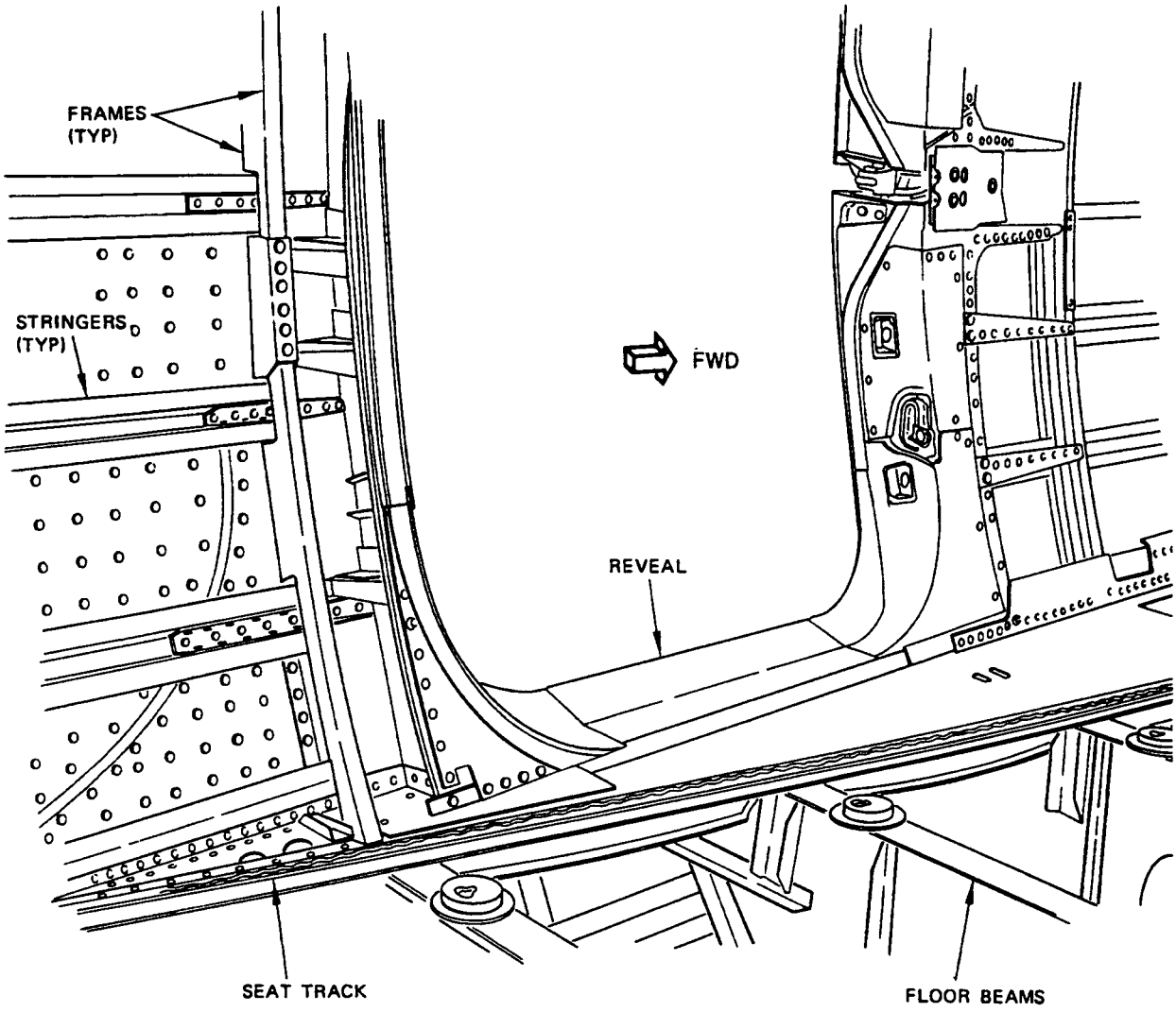
Q. Allow the corrosion inhibitor to dry before reinstalling inserts and restoring the airplane to normal.

3. Frequency of Application

A. 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.

B. 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.

C. 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.



TYPICAL DOOR OPENING STRUCTURE

Door Openings
Figure 7 (Sheet 1)

1. General

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

B. The primary corrosion area is under the door sill, floor panels and floor beams. Contaminants are tracked in by passenger, crew members, cargo and service personnel or by driven rain or snow when door is opened.

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

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

2. Corrosion Prevention

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

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

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

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

E. Prevention Treatment

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

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

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

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

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

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

(7) Open plugged drains, if dirty.

(8) Clear all drain paths.

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

(10) Apply a coat of BMS 10-11 epoxy primer to the inboard surfaces of stringer flanges.

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

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

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

TAKE PRECAUTION TO PREVENT SPRAYING CORROSION INHIBITING COMPOUNDS ON CONTROL CABLES, ACTUATOR RODS AND PARTS WITH LUBRICANT ON THEM.

DO NOT APPLY CORROSION INHIBITING COMPOUNDS TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONED CLAMPS. CORROSION INHIBITORS MAY CAUSE SEALS AND CUSHIONS TO SWELL.

(12) Apply BMS 5-95, Class F, chromate-loaded sealant to the inboard flanges and to portions of the stringers 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.

(13) Apply BMS 5-95 fay surface seals between the scuff plate and support structure and wet install the screws thru the scuff plate with BMS 5-95 sealant.

(14) 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.

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

(16) 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 896, 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. Airplane cum line numbers 736, 743 and on are known to have been delivered with insulation blankets with water-repellent fillers. Cum line numbers 1 thru 525 are known to have been delivered with insulation blankets using non-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 airplanes other than those identified as having water-repellent fillers.

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

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

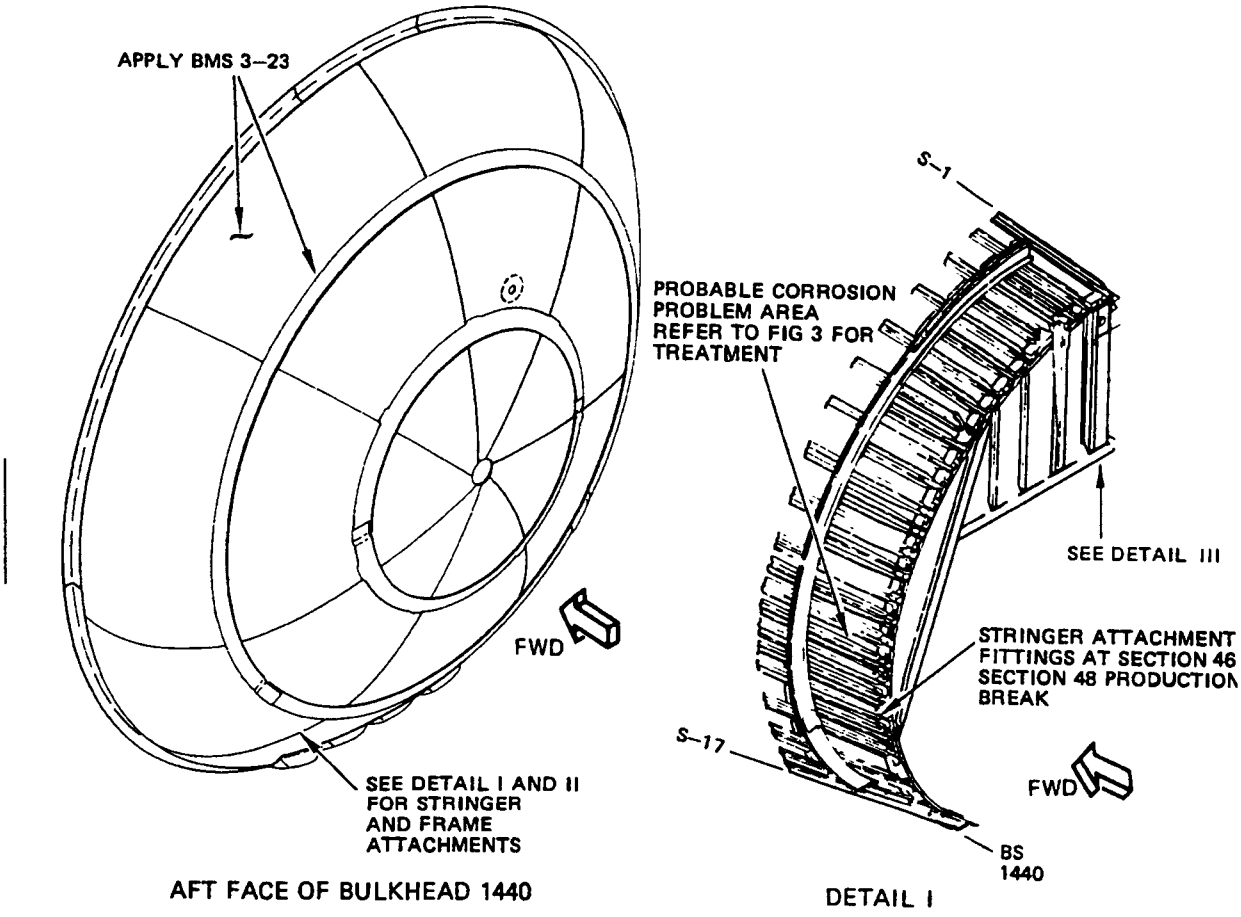
F. Frequency of Application

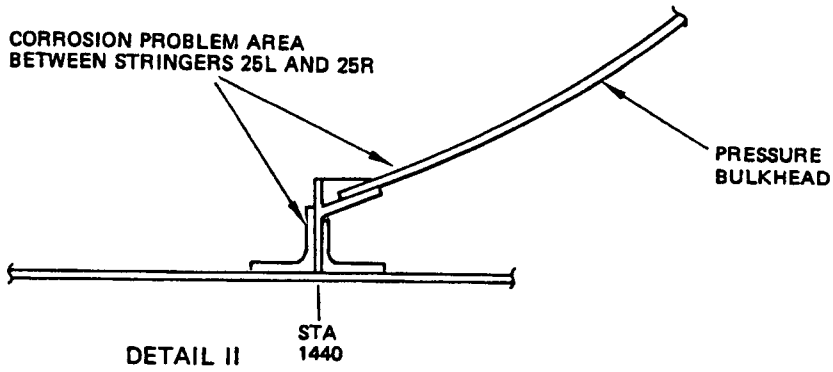
(1) Perform a sample inspection at major overhaul or approximately every 5 years to determine the condition of the corrosion inhibitor on the structure and the sealant coating on stringers and frames. Reapply sealant and corrosion inhibitor if required.

(2) In cases where door opening is cleaned with steam or high pressure water and detergent, reapplication of corrosion-inhibiting compound is recommended.

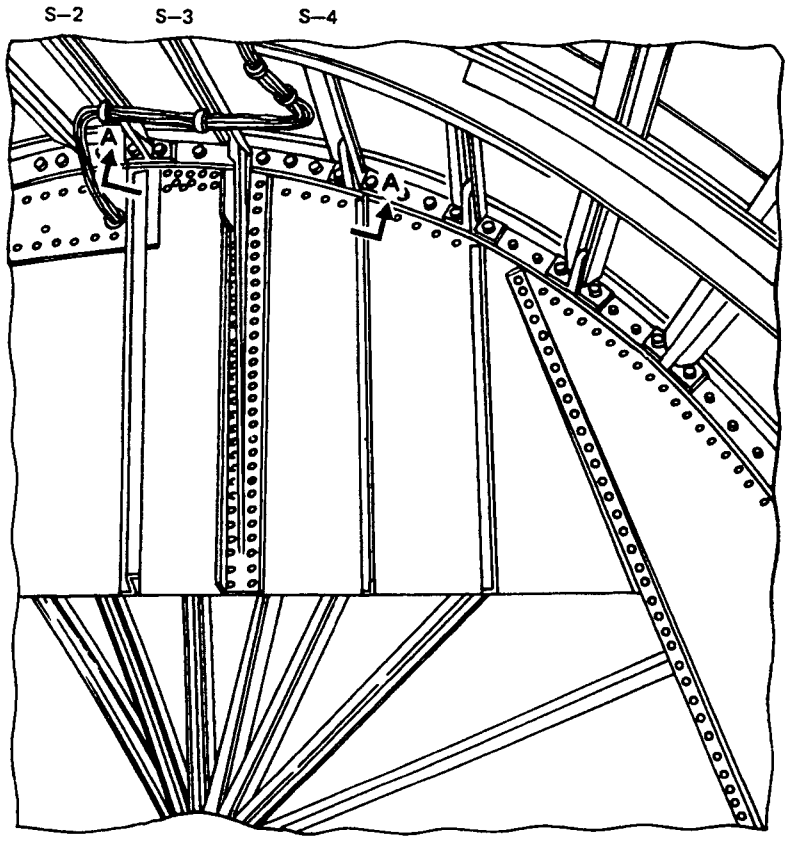
G. Improved Corrosion Protection

(1) At line number 897, the tightly sealed insulation blanket covers were replaced with unsealed covers to permit water to flow through the blankets. The blankets become drain paths into the lower lobe drain masts. These blankets have water repellent filler.



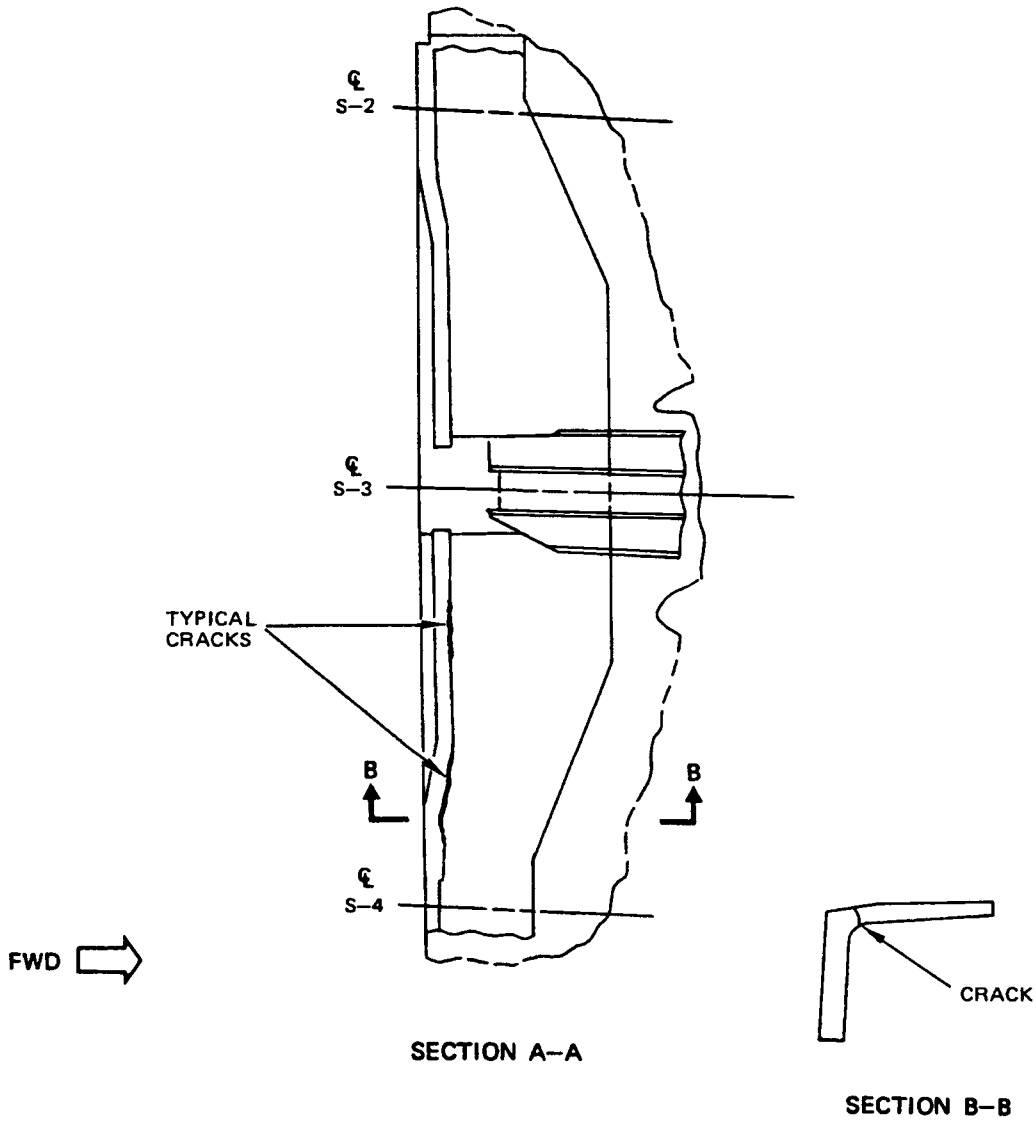


Aft Pressure Bulkhead
Figure 8 (Sheet 1)



DETAIL III

Aft Pressure Bulkhead
Figure 8 (Sheet 2)



Aft Pressure Bulkhead
Figure 8 (Sheet 3)

1. General

A. The circular concave pressure bulkhead at station 1440 consists of aluminum web panels with stiffening members on the forward face. The periphery is an extruded aluminum tee section which forms the station 1440 frame.

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

C. Corrosion has occurred on the lower part of the aft pressure bulkhead between stringers 25L and 25R, including the pressure web of the bulkhead, bulkhead chord, stringer attach fittings, fuselage skin and fasteners. The corrosion was attributed to accumulation of moisture in the lower flange area.

D. Specific corrosion problems have been encountered on the fastener holes at the stringer attachment fittings at the BS 1440 bulkhead below the main deck. Corrosion has been attributed to toilet leakage and the use of steel washers on aluminum structure. A production change to use aluminum washers and a special precautionary note when making bolt installations have been initiated at line number 899. Also, SB 3436 gives procedures for inspection and repair.

E. Stress corrosion cracks have been discovered in the BS 1440 frame chord between stringers 3 and 4. The first crack paralleled the radius in the forward horizontal flange. The second crack paralleled the joggle in the forward horizontal flange. Crack lengths varied from 1/2 to 1 inch (Detail III).

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

2. Corrosion Prevention

A. Make the regular inspections of Volume 1, 20-20-00, and SB 3436, to make sure the protective finishes stay serviceable. Start a corrosion prevention program to prevent corrosion because of collected moisture or corrosive products.

B. Treatment of the forward side of the bulkhead, the usual galley or lavatory location, is also given in Fig. 3.

C. Treatment of the crown structure is given in Fig. 1.

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

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

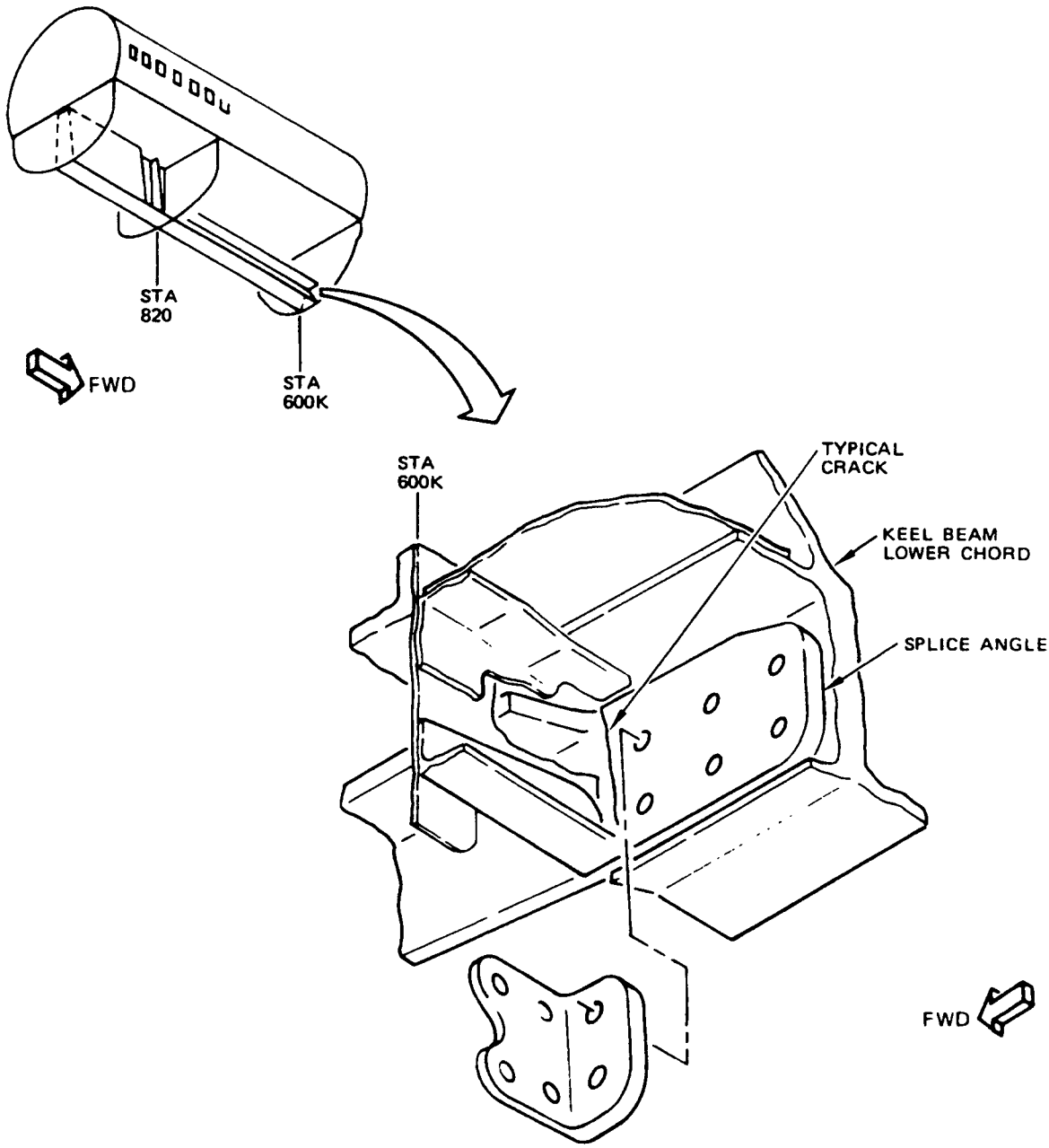
F. For minor corrosion, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process to minimize the downtime of the airplane. The finish system should be restored at the first opportunity consistent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

G. Clean plugged drains, if any.

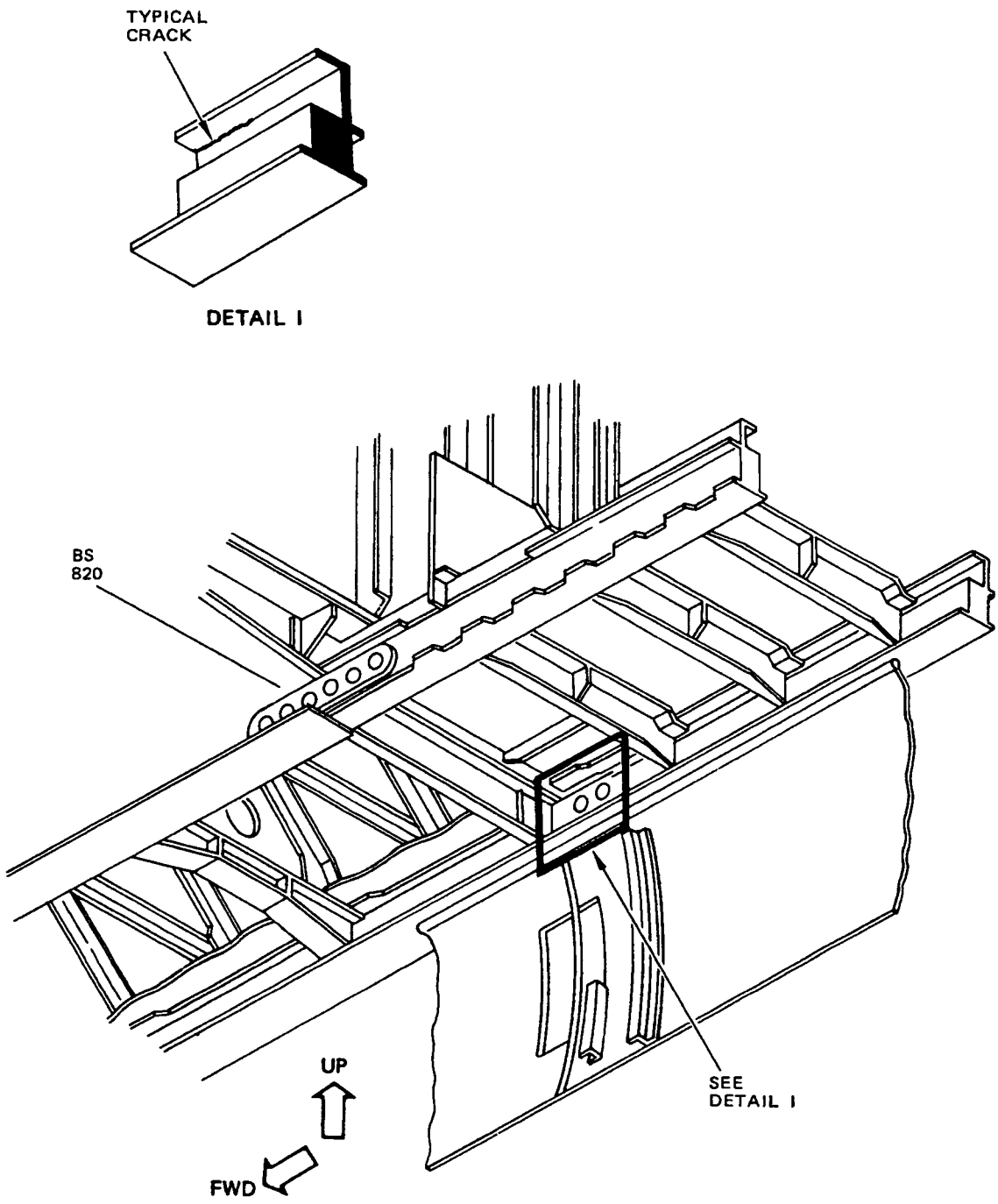
H. Apply BMS 3-23 to fastener heads and edges or surface areas of panels where the paint system has been cracked or flaked. Take special measures to ensure that the corrosion inhibitor is applied to stringer attachment fittings and bolts joining the bulkhead.

I. Repeat the application of BMS 3-23 as necessary based on service experience. In the event operator experience precludes the establishment of application intervals, the following periods are suggested according to operating environment.

(1) Severe zones - 6 months
Moderate zones - 12 months
Mild zones - 18 months



Keel Beam
Figure 9 (Sheet 1)



Keel Beam
Figure 9 (Sheet 2)

1. General

A. Corrosion has been reported on the keel beam inboard splice angles at STA 600K. This corrosion can contribute to crack initiation and ultimate fracture of these angles.

B. Stress corrosion cracks have been reported on the keel beam lower chord at BS 820. The cracks were located in the radius between the upper horizontal flange and the vertical leg.

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. Periodically inspect the keel beam for evidence of corrosion.

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

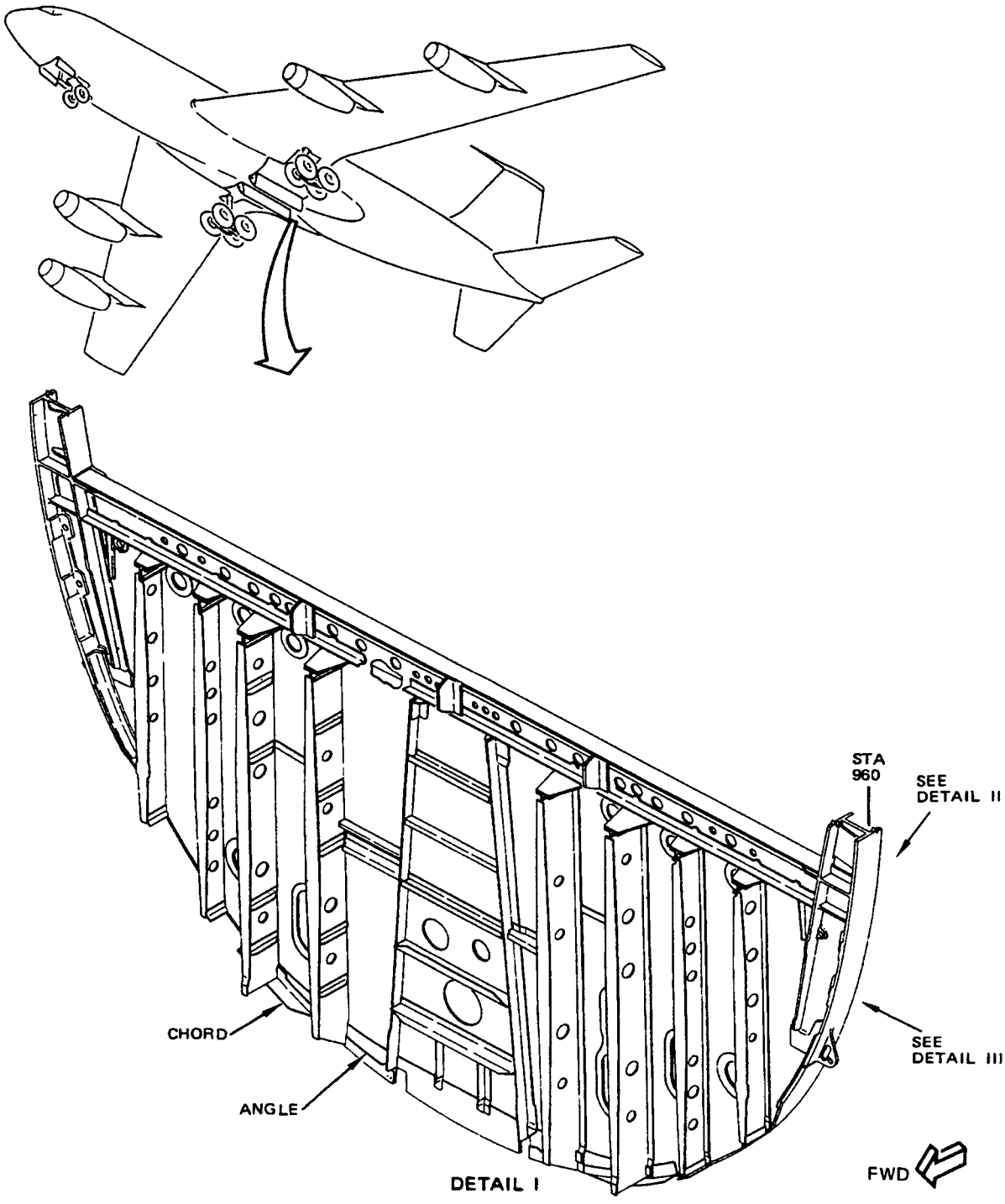
WARNING: DO NOT APPLY CORROSION INHIBITING COMPOUNDS INTO AREAS WHICH COULD POTENTIALLY BE IN CONTACT WITH OXYGEN SYSTEM COMPONENTS. MIXING OF CORROSION INHIBITORS AND OXYGEN MAY RESULT IN AN EXPLOSION.

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

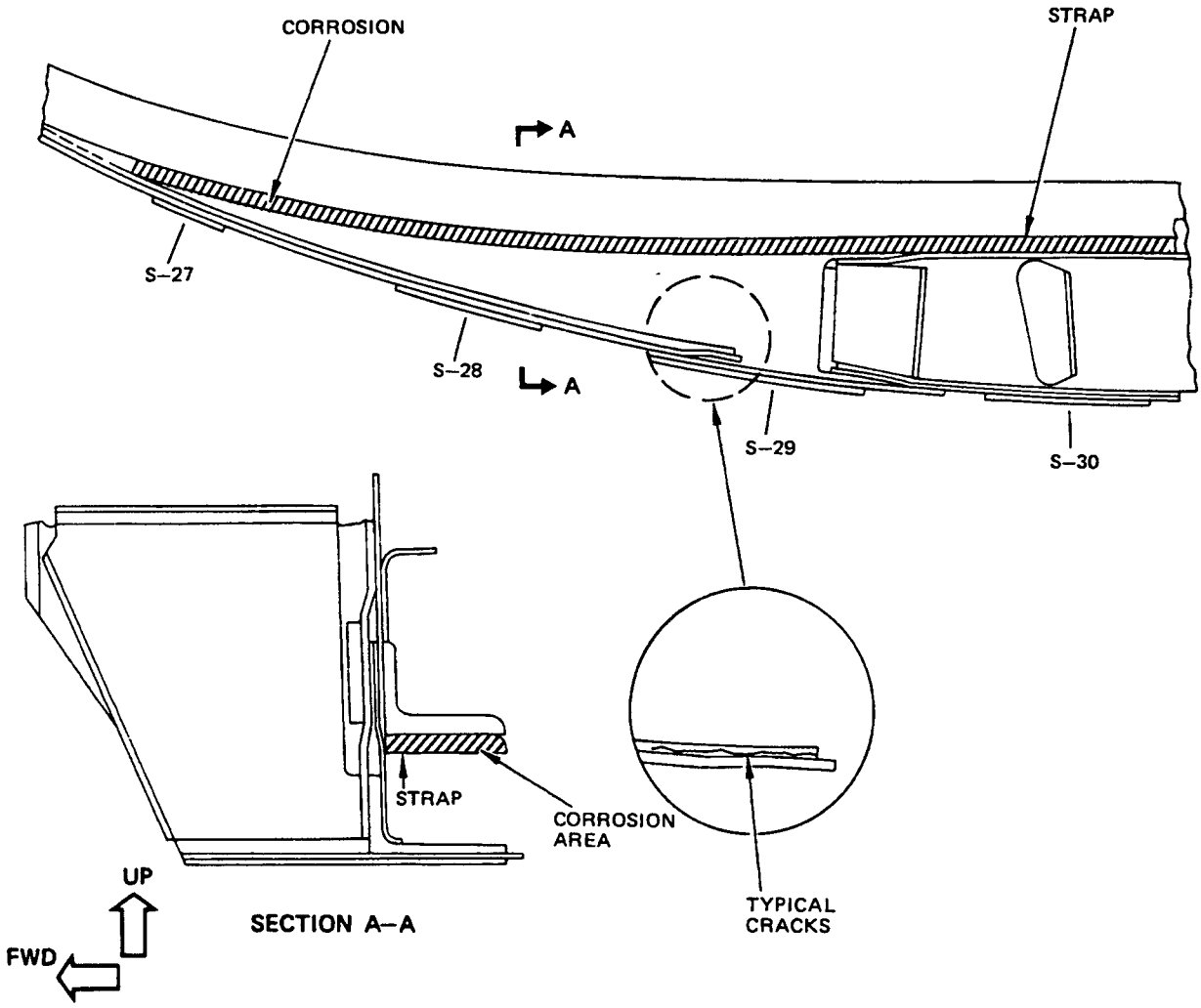
DO NOT APPLY WATER DISPLACING CORROSION INHIBITING COMPOUND TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONED CLAMPS BECAUSE IT WILL CAUSE THE SEALS OR CUSHIONS TO SWELL.

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

D. For minor corrosion, the corrosion products should be cleaned off followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-50-00 and 20-60-00).

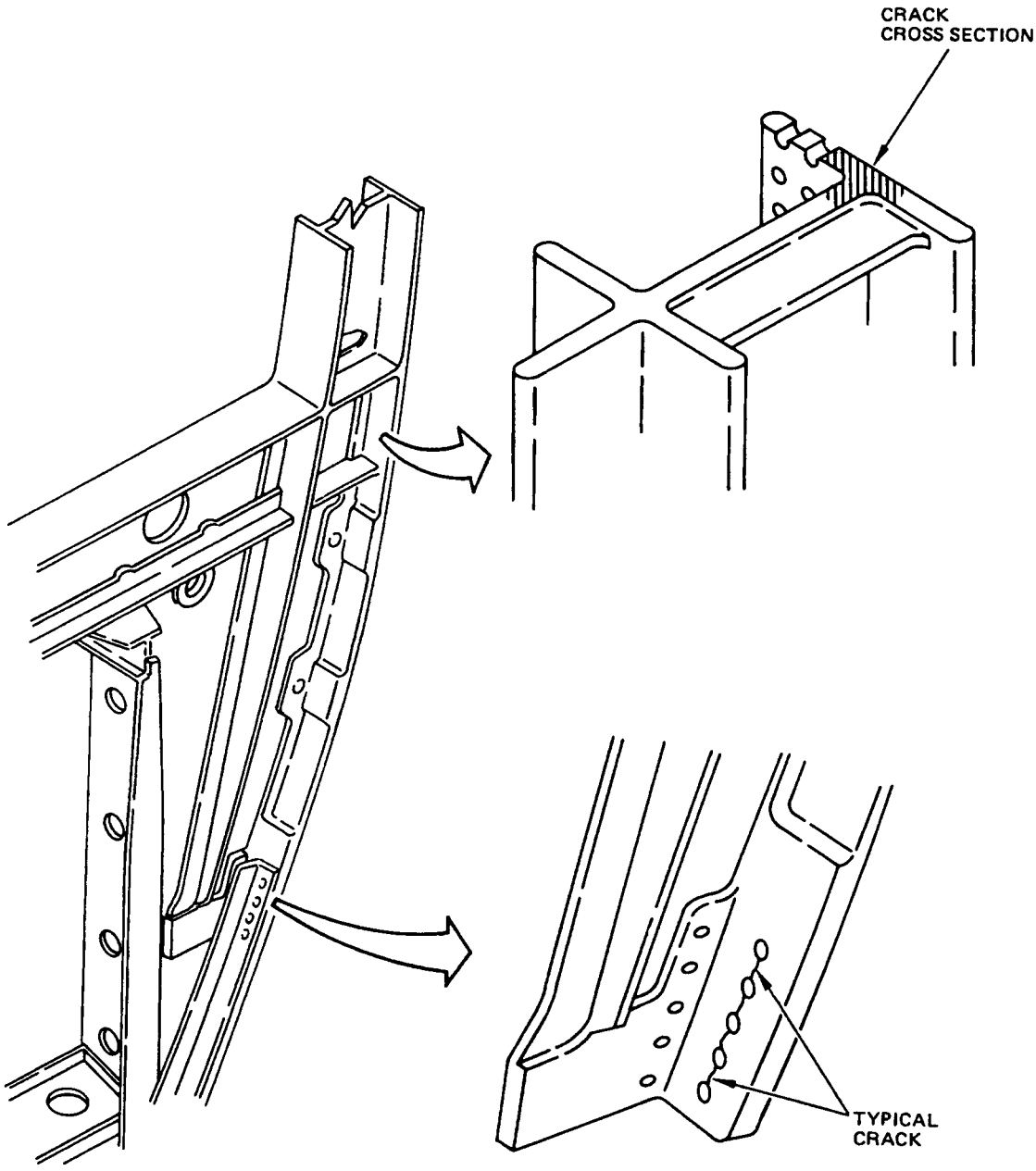


Aft Pressure Bulkhead
Figure 8 (Sheet 2)



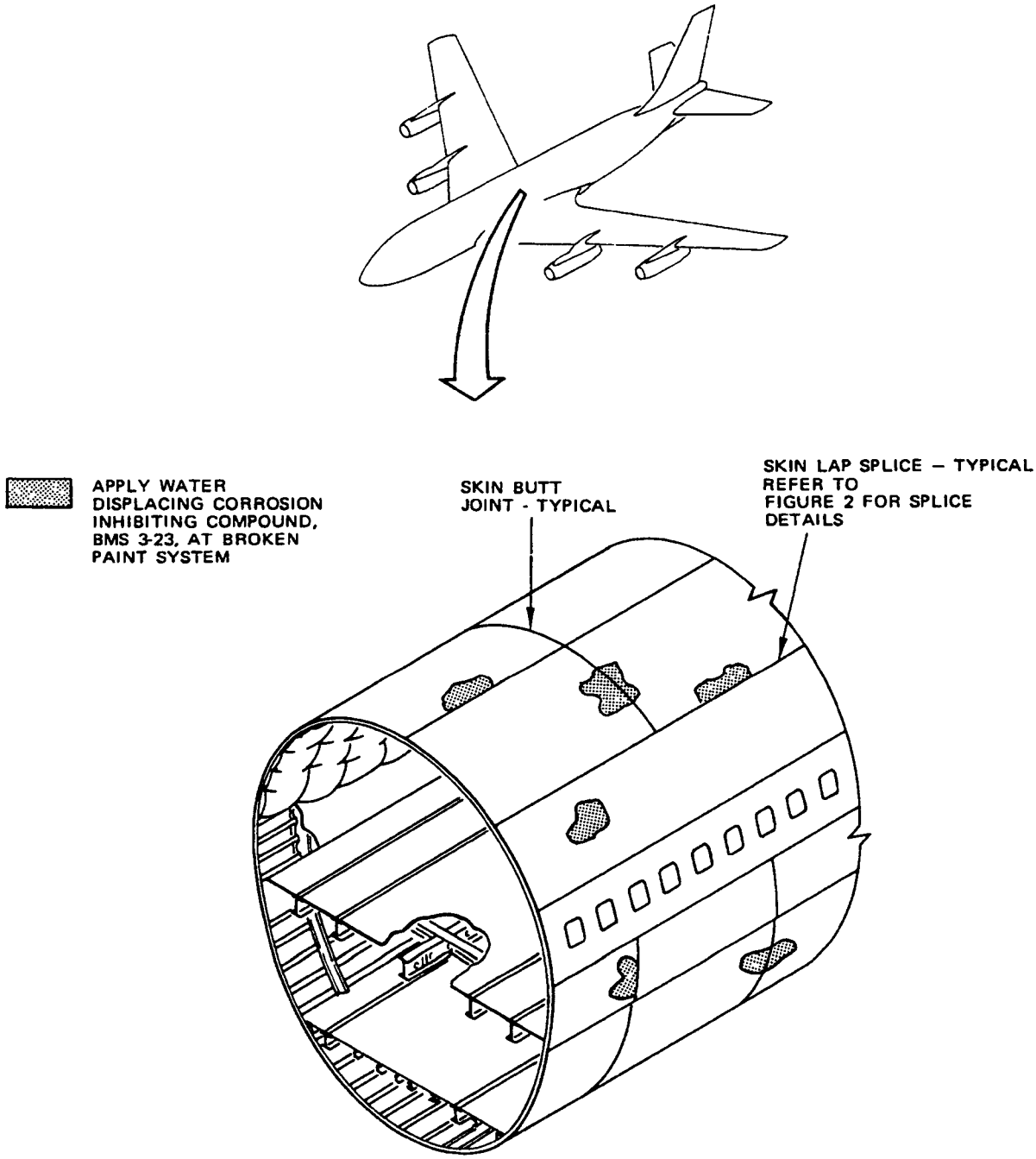
DETAIL II

STA 960 Bulkhead
Figure 10 (Sheet 2)



DETAIL III

STA 960 Bulkhead
Figure 10 (Sheet 3)



TYPICAL FUSELAGE SECTION

Fuselage Skin - External Surfaces
Figure 1

1. General

A. The exterior surfaces of fuselage skins at fastener locations and panel edges have been found to be susceptible to filiform corrosion. The small gap between the dimpled or countersunk skin and the head of flush fasteners leaves an unsupported area for the paint system leading to cracking of the paint around the fastener head and an opening for moisture and contaminants to enter. Edges of skin panels where the paint system has cracked or flaked are starting points for corrosion, including filiform corrosion.

B. The preventive action described in this figure applies to the exterior surfaces of either butt jointed or lap spliced skin panels. See Fig. 2 when working with lap spliced panel edges so that the preventive action for the lap joints may be worked together.

C. Corrosion has been reported on the unpainted exterior skin surfaces of the lower lobe fuselage, 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.

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

2. Corrosion Prevention

A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for damaged finishes is to replace the finish with the same protective system as used originally. Since in some cases, it is impractical or impossible to use this approach between overhaul cycles, the following treatment is recommended:

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

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

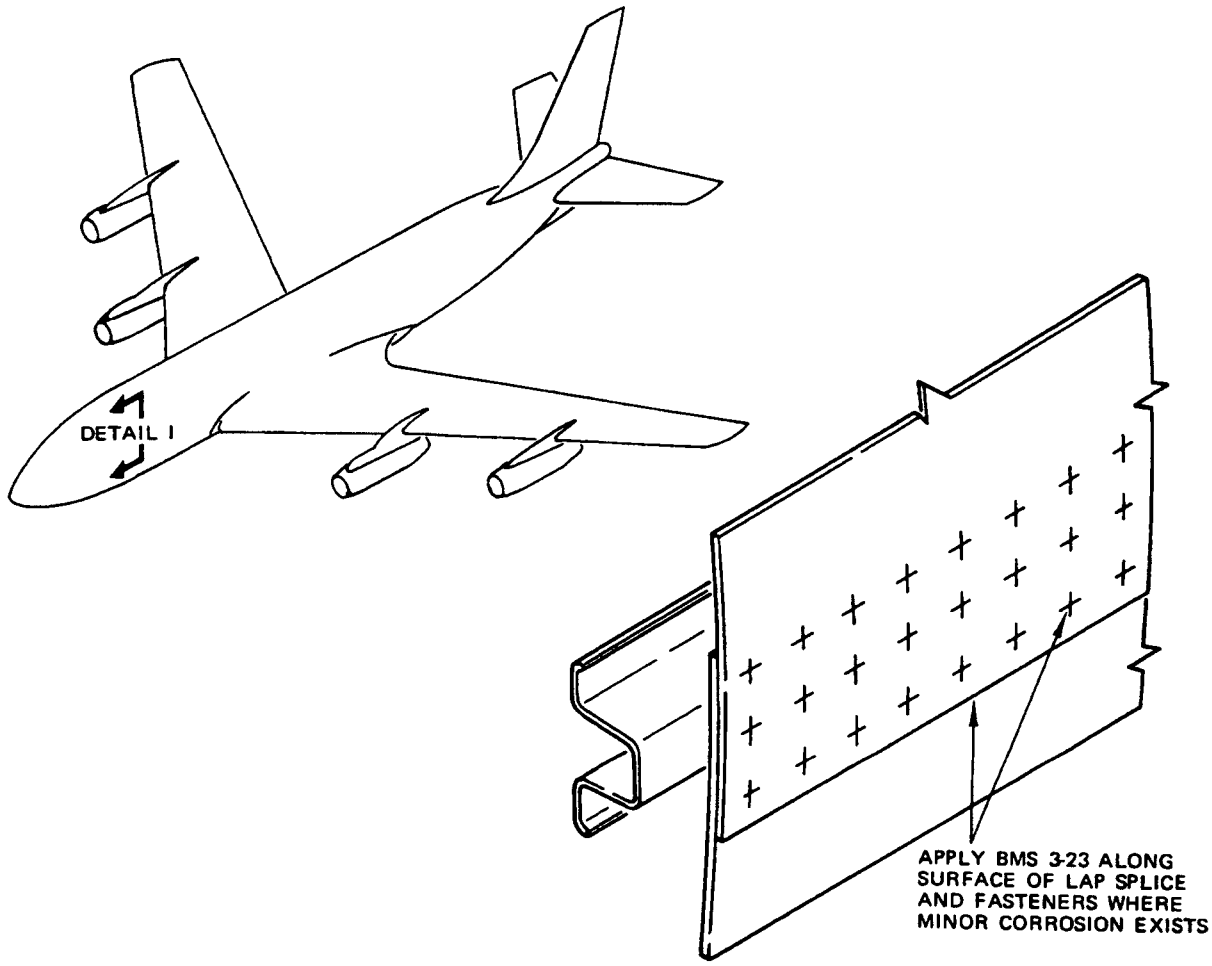
(3) For corrosion prevention, apply water displacing corrosion inhibiting compound to fastener heads or edges of skin panels where the paint system has been cracked or flaked. Wipe off excess.

(4) In cases where cleaning has been accomplished with steam and high pressure water and detergent, the corrosion inhibitor coating should be reapplied in areas noted in par.(3)above.

B. For airplanes with low utilization and airplanes operating in more corrosive ground air environments, exterior skin corrosion can be reduced by maintaining a regular washing schedule (Ref Volume 1, 20-60-00). Unpainted external surfaces of the lower lobe fuselage skin may be painted as follows to provide additional corrosion prevention:

(1) Apply 10-79 primer (Ref Maintenance Manual, 51-2-0).

(2) Apply BMS 10-60, Type II enamel (Ref Maintenance Manual 51-2-0).



Fuselage Skin Lap Joints
Figure 2 (Sheet 1)

1. General

A. The longitudinal lap splices of fuselage skins are located at stringers 1, 6, 10, 14, 20, 24,25 and 30. The lapped skins are joined by rivets and in the lower lobe areas have a faying surface seal added at the overlapping surfaces. The faying surfaces of the splices have been found susceptible to corrosion due to the entry of moisture, contaminants, washing detergents, etc., into the joints.

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. Skin bulges or white powdery deposits are evidences of the existence of corrosion.

NOTE: The use of fillet seal on the exterior surface of in-service airplanes is not recommended. Moisture and contaminants may have already entered the joint and sealing the joint will only trap the corrosion producing elements.

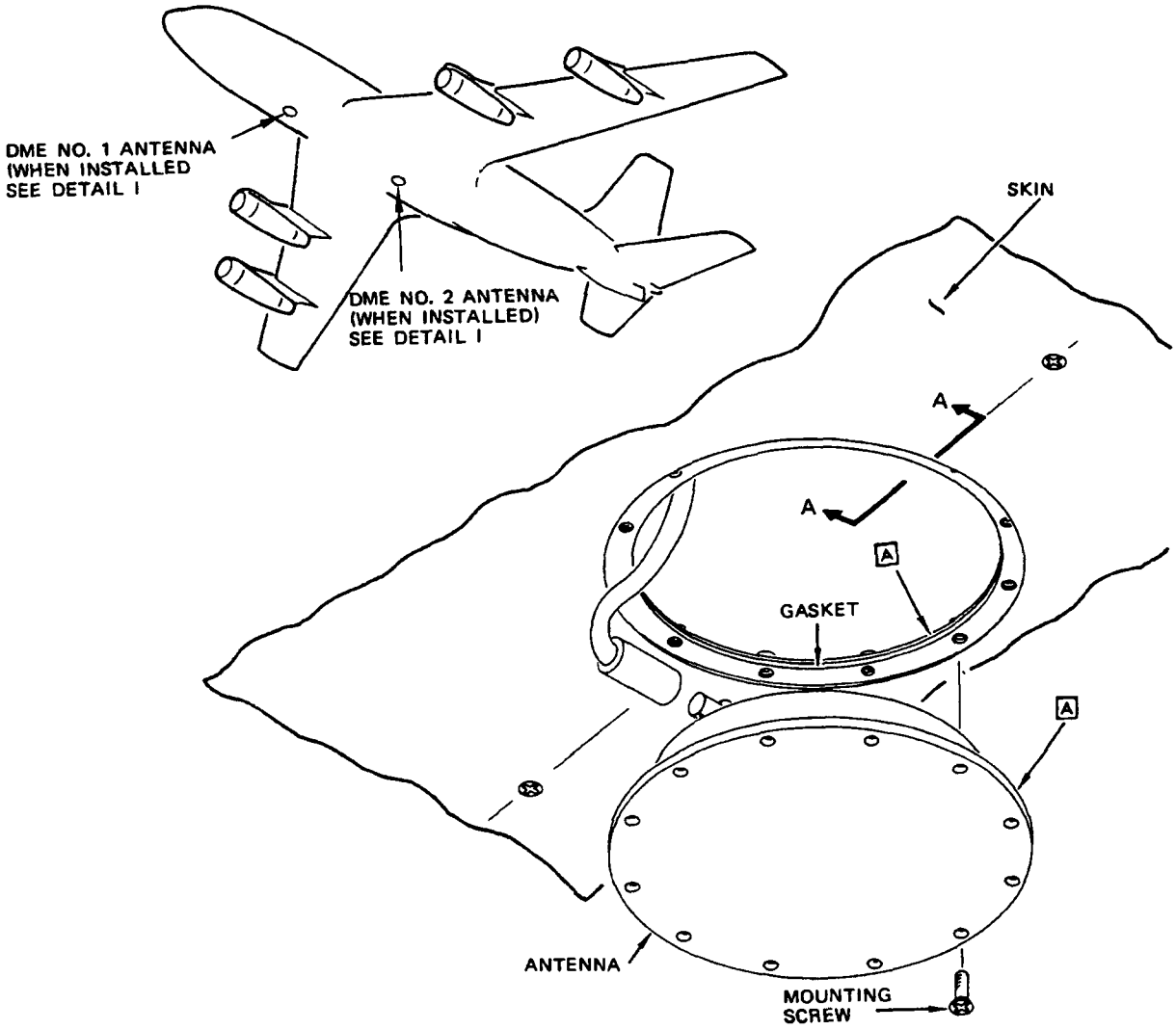
B. For minor corrosion detected during the periodic inspections and to minimize the downtime of the airplane between overhaul cycles, the application of a corrosion inhibiting compound into the joint may be used to retard the corrosion process.

NOTE: The use of BMS 3-23 is only recommended as a corrosion retardant on 707 lap joints, not for use in a regular preventive maintenance program.

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

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

E. For corrosion retardation, apply BMS 3-23 into lap joints and on lap joint rivet heads. Leave on for 30 minutes and wipe off excess with solvent. The use of pressure spray equipment with nozzle directed into joint is recommended for this application.



Skin at Antenna Mount
Figure 3

1. General

A. Varying degrees of corrosion have been reported on faying surfaces of the antenna and body skin on exterior mounted ATC, DME, VHF, BM, 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.

NOTE: To eliminate pockets for moisture accumulation, leveling compound applications aft of each antenna location between stations 1000 and 1080 were added in production at airplane cum line number 904 (Ref Section A-A).

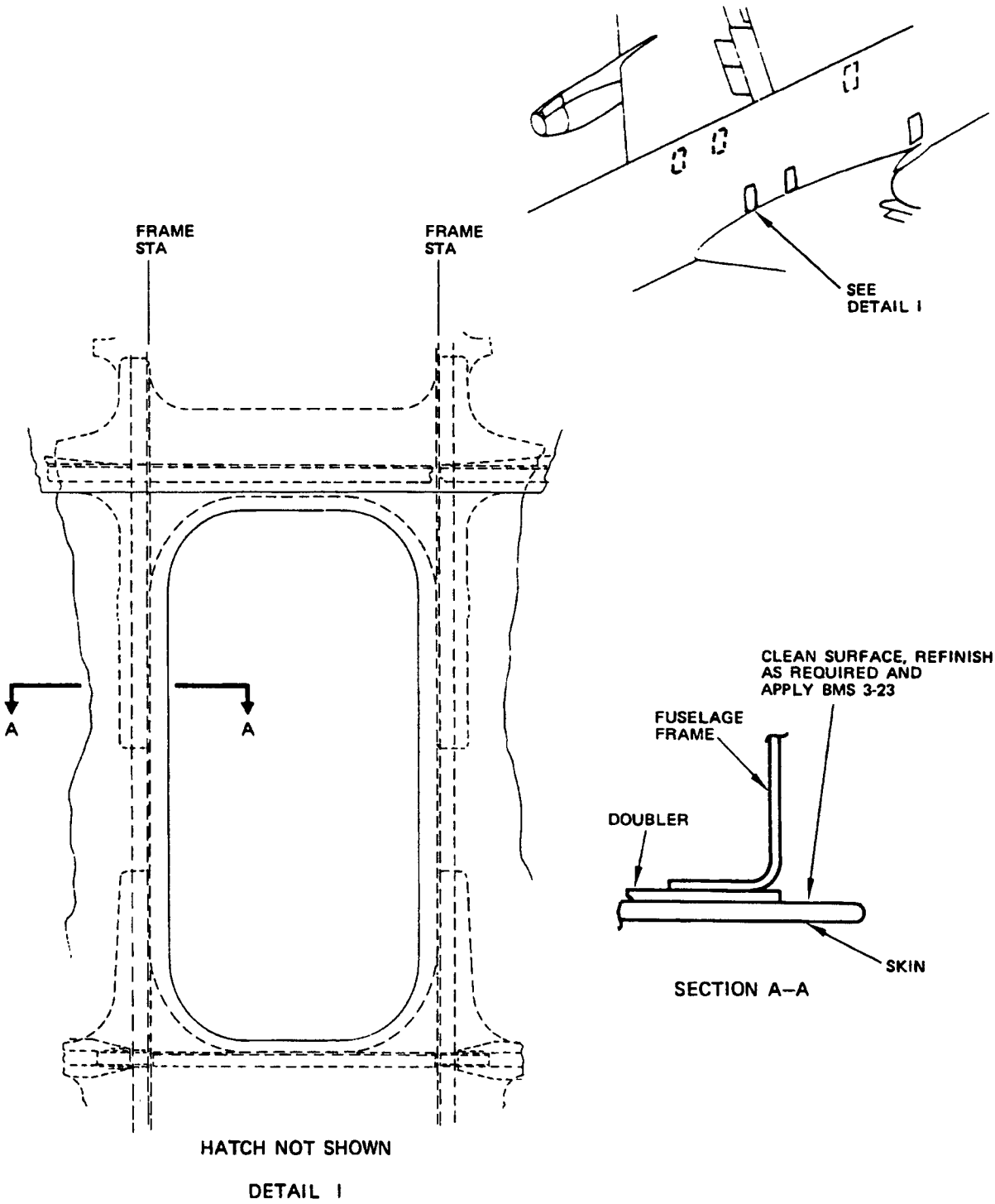
B. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

A. Examine the skin and antenna 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 procedures.

C. Whenever an antenna is removed apply BMS 3-23 to the faying surfaces to aid in preventing corrosion. Tests conducted at Boeing have shown that antenna performance will not be affected by the film of BMS 3-23.



Fuselage Skin - Emergency Exit Cutouts
Figure 4

1. General

A. The inner surfaces of the emergency exit skin cutouts have experienced corrosion problems due to the accumulation of moisture and contaminants in the seal areas.

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

2. Corrosion Prevention

A. Make periodic inspections of the emergency exit skin cutouts to preclude or detect early stages of corrosion. Inspection would require the removal of the hatches as prescribed in the Maintenance Manual.

B. A corrosion prevention program should be initiated to prevent the accumulation of moisture or corrosive products in order to minimize the occurrence of corrosion.

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

D. For minor corrosion, to minimize 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.

E. Apply BMS 3-23 on the interior surface of the skin of the emergency exit cutouts.

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

F. At periodic intervals remove the hatches and examine the condition of the corrosion inhibitor. Reapply BMS 3-23 as required.

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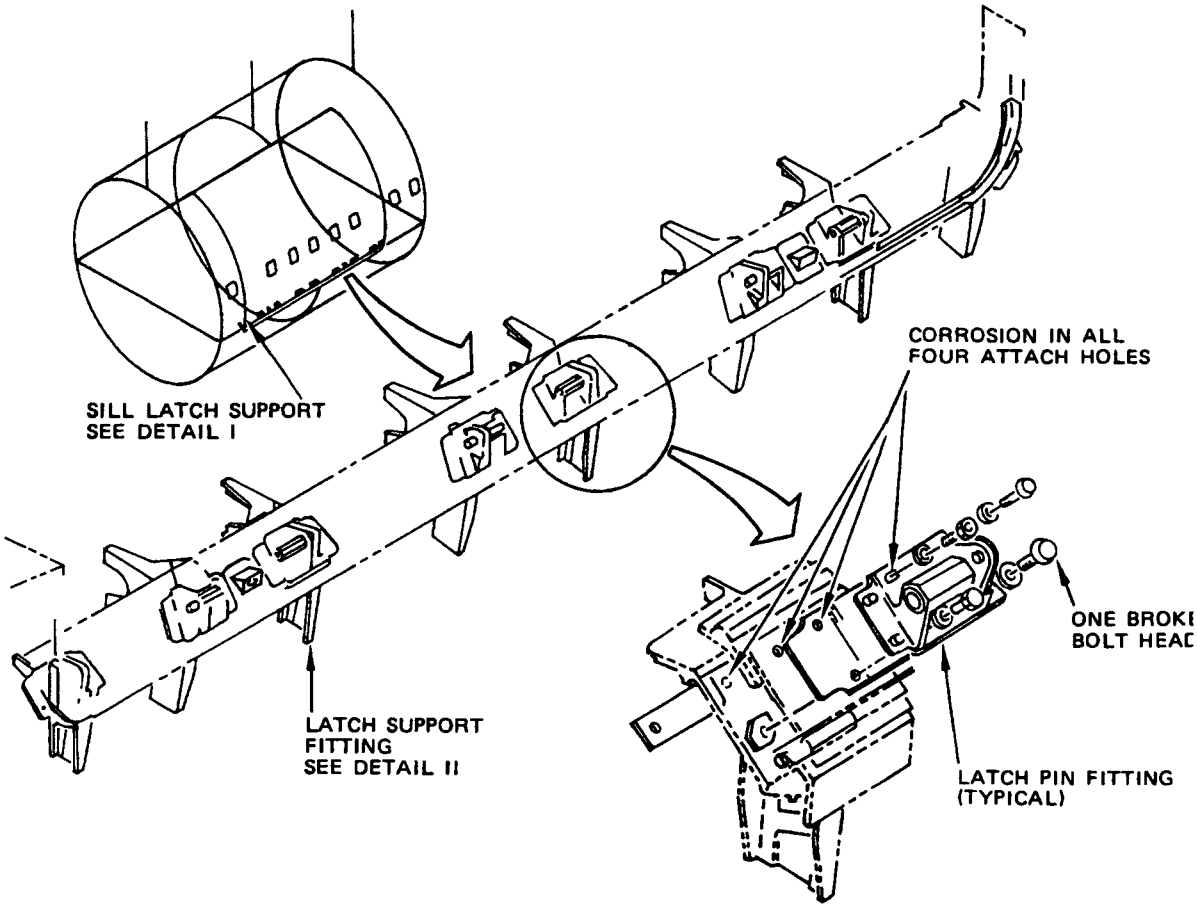
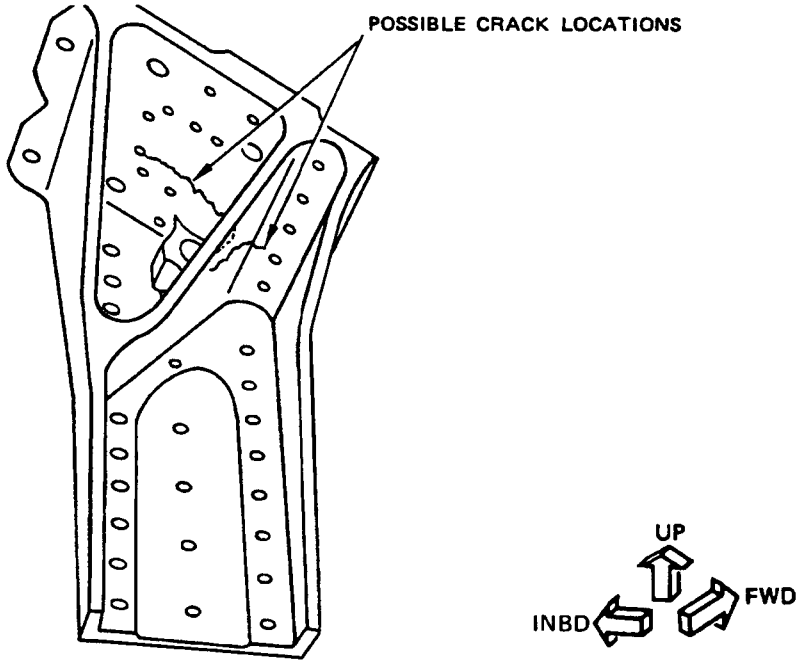
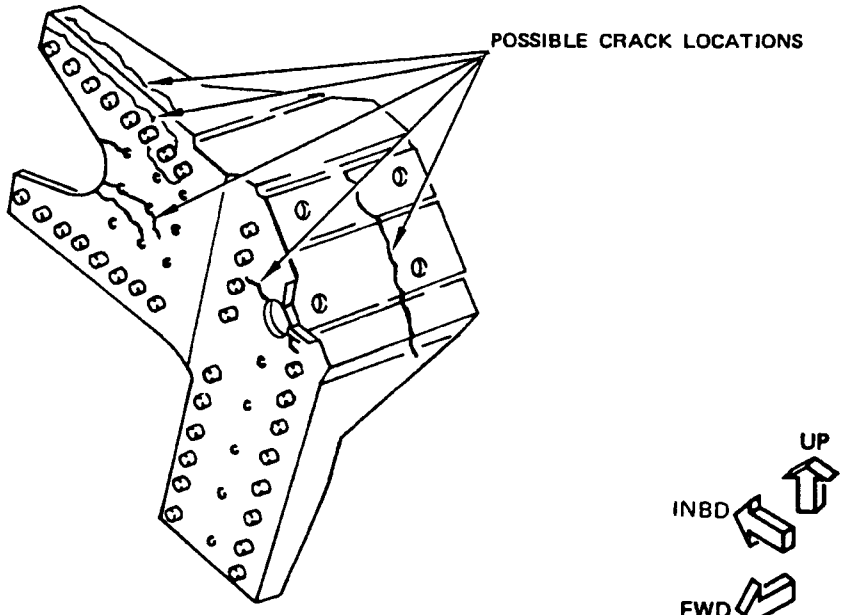


Fuselage Attach Fittings - Main Cargo Door Latch Pin Fittings
Figure 1 (Sheet 1)



SILL LATCH SUPPORT
DETAIL I



LATCH SUPPORT FITTING
DETAIL II

Fuselage Attach Fittings - Main Cargo Door Latch Pin Fittings
Figure 1 (Sheet 2)

1. General

A. The bolts and attach holes common to the main cargo door latch pin fitting and the sill structure have experienced corrosion problems. In some instances the heads of some of the attach bolts were broken or missing.

B. Stress corrosion cracks have been found in the cargo door lower forward sill latch support forging. Cracks originated at a nutplate hole between the two large bolt holes in the upper slanted surface of the forging and extended down and outboard on the underside of the surface. Total length was six inches (Detail I). The cracks progressed completely through the center rib.

C. Severe stress corrosion of the main cargo latch support fittings has been reported. Crack lengths of six inches were reported on the 7079-T6 aluminum alloy fittings. Reported crack locations are at the support fitting face on which the latch fitting mounts, the barrel nut hole in the web of the fitting, the upper flange and adjacent web (Detail II).

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 periodic inspections to preclude or detect early stages of corrosion. Inspection would require the removal of the hatches as prescribed in the Maintenance Manual.

B. A corrosion prevention program should be initiated to prevent the accumulation of moisture or corrosive products in order to minimize the occurrence of corrosion.

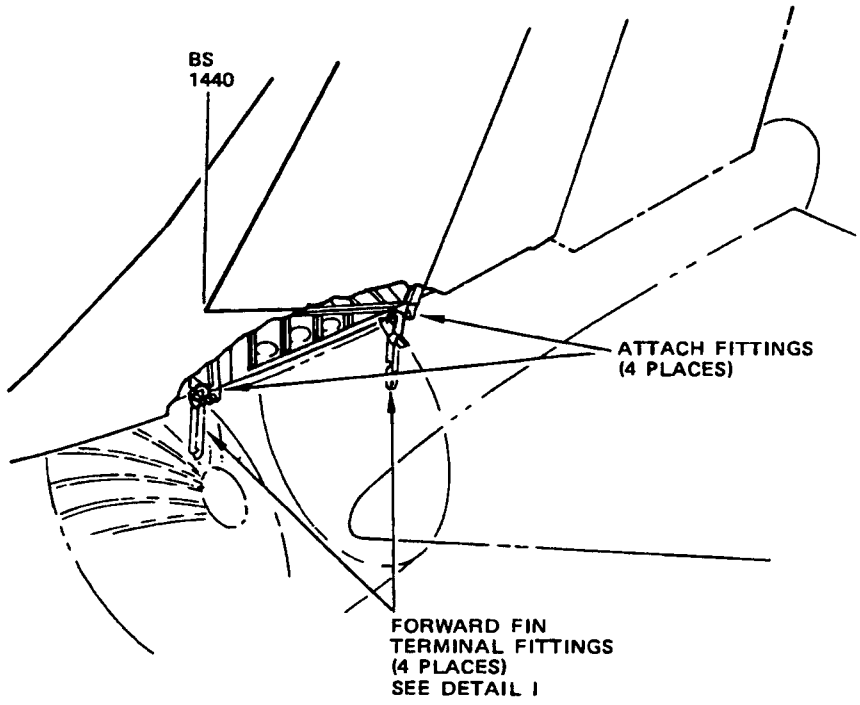
C. Where extensive corrosion exists refer to Structural Repair Manual.

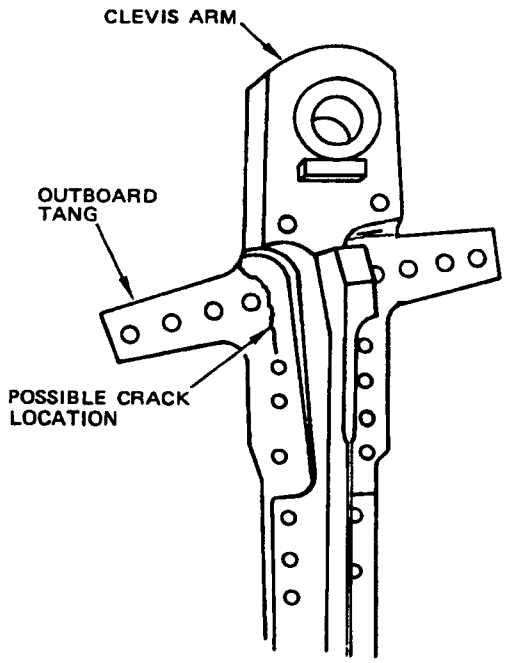
D. For minor corrosion, to minimize down time of the airplane, the corrosion products should be cleaned off followed by the restoration of the finish system as described in Volume 1, 20-50-00 and 20-60-00.

E. Apply BMS 3-23 per 53-10-07, Fig. 7.

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

F. At periodic intervals remove the hatches and examine the condition of the corrosion inhibitor. Reapply BMS 3-23 as required. Ref 53-10-07, Fig. 7.





FORWARD FIN TERMINAL FITTINGS
DETAIL I

Fuselage Attach Fittings - Vertical Fin
Figure 2 (Sheet 1)

1. General

A. Corrosion of the vertical fin terminals has been reported. The corrosion was located in the gap between the inner ends of the two flanged bushings in the fin front and rear spar terminal lugs. Fretting corrosion was also reported on the lug faces and the faces of the mating clevises on the body at the rear spar. Refer to SB 3389 for rework instructions.

B. Stress corrosion in the forward fin terminal fitting outboard tang has been reported. The cracks started at the fillet radius between the clevis arm and the transverse tangs of the fitting.

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 to preclude or detect the early stages of corrosion.

B. Spray the attachment fittings with BMS 3-23 corrosion inhibiting compound, paying particular attention to faces and interfaces of fittings and fasteners.

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CHAPTER

54

NACELLES/ PYLONS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Pylon Structure	Corrosion on mating faces of various fittings such as spar fittings and diagonal brace fittings. Stress corrosion cracking of mid spar fittings	54-10-07 Fig. 1	SB 3183
	Stress corrosion on diagonal brace end fittings		SB A3364
Nose Cowl	Corrosion of secondary air inlet door hinges on airplanes with large doors	54-10-07 Fig. 2	
Engine mounts	Corrosion at the forward and aft engine mounts	54-40-07 Fig. 1	SB 2455

Specific Corrosion Problems - Nacelles/Pylons
Figure 1

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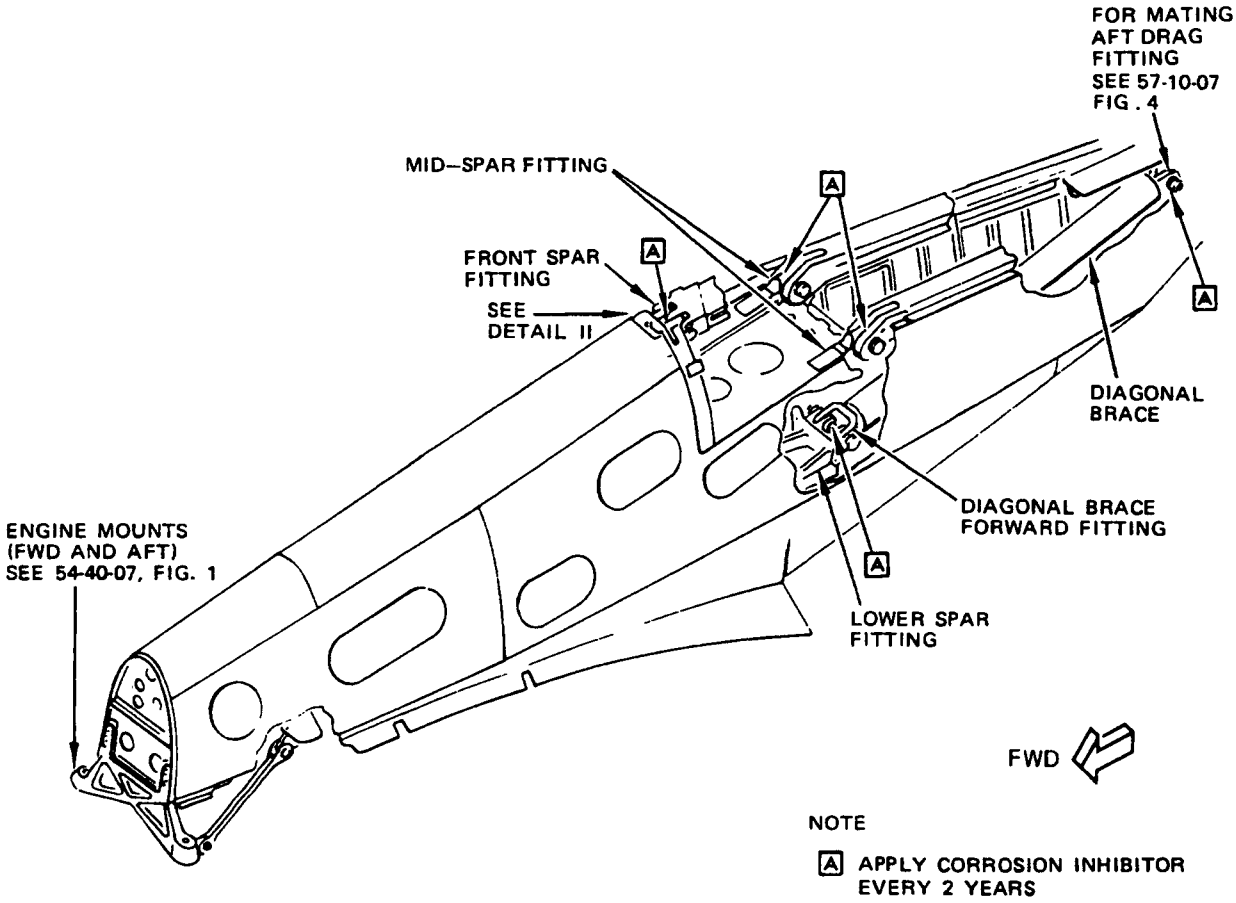
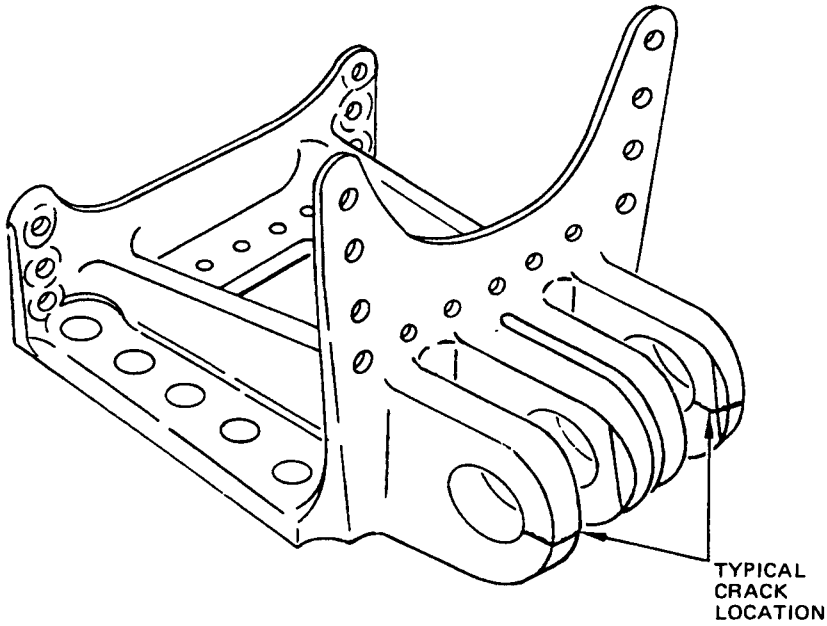


Nacelle Strut Structure
Figure 1 (Sheet 1)



LOWER SPAR ATTACH FITTING
DETAIL I

Nacelle Strut Structure
Figure 1 (Sheet 2)

1. General

A. Corrosion experience on the nacelle strut (pylon) has shown that the most susceptible locations for corrosion damage are the mating faces of the various fittings. These attachments are a series of single pin joints and fretting between parts can initiate corrosion by continually exposing unprotected metal.

B. Stress corrosion cracks and fatigue cracks on the midspar fittings on the nacelle strut have been reported. Machining changes and shot-peening of lug surfaces of existing forgings will be incorporated in production on line number 908 and on, plus airplanes incorporating SB 3183. Material change from 4330 steel to 4330M steel was accomplished at line number 918 and on.

C. Stress corrosion cracks on the lower spar fitting have been reported. In the cases reported either the inboard lug or the outboard lug was cracked.

D. Stress corrosion has been reported on the nacelle strut diagonal brace end fittings and mating fittings. Refer to SB A3364 for inspection and repair information.

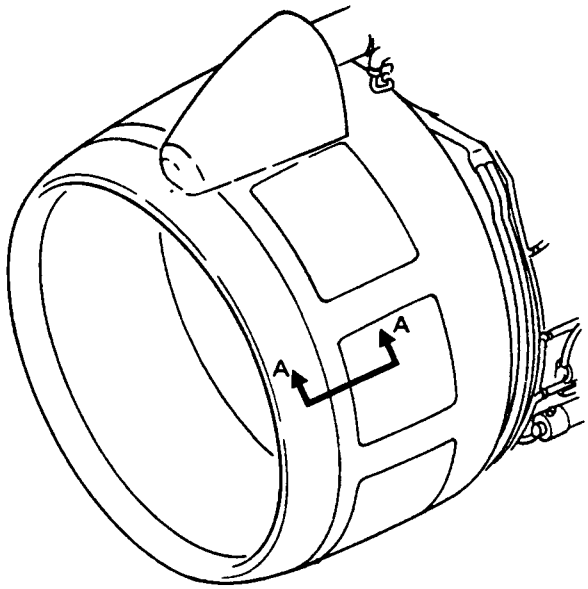
E. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

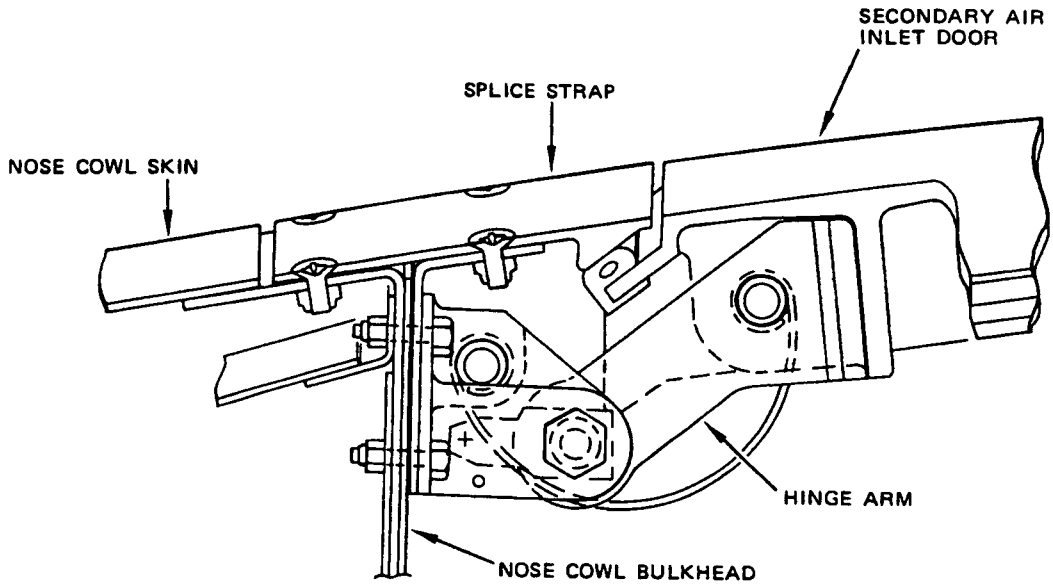
A. Generally corrosion protection on nacelle strut components should be maintained by ensuring that any damaged finish is restored before corrosion has taken place. Refer to Volume 1, 20-60-00 for information on finishes, including the use of water displacing corrosion inhibiting compound which may be used to protect the metal in areas where the finish is damaged, until it is convenient to make permanent restoration.

B. As fretting will cause finish deterioration at the mating faces in pin-jointed attachments, it is recommended that they should be sprayed with corrosion inhibitor every 2 years. Do not spray ducting in the area. See diagram for areas to be sprayed.

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



NOSE COWL WITH LARGE SECONDARY AIR INLET DOORS



SECTION A–A

Nose Cowl Secondary Air Inlet Door Hinges
Figure 2 (Sheet 1)

1. General

A. Corrosion has been found on the air inlet door hinge arms on nose cowls with the large secondary air inlet doors. Corrosion in this vicinity has been attributed to operation from salted, icy runways or in salt-laden or industrially polluted atmosphere.

2. Corrosion Prevention

A. Periodically clean and inspect the parts in the vicinity of the air inlet doors for deterioration of finish and evidence of corrosion.

B. Where restoration of finish is required solvent clean the area and apply two coats of BMS 10-11 type 1 primer.

C. Where corrosion has occurred refer to Structural Repair Manual for rectification instructions.

D. Establish an inspection frequency consistent with the operating environment and service experience with regard to the deterioration of finish in the affected area.

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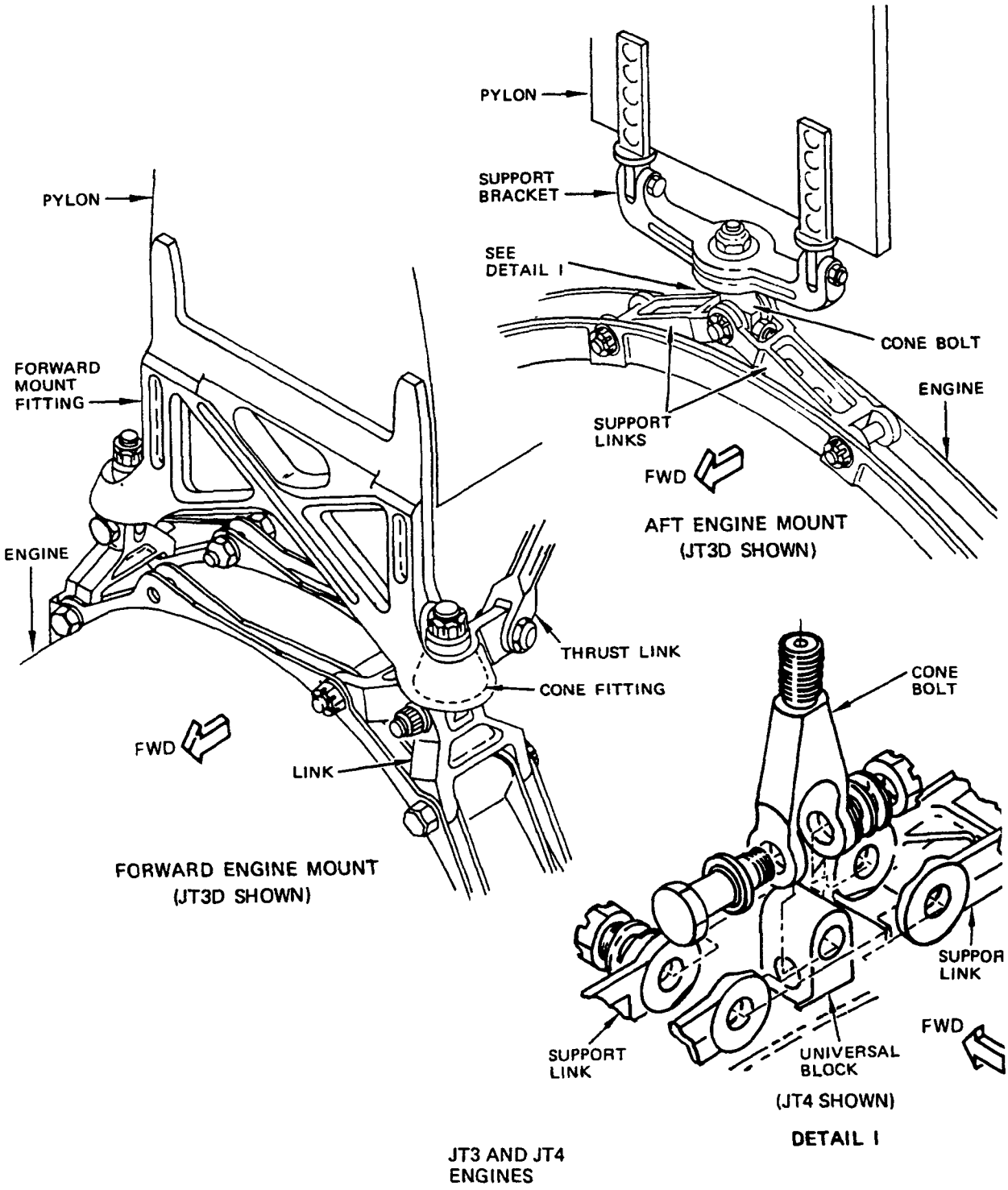

Forward and Aft Engine Mounts
Figure 1

1. General

A. Corrosion can occur on some airplanes at forward and aft engine mounts.

B. At the forward mount, corrosion can occur on the cone fitting and the mating mount fitting.

C. At the aft mount, corrosion can occur on the cone bolt, support bracket, support links, and universal blocks.

D. Cracks or pits of the nickel plate finish on some alloy steel aft engine mounts can cause 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. 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 anytime an engine is removed. As the engine is disconnected from the nacelle by releasing the cone fittings at the forward mount and the cone bolt at the aft mount, it is possible to inspect the cones and the mating tapered holes at this time.

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

C. Refer to SB 2455 for inspection and replacement procedures for nickel plated alloy steel aft engine mount fitting.

D. During engine installation, the cone fittings and cone bolt must be coated with Ease-Off 990 anti-seize compound. If you do not use anti-seize compound, corrosion that occurs could cause stress corrosion failure.

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

F. Improved Corrosion Protection

(1) At line number 329 for JT4 engines, PRR 15977-1R replaced nickel plated steel cone bolts, universal blocks, and support links with CRES components. This change can be made on other airplanes with JT4 engines with SB 2690.

(2) At line number 348 for JT3 engines, PRR 15977-2R replaced nickel plated steel cone bolts, universal blocks, and support links with CRES components. This change can be made on other airplanes with JT3 engines with SB 2690.

(3) At line number 562, PER 16561 charged the material of the engine aft mount fitting from plated alloy steel to unpolluted CRES. This change can be made on other airplanes with SB 2455.

CHAPTER

55

STABILIZERS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Horizontal Stabilizer	Corrosion on the skin spar chords and attach fittings	55-10-07	SB 2959 SB 3243 SB 3271 SB 3356
	Corrosion on the front spar splice plates of Intercontinental airplanes up to Line No. 896. Corrosion of the rivets securing the upper trailing edge skin panels		SB 3145
	Stress corrosion cracks of stabilizer hinge bearing housing		SB 3046
	Stress corrosion cracks on magnesium balance panel bay covers		SB 1594
	Corrosion on exterior skin surfaces		SL 20-4, SL 51-16
	Stress corrosion cracks on rear spar terminal shear fitting and on vertical flanges of rear and front spar upper and lower chords		SB 3356
	Stress corrosion cracks at rear and forward spar horizontal flanges		
	Stress corrosion cracking of the rear spar upper chord forward flange.		SB 3381
	Stress corrosion cracking of the upper closure rib chord		
	Corrosion on trailing edge hinge fitting attachment parts		
	Stress corrosion cracks in the fuselage jackscrew support fitting		
Elevators	Corrosion on exterior skin surfaces	55-20-07 Fig. 1	
Vertical Stabilizer	Corrosion on the skin, spars and attach fittings	55-30-07 Fig. 1	
Rudder	Corrosion on the skin, front and rear spars, tab spar, and attach fittings	55-40-07 Fig 1	
	Stress corrosion cracks of the rudder tab hinge fittings		SB 3409
	Corrosion of the rudder tab control rods		SB 3424

Specific Corrosion Problems - Stabilizers
Figure 1

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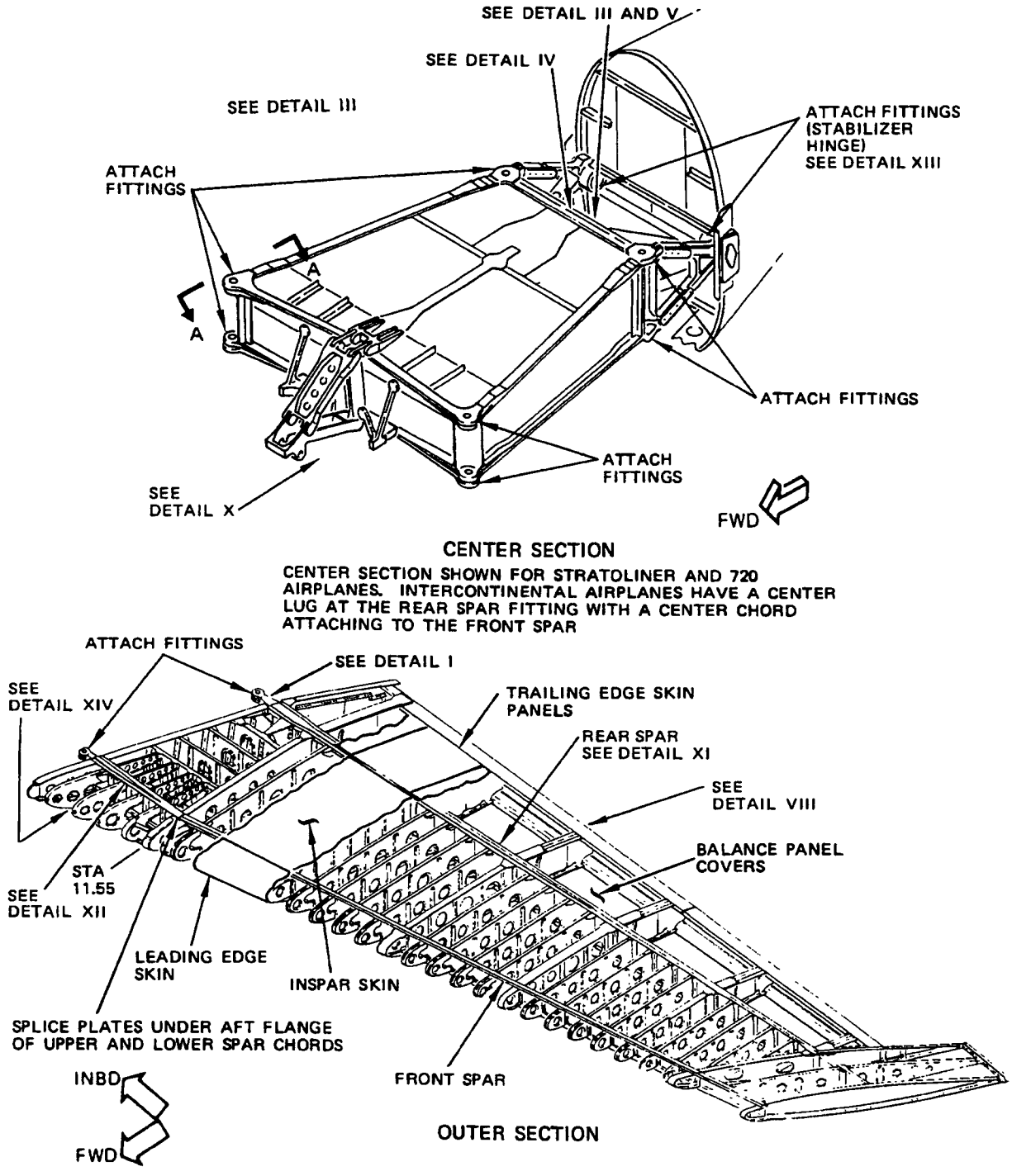
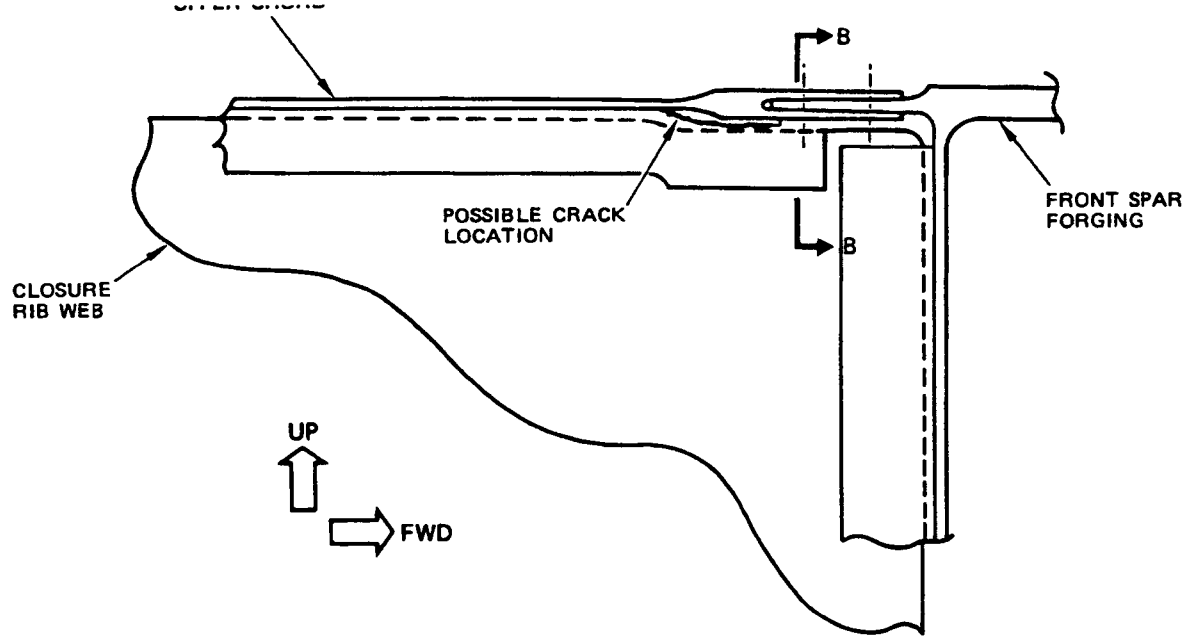
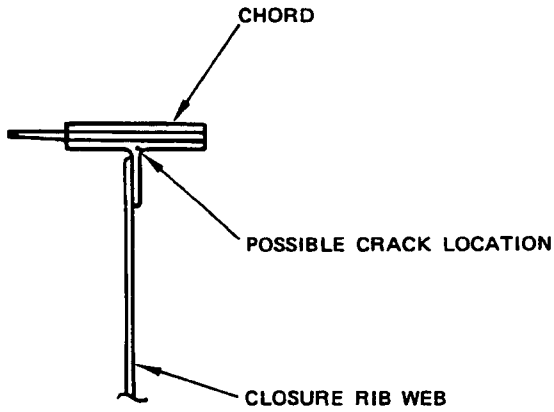


Horizontal Stabilizers
Figure 1 (Sheet 1)

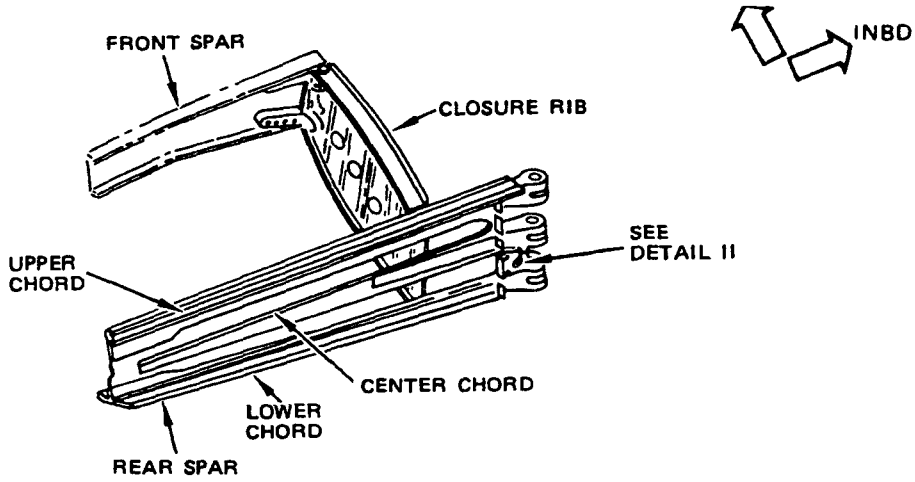


SECTION A–A

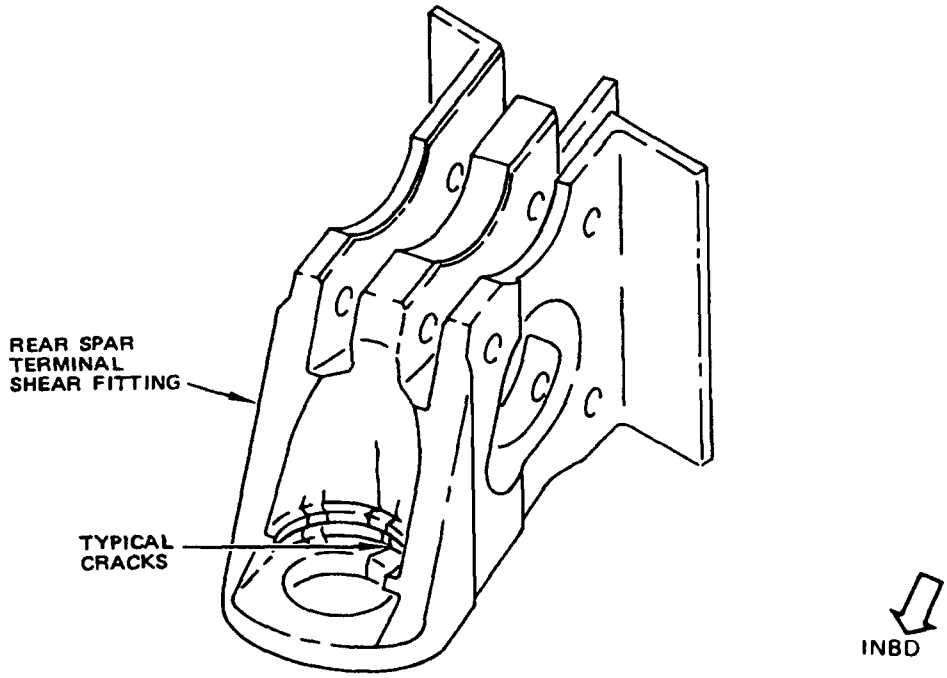


SECTION B–B

Horizontal Stabilizers
Figure 1 (Sheet 2)

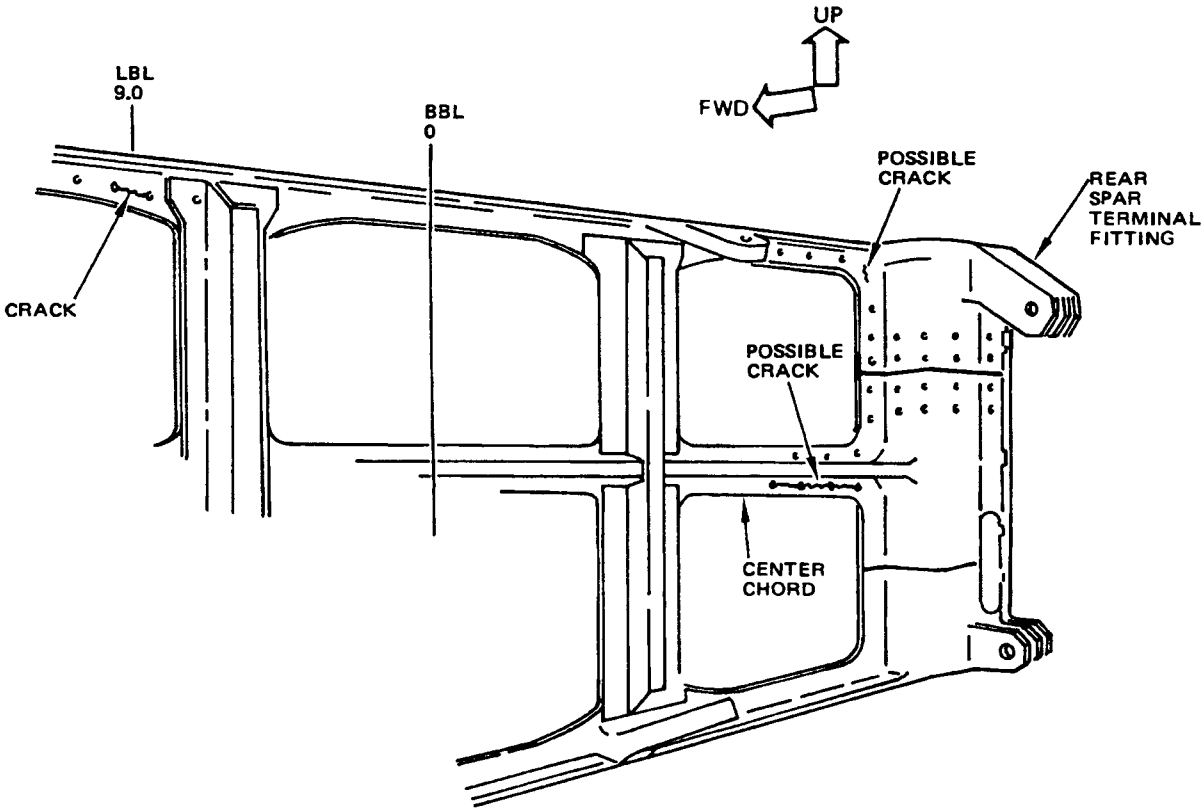


OUTER SECTION
DETAIL I

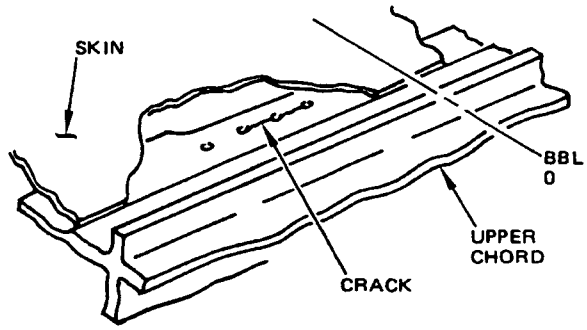


OUTER SECTION
DETAIL II

Horizontal Stabilizer
Figure 1 (Sheet 3)

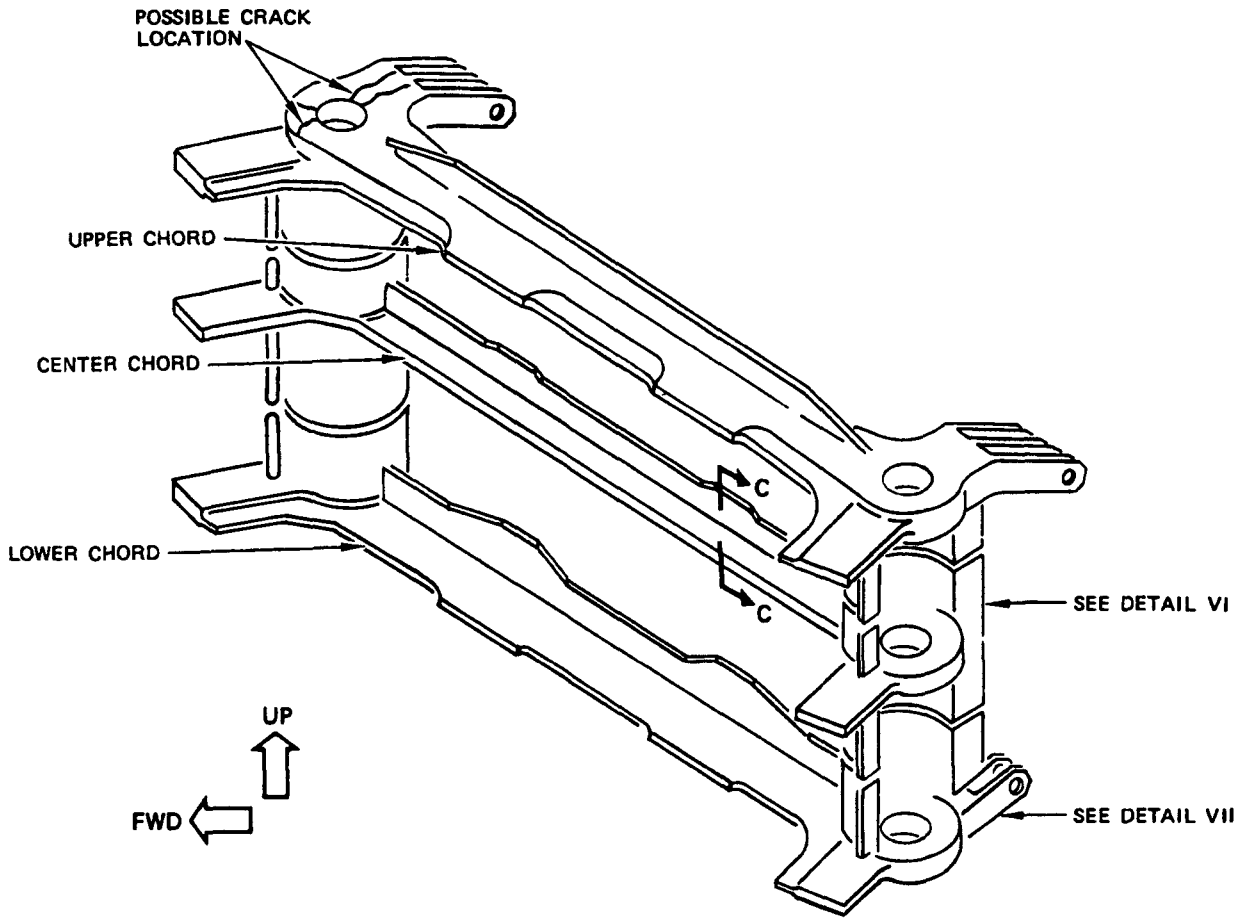


CENTER SECTION
REAR SPAR
DETAIL III

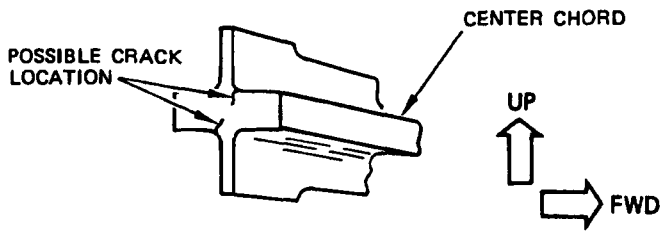


CENTER SECTION
REAR SPAR
UPPER CHORD
DETAIL IV

Horizontal Stabilizer
Figure 1 (Sheet 4)

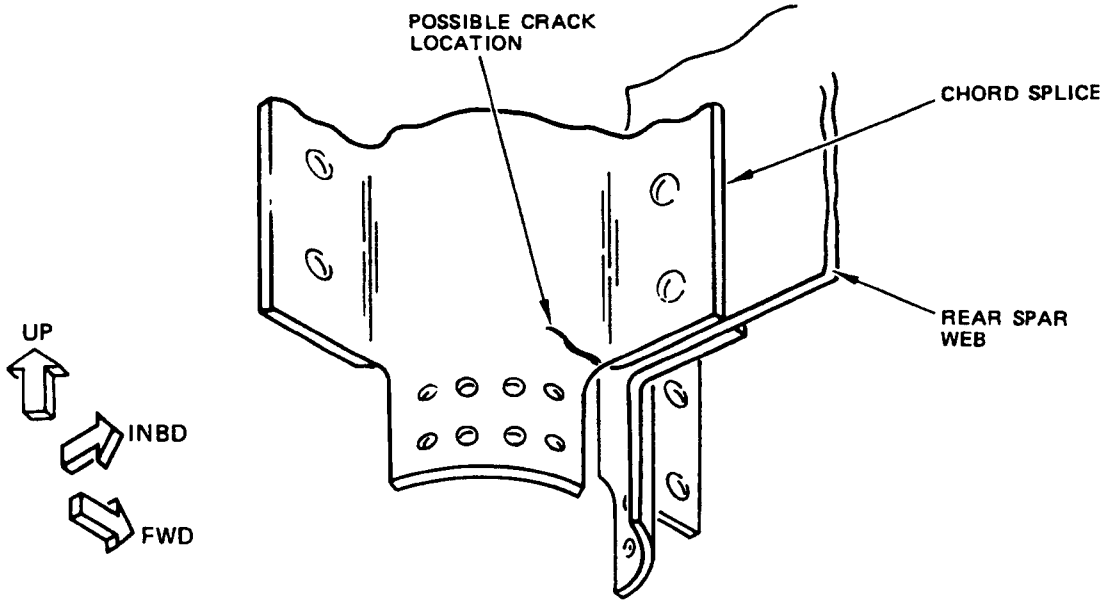


CENTER SECTION REAR SPAR
DETAIL V

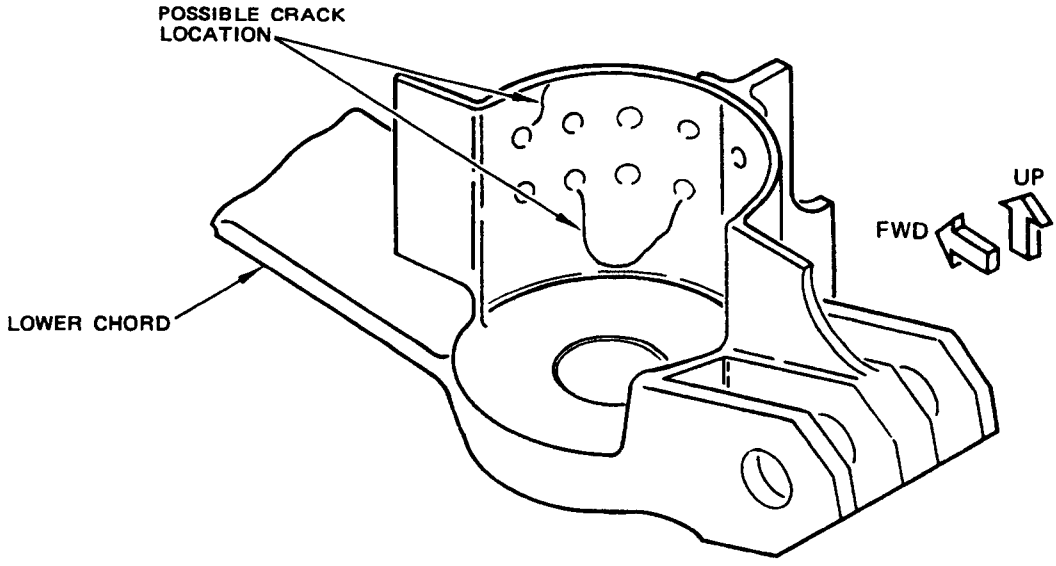


SECTION C–C

Horizontal Stabilizer
Figure 1 (Sheet 5)

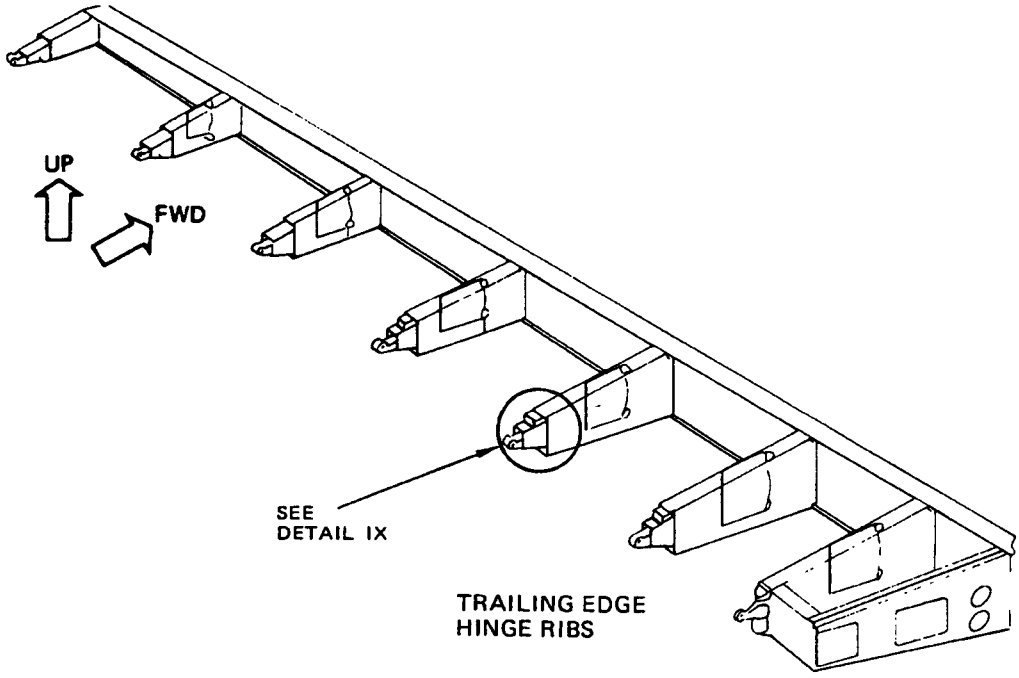


DETAIL VI

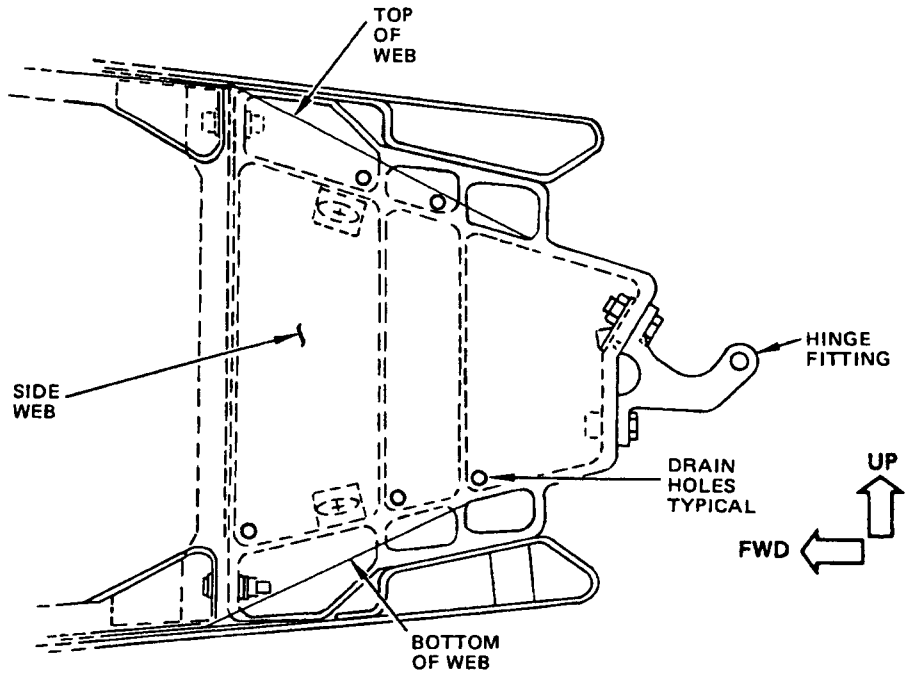


DETAIL VII

Horizontal Stabilizers
Figure 1 (Sheet 6)

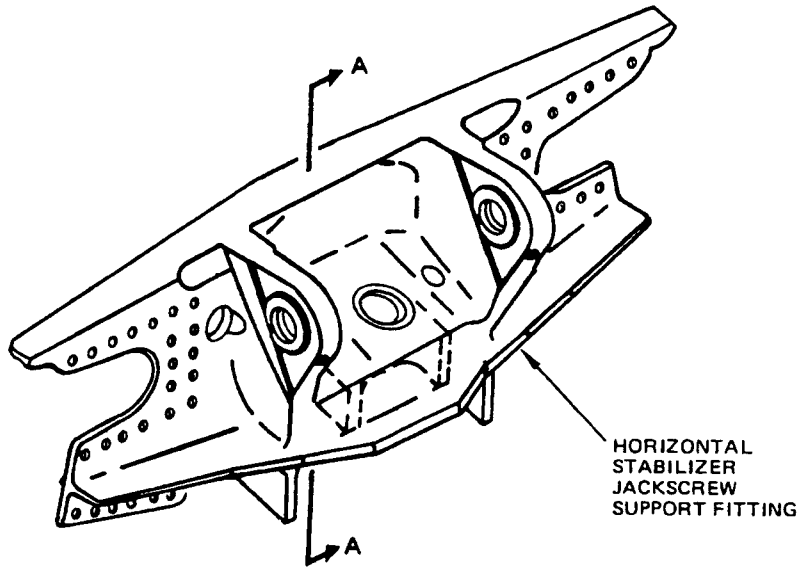


DETAIL VIII

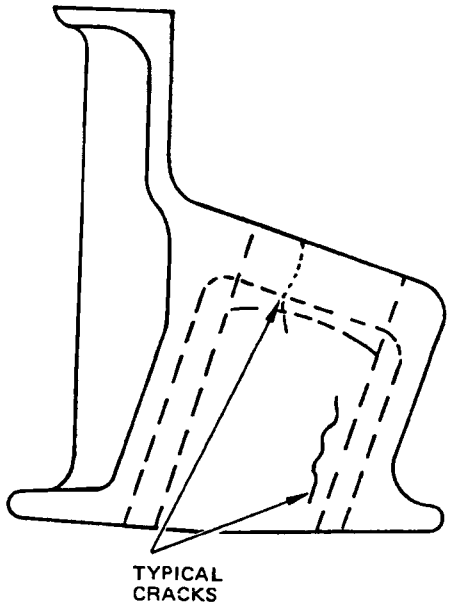


DETAIL IX

Horizontal Stabilizers
Figure 1 (Sheet 7)

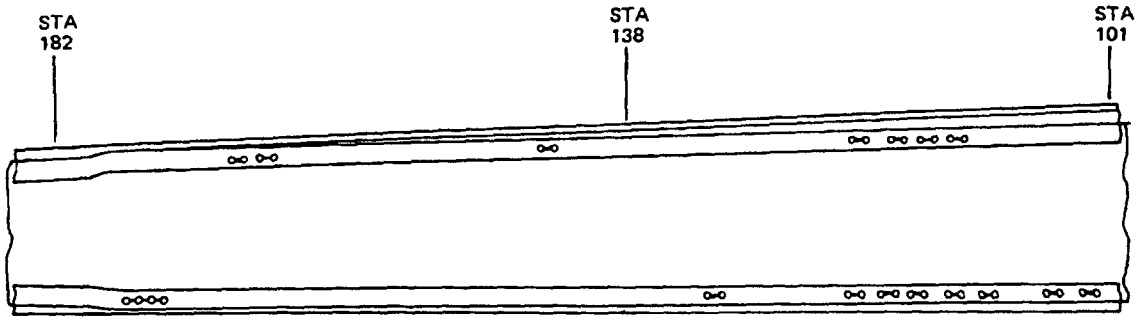


DETAIL X



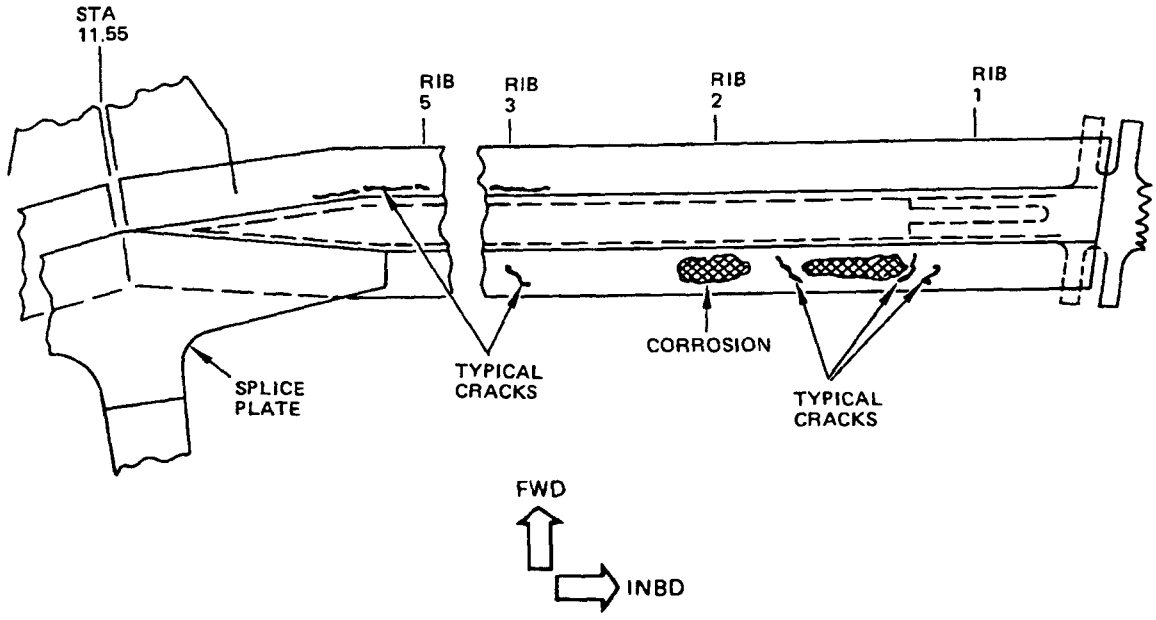
SECTION A–A

Horizontal Stabilizers
Figure 1 (Sheet 8)



TYPICAL CRACK LOCATIONS
REAR SPAR - REAR VIEW

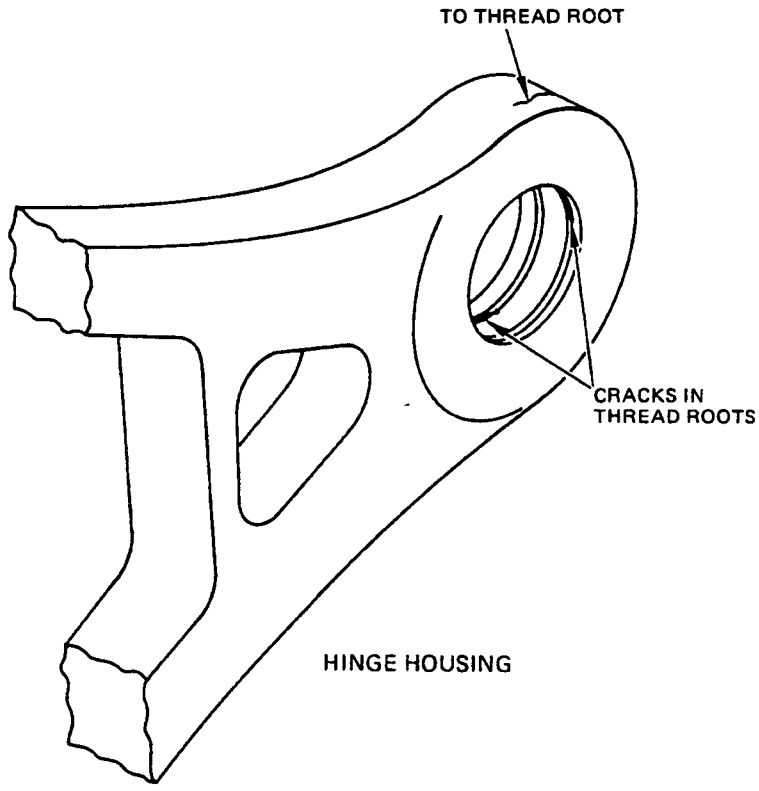
DETAIL XI



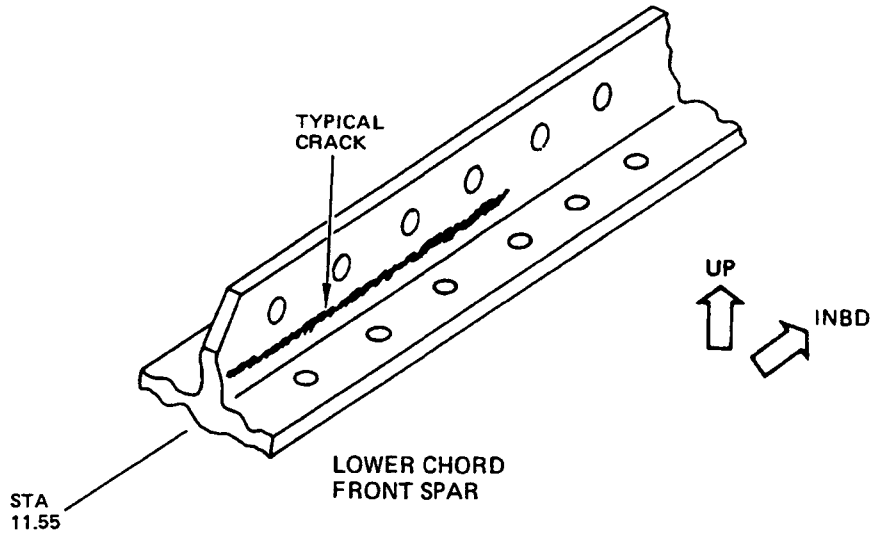
FRONT SPAR

DETAIL XII

Horizontal Stabilizers
Figure 1 (Sheet 9)



DETAIL XIII



Horizontal Stabilizers
Figure 1 (Sheet 10)

1. General

A. Corrosion has been reported on the horizontal stabilizer spar chords and on the attach fittings.

B. Stress corrosion cracking has been reported on the front spar terminal fitting lugs on forgings made from 7079-T6. SB 2959 (707-300,-400), 3271 (707-100,-200, and 720) and 3067 introduced improvements to minimize the effects of stress corrosion on 7079-T6 fittings. Forgings have been changed in production to 7075-T3 at line No. 860. SB 2330 introduced inspection and repair criteria for stress corrosion cracks in unbushed terminal lugs for airplanes up to line No. 477.

C. Stress corrosion cracking has been reported on the rear spar terminal fitting lugs and on the hinge fitting attach lugs. The rear spar chord assemblies are made from steel forgings heat-treated to 220-240 ksi. Two-piece bushings introduced by SB 2243 have contributed to the problem and SB 3243 and SB 3253 have been issued to cover new procedures.

D. Corrosion has been reported on the front spar splice plates at Sta 11.55 on 707-300,-300B,-300C and -400 airplanes up to line No. 896. Splice plates with a heat treat less susceptible to corrosion were installed on airplanes line No. 897 and on, plus airplanes incorporating SB 3145.

E. Corrosion has been reported on the stabilizer lower skins. As this has been predominately on the right side, it is believed to have been caused by leakage of toilet effluent.

F. Corrosion of the MS 20426B rivets securing the upper trailing edge panels has been reported. From line No. 922, these rivets have been changed to BACR15BA-D.

G. Stress corrosion cracking has been reported on the stabilizer hinge housing. See Detail XIII. A material change was introduced at line No. 862 which replaced 7079-T6 housings with improved housings made from 7075-T73 material. These housings may be incorporated retroactively as described in SB 3046.

H. Corrosion has been reported on the exterior skin surfaces of the horizontal stabilizer 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.

I. Stress corrosion cracking has been reported on the horizontal stabilizer balance panel bay covers made from magnesium. A material change was introduced in production which changed the magnesium covers to aluminum. SB 1594 provides inspection procedures for airplanes with magnesium covers.

J. Stress corrosion cracking has been reported on the rear spar terminal shear fittings. The fittings are made from 7079-T6 and the cracking is attributed to stress corrosion.

K. Stress corrosion cracking has been reported on the rear spar upper and lower chords, Cracks were found in the vertical flanges along the centerline of the fasteners attaching the web to the chord. See Detail XI. A material change for the chords from 7079-T6 to 7075-T73511 was introduced at cum line number 884 or 895 depending upon configuration. SB 3356 provides inspection, preventive modification (fastener replacement with sealant) and repair. Stress corrosion cracks have also been reported in the rear spar horizontal flange at approximate stabilizer stations 162, 174, and 224 (LH). Cracks have been found in the LH stabilizer forward spar horizontal flange.

L. Corrosion and stress corrosion have been reported on the stabilizer front spar upper chord sections inboard of the chord splice at station 11.55. See Details XII and XIV.

M. Cracks have been reported on the rear spar upper and lower chords. Cracks were found in the horizontal and vertical flanges. The upper and lower chords are made of 7079 and 7075-T6 respectively, and the cracking is attributed to stress corrosion.

N. Stress corrosion cracks have been found in the horizontal stabilizer center section rear spar structure, in the forward horizontal flange, the chord vertical flange, and the chord lower vertical flange (See Detail V).

O. Stress corrosion cracks have been found in the horizontal stabilizer rear spar upper chord forward flange. All cracks occurred at the lower surface of the flanges. Refer to SB 3381 for rework information.

P. Stress corrosion cracking of the stabilizer center section upper closure rib chord has been reported. Cracking started at the forward end of the chord, immediately below the radius between the vertical and horizontal legs. Cracking progressed horizontally aft above the fastener holes.

Q. Corrosion has been found on the trailing edge hinge fitting mounting bolts and nutplates due to moisture entrapment. See Details VIII and IX.

R. Stress corrosion cracks have been found in the webs of the horizontal stabilizer jackscrew support fitting which attaches the jackscrew to the fuselage. See Detail X. Improved fittings were introduced in production at line number 554. Inspection and modification instructions were provided in SB 2449.

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

2. Corrosion Prevention

A. Periodically inspect the front and rear spars and the stabilizer attach fittings for damaged finish and evidence of corrosion. Refer to SB 2959 or SB 3271 for front spar upper chord terminal lug inspection and preventive modification procedures and to SB 3243 for rear spar upper chord terminal lug procedures. Refer to SB 3356 for rear spar upper chord inspection and preventive modification on Intercontinental airplanes.

B. Inspect the upper and lower splice plates at Sta 11-55 on 707-300,-300B,-300C and -400 airplanes up to line No. 896 unless new plates have been installed in accordance with SB 3145. This service bulletin also describes the inspection procedure to be used on these airplanes.

C. Inspect the exterior skin surfaces for evidence of corrosion and the fasteners in the upper trailing edge panels.

D. Inspect stabilizer hinge housings made from 7079-T6 material as described in SB 3046.

E. Inspect the upper and lower rear spar chords for evidence of corrosion.

F. Inspect the center section rear spar for evidence of corrosion.

G. Restore damaged finish as described in Volume 1, 20-50-00 and 20-60-00. Temporary corrosion protection may be obtained by the application of water-displacing corrosion-inhibiting compound until convenient to restore the finish.

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

H. Apply corrosion-inhibiting compound annually to accessible areas of the front and rear spars with particular attention to the rear spar upper and lower chord and the front spar splice fittings at Sta 11.55.

I. Apply water-displacing corrosion-inhibiting compound to the stabilizer hinge housing taking care not to contaminate the bearing liner.

J. Spray the joint between the inner spar skin and trailing edge skin with corrosion-inhibiting compound annually.

K. Spray all attachment lugs with corrosion-inhibiting compound annually paying particular attention to lug faces and connecting pins.

L. Examine the center section structure and condition of the corrosion inhibitor every 2 years. Reapply the corrosion inhibitor as required.

M. For airplanes with low utilization and airplanes operating in corrosive ground air environments, skin corrosion can be reduced by maintaining a regular washing schedule (Ref Volume 1, 20-60-00). External skin surfaces of the horizontal stabilizer may be painted as follows to provide additional corrosion prevention:

(1) Apply 10-79, Type III primer (Ref Maintenance Manual 51-2-0).

(2) Apply BMS 10-60, Type II enamel (Ref Maintenance Manual 51-2-0).

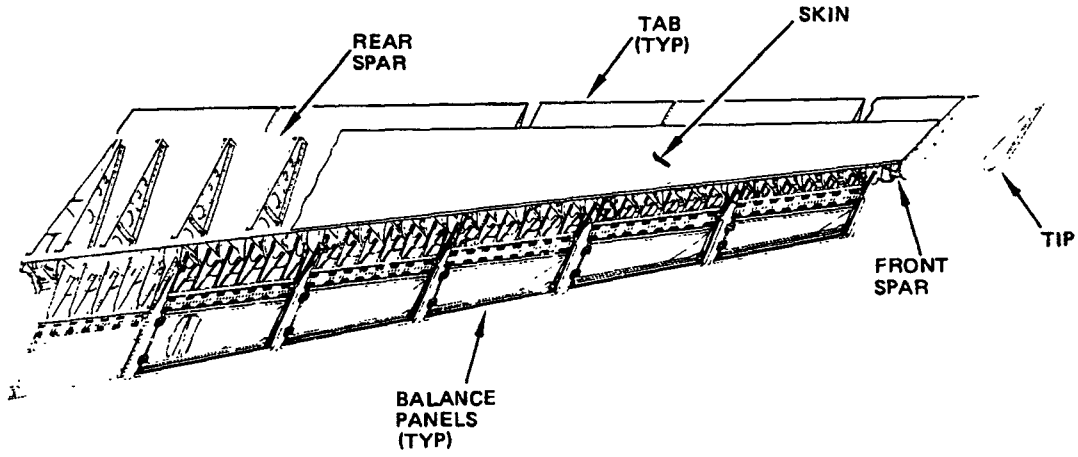
N. Inspect the rear spar terminal shear fittings for damaged finish and evidence of corrosion. Apply water-displacing corrosion-inhibiting compound to the shear fittings.

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

3. Improved Corrosion Protection

A. At line No. 932, drain holes were added to the side webs on the trailing edge ribs to reduce moisture entrapment. This change can be incorporated on earlier airplanes with SB 2997.

B. At line No. 914, BMS 10-79, Type III primer and BMS 10-60, Type II enamel was applied to the upper and lower in-spar skins. This change can be incorporated on earlier airplanes with SL 20-4 and 51-16.



Elevators
Figure 1

1. General

A. Corrosion has been reported on the elevator balance panels of other airplanes, and similar structure to the elevator front spar.

B. Corrosion has been reported on the exterior skin surfaces of the elevators particularly on airplanes with low utilization which are parked outside. Smoke, industrial waste products and other ground air contaminants contribute to corrosion on airplanes not washed regularly.

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 elevators to ensure that the protective finishes provided at manufacture remain intact.

B. Restore damaged finish at the first available opportunity as described in Volume 1, 20-50-00 and 20-60-00. Meanwhile temporary corrosion protection may be obtained by the use of water displacing corrosion inhibiting compound.

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

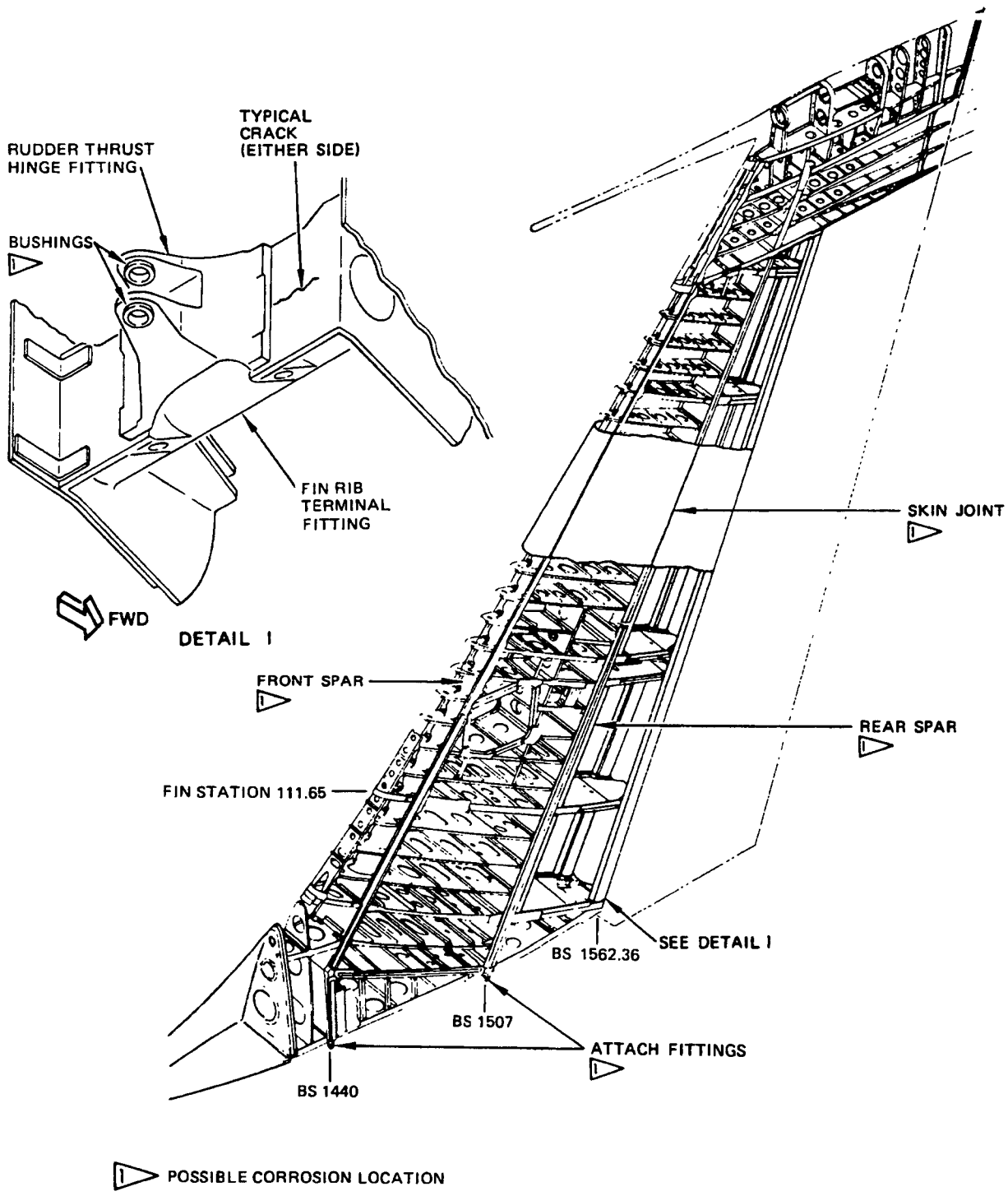
C. For airplanes with low utilization and airplanes operating in corrosive ground/air environments, external skin corrosion can be reduced by maintaining a regular washing schedule (Ref Part 1, 20-60-00). Elevators may be painted as follows to provide additional corrosion prevention:

(1) Apply 10-79 Type II primer (Ref Maintenance Manual 51-2-0).

(2) Apply BMS 10-60 Type II enamel (Ref Maintenance Manual 51-2-0).

(3) Rebalance elevator (Ref Structural Repair Manual 51-15-0).

D. Where extensive corrosion exists, refer to Structural Repair Manual for corrosion removal procedures.



Vertical Stabilizer
Figure 1

1. General

A. Corrosion has been reported on the vertical stabilizer skin, on the front and rear spars, and near and on the attach fittings.

B. Cracks in the 7075-T6 fin rib terminal fitting at the lower end of the fin trailing edge beam have been reported. The rudder thrust hinge is attached to this fitting. See Detail I. The cracks which were on either side of the hinge fittings were caused by stress corrosion.

C. Corrosion occurred on the bushings of the clevis at the aft fin terminal fitting. Corrosion also occurred on the bushings of the rudder actuator support fitting.

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. Regularly examine the vertical stabilizer for damaged finish and signs of corrosion.

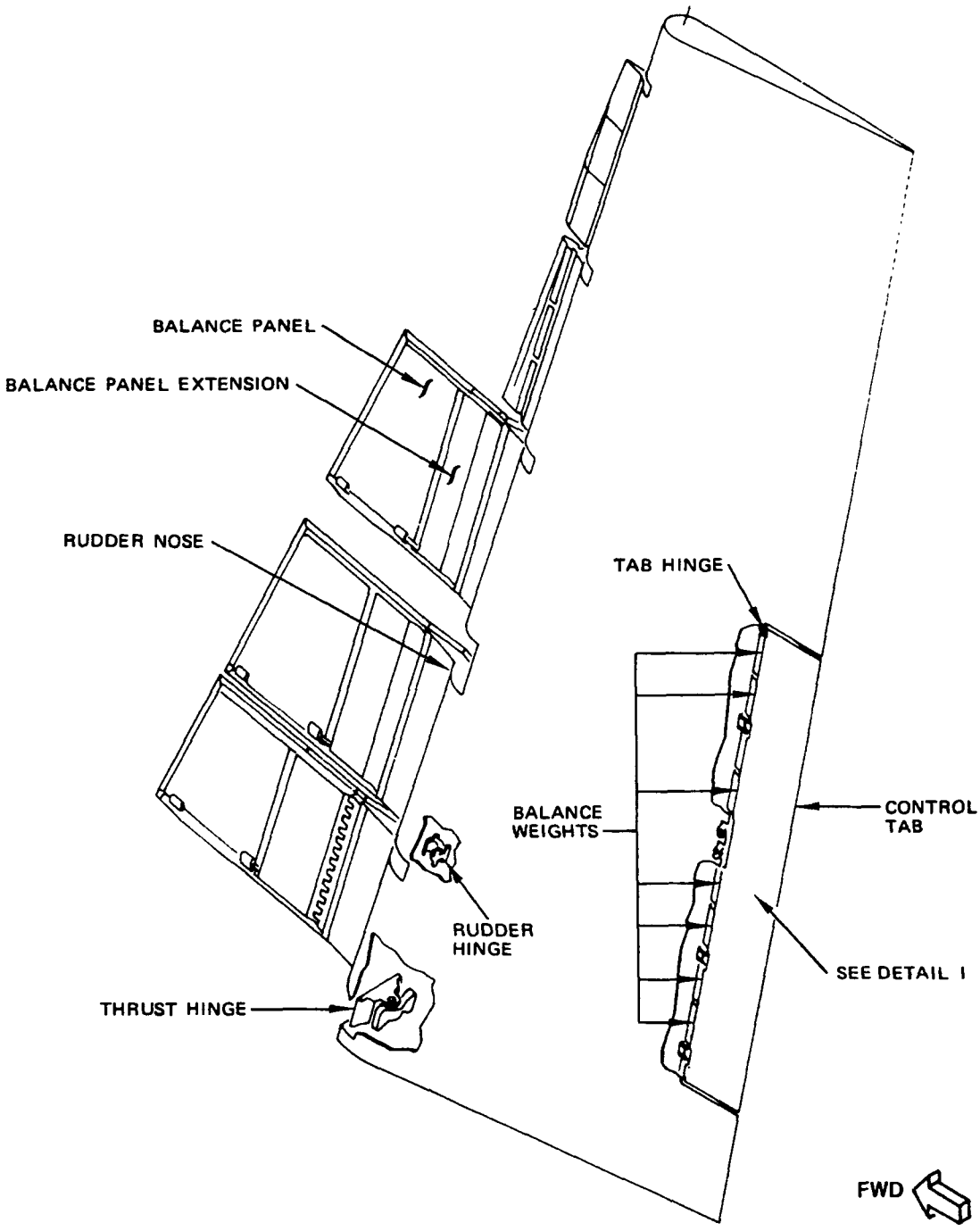
B. Restore damaged finish at the first available opportunity, meanwhile temporary corrosion protection may be obtained with the use of a water-displacing, corrosion-inhibiting compound. Refer to Volume 1, 20-50-00 and 20-60-00 for finish systems.

C. Apply the corrosion inhibitor annually to accessible areas of the front and rear spars paying particular attention to the chords.

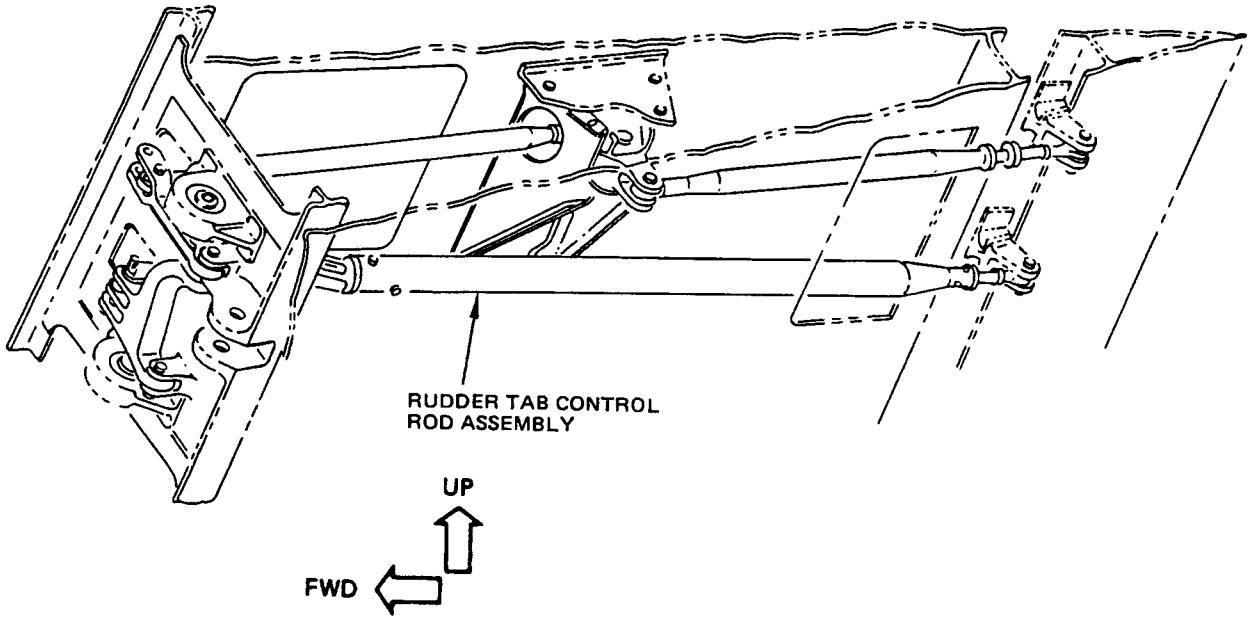
D. Spray all attachment fittings with the corrosion inhibitor annually with particular attention to faces and interfaces of fitting and fasteners.

E. Spray the joint between the inspar and trailing edge skins with the corrosion inhibitor annually.

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



Rudder
Figure 1 (Sheet 1)



DETAIL I

Rudder
Figure 1 (Sheet 2)

1. General

A. Corrosion has been reported on the rudder skin, the front and rear spars, the tab spar and the attach fittings.

B. Stress corrosion cracking of the rudder tab hinge fittings has been reported. The cracked 7075-T6 aluminum alloy tab hinge fittings were discovered on aircraft with from 2,040 to 51,000 flight hours. Refer to SB 3409 for inspection and replacement.

C. Corrosion and fracture of the rudder tab control rod assemblies has been reported. Refer to SL 27-10 and SB 3424 for inspection and replacement.

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. Regularly examine the rudder and tab for damaged finish and signs of corrosion.

B. Restore damaged finish at the first available opportunity as described in Volume 1, 20-50-00 and 20-60-00. Meanwhile temporary corrosion Protection can be obtained by the use of BMS 3-23 corrosion-preventive compound.

C. Apply BMS 3-23 annually to exposed areas of the front and rear spars and the tab spar paying particular attention to faying surfaces and the attach fittings.

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

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CHAPTER

56

WINDOWS

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AREA	PROBLEM	INDEX PREVENTION VOLUME 2	TERMINATING ACTION (IF ANY)
Cabin Window Frames	Corrosion on the passenger cabin window frames. Stress corrosion cracking of the steel and CRES steel doublers adjacent to the overwing escape hatches. Stress corrosion cracking of passenger window frame forgings	56-20-07 Fig. 1	

Specific Corrosion Problems - Windows
Figure 1

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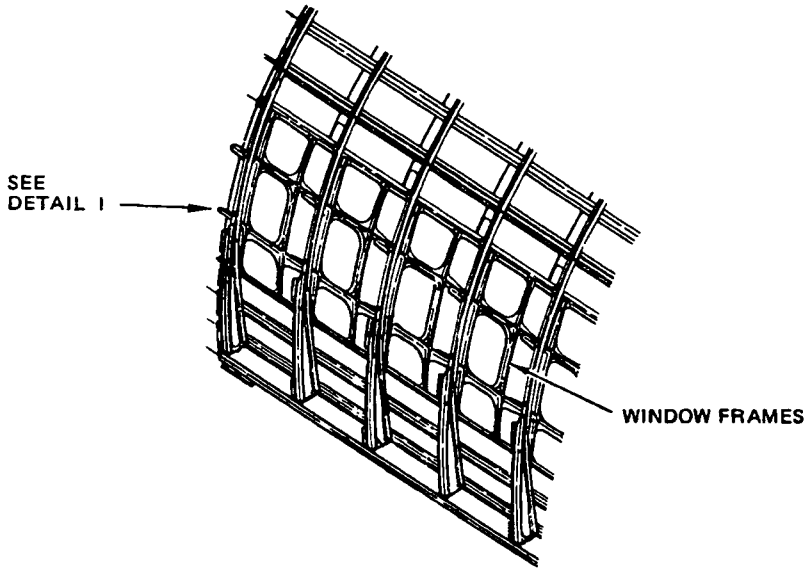
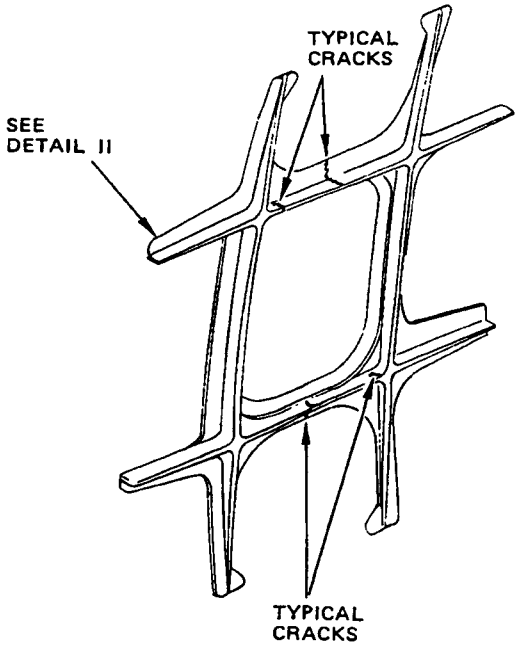
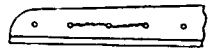


TYPICAL PASSENGER CABIN WINDOW AREA



DETAIL I



DETAIL II

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 cracks have been found in the steel doublers at BS 820 and at the overwing escape hatches. 4130 steel doublers were used on airplanes delivered through Nov. 8, 1967, and 17-7PH CRES steel doublers were used on all subsequent airplanes. The majority of the cracks intersected fastener holes. Crack lengths varied from one to two inches in the 4130 steel. Several long cracks occurred in the CRES doublers which ran parallel to the doubler edge at the window openings without intersecting fastener holes. Crack length in the CRES doublers varied from one to 15 inches.

C. Severe exfoliation corrosion of the passenger window frame from BS 500 to 580 and BS 660 to 679 has been reported. In all cases corrosion was on the aft flange of the window frame forging.

D. Stress corrosion can cause cracks in the window frame forgings. Cyclic loading makes the cracks grow.

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 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 restore 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, nutplates and sheet metal parts is permissible.

CHAPTER

57

WINGS

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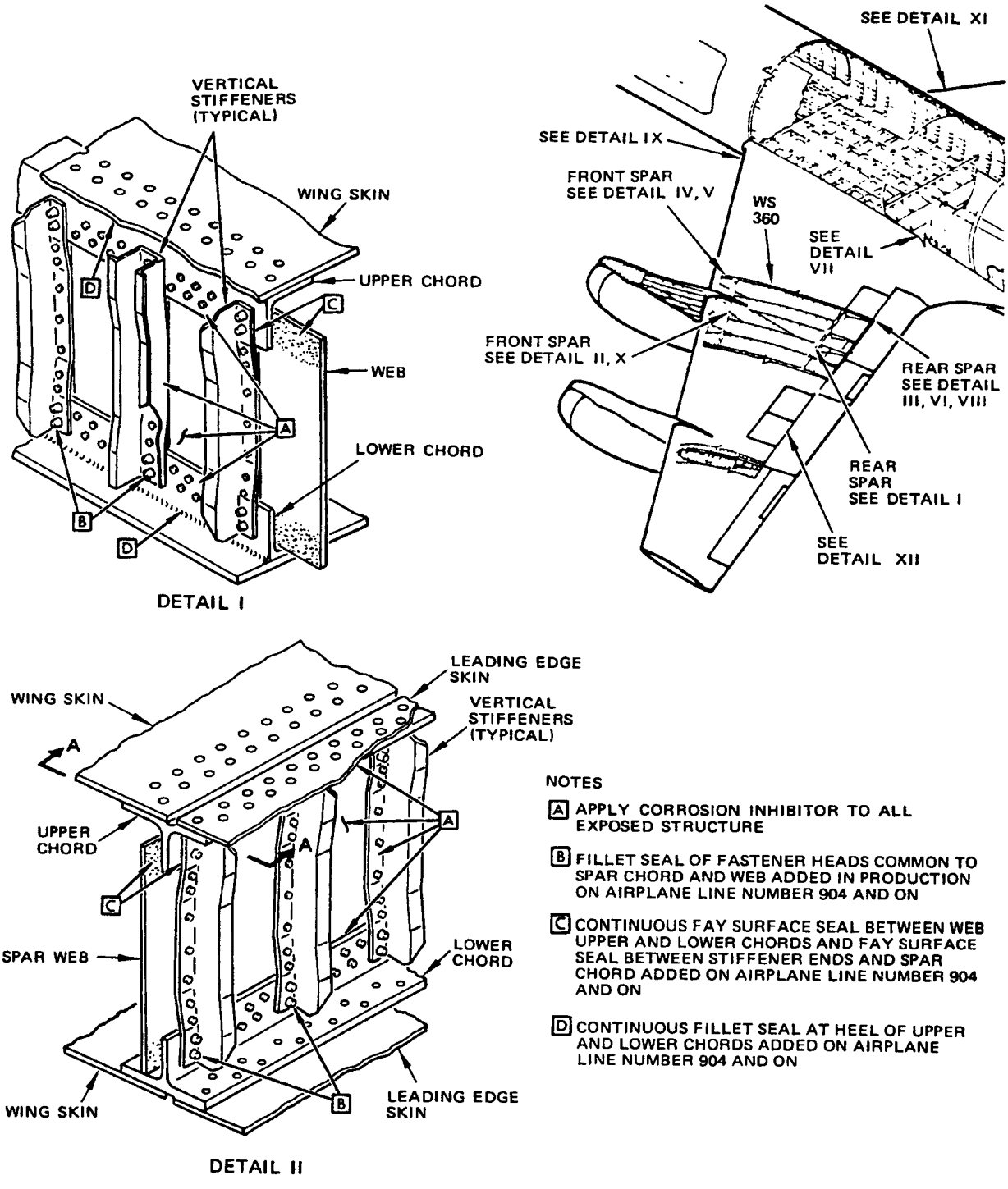
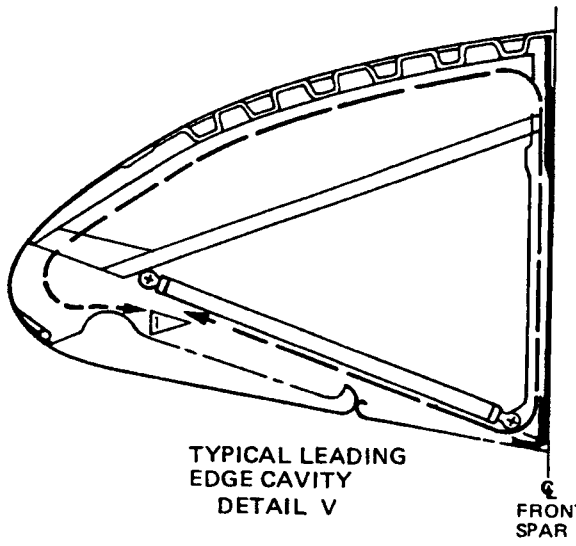
AREA	PROBLEM	INDEX PREVENTION PART 2	TERMINATING ACTION (IF ANY)
Front and Rear Spars	Spar chords susceptible to corrosion. (Improved sealing on line No. 904. SB 3240 requires inspection and application of corrosion inhibitor.)	57-10-07 Fig. 1	
	Stress corrosion cracks in inboard horizontal flanges of front spar terminal fitting, upper chord vertical flange and radius, flap track upper support fittings, rear spar chord, and drive shaft fitting		
	Corrosion between skin and front spar upper chord forward flange		
	Stress corrosion cracks in rear spar terminal fitting		
	Stress corrosion cracks on flap lower support fittings		
	Cracks reported in the front spar lower chord radius		
	Cracks reported in the flap track vertical support fitting		
Wheel Well	Surfaces inside wheel well subject to corrosion due to air contaminants and runway splash	57-10-07 Fig. 2	
Production Break	Stress corrosion cracking of production break lower chord (WS725/733). Stress corrosion cracking in the upper outboard chord WS 733	57-10-07 Fig. 3	
Nacelle Attach Fittings	Stress corrosion in nacelle strut overwing support fittings and nacelle forward inboard drag support	57-10-07 Fig. 4	
	Cracks in nacelle drag fitting		SB A3364
Wing-to-center Section Lower Splice Bolts	Bolt head-to-shank separation on wing-to-center section lower splice plate	57-10-07 Fig. 5	
Leading Edge Slat Support Fittings	Stress corrosion on leading edge slat hinge support fittings and actuator support fitting	57-20-07 Fig. 1	
Ram Air Duct	Corrosion on lower surface of wing center section skin which forms one wall of ram air duct. Corrosion on lower skin forward and aft of the ram air duct inlet	57-30-07 Fig. 1	SB 3140

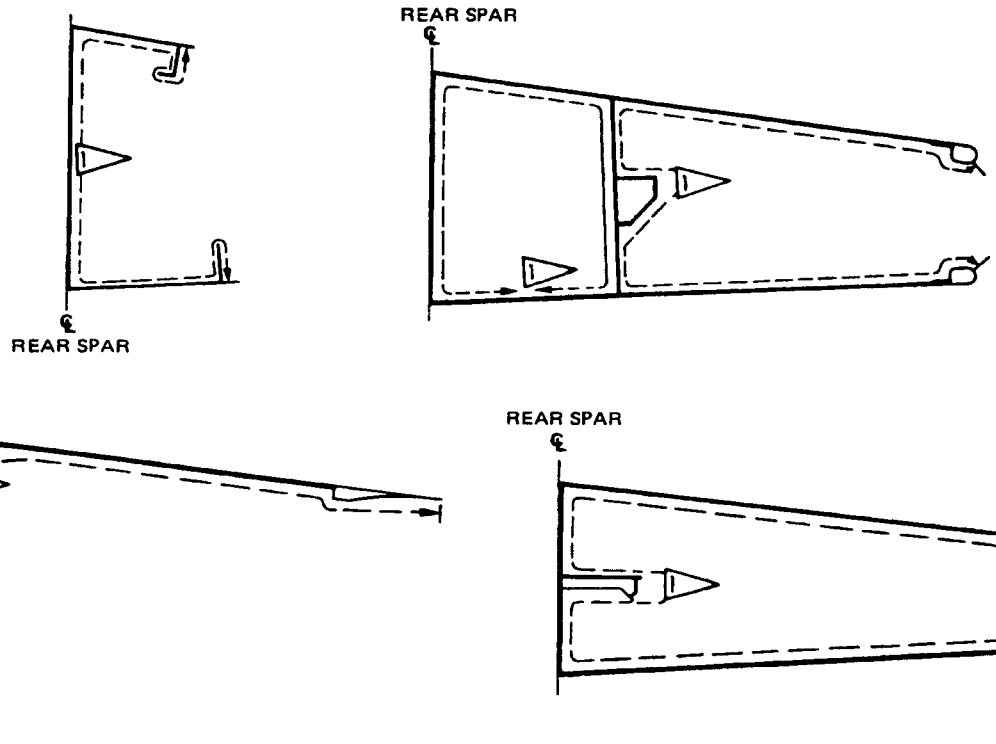
AREA	PROBLEM	INDEX PREVENTION PART 2	TERMINATING ACTION (IF ANY)
Center Section Skins	Corrosion on external surfaces of upper and lower skins and rear spar	57-30-07 Fig. 2	
	Corrosion and cracking on upper wing splice plate		
Fuel Tank Access Panels	Corrosion on exposed end grain at door cutouts	57-30-07 Fig. 3	
	Corrosion of fuel vent splice fittings		
Wing Skins	Corrosion at fastener and in vicinity of rib chord at BBL 70.5	57-30-07 Fig. 4	
	Stress corrosion cracks in seal stop fastener holes at upper chord of front spar and WBL 59		
	Pitting of lower inspar skins		
Wing-to-Body Attachments	Corrosion in vicinity of bottle pins	57-40-07 Fig. 1	
Main Landing Gear Torque Box	Corrosion due to water collection.	57-40-07 Fig. 2	SB 2425
	Cracks in rear spar clevis lugs for trunnion support fitting		
	Corrosion on upper inboard aft horizontal flange of wing front spar terminal fitting	57-40-07 Fig. 3	
Aileron	Corrosion has been found on the exterior skin surface	57-50-07 Fig. 1	
	Corrosion has been found on the balance weight fasteners		
Spoiler	Stress corrosion cracks in actuator mount holes of the spoiler actuator rib	57-70-07 Fig. 1	

Specific Corrosion Problems - Wings
Figure 1 (Sheet 1 and 2)



Front and Rear Spars
Figure 1 (Sheet 1)

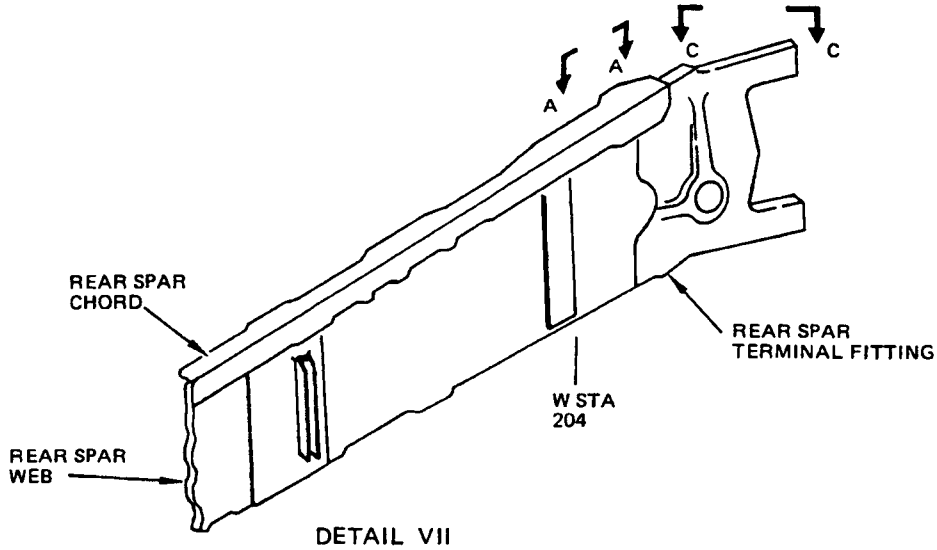




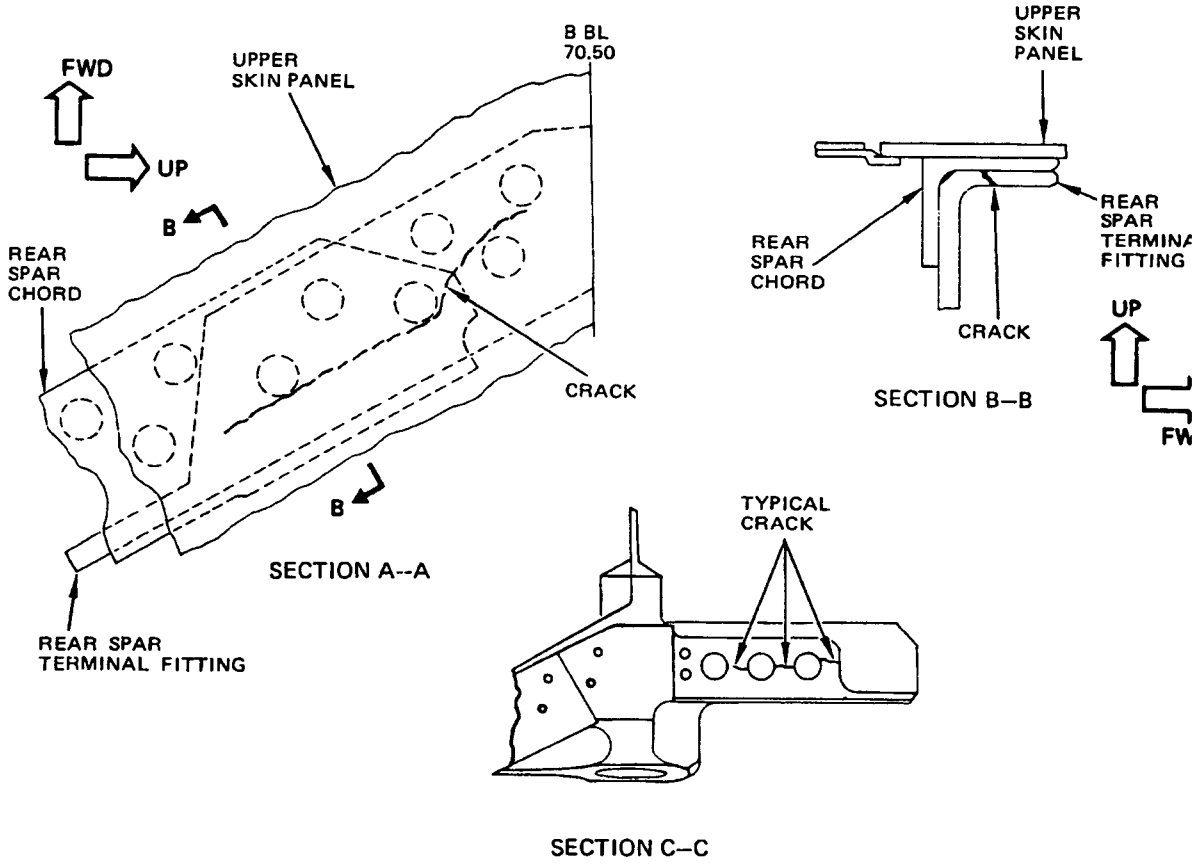
TYPICAL TRAILING EDGE CAVITIES
DETAIL VI

ADDITIONAL APPLICATION OF
PRIMER OR ENAMEL FINISH

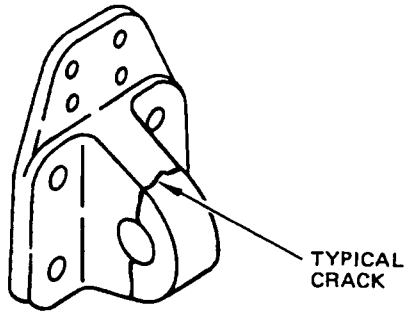
Front and Rear Spars
Figure 1 (Sheet 2)



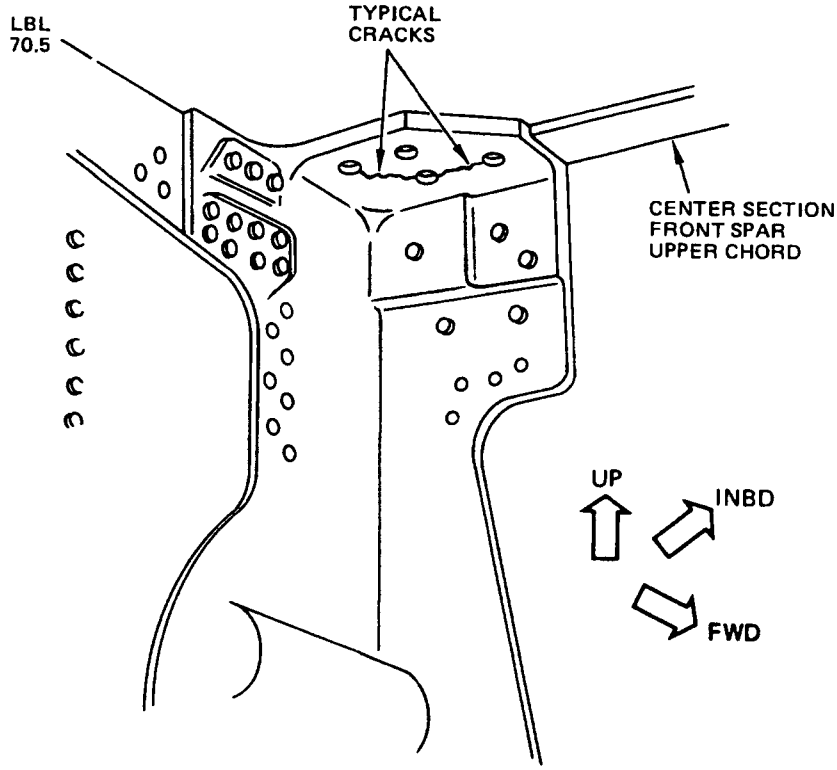
DETAIL VII



Front and Rear Spars
Figure 1 (Sheet 3)

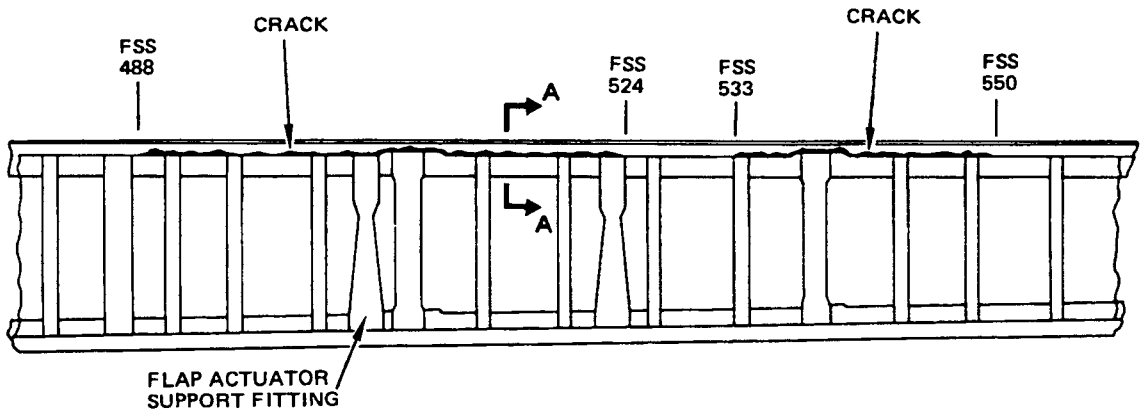


FLAP TRACK LOWER
SUPPORT FITTING
DETAIL VIII

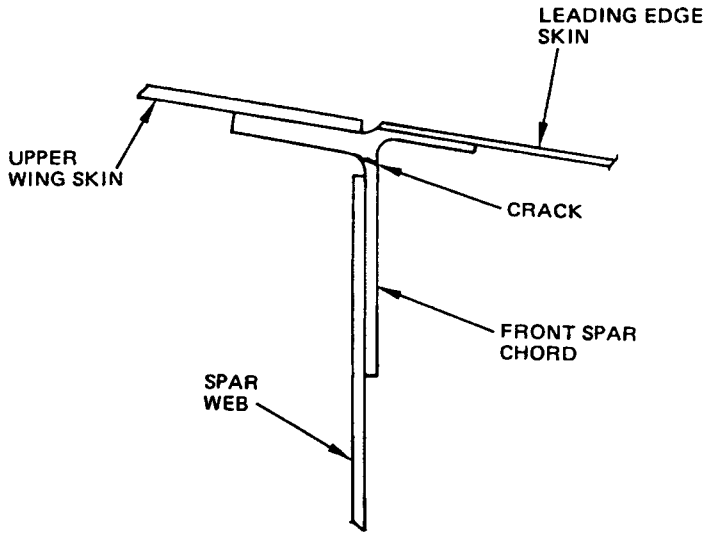


WING FRONT SPAR
TERMINAL FITTING
DETAIL IX

Front and Rear Spars
Figure 1 (Sheet 4)

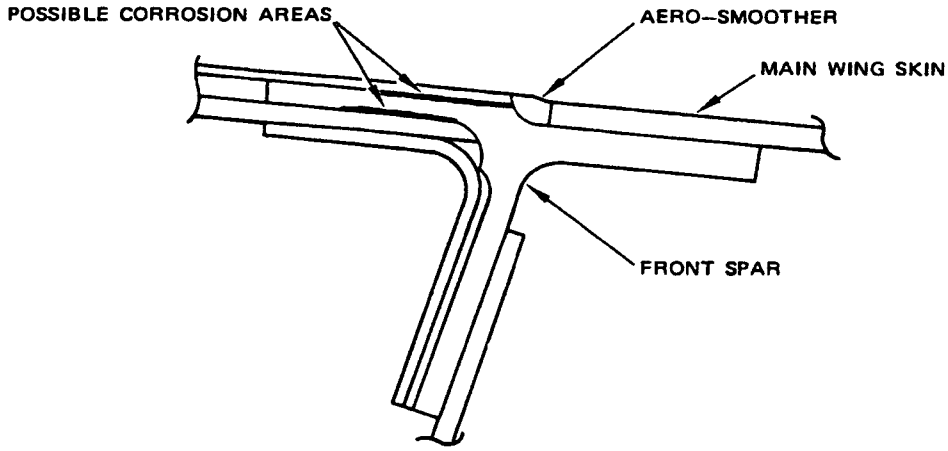


FRONT SPAR
DETAIL X

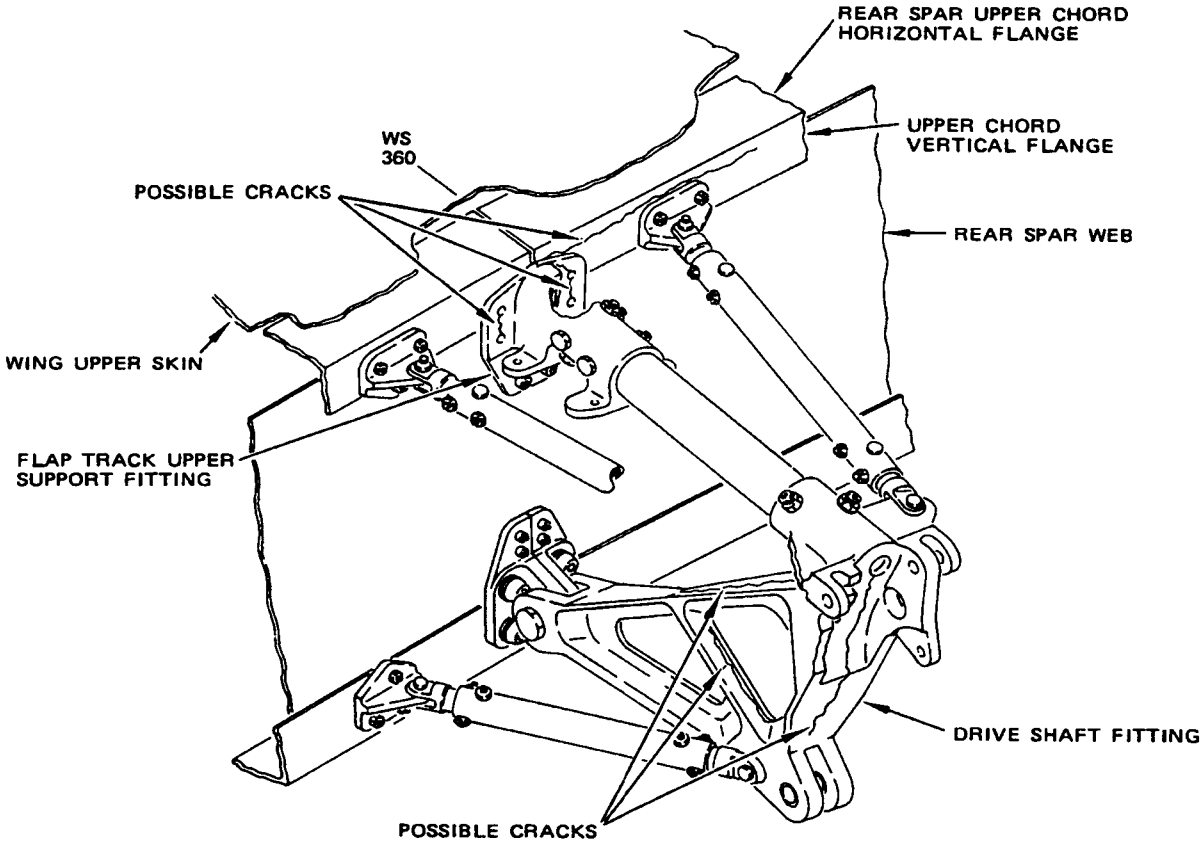


SECTION A–A

Front and Rear Spars
Figure 1 (Sheet 5)

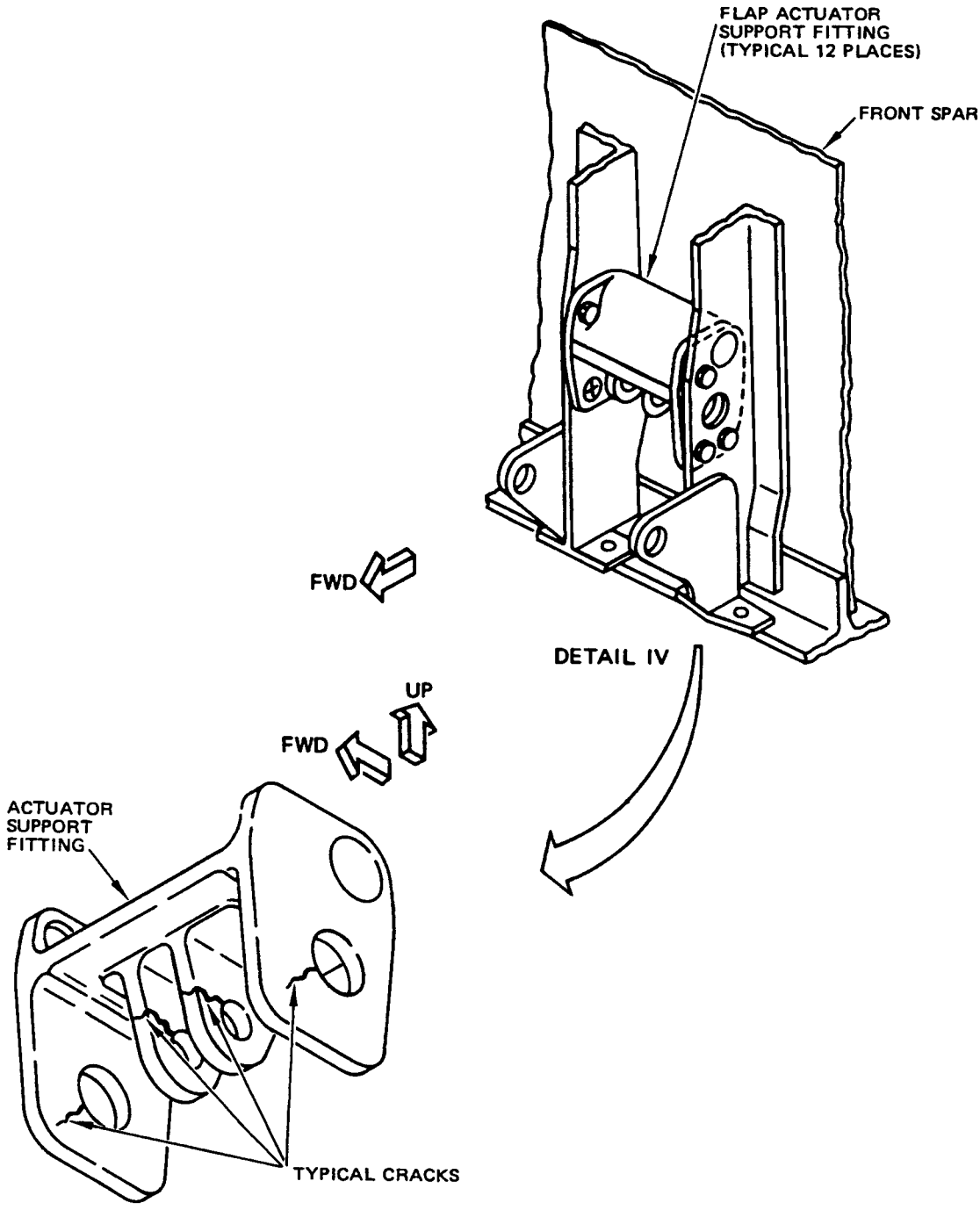


SECTION A–A

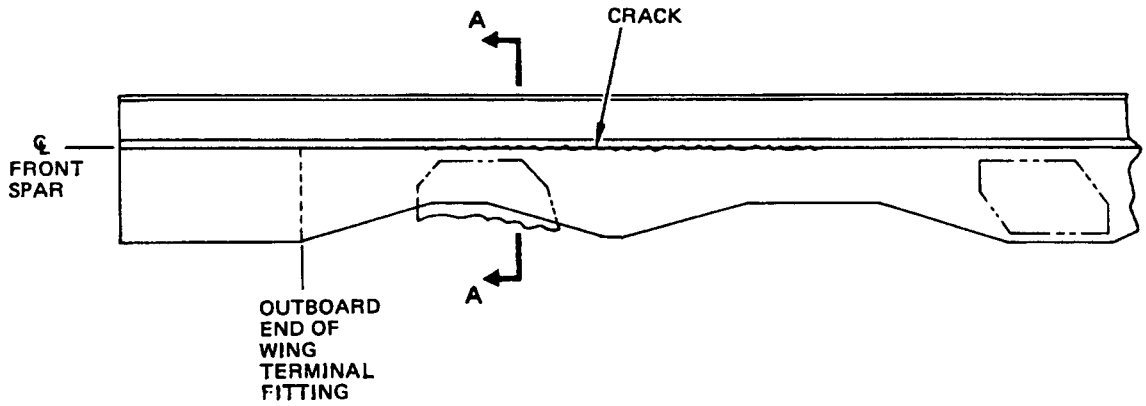


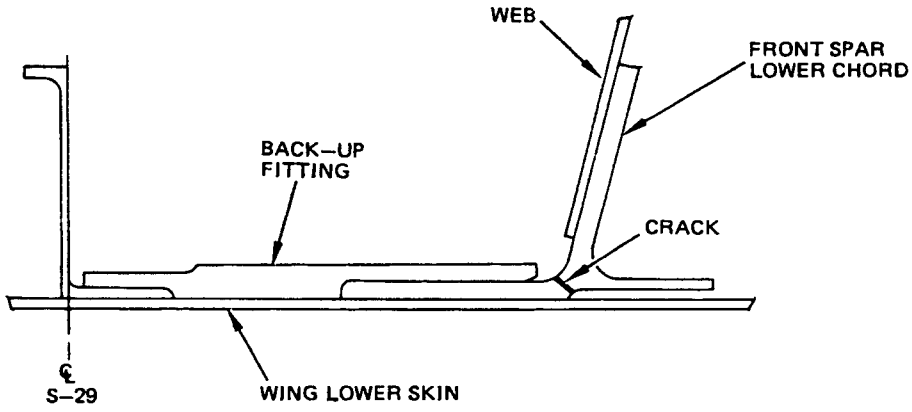
WS 360 LEFT WING
DETAIL III

Front and Rear Spars
Figure 1 (Sheet 6)



Front and Rear Spars
Figure 1 (Sheet 7)

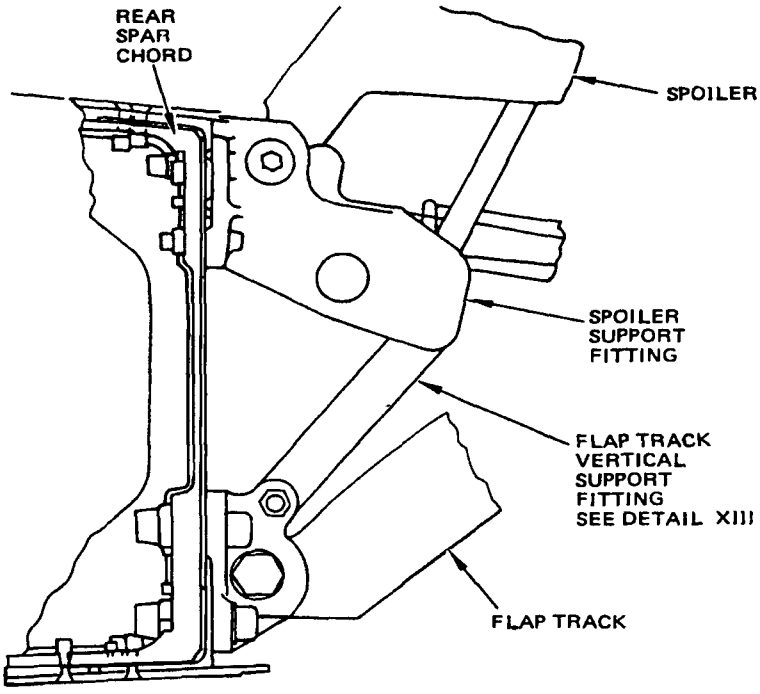




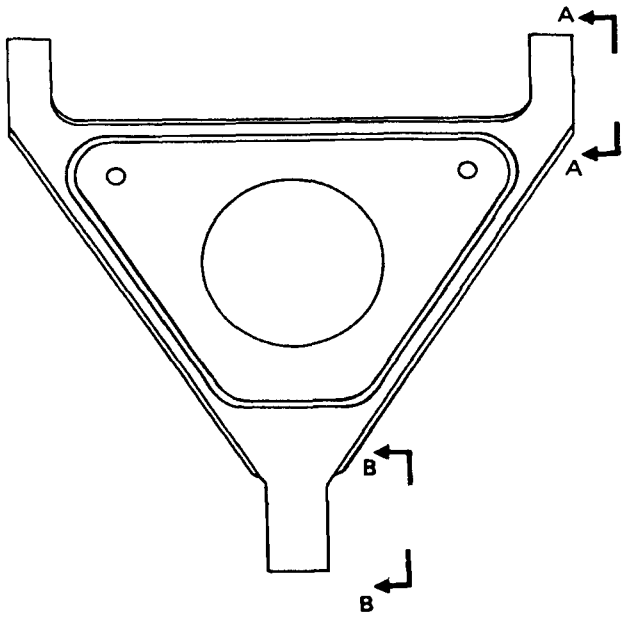
SECTION A–A

DETAIL XI

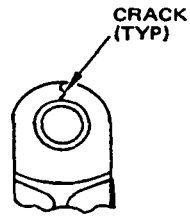
Front and Rear Spars
Figure 1 (Sheet 8)



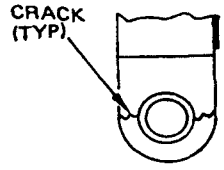
DETAIL XII



DETAIL XIII



SECTION A–A



SECTION B–B

Front and Rear Spars
Figure 1 (Sheet 9)

1. General

A. The front and rear spars on the left and right wing boxes are primary structural components of the main wing frame. They extend from the wing root rib to the wingtip. The spars consist of vertical sheet metal webs tapering down in depth towards the wingtips and provided with chords along the upper and lower edges. Vertical stiffeners are attached to the vertical faces of the spars.

B. The deployment of flight control surfaces expose the spars to the ground and near ground air contaminants, thrust reverser soot, runway dirt and debris and inclement weather elements, all of which contribute to corrosion.

C. The spar chords are found to be particularly susceptible to corrosion originating most likely at the fasteners common to the chord and web.

NOTE: For improved corrosion protection fillet seal fastener heads common to spar chords and webs. Fillet sealed fastener heads were incorporated in production at cum line number 904.

In addition the fillet seals along the toes of the spar chords were replaced with continuous fay seals between spar chords and web, fay seals between stiffeners and spar chords, and continuous fillet seals at the heels of the upper and lower chords, at airplane cum line number 904.

Service Bulletin 3240 requires inspection and application of corrosion inhibitor on all 707/720 airplanes.

D. Cracks have been found in the upper and lower inboard vertical flanges of the wing front and rear spar terminal fitting. Airplanes through line position 868 and line position 871 have fittings made from 7079-T6 forgings. Line positions 869, 870 and 872 and on have fittings made from 7075-T73 forgings and are much less susceptible to stress corrosion.

E. Stress corrosion cracks have been found in the rear spar upper chord vertical flange at WS 360. See Detail III.

F. Stress corrosion cracks have been reported in the flap track upper support fittings, rear spar chord, and drive shaft fitting. Refer to SB 3413 for inspection and modification information.

G. Corrosion between the skin and front spar upper chord forward flange has been reported. Corrosion was discovered between the number three and four pylons along the aft edge of the upper wing leading edge skin. Skin raises due to corrosion of up to 1/4 of an inch were reported.

H. Stress corrosion cracks have been reported on inboard leading edge flap actuator support fittings (Detail IV) of airplanes prior to cum line number 886. Refer to SB 3411 for inspection and replacement of 7079-T6 fittings with 7075-T73 fittings. Inspection and application of BMS 3-23 should be carried out at approximate yearly intervals on 7079-T6 fittings.

I. Stress corrosion cracks have been reported in the horizontal flange of the rear spar terminal fitting. See Detail VII.

J. Stress corrosion cracks have been reported in the horizontal flange of the front spar terminal fitting. See Detail IX.

K. Stress corrosion cracks have been reported in the radius of the front spar upper chord between FSS 488 and 550. See Detail X.

L. Cracks have been reported in the aft radius of the front spar lower chord just outboard of the wing terminal fitting. See Detail XI.

M. Cracks have been reported in the flap track vertical support fitting at the attach lugs. See Details XII and XIII. Inspection and replacement procedures were the subject of SB 3222.

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

2. Corrosion Prevention

A. Make periodic inspections described in Volume 1, 20-20-00 to preclude or detect the early stages of corrosion. White powdery or discolored deposits are evidences of corrosion which should alert operators that some corrective action is required. A corrosion prevention program should be initiated to prevent the accumulation of corrosive contaminants in the spar cavities to minimize the occurrence of corrosion.

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

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

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

E. Areas of inspection in the leading and trailing edge cavities have been expanded including the application of additional coats of primer or enamel. See Fig. 1, Details V, VI, refer to SB 2199 for incorporation of procedures on airplanes prior to line number 468.

F. When available for a visual inspection, inspect upper inboard horizontal flange of the wing front spar terminal fitting on aircraft having 7079-T6 fittings. Aircraft line numbers 1 through 868 and 871 have this type fitting. The inspection should include all visible fitting surfaces inboard and outboard of the BBL 70.5 rib.

G. Hydraulic tubing, tubing supports and fittings are to be treated per 29-10-07, Fig. 1.

H. Prevention Treatment

CAUTION: OBSERVE PRECAUTIONS OF VOLUME 1, 20-60-00 FOR SPRAYING CONTROL CABLES WITH WATER DISPLACING CORROSION INHIBITING COMPOUND.

DO NOT APPLY WATER DISPLACING CORROSION INHIBITING COMPOUND TO SILICONE RUBBER OR RUBBER SEALS BECAUSE IT MAY CAUSE SEALS TO SWELL. DO NOT SPRAY CORROSION INHIBITOR ON ACTUATOR RODS. PROTECT ELECTRICAL WIRING AND NONMETALLIC DUCTING.

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

(2) Replace damaged or broken finishes if at all possible. Refer to Volume 1, 20-50-00 and 20-60-00 for protective finish systems.

(3) Apply water displacing corrosion inhibiting compound to the forward surface areas of the front spar with particular attention to spar chord and web joints and faying surfaces of stiffeners, brackets, etc. The use of spray equipment with nozzle directed into faying surfaces is recommended.

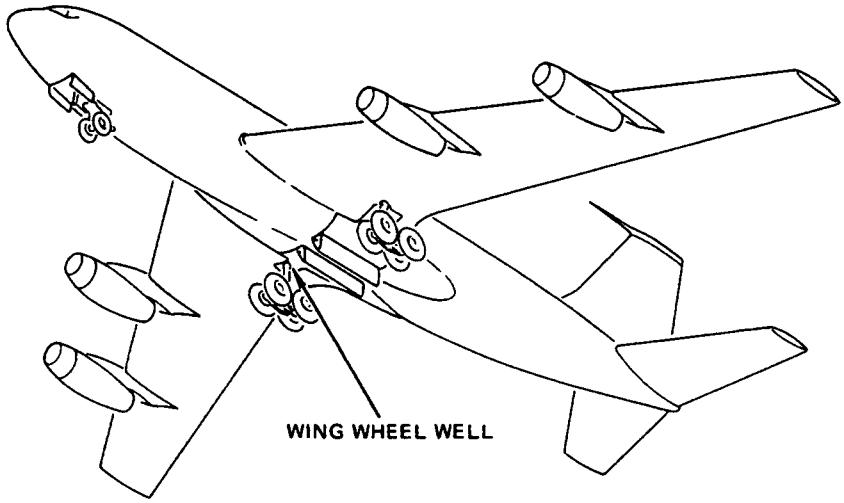
(4) Apply water displacing corrosion inhibiting compound to the aft surface areas of the rear spar with particular attention to the spar chord and web joints, faying surfaces of stiffeners, brackets, etc., and around high strength boltheads.

(5) Regrease all grease fittings in treatment area.

I. Frequency of Application

(1) The corrosion inhibitor should be reapplied annually.

(2) In cases where the spars or spar cavities are cleaned with steam or high pressure water and detergents, the reapplication of corrosion inhibitor is recommended.



Wing Wheel Well
Figure 2

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. The wing well should be treated at the same time as the wing torque box, trunnion and trunnion support fittings (Ref 57-40-07, Fig. 2).

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

2. Corrosion Prevention

A. The basic corrosion prevention philosophy is to make periodic inspections described in Volume 1, 20-20-00. Heavily loaded structural members and wheel well closure walls should be regularly inspected for deterioration of protective finishes to minimize the occurrence of corrosion. Missing fasteners, white powdery or discolored deposits are evidences of the existence of corrosion which should alert operators that some corrective action is required. A corrosion program should be initiated to prevent the accumulation of moisture or corrosive products in the structure of the wheel well.

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

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

D. For minor corrosion to minimize the downtime of the airplane, the corrosion products should be cleaned off, followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-50-00 and 20-60-00).

E. Hydraulic tubing, tubing supports and fittings are to be treated per 29-10-07, Fig. 1.

F. Preventative Treatment

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

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

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

CAUTION:OBSERVE PRECAUTIONS OF VOLUME 1, 20-60-00 FOR SPRAYING CONTROL CABLES WITH BMS 3-23.

DO NOT APPLY BMS 3-23 TO SILICONE RUBBER OR RUBBER SEALS. BMS 3-23 MAY CAUSE THE SEALS TO SWELL.

(4) Apply BMS 3-23 to all exposed wheel well structure. Special effort should be made to apply the corrosion inhibitor along doubler edges, along edges of structure, forgings, etc., and on fastener heads. The use of spray equipment with nozzle directed into faying surfaces is recommended.

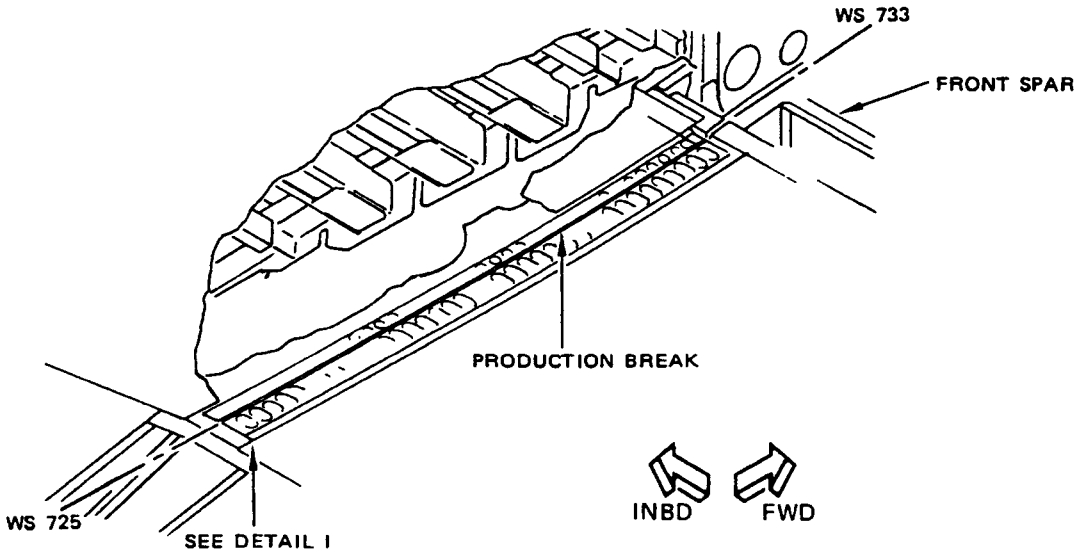
(5) Apply BMS 3-23 to landing gear attachment fittings. Ensure that lugs and lug faces are treated.

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

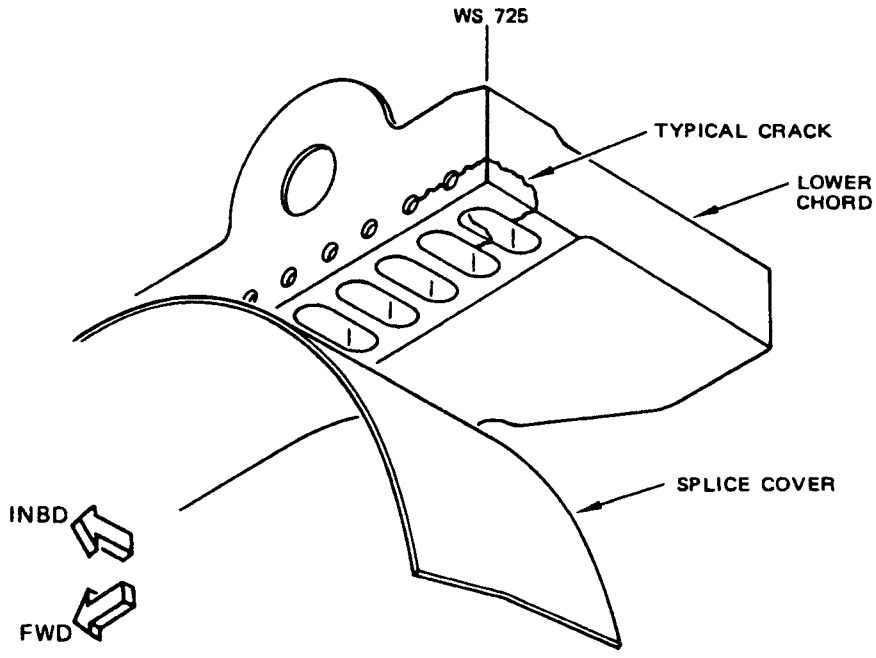
G. Frequency of Application

(1) The corrosion inhibitor should be reapplied annually.

(2) In cases where the wheel well is cleaned with steam or high pressure water and detergent, reapplication of BMS 3-23 is recommended.

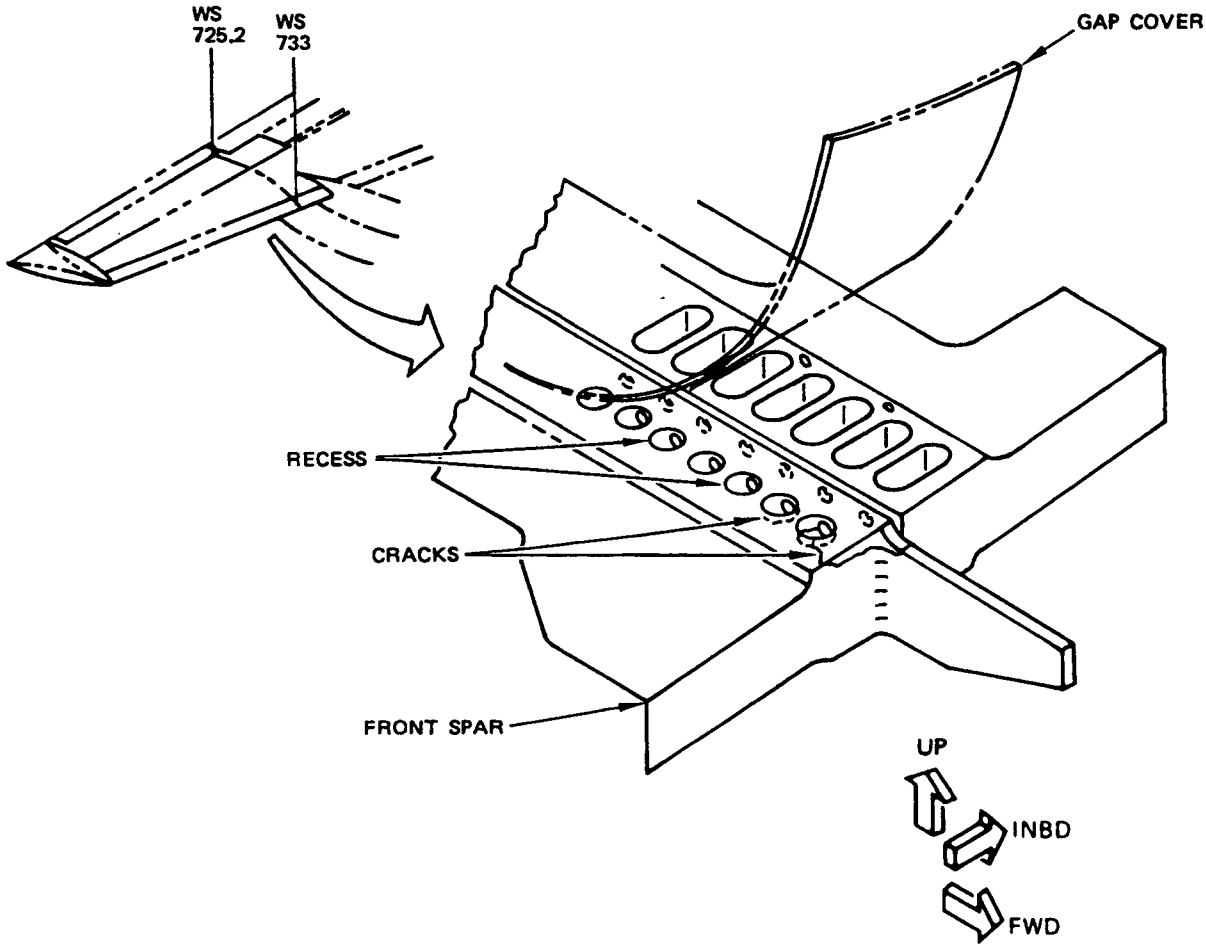


VIEW ON UNDERSIDE OF WING AT PRODUCTION BREAK



DETAIL I

WS 733 Production Break Rib Chord
Figure 3 (Sheet 1)



WS 733 Production Break Rib Chord
Figure 3 (Sheet 2)

1. General

A. Stress corrosion cracking of the aft lower rib chord at the production break at WS 733 has been reported by a number of operators. On 720, 707-300B and 707-300C airplanes this chord is manufactured from 7079-T6 aluminum alloy which is considered to be susceptible to stress corrosion cracking.

B. Stress corrosion cracks have been reported in the upper outboard chord at WS 733 in the area of the two forward recesses.

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.

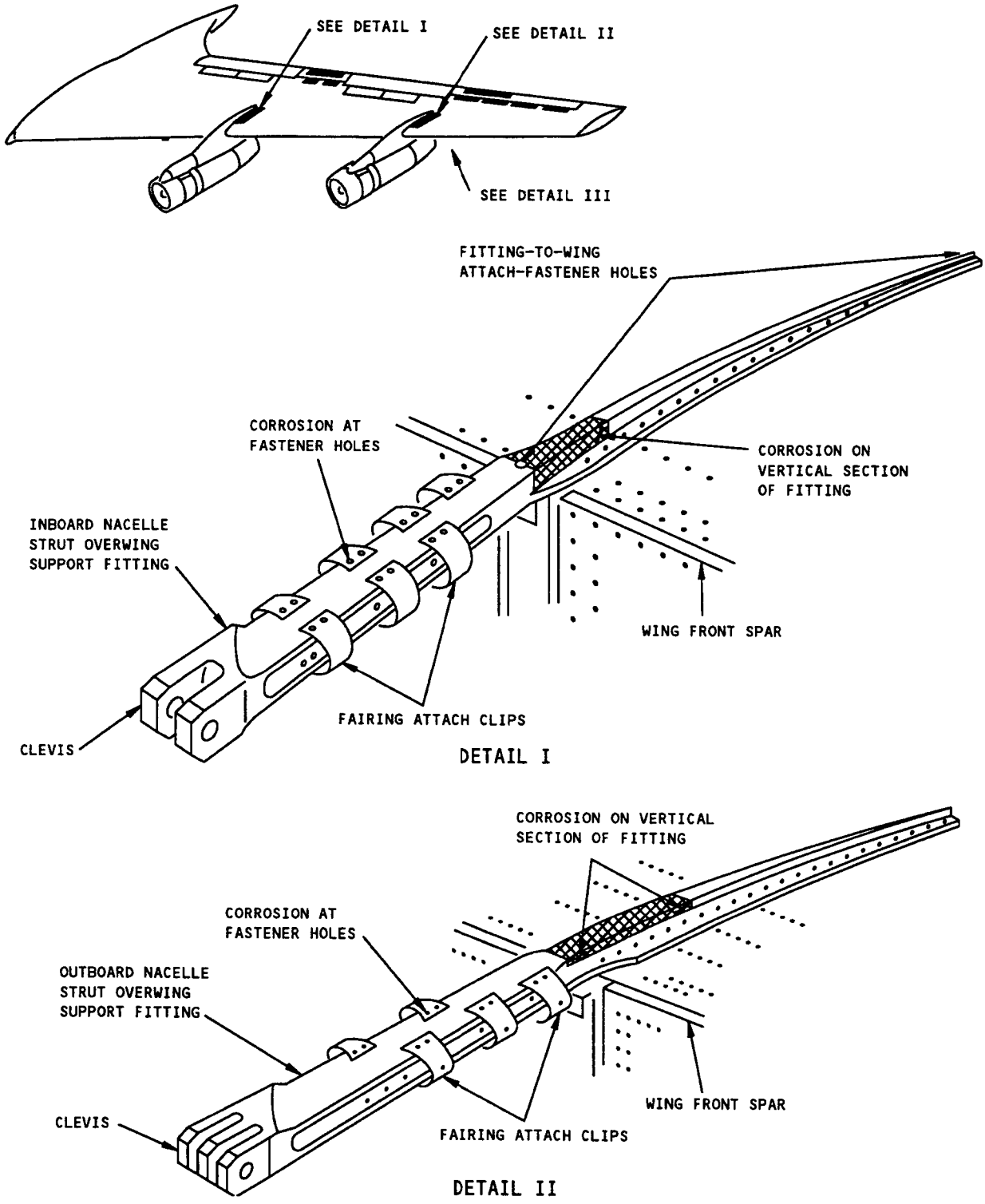
2. Corrosion Prevention

A. Regularly examine for stress corrosion cracking with SB A3308.

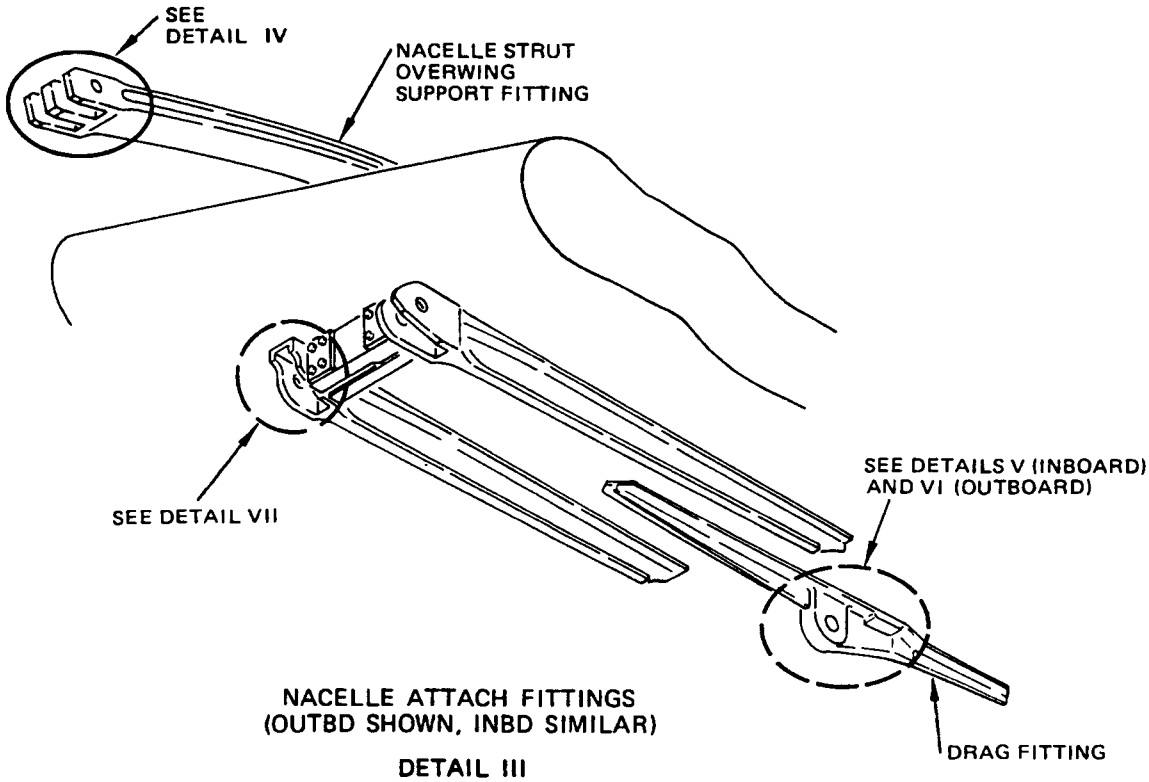
B. Applications of water displacing corrosion inhibiting compound (BMS 3-23 or equivalent) to the area will help to prevent the initial corrosion which results in stress corrosion cracking.

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

C. If you find stress corrosion cracks, refer to SB A3308 for repair procedures.

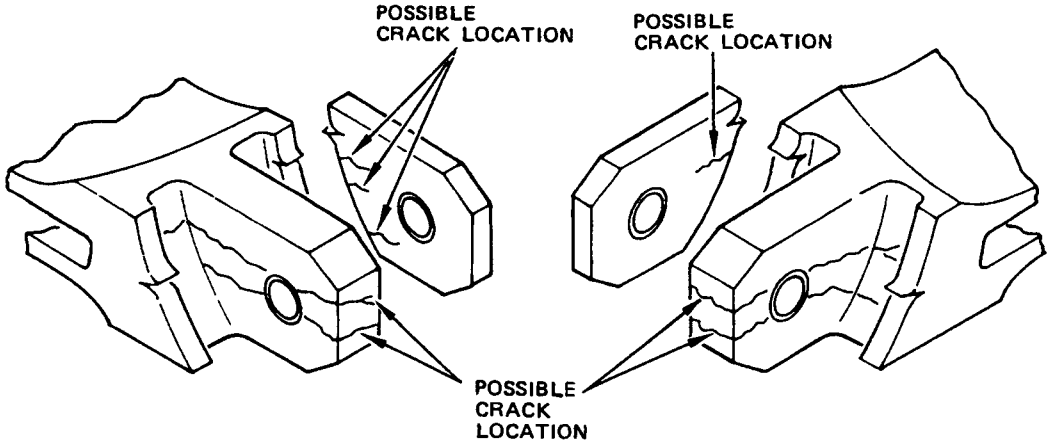


Nacelle Attach Fittings
Figure 4 (Sheet 1)



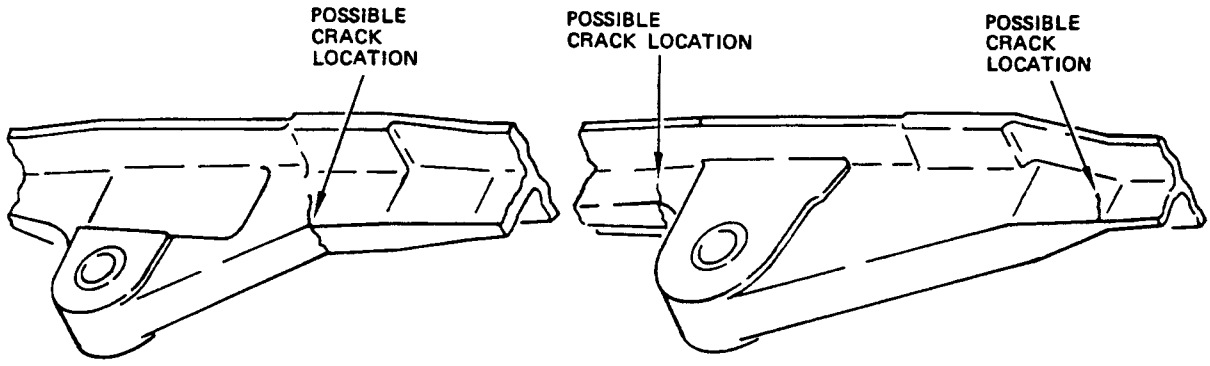
NACELLE ATTACH FITTINGS
(OUTBD SHOWN, INBD SIMILAR)

DETAIL III



DETAIL IV

Nacelle Attach Fittings
Figure 4 (Sheet 2)

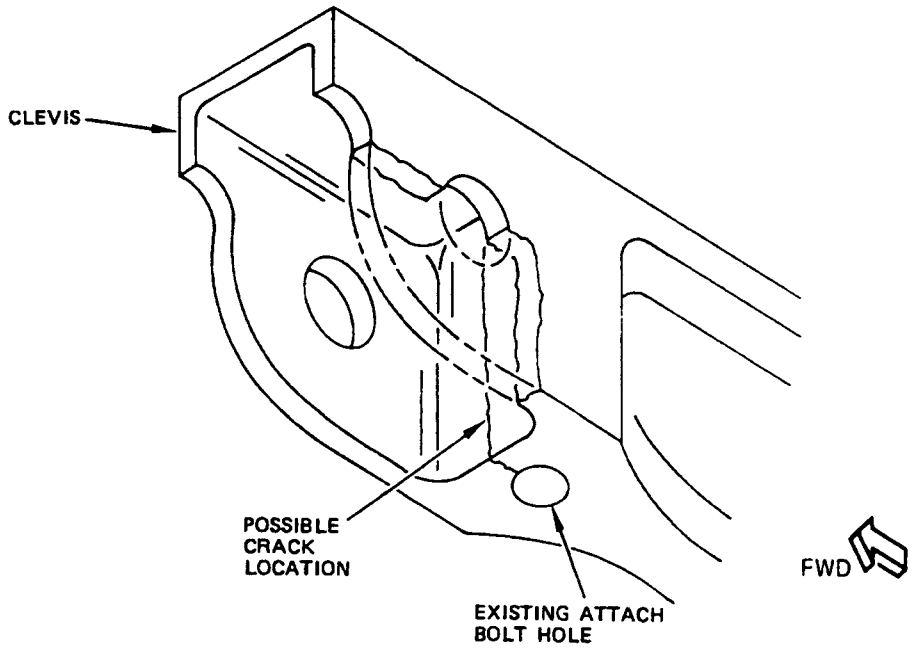


AFT DRAG FITTING INBOARD NACELLE

DETAIL V

AFT DRAG FITTING, OUTBOARD NACELLE

DETAIL VI



DETAIL VII

Nacelle Attach Fittings
Figure 4 (Sheet 3)

1. General

A. Stress corrosion and cracks can occur on the nacelle strut overwing support fittings. The problem areas are on the lugs, at the fuse joint hole, the clip attach holes, the fitting-to-wing attach holes and the vertical section of the fitting of the wing front spar.

B. Cracks can occur in the nacelle drag fittings ana inboard nacelle upper support fittings.

C. Cracks that could be from stress corrosion can occur in the forward end of the No. 1 engine nacelle forward inboard drag support at the aft wall of the clevis.

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 ana Control Program.

2. Corrosion Prevention

A. Regularly examine the nacelle strut overwing support fittings, drag fittings, and nacelle forward inboard drag support for corrosion per Volume 1, 20-20-00. SB 3173 gives procedures for the nacelle strut overwin6 fittings. SB A3364 gives procedures for the drag fittings.

B. If you find corrosion, refer to Structural Repair Manual for details of corrosion removal.

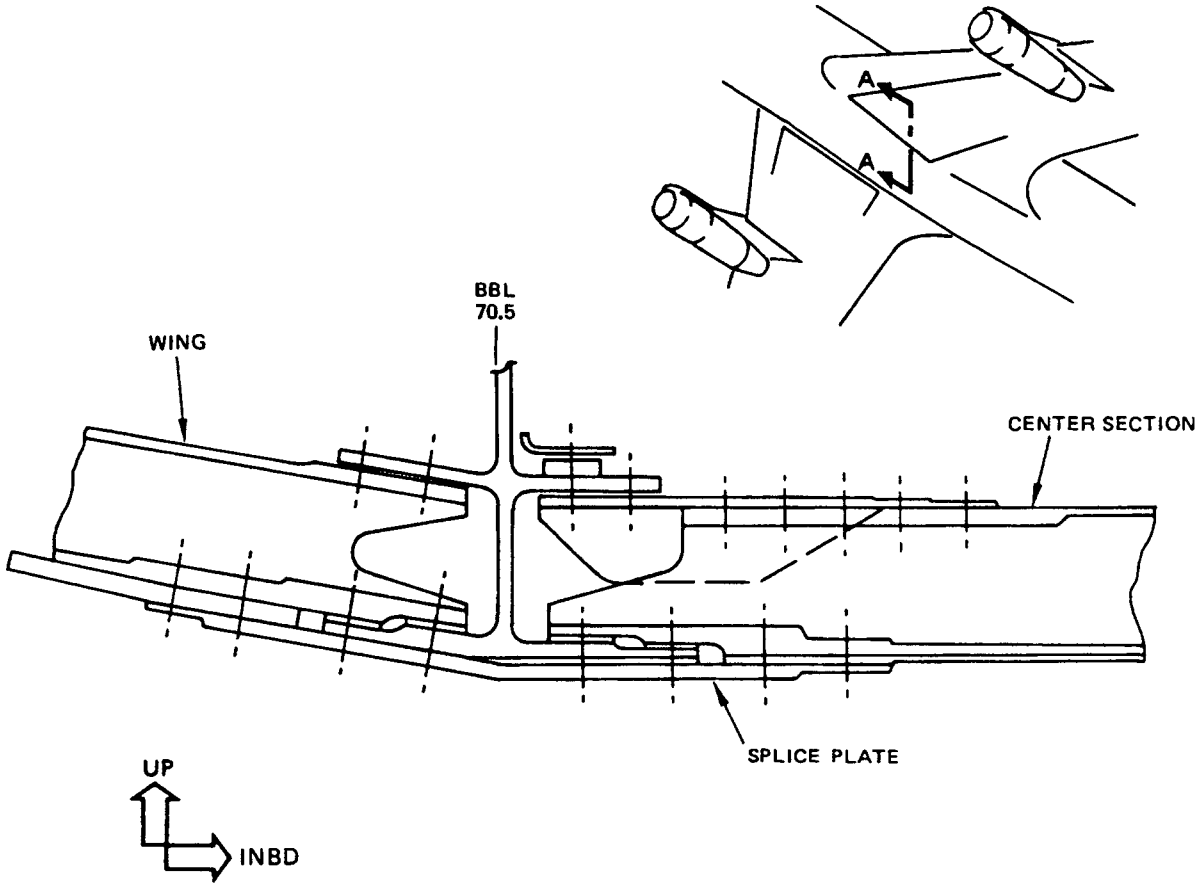
WARNING: DO NOT APPLY CORROSION-INHIBITING COMPOUNDS INTO AREAS WHICH COULD POTENTIALLY BE IN CONTACT WITH OXYGEN SYSTEM COMPONENTS. MIXING OF CORROSION INHIBITORS AND OXYGEN MAY RESULT IN AN EXPLOSION.

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

DO NOT APPLY WATER-DISPLACING CORROSION-INHIBITING COMPOUND TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONED CLAMPS BECAUSE IT WILL CAUSE THE SEALS OR CUSHIONS TO SWELL.

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

D. For minor corrosion, the corrosion products should be cleaned off followed by an application of a corrosion-inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-50-00 and 20-60-00).



Wing-to-Center-Section Lower Splice Bolts
Figure 5 (Sheet 1)

1. General

A. Bolt head-to-shank separation has been reported during wing-to-center section lower splice plate bolt removal. Subsequent evaluation of some of the bolts indicated fracture was due to stress corrosion.

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

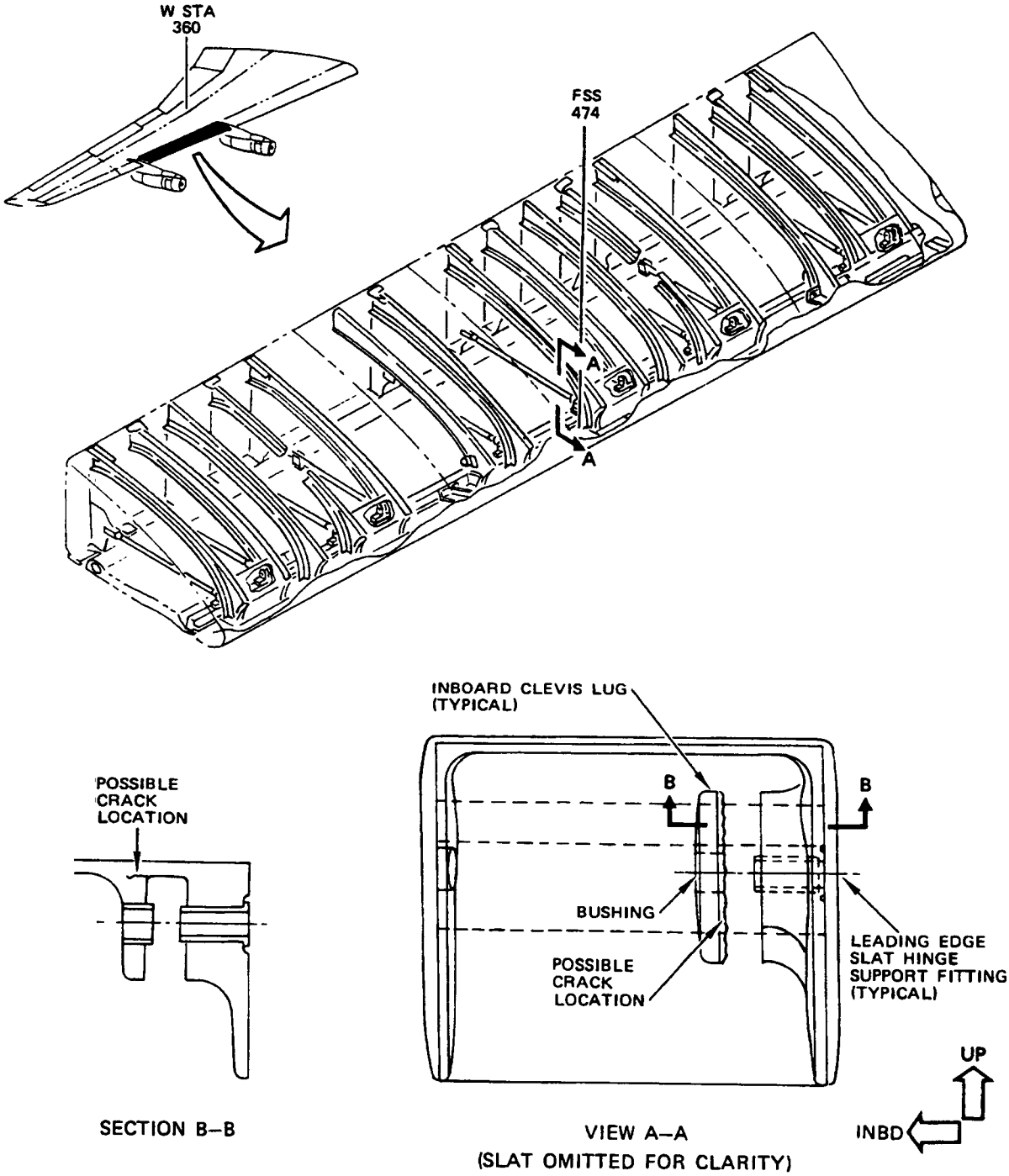
A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for broken finishes is to replace the finish with the same protective system as used originally.

B. Where it is impractical to restore the finish, temporary corrosion protection can be provided by an application of water-displacing corrosion-preventive compound to fastener heads and skin surfaces where the paint system has cracked or flaked. Allow 30 minutes for the corrosion preventive compound to penetrate under fastener heads and for the carrier solvent of the compound to evaporate. Wipe off excess.

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

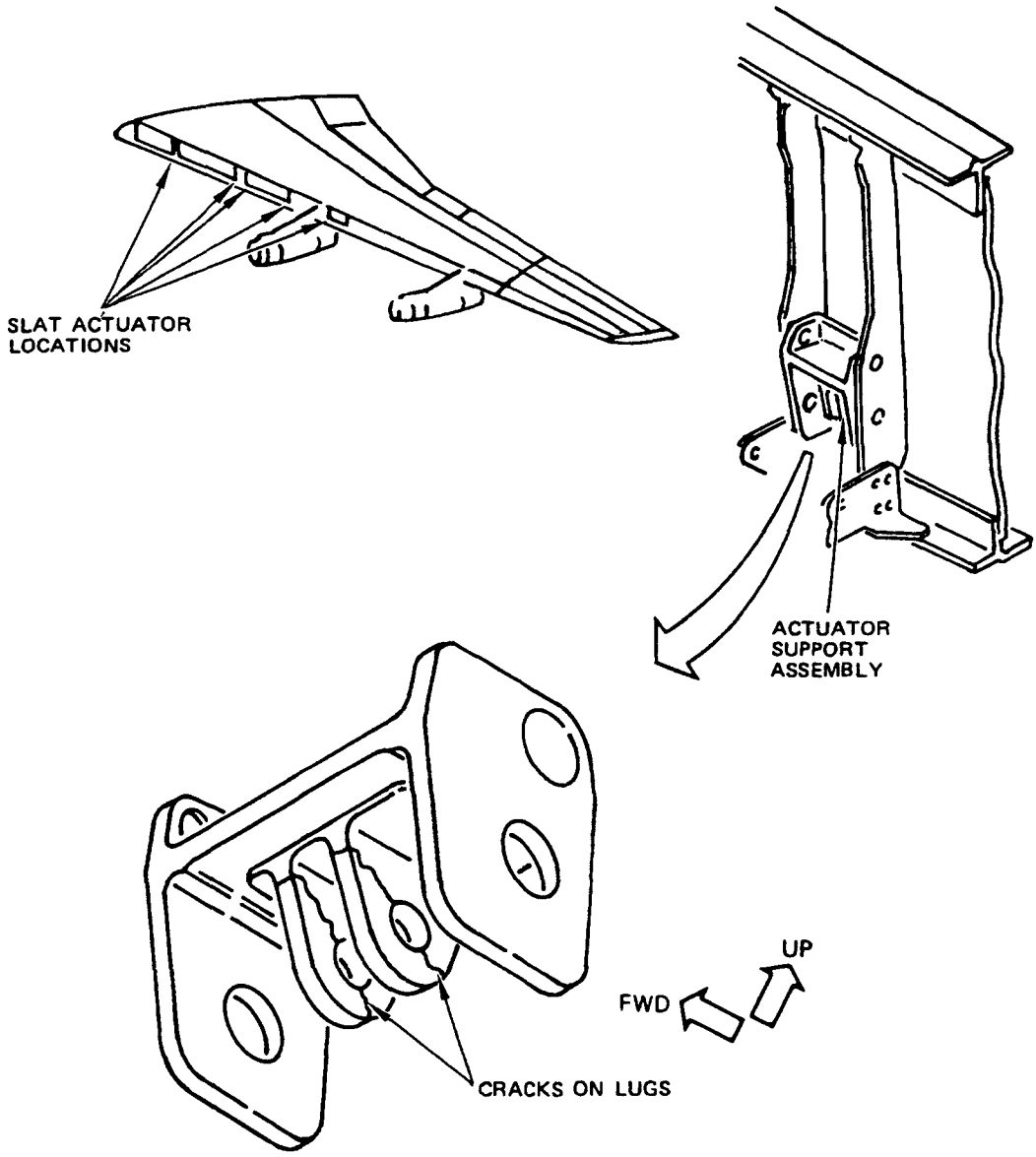
C. For minor corrosion, to minimize the down time of the airplane, the corrosion products should be cleaned off followed by an application of water-displacing corrosion-preventive compound on the affected area. The finish system should be restored at the first opportunity consistent with the maintenance schedule.

D. Refer to SL 57-4 for an inspection procedure for these bolts. The procedures uses an overtorque check to see if the bolts have stress corrosion cracks.



LEADING EDGE SLAT HINGE SUPPORT FITTINGS
DETAIL I

Leading Edge Slat Support Fittings
Figure 1 (Sheet 1)



Leading Edge Slat Support Fittings
Figure 1 (Sheet 2)

1. General

A. Stress corrosion has been reported on the leading edge slat hinge support fittings.

B. Stress corrosion has been reported on the leading edge slat actuator support fitting.

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. Periodically inspect the leading edge slat hinge and actuator support fittings for evidence of corrosion.

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

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

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

DO NOT APPLY WATER DISPLACING CORROSION INHIBITING COMPOUND TO SILICONE RUBBER, RUBBER SEALS OR CUSHIONED CLAMPS BECAUSE IT WILL CAUSE THE SEALS OR CUSHIONS TO SWELL.

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

D. For minor corrosion, the corrosion products should be cleaned off followed by an application of a corrosion inhibiting compound into the affected area to retard the corrosion process. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Volume 1, 20-50-00 and 20-60-00).

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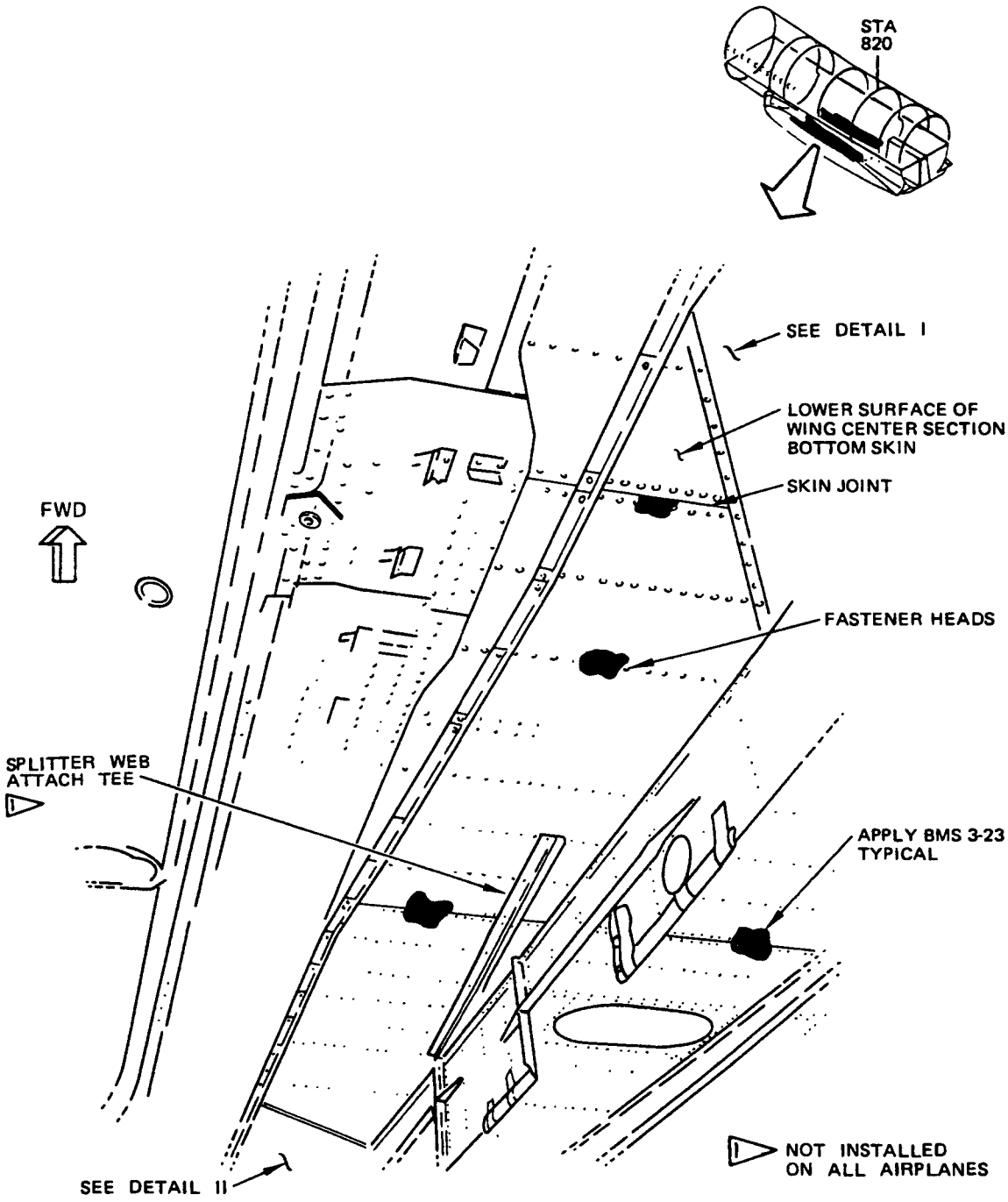
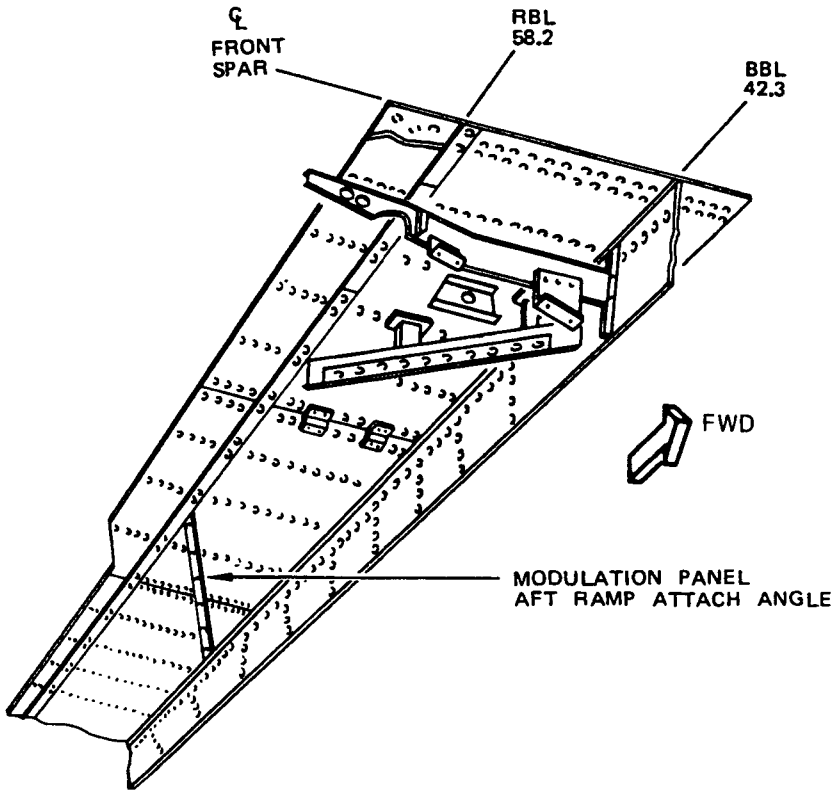
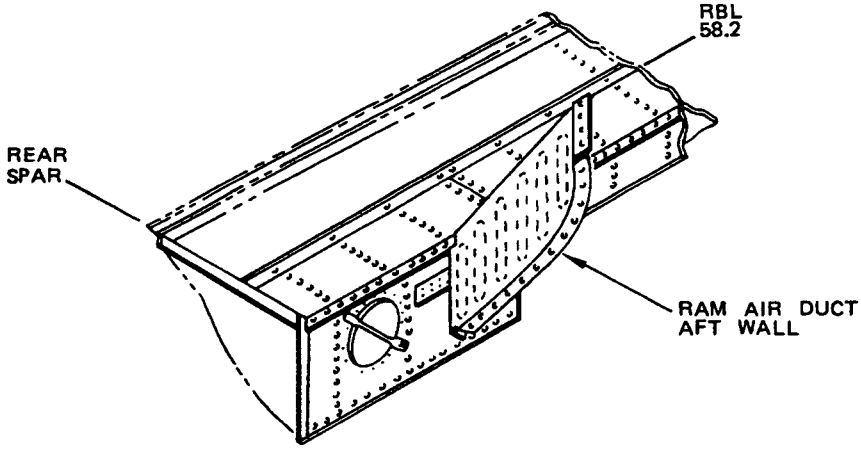


CENTER SECTION LOWER PANEL (TYPICAL)

Air Conditioning Ram Air Duct
Figure 1 (Sheet 1)



DETAIL I



DETAIL II

Air Conditioning Ram Air Duct
Figure 1 (Sheet 2)

1. General

A. The lower surface of the bottom skin of the wing center section forms one wall of the rain air duct and consists of machined aluminum skins.

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

C. Corrosion in this area including the lower skin forward and aft of the ram air duct causes loss of cross-sectional area of the skin which can result in a reduction in the load carrying capability of this primary structure.

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

CAUTION: IF COROGARD IS USED FOR REFINISHING OR TOUCHUP, ALL CORROSION PRODUCTS MUST BE REMOVED, ESPECIALLY AROUND FASTENER HEADS. THE DARK COLOR AND OPAQUENESS OF COROGARD MAKES FUTURE CORROSION DETECTION DIFFICULT.

A. 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 with BMS 10-79 primer ana two coats of Aeroflex coating. Corogard may be used as an optional finish. It is chemically, but not cosmetically, compatible with Aerofiex.

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

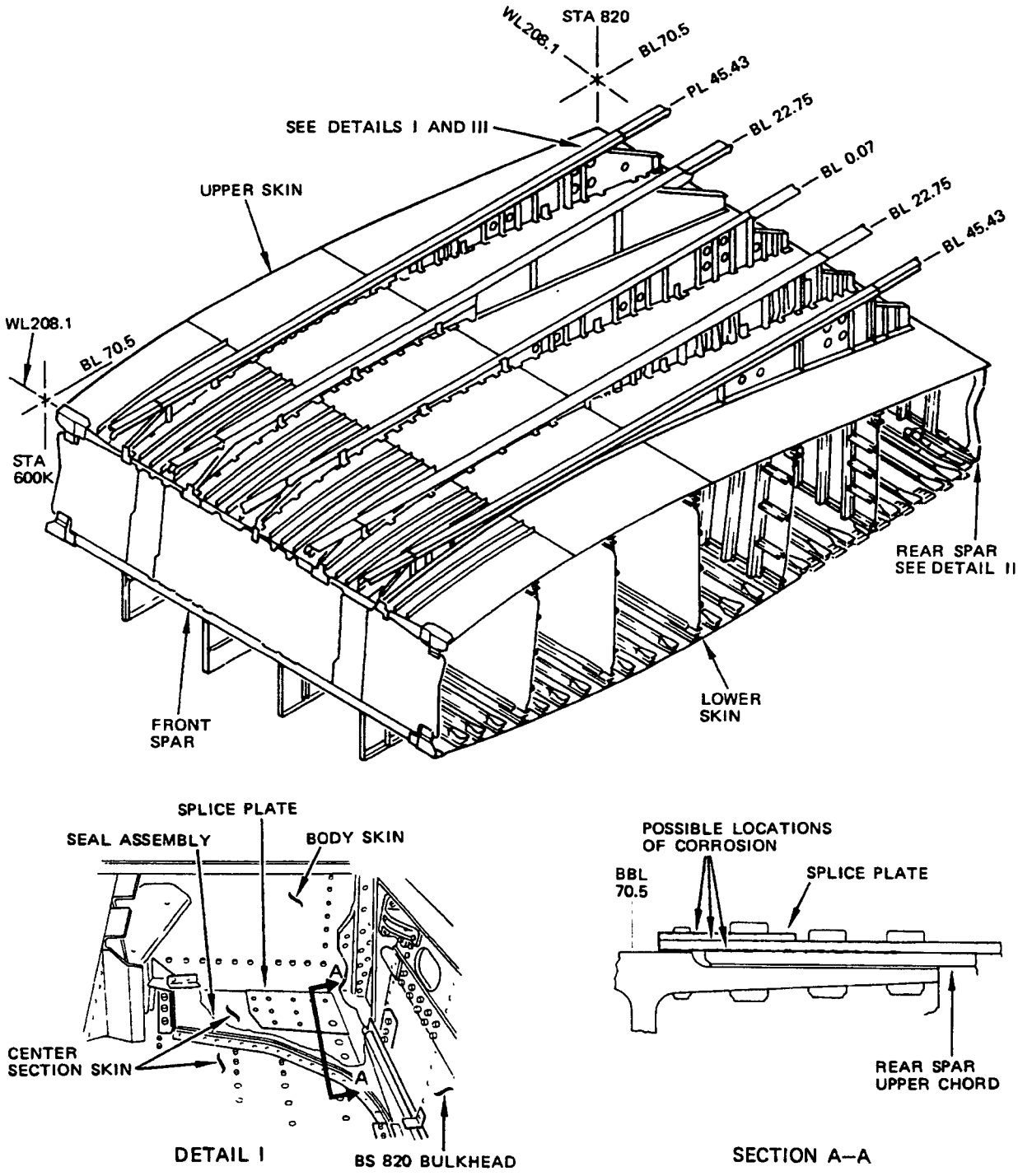
C. Airplanes in service prior to line number 871 do not nave a corrosion resistant paint system such as Corogard or Aeroflex on this skin. Incorporation of SB 3140 is recommended. Since in some cases, it is impractical to do this between overhaul cycles, the following treatment is recommended:

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

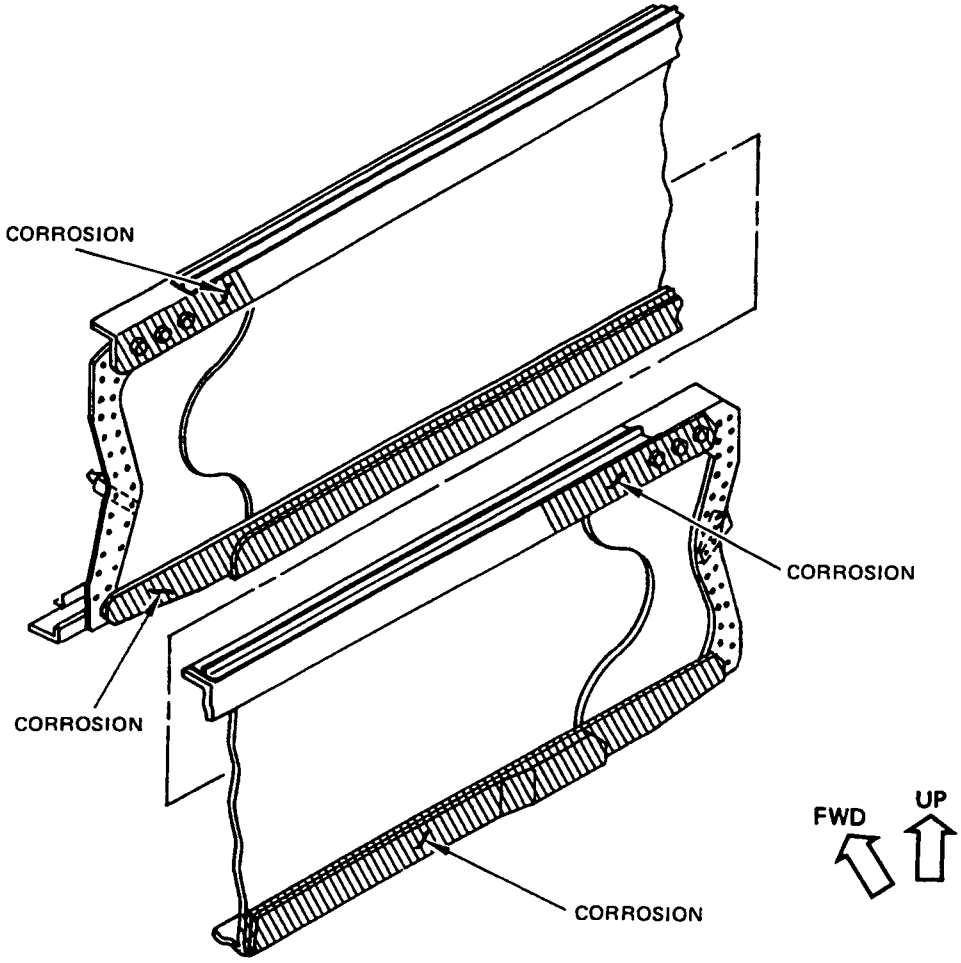
(2) For corrosion prevention, apply BMS 3-23 to fastener heads or edges of skin panels where the paint system has been cracked or flaked. Wipe off excess.

(3) In cases where cleaning has been accomplished with steam and high pressure water and detergent, the BMS 3-23 coating should be reapplied in areas noted in par.(2).

(4) Repeat the application of BMS 3-23 as necessary based on service experience. In the event operator experience precludes the establishment of application intervals, it is suggested that 3 months be established as the initial reinspecting and compound reapplication, if required. The operator may subsequently adjust this interval to reflect his service experience.



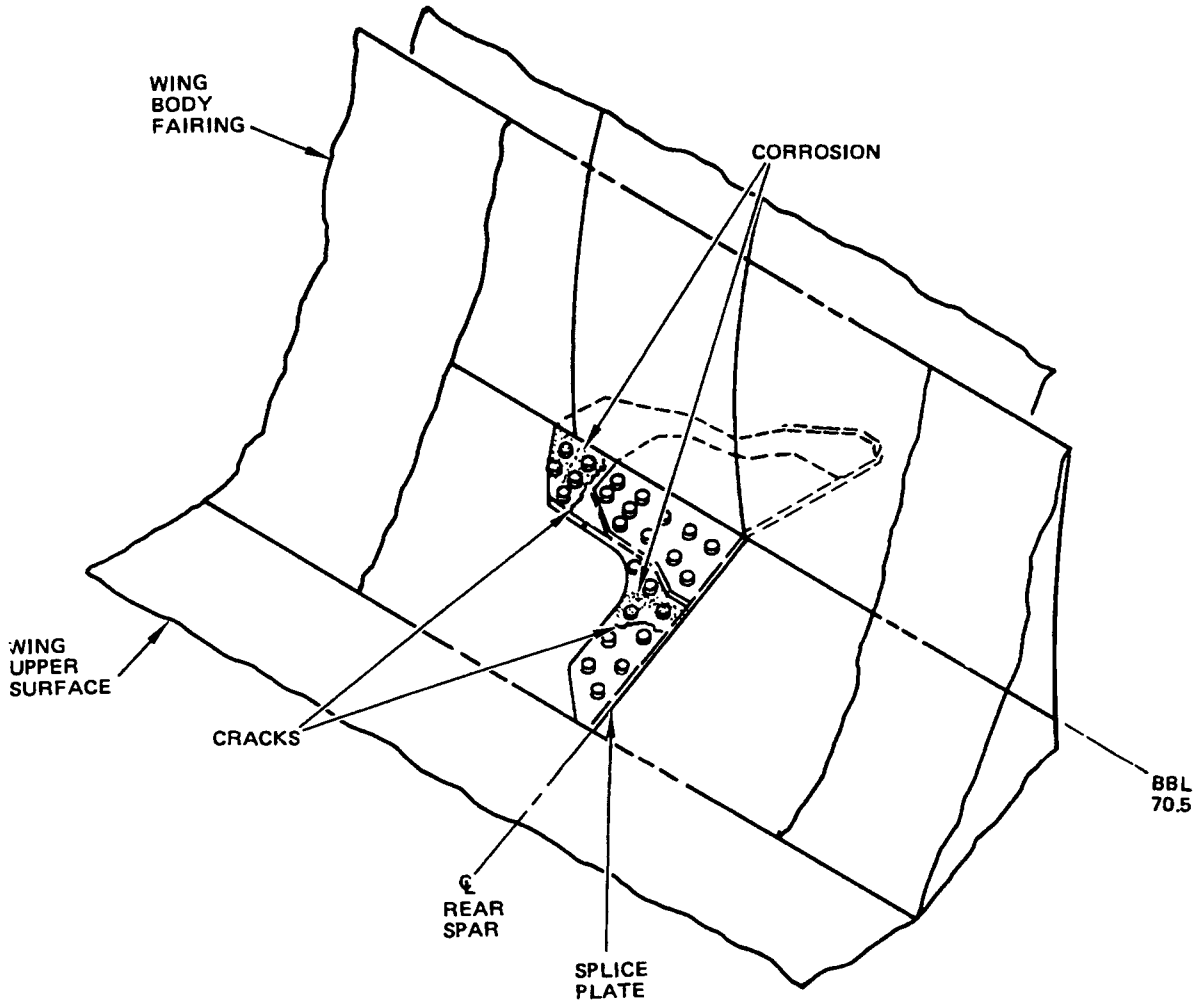
Wing Center Section Skin
Figure 2 (Sheet 1)



WING CENTER SECTION
REAR SPAR

DETAIL II

Wing Center Section Skin
Figure 2 (Sheet 2)



Wing Center Section Skin
Figure 2 (Sheet 3)

1. General

A. Corrosion can occur on the upper and lower external surfaces of the wing center section.

B. Corrosion can occur on the upper surface at the aft outboard corner (Detail I). One sign of corrosion is a bulged seal in the area.

C. Corrosion can occur on the upper and lower chords of the center section rear spar. Corrosion can occur on the forward and aft faces of the lower chord.

D. Corrosion and cracks can occur on the wing splice plate at the rear spar. Usually, the corrosion was only on outer tang of the splice plate (Detail III). The corrosion was caused by moisture that collected under the wing-to-body fairing.

E. Corrosion can occur in the lower surface skin at the air-conditioning support structure at station A left.

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

2. Corrosion Prevention

A. Make the regular inspection of Volume 1, 20-20-00 to stop or find the start of corrosion.

B. When scheduled maintenance work permits access to the wing center section, do corrosion-preventive treatment.

C. Spray water-displacing corrosion-inhibiting compound on the upper and lower external surfaces of the structure. Make sure you include fastener holes, joints and faying surfaces.

D. Inspect every 2 years and reapply as required.

E. When a major overhaul is required, touch up the areas of missing paint on the upper surface. Refinish the lower external surface with -BMS 10-60, Type II except in the area of the ram air duct. Refer to Volume 1, 20-60-00 for paint finishes.

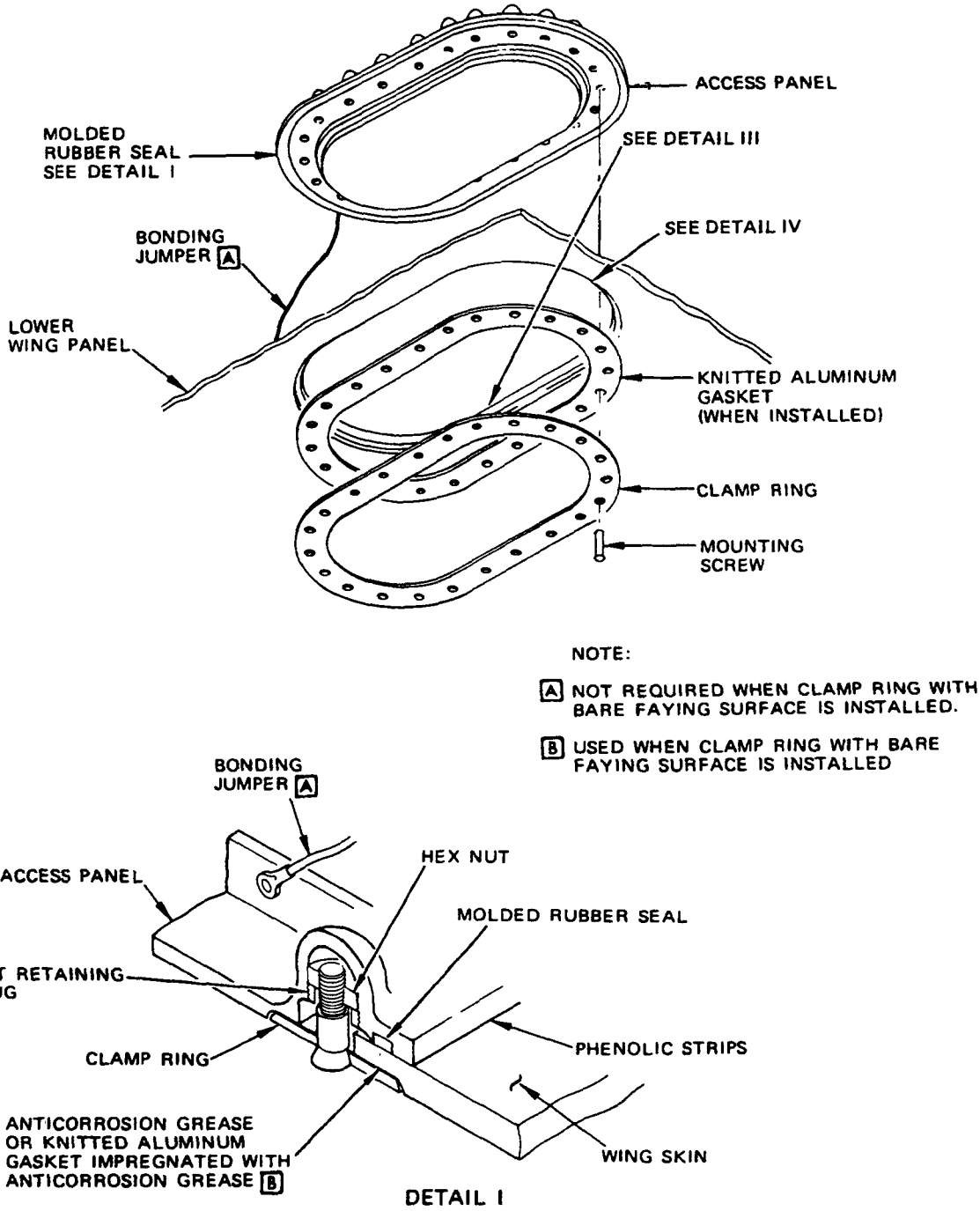
(1) On bare aluminum, clean and apply Alodine or Iridite (Ref Volume 1, 20-50-00).

(2) If an area had BMS 10-11, Type I primer, clean and apply that primer again.

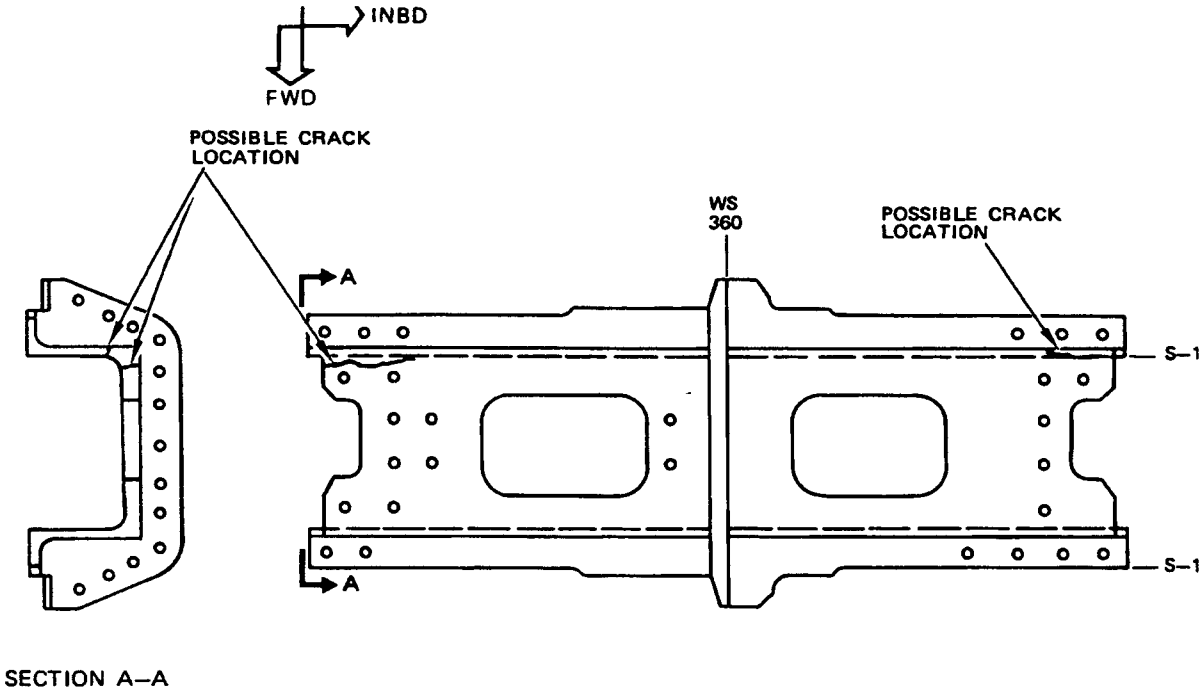
(3) Apply BMS 10-79 primer over BMS 10-11, Type 1 primer.

F. Refer to Volume 11, 57-30-07, Fig. 1 for corrosion prevention for the lower external surface that forms one wall of the ram air duct.

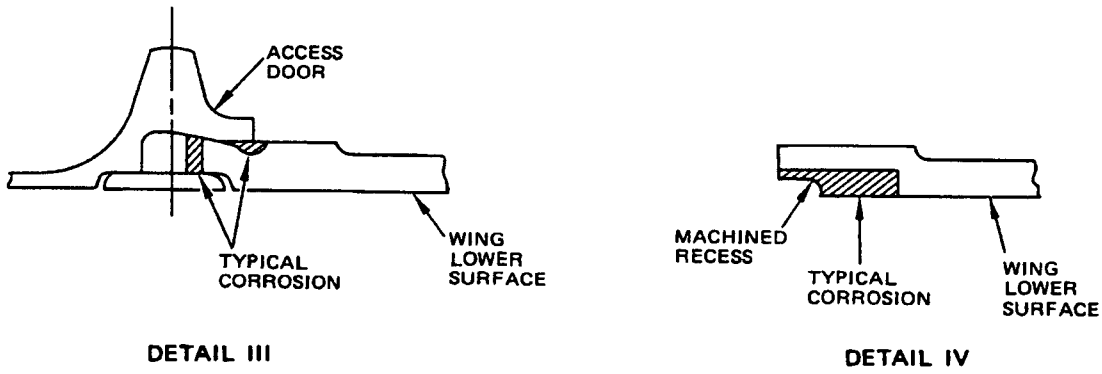
G. Refer to Structural Repair Manual for corrosion removal procedures.



Fuel Tank Access Panels
Figure 3 (Sheet 1)



TYPICAL WING FUEL VENT SPLICE FITTING
DETAIL II



Fuel Tank Access Panels
Figure 3 (Sheet 2)

1. General

A. The wing lower skin in the area of the reserve and main tank access door cutouts is susceptible to intergranular and fretting corrosion. This is attributed to exposed aluminum end grain combined with fretting between the access panel and the wing lower skin. Reports indicate that corrosion occurs in the wing lower skin faying surface adjacent to the access door clamp ring (Detail III). Cracks can start in the wing skin machined radius and go into the skin in a plane parallel to the skin surface.

B. Stress corrosion of the wing fuel vent splice fittings has been discovered (Detail II). The cracked vent splice fittings were located at WS 360 upper skin between Stringers 15 and 16, 13 and 14. The stress corrosion cracks ran inboard and outboard.

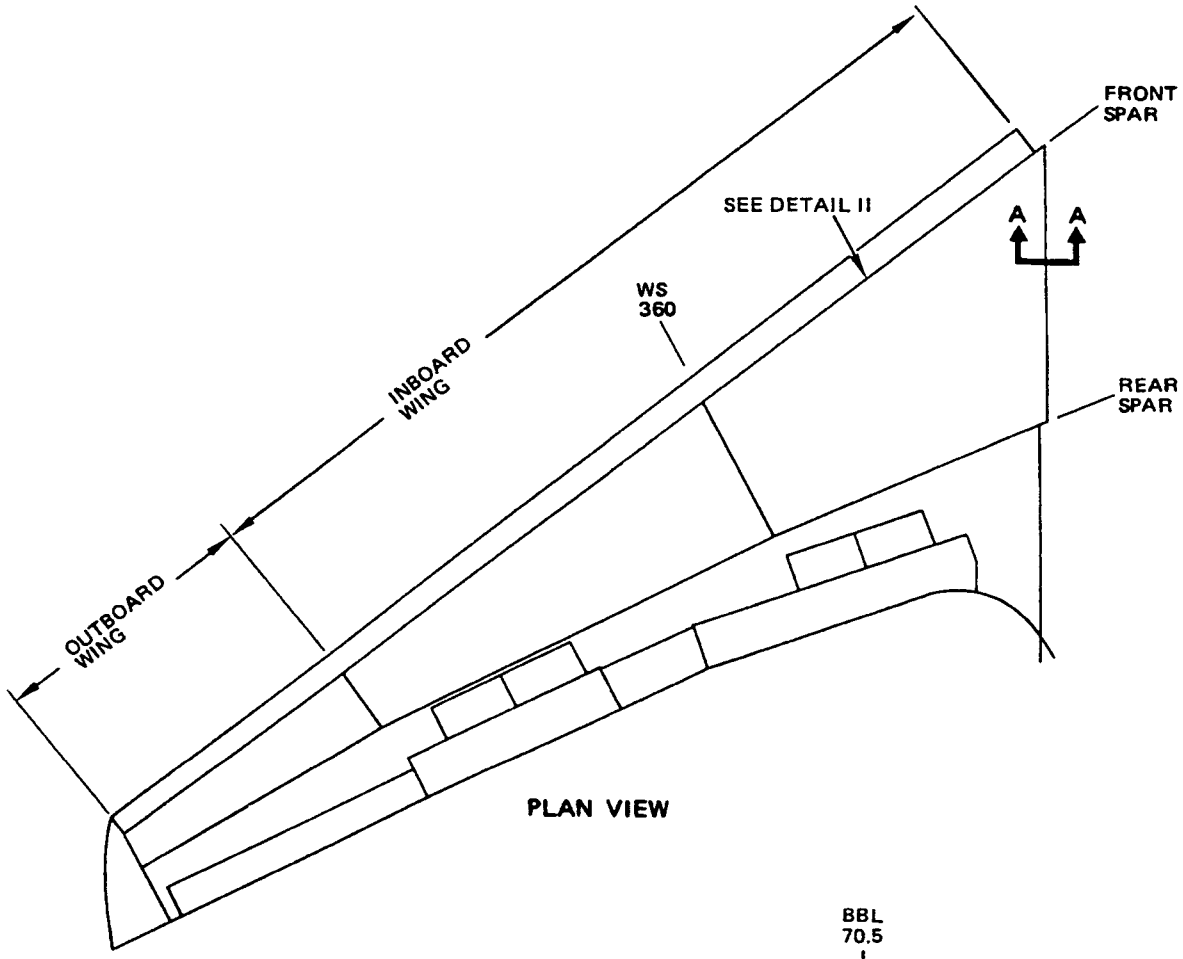
C. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

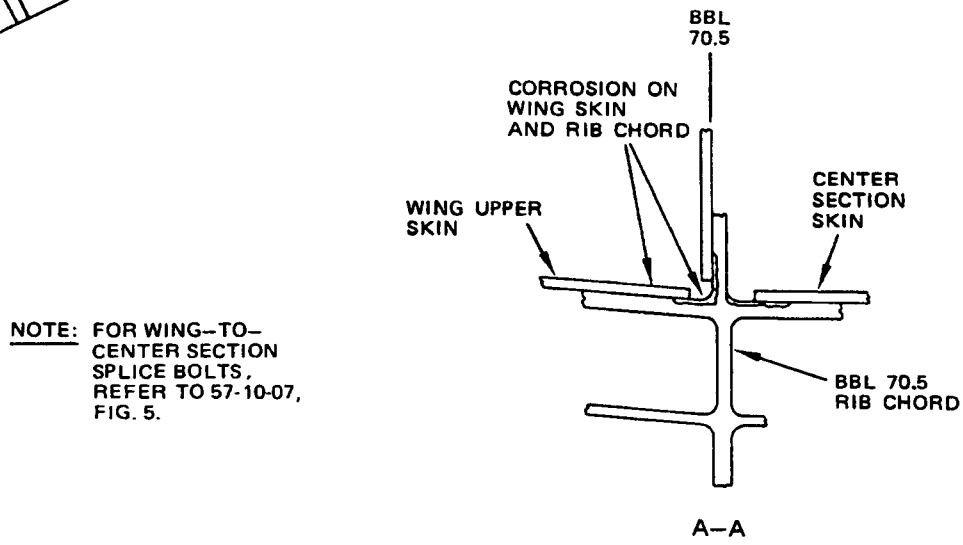
2. Corrosion Prevention

A. Inspection of the mating surfaces of the access door clamp ring and wing skin should be made at regularly scheduled maintenance periods for evidence of corrosion.

B. If there is no corrosion, the access clamp rings should be installed using either anticorrosion grease (Aero Shell No. 14), phenolic rub strips or knitted aluminum gaskets impregnated with anticorrosion grease for corrosion protection.

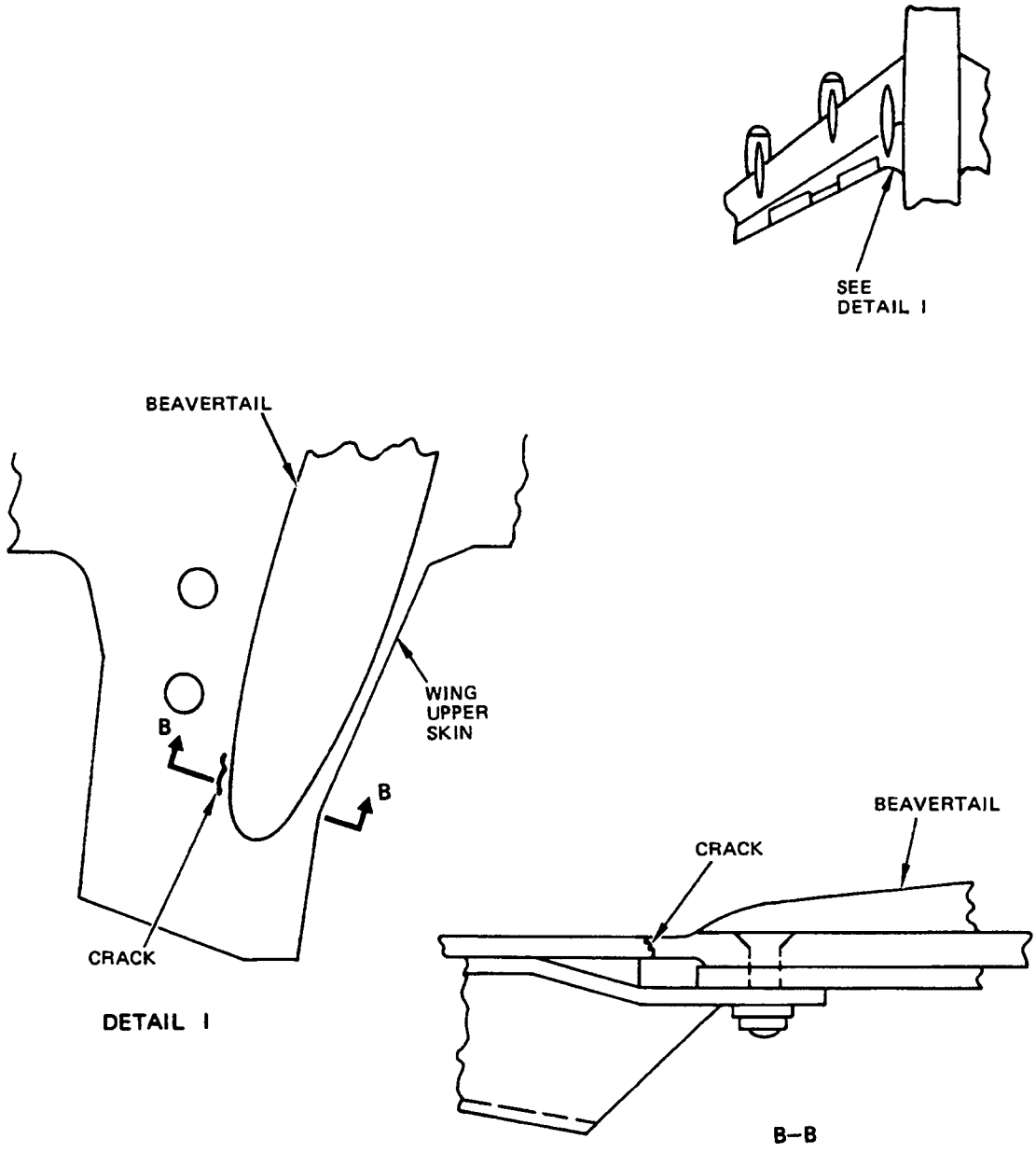
C. If corrosion is evident, refer to Structural Repair Manual for corrosion removal.



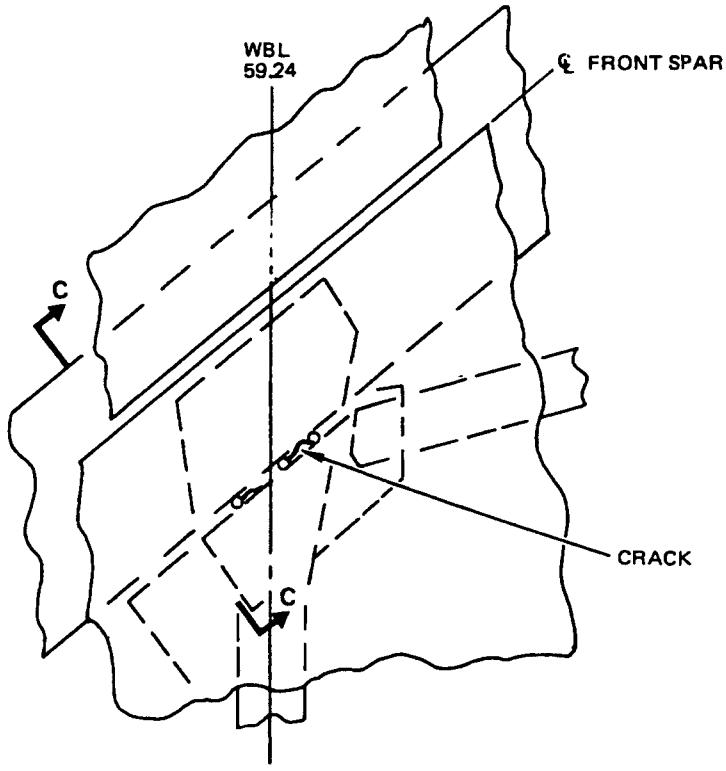


NOTE: FOR WING–TO–CENTER SECTION SPLICE BOLTS, REFER TO 57-10-07, FIG. 5.

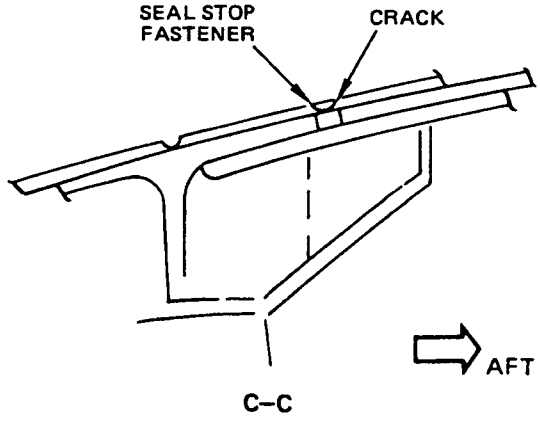
Wing Skins
Figure 4 (Sheet 1)



Wing Skins
Figure 4 (Sheet 2)



DETAIL II



C–C

Wing Skins
Figure 4 (Sheet 2)

1. General

A. The exterior surfaces of the upper and lower inspar skins are susceptible to corrosion. Corrosion may occur as pin-hole size skin pitting or at fastener locations. The small gap between the countersunk skin and the head of the flush fastener leaves an unsupported area for the paint system leading to cracking of the paint system around the fastener head and an opening for moisture and contaminants to enter. From service experience, the greatest occurrence of corrosion seems to be in an area inboard of WS 360.

B. A potential corrosion problem exists if drainage from the overwing glove fairing is obstructed. Drainage is provided by slots in the fairing at the trailing edge and some operators have mistakenly filled these slots with sealant.

C. Corrosion has been found under the wing-to-body fairing. This corrosion has occurred on the skin outboard of the rib at BBL 70.5 and on the rib chord itself (Section A-A).

D. Stress corrosion cracks have been discovered in the wing upper skin panel approximately 20 inches aft of the rear spar at the outboard beaver tail. Crack length varied from 1- to 2-1/2 inches. The cracks started at a step in the skin thickness and ran parallel to WBL 59.24. See Detail 1.

E. Stress corrosion cracks have been reported on the wing upper skin at the front spar and WBL 59. The crack initiated at the seal stop fastener holes. See Detail II.

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

2. Corrosion Prevention

A. Make the periodic Inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for broken finishes is to replace the finish with the same protective system as used originally or a newer upgraded paint system. Refer to SL 20-4 and 51-16 for methods of corrosion protection for unpainted lower wing surfaces.

NOTE: Current production airplanes have a Corogard paint system on the upper wing skin and a polyurethane enamel paint system on the lower surface. The preferred replacement for Corogard is Aeroflex. Both coatings are compatible; however the cosmetic difference may be objectionable if used together on the same airplane.

B. Where extensive corrosion exists, refer to Structural Repair Manual for details of corrosion removal.

C. Where it is impractical to restore the finish, temporary corrosion protection can be provided by an application of water-displacing corrosion-inhibiting compound to fastener heads and skin surfaces where the paint system has cracked or flaked. Allow 30 minutes to permit penetration under fastener heads and for the carrier solvent of the compound to evaporate. Wipe off excess.

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

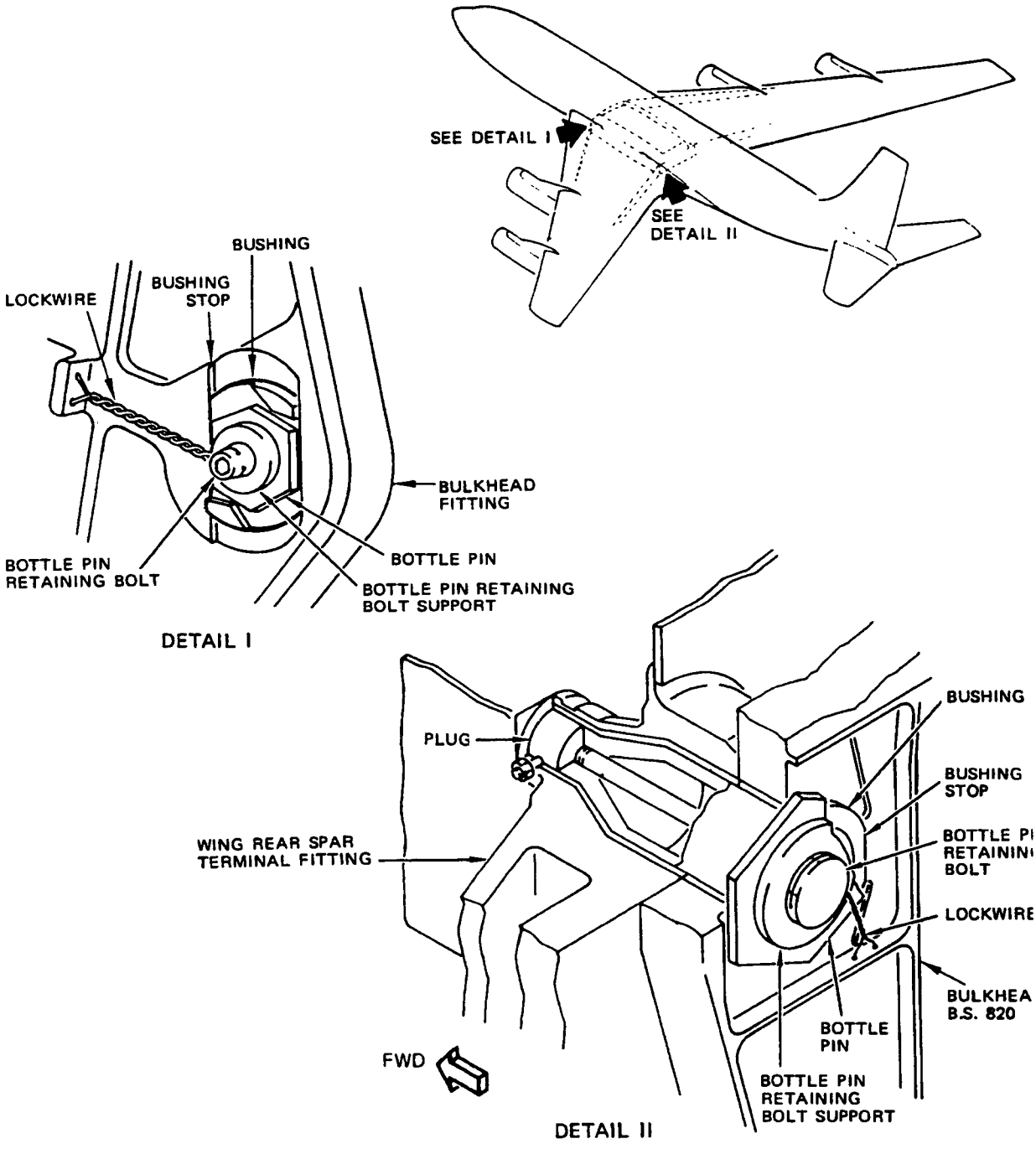
D. For minor corrosion, to minimize the down time of the airplane, the corrosion products should be cleaned off followed by an application of water displacing corrosion inhibiting compound on the affected area. The finish system should be restored at the first opportunity consistent with the maintenance schedule (Ref Structural Repair Manual).

E. Frequency of Application

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

F. Improved Corrosion Protection

(1) At line No. 365, BMS 10-79, Type III primer and BMS 10-100 enamel was applied to the wing inspar upper skin. This change, and also the application of BMS 5-95, Class F sealant and BMS 10-60, Type II enamel on the lower skin, can be incorporated on all airplanes with SL 20-4 and 51-16.



Wing to Body Attachments
Figure 1 (Sheet 1)

1. General

A. Corrosion can occur at the bottle pins that attach the wing to the fuselage.

B. Stress corrosion can occur in fastener holes of the rear spar wing-to-body terminal fitting.

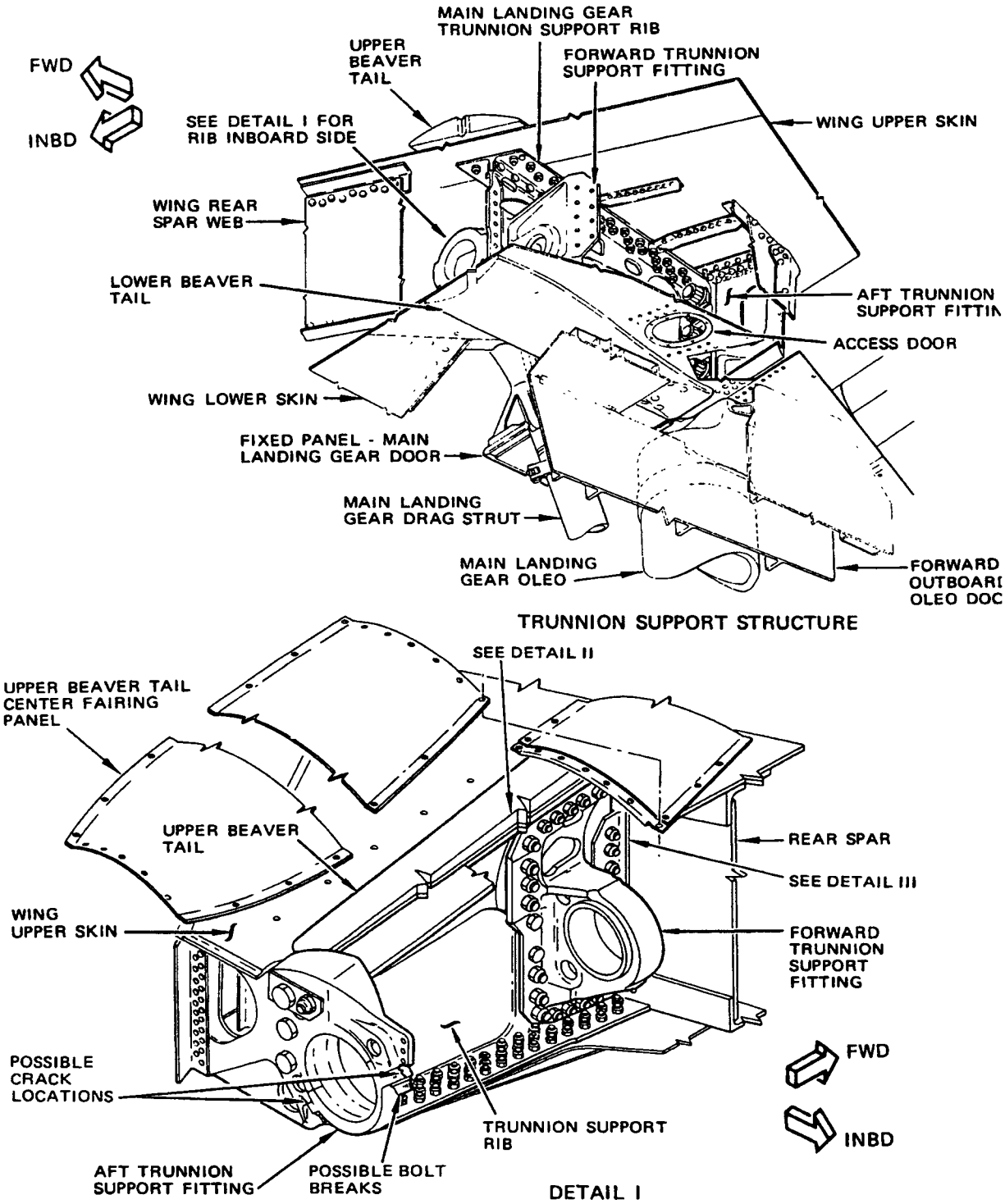
C. Refer to the Introduction of this manual for a discussion of the Aging Airplane Corrosion Prevention and Control Program and related documentation. Structural items within this section are subject to the unique requirements of the mandatory Corrosion Prevention and Control Program.

2. Corrosion Prevention

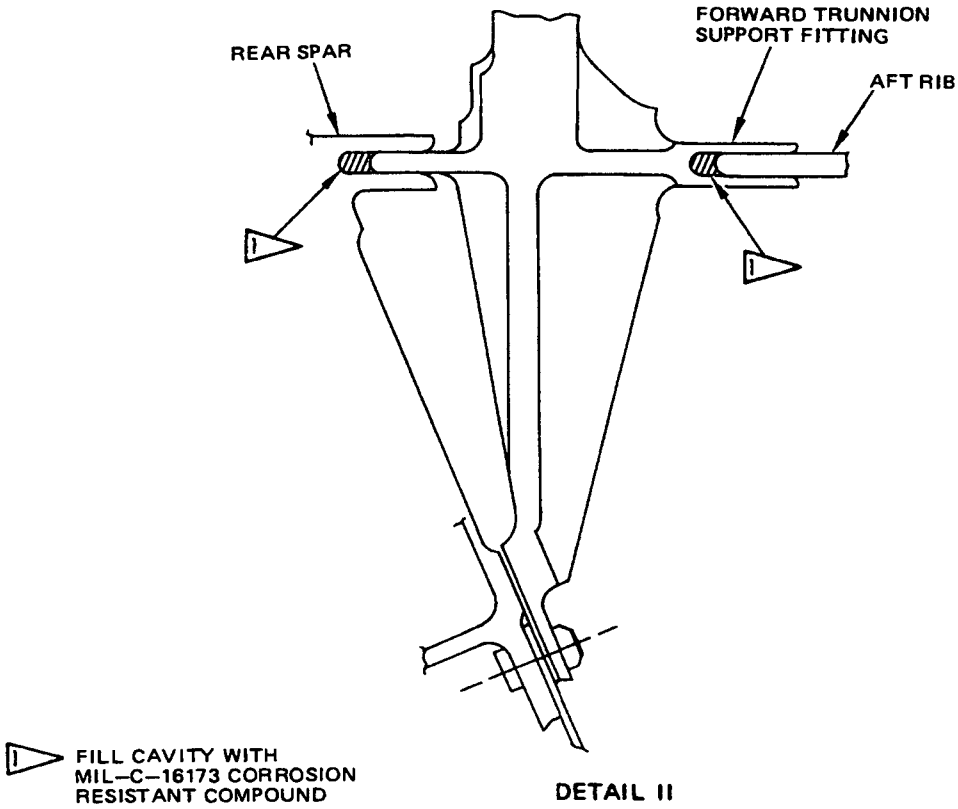
A. Wing bottle pins are installed with MIL-G-23827 grease and periodically lubricated.

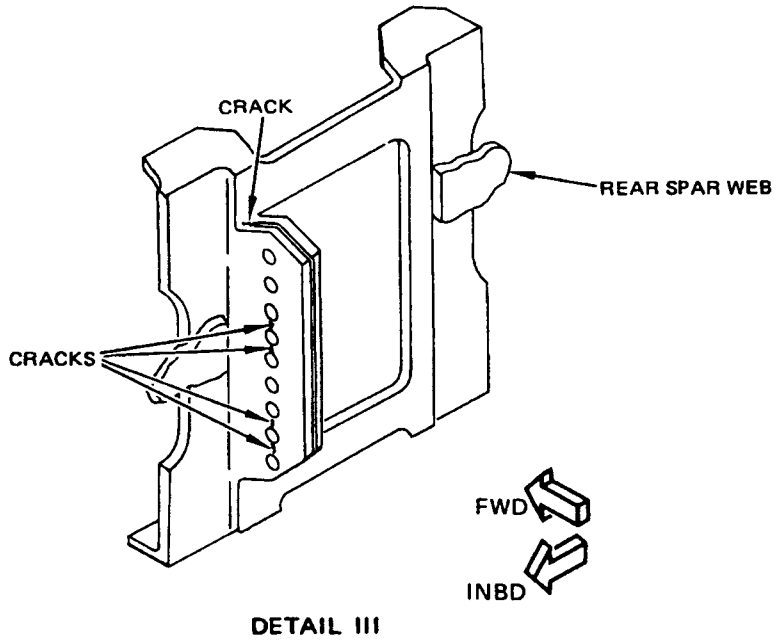
B. Periodic inspections are part of the normal airplane maintenance program. Where evidence of corrosion is present, refer to Structural Repair Manual for rectification procedures.

C. At approximately 1 year intervals, apply BMS 3-23 to the exposed portion of the bottle pin and the adjacent structure, with particular attention to crevices and faying surfaces.



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





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

1. General

A. The main landing gear trunnion attaches to the trunnion support fittings on the inboard side of the trunnion support rib. The support structure outboard of the trunnion support rib is known as the main landing gear torque box. Water collection in the torque box has resulted in corrosion on some airplanes, but this has been minimized by the introduction of drain holes on line number 800 and on, plus airplanes incorporating SB 2425.

B. Stress corrosion cracks can occur in the aft trunnion support fitting.

C. Stress corrosion cracks can occur in the rear spar clevis lugs for the main landing gear trunnion support fitting (Detail III). The stress corrosion came from clamp-up stresses. For line number 1 thru 937, SB 3362 gives inspection and modification procedures.

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. Torque Box

(1) Examine torque box every 2 years and restore any damaged finish as described in Volume 1, 20-60-00. Access is available only through the access door in the lower skin.

(2) Spray the entire inside surface of the torque box with BMS 3-23 corrosion inhibitor, with particular attention to the outboard side of' the trunnion fitting and the lower surface of the torque box. Refer to Volume 1, 20-60-00 for how to apply water-displacing corrosion-inhibiting compound.

(3) If you find corrosion, refer to Structural Repair Manual.

B. Trunnion Support Rib

(1) Examine inboard and outboard side of trunnion support rib every 2 years and restore any damaged finish as described in Volume 1, 20-60-00. Access to the outboard side of the rib is available through the door in the lower skin.

(2) Spray the inboard and outboard side of the rib with BMS 3-23 corrosion inhibitor, with particular attention to the upper and lower chords.

(3) If you find corrosion, refer to Structural Repair Manual.

C. Trunnion Fittings

(1) Examine the trunnion fittings annually and restore any damaged finish as described in Volume 1, 20-60-00 or 32-10-12 of the Overhaul Manual.

(2) Spray all accessible areas of the trunnion fittings with BMS 3-23 corrosion inhibitor paying particular attention to fasteners and faying surfaces. Apply liberally to permit penetration between the aft support fitting and trunnion rib, and between the lower flange of the trunnion rib and the lower wing skin.

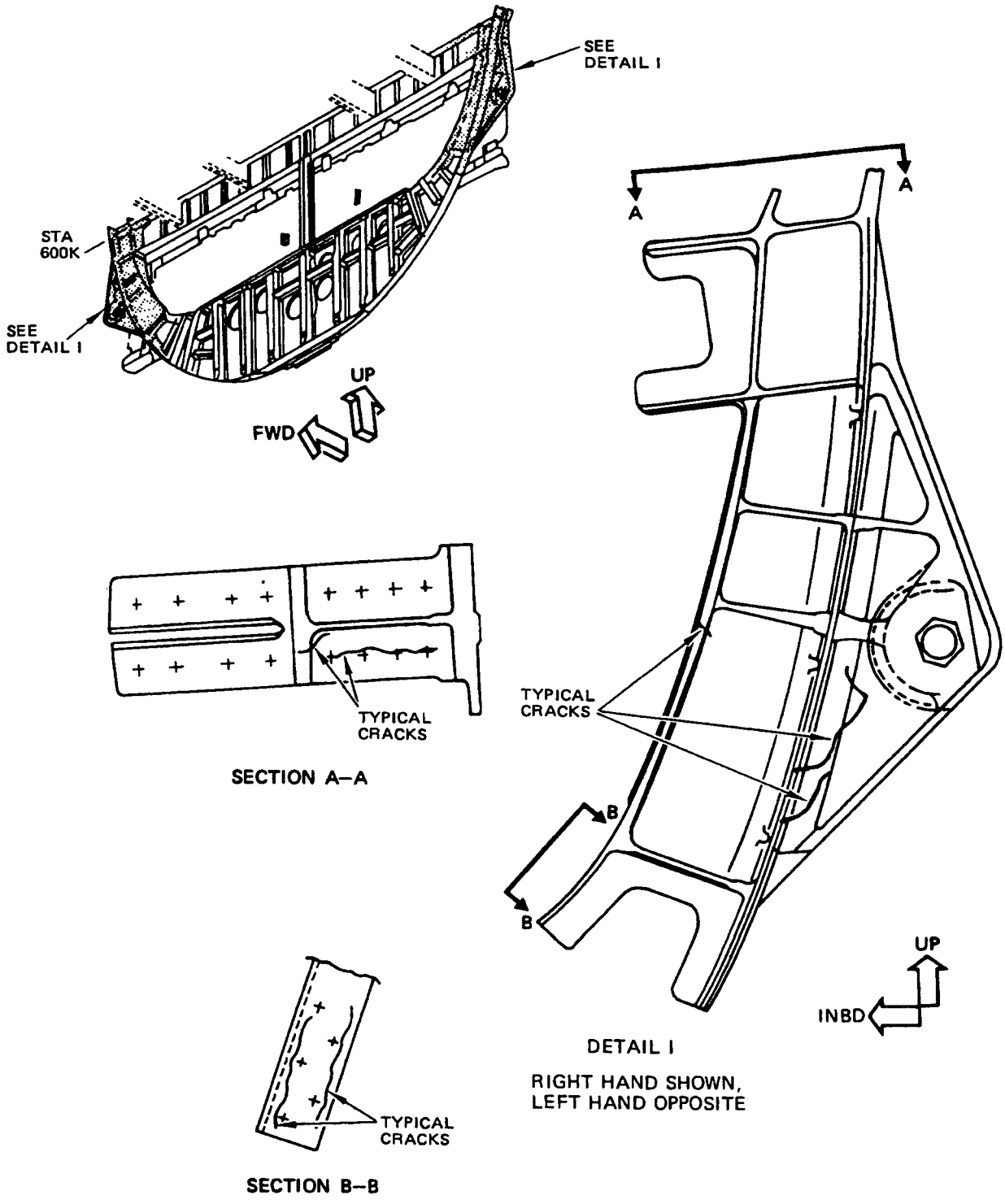
(3) If you find corrosion, refer to Structural Repair Manual.

D. Improved Corrosion Protection

(1) At line number 134, PRR 13843 filled some empty spaces with MIL-C-16173 corrosion preventive compound. The empty spaces are between the trunnion support fitting and the aft rib, and between the trunnion support and the rear spar (Detail II). This change can be incorporated on earlier airplanes with SB 925.

(2) At line number 800, a production change added drain holes in the torque box. This can be incorporated on earlier airplanes with SB 2425.

(3) At line number 820, a production change added bushings to the aft trunnion support fitting and used chrome plated fasteners. These changes can be incorporated on earlier airplanes with SB 2489.



SECTION A–A

DETAIL I

RIGHT HAND SHOWN,
LEFT HAND OPPOSITE

SECTION B–B

Wing Front Spar Terminal Fitting
Figure 3 (Sheet 1)

1. General

A. Cracks have been reported in the BS 600K bulkhead, wing front spar terminal fitting. The material is 7079 and cracking is attributed to stress corrosion.

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

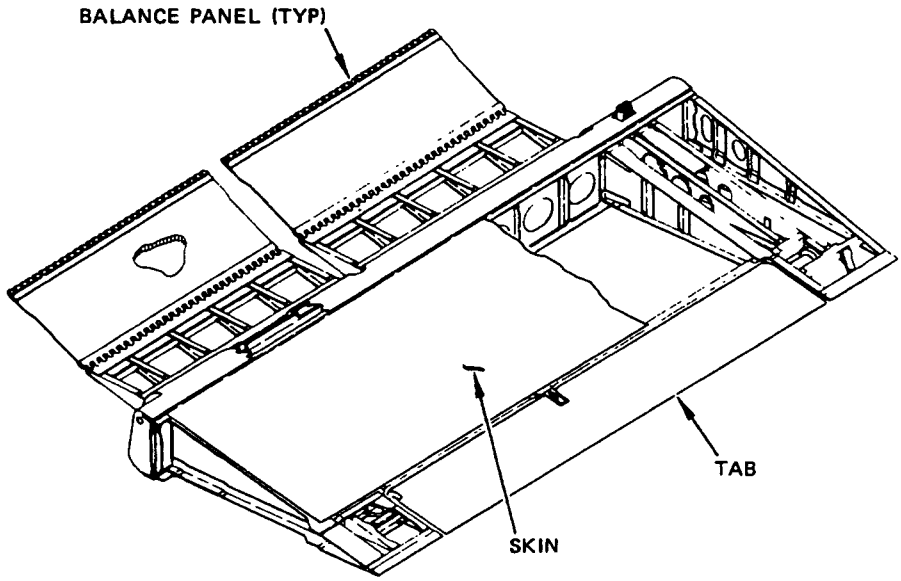
A. Make the periodic inspection described in Volume 1, 20-20-00 to ensure that the protective finishes provided at manufacture remain intact. The preferred treatment for broken finishes is to replace the finish with the same protective system as used originally or a newer upgraded paint system.

B. Where extensive corrosion exists, refer to Structural Repair Manual for details of corrosion removal.

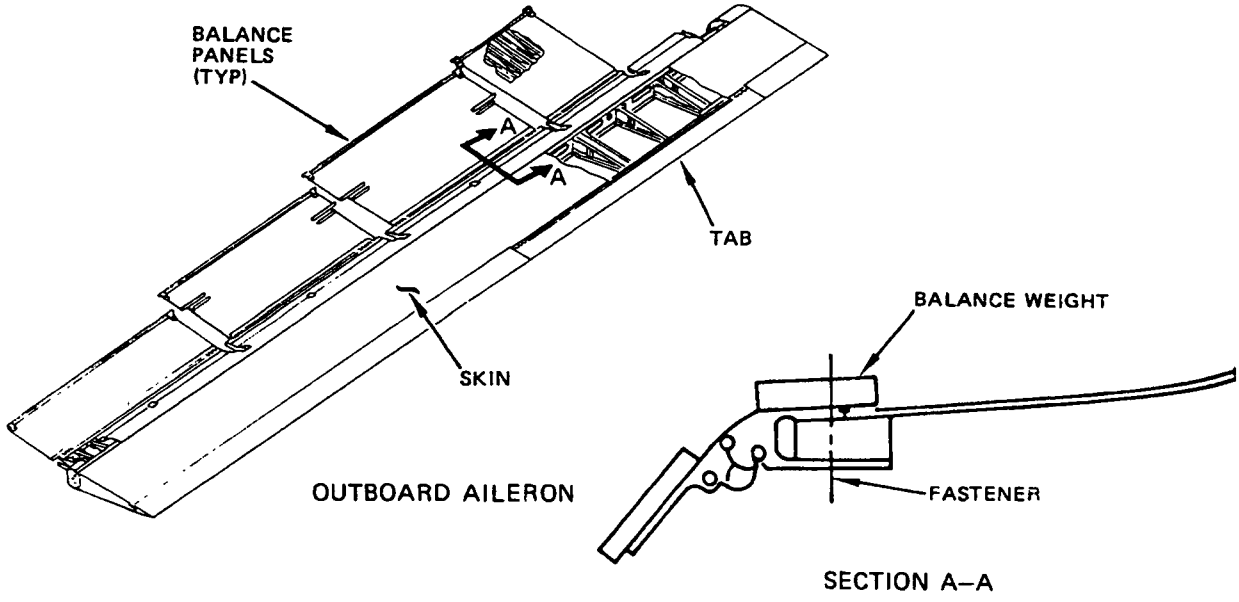
C. Where it is impractical to restore the finish, temporary corrosion protection can be provided by an application of water-displacing corrosion-inhibiting compound to fastener heads where the paint system has cracked or flaked. Allow 30 minutes to permit penetration under fastener heads and for the carrier solvent of the compound to evaporate. Wipe off excess.

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

D. For minor corrosion, to minimize the down time of the airplane, the corrosion products should be cleaned off followed by an application of water-displacing corrosion-inhibiting compound on the affected area. The finish system should be restored at the first opportunity consistent with the maintenance schedule.



INBOARD AILERON



OUTBOARD AILERON

SECTION A–A

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 are not washed on a regular basis.

B. Corrosion has been reported on the balance weight fasteners. Some fasteners were missing.

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 ailerons to ensure that the protective finishes provided at manufacture remain intact.

B. Restore damaged finish at the first available opportunity as described in Volume 1, 20-50-00 and 20-60-00. Meanwhile temporary corrosion protection may be obtained by the use of water, displacing corrosion inhibiting compound.

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

C. For airplanes with low utilization and airplanes operating in corrosive ground/air environments, external skin corrosion can be reduced by maintaining a regular washing schedule (Ref Volume 1, 20-60-00). Ailerons may be painted as follows to provide additional corrosion prevention:

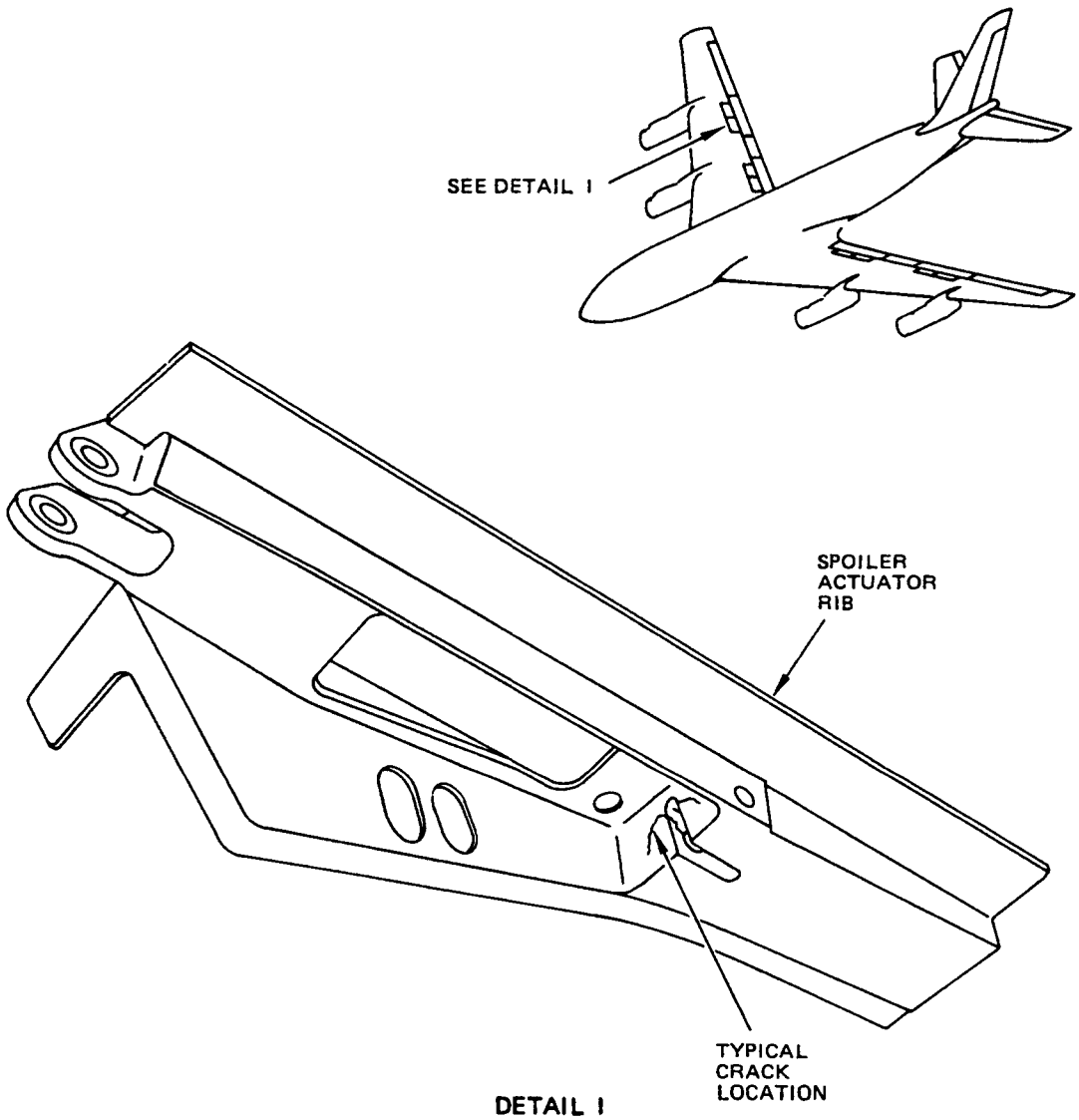
NOTE: Painting the inboard and outboard aileron Labs is not recommended.

(1) Apply 10-79 Type II primer (Ref Maintenance Manual, 51-2-0).

(2) Apply BMS 10-60, Type 11 enamel (Ref Maintenance Manual, 51-2-0).

(3) Rebalance aileron (Ref Structural Repair Manual, 51-50-0).

D. Where extensive corrosion exists, refer to Structural Repair Manual for corrosion removal procedures.



Spoilers
Figure 2

1. General

A. Cracks have been reported in the actuator attach hole on the spoiler actuator rib. Cracking is attributed to stress corrosion. Inspections and rework instructions are provided in SB 3410.

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 20-20-00 to ensure that the protective finishes provided at manufacture remain intact.

B. Apply BMS 3-23 corrosion inhibiting compound to all accessible areas of actuator rib.

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