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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D. C.

SERVICE BULLETIN 747-57-2253

(PAGES S-1 THRU S-41)

BOEING COMMERCIAL AIRPLANES POST OFFICE BOX 3707 SEATTLE, WASHINGTON 98124-2207

SERVICE BULLETIN

747

ATA SYSTEM: 5714
2811

NUMBER: 747-57-2253

DATE: September 21, 1989
REVISION 1: July 5, 1990

SUBJECT: WINGS - CENTER SECTION - SECONDARY FUEL BARRIER INSPECTION AND REPAIR

I. PLANNING INFORMATION

A. Effectivity

1. Airplanes Affected

See Service Bulletin Index Part 3 for cross reference of Variable Number to Airplane Serial Number.

An equivalent change will be incorporated in production on applicable airplanes other than those listed below.

LISTING BY CUSTOMER, CUSTOMER CODE, GROUP AND VARIABLE NUMBER

CUSTOMER
GROUP VARIABLE NUMBER

AER LINGUS (ARL)

2 RA203 RA501-RA502

AEROLINEAS ARGENTINAS (ARG)

2 RG162

AIR CANADA (ACN)

2 RA743-RA745

AIR CHINA (BEJ)

2 RG164 RG211-RG213
3 RT031-RT032

S-1

CUSTOMER
GROUP VARIABLE NUMBER (CONTINUED)

AIR FRANCE (AFA)

2 RA251-RA259 RA261-RA266
3 RR307-RR308

AIR INDIA (AIN)

1 RA722-RA724
3 RS781-RS782

AIR NEW ZEALAND, LTD. (ANZ)

3 RT671

ALL NIPPON AIRWAYS CO. LTD. (ANA)

2 RB681-RB697
3 RD235

AMERICA WEST AIRLINES, INC. (AMW)

1 RA671 RA673

AMERICAN AIRLINES, INC. (AAL)

2 RG192-RG193

BRITISH AIRWAYS (BAB)

1 RA217
2 RA301-RA308 RA310 RA312-RA318
3 RT471-RT477

CARGOLUX AIRLINES INTERNATIONAL S.A. (CLX)

2 RA023 RA025

CATHAY PACIFIC AIRWAYS, LTD. (CAT)

3 RR442 RS306 RT451-RT453

CHINA AIR LINES, INC. (CHI)

2 RG171-RG174
3 RR522 RT631

S-2

CUSTOMER
GROUP VARIABLE NUMBER (CONTINUED)

CONTINENTAL AIRLINES, INC. (CAL)

1	RA559	RA561	RB003-RB005
2	RA551-RA552		

DUBAI AIR WING (DAW)

2	RG191

EGYPTAIR (EGP)

3	RS731-RS732

EL AL ISRAEL AIRLINES, LTD. (ELA)

1	RA781-RA782
2	RB043

EVERGREEN INTERNATIONAL AIRLINES (EVR)

2	RA003-RA004	RA020	RA022	RA113

FLYING TIGER LINES INC (FTL)

2	RA026	RA029	RA033	RA632	RA634-RA635	RA741
	RA916	RB041				

IBERIA (LINEAS AEREAS DE ESPANA S.A.) (IBE)

1	RA585

IRAN ISLAMIC REPUBLIC AIRLINE (IRN)

2	RA101-RA103	RA112	RA161-RA163	RB711	RG101-RG104

IRAQI AIRWAYS (IRQ)

2	RG095

JAPAN AIR LINES (JAL)

1	RA532-RA535	RA537-RA540		
2	RA521-RA528	RB604-RB607	RB721-RB723	RS001-RS002
3	RS263	RT641-RT644		

CUSTOMER
GROUP VARIABLE NUMBER (CONTINUED)

KLM ROYAL DUTCH AIRLINES (KLM)

1	RA672	RA674-RA675	RA677
3	RT001-RT004	RT531-RT532	

KOREAN AIR LINES, INC. (KAL)

1	RA216	RA245	RR201
2	RG221-RG222		
3	RR024-RR025	RS786	RT571-RT573

LUFTHANSA GERMAN AIRLINES (DLH)

3	RR206	RT041-RT043	RT431-RT433

MALAYSIAN AIRLINES SYSTEM BERHAD (MAS)

3	RT021-RT022

MARTINAIR HOLLAND N.V. (MTH)

3	RJ322

MINERVE S.A. (MNR)

1	RA701

NASA (NAS)

2	RA908	RB601

NATIONAIR (NTN)

2	RA762

NORTHWEST AIRLINES, INC. (NWA)

1	RA369-RA373	
2	RA351-RA360	RA601-RA602
3	RT401-RT406	

S-4

CUSTOMER
GROUP VARIABLE NUMBER (CONTINUED)

PAN AMERICAN WORLD AIRWAYS, INC. (PAA)

2	RA002	RA005-RA007	RA009	RA012-RA019	RA027-RA028	RA030-RA032
	RA034	RA401-RA405	RA631	RA633	RA910	RA914

PRIVATE FLIGHT DIRECTORATE (ABU DHABI) (ABD)

2 RH102

QANTAS AIRWAYS, LTD. (QAN)

1 RB001-RB002
2 RH111-RH112
3 RT551-RT555

ROYAL AIR MAROC (RAM)

2 RG124

ROYAL FLIGHT OMAN (GOVT. OF OMAN) (RFO)

2 RG161

SABENA BELGIAN WORLD AIRLINES (SAB)

2 RB101-RB102

SAUDI ARABIAN AIRLINES CORP. (SVA)

2 RB741-RB748 RH121-RH122
3 RR526

SAUDI ROYAL FLEET (SRF)

2 RH101

SINGAPORE AIRLINES, LTD (SIA)

3 RR566 RT501-RT505

SOUTH AFRICAN AIRWAYS (SAA)

1 RB071-RB075
2 RG121-RG123 RG125-RG126

CUSTOMER
GROUP VARIABLE NUMBER (CONTINUED)

SYRIAN ARAB AIRLINES (SYR)

2 RG141-RG142

THAI AIRWAYS INTERNATIONAL, INC. (TII)

3 RT691

TOWER AIR, INC. (TOW)

2 RA024 RA201 RA761 RB042

TRANS WORLD AIRLINES, INC. (TWA)

1 RA651-RA652 RD001-RD002
2 RA104-RA110 RA114-RA115 RA164 RA309 RA311 RA581-RA582

UNION DE TRANSPORTS AERIENS - UTA (UTA)

3 RT591

UNITED AIR LINES, INC. (UAL)

2 RA406-RA418 RA903-RA907 RG001-RG009 RG091 RG163
3 RT601-RT604

UNITED PARCEL SERVICE (UPS)

2 RA901-RA902 RA911-RA913 RA915

VARIG AIRLINES (VAR)

3 RS331-RS333

VIRGIN ATLANTIC AIRLINES (VAA)

1 RA560 RA702
2 RA909

WARDAIR CANADA, LTD. (WDA)

2 RA742 RB044

S-6

LISTING BY VARIABLE NUMBER

GROUP 1

RA216-RA217 RA245-RA246 RA369-RA373 RA532-RA540 RA559-RA561 RA585
RA651-RA652 RA671-RA677 RA701-RA702 RA721-RA724 RA781-RA782 RB001-RB005
RB071-RB075 RD001-RD002 RR201

GROUP 2

RA001-RA034 RA101-RA115 RA161-RA164 RA201-RA203 RA251-RA266 RA301-RA318
RA351-RA360 RA401-RA418 RA501-RA502 RA521-RA528 RA551-RA552 RA581-RA582
RA601-RA602 RA631-RA635 RA741-RA745 RA761-RA762 RA901-RA916 RB041-RB044
RB101-RB102 RB601-RB607 RB681-RB697 RB711 RB721-RB723 RB741-RB748
RG001-RG009 RG091 RG095 RG101-RG104 RG121-RG126 RG141-RG142
RG161-RG164 RG171-RG174 RG191-RG193 RG211-RG213 RG221-RG222 RH101-RH102
RH111-RH112 RH121-RH122 RS001-RS002

GROUP 3

RD235 RJ322 RR024-RR025 RR206 RR307-RR308 RR442
RR522 RR526 RR566 RS263 RS306 RS331-RS333
RS731-RS732 RS781-RS782 RS786 RT001-RT004 RT021-RT022 RT031-RT032
RT041-RT043 RT401-RT406 RT431-RT433 RT451-RT453 RT471-RT477 RT501-RT505
RT531-RT532 RT551-RT555 RT571-RT573 RT591 RT601-RT604 RT631
RT641-RT644 RT671 RT691

2. Spares Affected

None

S-7

B. Reason

Accomplishment of this service bulletin will ensure the integrity of the wing center section secondary fuel barrier.

Boeing has determined that the secondary fuel barrier may not have been properly applied to some areas of the wing center section upper surface and front spar during production. The secondary fuel barrier is applied by spraying the sealant on the wing center section upper surface and front spar. An inspection of an airplane in production revealed that the back side of fasteners and brackets may not have been coated as these areas were shielded from the spray. This coating is required to prevent fuel or fuel vapors from entering the cargo and passenger compartments in the event of a failure of a primary fuel seal or a crack in the center section structure.

Revision 1 is issued to add 747 airplanes line position 696 and 700 through 776 to the effectivity. Subsequent to the original release of this service bulletin, it was discovered that the secondary fuel barrier may not have been properly applied on these airplanes.

C. Description

On Groups 1 and 3 airplanes, the wing center section front spar and upper surface should be inspected for continuity of the secondary fuel barrier and repaired as necessary.

On Group 2 airplanes, the wing center section upper surface aft of spanwise beam number 3, should be inspected for continuity of the secondary fuel barrier and repaired as necessary.

Airplane effectivity is divided into two groups to reflect the following differences:

Group 1 airplanes have a fuel tank adjacent to the wing center section front spar.

Group 2 airplanes do not have a fuel tank adjacent to the wing center section front spar.

S-8

C. (Continued)

Group 3 airplanes have a fuel tank adjacent to the wing center section front spar. Group 3 airplanes also have a bathtub fitting forward of the front spar at Stringer S-38.

NOTES: 1. This service bulletin is applicable to Group 1 airplanes only if Service Bulletin 747-53-2064 has not been incorporated.

2. On Group 1 airplanes, if service bulletin 747-53-2064 has been incorporated, the intent of this service bulletin is covered by Service Bulletin 747-57A2247.

3. On Group 3 airplanes line position 696 and 700 thru 720, Service Bulletin 747-57A2247 installs a seal cap over a bolt head in the wing center fuel tank at the bathtub fitting located on the front spar lower chord at Stringer S-38. Service Bulletin 747-57A2247 is a subject of FAA AD 88-11-11.

Revision 1 - Airplanes modified per the previous release of this service bulletin do not require additional work.

D. Approval

This service bulletin has been reviewed by the Federal Aviation Administration (FAA) and the repairs and modifications herein comply with the applicable Federal Aviation Regulations (FAR's) and are FAA approved.

S-9

E. Manpower

The following breakdown of manpower requirements is suggested as a guide to assist operators in planning and accomplishing this modification. This estimate is for direct labor performed by an experienced crew. It does not include setup, planning, familiarization, cure time, part fabrication, tool acquisition, or lost time. Factor this estimate as necessary based on your own experience.

Operation	Crew size	Man-Hours	Elapsed Time (Hours)
Access			
Group 1 and 3 airplanes with lower lobe galley	6	78	13
Group 1 and 3 airplanes without lower lobe galley	6	72	12
Group 2 airplanes	6	54	9
Inspection			
Group 1 and 3 airplanes	4	20	5
Group 2 airplanes	4	16	4
Restoration			
Group 1 and 3 airplanes with lower lobe galley	6	90	15
Group 1 and 3 airplanes without lower lobe galley	6	84	14
Group 2 airplanes	6	66	11
TOTAL PER AIRPLANE			
Group 1 and 3 airplanes with lower lobe galley		188	33
Group 1 and 3 airplanes without lower lobe galley		176	31
Group 2 airplanes		136	24

F. Material - Price and Availability

The materials identified in Paragraph II.A may be furnished from operator's existing stock or purchased directly from industry sources. Accordingly, price and delivery data are not included in support of this bulletin.

G. Tooling - Price and Availability

None

H. Weight and Balance

None

S-10

I. References:

1. Existing Data:

a. 747 Maintenance Manual Subjects 21-13-02, 21-25-07, 25-25-01, 25-27-01, 25-52-04, 26-23-01, 38-11-04, 51-24-11, 53-21-02

b. Boeing Service Bulletin 747-57A2247, "Wings - Center Section - Drag Splice Plate Fitting Bolt Inspection and Replacement, and Secondary Fuel Barrier Inspection and Repair"

c. Boeing Service Bulletin 747-53-2064 "Front Spar Pressure Bulkhead Chord Reinforcement and Drag Splice Fitting Rework"

2. Data supplied in support of this service bulletin:

None

J. Publications Affected

None

S-11

II. MATERIAL INFORMATION

A. Parts Required Per Airplane

The following materials are to be furnished by the operator.

Quantity	Part Number or Specification	Nomenclature
16 ounces	BMS 5-26 Type II (a)(b)(c)	Sealant
12 ounces	BMS 5-26 Type II (a)(b)(d)	Sealant
1 gallon	BMS 5-81 Type II (a)(b)(c)	Sealant
3 quarts	BMS 5-81 Type II (a)(b)(d)	Sealant
1 gallon	BMS 11-7 (a)(b)(c) (1,1,1 trichloroethane optional)	Solvent
3 quarts	BMS 11-7 (a)(b)(d) (1,1,1 trichloroethane optional)	Solvent
2 quarts	Naphtha (a)(b)	Solvent
10 feet	(e)	Nylon Tube

(a) See 747 Maintenance Manual Section 20-30, Boeing Standard Overhaul Practices Manual Section 20-60 or Qualified Products List (QPL) at the end of Boeing Material Specification (BMS) for supplier data.
(b) Required only if secondary fuel barrier repair is necessary.
(c) Applies to Groups 1 and 3 airplanes.
(d) Applies to Group 2 airplanes.
(e) Stock 3/8 inch outside diameter, 0.032 inch wall thickness, nylon tubing per Federal Specification LP410, LP410 6/6, LP410 6/10, or LP410 AND 6.

B. Parts Required to Modify Spares

None

C. Special Tools and Equipment Required

No special tools or equipment are required to accomplish this bulletin. Maintenance and overhaul tools may be required per any manuals that are listed in Paragraph I.I., References, of this bulletin. Operators should review their tool inventory to ensure tool availability.

D. Existing Parts Accountability

None

S-12

III. ACCOMPLISHMENT INSTRUCTIONS

NOTES: 1. The following paragraphs outline the general accomplishment instructions requirements. The suggested sequence of operations and detailed accomplishment instructions are indicated by circle notes on the figures.

2. On the figures, unless otherwise specified:

- All linear dimensions are in inches
- Tolerance on linear dimensions other than rivet and bolt edge margin is plus or minus 0.03

3. This service bulletin is applicable to Group 1 airplanes only if Service Bulletin 747-53-2064 has not been incorporated.

4. On Group 1 airplanes, if Service Bulletin 747-53-2064 has been incorporated, the intent of this service bulletin is covered by Service Bulletin 747-57A2247.

5. On Group 3 airplanes line position 696 and 700 thru 720, Service Bulletin 747-57A2247 installs a seal cap over a bolt head in the wing center fuel tank at the bathtub fitting located on the front spar lower chord at Stringer S-38.

A. Gain access to the wing center section per Figures 1, 2 or 3 as applicable.

B. On Group 1 and 3 airplanes, perform a visual inspection of the wing center section front spar and upper surface for continuity of the secondary fuel barrier and repair as necessary per Figure 4.

C. On Group 2 airplanes, perform a visual inspection of the wing center section upper surface for continuity of the secondary fuel barrier and repair as necessary per Figure 5.

D. Restore access to the wing center section front spar and upper surface per Figures 1, 2 or 3 as applicable.

E. Restore airplane to normal configuration.

S-13

Illustration Table of Contents

S-14

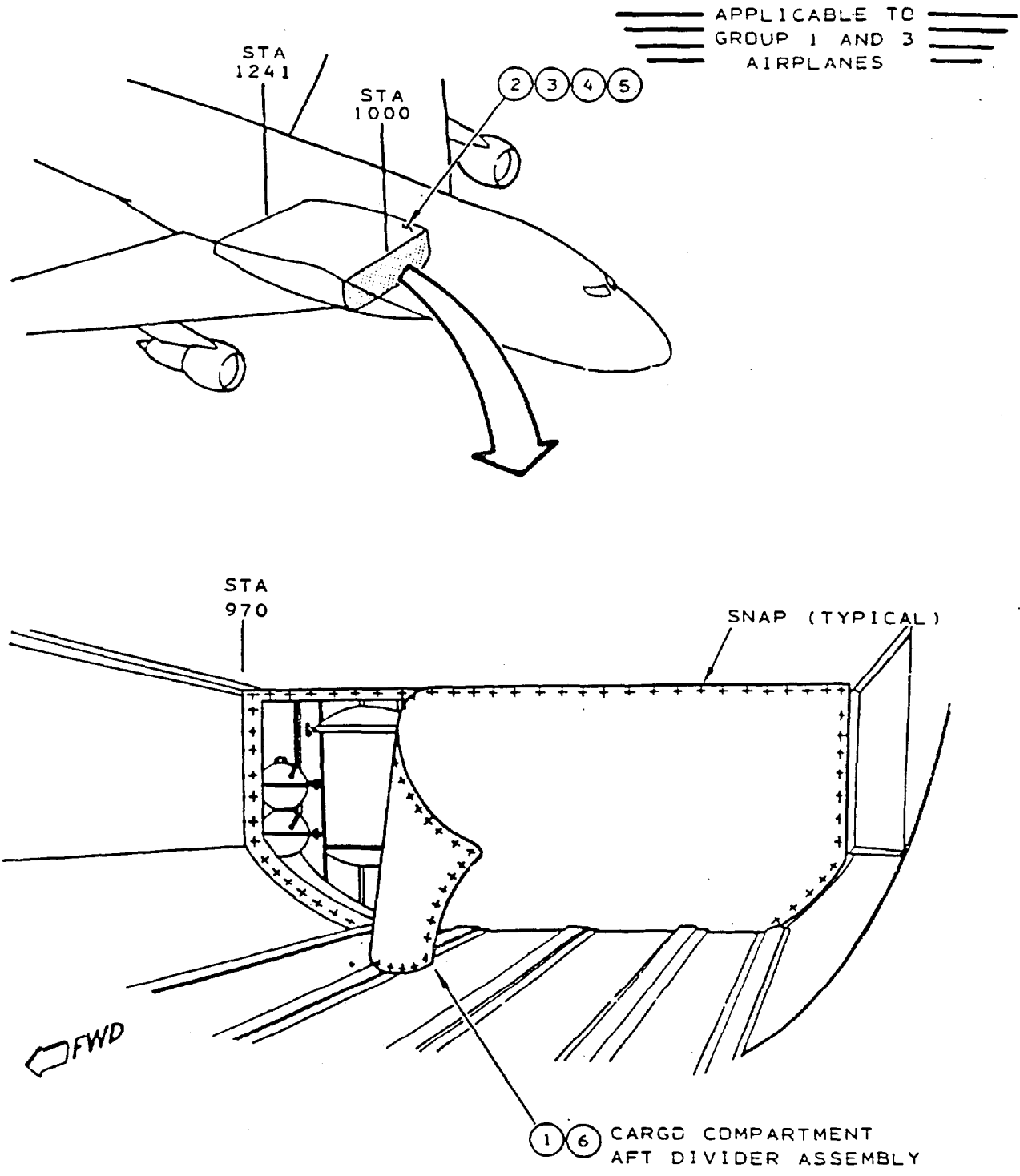


FIGURE 1. ACCESS AND RESTORATION FOR GROUP 1 AND 3 AIRPLANES - AIRPLANES WITHOUT LOWER LOBE GALLEY

S-15

ACCESS

(1) Unsnap divider assembly to expose forward side of front spar pressure bulkhead.

(2) On passenger airplanes only, remove seats and carpets between Body Station (STA) 1000 and STA 1241 per 747 Maintenance Manual Subjects 25-25-01 and 25-27-01 or operator's comparable procedure.

(3) Remove floor panels between STA 1000 and STA 1241 per 747 Maintenance Manual Subject 53-21-02 or operator's comparable procedure.

RESTORATION

(4) Reinstall floor panels per 747 Maintenance Manual Subject 53-21-02 or operator's comparable procedure.

(5) On passenger airplanes only, reinstall carpets and seats per 747 reinstall carpets and seats per 747 Maintenance Manual Subjects 25-25-01 and 25-27-01 or operator's comparable procedure.

(6) Snap divider into place.

FIGURE 1. ACCESS AND RESTORATION FOR GROUP 1 AND 3 AIRPLANES - AIRPLANES WITHOUT LOWER LOBE GALLEY

S-16

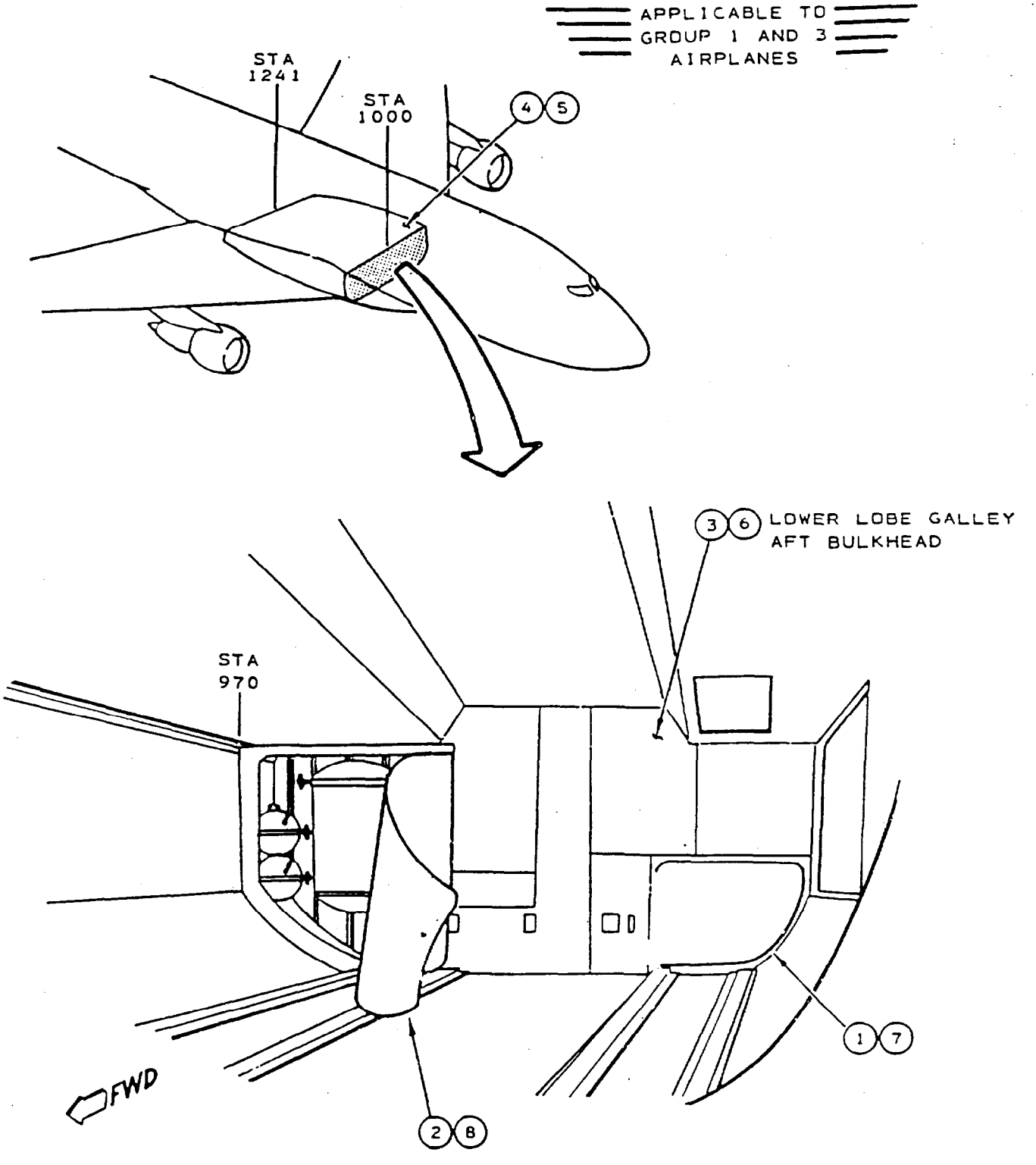


FIGURE 2. ACCESS AND RESTORATION FOR GROUP 1 AND 3 AIRPLANES - AIRPLANES WITH LOWER LOBE GALLEY

S-17

ACCESS

(1) Remove freezer module (not shown) per operator's standard procedure.

(2) Roll tray cart modules (not shown) forward.

(3) Remove lower lobe galley aft bulkhead per operator's standard procedure.

(4) Remove seats, carpets and floor panels between Body Station (STA) 1000 and STA 1241 to expose wing center section upper surface per 747 Maintenance Manual Subjects 25-25-01, 25-27-01 and 53-21-02 or operator's comparable procedure.

RESTORATION

(5) Reinstall seats, carpets and floor panels per 747 Maintenance Manual Subjects 25-25-01, 25-27-01 and 53-21-02 or operator's comparable procedures.

(6) Install lower lobe galley aft bulkhead per operator's standard procedure.

(7) Install freezer module (not shown) per operator's standard procedure.

(8) Roll tray cart modules (not shown) back in place.

FIGURE 2. ACCESS AND RESTORATION FOR GROUP 1 AND 3 AIRPLANES - AIRPLANES WITH LOWER LOBE GALLEY

S-18

APPLICABLE TO
GROUP 2
AIRPLANES

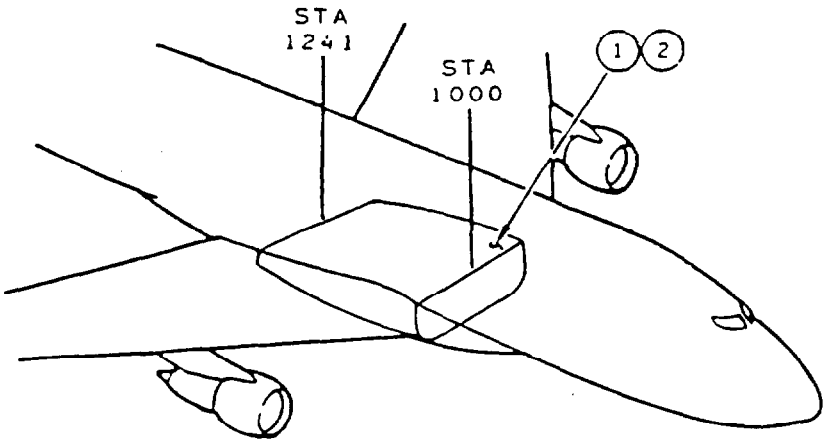


FIGURE 3. ACCESS AND RESTORATION FOR GROUP 2 AIRPLANES

S-19

ACCESS

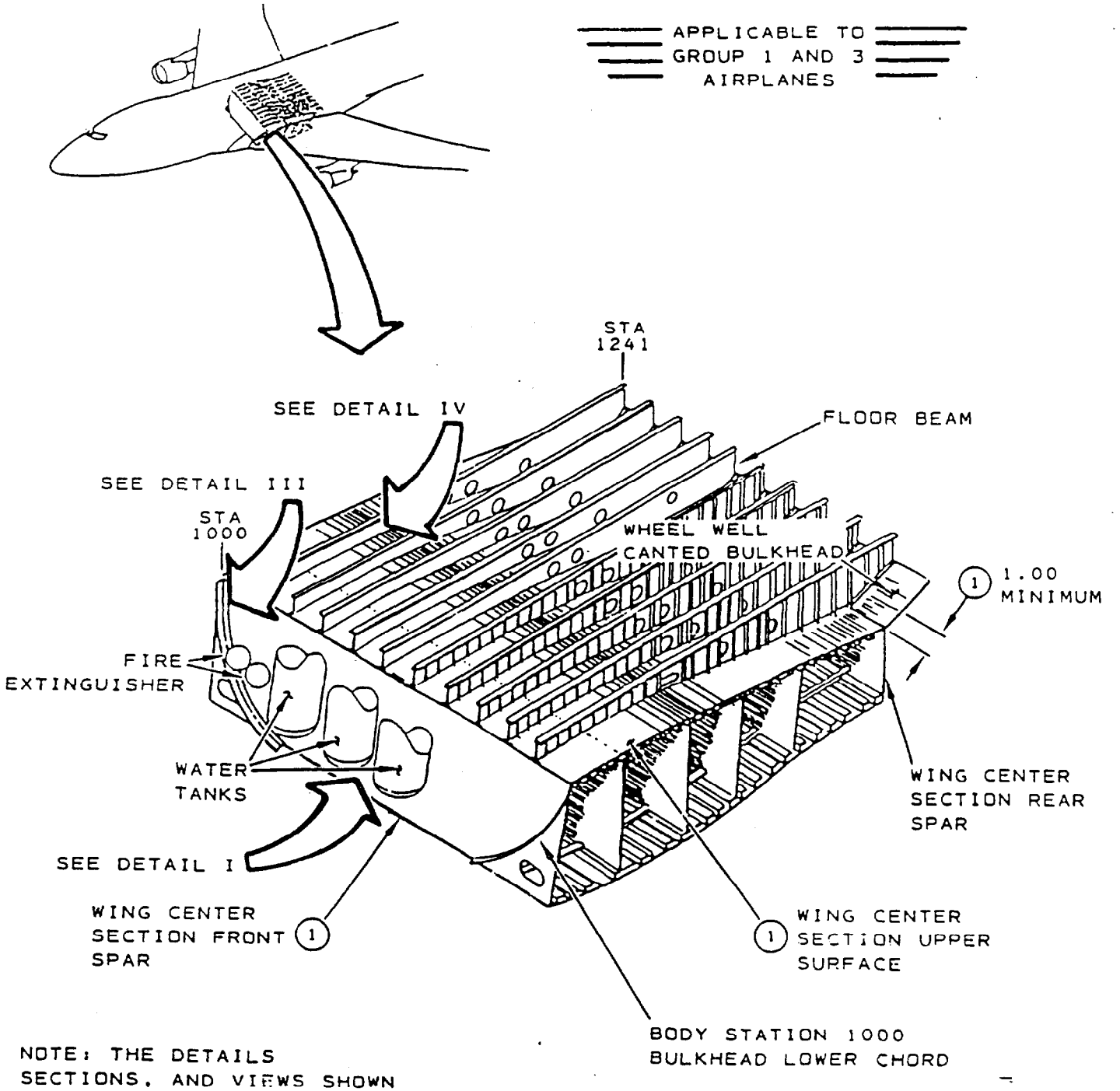
(1) Remove seats, carpets and floor panels between Body Station (STA) 1000 and STA 1241 to expose wing center section upper surface per 747 Maintenance Manual Subjects 25-25-01, 25-27-01 and 53-21-02 or operator's comparable procedures.

RESTORATION

(2) Reinstall seats, carpets and floor panels per 747 Maintenance Manual Subjects 25-25-01, 25-27-01 and 53-21-02 or operator's comparable procedures.

FIGURE 3. ACCESS AND RESTORATION FOR GROUP 2 AIRPLANES

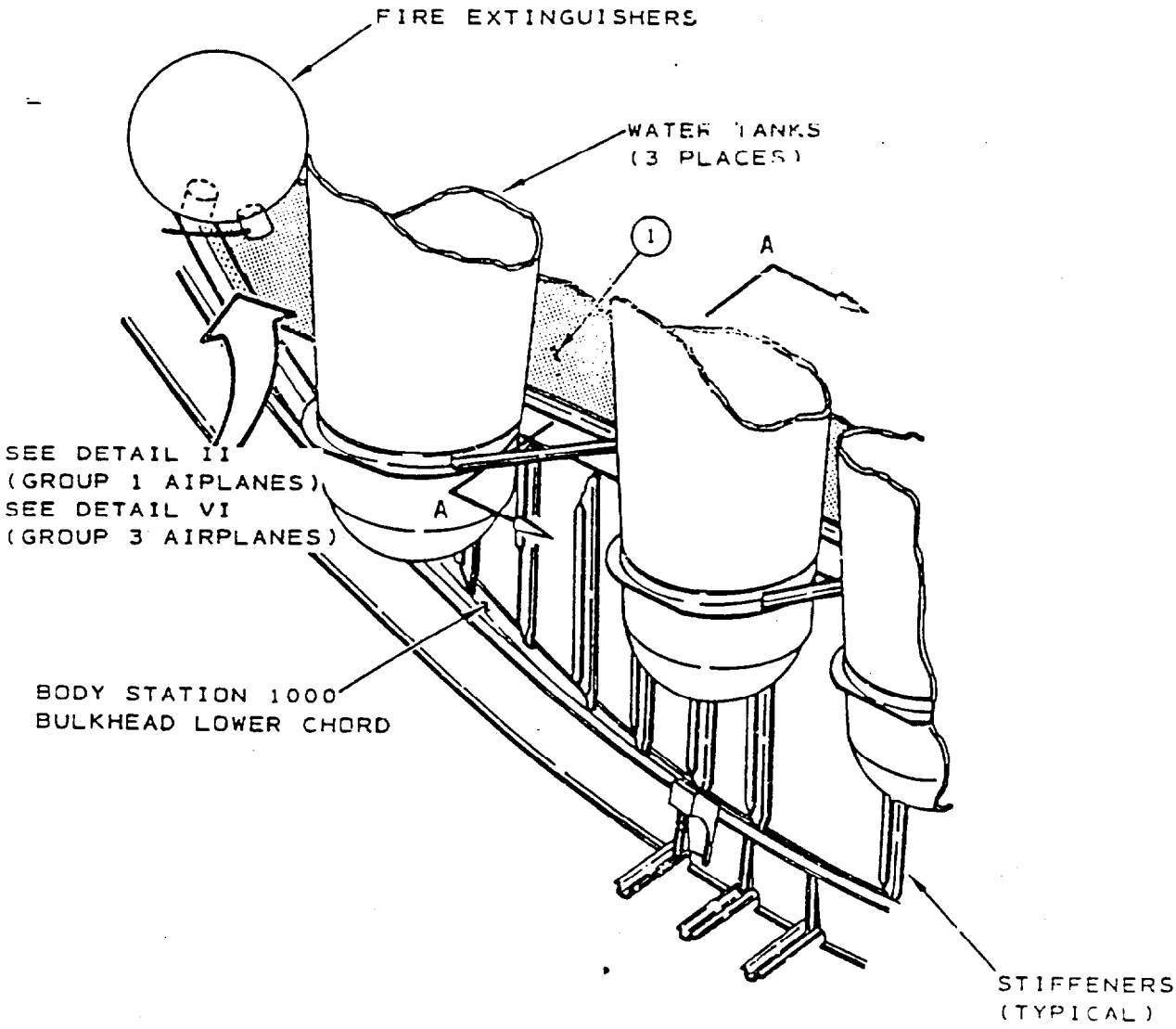
S-20



NOTE: THE DETAILS SECTIONS, AND VIEWS SHOWN REPRESENT TYPICAL FUEL BARRIER REQUIREMENTS FOR THE ENTIRE WING CENTER SECTION, FRONT SPAR AND UPPER SURFACE.

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

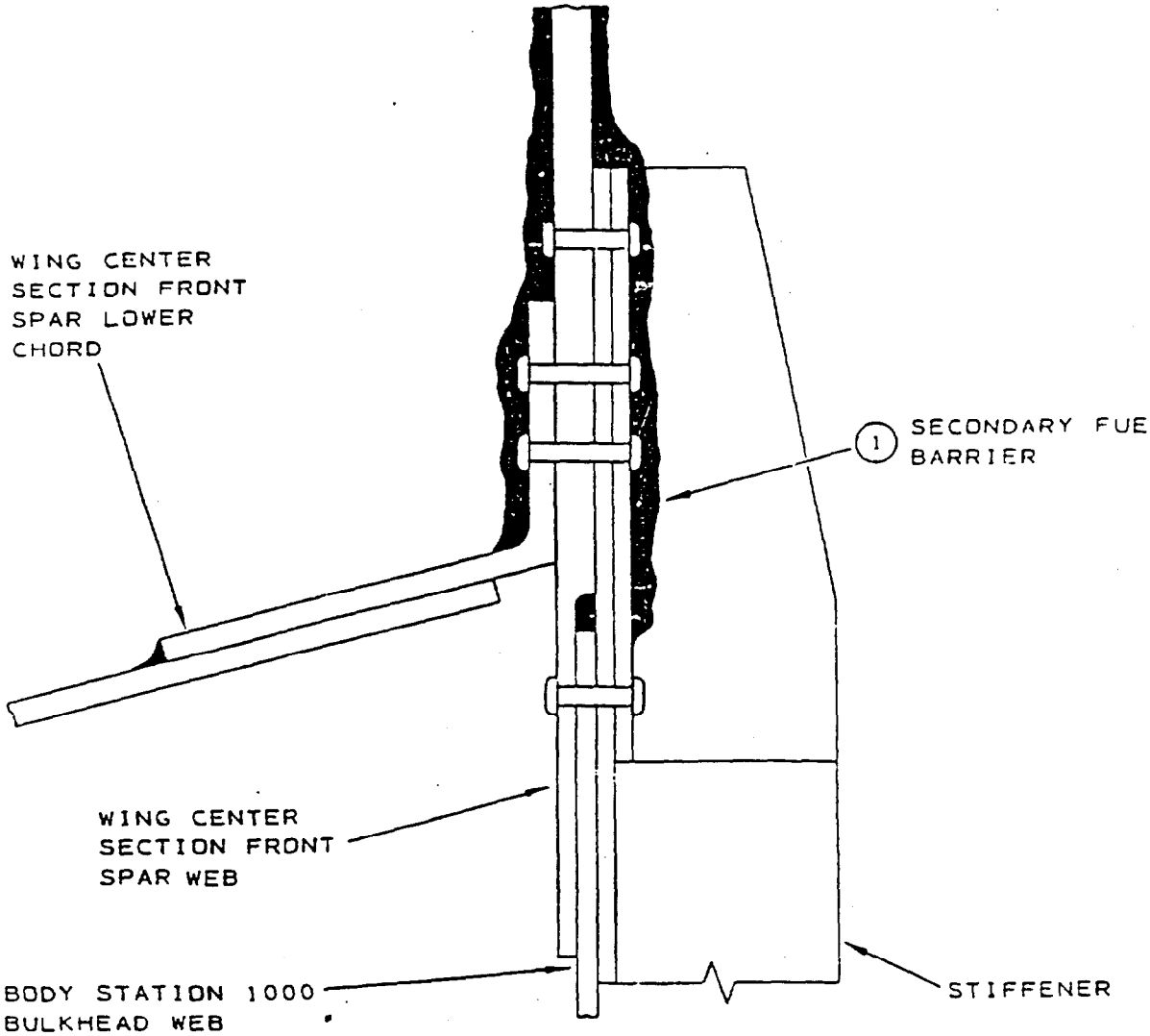
5-21



DETAIL I

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

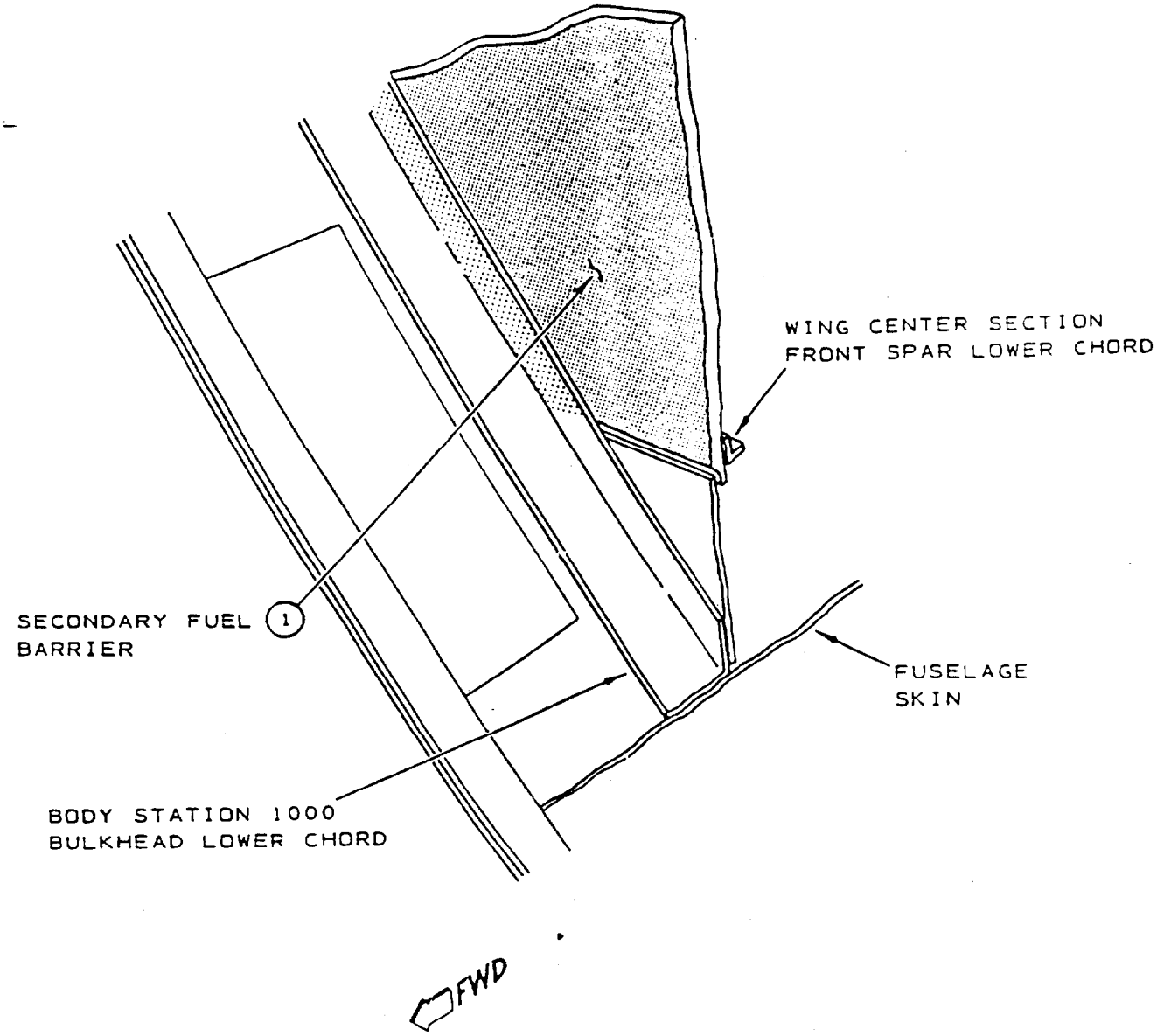
S-22



SECTION A-A
(TYPICAL)

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

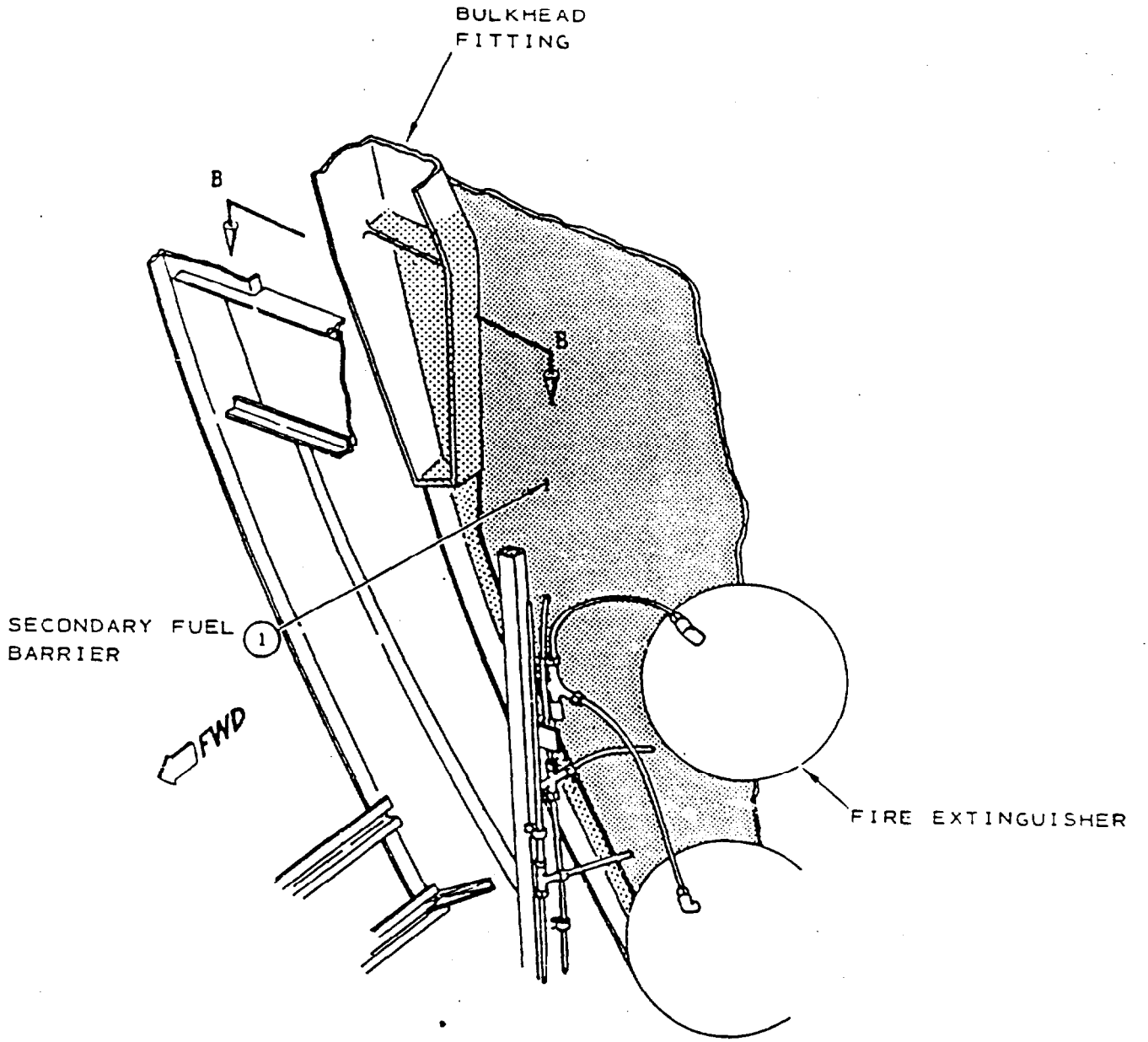
S-23



DETAIL II
(TYPICAL)

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

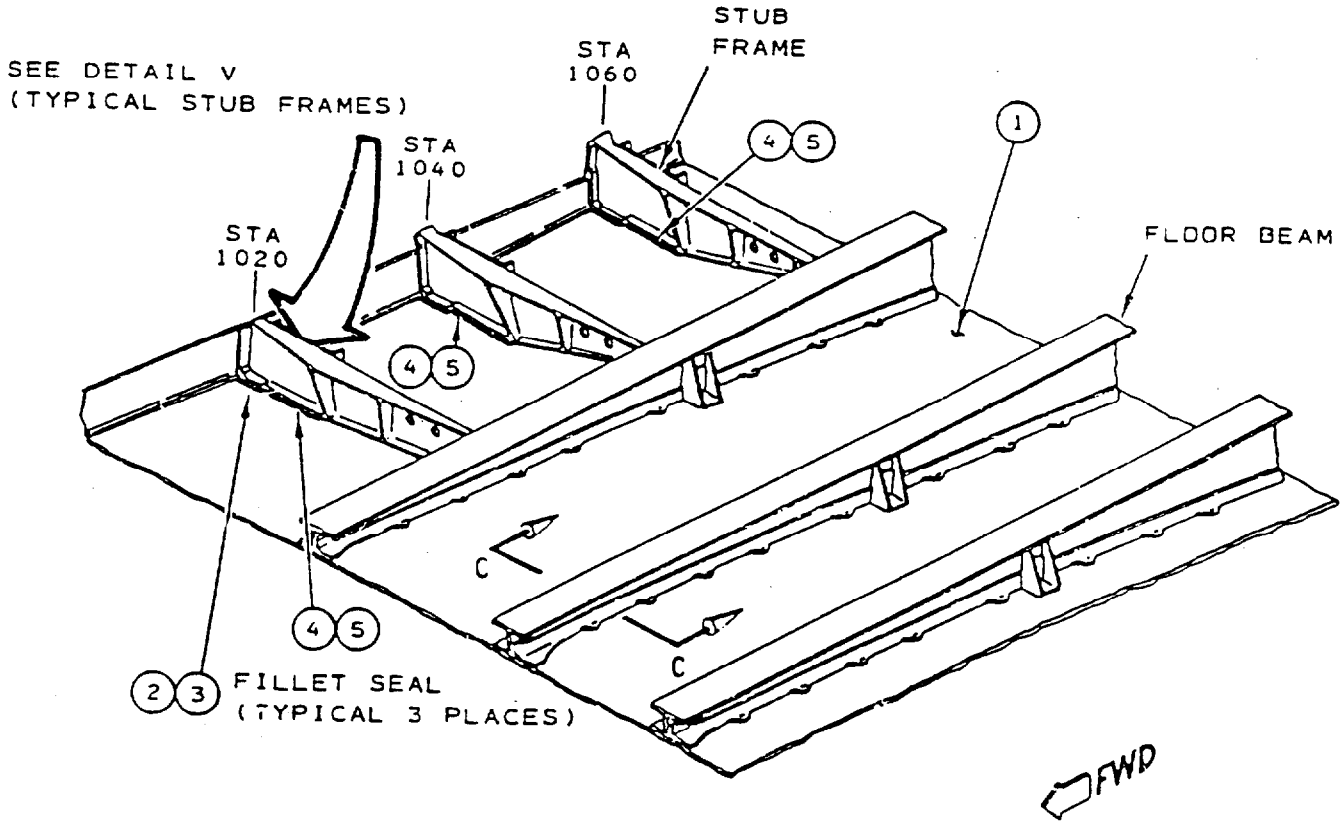
S-24



DETAIL III

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

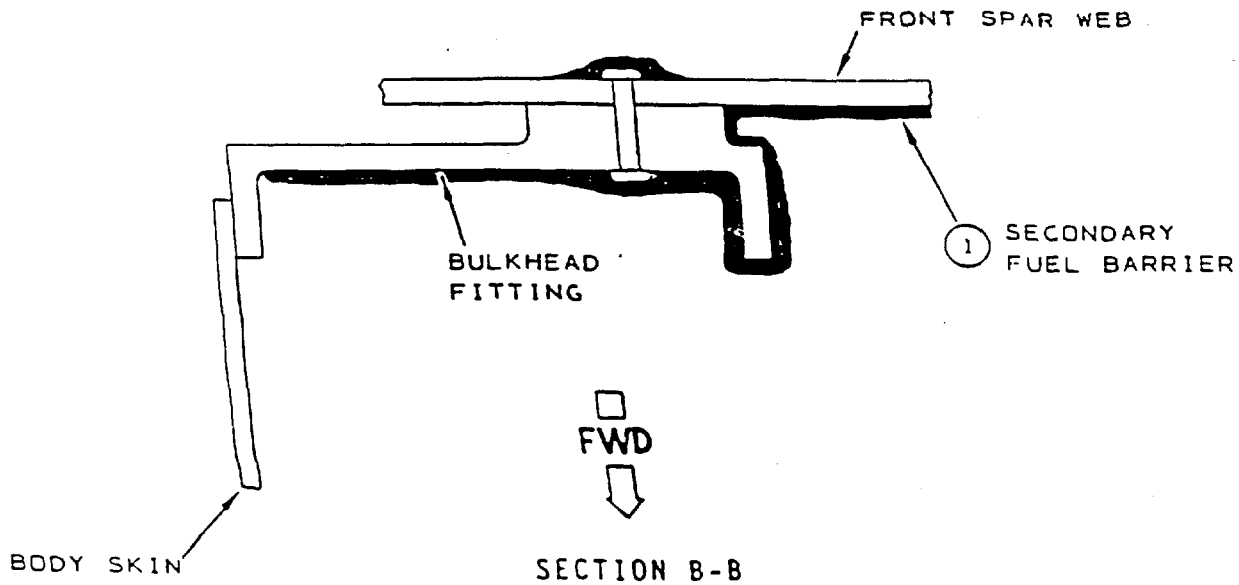
S-25



DETAIL IV

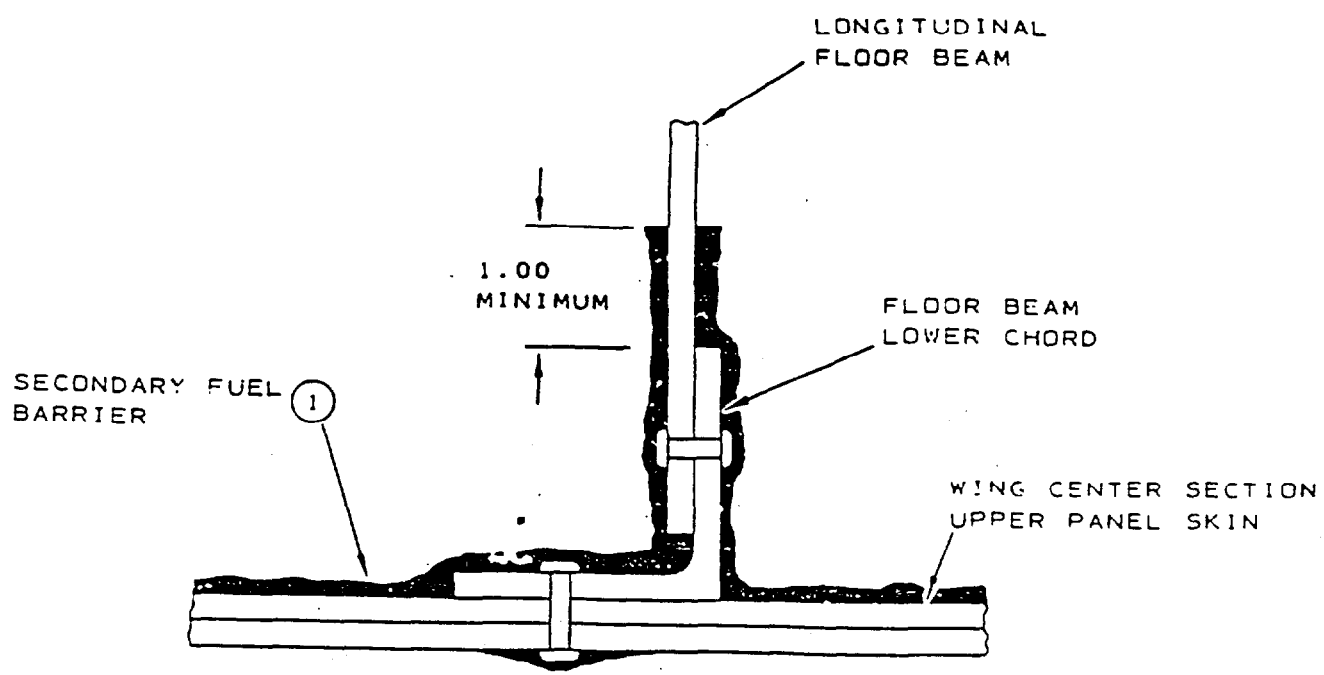
FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

S-26



SECTION B-B

(TYPICAL)

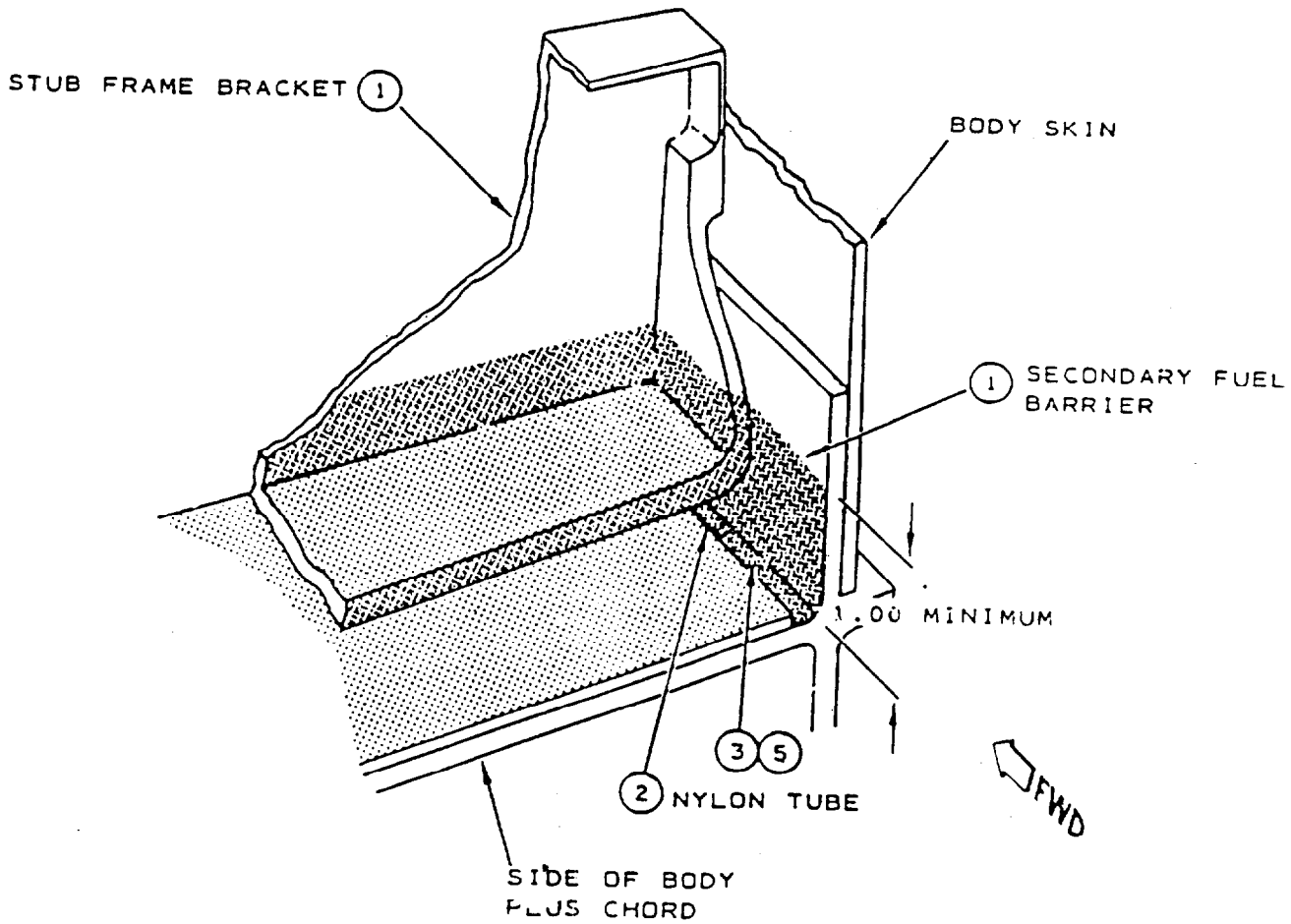


SECTION C-C

(TYPICAL)

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

S-27

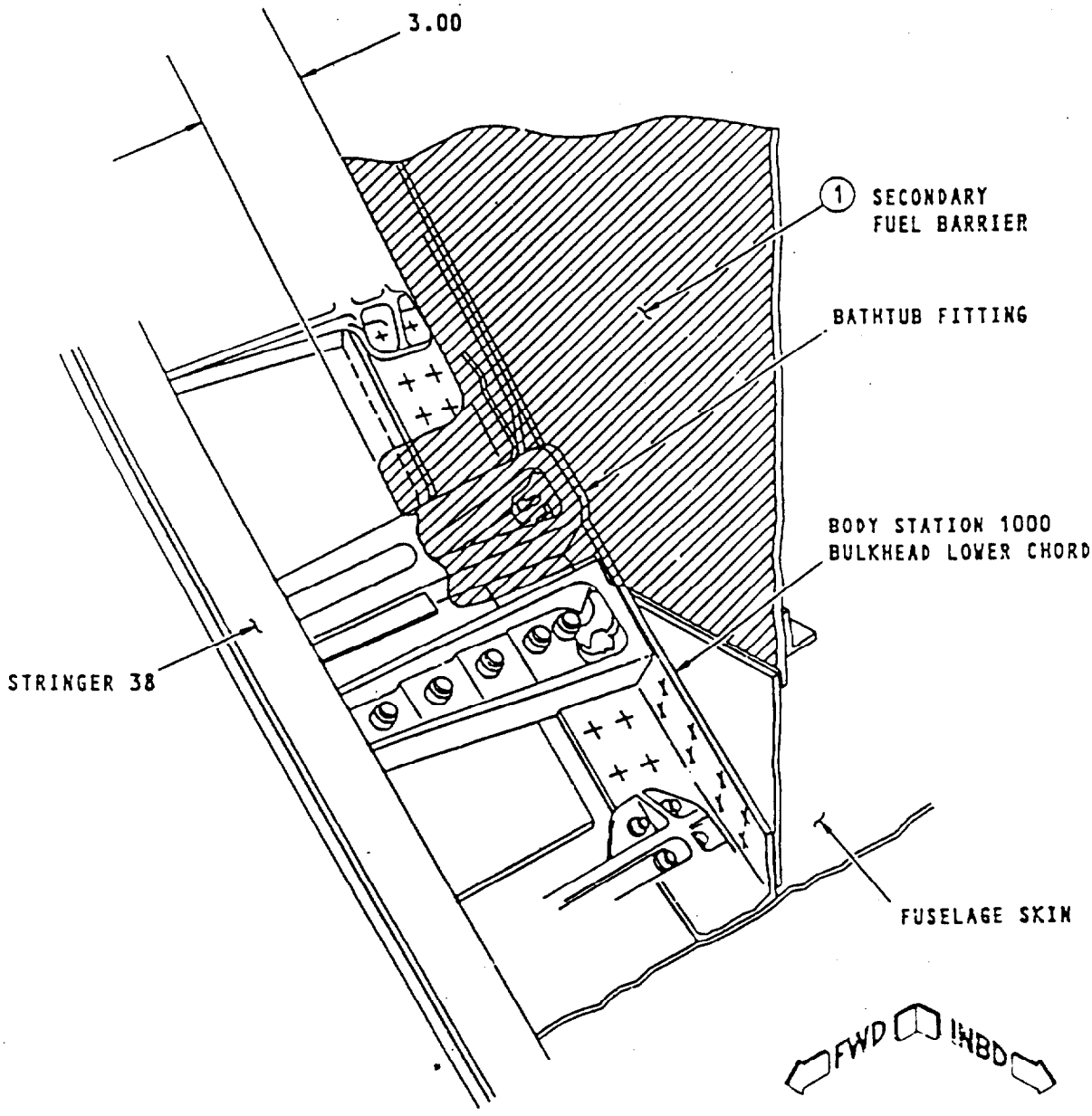


DETAIL V

(TYPICAL AT ALL STUB FRAME BRACKETS)

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

S-28



DETAIL VI
(TYPICAL)

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

S-29

(1) Perform a close visual inspection of the exterior surface of the wing center section front spar and upper surface to determine whether the secondary fuel barrier (sealant BMS 5-81) meets the following requirements:

NOTES: 1. The secondary fuel barrier may be identified by it's glossy finish, clear to brownish hue, and rubber like texture.

2. Particular attention should be paid to areas around fasteners, brackets, and structural joints.

a. The secondary fuel barrier should have complete coverage (with no breaks or openings) of all structure on the front spar and upper surface which is in contact or directly adjacent to the wing center section fuel.

b. On the front spar, the secondary fuel barrier should extend a minimum of one inch forward of front spar of stiffeners, fittings, chords and brackets.

c. On the front spar, the secondary fuel barrier should cover the web flange of the Body Station (BS) 1000 bulkhead lower chord (see Detail II).

d. On the front spar, the secondary fuel barrier should cover the bulkhead fitting at BS 1000 up to the outboard flange at fillet (see Detail III).

e. On the wing center section upper surface, the barrier should extend a minimum of one inch above the longitudinal floor beam lower chord (see Section C-C).

f. On the wing center section upper surface, the coating should extend a minimum of one inch onto the wheel well canted bulkhead.

g. On the wing center section upper surface, the barrier should extend a minimum of one inch above the horizontal flange of the side of body plus chord and stub frame brackets (see Detail V).

h. On Group 3 airplanes, the secondary fuel barrier should extend at least 3.0 inches forward of the front spar at the bathtub fitting at Stringer S-38 (see Detail VI).

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

S-30

Repair areas where secondary fuel barrier is missing or damaged with sealant BMS 5-81 per Process Data pages or operator's comparable procedure.

NOTE: Use of a borescope is recommended for areas which are covered by tubing, ducting, insulation blankets or wire bundles. However, if additional access is needed for inspection or repair, accomplish the following as needed:

a. Disconnect wire bundle supports and move wiring out of the way.

b. Locally remove and reinstall insulation blankets per operator's standard procedure (Ref 747 Maintenance Manual Subject 25-52-04).

c. Remove air conditioning ducts and plenum chamber per operator's standard procedure.

d. Remove water tanks per 747 Maintenance Manual Subject 38-11-04 or operator's comparable procedure.

e. Remove fire extinguishers per 747 Maintenance Manual Subject 26-23-01 or operator's comparable procedure.

f. Remove supplemental air fans per 747 Maintenance Manual Subject 21-25-07 or operator's comparable procedure.

g. Remove insulation from trim air mufflers and ducts per 747 Maintenance Manual Subject 21-13-02 or operator's comparable procedure.

(2) Optional - Insert 3/8 inch outside diameter nylon tube under stub frame, leaving 0.50-0.75 inch length of tube extending beyond each side of the fitting. Temporarily plug the tube during sealant injection.

(3) Clean area per Process Data pages and inject sealant BMS 5-26 under all stub fittings (stub frame) and fair into fillet seal. Provide a ramp to allow water to drain around fitting.

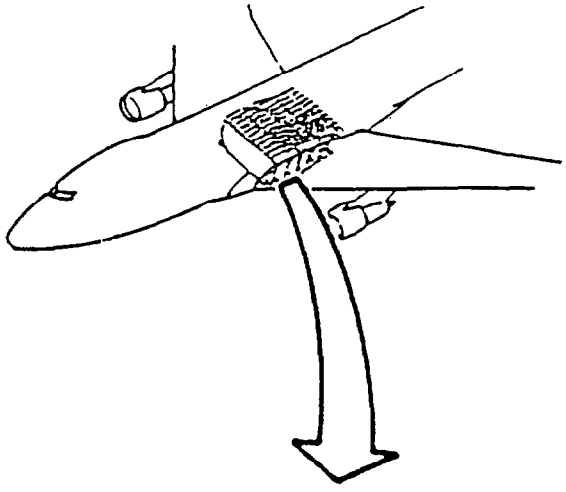
(4) Clean area per Process Data pages and inject sealant BMS 5-26 under forward three stub frame fittings on each side of airplanes and fair into fillet seal.

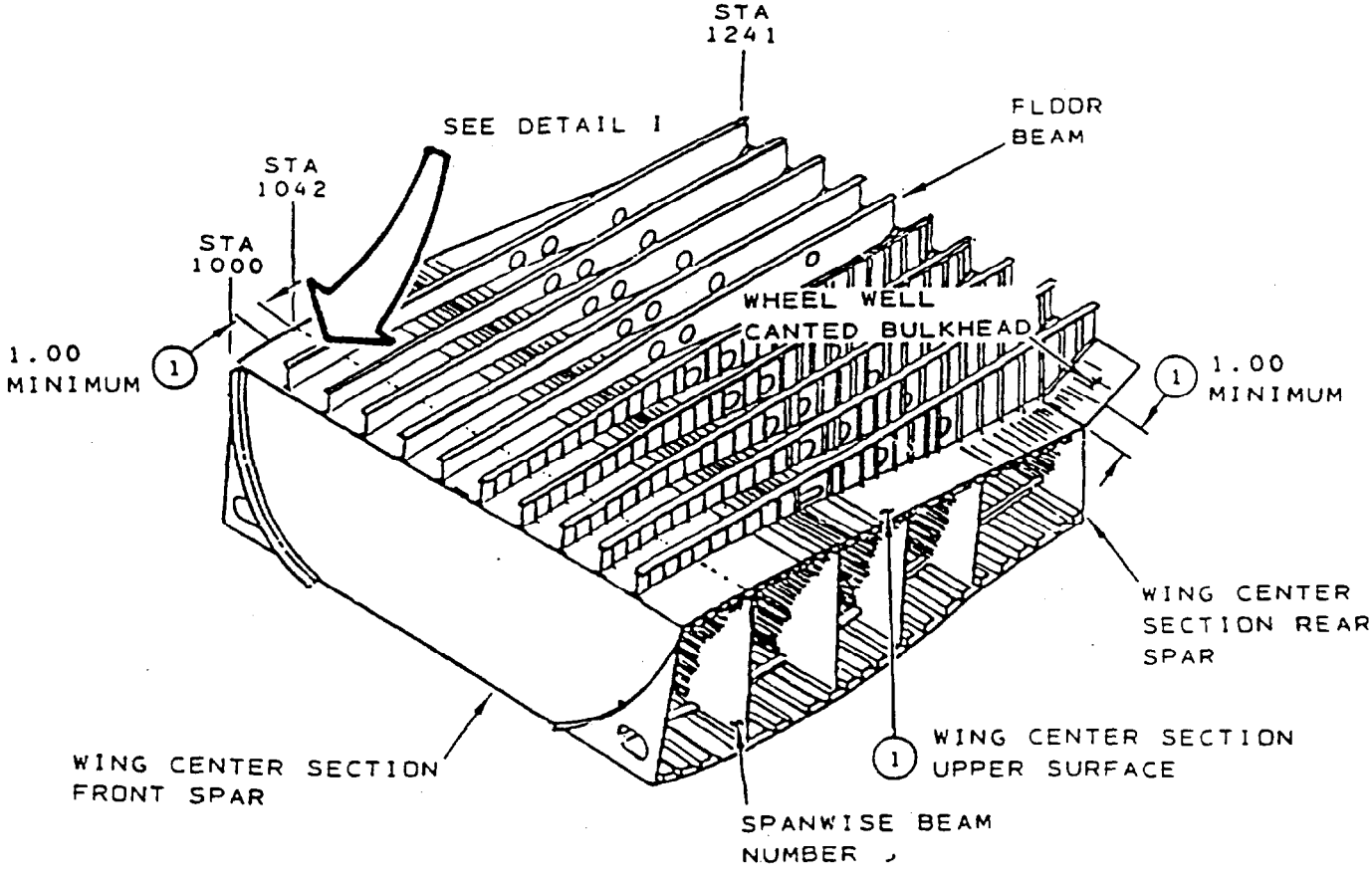
(5) Apply secondary fuel barrier sealant BMS 5-81 and overlap at least one inch onto existing barrier per Process Data pages or operator's comparable procedure.

FIGURE 4. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 1 AND 3 AIRPLANES

S-31

APPLICABLE TO GROUP 2 AIRPLANES

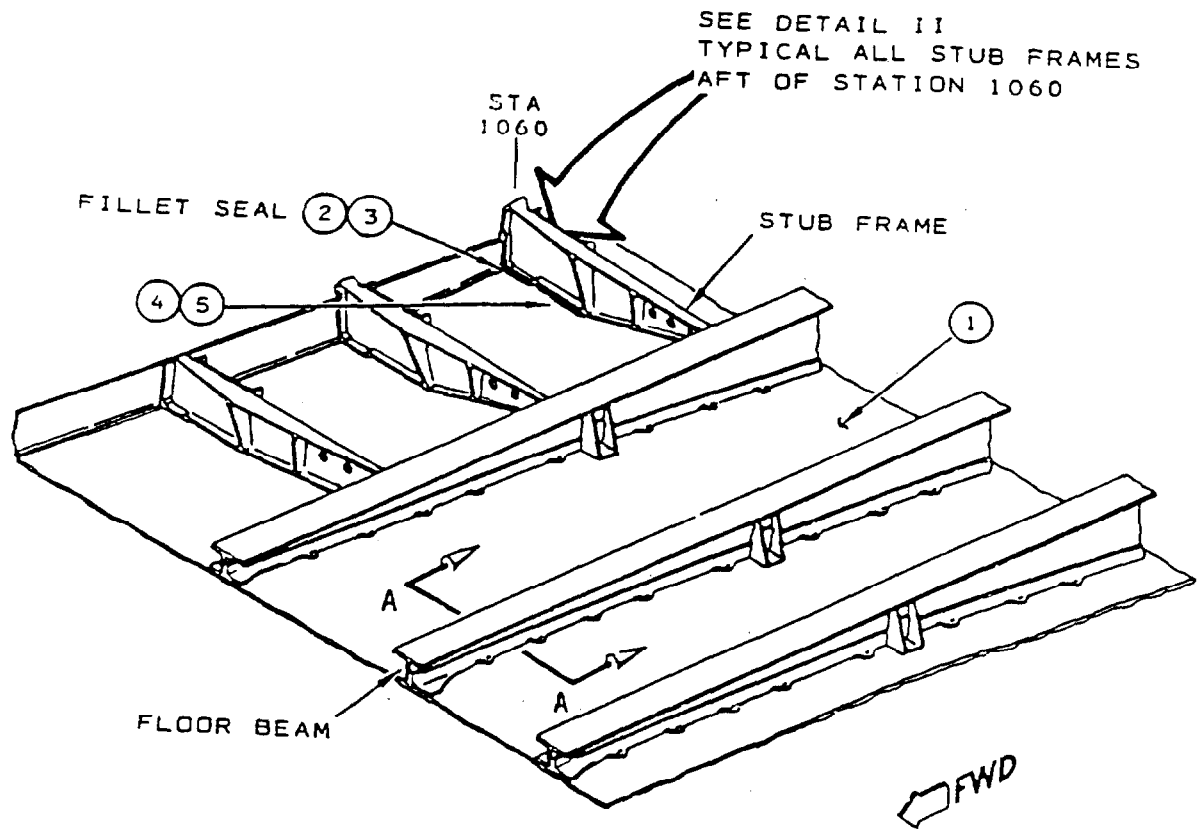




NOTE: THE DETAILS SECTIONS, AND VIEWS SHOWN REPRESENT TYPICAL FUEL BARRIER REQUIREMENTS FOR THE ENTIRE WING CENTER SECTION UPPER SURFACE.

S-32

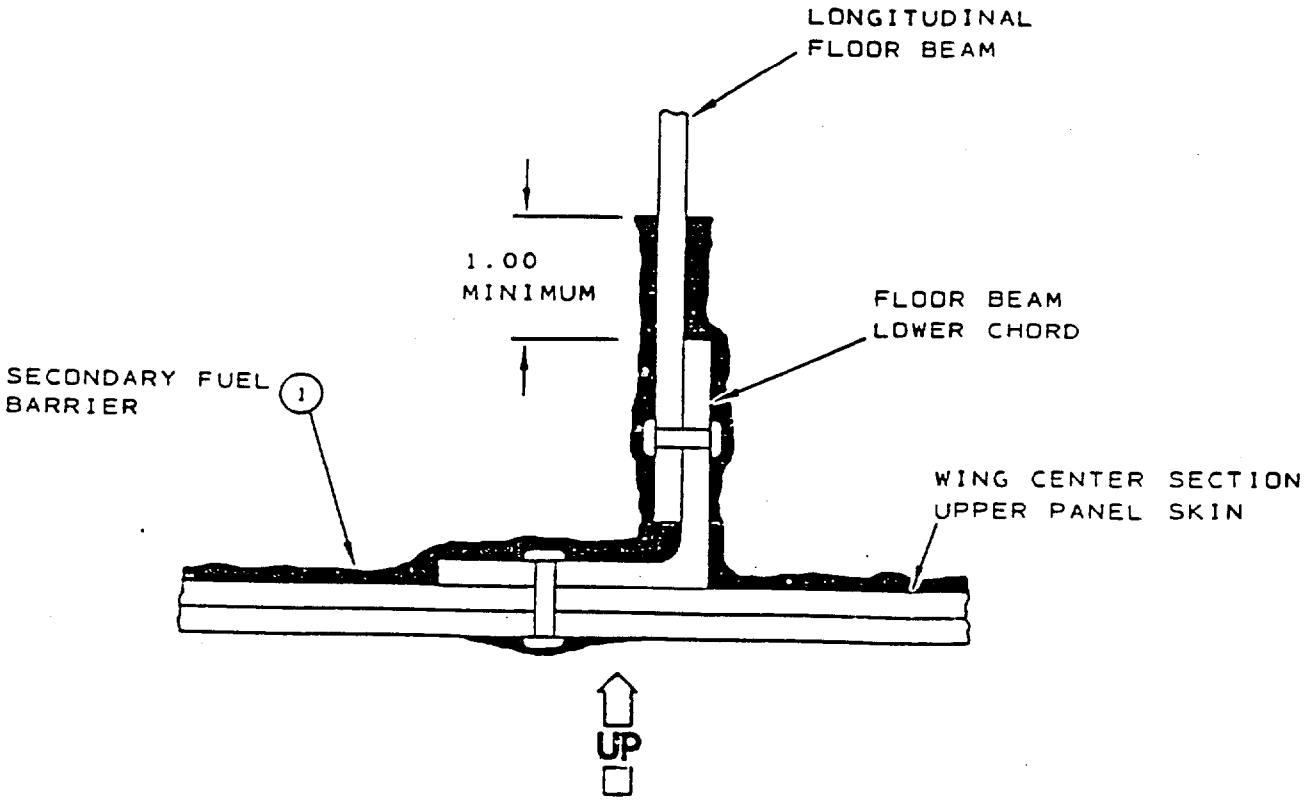
FIGURE 5. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 2 AIRPLANES



DETAIL I

S-33

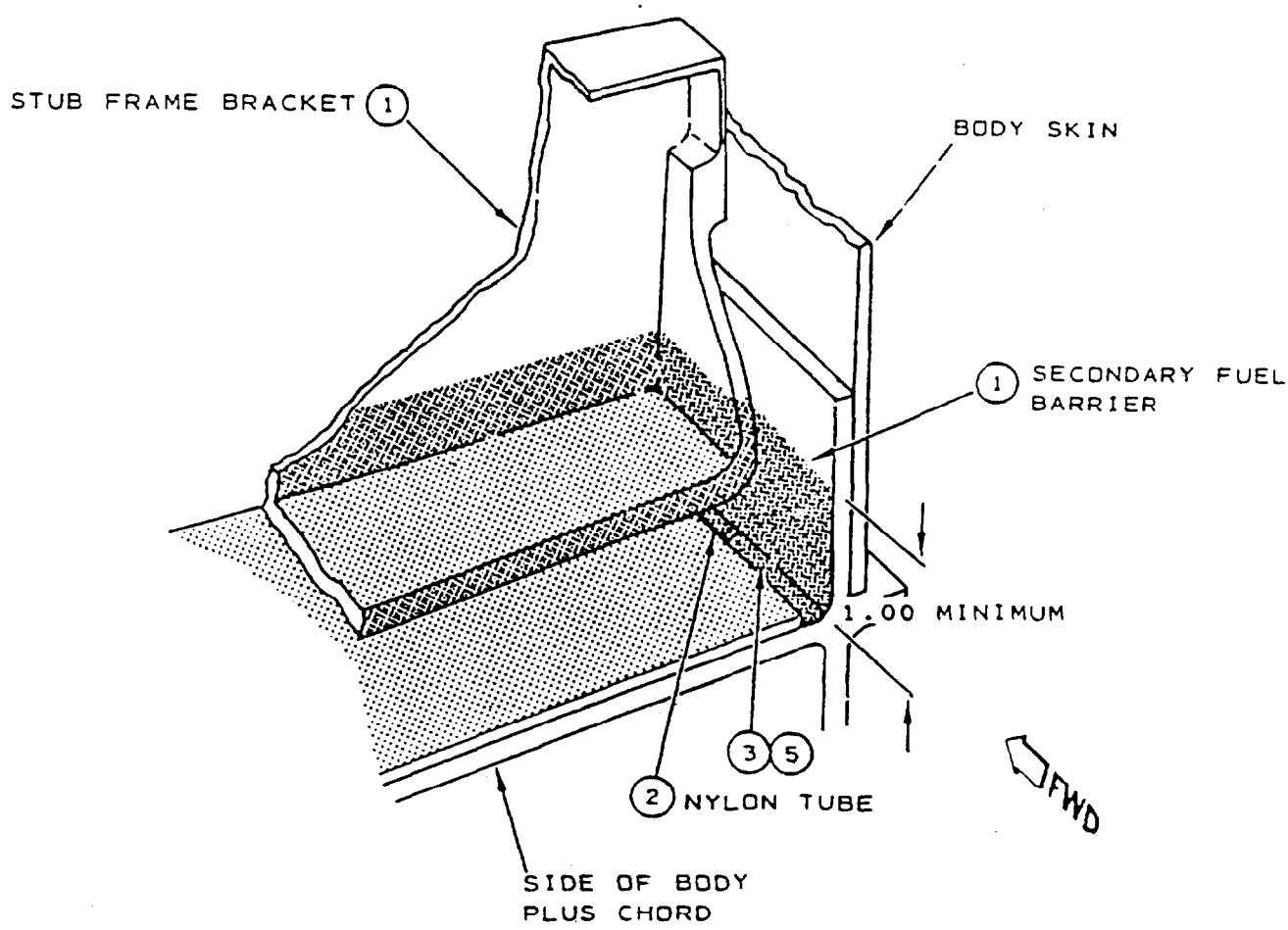
FIGURE 5. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 2 AIRPLANES



SECTION A-A

S-34

FIGURE 5. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 2 AIRPLANES



DETAIL II

TYPICAL ALL STUB FRAMES
AFT OF STATION 1060

S-35

FIGURE 5. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 2 AIRPLANES

(1) Perform a close visual inspection of the exterior surface of the wing center section upper surface to determine whether the secondary fuel barrier (sealant BMS 5-81) meets the following requirements:

NOTES: 1. The secondary fuel barrier may be identified by it's glossy finish, clear to brownish hue, and rubber like texture.

2. Particular attention should be paid to areas around fasteners, brackets, and structural joints.

a. The secondary fuel barrier should have complete coverage (with no breaks or openings) of all structure of the upper surface which is in contact or directly adjacent to the wing center section fuel.

b. On the wing center section upper surface, the barrier should extend a minimum of one inch above the longitudinal floor beam lower chord (see Section A-A).

c. On the wing center section upper surface, the coating should extend a minimum of one inch onto the wheel well canted bulkhead.

d. On the wing center section upper surface, the barrier should extend a minimum of one inch above the horizontal flange of the side of body plus chord and stub frame brackets (see Detail II).

e. On the wing center section upper surface, the coating should extend a minimum of one inch forward of spanwise beam number 3.

Repair areas where secondary fuel barrier is missing or damaged with sealant BMS 5-81 per Process Data pages or operator's comparable procedure.

NOTE: Use of a borescope is recommended for areas which are covered by tubing, ducting, insulation blankets or wire bundles. However, if additional access is needed for inspection or repair, accomplish the following as needed:

a. Disconnect wire bundle supports and move wiring out of the way.

b. Remove air conditioning ducts and plenum chamber per operator's standard procedure.

c. Remove supplemental air fans per 747 Maintenance Manual Subject 21-25-07 or operator's comparable procedure.

d. Remove insulation from trim air mufflers and ducts per 747 Maintenance Manual Subject 21-13-02 or operator's comparable procedure.

S-36

FIGURE 5. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 2 AIRPLANES

(2) Optional - Insert 3/8 inch outside diameter nylon tube under stub frame, leaving 0.50-0.75 inch length of tube extending beyond each side of the fitting. Temporarily plug the tube during sealant injection.

(3) Clean area per Process Data pages and inject sealant BMS 5-26 under the stub fitting (stub frame) and fair into fillet seal. Provide a ramp to allow water to drain around fitting.

(4) Clean area per Process Data pages and inject sealant BMS 5-26 under the aft stub frame fitting on each side of airplane and fair into fillet seal.

(5) Apply secondary fuel barrier sealant BMS 5-81 and overlap at least one inch onto existing barrier per Process Data pages or operator's comparable procedure.

S-37

FIGURE 5. SECONDARY FUEL BARRIER INSPECTION AND REPAIR - GROUP 2 AIRPLANES

PROCESS DATA

NOTE: THE PROCESS INFORMATION PRESENTED HEREIN IN ABBREVIATED FORM WAS CURRENT DURING PREPARATION OF THIS SERVICE BULLETIN, BUT WILL NOT BE KEPT UP TO DATE.

A. General

The function of the BMS 5-81 Type II is to prevent leakage of fuel vapors into the pressurized area of the airplane if a crack develops in the structure. The BMS 5-81 Type II will thin out at areas that have sharp ridges, degrading the integrity of the secondary fuel barrier. These areas must be made smooth by applying fillet seals of BMS 5-26 Type II sealant to provide a smooth transition from the wing center section upper skin or front spar web to attach parts, such as brackets, straps, fittings and floor beam chords.

B. Repair Procedures

1. Where areas of the BMS 5-81 film have been damaged or destroyed exposing primer or bare metal, proceed as follows:

   a. Remove all corrosion inhibiting compounds, such as BMS 3-23 or BMS 3-26, by solvent cleaning with naphtha.

   b. Smooth and feather the damaged area by lightly sanding with 180 grit or finer abrasive paper. Avoid abrading to bare metal if possible.

   c. Remove sanding residue using a BMS 11-7 or 1,1,1 trichloroethane saturated wiper. Wipe dry with a clean dry wiper.

   d. When bare aluminum is exposed, brush apply a chemical coating (Alodine or Iridite).

   e. Reactivate primed surfaces by abrading with 320 grit or finer abrasive paper followed by solvent cleaning with BMS 11-7 or 1,1,1 trichloroethane.

   f. Apply sealant.BMS 5-26 Type II if required to provide a smooth base for the BMS 5-81 Type II coating (see statement in general section above).

S-38

PROCESS DATA

B. (Continued)

g. Apply a coat of primer BMS 10-11 Type I (yellow), feathering the coating as it overlaps the adjacent, undamaged area. Allow to dry 30 minutes to 48 hours (Ref. 747 Maintenance Manual Subject 51-24-11, primer mixing and primer application).

h. Apply BMS 5-81 Type II with a flat, bristle brush to obtain a total dry film thickness of 5 to 10 mil. For horizontal surfaces allow 1/2 hour minimum drying time between coats. For vertical surfaces allow 2 hours minimum drying time between coats. Cure BMS 5-81 coating in accordance with Table I.

CAUTION: DO NOT APPLY BMS 5-81 WHEN THE AIR TEMPERATURE IS BELOW 50F OR WHEN THE RELATIVE HUMIDITY EXCEEDS 95%.

2. Procedure for applying sealant BMS 5-26 Type II to BMS 5-81 coated areas.

a. Remove all corrosion inhibiting compounds, such as BMS 3-23 or BMS 3-26, by solvent cleaning with naphtha.

b. Lightly sand the area with 180 grit or finer abrasive paper. Remove as little of the film as possible. Do not sand through coating.

c. Remove sanding residue using BMS 11-7 or 1,1,1 trichloroethane saturated wiper. Wipe dry with a clean dry wiper.

d. Apply BMS 5-26 Type II as required.

S-39

PROCESS DATA

PROCESS DATA

B. (Continued)

3. BMS 5-81 Curing

NOTE: For optimum results, cure temperatures (coating surface temperatures) above 80F are required.

TABLE I

CURE TEMP	CURE CONDITION (IN HOURS) DRY HARD (a)	DRY THROUGH (b)
75 ± 5 F	50	96
100 ± 5 F	18	36
125 ± 5 F	7.5	15
150 ± 5 F	2.5	5

(a) Condition where metal chips and/or fillings will not adhere to the BMS 5-81

(b) Condition where the BMS 5-81 is hard enough to resist damage when walked on with boot socks.

S-40

PROCESS DATA

BOEING

SERVICE BULLETIN

747

NOTICE OF STATUS CHANGE

BOEING COMMERCIAL AIRPLANES POST OFFICE BOX 3707 SEATTLE, WASHINGTON 98124-2207

MODEL: 747 ATA SYSTEM: 5714 DATE: September 27, 1990

Boeing Service Bulletin No. 747-57-2253 REV. 1 Dated Jul 5/90

Notice of Status Change No. 747-57-2253 NSC1

SUBJECT: WINGS - CENTER SECTION - SECONDARY FUEL BARRIER INSPECTION AND REPAIR

DESCRIPTION:

This Notice of Status Change is sent to tell operators of an error in the paragraph that gives effectivity on Summary page 1. 747-200 airplanes between line position 700 and 776 were not included.

The effectivity is given correctly in the service bulletin in Paragraph I.A.1 Airplanes Affected.

This is the correct effectivity paragraph:

All 747-100 and Special Performance (SP) airplanes. All 747-200 airplanes line position 88 through 198 and all 747-200, -300, and -400 airplanes line position 696 and 700 through 776.

NOTE: Subject service bulletin Summary is attached for reference only.