

CHAPTER

55

STABILIZERS



**767-300
STRUCTURAL REPAIR MANUAL**

**CHAPTER 55
STABILIZERS**

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ELEVATOR ATTACHMENT FITTINGS

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GENERAL - Vertical Stabilizer

VERTICAL STABILIZER SKINS

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GENERAL - STABILIZERS

1. General

- A. This chapter provides structural identification, allowable damage and repairs to the horizontal stabilizer, inboard and outboard elevators, vertical stabilizer and upper and lower rudders.
- B. The term "fin" is sometimes used in place of "vertical stabilizer" to ensure compatibility with manufacturing drawings. In particular, fin stations and fin waterlines are used to provide vertical locations as shown in 55-30-00, GENERAL.

2. References

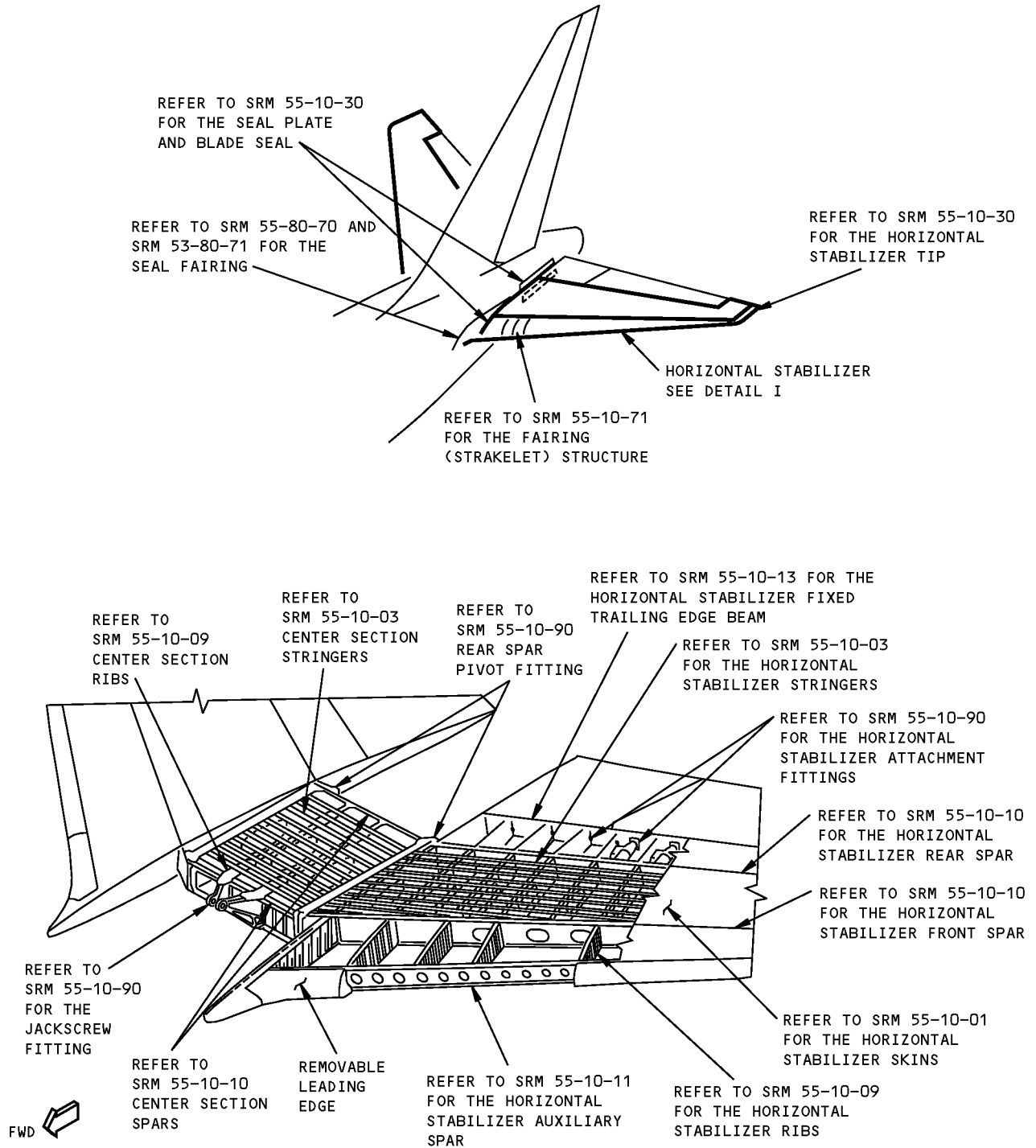
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51-60-00, GENERAL	Control Surface Balance Moment Determination
51-60-02, GENERAL	Elevator Operational Balance Requirements and Procedures
51-60-03, GENERAL	Rudder Operational Balance Requirements and Procedures
55-30-00, GENERAL	Vertical Stabilizer

3. Control Surface Balancing

- A. Refer to 51-60-00, GENERAL for general information on control surface balancing.
- B. Refer to 51-60-02, GENERAL for elevator balance requirements and rebalancing instructions.
- C. Refer to 51-60-03, GENERAL for rudder balance requirements and rebalancing instructions.

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GENERAL - HORIZONTAL STABILIZERS



**HORIZONTAL STABILIZER
DETAIL I**

**Horizontal Stabilizer Structure Diagram
Figure 1**



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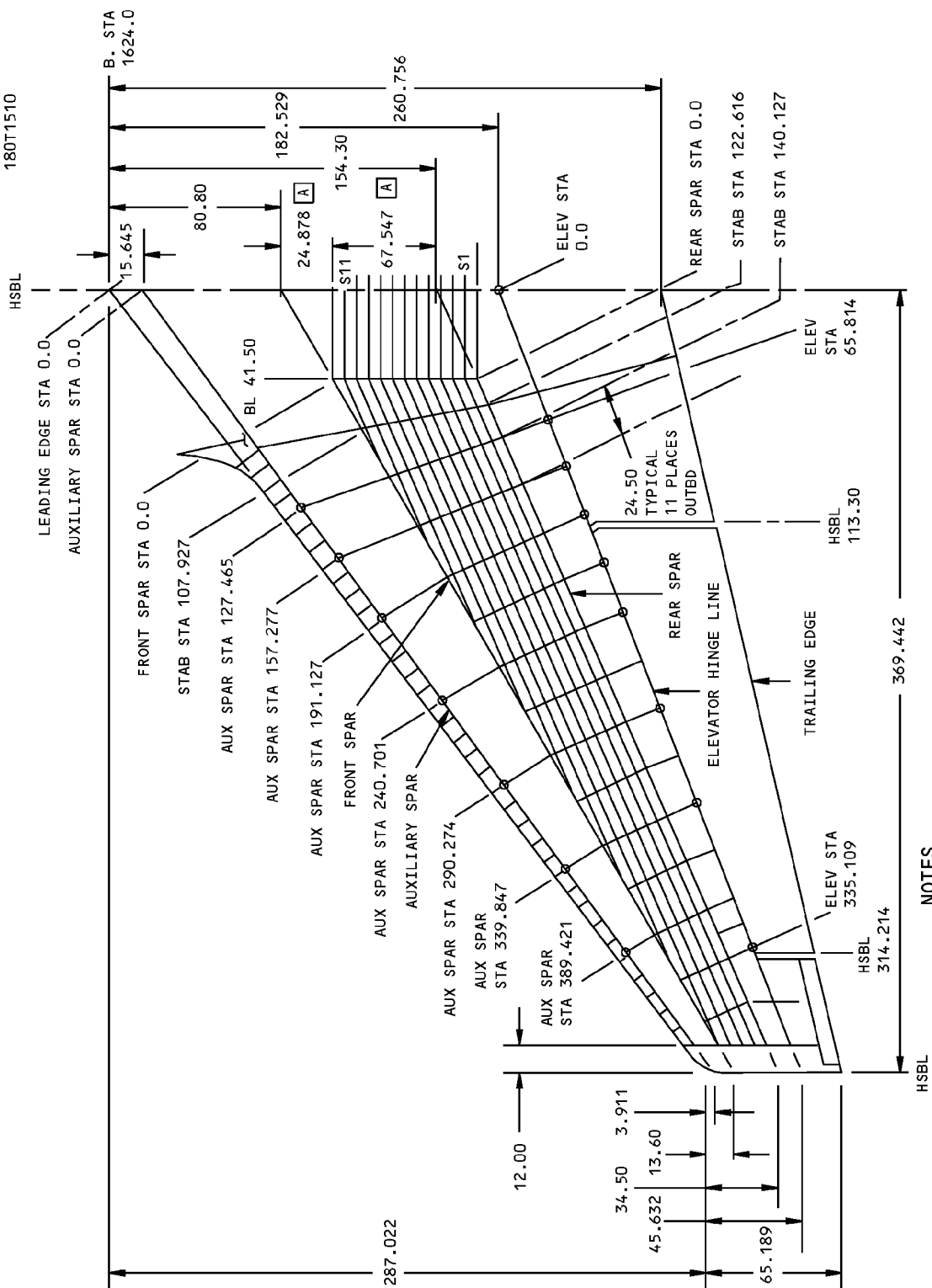
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55-10-00

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REFERENCE DRAWING
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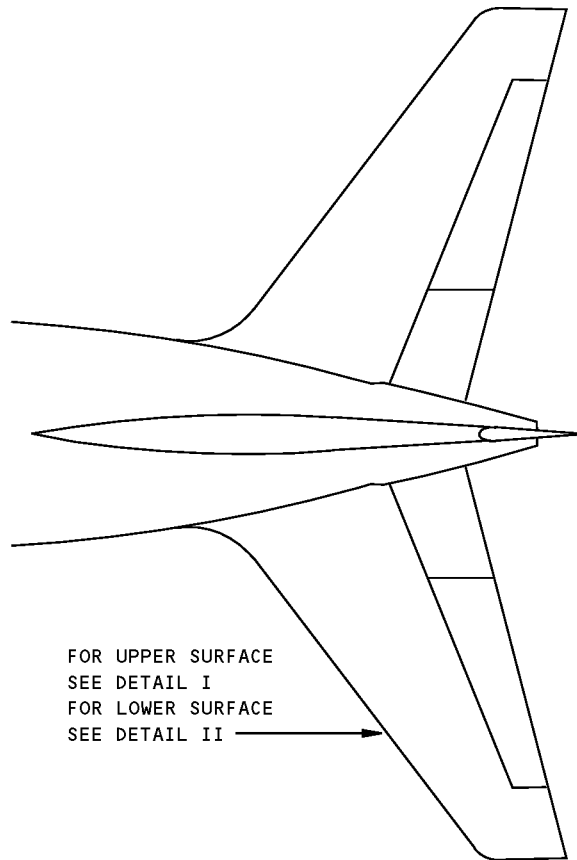
**Horizontal Stabilizer Station Diagram
Figure 2**

- NOTES**
- ALL DIMENSIONS ARE MEASURED ALONG OR PARALLEL TO HORIZONTAL STABILIZER REFERENCE PLANE - EXCEPT AS NOTED
 - [A] MEASURED ALONG CENTER SECTION REFERENCE PLANE.

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183T1000
184T0000
185T0000

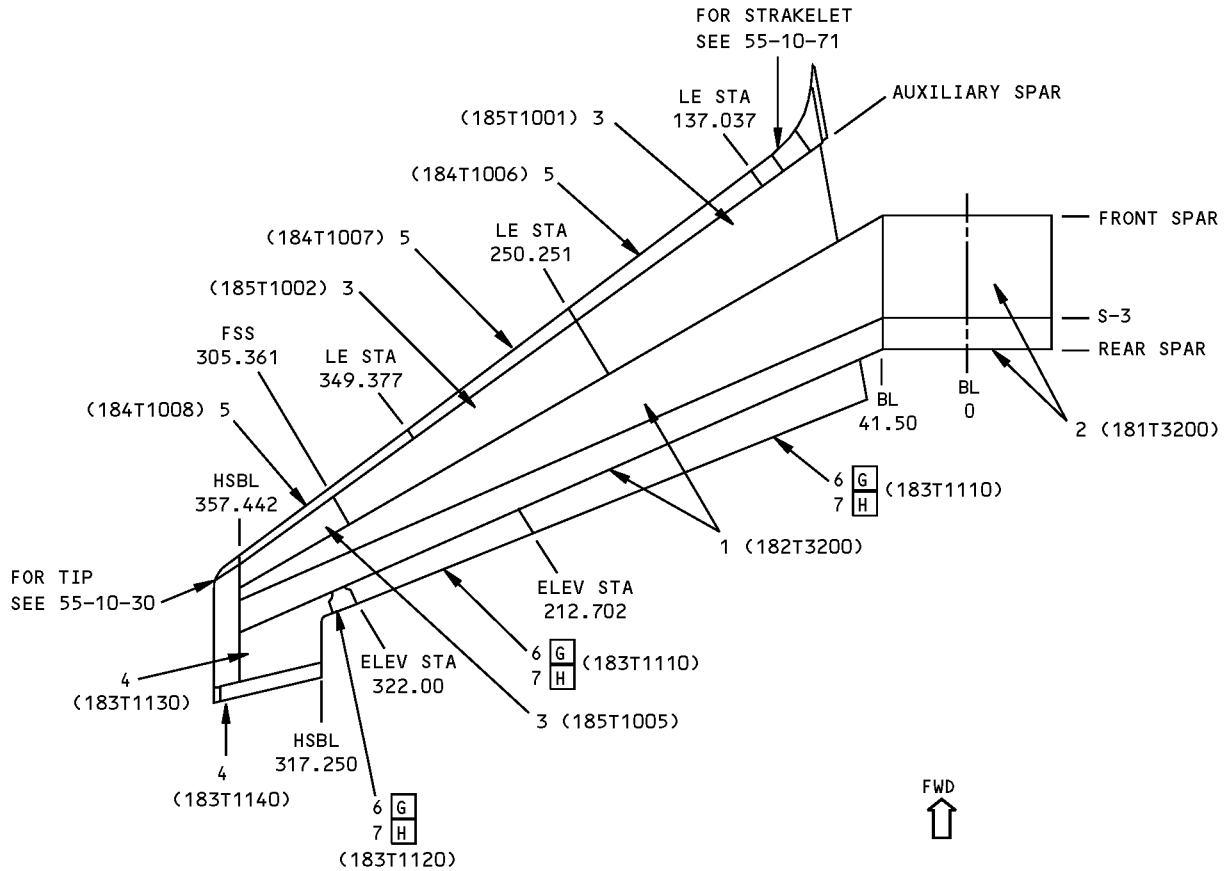


NOTES

- | | |
|--|---|
| <p>A PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION</p> <p>B ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 285, 250°F (121°C) CURE</p> <p>C GRAPHITE/EPOXY TAPE PER BMS 8-168, CLASS I, TYPE II GRADE 145, 250°F (121°C) CURE</p> <p>D MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS</p> <p>E FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 120, CLASS III, GRADE I, 250°F (121°C) CURE</p> | <p>F FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE I, 250°F (121°C) CURE</p> <p>G FOR CUM LINE NUMBERS: 1 THRU 139</p> <p>H FOR CUM LINE NUMBERS: 140 AND ON</p> <p>I FOR CUM LINE NUMBERS: 1 THRU 200</p> <p>J FOR CUM LINE NUMBERS: 201 AND ON</p> |
|--|---|

**Horizontal Stabilizer Skin Identification
Figure 1 (Sheet 1 of 7)**

**767-300
STRUCTURAL REPAIR MANUAL**



UPPER SURFACE
DETAIL I



**Horizontal Stabilizer Skin Identification
Figure 1 (Sheet 2 of 7)**



**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.480	2024-T351 (MACHINED TO 0.158 MIN)	
2	SKIN	0.580	2024-T351 (MACHINED TO 0.145 MIN)	
3	PANEL			
	INNER SKIN	0.012	7075-T6	
	CORE		ALUMINUM HONEYCOMB PER BMS 4-4, 3-10N	
	CORE EDGE		ALUMINUM HONEYCOMB PER BMS 4-4, 4-25N	
	OUTER SKIN	0.100	CLAD 7075-T6	
4	TE PANEL			
	PANEL		PLASTIC GLASS FABRIC EPOXY SANDWICH GLASS FABRIC REINFORCED PER BMS 8-79, CLASS III, GRADE 1, TYPE 120	
	FILLER		GLASS FABRIC REINFORCED EPOXY PER BMS 8-79, CLASS III, GRADE 1, TYPE 120 OR 1581	
	CORE		NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
5	LE PANEL			
	SKIN	0.090	CLAD 2024-T3	
	INNER SKIN	0.016	2024-T3	
	CORE		ALUMINUM HONEYCOMB PER BMS 4-6, CLASS II, TYPE 6.0-37 FORM B OPTIONAL: ALUMINUM HONEYCOMB 5052 FLEXCORE PER BMS 4-6, TYPE II EXCEPT USE TYPE 5.7-37	
6	TE PANEL			
	SKIN		ARAMID/GRAPHITE/EPOXY HYBRID SANDWICH (SEE DETAIL III)	G
	CORE		NONMETALLIC HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
7	TE PANEL			
	SKIN		FIBERGLASS/EPOXY HONEYCOMB SANDWICH (SEE DETAIL III)	H
	CORE		NONMETALLIC HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAIL I

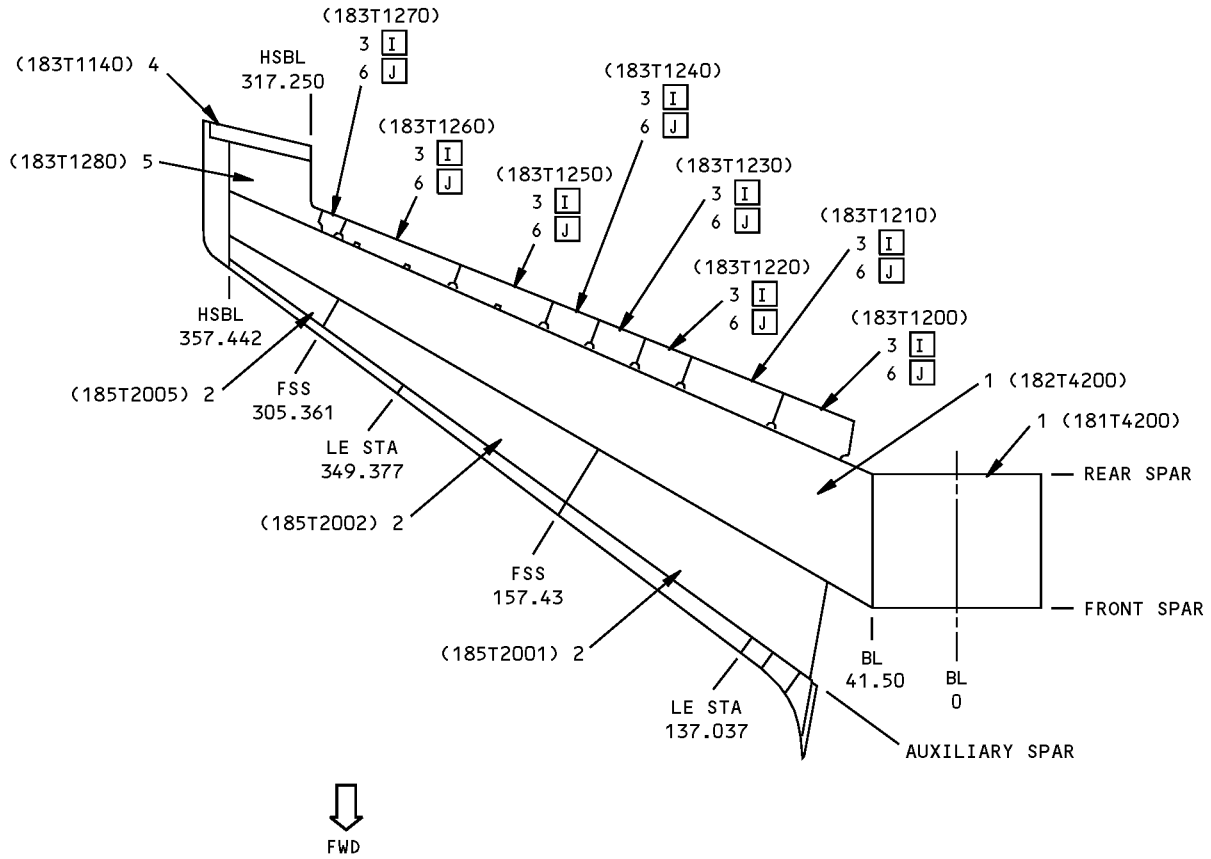
**Horizontal Stabilizer Skin Identification
Figure 1 (Sheet 3 of 7)**

IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**



LOWER SURFACE
DETAIL II



**Horizontal Stabilizer Skin Identification
Figure 1 (Sheet 4 of 7)**



**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.430	7075-T651 (MACHINED TO 0.150 MIN)	
2	PANEL			
	INNER SKIN	0.012	7075-T6	
	CORE		ALUMINUM HONEYCOMB PER BMS 4-4, 3-10N	
	CORE EDGE		ALUMINUM HONEYCOMB PER BMS 4-4, 4-25N	
	OUTER SKIN	0.100	CLAD 7075-T6	
3	TE PANEL		ARAMID/GRAPHITE EPOXY HYBRID HONEYCOMB SANDWICH	
	SKIN		(SEE DETAIL IV)	
	CORE		NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
4	TE PANEL		PLASTIC GLASS FABRIC REINFORCED EPOXY LAMINATE PER BMS 8-79, CLASS III, GRADE 1, TYPE 120 OR 1581	
5	TE PANEL		PLASTIC GLASS FABRIC REINFORCED EPOXY SANDWICH	
	SKIN		GLASS FABRIC REINFORCED PER BMS 8-79, CLASS III, GRADE 1, TYPE 120	
	FILLER		GLASS FABRIC REINFORCED PER BMS 8-79, CLASS III, GRADE 1, TYPE 120 OR 1581	
	CORE		NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
6	TE PANEL		ARAMID/GRAPHITE/FIBERGLASS EPOXY HONEYCOMB SANDWICH	
	SKIN		(SEE DETAIL IV)	
	CORE		NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAIL II

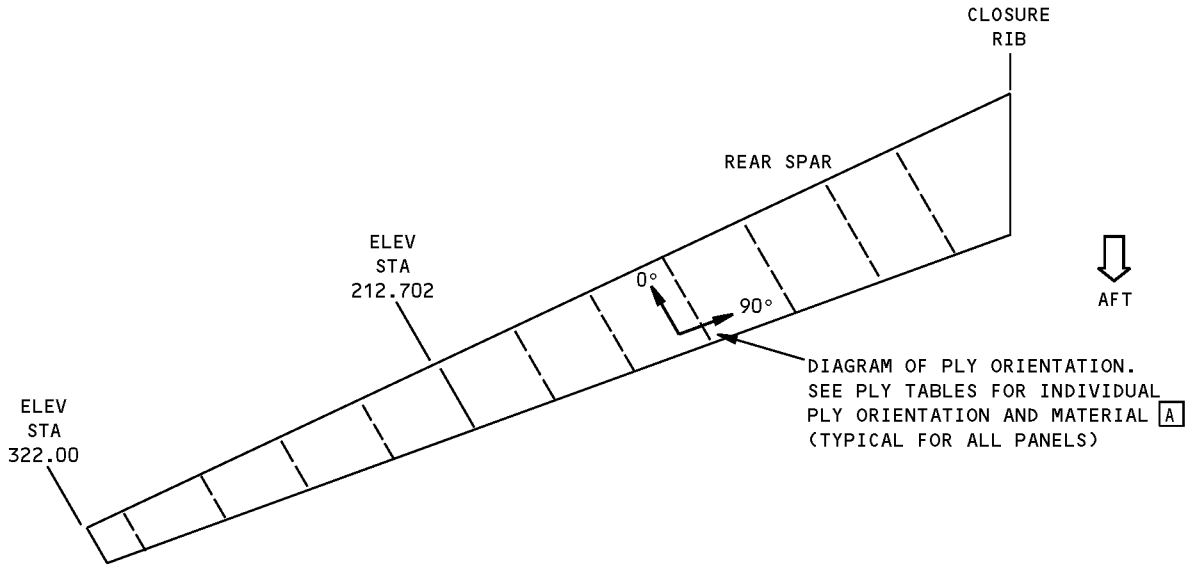
**Horizontal Stabilizer Skin Identification
Figure 1 (Sheet 5 of 7)**

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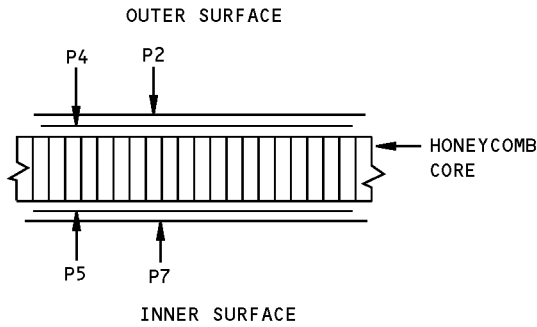
55-10-01

IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**



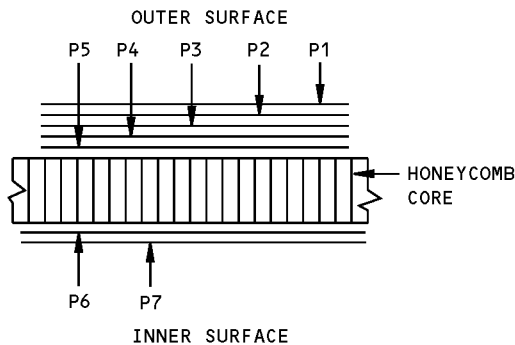
UPPER TRAILING EDGE PANELS (ITEMS 6 AND 7, DETAIL I)



SECTION THRU HONEYCOMB PANEL FOR ITEM 6 (DETAIL I)

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
6 (DETAIL I)	P2	[B]	0 OR 90°
	P4	[C]	0°
	P5	[C]	0°
	P7	[B]	0 OR 90°

PLY TABLE [D] [G]



SECTION THRU HONEYCOMB PANEL FOR ITEM 7 (DETAIL I)

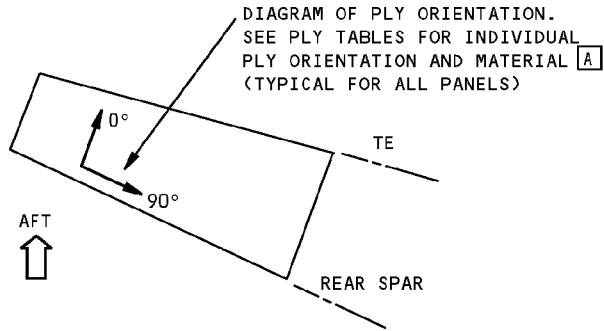
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
7 (DETAIL I)	P1	[E]	0 OR 90°
	P2, P3, P4, P5	[F]	0 OR 90°
	P6	[F]	0 OR 90°
	P7	[E]	0 OR 90°

PLY TABLE [D] [H]

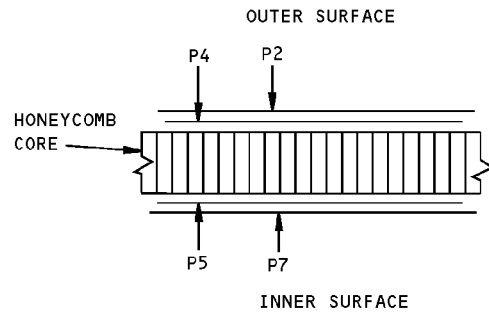
DETAIL III

**Horizontal Stabilizer Skin Identification
Figure 1 (Sheet 6 of 7)**

**767-300
STRUCTURAL REPAIR MANUAL**



**LOWER TE PANEL
FOR ITEMS 3 AND 6 (DETAIL II)
(TYPICAL)**



**SECTION THRU HONEYCOMB PANEL
FOR ITEMS 3 AND 6 (DETAIL II)**

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
3 (DETAIL II)	P2	[B]	0 OR 90°
	P4	[C]	0°
	P5	[C]	0°
	P7	[B]	0 OR 90°

PLY TABLE [D] [I]

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
6 (DETAIL II)	P2	[F]	0 OR 90°
	P4	[C]	0°
	P5	[C]	0°
	P7	[B]	0 OR 90°

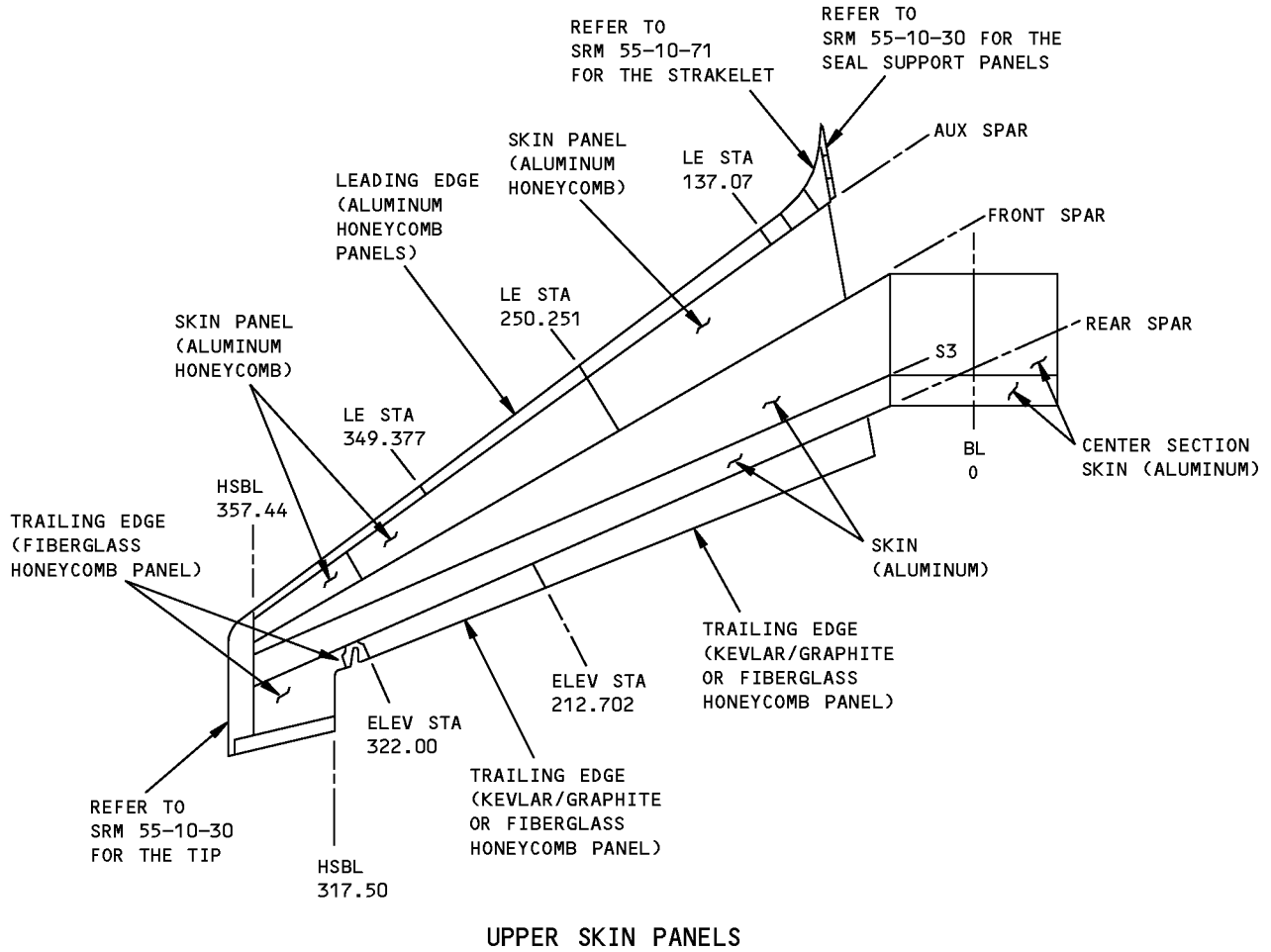
PLY TABLE [D] [J]

DETAIL IV

**Horizontal Stabilizer Skin Identification
Figure 1 (Sheet 7 of 7)**

**767-300
STRUCTURAL REPAIR MANUAL**

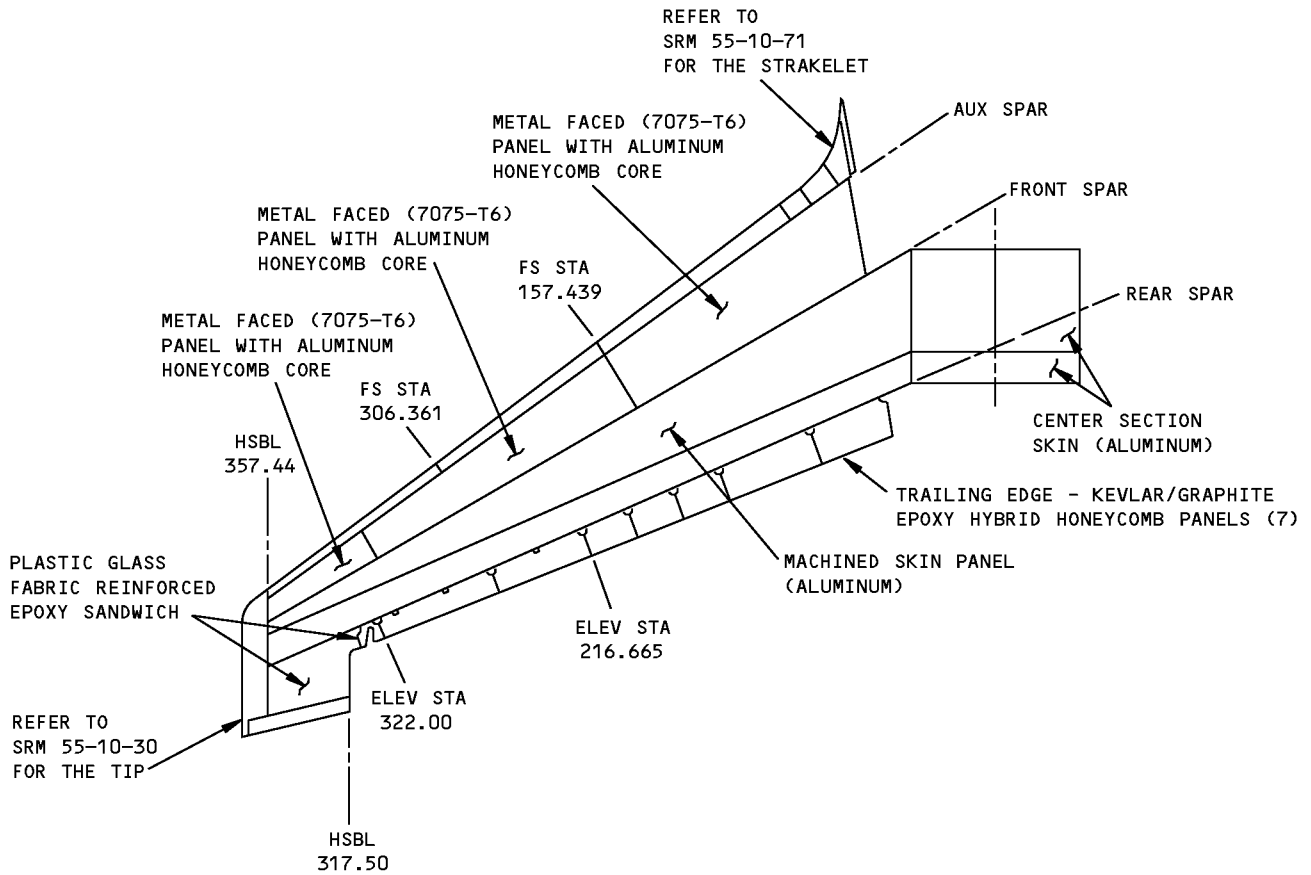
ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER SKINS



18440 S0006828876_V2

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 1 of 9)**

**767-300
STRUCTURAL REPAIR MANUAL**



LOWER SKIN PANELS

18444 S0006828877_V2

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 2 of 9)**



**767-300
STRUCTURAL REPAIR MANUAL**

LOCATION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	PUNCTURES AND HOLES	PANEL DELAMINATION
LEADING EDGE SKIN	A	REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND IV. REMOVE OTHER DAMAGE AS GIVEN IN DETAILS II AND V IF THE DEPTH OF CLEANUP DOES NOT EXCEED 0.01 INCH.	O	D	C
OUTER SKIN BETWEEN AUXILIARY SPAR AND FRONT SPAR	A	REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND IV. REMOVE OTHER DAMAGE AS GIVEN IN DETAILS II AND V IF THE DEPTH OF CLEANUP DOES NOT EXCEED 0.006 INCH IN CHEM-MILLED POCKETS AND 0.01 INCH AT OTHER LOCATIONS.	O	D	C
OUTER SKIN BETWEEN FRONT AND REAR SPARS M	A	REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND IV. AT OTHER LOCATIONS REMOVE DAMAGE AS GIVEN IN DETAILS II AND VI, IF THE DEPTH OF CLEANUP DOES NOT EXCEED 10% OF THE SKIN THICKNESS AT THE DAMAGE LOCATION. E	F	G	---
UPPER AND LOWER CENTER SECTION SKINS M	A	REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND IV. REMOVE OTHER DAMAGE AS GIVEN IN DETAILS II AND X IF THE DEPTH OF CLEANUP DOES NOT EXCEED 0.015 INCH. SEE DETAIL VIII FOR DAMAGE CLEANUP IN PADDED AREAS. L	F	G	---
TRAILING EDGE SKIN	H	I	J	H	H

TABLE I

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 3 of 9)**

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ALLOWABLE DAMAGE 1
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STRUCTURAL REPAIR MANUAL

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-21.
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS GIVEN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING AS GIVEN IN SRM 51-70-14.

- [A] CRACKS ARE NOT PERMITTED. EDGE CRACKS MUST BE REMOVED AS SHOWN IN DETAILS I AND IV.
- [B] USE ALUMINUM ALLOY SHIM AS REQUIRED AND INSTALL THE FITTING WITH BMS 5-95 (MATING SURFACE) SEALANT. REFER TO SRM 55-10-90 FOR IDENTIFICATION AND ALLOWABLE DAMAGE OF THE CENTER SECTION FITTING.
- [C] REMOVE EDGE DELAMINATION AS GIVEN IN DETAIL I OR IV. 1.50 INCHES (38 mm) MAXIMUM DIAMETER IS PERMITTED IN THE HONEYCOMB AREA. REPAIR THE DELAMINATION AS GIVEN IN SRM 51-70 NO LATER THAN THE NEXT "C" CHECK.
- [D] HOLES UP TO 0.25 INCH (6 mm) DIAMETER, NOT CLOSER THAN 1.0 INCH (25 mm) TO ANY ADJACENT HOLE, MAY BE FILLED WITH BMS 5-28, TYPE II POTTING COMPOUND. [N]
- [E] REPLACE COUNTERSUNK FASTENER WITH BUTTON-HEAD FASTENER OF THE SAME TYPE, IF BLENDOUT AROUND THE HEAD EITHER IS MORE THAN 0.010 INCH (0.254 mm) OR IF IT CAUSES A KNIFE-EDGE CONDITION.
- [F] DENTS UP TO 0.125 INCH (3 mm) ARE PERMITTED WHEN A/Y IS NOT LESS THAN 30 (SEE DETAIL III). THE DISTANCE BETWEEN ADJACENT DENTS, EDGE-TO-EDGE, MUST BE GREATER THAN ONE-HALF THE DIAMETER OF THE LARGEST DENT.
- [G] HOLES UP TO 0.25 INCH (6 mm) DIAMETER, NOT CLOSER THAN 1.0 INCH (25 mm) TO AN ADJACENT HOLE OR OTHER DAMAGE, MAY BE FILLED WITH AN ALUMINUM (2117) RIVET, INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.
- [H] REMOVE EDGE DAMAGE AS GIVEN IN DETAIL I OR IV. NOT MORE THAN ONE FASTENER HOLE IN SIX MAY BE CRACKED OR DAMAGED. DAMAGE MUST NOT EXCEED 10% OF THE EDGE BAND LENGTH PER SIDE. FOR OTHER DAMAGE SEE DETAIL VII. DAMAGE IS PERMITTED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE THAT IS NOT REPAIRED AS GIVEN IN [N].

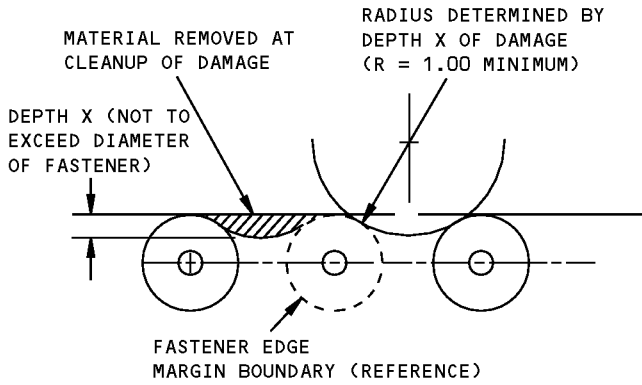
- [I] DAMAGE TO SURFACE RESIN IS PERMITTED. IF THERE IS FIBER DAMAGE REFER TO [H].
- [J] DENTS RESULT IN DELAMINATION AND FIBER DAMAGE. REFER TO [H].
- [K] SEE DETAIL VIII FOR DAMAGE CLEANUP IN PADDED AREAS.
- [L] THE LENGTH OF DAMAGE BETWEEN THE FRONT AND REAR SPARS, MEASURED PERPENDICULAR TO THE REAR SPAR AFTER CLEANING OUT, MUST NOT EXCEED A TOTAL OF 6.00 INCHES (150 mm) IN ANY LOCATION. MULTIPLE AREAS OF DAMAGE ARE TO BE CONSIDERED ON THE SAME LINE IF THEY ARE LESS THAN 1.50 INCHES (38 mm) FROM EACH OTHER (MEASURED ON A LINE PARALLEL TO THE REAR SPAR).
- [M] SHOT PEEN REWORKED AREAS AS GIVEN IN SRM 51-20-06. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT OVER AFTER REWORK.
- [N] REMOVE MOISTURE FROM THE DAMAGE AREA. THE USE OF VACUUM AND HEAT (MAXIMUM OF 125°F (52°C)) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH AIRPLANE "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE IF THERE IS PEELING OR DETERIORATION OF THE TAPE. REPAIR NO LATER THAN THE NEXT AIRPLANE "C" CHECK.
- [O] IT IS NOT NECESSARY TO REWORK DENTS THAT AGREE WITH THE CONDITIONS IN DETAIL IX AND HAVE A DEPTH (Y) NOT GREATER THAN 0.125 INCH (3 mm).

DENTS THAT AGREE WITH THE CONDITIONS IN DETAIL IX BUT WITH A DEPTH (Y) GREATER THAN 0.125 INCH (3 mm) MUST BE FILLED WITH A POTTING COMPOUND AS SHOWN IN SRM 51-70-01. MAKE A COVER OVER THE FILLED DENT WITH ALUMINUM FOIL TAPE (SPEED TAPE). AS AN ALTERNATIVE, THE DENT MAY BE REPAIRED AS SHOWN IN SRM 51-70-10, REPAIR 2.

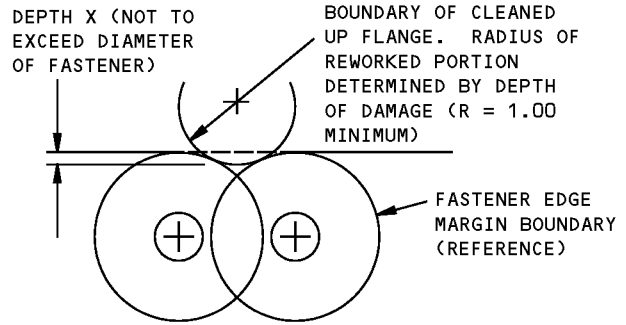
DENTS THAT DO NOT AGREE WITH THE CONDITIONS IN DETAIL IX MUST BE REPAIRED. REFER TO SRM 51-70-10.

Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 4 of 9)

STRUCTURAL REPAIR MANUAL

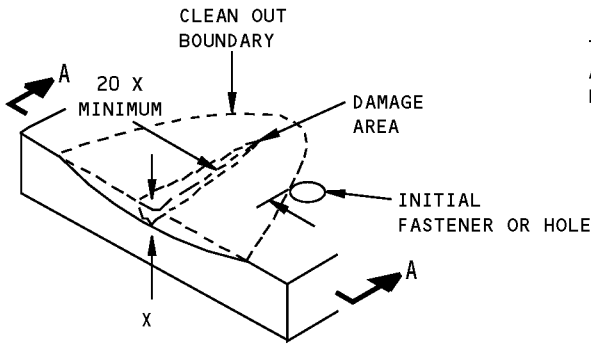


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

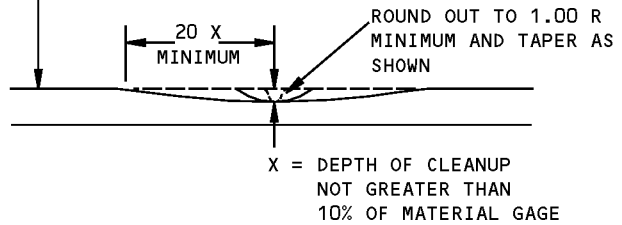


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I

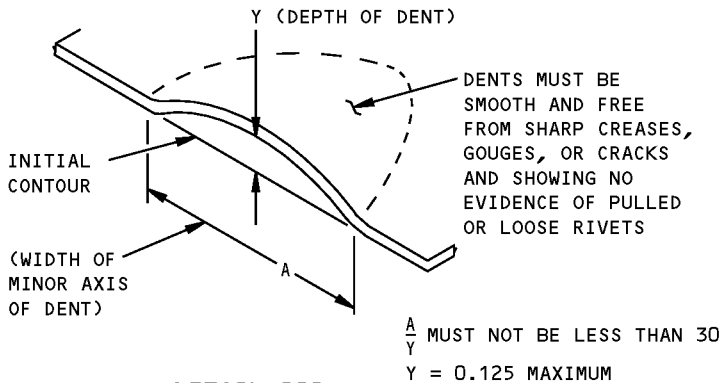


THE DISTANCE OF THE DAMAGE FROM AN EXISTING HOLE, FASTENER OR SKIN EDGE MUST NOT BE LESS THAN 20X

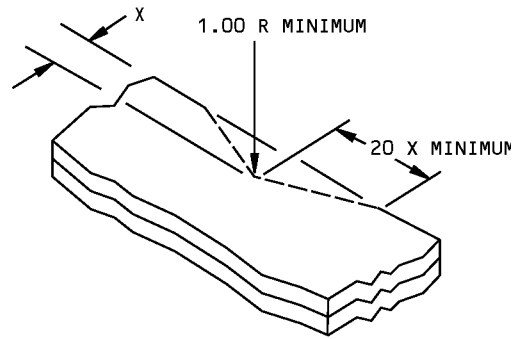


A-A

**REMOVAL OF NICK OR GOUGE DAMAGE ON A SURFACE
DETAIL II**



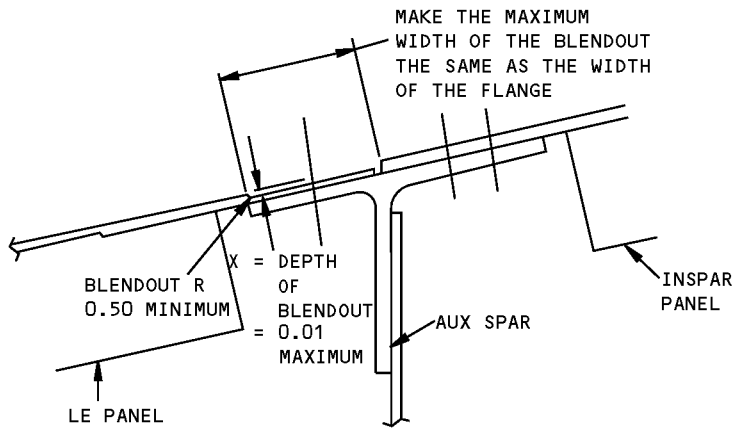
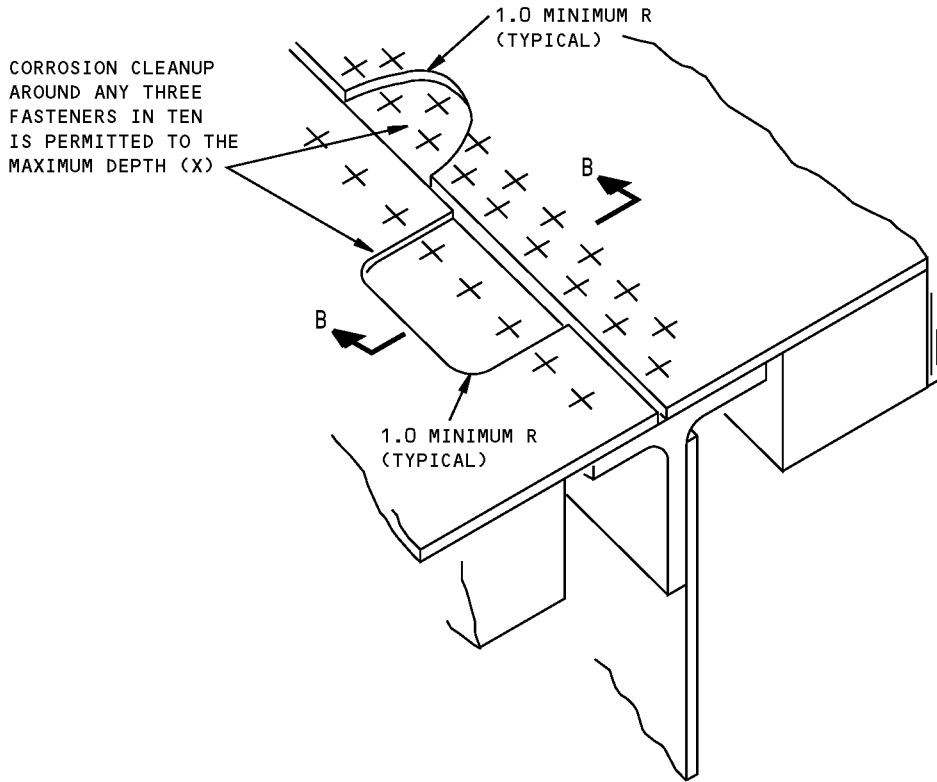
DETAIL III



DETAIL IV

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 5 of 9)**

**767-300
STRUCTURAL REPAIR MANUAL**

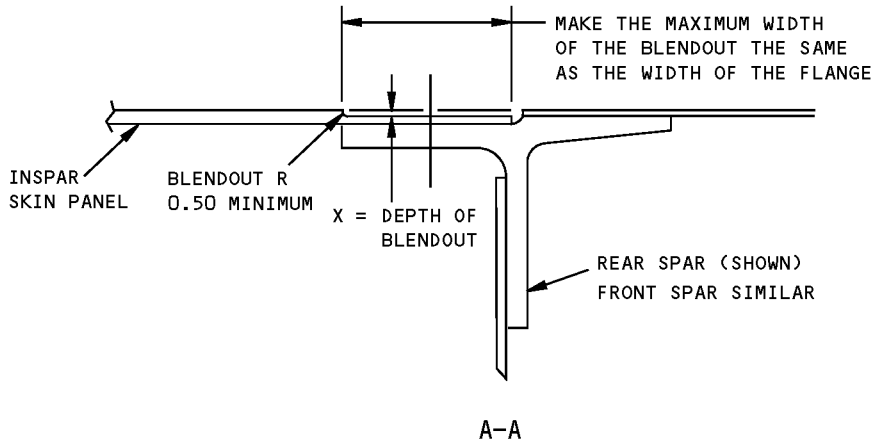
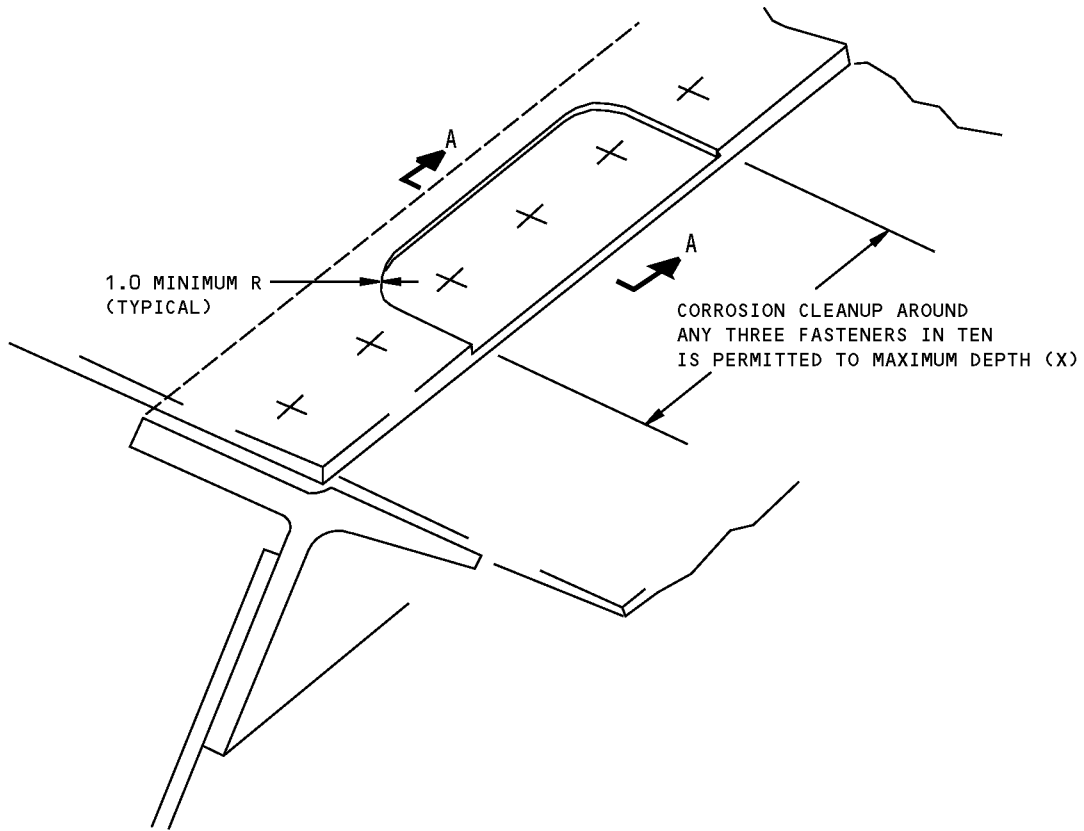


SECTION B-B

DETAIL V

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 6 of 9)**

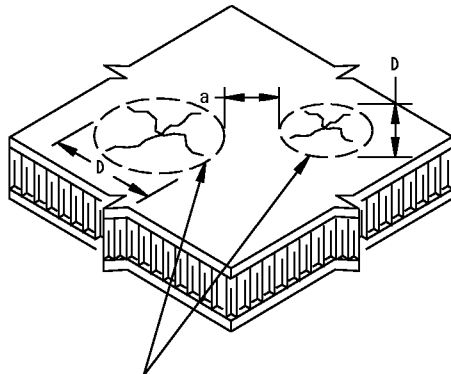
**767-300
STRUCTURAL REPAIR MANUAL**



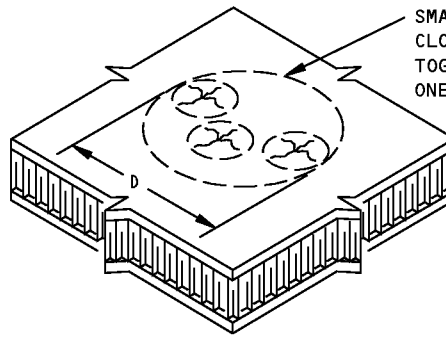
DETAIL VI

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 7 of 9)**

**767-300
STRUCTURAL REPAIR MANUAL**



ADJACENT DAMAGE SITES ON
SURFACE OF COMPOSITE PANEL



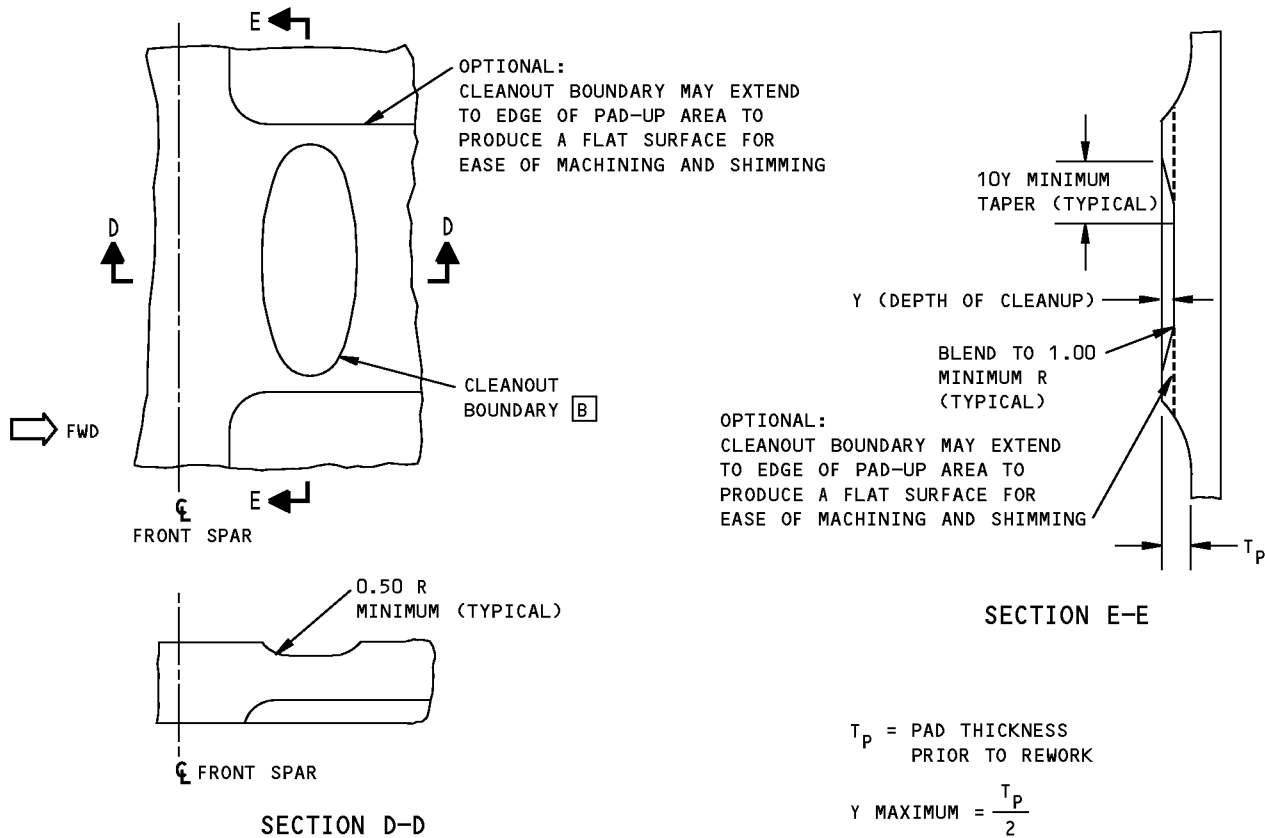
SMALL DAMAGE SITES THAT ARE
CLOSELY SPACED MAY BE GROUPED
TOGETHER AND CONSIDERED AS
ONE DAMAGE SITE

- THE DAMAGE SITE IS ANY SINGLE AREA OF A PANEL WHERE THERE IS A DENT, CRACK, DELAMINATION, PUNCTURE OR ANY COMBINATION OF THESE. SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE.
- DAMAGE TO COMPOSITE PANELS EXPOSED TO MULTIPLE IMPACTS (FOR EXAMPLE: HAIL DAMAGE), CAN BE DETECTED BY USING INSTRUMENTED NON-DESTRUCTIVE INSPECTION (NDI) METHODS OR BY THE TAP TEST. THE INSPECTION SHOULD COVER THE AREA WITHIN 3 DIAMETERS AROUND THE EDGE OF THE VISIBLE DAMAGE SITE. FOR TAP TEST, USE A SOLID METAL OBJECT AND TAP THE DAMAGE AREA LIGHTLY BUT FIRMLY. VOID AREAS SHOULD PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLIDLY BONDED AREA. THE TAP TEST IS NOT A RELIABLE METHOD FOR FINDING DAMAGE. WHENEVER POSSIBLE USE NDI PROCEDURES ACCORDING TO THE NONDESTRUCTIVE TEST MANUAL.
- "D" IS DETERMINED BY MEASURING THE DIAMETER OF A CIRCLE DRAWN AROUND THE DENT, CRACK, OR OTHER DAMAGE, WHICHEVER IS GREATER.
D = 1.5 MAXIMUM
- "a" IS THE DISTANCE BETWEEN TWO ADJACENT DAMAGE SITES.
a = 4.50 MINIMUM

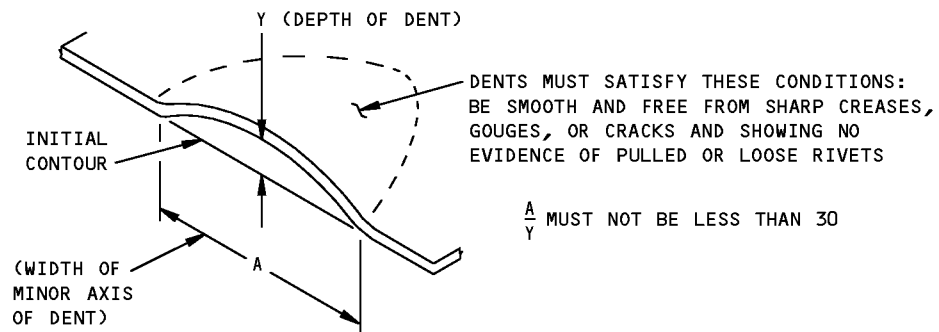
**DAMAGE SIZING AND SPACING DATA
FOR THE HONEYCOMB AREAS OF COMPOSITE PANELS
DETAIL VII**

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 8 of 9)**

**767-300
STRUCTURAL REPAIR MANUAL**



**DAMAGE CLEANUP OF PADDED AREA
DETAIL VIII**

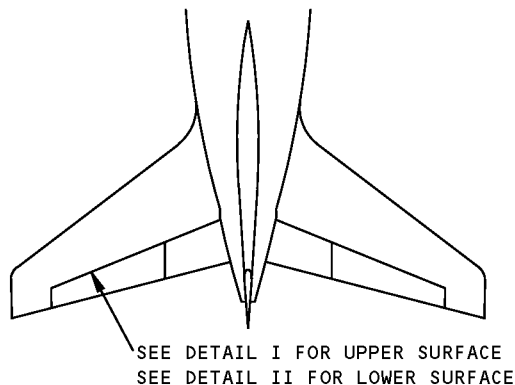


**ALLOWABLE DAMAGE FOR DENT
DETAIL IX**

**Allowable Damage - Horizontal Stabilizer Skins
Figure 101 (Sheet 9 of 9)**

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STRUCTURAL REPAIR MANUAL

REPAIR 1 - HORIZONTAL STABILIZER TRAILING EDGE SKIN REPAIR



NOTES

- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS AS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING AS GIVEN IN SRM 51-70-14

A DO NOT EXTEND GRAPHITE/EPOXY REPAIR PLYS INTO PANEL EDGE BAND

B INSPECT INTERIM REPAIR USING INSTRUMENTED NDI METHODS OR "TAP" TEST EVERY AIRPLANE "C" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN

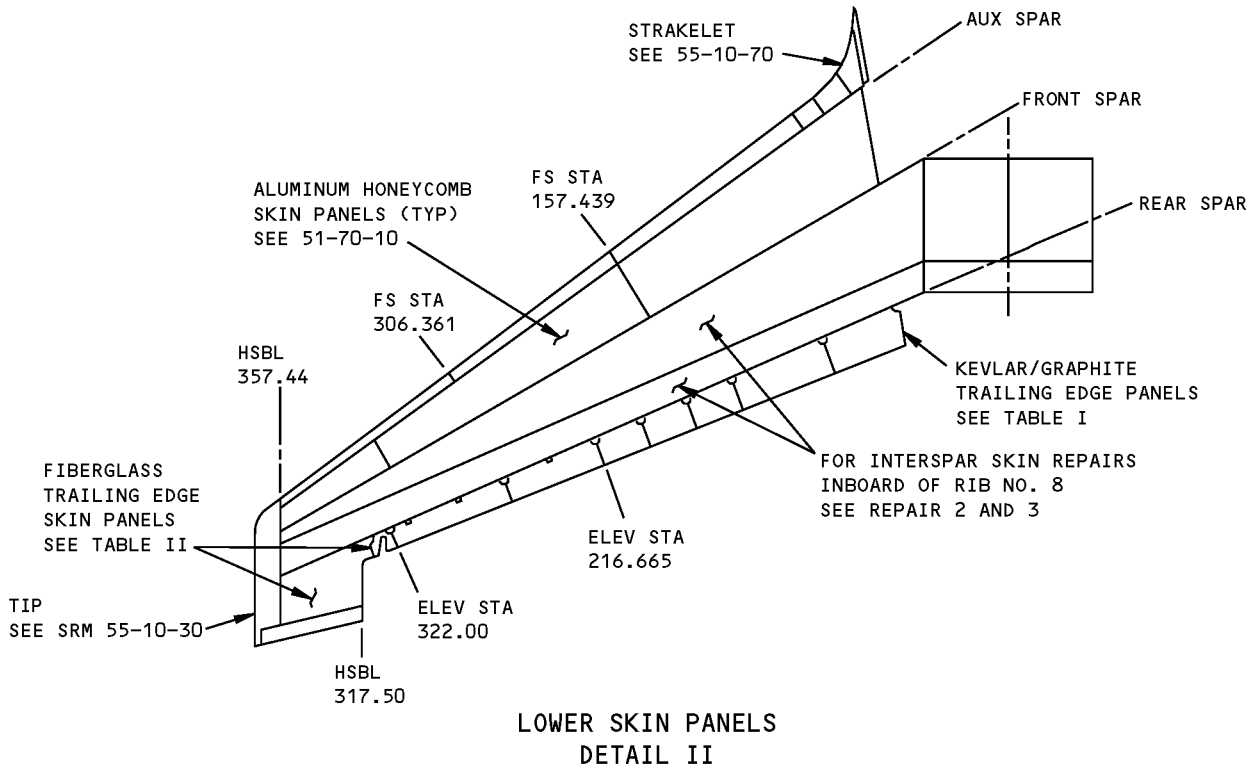
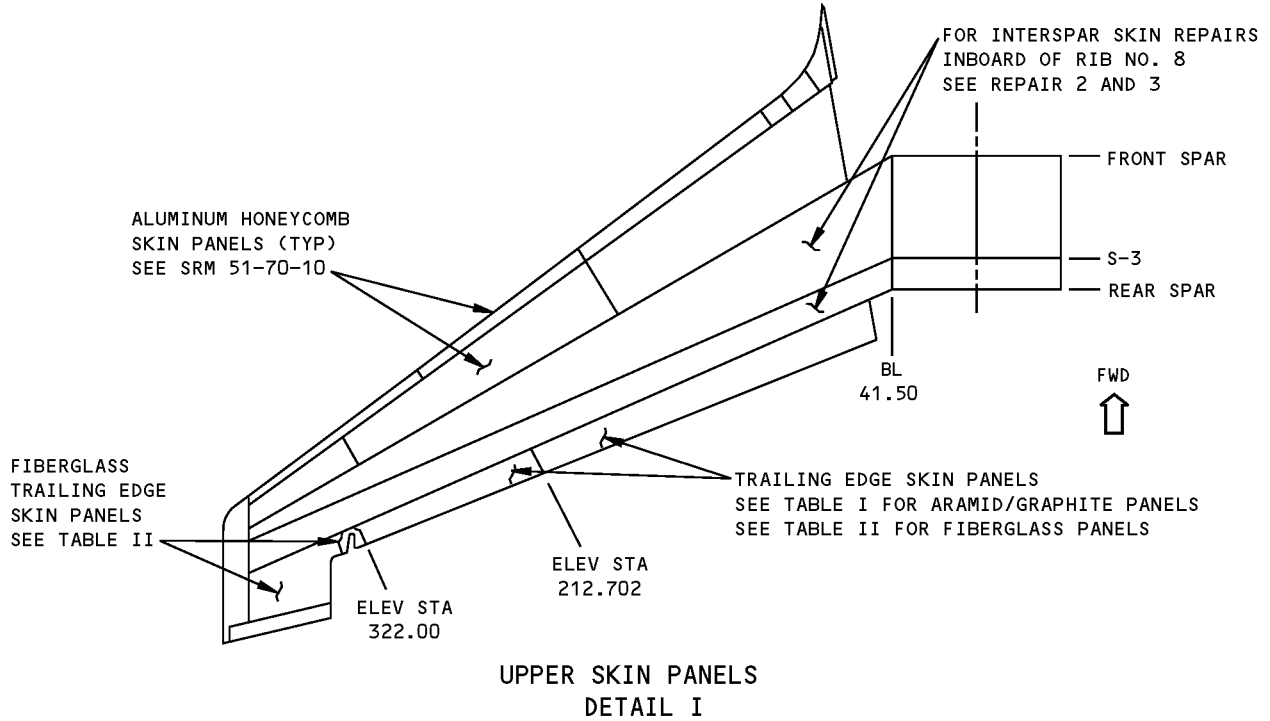
C LIMITED TO REPAIR OF DAMAGE TO ONE FACESHEET SKIN AND HONEYCOMB CORE.

D MINIMUM SPACING (EDGE TO EDGE), 6 INCHES (150 mm) BETWEEN CORE REPAIRS.

E WHERE BMS 5-95 SEALANT IS APPLIED ON EXTERIOR SURFACES OF PANEL AT MANUFACTURE, REAPPLY BMS 5-95 SEALANT ON REWORKED AREAS PRIOR TO THE APPLICATION OF ENAMEL FINISH. REFER TO AMM 51-21-12.

Horizontal Stabilizer Trailing Edge Skin Repairs
Figure 201 (Sheet 1 of 4)

**767-300
STRUCTURAL REPAIR MANUAL**



**Horizontal Stabilizer Trailing Edge Skin Repairs
Figure 201 (Sheet 2 of 4)**

STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS [A]		
	WET LAYUP ROOM TEMPERATURE CURE (SRM 51-70-03)	WET LAYUP 150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [C]	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [C] [D]	8.0 INCHES (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED [D]	16.0 INCHES (400 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	NO SIZE LIMIT
DELAMINATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	UP TO 4.0 INCHES (100 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.L. OVER 4.0 INCHES (100 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F (121°C) CURE ARAMID/GRAPHITE HONEYCOMB PANELS [E]

TABLE I

**Horizontal Stabilizer Trailing Edge Skin Repairs
Figure 201 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS [A]		
	WET LAYUP ROOM TEMPERATURE CURE (51-70-06)	WET LAYUP 150°F (66°C) CURE (51-70-06)	WET LAYUP 200°F (93°C) CURE (51-70-17)	250°F (121°C) CURE (51-70-07)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. [C]	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES MAX (100 mm) DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. [C] [D]	8.0 INCHES MAX (200 mm) DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED [D]	16.0 INCHES MAX (400 mm) DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	NO SIZE LIMIT
DELAMINATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	UP TO 4.0 INCHES (100 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.L. OVER 4.0 INCHES (100 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F (121° C) CURE FIBERGLASS HONEYCOMB PANELS
TABLE II

**Horizontal Stabilizer Trailing Edge Skin Repairs
Figure 201 (Sheet 4 of 4)**

767-300 STRUCTURAL REPAIR MANUAL

REPAIR 2 - HORIZONTAL STABILIZER INTERSPAR SKIN FLUSH REPAIR BETWEEN STRINGERS INBOARD OF RIB NO. 8

REPAIR INSTRUCTIONS

1. Cut out damaged portion of skin to give a hole with the major axis parallel to the stiffeners.
2. Make the repair parts.
3. Assemble the repair parts and drill the fastener holes.
4. Remove the repair parts.
5. Break sharp edges of initial and repair parts 0.015R to 0.030R.
6. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-79, Type III primer to the repair parts and to the bare surfaces of the initial parts as given in AMM 51-24.
9. Install the repair parts. Install rivets wet with BMS 5-95.
10. Fill gap between parts with aerodynamic smoother (BMS 5-79 or BMS 5-95).
11. Restore initial finish as given in AMM 51-21.

- A** 2024-T3 FOR UPPER SKIN. 7075-T6 FOR LOWER SKIN. FOR MATERIAL GAGES, SEE TABLE I
- B** CLAD 2024-T3 FOR UPPER SKIN. CLAD 7075-T6 FOR LOWER SKIN. SAME THICKNESS AS SKIN
- C** OPTIONAL REPAIR FASTENER:
BACB30NW6K BOLT WITH BACC30M COLLAR. COLD WORK FASTENER HOLES ON UPPER SKIN AS GIVEN IN SRM 51-40-09

FASTENER SYMBOLS

-  REPAIR FASTENER LOCATION

NOTES

- WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

**Horizontal Stabilizer Interspar Skin Flush Repair Between Stringers - Inboard of Rib No. 8
Figure 201 (Sheet 1 of 3)**



**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	A
2	PLATE	1	A
3	PLATE	1	A
4	PLATE	1	A
5	FILLER	1	B

SKIN THICKNESS	REPAIR PLATE GAGE			
	PLATE 1	PLATE 2	PLATE 3	PLATE 4
0.071 THRU 0.100	0.040	0.040	0.040	NOT REQUIRED
OVER 0.100 THRU 0.125	0.040	0.040	0.040	0.040
OVER 0.125 THRU 0.160	0.050	0.050	0.050	0.050
OVER 0.160 THRU 0.190	0.050	0.050	0.050	0.080

TABLE I

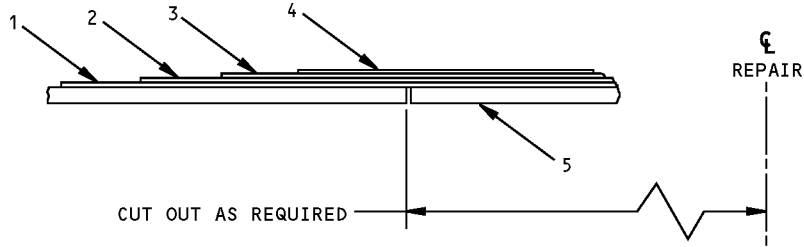
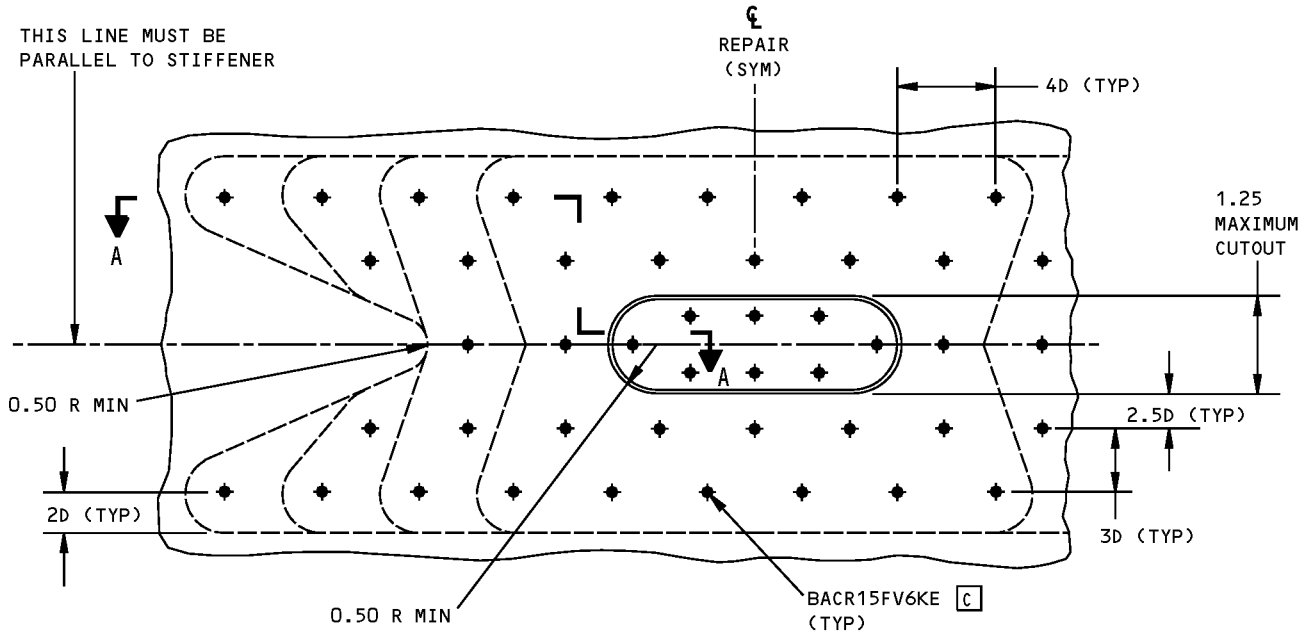
**Horizontal Stabilizer Interspar Skin Flush Repair Between Stringers - Inboard of Rib No. 8
Figure 201 (Sheet 2 of 3)**

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REPAIR 2
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**767-300
STRUCTURAL REPAIR MANUAL**



SECTION A-A

**Horizontal Stabilizer Interspar Skin Flush Repair Between Stringers - Inboard of Rib No. 8
Figure 201 (Sheet 3 of 3)**

STRUCTURAL REPAIR MANUAL

REPAIR 3 - HORIZONTAL STABILIZER SKIN FLUSH REPAIR AT A STRINGER INBOARD OF RIB NO. 8



REPAIR INSTRUCTIONS

1. Drill out initial fasteners in the skin to stringer attachment as required.
2. Cut out damaged portion of skin to give a rectangular hole with radiused corners. Do not cut into stiffener. If stiffener is damaged, refer to SRM 55-10-03.
3. Make the repair parts.
4. Assemble the repair parts and drill the fastener holes.
5. Remove the repair parts.
6. Break sharp edges of initial and repair parts 0.015R to 0.030R.
7. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial part. Refer to SRM 51-20-01.
9. Apply one coat of BMS 10-79, Type III primer to the repair parts and to the bare surfaces of the initial parts as given in AMM 51-24.
10. Install the repair parts. Install rivets wet with BMS 5-95.
11. Fill gap between parts with aerodynamic smoother (BMS 5-79 or BMS 5-95).
12. Restore initial finish as given in AMM 51-21.

NOTES

- WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS
- A** 2024-T3 FOR UPPER SKIN. 7075-T6 FOR LOWER SKIN. FOR MATERIAL GAGES, SEE TABLE I
- B** CLAD 2024-T3 FOR UPPER SKIN. CLAD 7075-T6 FOR LOWER SKIN. SAME THICKNESS AS SKIN
- C** OPTIONAL REPAIR FASTENER: BACB30NWK BK BOLT WITH BACC30M COLLAR. SEE TABLE I FOR FASTENER SIZE. COLD WORK FASTENER HOLES ON UPPER SKIN AS GIVEN IN SRM 51-40-09
- D** IF THE HOLE IS DAMAGED, USE THE NEXT SIZE FASTENER. INITIAL DEPTH OF COUNTERSINK MUST BE MAINTAINED. MICROSHAVE FLUSH PROTRUDING PORTION OF FASTENER HEAD AS GIVEN IN SRM 51-01-01

FASTENER SYMBOLS

-  INITIAL FASTENER LOCATION
-  REPAIR FASTENER LOCATION

**Horizontal Stabilizer Interspar Skin Flush Repair at a Stringer - Inboard of Rib No. 8
Figure 201 (Sheet 1 of 3)**



**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	2	A
2	PLATE	2	A
3	PLATE	2	A
4	PLATE	2	A
5	FILLER	1	B

SKIN THICKNESS	REPAIR PLATE GAGE				REPAIR FASTENER SIZE
	PLATE 1	PLATE 2	PLATE 3	PLATE 4	
0.071 THRU 0.100	0.040	0.040	0.040	NOT REQUIRED	3/16
OVER 0.100 THRU 0.125	0.040	0.040	0.040	0.040	1/4
OVER 0.125 THRU 0.160	0.050	0.050	0.050	0.050	1/4
OVER 0.160 THRU 0.190	0.050	0.050	0.050	0.080	1/4

TABLE I

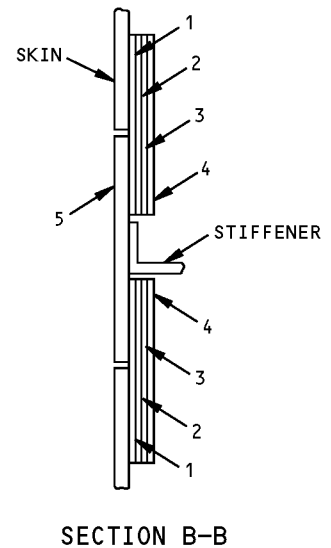
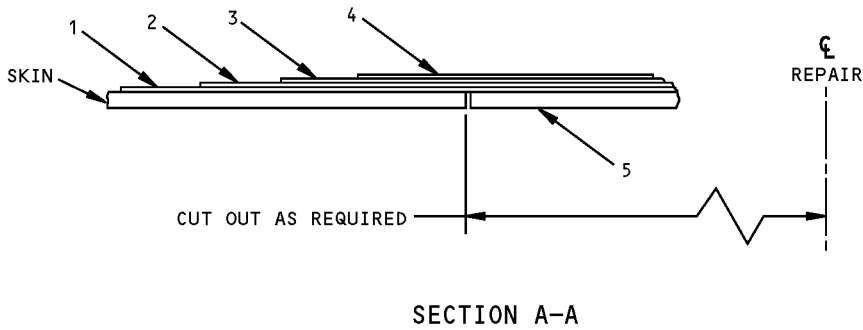
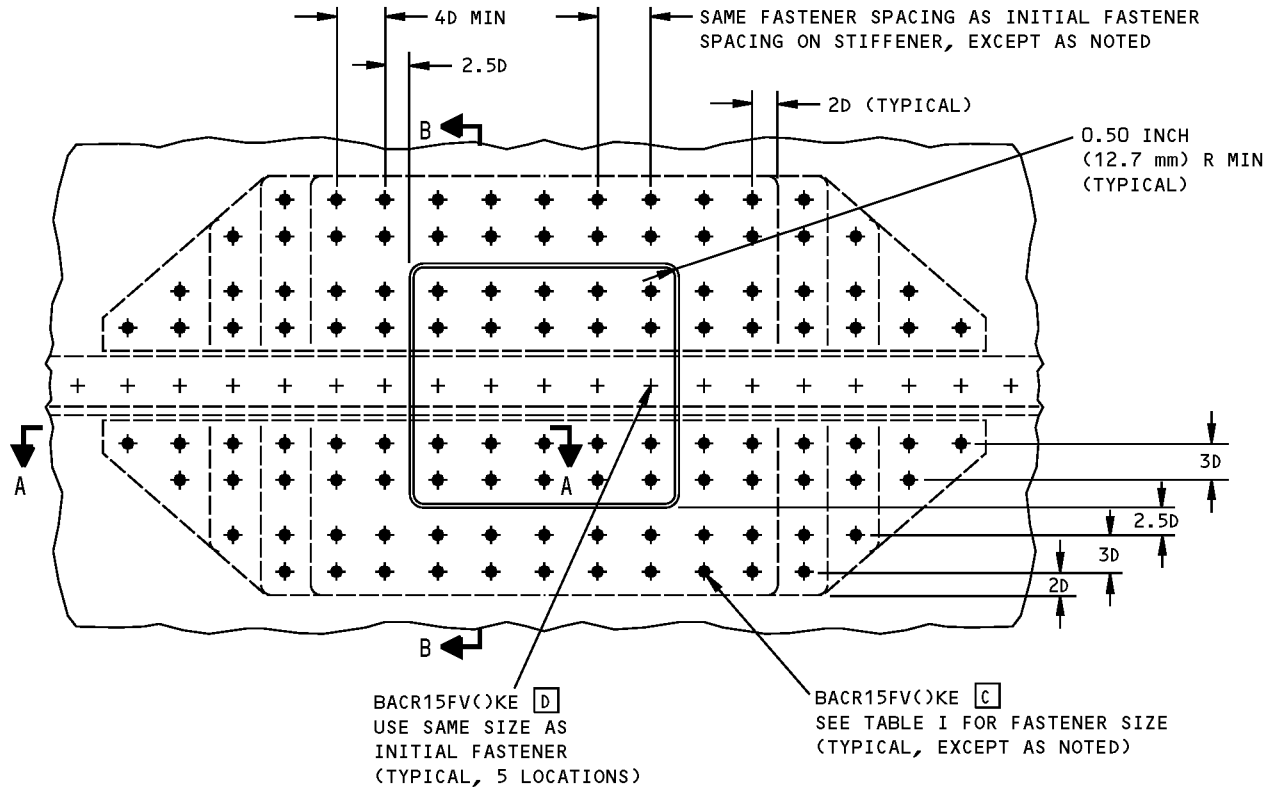
**Horizontal Stabilizer Interspar Skin Flush Repair at a Stringer - Inboard of Rib No. 8
Figure 201 (Sheet 2 of 3)**

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STRUCTURAL REPAIR MANUAL



Horizontal Stabilizer Interspar Skin Flush Repair at a Stringer - Inboard of Rib No. 8
Figure 201 (Sheet 3 of 3)

STRUCTURAL REPAIR MANUAL

REPAIR 4 - HORIZONTAL STABILIZER CENTER SECTION LOWER SKIN REPAIR BETWEEN STRINGERS

REPAIR INSTRUCTIONS

1. Cut out the damaged portion of the skin to give a hole with the major axis parallel to the stringers.
2. Make the repair parts.
3. Assemble the repair parts and drill the fastener holes.
4. Remove the repair parts.
5. Break sharp edges of initial and repair parts 0.015R to 0.03R.
6. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
7. Rotary peen all edges of skin cutout as given in SOPM 20-10-03.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply BMS 10-11, Type I protective primer to the repair parts and to the bare surfaces of the initial parts.
10. Install the repair making faying surface seals with BMS 5-95 sealant. Install fasteners wet with BMS 5-95 sealant.
11. Apply a fillet seal with BMS 5-95 sealant as given in SRM 51-20-05.
12. Apply BMS 10-11, Type I protective primer to sealant.
13. Restore initial finish as given in AMM 51-21.

NOTES

- THIS REPAIR NOT PERMITTED FOR DAMAGE CLOSER THAN 10.00 INCHES (254 mm) TO SKIN PANEL EDGE OR MAJOR FITTINGS.
- D = REPAIR FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-21 FOR APPLICATION OF INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

A FOR MATERIAL GAGE SEE TABLE I

B SAME THICKNESS AS SKIN

FASTENER SYMBOLS

- REPAIR FASTENER LOCATION
INSTALL BACB30MY8K WITH BACC30M8
- ⊕ REPAIR FASTENER LOCATION
INSTALL BACR15FT8D

Horizontal Stabilizer Center Section Lower Skin Repair Between Stringers
Figure 201 (Sheet 1 of 3)



**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	7075-T651 OPT: 7075-T6 <input type="checkbox"/> A
2	PLATE	1	7075-T651 OPT: 7075-T6 <input type="checkbox"/> A
3	PLATE	1	7075-T651 OPT: 7075-T6 <input type="checkbox"/> A
4	PLATE	1	7075-T651 OPT: 7075-T6 <input type="checkbox"/> A
5	FILLER	1	7075-T651 OPT: 7075-T6 <input type="checkbox"/> B

SKIN THICKNESS	REPAIR PLATE THICKNESS				REPAIR FASTENER DIAMETER
	PLATE 1	PLATE 2	PLATE 3	PLATE 4	
0.150 THRU 0.180	0.050	0.063	0.050	0.063	1/4

TABLE I

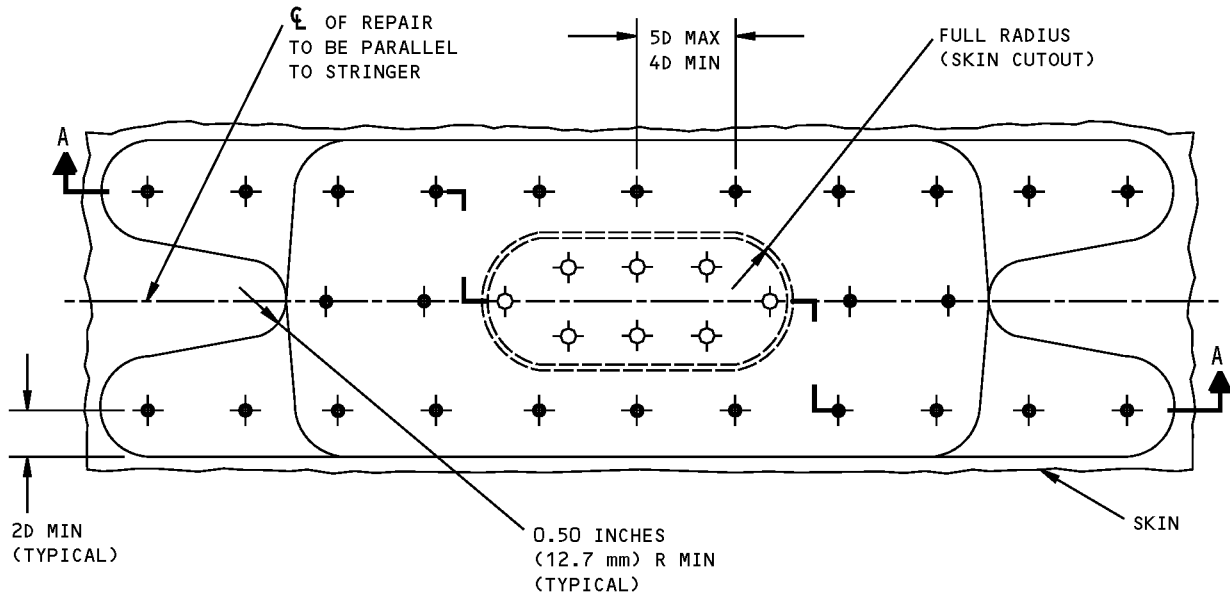
**Horizontal Stabilizer Center Section Lower Skin Repair Between Stringers
Figure 201 (Sheet 2 of 3)**

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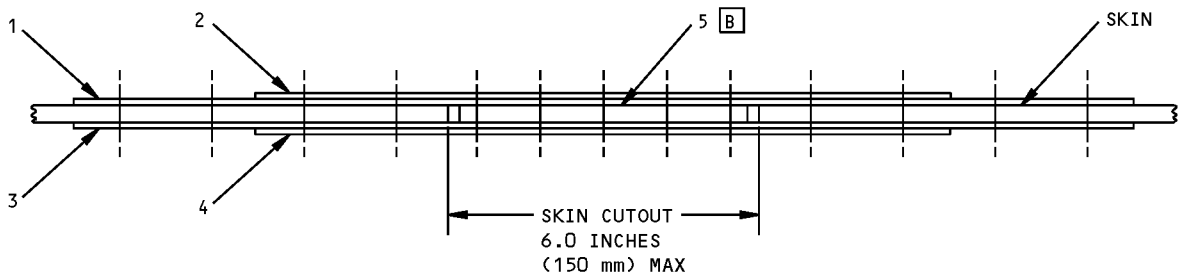
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STRUCTURAL REPAIR MANUAL**



PLAN VIEW - LOWER SKIN



SECTION A-A

**Horizontal Stabilizer Center Section Lower Skin Repair Between Stringers
Figure 201 (Sheet 3 of 3)**

STRUCTURAL REPAIR MANUAL

REPAIR 5 - HORIZONTAL STABILIZER CENTER SECTION LOWER SKIN REPAIR AT A STRINGER

REPAIR INSTRUCTIONS

1. Cut out the damaged portion of skin to give a rectangular hole with radiused corners. Do not cut into stringers. If stringer is damaged, see SRM 55-10-03.
2. Drill out existing fasteners in the skin to stringer attachment as required.
3. Make the repair parts.
4. Assemble the repair parts and drill the fastener holes.
5. Remove the repair parts.
6. Break sharp edges of initial and repair parts 0.015R to 0.03R.
7. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
8. Rotary peen all edges of skin cutout as given in SOPM 20-10-03. Do not peen edges closer than 0.50 inch (12.7 mm) to a stringer.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply BMS 10-11, Type I protective primer to the repair parts and to the bare surfaces of the initial parts.
11. Install the repair making faying surface seals with BMS 5-95 sealant. Install fasteners wet with BMS 5-95 sealant.
12. Apply a fillet seal with BMS 5-95 sealant as given in SRM 51-20-05.
13. Apply BMS 10-11, Type I protective primer to sealant.
14. Restore initial finish as given in AMM 51-21.





NOTES

- THIS REPAIR NOT PERMITTED FOR DAMAGE CLOSER THAN 10.00 INCHES (250 mm) TO SKIN PANEL EDGE OR MAJOR FITTING
- D = REPAIR FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR REPAIRS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

A FOR MATERIAL GAGE SEE TABLE I

B SAME THICKNESS AS SKIN

FASTENER SYMBOLS

-  INITIAL FASTENER LOCATION
-  INITIAL FASTENER LOCATION. INSTALL 1/32 OVERSIZE BACR15FT()KE()C RIVETS
-  REPAIR FASTENER LOCATION
INSTALL BACB30MY8K WITH BACC30M8
-  REPAIR FASTENER LOCATION
INSTALL BACR15FT8D RIVETS

**Horizontal Stabilizer Center Section Lower Skin Repair at a Stringer
Figure 201 (Sheet 1 of 4)**



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STRUCTURAL REPAIR MANUAL

REPAIR MATERIAL					
PART		QTY	MATERIAL		
1	PLATE	1	7075-T651 OPT: 7075-T6	<input type="checkbox"/>	A
2	PLATE	1	7075-T651 OPT: 7075-T6	<input type="checkbox"/>	A
3	PLATE	2	7075-T651 OPT: 7075-T6	<input type="checkbox"/>	A
4	PLATE	2	7075-T651 OPT: 7075-T6	<input type="checkbox"/>	A
5	FILLER	1	7075-T6	<input type="checkbox"/>	B

SKIN THICKNESS	REPAIR PLATE THICKNESS				REPAIR FASTENER DIAMETER
	PLATE 1	PLATE 2	PLATE 3	PLATE 4	
0.150 THRU 0.180	0.050	0.063	0.050	0.063	1/4

TABLE I

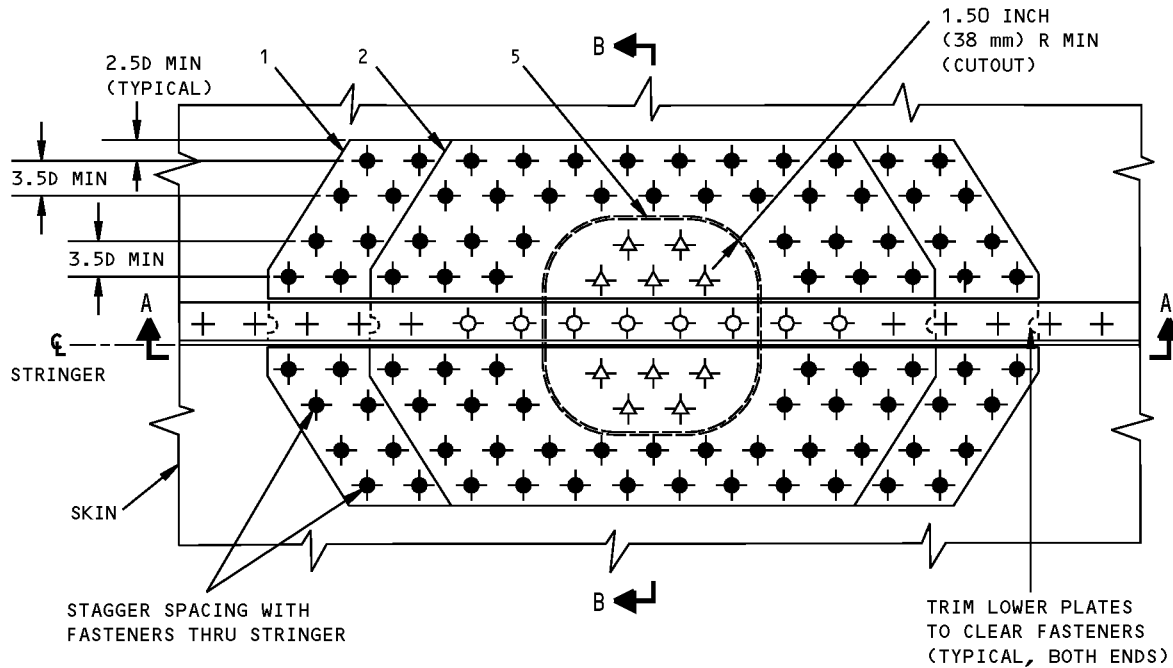
Horizontal Stabilizer Center Section Lower Skin Repair at a Stringer
Figure 201 (Sheet 2 of 4)

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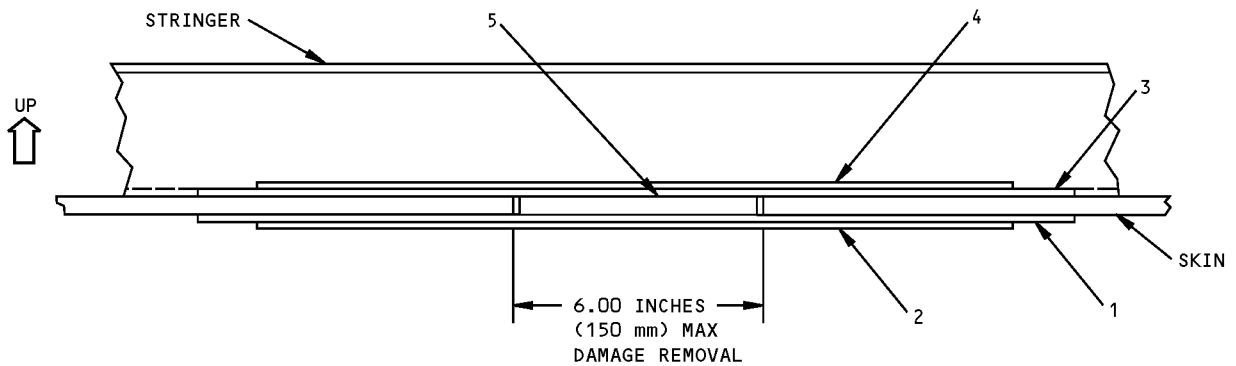
55-10-01

REPAIR 5
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STRUCTURAL REPAIR MANUAL**



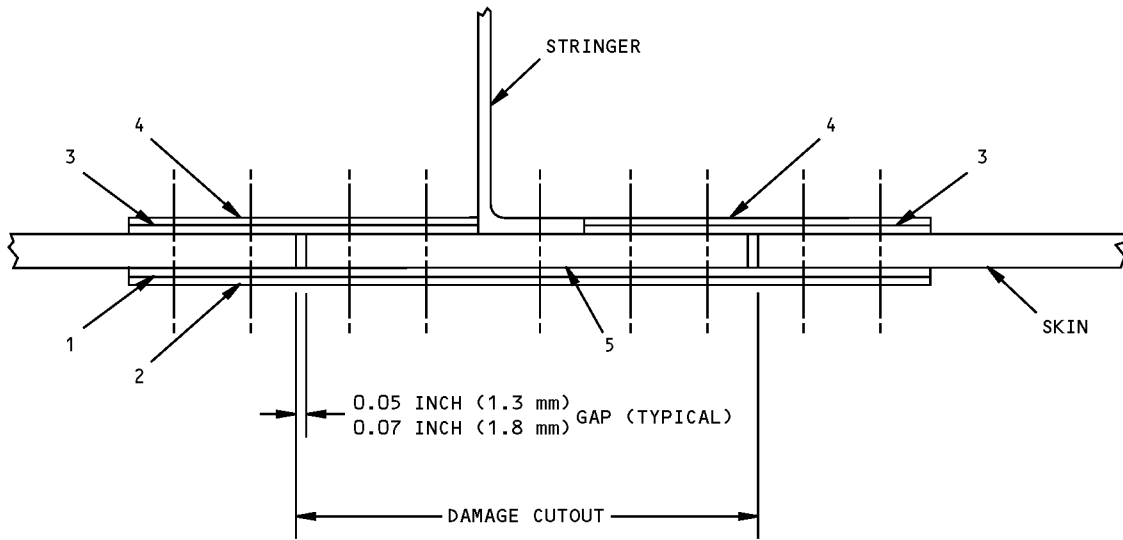
PLAN VIEW - LOWER SKIN



SECTION A-A

**Horizontal Stabilizer Center Section Lower Skin Repair at a Stringer
Figure 201 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**



**SECTION B-B
(ROTATED CLOCKWISE 90°)**

**Horizontal Stabilizer Center Section Lower Skin Repair at a Stringer
Figure 201 (Sheet 4 of 4)**

STRUCTURAL REPAIR MANUAL

REPAIR 6 - HORIZONTAL STABILIZER CENTER SECTION UPPER SKIN REPAIR BETWEEN STRINGERS

REPAIR INSTRUCTIONS

1. Cut out the damaged portion of the skin to give a hole with the major axis parallel to the stringers.
2. Make the repair parts.
3. Assemble the repair parts and drill the fastener holes.
4. Remove the repair parts.
5. Break sharp edges of initial and repair parts 0.015R to 0.03R.
6. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
7. Rotary peen all edges of skin cutout as given in SOPM 20-10-03.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply BMS 10-11, Type I protective primer to the repair parts and to the bare surfaces of the initial parts.
10. Install the repair making faying surface seals with BMS 5-95 sealant. Install fasteners wet with BMS 5-95 sealant. **[B]**
11. Apply a fillet seal with BMS 5-95 sealant as given in SRM 51-20-05.
12. Apply BMS 10-11, Type I protective primer to sealant.
13. Restore initial finish as given in AMM 51-21.

NOTES



- THIS REPAIR NOT PERMITTED FOR DAMAGE CLOSER THAN 10.00 INCHES (250 mm) TO SKIN PANEL EDGE OR MAJOR FITTINGS
- D = REPAIR FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR SEALING AND SEALS
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

[A] FOR MATERIAL GAGE SEE TABLE I

[B] FOR SKIN THICKNESS OVER 0.160 INCH (4.06 mm) COLD WORK FASTENER HOLES AS GIVEN IN SRM 51-40-09, HIGH INTERFERENCE METHOD

[C] SAME THICKNESS AS SKIN

FASTENER SYMBOLS

-  REPAIR FASTENER LOCATION
INSTALL BACR15FT8D **[B]**
-  REPAIR FASTENER LOCATION
INSTALL BACB30MY8K WITH BACC30M8 **[B]**

**Horizontal Stabilizer Center Section Upper Skin Repair Between Stringers
Figure 201 (Sheet 1 of 3)**



**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	2024-T351 OPT: 2024-T3 A
2	PLATE	1	2024-T351 OPT: 2024-T3 A
3	PLATE	1	2024-T351 OPT: 2024-T3 A
4	PLATE	1	2024-T351 OPT: 2024-T3 A
5	FILLER	1	2024-T3 C

SKIN THICKNESS	REPAIR PLATE THICKNESS				REPAIR FASTENER DIAMETER
	PLATE 1	PLATE 2	PLATE 3	PLATE 4	
0.145 THRU 0.180	0.050	0.063	0.050	0.063	1/4

TABLE I

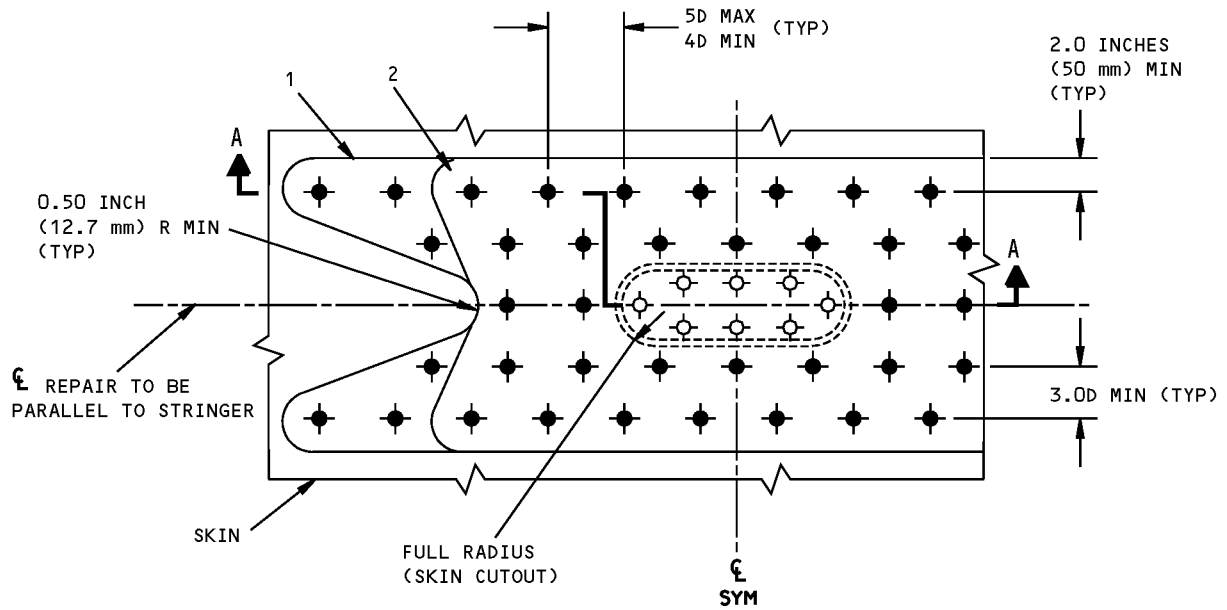
**Horizontal Stabilizer Center Section Upper Skin Repair Between Stringers
Figure 201 (Sheet 2 of 3)**

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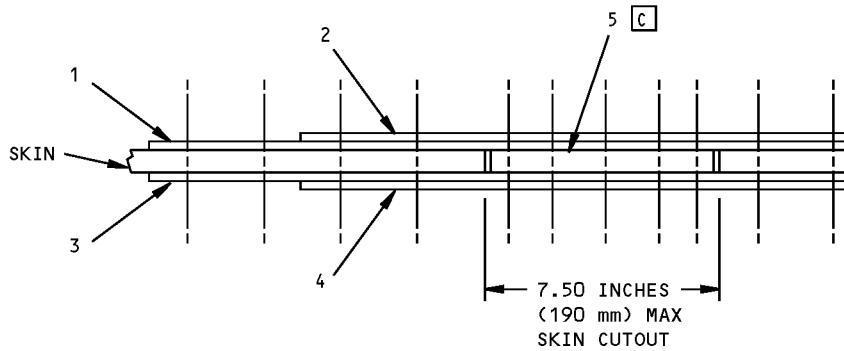
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REPAIR 6
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**767-300
STRUCTURAL REPAIR MANUAL**



PLAN VIEW - UPPER SKIN



SECTION A-A

**Horizontal Stabilizer Center Section Upper Skin Repair Between Stringers
Figure 201 (Sheet 3 of 3)**

STRUCTURAL REPAIR MANUAL

REPAIR 7 - HORIZONTAL STABILIZER CENTER SECTION UPPER SKIN REPAIR AT A STRINGER

REPAIR INSTRUCTIONS

1. Cut out the damaged portion of skin to give a rectangular hole with radiused corners. Do not cut into stringers. If stringer is damaged. Refer to SRM 55-10-03.
2. Drill out the initial fasteners in the skin to stringer attachment as required.
3. Make the repair parts.
4. Assemble the repair parts and drill the fastener holes.
5. Remove the repair parts.
6. Break sharp edges of initial and repair parts 0.015R to 0.03R.
7. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
8. Rotary peen all edges of skin cutout as given in SOPM 20-10-03 Do not peen edges closer than 0.50 inch (12.7 mm) to a stringer.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply BMS 10-11, Type I protective coating to the repair parts and to the bare surfaces of the initial parts as given in AMM 28-11-00.
11. Install the repair making faying surface seals with BMS 5-95 sealant. Install fasteners wet with BMS 5-95 sealant. C
12. Apply a fillet seal with BMS 5-95 sealant as given in AMM 51-20-05.
13. Apply BMS 10-11, Type I protective coating to sealant.
14. Restore initial finish as given in AMM 51-21.

NOTES

- THIS REPAIR NOT PERMITTED FOR DAMAGE CLOSER THAN 10.00 INCHES (250 mm) TO SKIN PANEL EDGE OR MAJOR FITTINGS
- D = REPAIR FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

A FOR MATERIAL GAGE SEE TABLE I

B SAME THICKNESS AS SKIN

C FOR SKIN THICKNESS OVER 0.160 INCH (4.06 mm) COLD WORK FASTENER HOLES AS GIVEN IN SRM 51-40-09, HIGH INTERFERENCE METHOD

FASTENER SYMBOLS

- ✚ INITIAL FASTENER LOCATION
INSTALL BACR15FT()KE RIVETS
USE SAME SIZE AS THE INITIAL FASTENER.
IF FASTENER HOLE IS DAMAGED, USE 1/32 OVERSIZE RIVETS
- ⊕ INITIAL FASTENER LOCATION. INSTALL 1/32 OVERSIZE BACR15FT()KE RIVETS C
- ✦ REPAIR FASTENER LOCATION
INSTALL BACB30MY8K WITH BACC30M8 C
- ✧ REPAIR FASTENER LOCATION
INSTALL BACR15FT8D RIVETS

**Horizontal Stabilizer Center Section Upper Skin Repair at a Stringer
Figure 201 (Sheet 1 of 4)**



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STRUCTURAL REPAIR MANUAL**

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	2024-T351 OPT: 2024-T3 A
2	PLATE	1	2024-T351 OPT: 2024-T3 A
3	PLATE	2	2024-T351 OPT: 2024-T3 A
4	PLATE	2	2024-T351 OPT: 2024-T3 A
5	FILLER	1	2024-T3 B

SKIN THICKNESS	REPAIR PLATE THICKNESS				REPAIR FASTENER DIAMETER
	PLATE 1	PLATE 2	PLATE 3	PLATE 4	
0.145 THRU 0.180	0.050	0.063	0.050	0.063	1/4

TABLE I

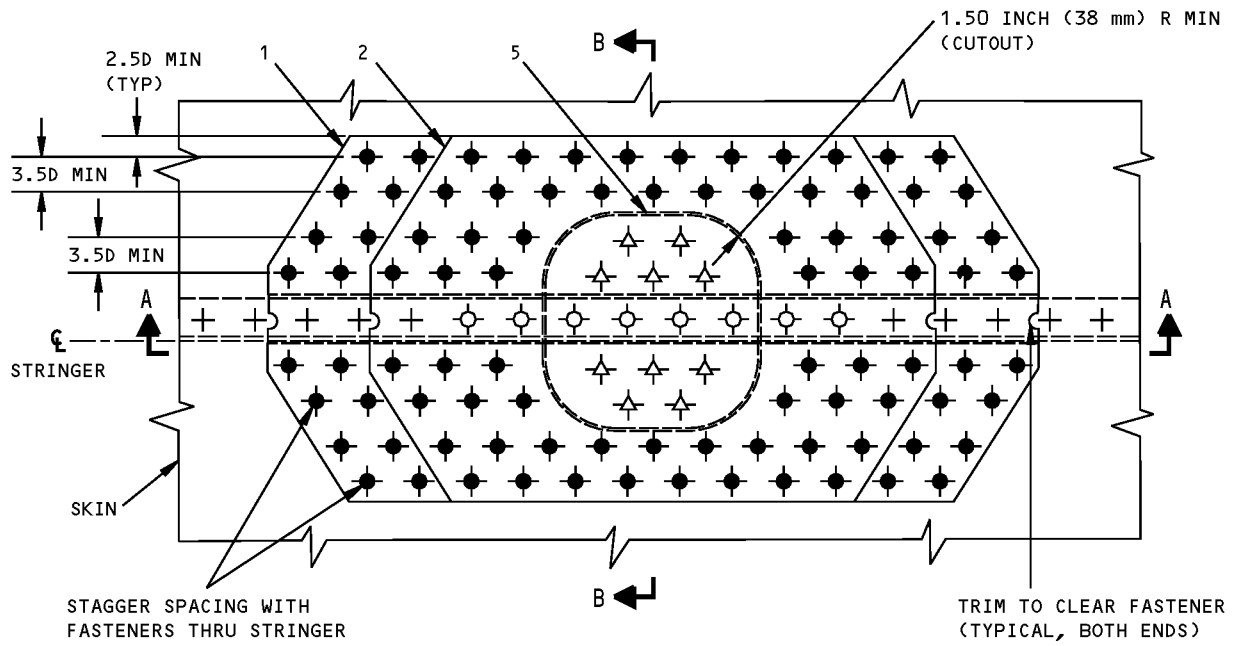
**Horizontal Stabilizer Center Section Upper Skin Repair at a Stringer
Figure 201 (Sheet 2 of 4)**

D634T210

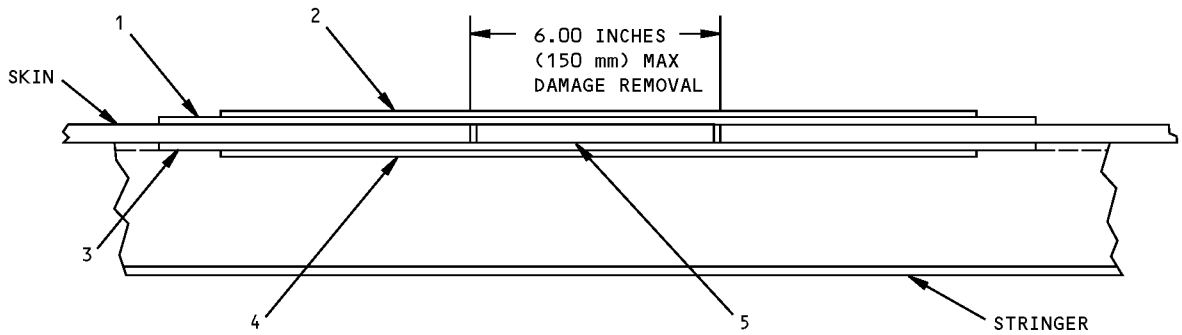
55-10-01

REPAIR 7
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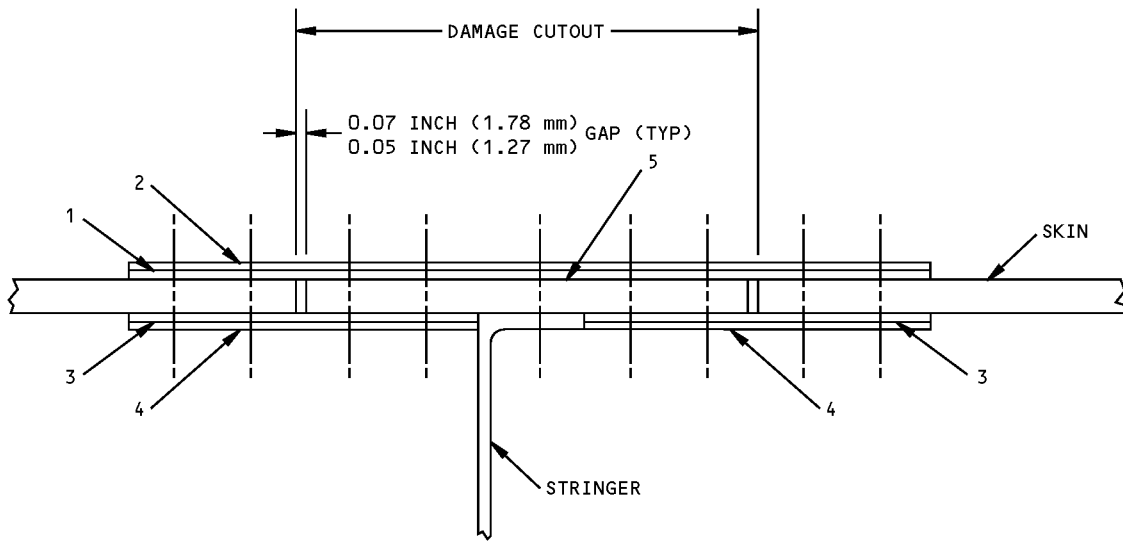
PLAN VIEW - UPPER SKIN



SECTION A-A

**Horizontal Stabilizer Center Section Upper Skin Repair at a Stringer
Figure 201 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

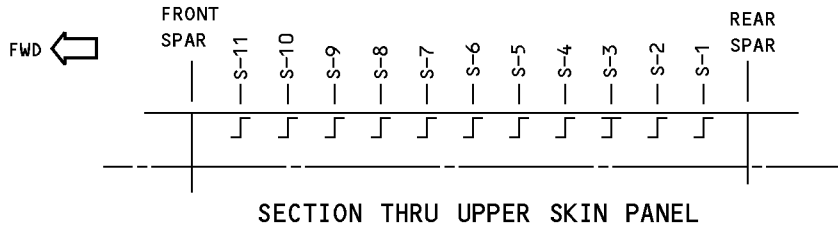
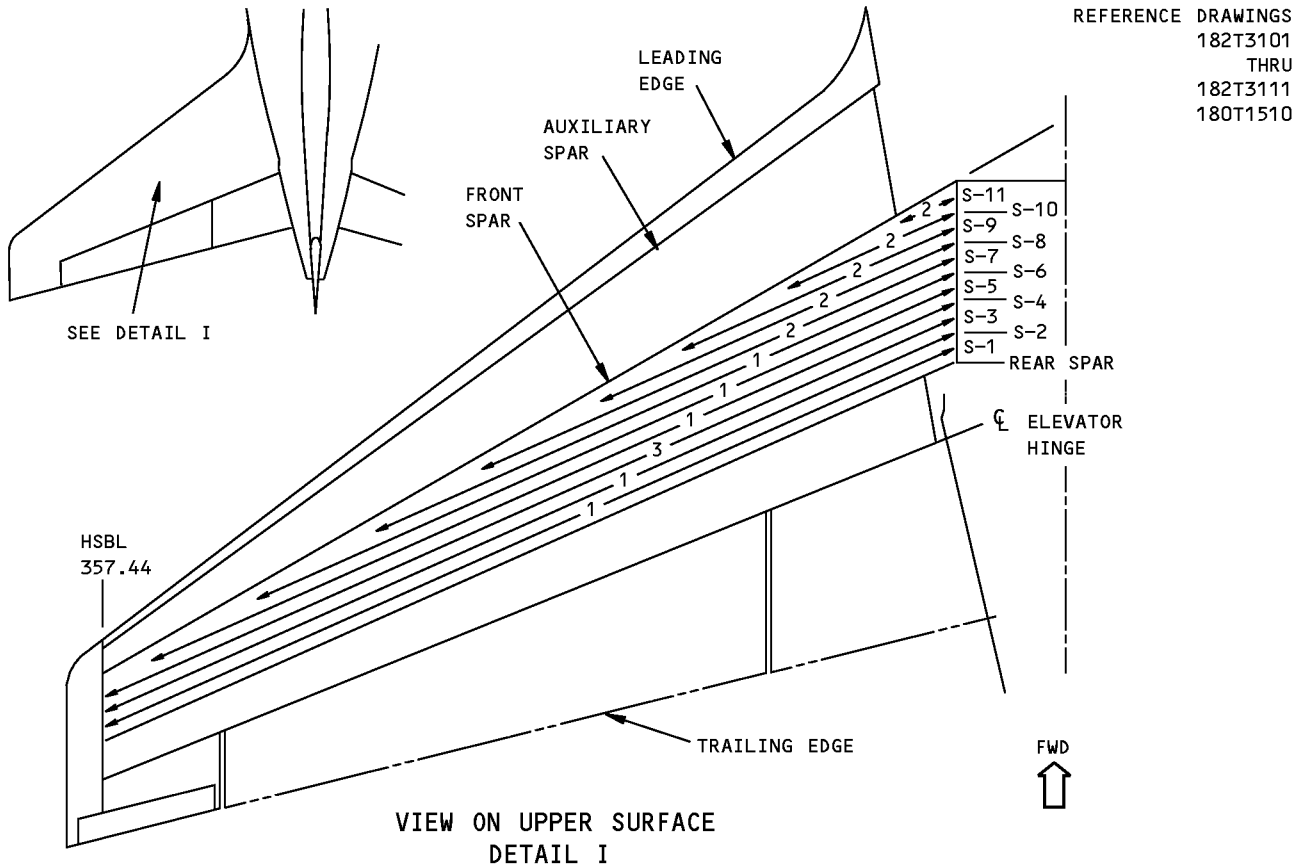


**SECTION B-B
(ROTATED CLOCKWISE 90°)**

**Horizontal Stabilizer Center Section Upper Skin Repair at a Stringer
Figure 201 (Sheet 4 of 4)**

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STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - HORIZONTAL STABILIZER STRINGERS - UPPER SURFACE



ITEM	DESCRIPTION	GAGE	MATERIAL	TYPE	EFFECTIVITY
1	STRINGER		BAC1518-934 7075-T6511 OPTIONAL: BAC1518-773 7075-T6511		
2	STRINGER		BAC1518-935 7075-T6511 OPTIONAL: BAC1518-773 7075-T6511		
3	STRINGER		BAC1518-936 7075-T6511 OPTIONAL: BAC1518-774 7075-T6511		

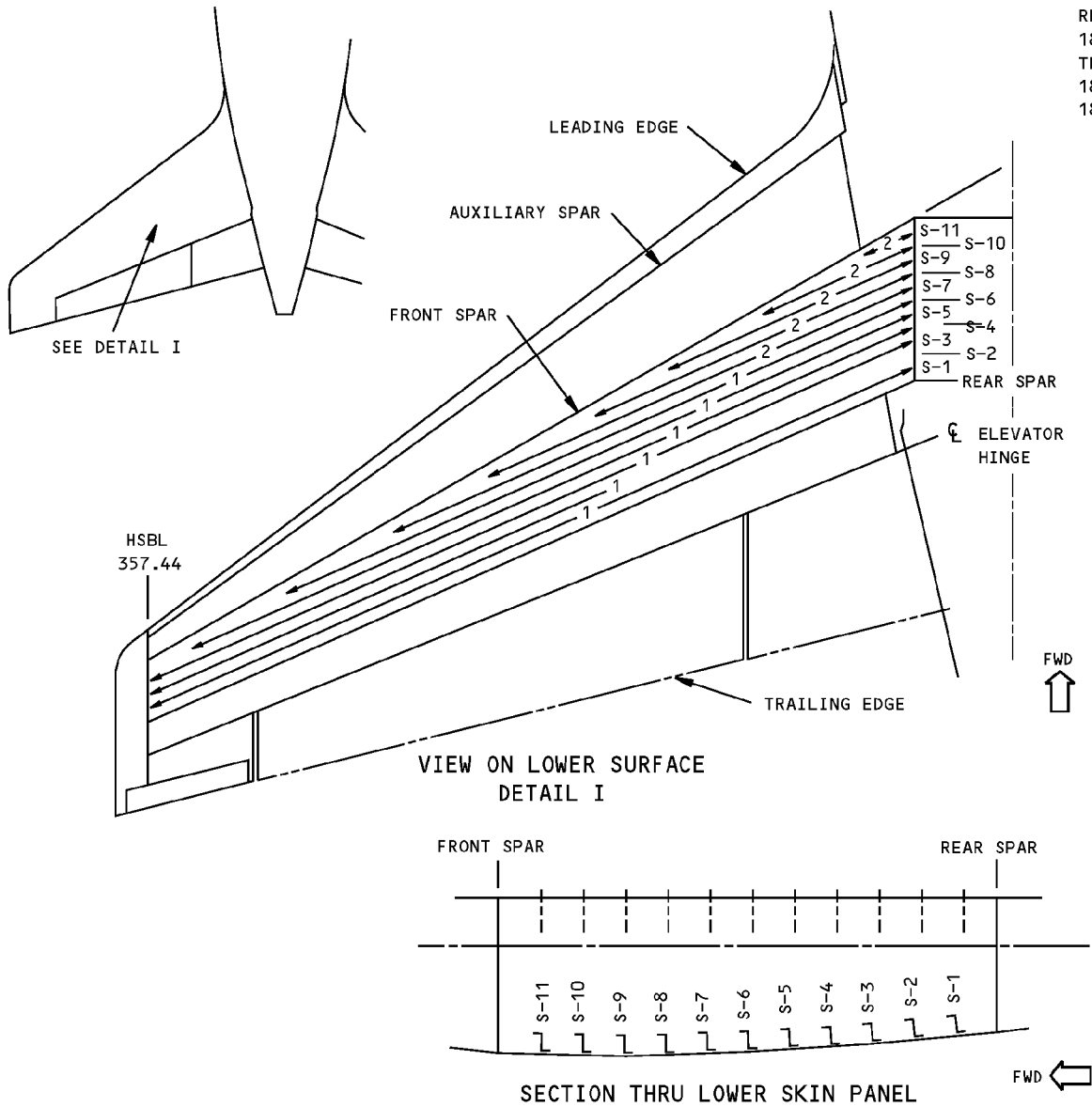
LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Stringer Identification - Upper Surface
Figure 1**

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 2 - HORIZONTAL STABILIZER STRINGERS - LOWER SURFACE

REF DWGS
182T4101
THRU
182T4111
180T1510



ITEM	DESCRIPTION	GAGE	MATERIAL	TYPE	EFFECTIVITY
1	STRINGER		BAC1518-932 7075-T6511 OPTIONAL: BAC1518-753 7075-T6511		
2	STRINGER		BAC1518-933 7075-T6511 OPTIONAL: BAC1518-753 7075-T6511		

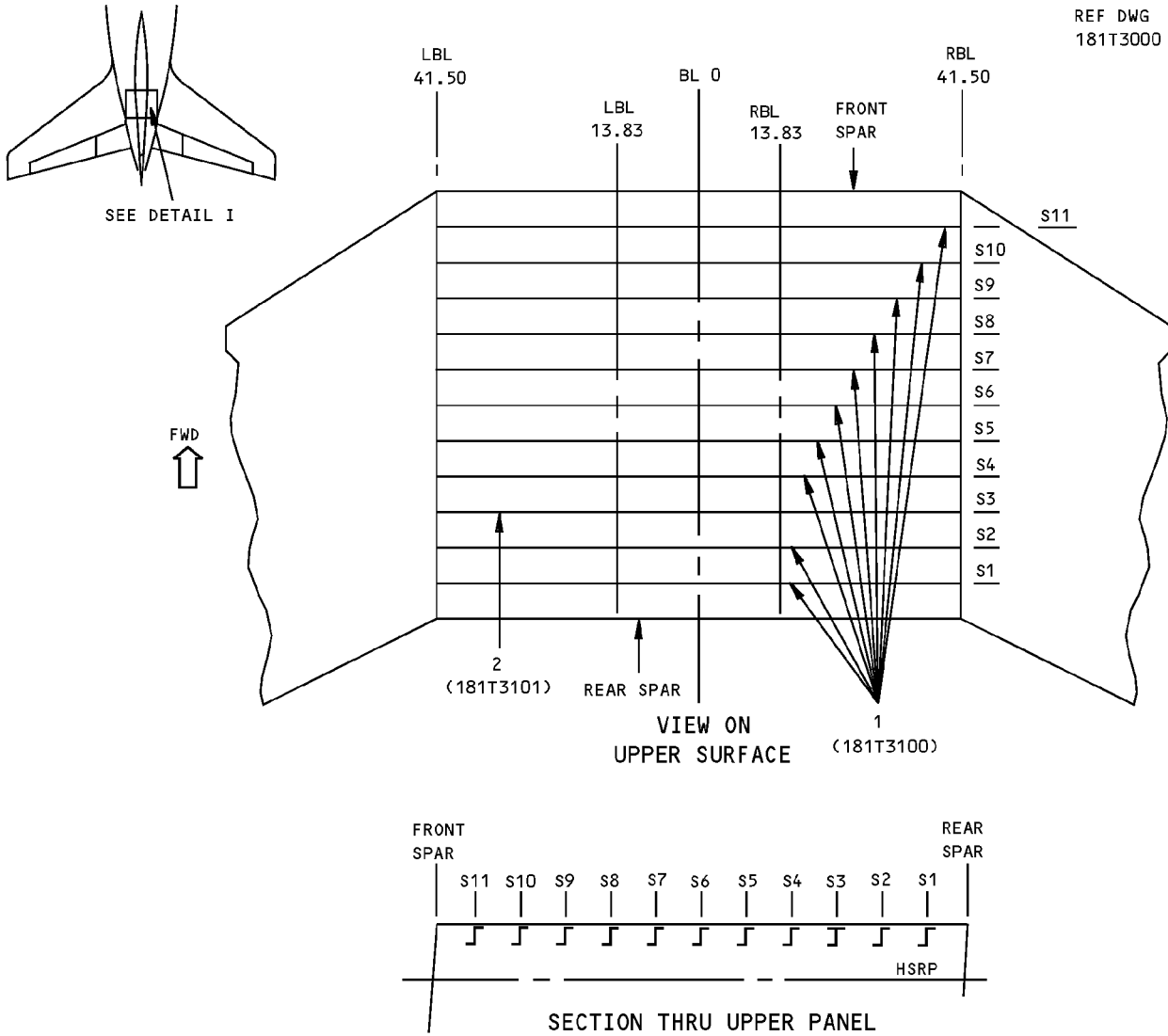
LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Stringer Identification - Lower Surface
Figure 1**

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STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 3 - HORIZONTAL STABILIZER CENTER SECTION UPPER STRINGERS

REF DWG
181T3000



ITEM	DESCRIPTION	GAGE	MATERIAL	TYPE	EFFECTIVITY
1	STRINGER		BAC1518-761 7075-T6511	I	
2	STRINGER		BAC1518-760 7075-T6511	I	

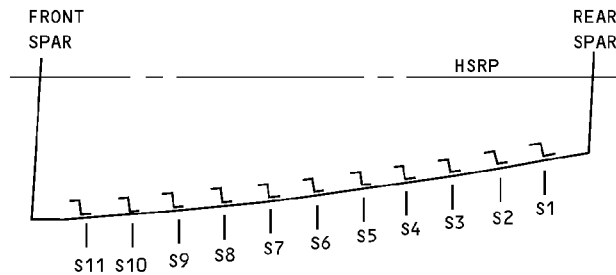
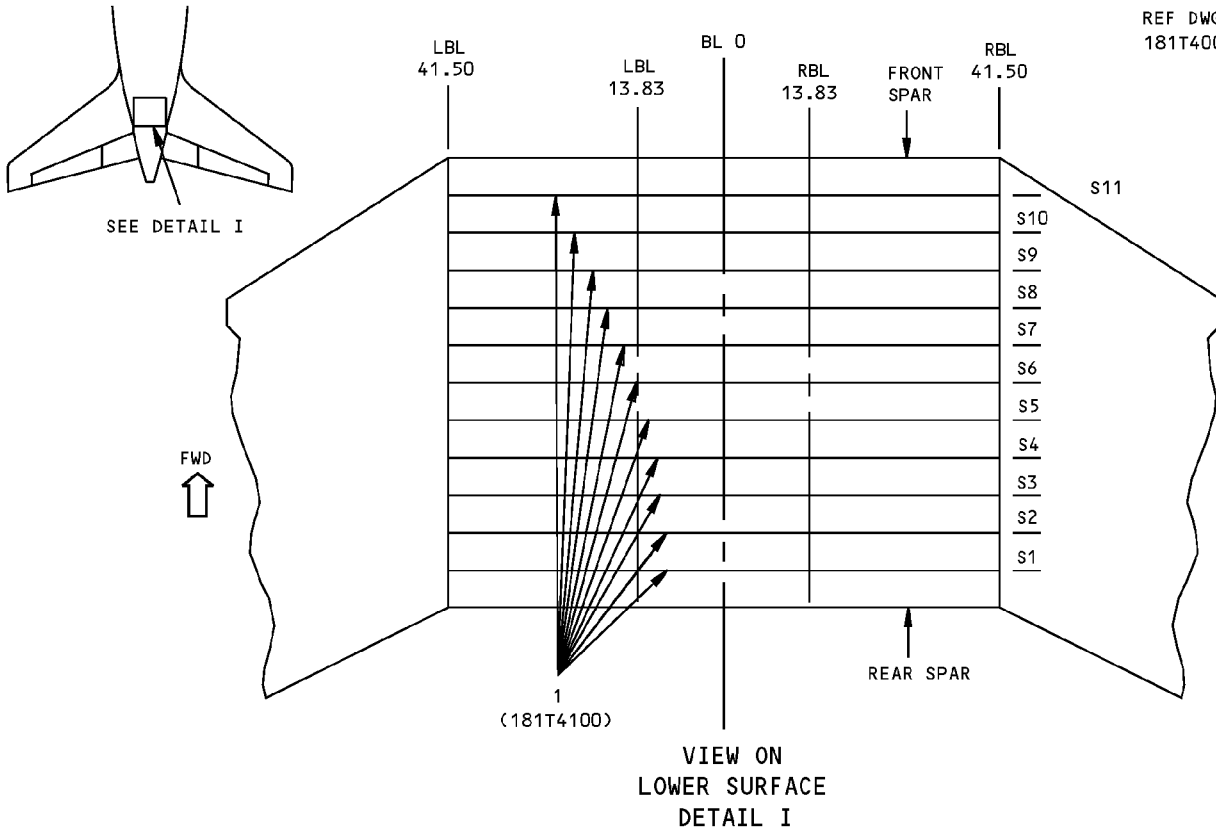
LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Center Section Upper Stringers Identification
Figure 1**

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STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 4 - HORIZONTAL STABILIZER CENTER SECTION LOWER STRINGERS

REF DWG
181T4000



SECTION THRU LOWER SKIN PANEL

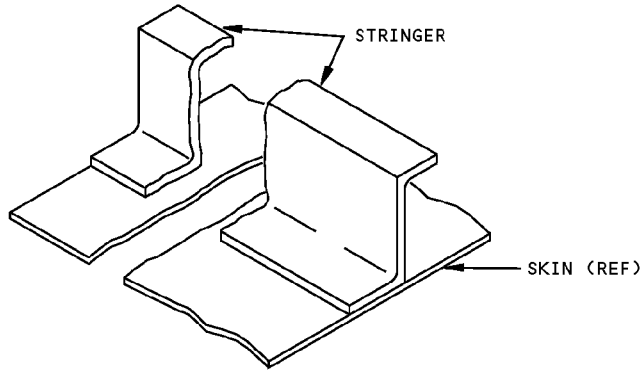
ITEM	DESCRIPTION	GAGE	MATERIAL	TYPE	EFFECTIVITY
1	STRINGER		BAC1518-759 7075-T6511		

LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Center Section Lower Stringers Identification
Figure 1**

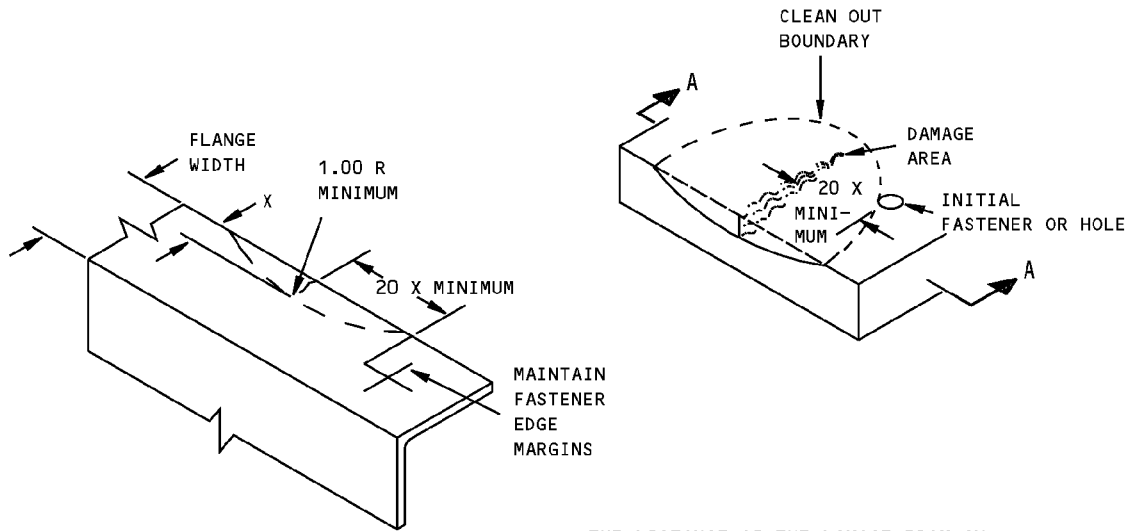
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ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER STRINGERS



TYPICAL SKIN STRINGER

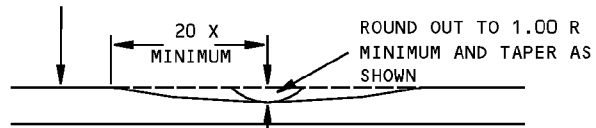
CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES
FOR EDGE CRACKS SEE DETAIL I. OTHER CRACKS ARE NOT PERMITTED	REMOVE EDGE DAMAGE AS GIVEN IN DETAIL I. AT OTHER LOCATIONS REMOVE THE DAMAGE AS GIVEN IN DETAIL II, IF THE CLEAN UP IS NOT MORE THAN 5% OF THE GAGE.	NOT PERMITTED	NOT PERMITTED



X = DEPTH OF CLEAN UP
= ONE FASTENER DIAMETER OR
15% OF FLANGE WIDTH

DETAIL I

THE DISTANCE OF THE DAMAGE FROM AN EXISTING HOLE, FASTENER OR SKIN EDGE MUST NOT BE LESS THAN 20 X



X = DEPTH OF CLEAN UP

SECTION A-A

DETAIL II

**Allowable Damage - Horizontal Stabilizer Stringers
Figure 101**

STRUCTURAL REPAIR MANUAL

REPAIR 1 - HORIZONTAL STABILIZER ZEE STRINGER

APPLICABILITY

THIS REPAIR IS APPLICABLE TO THE HORIZONTAL STABILIZER CENTER AND OUTER SECTIONS.

REPAIR INSTRUCTIONS

1. Cut and remove the damaged piece of the stringer. Cut the stringer far away from the rib. If you do not, there will not be sufficient clearance between the repair part and the pad at the rib attachment. If the skin is damaged, refer to SRM 55-10-01.

NOTE: Get access to the stabilizer stringers outboard of Rib No. 8 through the access holes in the rear spar.

2. Calculate the dimensions and gages of the repair parts. See the sample calculation.
3. Make the repair parts. See Table I.
4. Assemble the repair parts and drill the fastener holes.
5. Remove the repair parts.
6. Break sharp edges of the initial and the repair parts 0.015R to 0.030R.
7. Remove all nicks, scratches, burrs, sharp edges and corners from the initial and the repair parts.
8. Shot peen the cut edges of the stringer as given in SRM 51-20-06.
9. Apply a chemical conversion coating to the repair parts and to the cut edges of the stringer as given in SRM 51-20-01.
10. Apply one coat of BMS 10-11, Type I primer to the repair parts and to the cut edges of the stringer. Refer to SOPM 20-41-02.
11. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
12. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
13. Restore the initial finish as given in AMM 51-21.

NOTES

- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - SOPM 20-41-02 FOR APPLICATION OF FINISHES

- SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
- SRM 51-20-05 FOR SEALING OF REPAIRS
- SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

- A** SELECTION OF GAGE TO BE DETERMINED BY THE INITIAL STRINGER THICKNESS AS SHOWN IN TABLE II AND THE AREA REQUIREMENTS IN CONJUNCTION WITH OTHER REPAIR PARTS.
- B** SELECTION OF GAGE TO BE DETERMINED IN CONJUNCTION WITH OTHER REPAIR PARTS TO GIVE A COMBINED CROSS-SECTIONAL AREA OF ALL REPAIR ANGLES AT LEAST 1.25 TIMES GREATER THAN THE INITIAL STRINGER CROSS-SECTIONAL AREA. EACH FLANGE SHOULD BE JOINED BY MATERIAL 1.25 TIMES GREATER THAN THE INITIAL CROSS-SECTIONAL AREA.
- C** USE THE SAME TYPE AND SIZE AS THE INITIAL FASTENER. IF THE HOLE IS DAMAGED, USE THE NEXT SIZE FASTENER. FOR COUNTERSUNK FASTENERS, USE THE SAME DEPTH OF COUNTER-SINK AS THE INITIAL FASTENER. MICROSHAVE (FLUSH) THE PROTRUDING PART OF THE FASTENER HEAD AS GIVEN IN SRM 51-10-01.
- D** FOR UPPER STRINGERS:
 - INBOARD OF RIB NO. 8 USE 3/16 DIA FASTENERS
 - OUTBOARD OF RIB NO. 8 USE 5/32 DIA FASTENERS
 FOR LOWER STRINGERS:
 - INBOARD OF RIB NO. 9 USE 3/16 DIA FASTENERS
 - OUTBOARD OF RIB NO. 9 USE 5/32 DIA FASTENERS
- E** FOR REPAIR OF UPPER STRINGERS:
 - INBOARD OF RIB NO. 11 SEE DETAIL I
 - OUTBOARD OF RIB NO. 11 SEE DETAIL II
 FOR REPAIR OF LOWER STRINGERS:
 - INBOARD OF RIB NO. 12 SEE DETAIL I
 - OUTBOARD OF RIB NO. 12 SEE DETAIL II
- F** WHEN YOU CALCULATE THE FASTENER REQUIREMENTS, TAKE FRACTIONS (OF A FASTENER) TO THE NEXT HIGHER WHOLE NUMBER.
- G** TO CALCULATE THE FASTENER REQUIREMENTS IN THE STRINGER WEB, DIVIDE THE VALUES IN TABLE III BY 2.0.

**Horizontal Stabilizer Zee Stringer Repair
Figure 201 (Sheet 1 of 7)**



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STRUCTURAL REPAIR MANUAL

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	ANGLE	1	7075-0 HT TR T6 A
2	ANGLE	1	7075-0 HT TR T6 A
3	ANGLE	1	7075-0 HT TR T6 A
4	ANGLE	1	7075-0 HT TR T6 A
5	ANGLE	1	7075-0 HT TR T6 B
6	ANGLE	1	7075-0 HT TR T6 B
7	FILLER	1	SAME AS ORIGINAL STRINGER
8	ANGLE	1	0.040 7075-0 HT TR T6
9	ANGLE	1	0.040 7075-0 HT TR T6
10	ANGLE	1	0.040 7075-0 HT TR T6
11	ANGLE	1	0.040 7075-0 HT TR T6
12	STRAP	1	0.040 7075-T6
13	STRAP	1	0.040 7075-T6

TABLE I

Horizontal Stabilizer Zee Stringer Repair
Figure 201 (Sheet 2 of 7)

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STRUCTURAL REPAIR MANUAL**

INITIAL STRINGER THICKNESS	THICKNESS OF REPAIR PARTS 1 AND 2	THICKNESS OF REPAIR PARTS 3 AND 4
UP TO 0.112	0.040	0.040
OVER 0.112 THRU 0.125	0.040	0.045
OVER 0.125 THRU 0.140	0.040	0.050
OVER 0.140 THRU 0.160	0.040	0.056
OVER 0.160 THRU 0.180	0.045	0.063
OVER 0.180 THRU 0.200	0.050	0.071

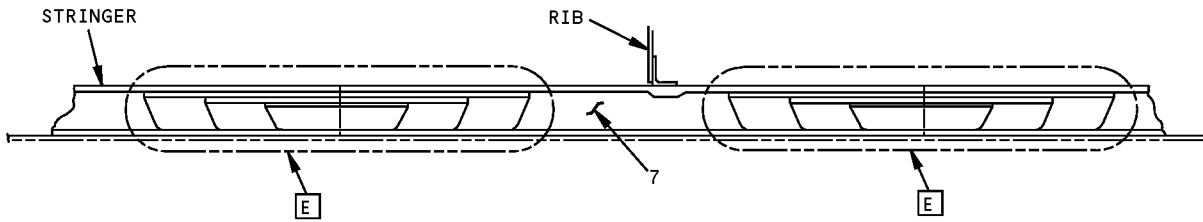
TABLE II

GAGE OF REPAIR PLATE	MINIMUM NUMBER OF FASTENERS PER INCH WIDTH OF REPAIR PART FLANGE F G					
	INITIAL FASTENER			REPAIR FASTENER		
	BACR15FV()KE		BACR15FT()KE	BACB30FM()- ,BACB30MY()K		
	5/32 DIA	3/16 DIA	1/4 DIA	1/4 DIA	5/32 DIA	3/16 DIA
0.040	5.9	5.3	4.8	2.5	4.1	3.5
0.045	5.5	5.1	4.4	2.5	4.1	3.5
0.050	5.3	4.8	4.1	2.5	4.1	3.5
0.056	5.2	4.5	3.9	2.5	4.1	3.5
0.063	5.7	4.3	3.7	2.5	4.1	3.5
0.071	6.4	4.5	3.5	2.6	4.1	3.5
0.080		5.0	3.3	2.9		3.5
0.090		5.6	3.2	3.2		3.5
0.100			3.5	3.5		3.5
0.112			4.0	4.0		3.5
0.125			4.4	4.4		3.5
0.140			4.9	4.9		3.7
0.160			5.6	5.6		4.2

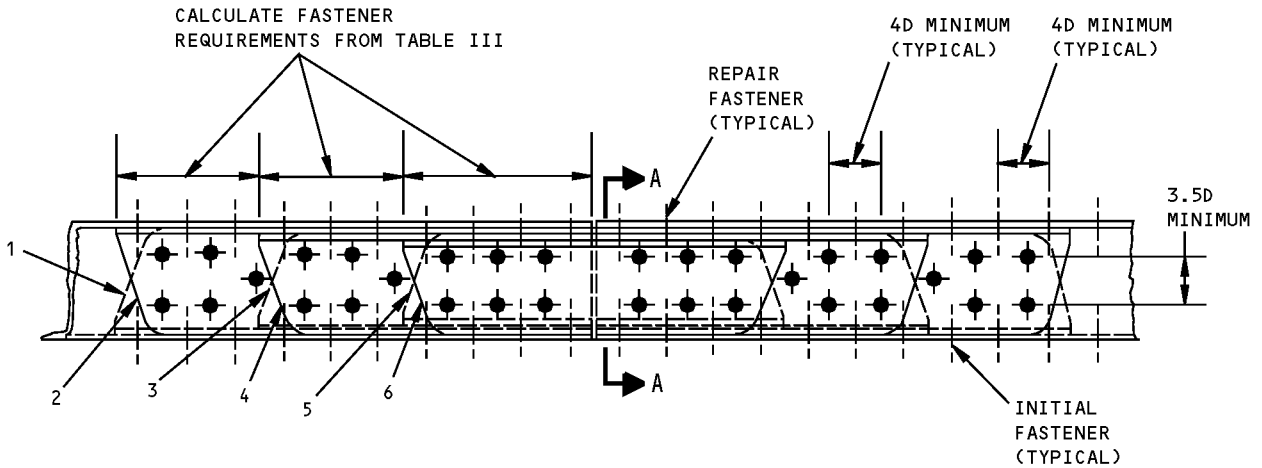
TABLE III

**Horizontal Stabilizer Zee Stringer Repair
Figure 201 (Sheet 3 of 7)**

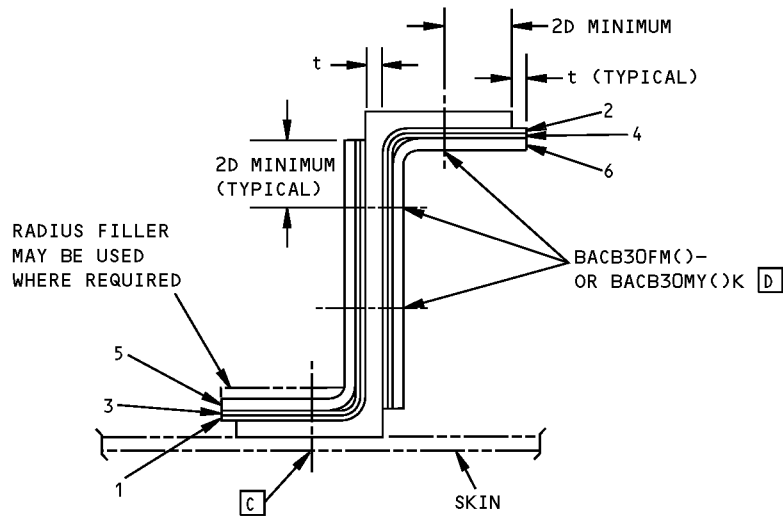
**767-300
STRUCTURAL REPAIR MANUAL**



TYPICAL REPAIR INSTALLATION



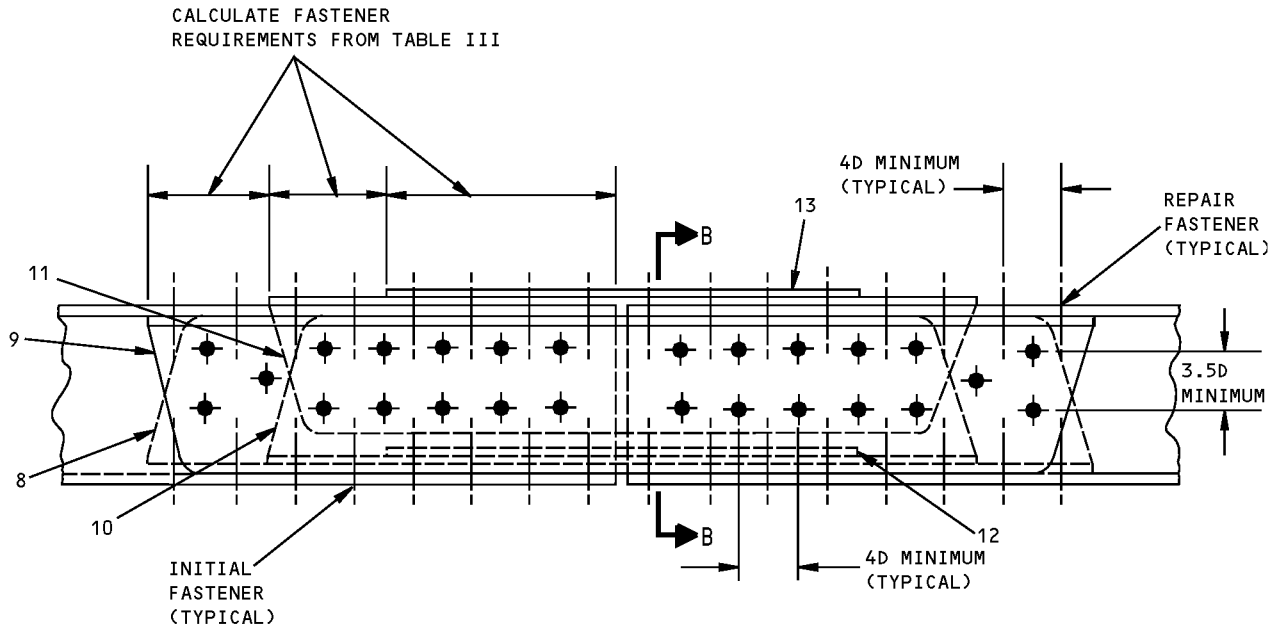
DETAIL I



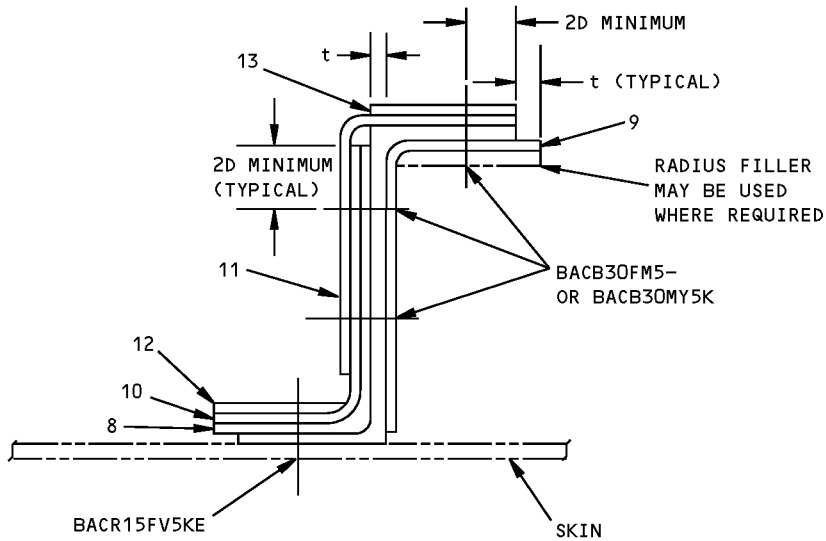
SECTION A-A

**Horizontal Stabilizer Zee Stringer Repair
Figure 201 (Sheet 4 of 7)**

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STRUCTURAL REPAIR MANUAL**



DETAIL II



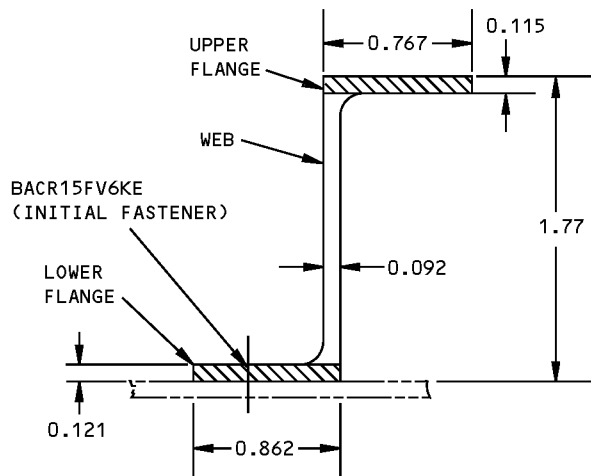
SECTION B-B

**Horizontal Stabilizer Zee Stringer Repair
Figure 201 (Sheet 5 of 7)**

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STRUCTURAL REPAIR MANUAL**

SAMPLE CALCULATION (DAMAGE TO LOWER STRINGER BETWEEN RIB NOS. 8 AND 9)

1. DETERMINE THE DIMENSIONS OF THE INITIAL STRINGER.



2. CALCULATE THE AREAS OF THE EXISTING FLANGES AND WEB.

UPPER FLANGE	$0.767 \times 0.115 = 0.0882$ SQ. IN.
LOWER FLANGE	$0.862 \times 0.121 = 0.104$ SQ. IN.
WEB	$(1.77 - 0.115 - 0.121) \times 0.092 = 0.141$ SQ. IN.

3. CALCULATE THE GAGES OF THE REPAIR PARTS THAT ARE REQUIRED TO GIVE AN AREA 1.25 TIMES GREATER THAN THE INITIAL AREA. (REFER TO TABLE II)

UPPER FLANGE - REPAIR ANGLE GAGES THAT ARE REQUIRED TO GIVE AN AREA OF $1.25 \times 0.0882 = 0.110$ SQ. IN.

REPAIR PART 2 IS 0.040 THICK, AREA = $0.767 \times 0.040 = 0.0307$ SQ. IN.

REPAIR PART 4 IS 0.045 THICK, AREA = $(0.767 - 0.040) \times 0.045 = 0.0327$ SQ. IN.

REPAIR PART 6 MUST PROVIDE AN AREA OF $0.110 - 0.0307 - 0.0327 = 0.0466$ SQ. IN. THIS WOULD MEAN THAT REPAIR PART 6 SHOULD BE A MINIMUM OF 0.0466 (DIVIDED BY) $(0.767 - 0.040 - 0.045) = 0.068$ THICK. (USE 0.071 GAGE SHEET)

LOWER FLANGE - REPAIR ANGLE GAGES THAT ARE REQUIRED TO GIVE AN AREA OF $1.25 \times 0.104 = 0.130$ SQ. IN.

REPAIR PART 1 IS 0.040 THICK, AREA = $0.862 \times 0.040 = 0.0345$ SQ. IN.

REPAIR PART 3 IS 0.045 THICK, AREA = $(0.862 - 0.040) \times 0.045 = 0.037$ SQ. IN.

REPAIR PART 5 MUST PROVIDE AN AREA OF $0.130 - 0.0345 - 0.0370 = 0.0585$ SQ. IN. THIS WOULD MEAN THAT REPAIR PART 5 SHOULD BE A MINIMUM OF 0.0585 (DIVIDED BY) $(0.862 - 0.040 - 0.045) = 0.075$ THICK. (USE 0.080 GAGE SHEET)

WEB - THE REPAIR PARTS PROVIDE MORE AREA THAN REQUIRED SO NO CALCULATIONS ARE NECESSARY.

**Horizontal Stabilizer Zee Stringer Repair
Figure 201 (Sheet 6 of 7)**



767-300 STRUCTURAL REPAIR MANUAL

SAMPLE CALCULATION (DAMAGE TO LOWER STRINGER BETWEEN RIB NOS. 8 AND 9)(CONTINUED)

4. CALCULATE THE FASTENER REQUIREMENTS. EACH FLANGE OF EACH REPAIR PART SHOULD BE CONSIDERED SEPARATELY. (REFER TO TABLE III)

STRINGER UPPER FLANGE (USE 3/16 DIA HEX DRIVE BOLTS) -

REPAIR PART 2, 0.040 GAGE X 0.767 WIDE, WOULD REQUIRE A MINIMUM OF $3.5 \times 0.767 = 2.7$.
USE 3 FASTENERS.

REPAIR PART 4, 0.045 GAGE X 0.727 WIDE, WOULD REQUIRE A MINIMUM OF $3.5 \times 0.727 = 2.5$.
USE 3 FASTENERS.

REPAIR PART 6, 0.071 GAGE X 0.682 WIDE, WOULD REQUIRE A MINIMUM OF $3.5 \times 0.682 = 2.4$.
USE 3 FASTENERS.

STRINGER LOWER FLANGE (USE THE SAME SIZE AND TYPE AS THE INITIAL FASTENER, I.E., BACR15FV6KE) -

REPAIR PART 1, 0.040 GAGE X 0.862 WIDE, WOULD REQUIRE A MINIMUM OF $5.3 \times 0.862 = 4.6$.
USE 5 FASTENERS.

REPAIR PART 3, 0.045 GAGE X 0.822 WIDE, WOULD REQUIRE A MINIMUM OF $5.1 \times 0.822 = 4.2$.
USE 5 FASTENERS.

REPAIR PART 5, 0.080 GAGE X 0.777 WIDE, WOULD REQUIRE A MINIMUM OF $5.0 \times 0.777 = 3.9$.
USE 4 FASTENERS.

STRINGER WEB (USE 3/16 DIA HI-LOKS) -

NOTE: TO CALCULATE THE FASTENER REQUIREMENTS IN THE STRINGER WEB, DIVIDE THE VALUES IN TABLE III BY 2.0.

REPAIR PART 1, 0.040 GAGE X 1.534 WIDE, WOULD REQUIRE A MINIMUM OF $1.8 \times 1.534 = 2.8$.
USE 3 FASTENERS.

REPAIR PART 2, 0.040 GAGE X 1.534 WIDE, WOULD REQUIRE A MINIMUM OF $1.8 \times 1.534 = 2.8$.
USE 3 FASTENERS.

REPAIR PART 3, 0.045 GAGE X 1.494 WIDE, WOULD REQUIRE A MINIMUM OF $1.8 \times 1.494 = 2.7$.
USE 3 FASTENERS.

REPAIR PART 4, 0.045 GAGE X 1.494 WIDE, WOULD REQUIRE A MINIMUM OF $1.8 \times 1.494 = 2.7$.
USE 3 FASTENERS.

REPAIR PART 5, 0.080 GAGE X 1.449 WIDE, WOULD REQUIRE A MINIMUM OF $1.8 \times 1.449 = 2.6$.
USE 3 FASTENERS.

REPAIR PART 6, 0.071 GAGE X 1.449 WIDE, WOULD REQUIRE A MINIMUM OF $1.8 \times 1.449 = 2.6$.
USE 3 FASTENERS.

**Horizontal Stabilizer Zee Stringer Repair
Figure 201 (Sheet 7 of 7)**

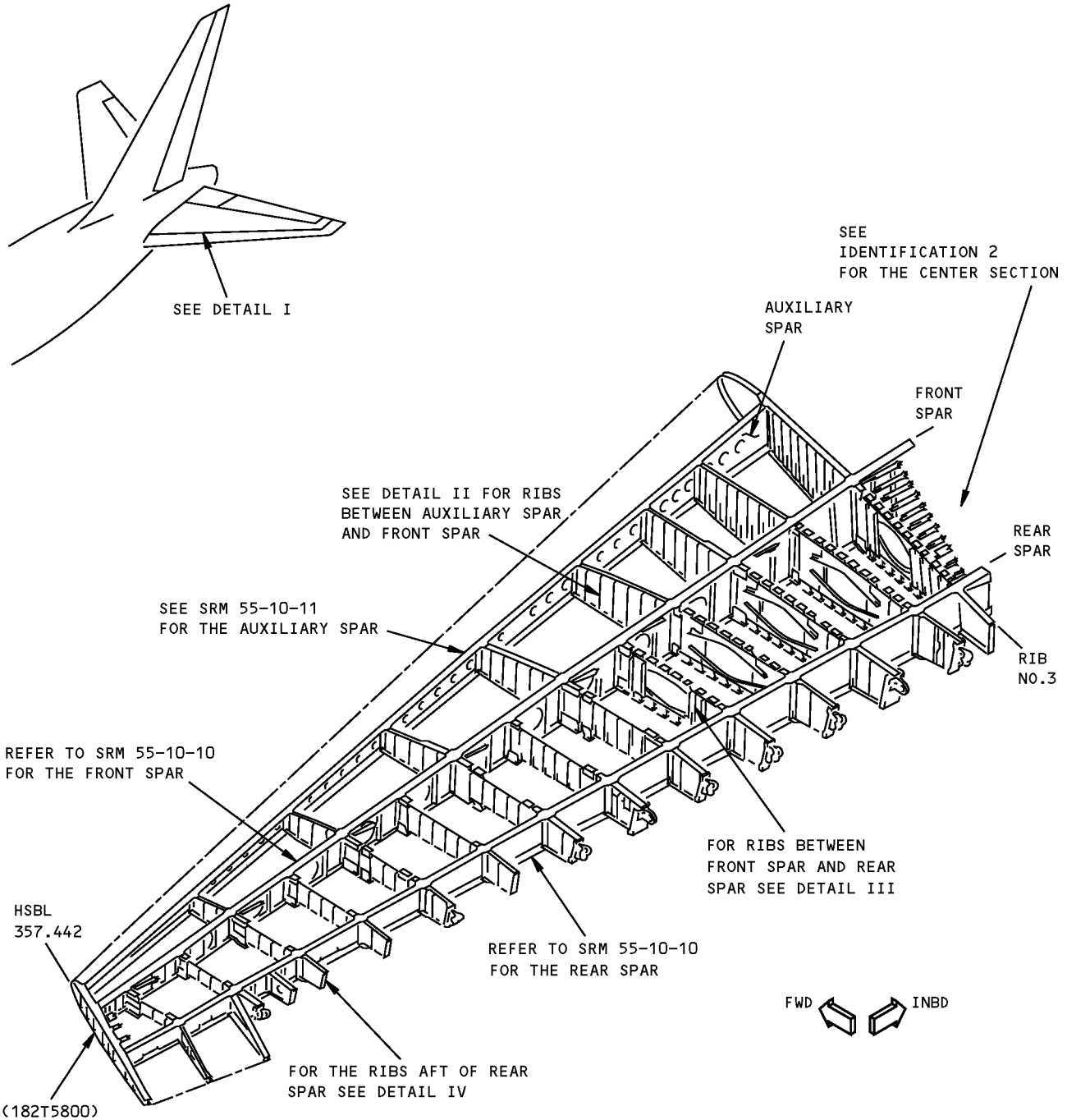
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STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - HORIZONTAL STABILIZER RIBS



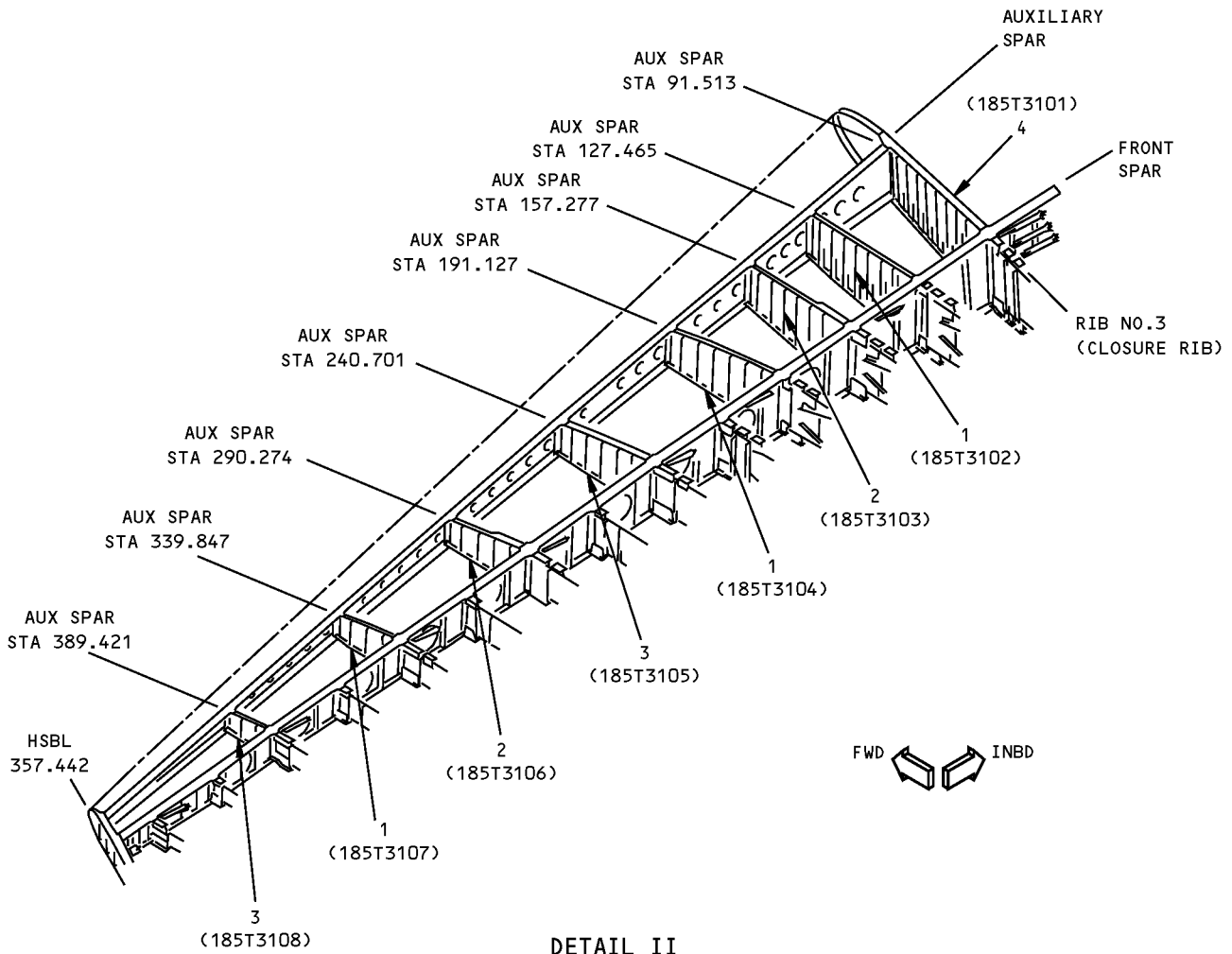
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

DETAIL I

**Horizontal Stabilizer Rib Identification
Figure 1 (Sheet 1 of 7)**

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STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
185T0000



LIST OF
MATL

**Horizontal Stabilizer Rib Identification
Figure 1 (Sheet 2 of 7)**

IDENTIFICATION 1
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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.025	CLAD 7075-T6 BAC1503-100267 7075-T6511 BAC1503-100267 7075-T6511	
2	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.025	CLAD 7075-T6 BAC1505-100416 7075-T6511 BAC1505-100416 7075-T6511	
3	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.025	CLAD 7075-T6 BAC1505-100881 7075-T6511 BAC1505-100881 7075-T6511	
4	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD FORWARD CHORD	0.025 0.080	CLAD 7075-T6 BAC1506-3207 7075-T6511 BAC1506-3207 7075-T6511 7075-T6	

LIST OF MATERIALS FOR DETAIL II

Horizontal Stabilizer Rib Identification
Figure 1 (Sheet 3 of 7)

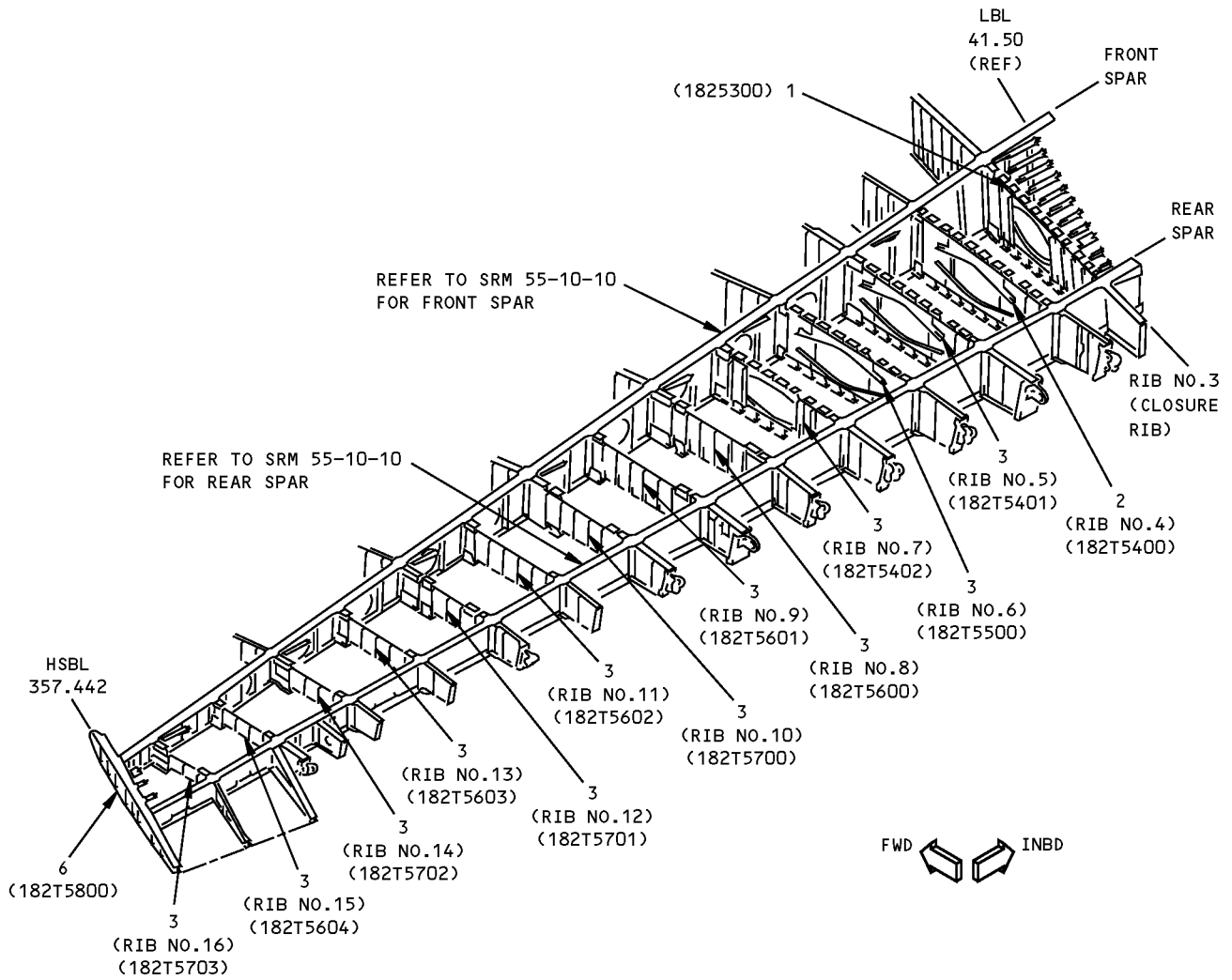
D634T210

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IDENTIFICATION 1
Page 3
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**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
182T4000



DETAIL III



**Horizontal Stabilizer Rib Identification
Figure 1 (Sheet 4 of 7)**

IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB ASSEMBLY			
	WEB FWD	0.025	7075-T6	
	WEB AFT	0.032	7075-T6	
	UPPER CHORD		BAC1503-100451 7075-T6511	
	LOWER CHORD		BAC1503-100451 7075-T6511	
2	RIB ASSEMBLY			
	WEB	0.032	7075-T6	
	UPPER CHORD		BAC1503-100146 7075-T6511	
	LOWER CHORD		BAC1503-100146 7075-T6511	
3	RIB ASSEMBLY			
	WEB	0.025	7075-T6	
	UPPER CHORD		BAC1503-100146 7075-T6511	
	LOWER CHORD		BAC1503-100146 7075-T6511	
4	RIB ASSEMBLY			
	WEB FWD	0.025	CLAD 7075-T6	
	WEB AFT	0.025	7075-T6	
	UPPER CHORD		BAC1503-100146 7075-T6511	
	LOWER CHORD		BAC1503-100146 7075-T6511	
5	RIB ASSEMBLY			
	WEB	0.025	CLAD 7075-T6	
	UPPER CHORD		BAC1506-3171 7075-T6511	
	LOWER CHORD		BAC1506-3171 7075-T6511	
6	RIB ASSEMBLY			
	WEB	0.032	CLAD 7075-T6	
	UPPER CHORD		BAC1505-100881 7075-T6511	
	LOWER CHORD		BAC1505-100881 7075-T6511	

LIST OF MATERIALS FOR DETAIL III

**Horizontal Stabilizer Rib Identification
Figure 1 (Sheet 5 of 7)**

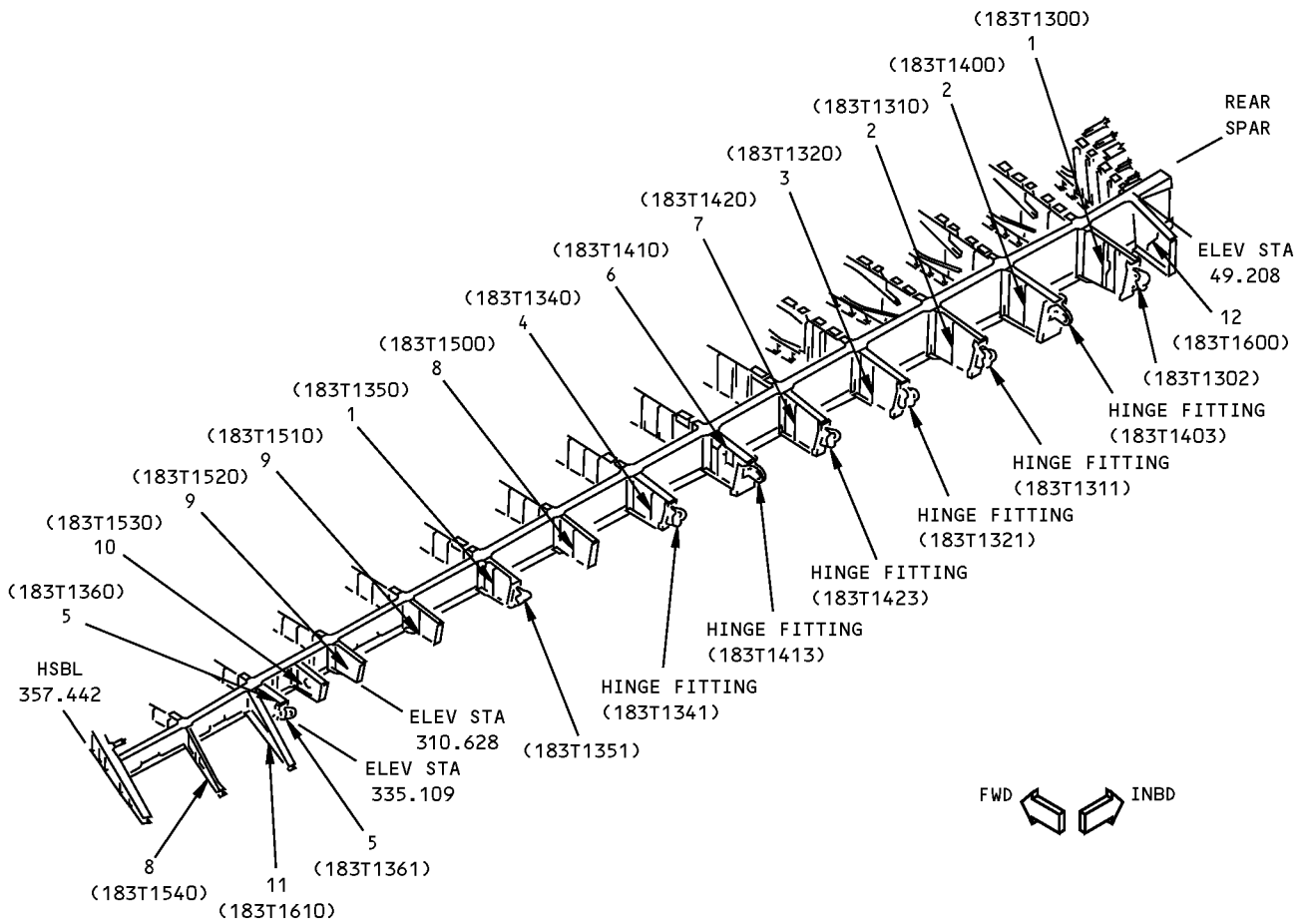
D634T210

55-10-09

IDENTIFICATION 1
Page 5
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**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
183T1000



DETAIL IV

LIST OF
MATL

**Horizontal Stabilizer Rib Identification
Figure 1 (Sheet 6 of 7)**

IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 AND10136-2407 7075-T6511 AND10136-2407 7075-T6511	
2	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 BAC1506-2514 7075-T6511 BAC1506-2514 7075-T6511	
3	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 AND10136-2407 7075-T6511 BAC1505-101090 7075-T6511 OR BAC1505-100893 7075-T6511	
4	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 BAC1505-10105 7075-T6511 OR BAC1505-100667 7075-T6511 BAC1505-101228 7075-T6511 OR BAC1505-101090 7075-T6511	
5	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 BAC1505-100186 7075-T6511 BAC1505-100186 7075-T6511	
6	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.050	CLAD 7075-T6 BAC1505-101015 7075-T6511 BAC1505-101015 7075-T6511	
7	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.040	CLAD 7075-T6 BAC1505-101015 7075-T6511 OR BAC1505-100667 7075-T6511 BAC1505-101228 7075-T6511 OR BAC1505-101090 7075-T6511	
8	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 AND10136-2404 7075-T6511 AND10136-2404 7075-T6511	
9	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 BAC1505-100186 7075-T6511 BAC1505-100186 7075-T6511	
10	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 BAC1505-100154 7075-T6511 BAC1505-100154 7075-T6511	
11	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.040	CLAD 7075-T6 AND10136-2404 7075-T6511 AND10136-2404 7075-T6511	
12	RIB ASSEMBLY WEB UPPER CHORD LOWER CHORD	0.032	CLAD 7075-T6 BAC1506-2512 7075-T6511 BAC1506-2512 7075-T6511	

LIST OF MATERIALS FOR DETAIL IV

**Horizontal Stabilizer Rib Identification
Figure 1 (Sheet 7 of 7)**

IDENTIFICATION 1

Page 7

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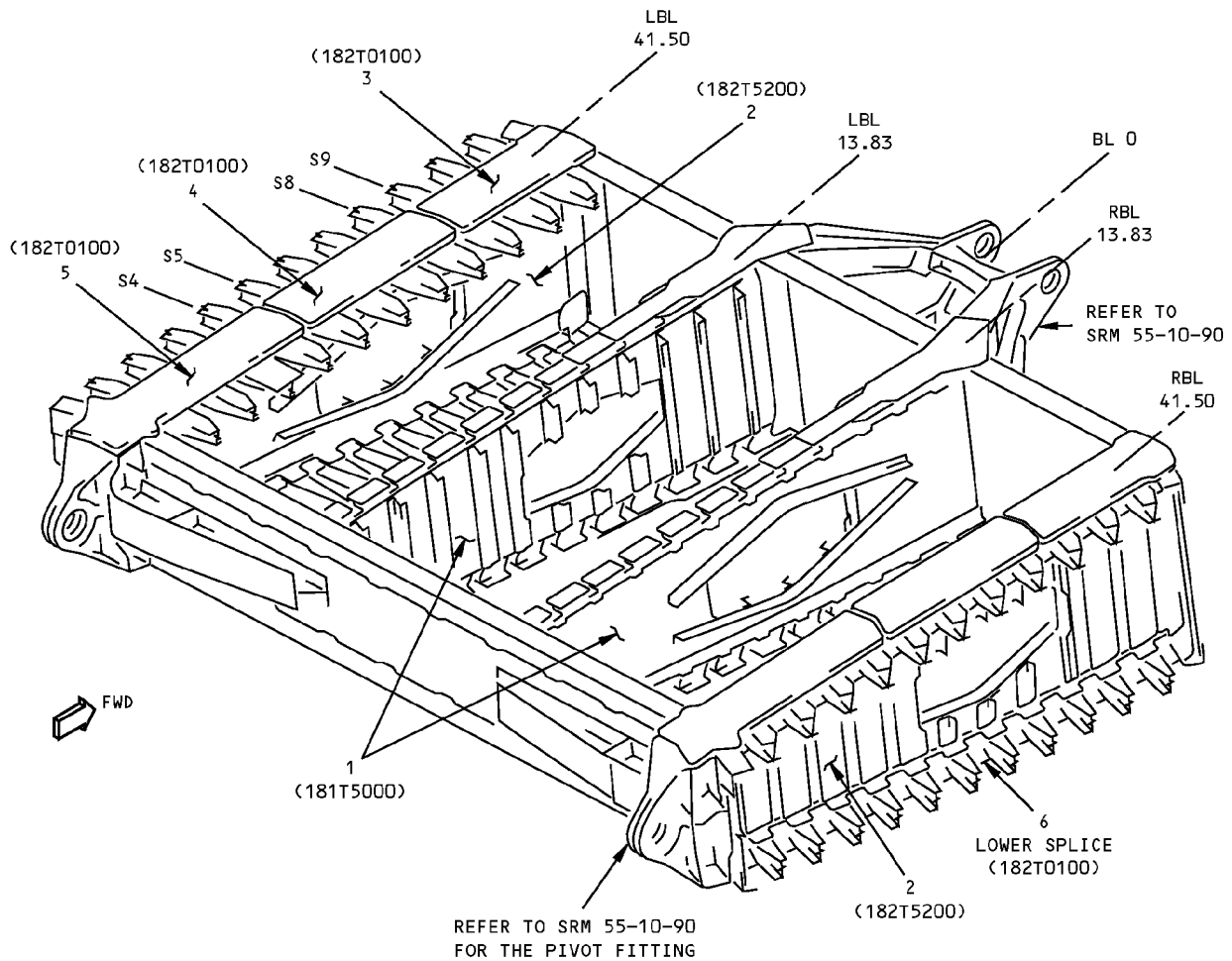
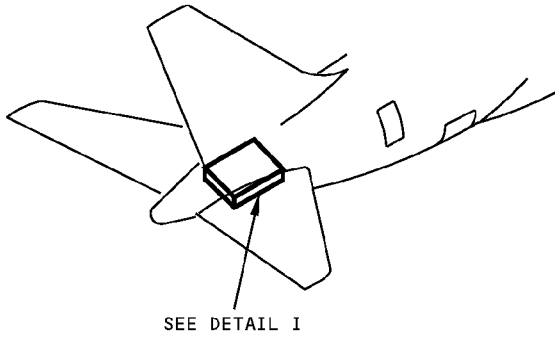
55-10-09

D634T210

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 2 - HORIZONTAL STABILIZER CENTER SECTION RIBS

REFERENCE DRAWING
181T0000



DETAIL I



**Horizontal Stabilizer Center Section Rib Identification
Figure 1 (Sheet 1 of 2)**



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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB ASSEMBLY UPPER CHORD WEB LOWER CHORD	0.063	BAC1506-3264 7075-T6511 7075-T6 (CHEM-MILLED TO 0.030 INCH MINIMUM) BAC1506-3264 7075-T6511	
2	RIB ASSEMBLY UPPER CHORD WEB LOWER CHORD	0.18	BAC1520-2156 7075-T73511 7075-T6 (MACHINED TO 0.060 INCH MINIMUM) BAC1520-2155 7075-T73511	
3	SPLICE PLATE	1.10	7075-T7351	
4	SPLICE PLATE	1.00	7075-T7351	
5	SPLICE PLATE	0.70	7075-T7351	
6	SPLICE PLATE	0.160	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL I

Horizontal Stabilizer Center Section Rib Identification
Figure 1 (Sheet 2 of 2)

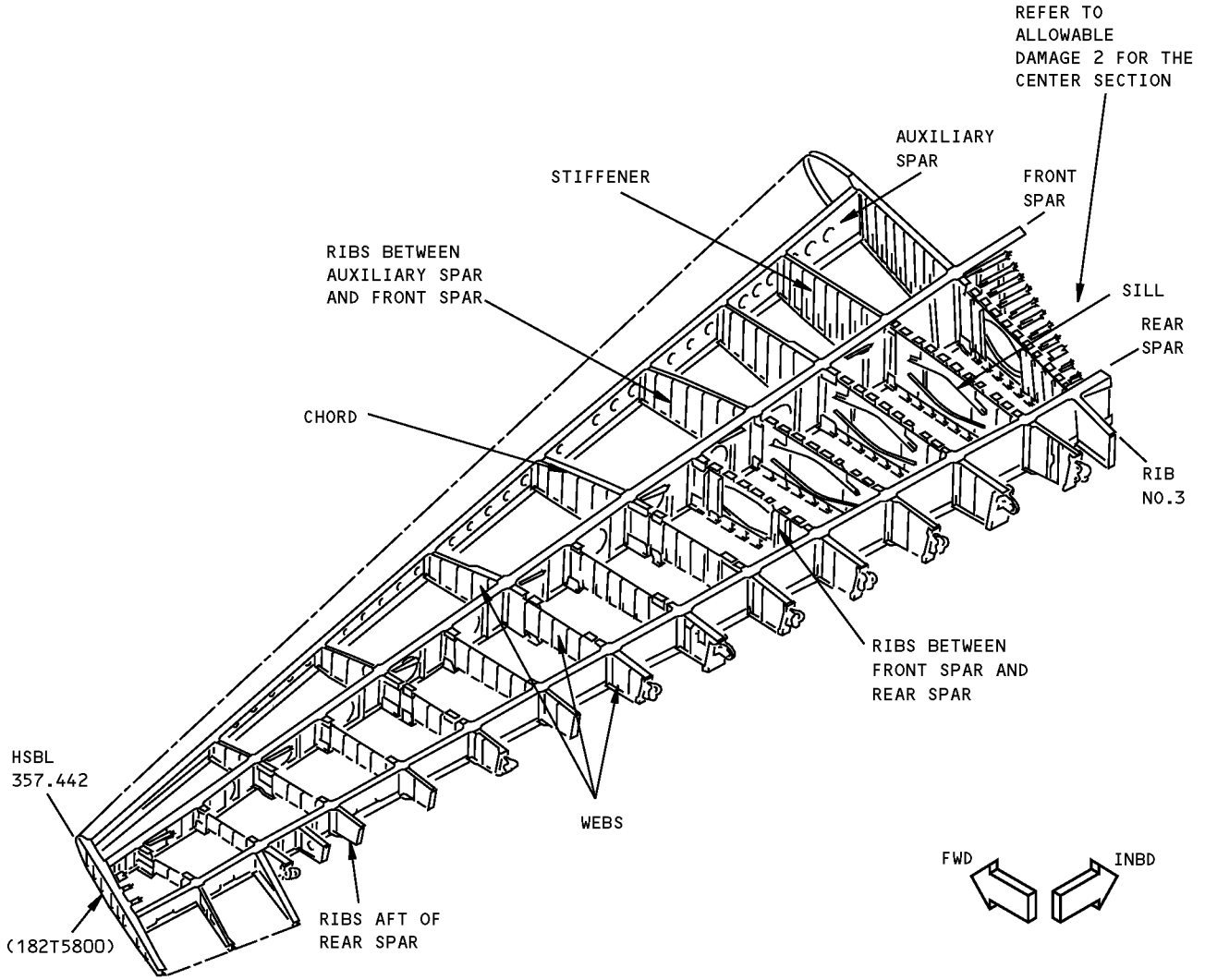
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IDENTIFICATION 2
Page 2
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**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER RIBS



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

**Allowable Damage - Horizontal Stabilizer Ribs
Figure 101 (Sheet 1 of 4)**



767-300
STRUCTURAL REPAIR MANUAL

LOCATION	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES
WEBS	A	B MAXIMUM DEPTH 10% OF GAGE	C	NOT PERMITTED
CHORDS	A	B MAXIMUM DEPTH 10% OF GAGE	NOT PERMITTED	NOT PERMITTED
STIFFENERS	A	B MAXIMUM DEPTH 10% OF GAGE	NOT PERMITTED	SEE DETAIL V
SILL	A	B MAXIMUM DEPTH 10% OF GAGE	NOT PERMITTED	SEE DETAIL VI

NOTES

- APPLY THE FINISH TO THE REWORKED AREAS AS GIVEN IN AMM 51-20.

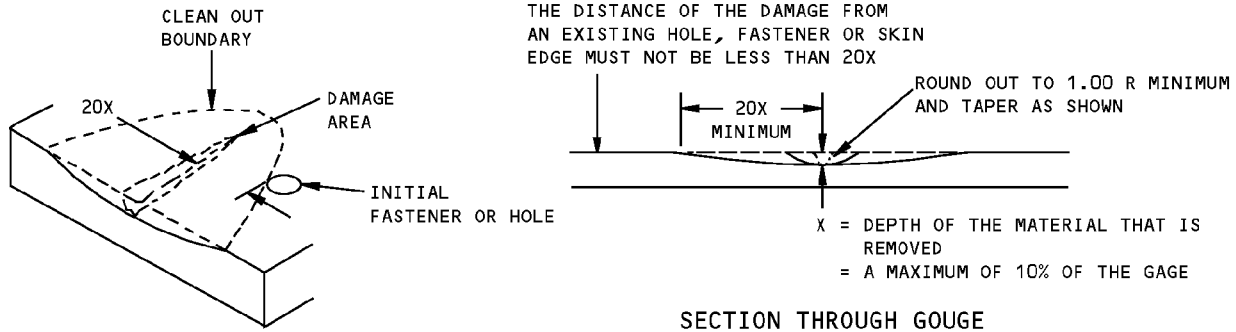
- A ALL CRACKED PARTS MUST BE REPAIRED. CRACKS ON EDGES MUST BE SMOOTHED OUT AS GIVEN IN DETAILS II AND III.
- B NICK, GOUGE OR SCRATCH DAMAGE THAT IS REMOVED AS GIVEN IN DETAIL I IS PERMITTED IF THE DEPTH IS NOT MORE THAN THE MAXIMUM PERMITTED DEPTH.
- C DENT DAMAGE IS PERMITTED IF THE DEPTH Y IS NOT MORE THAN 0.125 INCH, A/Y IS NOT LESS THAN 30 AND THERE IS NO EVIDENCE OF PULLED OR LOOSE RIVETS, SHARP CREASES, GOUGES, SCRATCHES OR CRACKING. SEE DETAIL IV.

Allowable Damage - Horizontal Stabilizer Ribs
Figure 101 (Sheet 2 of 4)

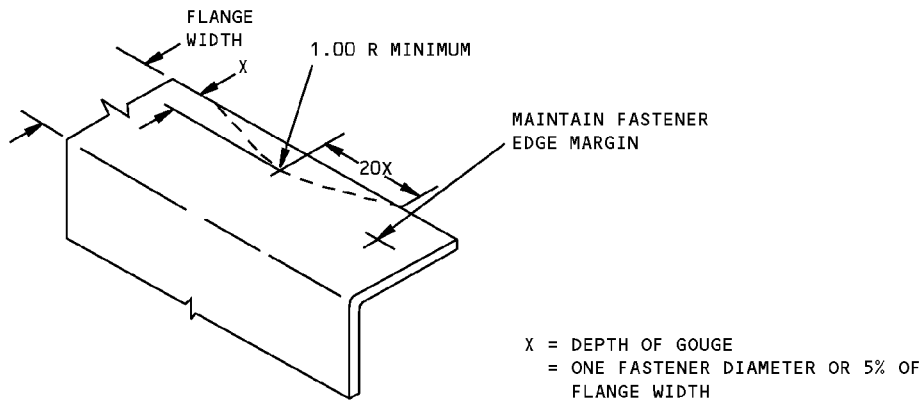
D634T210

ALLOWABLE DAMAGE 1
Page 102
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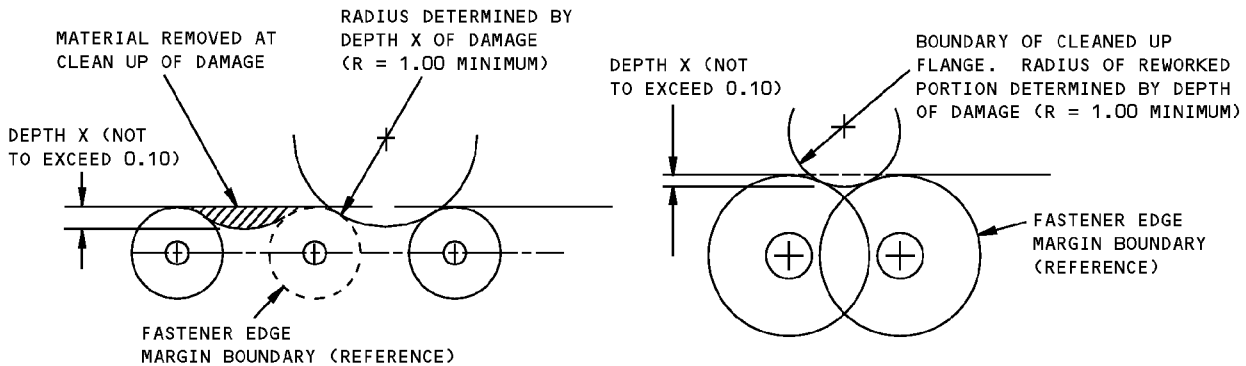
**767-300
STRUCTURAL REPAIR MANUAL**



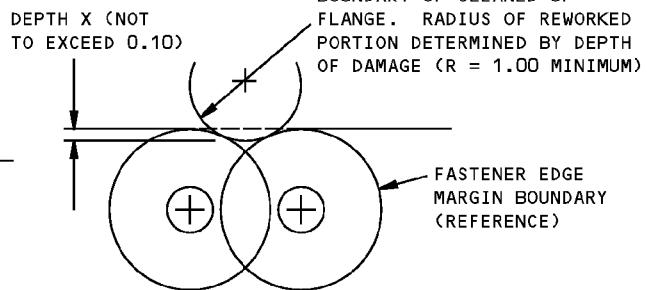
SECTION THROUGH GOUGE
REMOVAL OF NICK GOUGE OR SCRATCH
DAMAGE ON A SURFACE
DETAIL I



REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL II



DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP

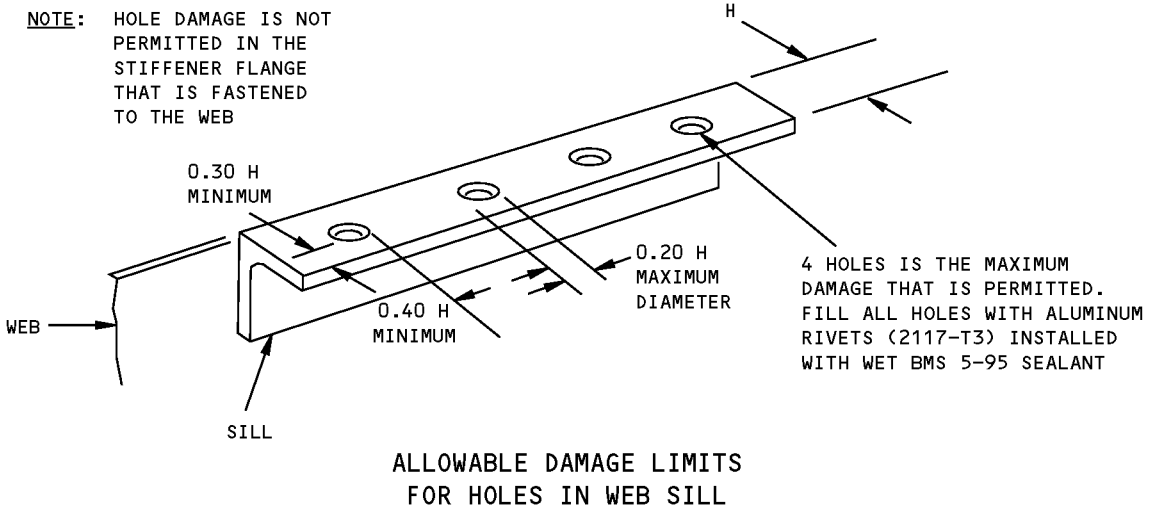
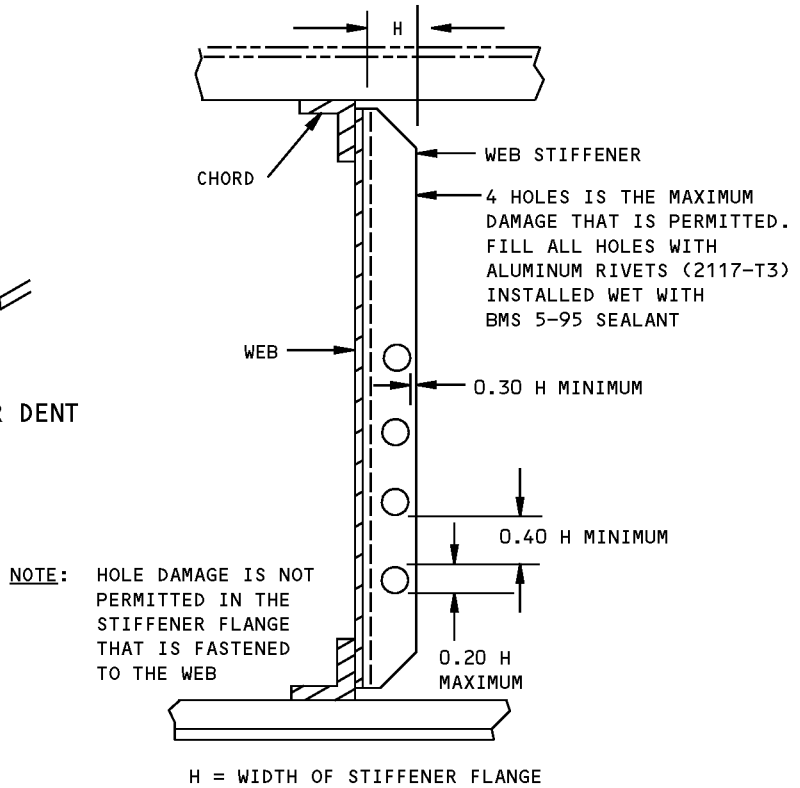
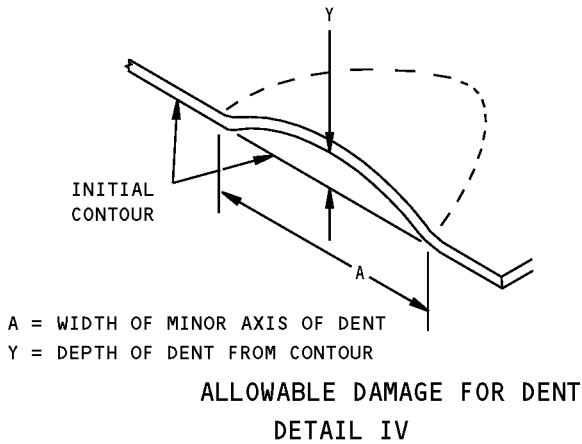


DAMAGE CLEAN UP OF EDGES
WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL III

**Allowable Damage - Horizontal Stabilizer Ribs
Figure 101 (Sheet 3 of 4)**

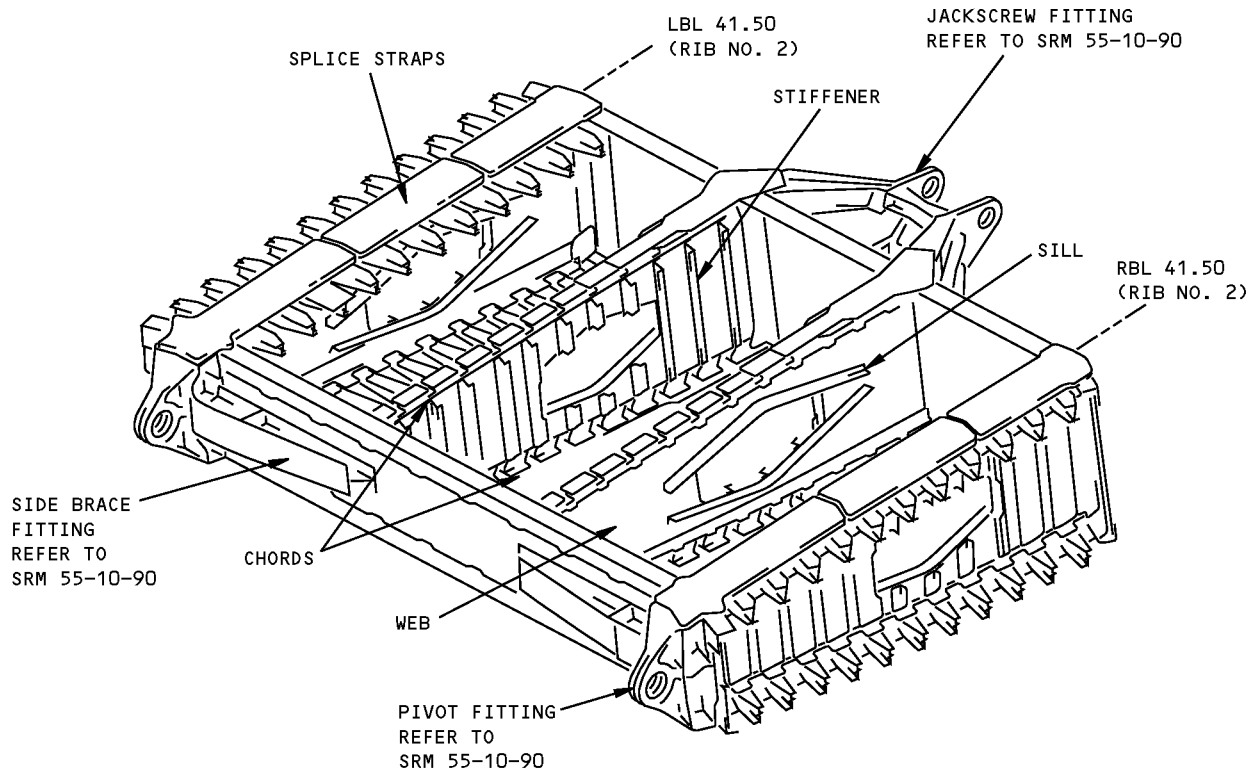
STRUCTURAL REPAIR MANUAL



**Allowable Damage - Horizontal Stabilizer Ribs
Figure 101 (Sheet 4 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 2 - HORIZONTAL STABILIZER CENTER SECTION RIBS



**Allowable Damage - Horizontal Stabilizer Center Section Ribs
Figure 101 (Sheet 1 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

LOCATION	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES
WEBS	A	B MAXIMUM DEPTH 10% OF GAGE	C	NOT PERMITTED
CHORDS	A	B MAXIMUM DEPTH 10% OF GAGE	NOT PERMITTED	NOT PERMITTED
STIFFENERS	A	B MAXIMUM DEPTH 10% OF GAGE	NOT PERMITTED	SEE DETAIL V
SILL	A	B MAXIMUM DEPTH 10% OF GAGE	NOT PERMITTED	SEE DETAIL VI
SPLICE STRAP	A	B MAXIMUM DEPTH 10% OF GAGE D	NOT PERMITTED	NOT PERMITTED

NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

A ALL CRACKED PARTS MUST BE REPAIRED. CRACKS ON EDGES MUST BE SMOOTHED OUT AS SHOWN IN DETAILS II AND III.

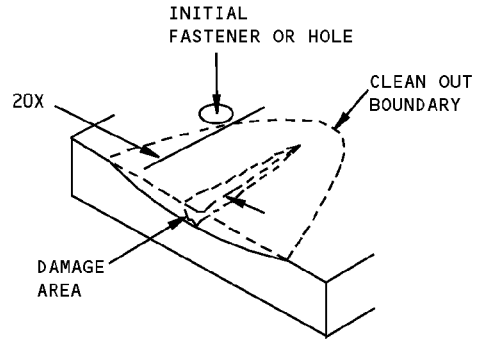
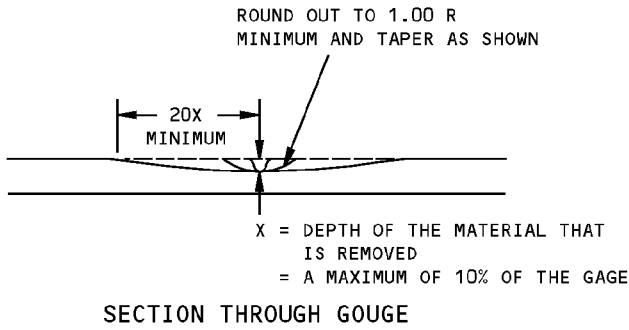
B NICK, GOUGE, OR SCRATCH DAMAGE THAT IS REMOVED AS GIVEN IN DETAIL I IS PERMITTED IF THE DEPTH IS NOT MORE THAN THE MAXIMUM PERMITTED DEPTH.

C DENT DAMAGE IS PERMITTED IF THE DEPTH Y IS NOT MORE THAN 0.125 INCH, A/Y IS NOT LESS THAN 30 AND THERE IS NO EVIDENCE OF PULLED OR LOOSE RIVETS, SHARP CREASES, GOUGES, SCRATCHES, OR CRACKING. SEE DETAIL IV.

D THE WIDTH OF THE CLEAN-OUT BOUNDARY MUST NOT BE MORE THAN: (FASTENER SPACING-FASTENER DIAMETER).

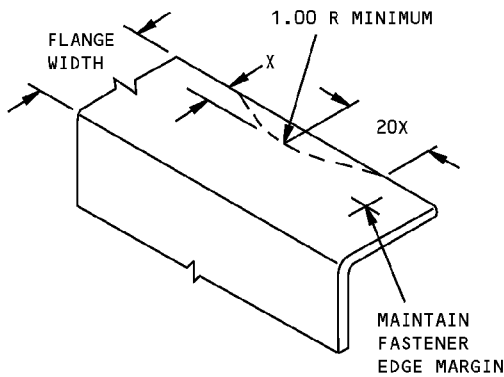
**Allowable Damage - Horizontal Stabilizer Center Section Ribs
Figure 101 (Sheet 2 of 4)**

STRUCTURAL REPAIR MANUAL



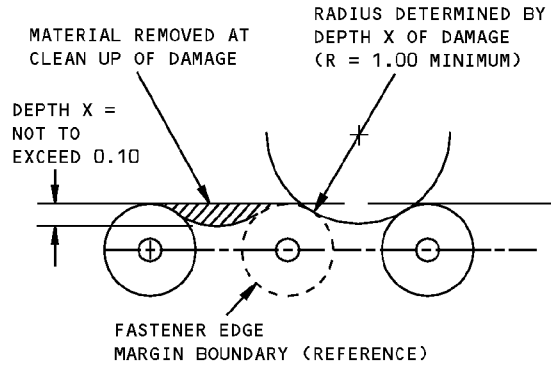
THE DISTANCE OF A GOUGE OR NICK DAMAGE FROM AN EXISTING HOLE, FASTENER OR SKIN EDGE MUST NOT BE LESS THAN 20X

**REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL I**

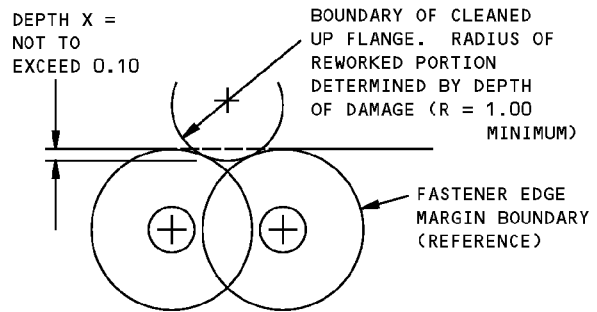


X = DEPTH OF GOUGE
= ONE FASTENER DIAMETER
OR 5% OF FLANGE WIDTH

DETAIL II



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

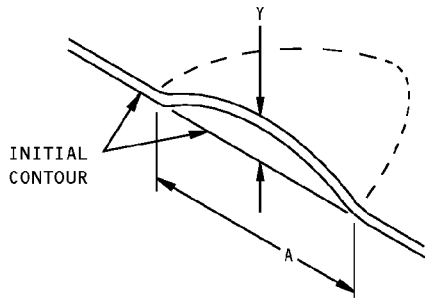


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL III

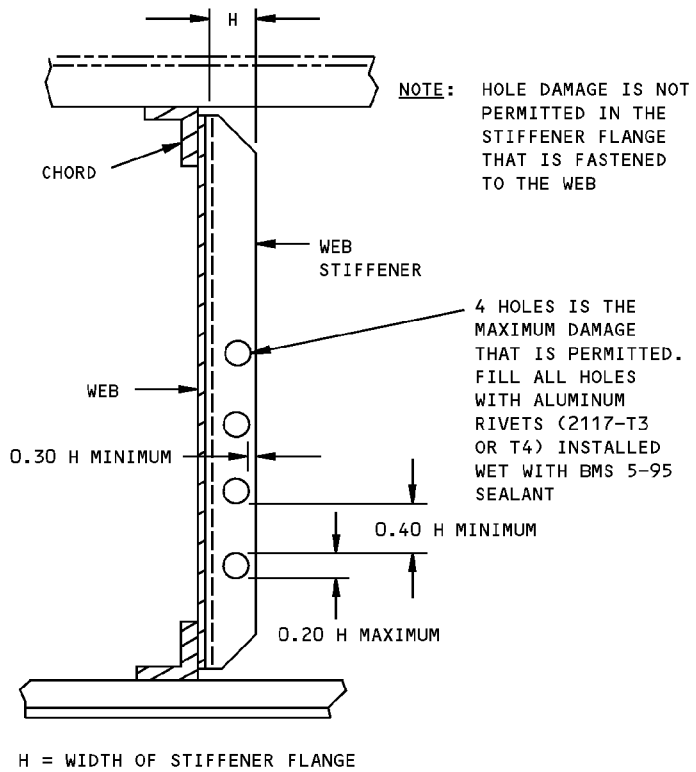
**Allowable Damage - Horizontal Stabilizer Center Section Ribs
Figure 101 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

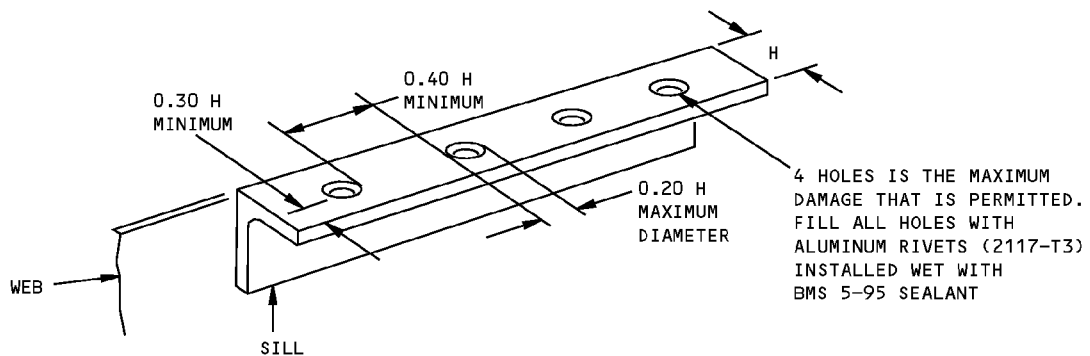


A = WIDTH OF MINOR AXIS OF DENT
Y = DEPTH OF DENT FROM CONTOUR

**ALLOWABLE DAMAGE FOR DENT
DETAIL IV**



**ALLOWABLE DAMAGE LIMITS FOR
HOLES IN WEB STIFFENERS
DETAIL V**

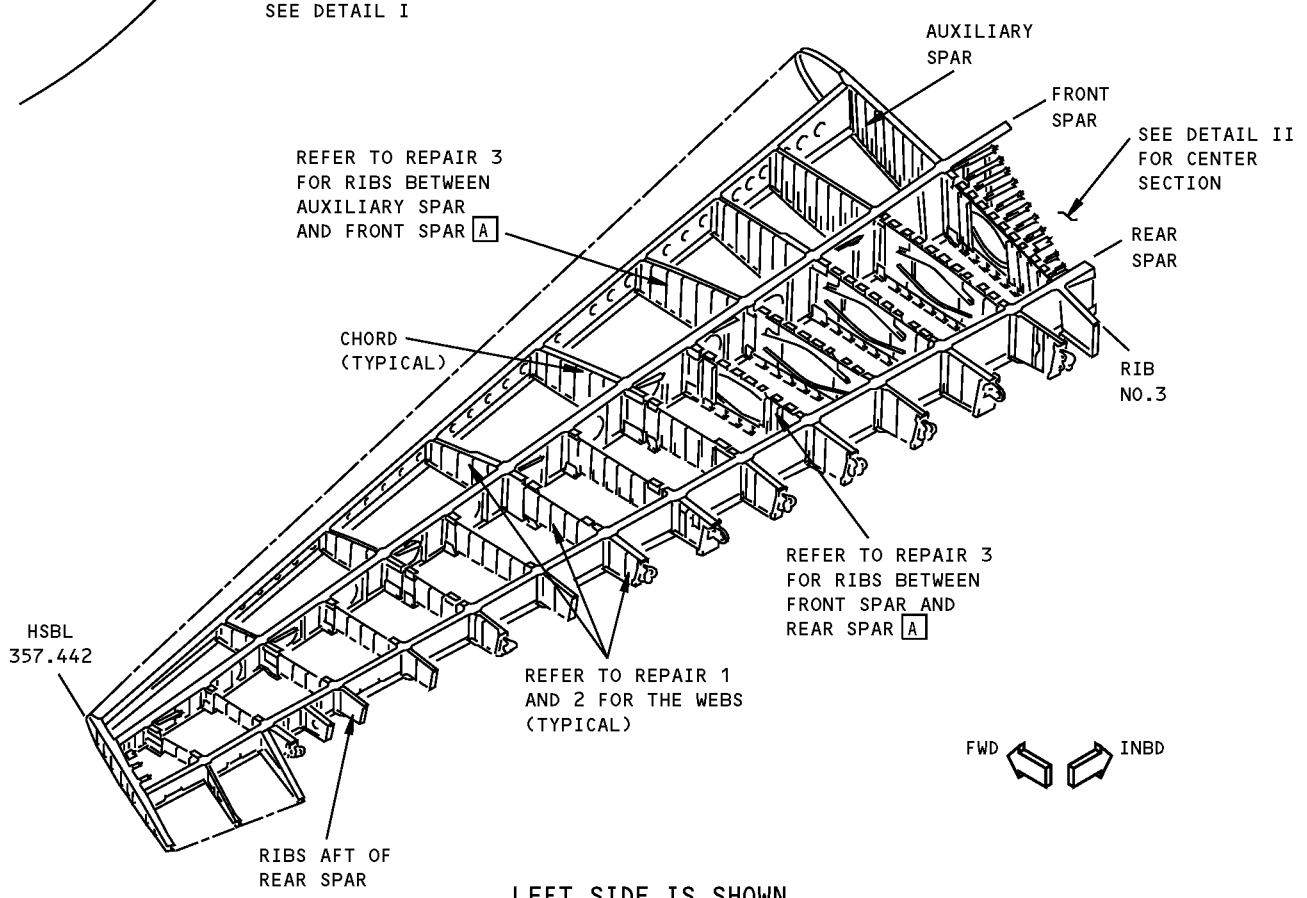
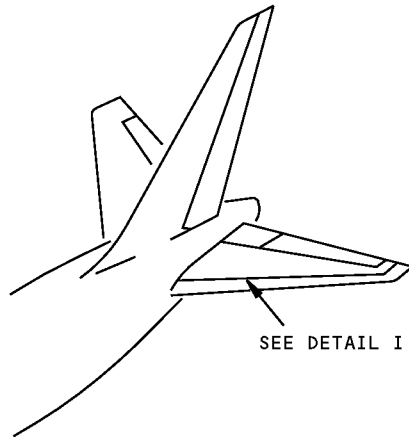


**ALLOWABLE DAMAGE LIMITS FOR HOLES IN WEB SILL
DETAIL VI**

**Allowable Damage - Horizontal Stabilizer Center Section Ribs
Figure 101 (Sheet 4 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR GENERAL - HORIZONTAL STABILIZER RIBS



LEFT SIDE IS SHOWN,
RIGHT SIDE IS OPPOSITE

DETAIL I

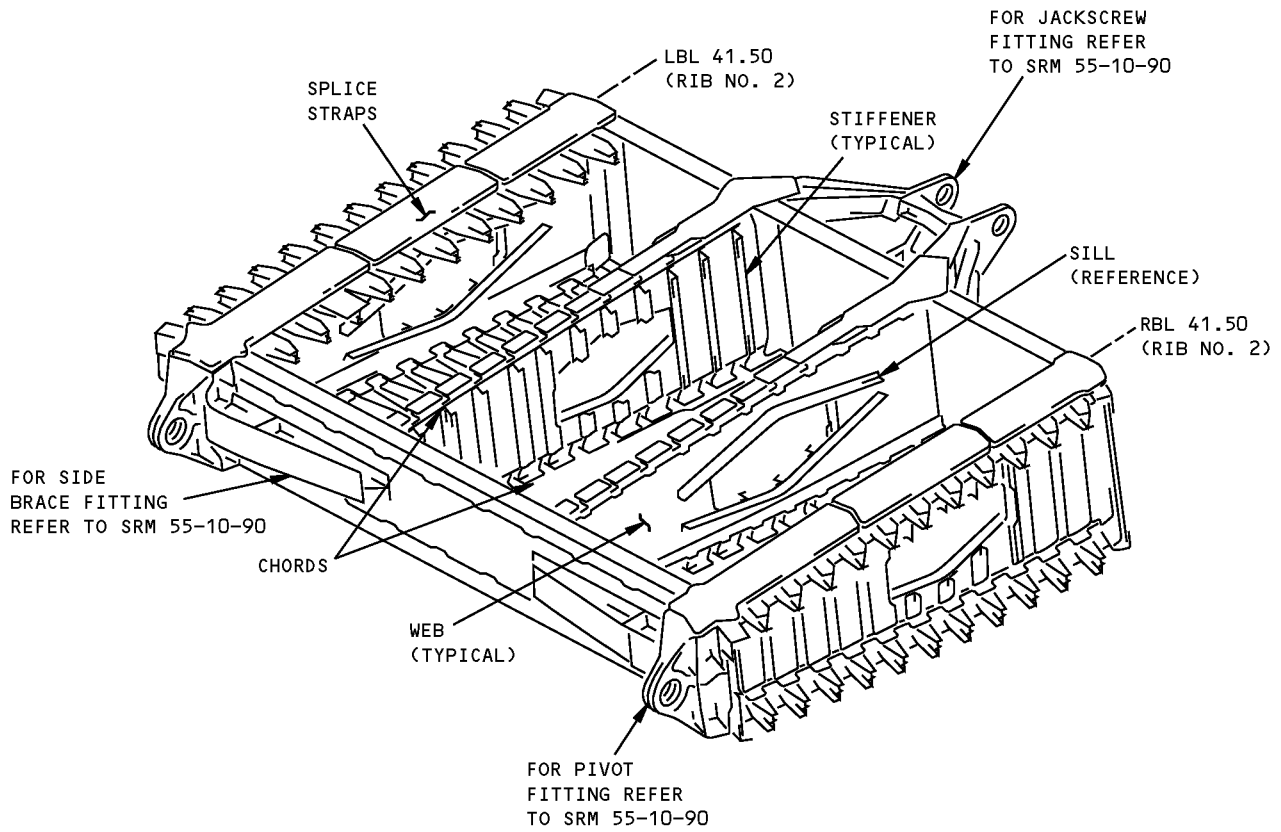
NOTES

- CALL THE BOEING COMPANY FOR REPAIRS TO HORIZONTAL STABILIZER CENTER SECTION RIB WEBS, CHORDS, AND SPLICES
- REFER TO SRM 51-70-12 FOR TYPICAL EXTRUDED SECTION REPAIRS TO STIFFENERS

[A] REFER TO SRM 51-70-12 (TYPICAL EXTRUDED SECTION REPAIRS) FOR AN ALTERNATIVE REPAIR TO RIB CHORDS

**Horizontal Stabilizer Rib Repairs
Figure 201 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



**HORIZONTAL STABILIZER CENTER SECTION
DETAIL II**

**Horizontal Stabilizer Rib Repairs
Figure 201 (Sheet 2 of 2)**

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REPAIR GENERAL
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STRUCTURAL REPAIR MANUAL

REPAIR 1 - HORIZONTAL STABILIZER RIB - WEB REPAIR AT A STIFFENER

REPAIR INSTRUCTIONS

1. Remove all web stiffeners which will not permit sufficient clearance for the repair.
2. Cut and remove the damaged piece of the web.
3. Make the repair parts. See Table I.
4. Assemble the repair parts and drill the fastener holes.
5. Disassemble the repair parts and deburr the holes.
6. Break the sharp edges of the initial and the repair parts 0.015 R to 0.030 R.
7. Remove all nicks, scratches, sharp edges, and corners from the repair parts and the initial structure.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply one layer of BMS 10-11, Type I primer to all surfaces of the repair parts and to the reworked areas of the initial parts. Refer to SOPM 20-41-02.
10. Install the repair parts and the web stiffener(s) with BMS 5-95 sealant between the mating surfaces.
11. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
12. Remove the loose debris from the repair area.
13. Make a fillet seal on all the repair parts.
14. Restore the initial finish as given in AMM 51-21.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
 - AMM 51-21 FOR RESTORATION OF FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SOPM 20-41-02 FOR APPLICATION OF FINISHES
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION AND HOLE SIZES, EDGE MARGINS AND SUBSTITUTIONS.

A FILLER EXTENDS TO END OF STIFFENER

FASTENER SYMBOLS

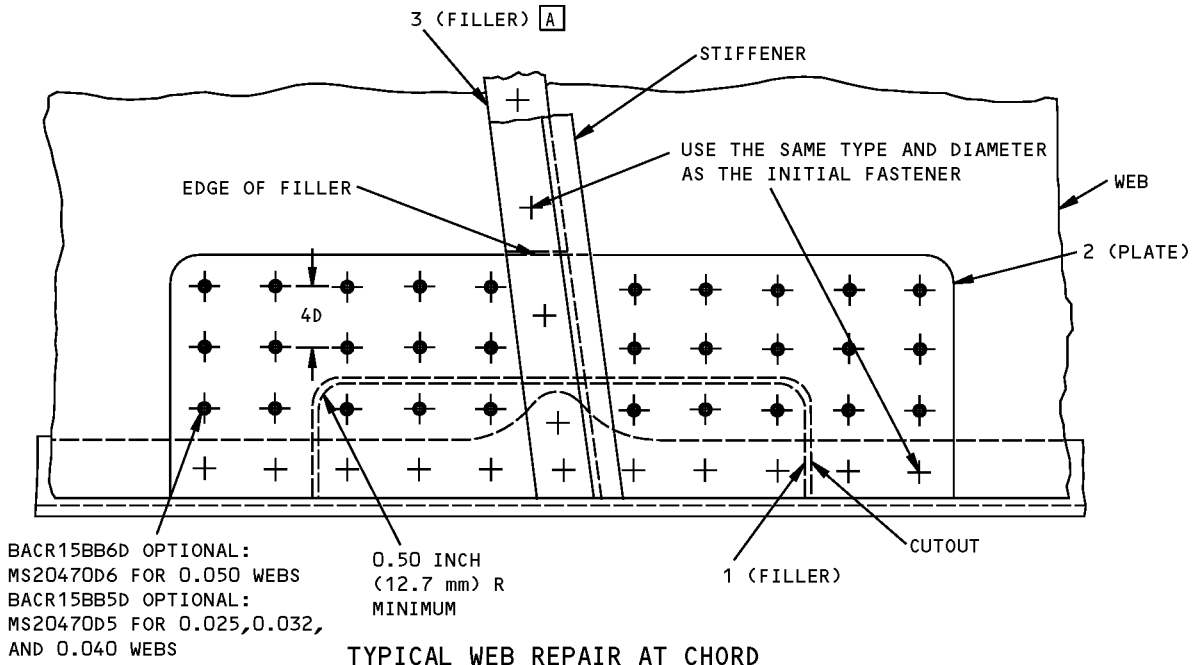
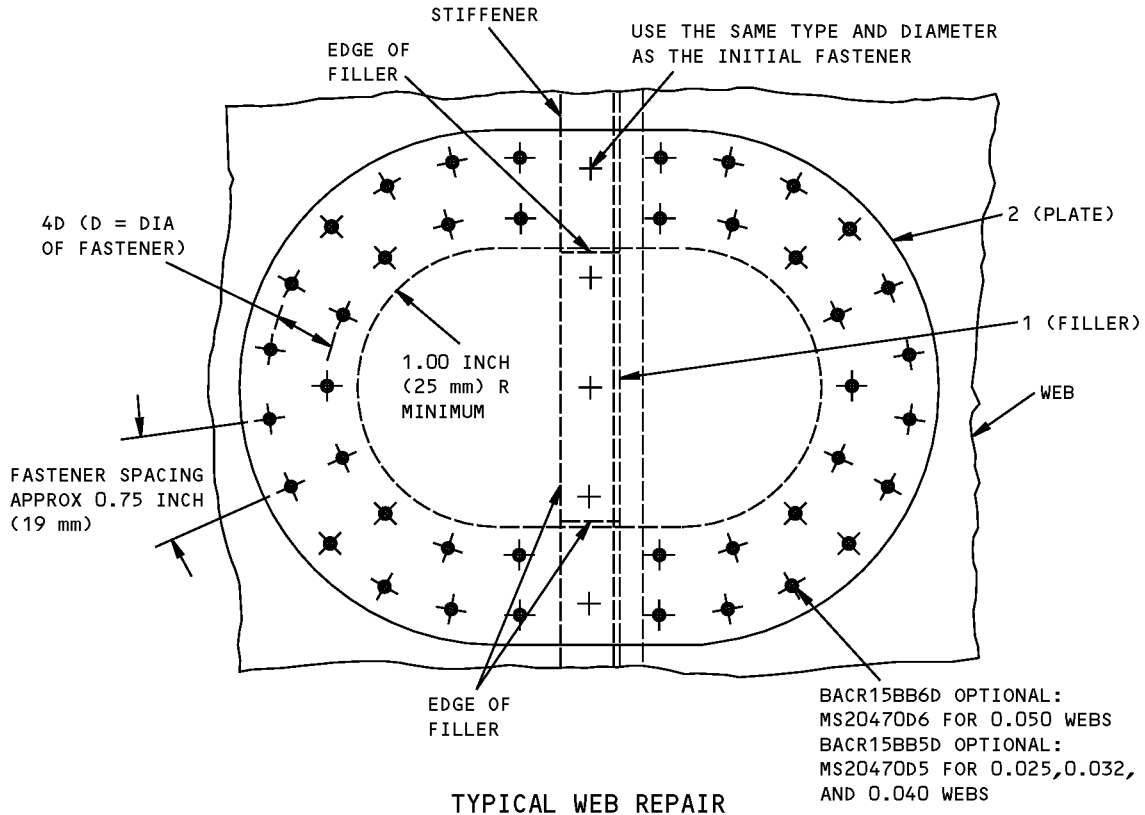
- ✚ INITIAL FASTENER LOCATION
- ✚ REPAIR FASTENER LOCATION

REPAIR MATERIAL			
	PART	QTY	MATERIAL
1	FILLER	1	CLAD 7075-T6 SAME GAGE AS WEB
2	PLATE	1	CLAD 7075-T6 ONE GAGE THICKER THAN WEB
3	FILLER	1	CLAD 7075-T6 SAME GAGE AS 2 (PLATE)

TABLE I

**Horizontal Stabilizer Rib Web Repair at a Stiffener
Figure 201 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



**Horizontal Stabilizer Rib Web Repair at a Stiffener
Figure 201 (Sheet 2 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 2 - HORIZONTAL STABILIZER RIB WEB REPAIR

APPLICABILITY
THIS REPAIR IS APPLICABLE TO BUILT UP SECTIONS WITHOUT CHEM-MILLED WEBS.

REPAIR INSTRUCTIONS

1. Remove the leading edge skin, inspar skin access door or inspar skin panels as necessary.
2. Stop drill 0.25 inch (6 mm) diameter holes at the ends of the crack. Refer to SRM 51-10-00.
3. Remove the stiffeners.
4. Make the repair parts. See Table I. Extend the repair plate to the edge of the stiffeners (Refer to Section A-A).
5. Assemble the repair parts and drill the fastener holes.
6. Disassemble the repair parts.
7. Break all sharp edges of the initial and the repair parts 0.015 R to 0.030 R.
8. Remove all nicks, scratches, burrs and sharp edges from from the initial and the repair parts.
9. Apply a chemical conversion coating to the repair parts and the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
11. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
12. Restore the initial finish as given in AMM 51-21.

NOTES

- WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR REPAIR SEALING
 - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, EDGE MARGINS AND SUBSTITUTIONS.

FASTENER SYMBOLS

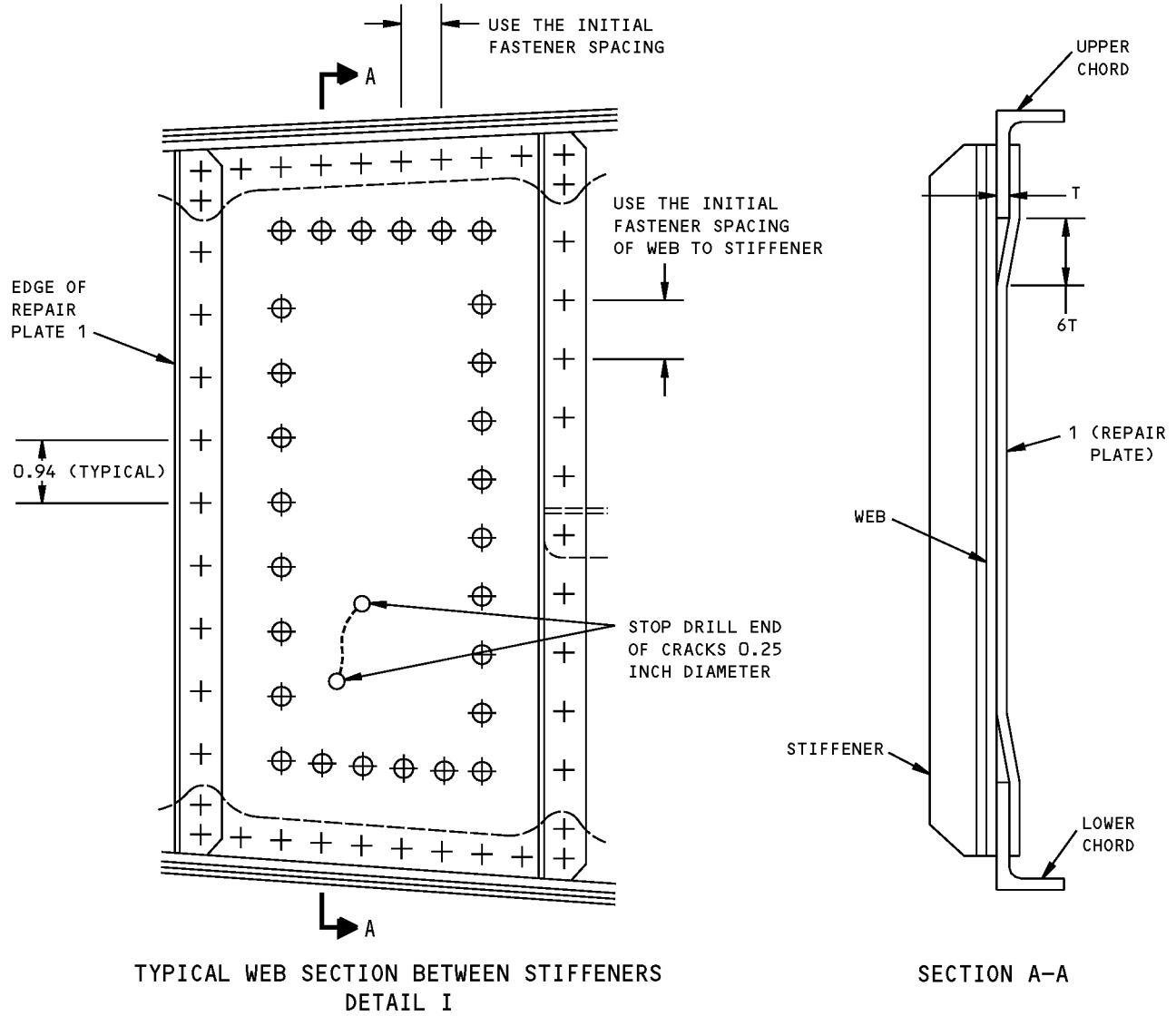
- + INITIAL FASTENER LOCATION. 1/32 OVERSIZE FOR RIVETS, 1/64 OVERSIZE FOR HEX DRIVE BOLTS.
- ◆ REPAIR FASTENER LOCATION. INSTALL BACR15BB6AD RIVETS.

REPAIR MATERIAL			
	PART	QTY	MATERIAL
1	REPAIR PLATE	AS REQ'D	SAME MATERIAL AS THE INITIAL WEB, ONE GAGE THICKER

TABLE I

**Horizontal Stabilizer Rib Web Repair
Figure 201 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



**Horizontal Stabilizer Rib Web Repair
Figure 201 (Sheet 2 of 2)**

STRUCTURAL REPAIR MANUAL**REPAIR 3 - HORIZONTAL STABILIZER RIB CHORD REPAIR****REPAIR INSTRUCTIONS**

1. Cut out the damaged part of the chord midway between the existing chord-to-web fasteners. Take care not to damage the web or skin.
2. Make the repair parts.
3. Assemble the repair parts and drill the fastener holes.
4. Disassemble the repair parts and deburr the holes.
5. Break sharp edges of the initial and the repair parts 0.015 R to 0.030 R.
6. Remove all nicks, scratches, sharp edges, and corners from the repair parts and the initial structure.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-11, Type I primer to the repair parts and the bare surfaces of the initial parts. Refer to SOPM 20-41-02.
9. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
11. Remove the loose debris from the repair area.
12. Restore the initial finish. Refer to AMM 51-21-00.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
 - AMM 51-21 FOR RESTORATION OF FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SOPM 20-41-02 FOR APPLICATION OF FINISHES
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, EDGE MARGINS AND SUBSTITUTIONS.

- A** REPAIR PARTS 3 AND 4 MAY BE USED AS AN ALTERNATIVE TO REPAIR PART 2. SEE TABLE I FOR MATERIAL GAGE
- B** SEE TABLE I FOR MINIMUM FASTENER REQUIREMENTS ON EACH SIDE OF SPLICE.
- C** USE THE SAME TYPE AND SIZE AS THE INITIAL FASTENER
- D** WHEN YOU CALCULATE FASTENER REQUIREMENTS, TAKE FRACTIONS (OF A FASTENER) TO THE NEXT HIGHER WHOLE NUMBER
- E** USE THE SAME THICKNESS AS THE INITIAL CHORD FLANGE

FASTENER SYMBOLS

- + INITIAL FASTENER LOCATION

**Horizontal Stabilizer Rib Chord Repair
Figure 201 (Sheet 1 of 4)**



**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER ANGLE	1	MAKE FROM THE SAME EXTRUSION AS THE INITIAL CHORD 7075-T6511 (ANGLE SECTION)
2	ANGLE	1	MAKE FROM THE SAME EXTRUSION AS THE INITIAL CHORD 7075-T6511
3	ANGLE	1	7075-T6511 A
4	ANGLE	1	7075-T6511 A
5	FILLER TEE	1	MAKE FROM THE SAME EXTRUSION AS THE INITIAL CHORD 7075-T6511 (TEE SECTION)
6	PLATE	1	7075-T6511 E

CHORD THICKNESS	GAGE OF REPAIR PARTS 3 AND 4	MINIMUM FASTENER REQUIREMENT PER INCH WIDTH OF FLANGE D	
		5/32 DIA	3/16 DIA
0.070	0.040	3.8	3.2
0.080	0.050	3.9	3.2
0.090	0.063	4.1	3.2
0.100	0.071	4.5	3.3
0.110	0.071	4.9	3.5
0.120	0.080	5.4	3.7
0.150	0.090	6.7	4.6

TABLE I

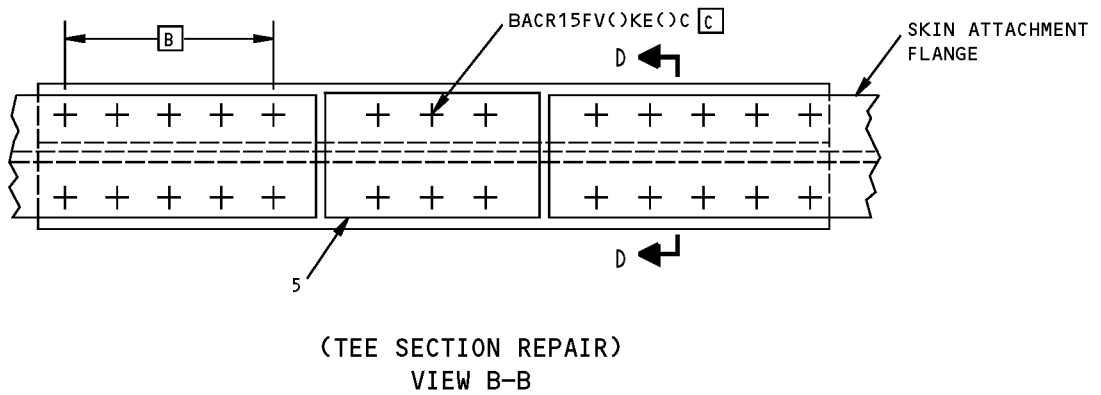
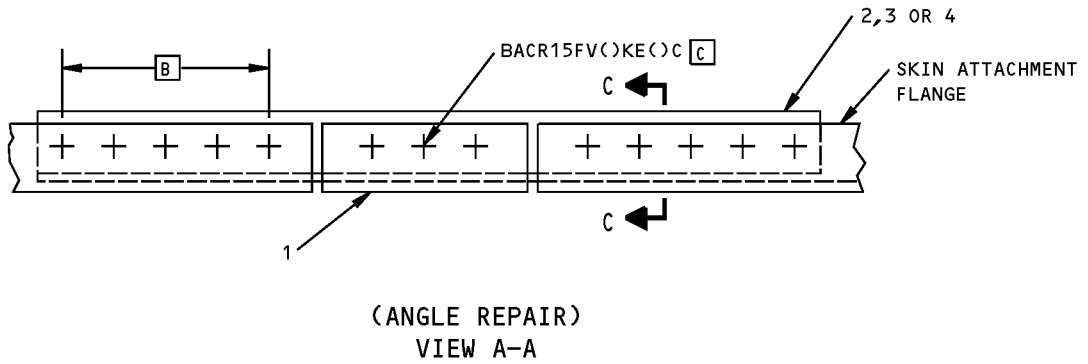
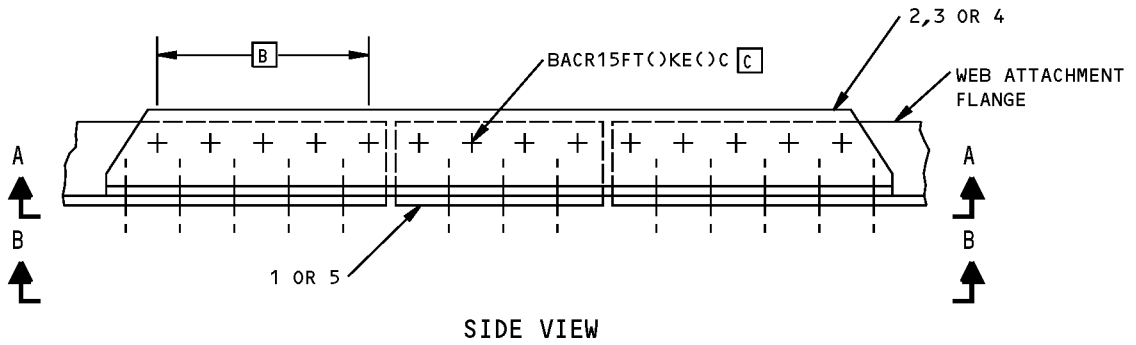
**Horizontal Stabilizer Rib Chord Repair
Figure 201 (Sheet 2 of 4)**

D634T210

55-10-09

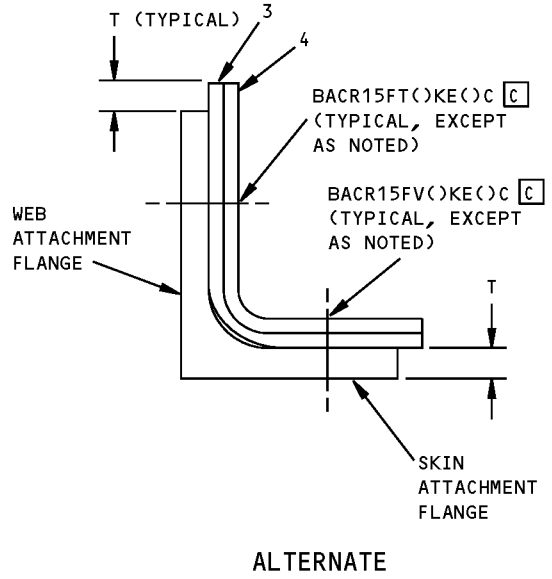
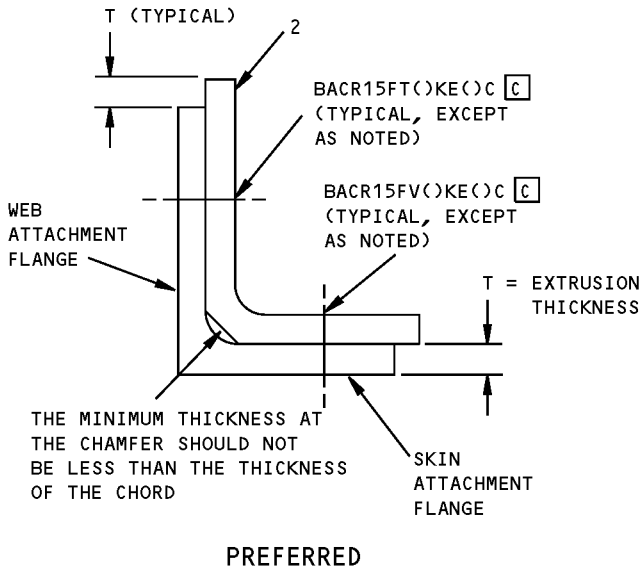
REPAIR 3
Page 202
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**767-300
STRUCTURAL REPAIR MANUAL**

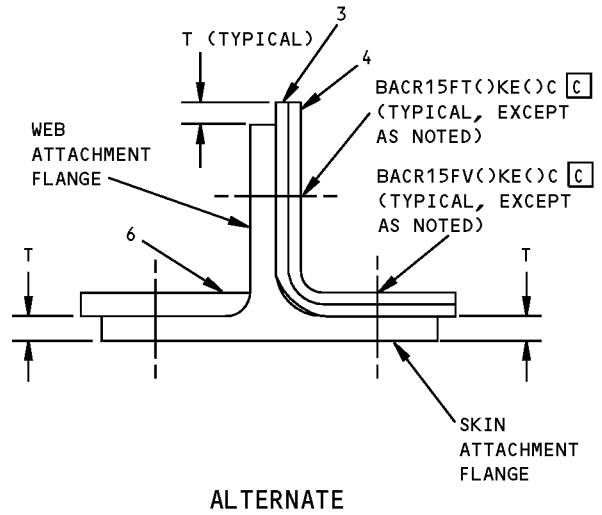
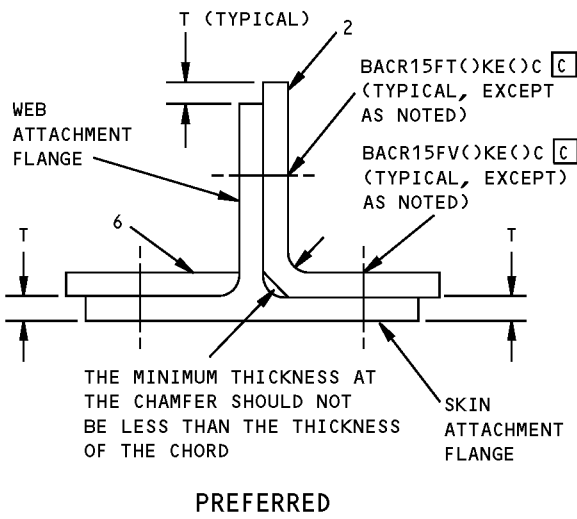


**Horizontal Stabilizer Rib Chord Repair
Figure 201 (Sheet 3 of 4)**

STRUCTURAL REPAIR MANUAL



SECTION C-C

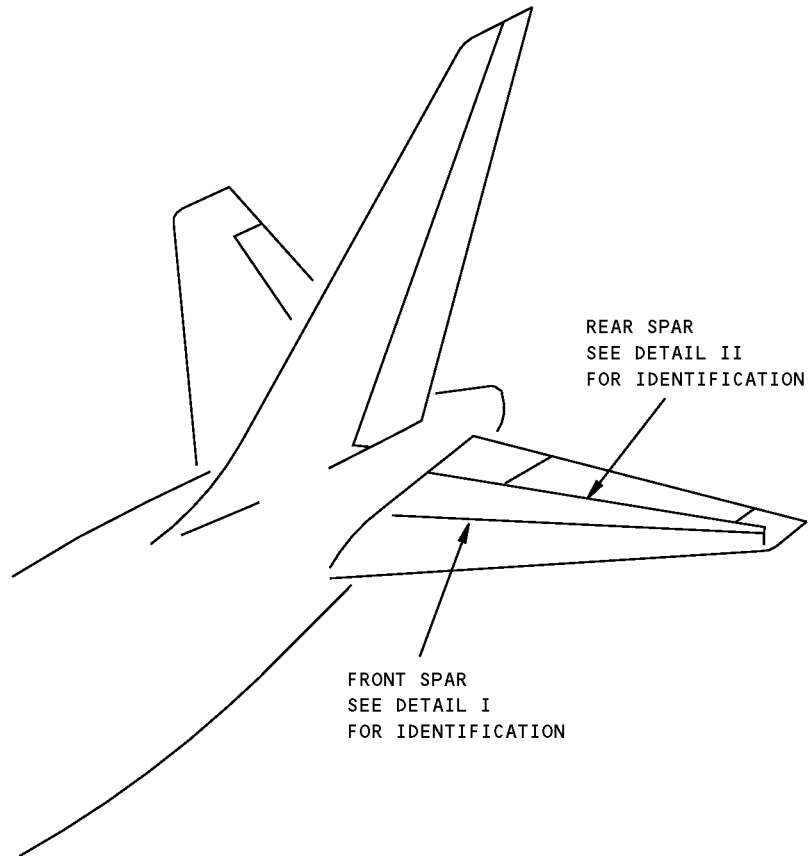


SECTION D-D

**Horizontal Stabilizer Rib Chord Repair
Figure 201 (Sheet 4 of 4)**

767-300
STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - HORIZONTAL STABILIZER SPAR



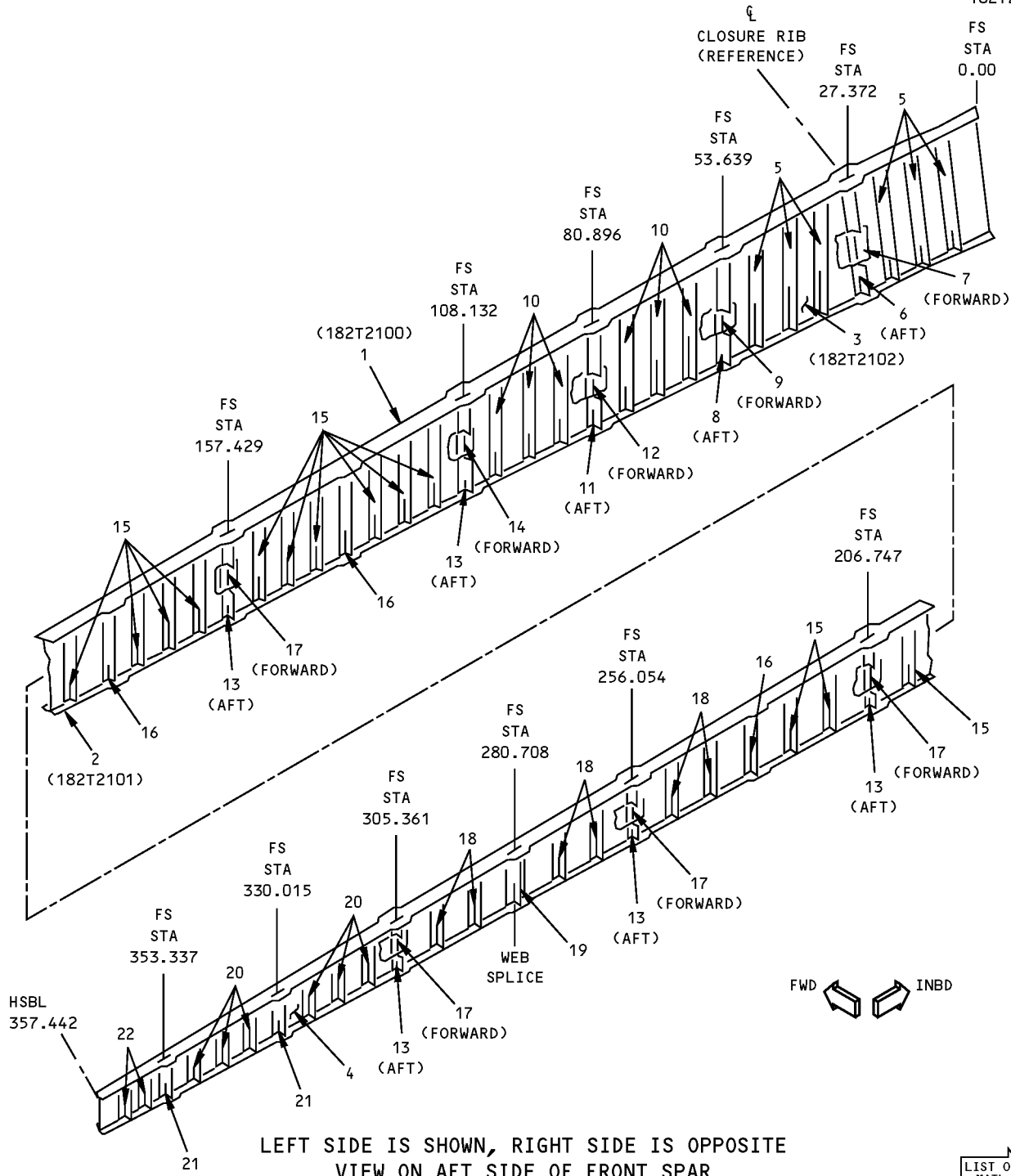
NOTES

- FOR AUXILIARY SPAR IDENTIFICATION,
REFER TO SRM 55-10-11

Horizontal Stabilizer Spar Identification
Figure 1 (Sheet 1 of 5)

**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
182T2000



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
VIEW ON AFT SIDE OF FRONT SPAR

DETAIL I

**Horizontal Stabilizer Spar Identification
Figure 1 (Sheet 2 of 5)**

LIST OF
MATL



**767-300
STRUCTURAL REPAIR MANUAL**

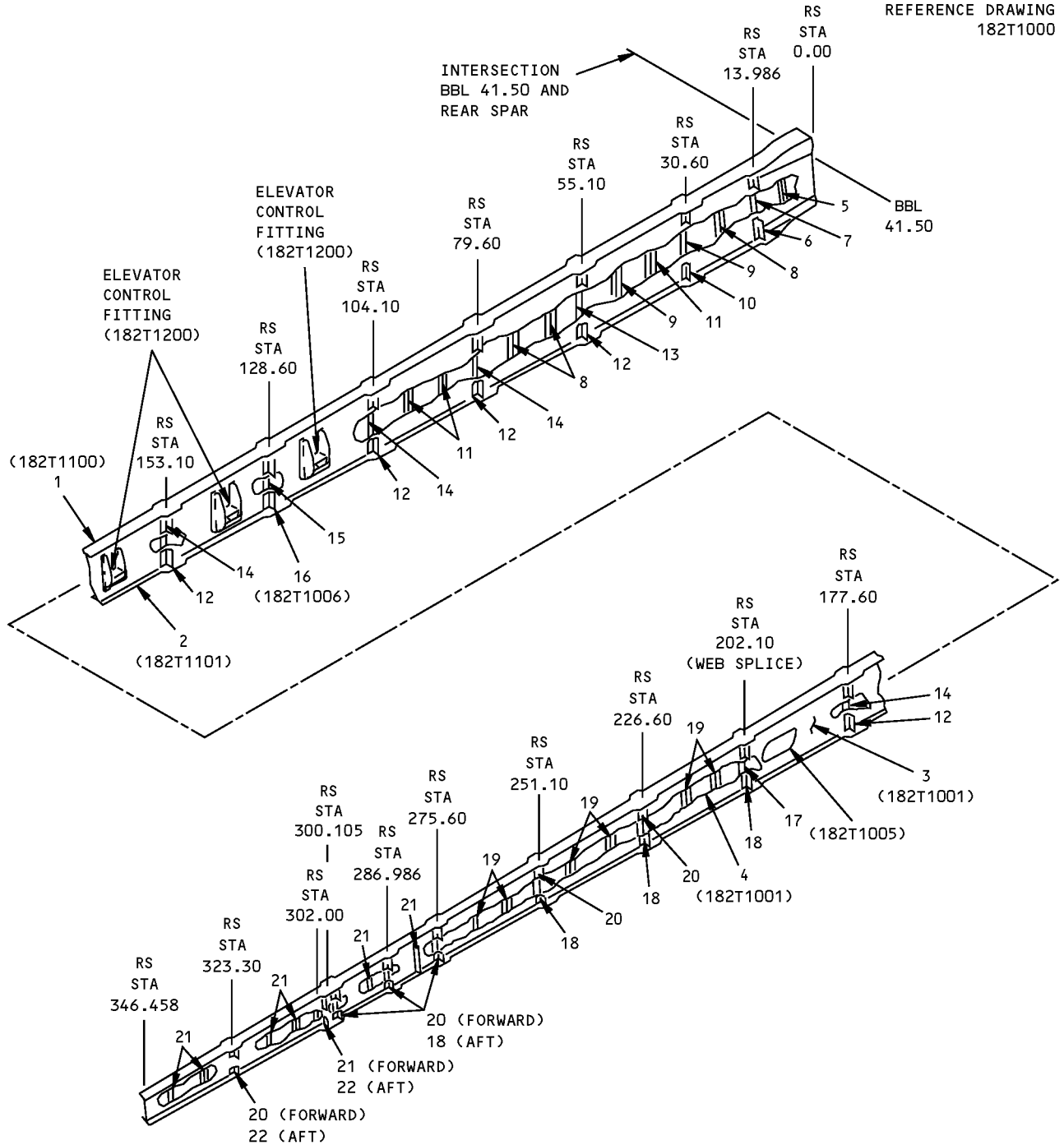
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER CHORD		BAC1506-3623 7075-T73511 OPTIONAL: BAC1506-3099 7075-T73511	
2	LOWER CHORD		BAC1506-3624 7075-T73511 OPTIONAL: BAC1506-3100 7075-T73511	
3	WEB (INBOARD)	0.100	7075-T6 (MACHINED TO 0.050 INCH (1.3 mm) MINIMUM)	
4	WEB (OUTBOARD)	0.040	CLAD 7075-T6	
5	STIFFENER		BAC1503-100617 7075-T6511	
6	RIB POST		BAC1514-2504 7075-T6511	
7	RIB POST		BAC1514-2505 7075-T6511	
8	RIB POST		BAC1514-2506 7075-T6511	
9	RIB POST		BAC1514-2507 7075-T6511	
10	STIFFENER		BAC1503-100618 7075-T6511	
11	RIB POST		BAC1514-2508 7075-T6511	
12	RIB POST		BAC1514-2509 7075-T6511	
13	RIB POST		BAC1514-2510 7075-T6511	
14	RIB POST		BAC1503-100636 7075-T6511	
15	STIFFENER		BAC1503-100619 7075-T6511	
16	RIB POST		BAC1514-2511 7075-T6511	
17	RIB POST		BAC1503-100635 7075-T6511	
18	STIFFENER		BAC1503-100620 7075-T6511	
19	SPLICE TEE		BAC1506-3299 7075-T6511	
20	STIFFENER		BAC1503-100071 7075-T6511	
21	RIB POST		BAC1514-2464 7075-T6511	
22	STIFFENER		BAC1503-100043 7075-T6511	

LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Spar Identification
Figure 1 (Sheet 3 of 5)**

**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
182T1000



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
VIEW ON AFT SIDE OF REAR SPAR

DETAIL II



**Horizontal Stabilizer Spar Identification
Figure 1 (Sheet 4 of 5)**

IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD, UPPER		BAC1506-3271 7075-T73511	
2	CHORD, LOWER		BAC1506-3625 7075-T73511 OPTIONAL: BAC1506-3272 7075-T73511	
3	WEB (INBOARD)	0.313	7075-T6511 (MACHINED TO 0.063 INCH (1.6 mm) MINIMUM)	
4	WEB (OUTBOARD)	0.080	7075-T6 (CHEM-MILLED TO 0.040 INCH (1.0 mm) MINIMUM)	
5	STIFFENER		BAC1503-100616 7075-T6511	
6	RIB POST		BAC1514-2491 7075-T6511	
7	RIB POST		BAC1514-2492 7075-T6511	
8	STIFFENER		BAC1503-100642 7075-T6511	
9	RIB POST		BAC1514-2537 7075-T6511	
10	RIB POST		BAC1514-2489 7075-T6511	
11	STIFFENER		BAC1503-100627 7075-T6511	
12	RIB POST		BAC1514-2487 7075-T6511	
13	RIB POST		BAC1514-2594 7075-T6511	
14	RIB POST		BAC1503-100621 7075-T6511	
15	RIB POST		BAC1503-4223 7075-T6511	
16	RIB POST		BAC1514-293 7075-T3511	
17	RIB POST		BAC1503-100069 7075-T6511	
18	RIB POST		BAC1514-2493 7075-T6511	
19	STIFFENER		BAC1503-100628 7075-T6511	
20	RIB POST		BAC1503-100060 7075-T6511	
21	STIFFENER		BAC1514-8 7075-T6511	
22	RIB POST		BAC1514-2593 7075-T6511	

LIST OF MATERIALS FOR DETAIL II

**Horizontal Stabilizer Spar Identification
Figure 1 (Sheet 5 of 5)**

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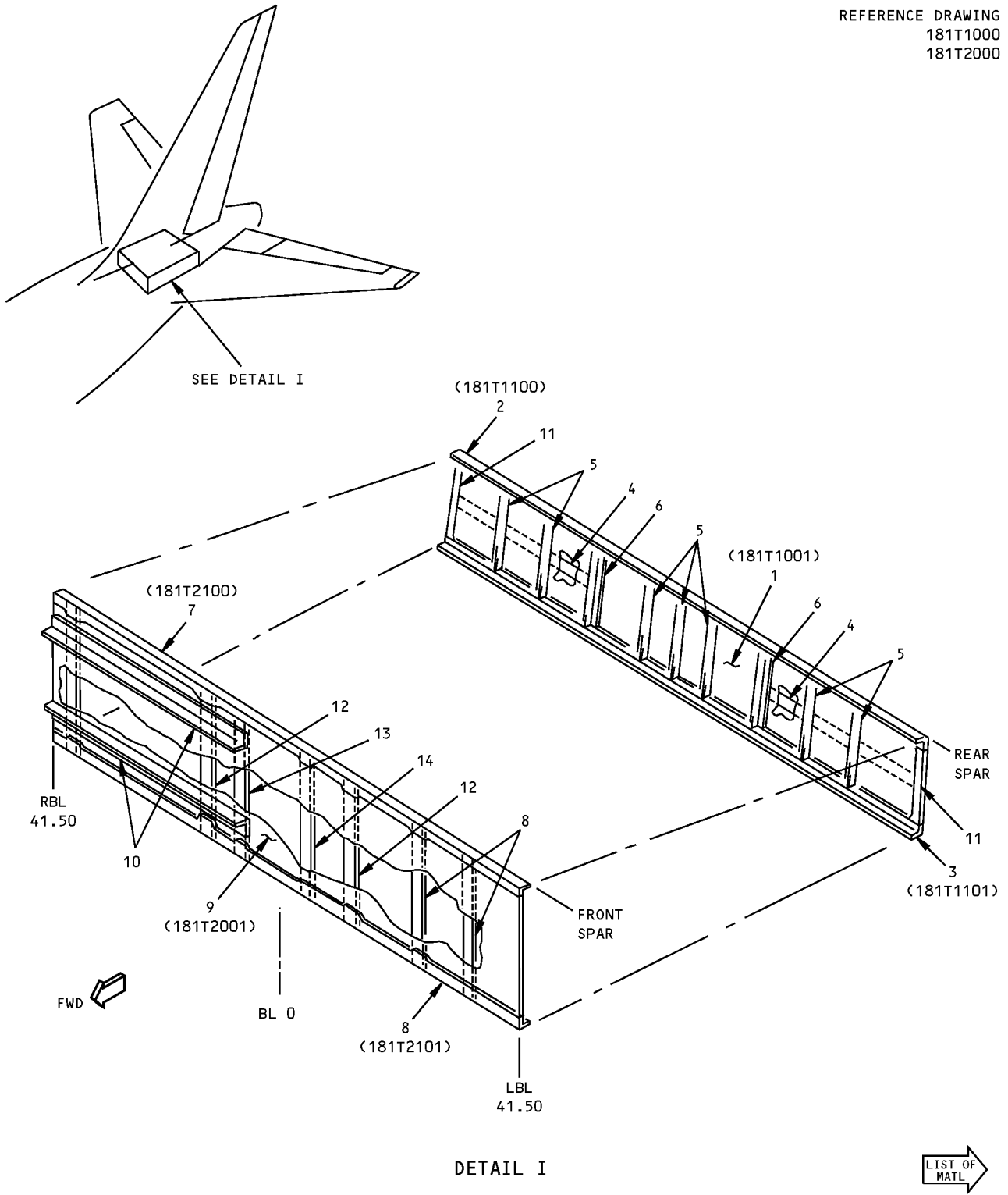
55-10-10

IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 2 - HORIZONTAL STABILIZER CENTER SECTION FRONT AND REAR SPAR

REFERENCE DRAWING
181T1000
181T2000



**Horizontal Stabilizer Center Section Front and Rear Spar Identification
Figure 1 (Sheet 1 of 2)**



**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.313	2024-T351 (MACHINED TO 0.160 INCH (4.06 mm) MINIMUM)	
2	UPPER CHORD		BAC1514-2786 7075-T73511 OPTIONAL: BAC1514-2485 7075-T73511	
3	LOWER CHORD		BAC1514-2787 7075-T73511 OPTIONAL: BAC1514-2486 7075-T73511	
4	FITTING PIVOT INTERCOSTAL		FORGING 7075-T73	
5	STIFFENER		BAC1503-100642 7075-T6511	
6	STIFFENER		BAC1505-101167 7075-T6511	
7	UPPER CHORD		BAC1514-2784 7075-T73511 OPTIONAL: BAC1514-2483 7075-T73511	
8	LOWER CHORD		BAC1514-2785 7075-T73511 OPTIONAL: BAC1514-2484 7075-T73511	
9	WEB	0.160	7075-T6 (MACHINED TO 0.080 INCH (2.03 mm) MINIMUM)	
10	STIFFENER		BAC1503-100653 7075-T6511	
11	STIFFENER		BAC1506-3261 7075-T6511	
12	RIB POST		BAC1505-101167 7075-T6511	
13	STIFFENER		BAC1506-3261 7075-T6511	
14	STIFFENER		BAC1503-100654 7075-T6511	

LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Center Section Front and Rear Spar Identification
Figure 1 (Sheet 2 of 2)**

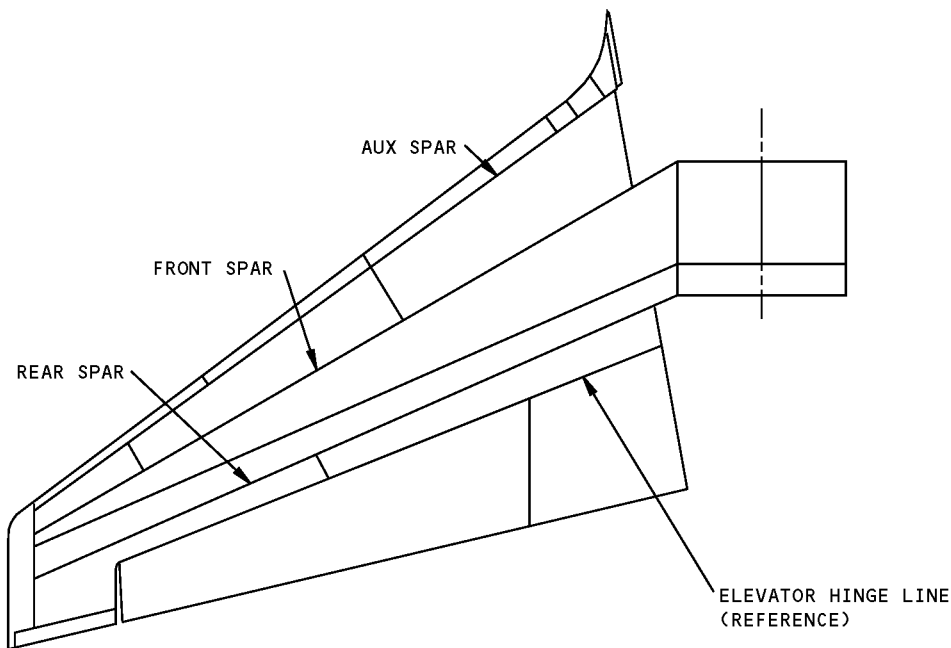
D634T210

55-10-10

IDENTIFICATION 2
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767-300
STRUCTURAL REPAIR MANUAL

ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER SPARS



NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- [A] CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. ALL CRACKED PARTS MUST BE REPAIRED.
- [B] DENT DAMAGE IS PERMITTED IF THE DEPTH Y DOES NOT EXCEED 0.125 INCH (3 mm), A/Y IS NOT LESS THAN 30 AND THERE IS NO EVIDENCE OF PULLED OR LOOSE RIVETS, SHARP CREASES, GOUGES, SCRATCHES OR CRACKING. SEE DETAIL III.

Allowable Damage - Horizontal Stabilizer Spars
Figure 101 (Sheet 1 of 4)



**767-300
STRUCTURAL REPAIR MANUAL**

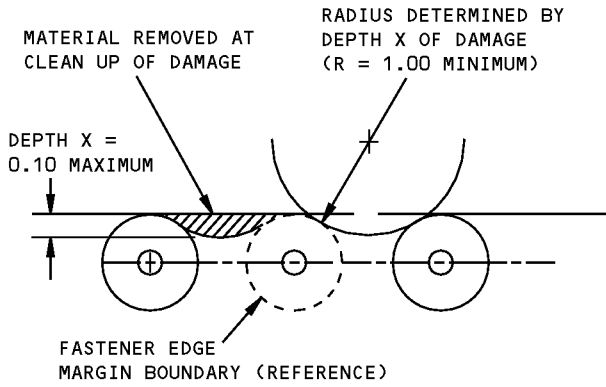
LOCATION	CRACKS	NICKS, GOUGES, SCRATCHES, AND CORROSION	DENTS	PUNCTURES AND HOLES
<u>AUXILIARY SPAR</u> UPPER CHORD	A	CLEAN UP AS GIVEN IN DETAILS I, II AND IV. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	NOT PERMITTED
LOWER CHORD	A	CLEAN UP AS GIVEN IN DETAILS I, II AND IV. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	NOT PERMITTED
WEB	A	CLEAN UP AS GIVEN IN DETAILS I AND II. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	B	NOT PERMITTED
STIFFENER OR RIB POST	A	CLEAN UP AS GIVEN IN DETAILS I AND II. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	SEE DETAIL V
<u>FRONT SPAR</u> UPPER CHORD	A	CLEAN UP AS GIVEN IN DETAILS I AND II. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	NOT PERMITTED
LOWER CHORD	A	CLEAN UP AS GIVEN IN DETAILS I, II AND IV. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	NOT PERMITTED
WEB	A	CLEAN UP AS GIVEN IN DETAILS I AND II. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	B	NOT PERMITTED
STIFFENER OR RIB POST	A	CLEAN UP AS GIVEN IN DETAILS I AND II. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	SEE DETAIL V
<u>REAR SPAR</u> UPPER CHORD	A	CLEAN UP AS GIVEN IN DETAILS I, II AND IV. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	NOT PERMITTED
LOWER CHORD	A	CLEAN UP AS GIVEN IN DETAILS I, II AND IV. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	NOT PERMITTED
WEB	A	CLEAN UP AS GIVEN IN DETAILS I AND II. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	B	NOT PERMITTED
STIFFENER OR RIB POST	A	CLEAN UP AS GIVEN IN DETAILS I AND II. THE MAXIMUM DEPTH IS 10% OF THE THICKNESS	NOT PERMITTED	SEE DETAIL V

**Allowable Damage - Horizontal Stabilizer Spars
Figure 101 (Sheet 2 of 4)**

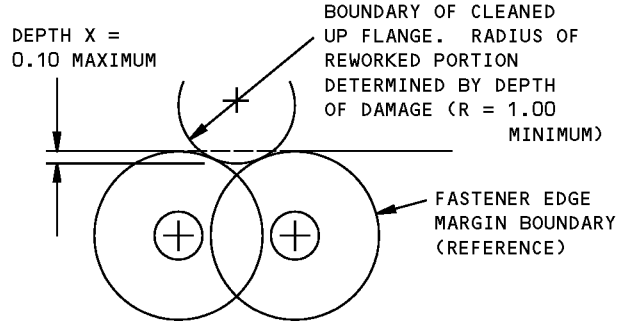
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ALLOWABLE DAMAGE 1
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STRUCTURAL REPAIR MANUAL

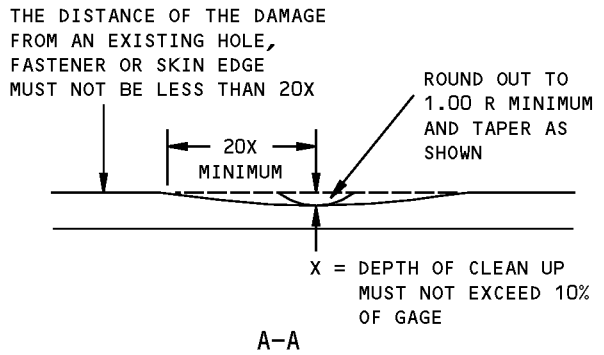
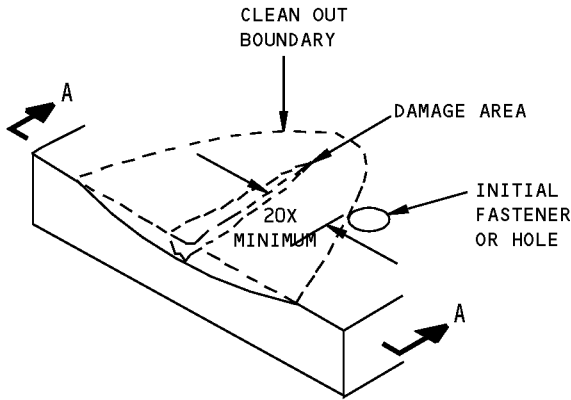


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

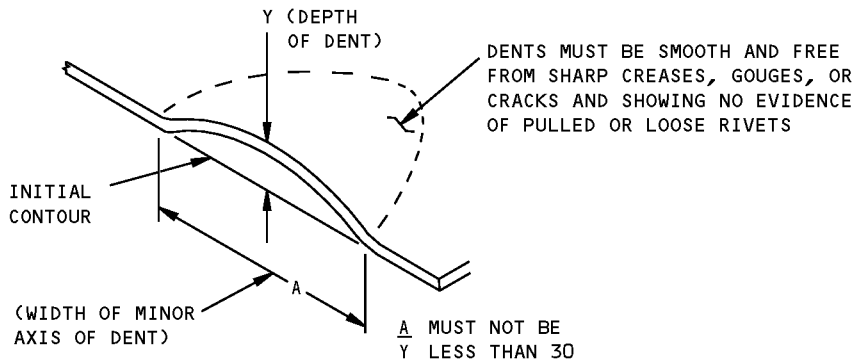


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I



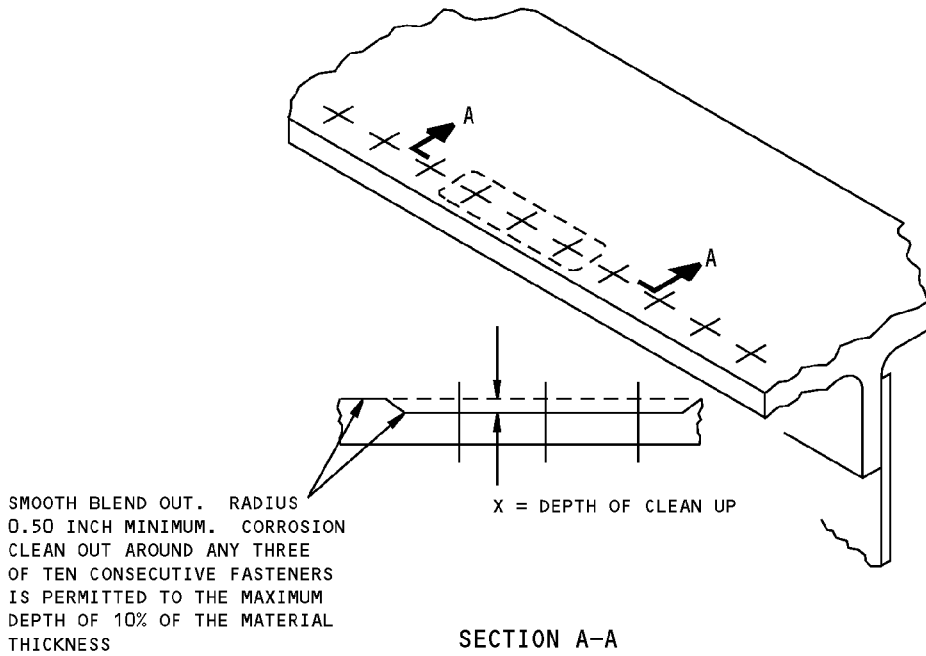
DETAIL II



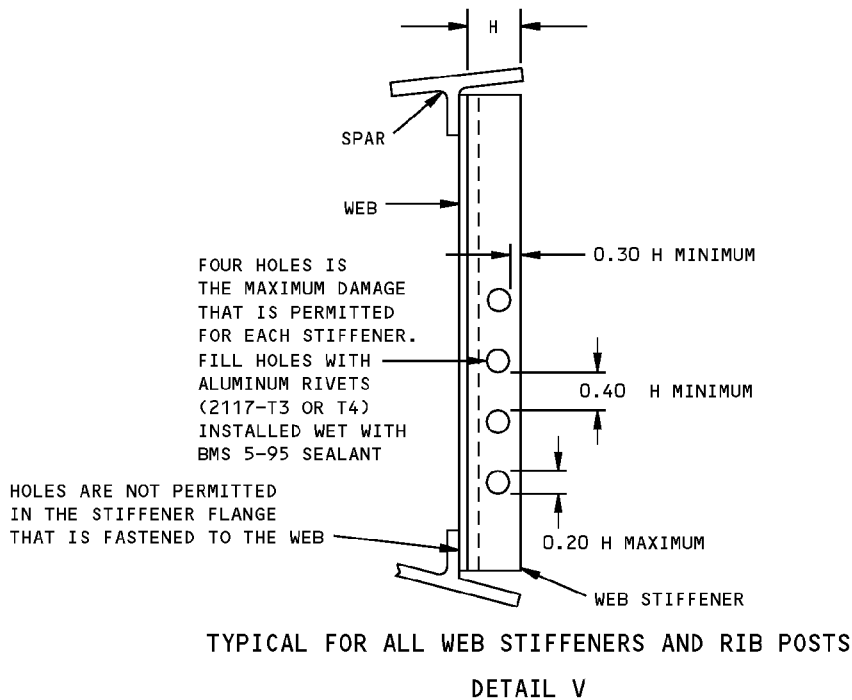
DETAIL III

Allowable Damage - Horizontal Stabilizer Spars
Figure 101 (Sheet 3 of 4)

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STRUCTURAL REPAIR MANUAL**



**SECTION A-A
CORROSION CLEANUP
DETAIL IV**

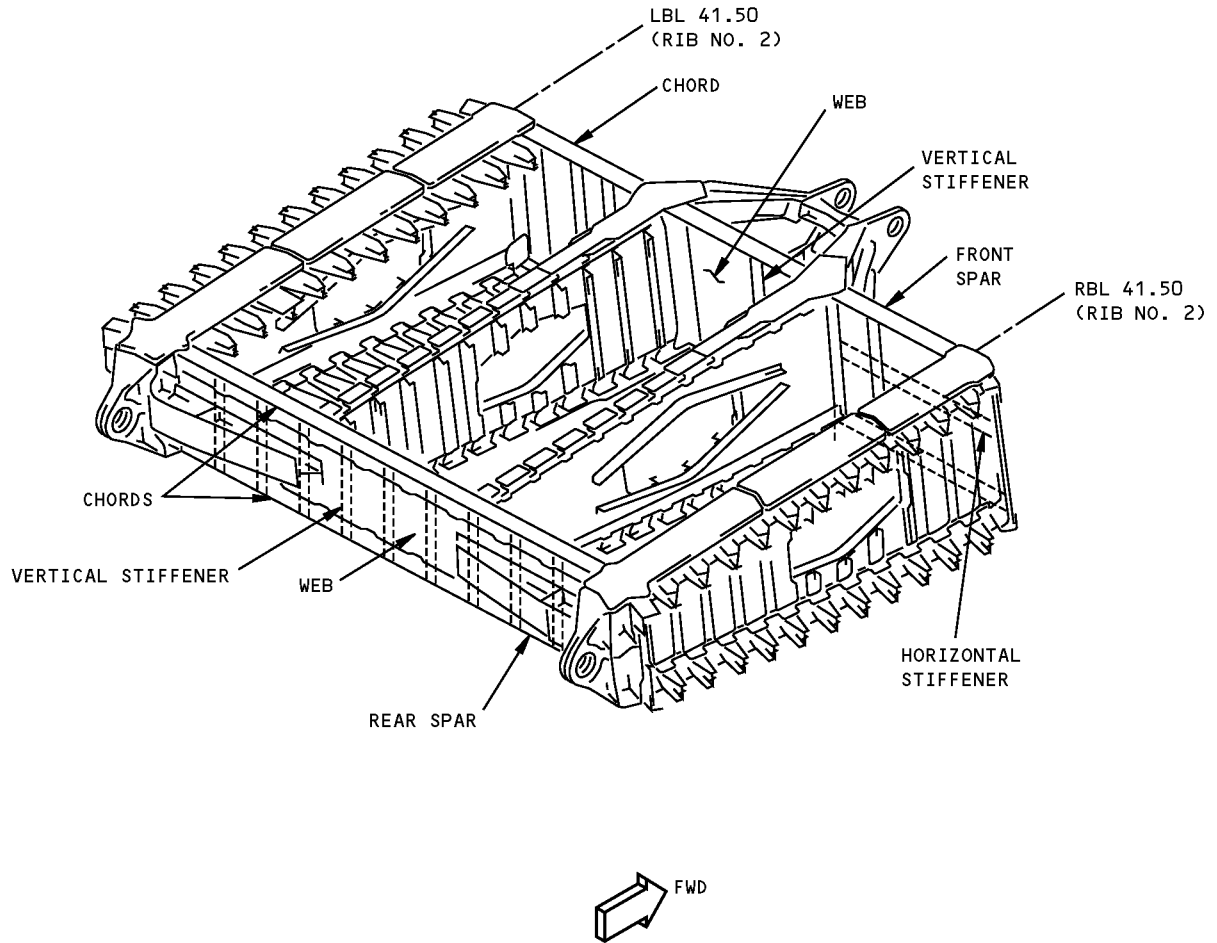


**TYPICAL FOR ALL WEB STIFFENERS AND RIB POSTS
DETAIL V**

**Allowable Damage - Horizontal Stabilizer Spars
Figure 101 (Sheet 4 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 2 - HORIZONTAL STABILIZER CENTER SECTION SPARS



**Allowable Damage - Horizontal Stabilizer Center Section Spars
Figure 101 (Sheet 1 of 4)**



**767-300
STRUCTURAL REPAIR MANUAL**

FRONT AND REAR SPAR LOCATION	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES
WEBS	A	B MAXIMUM DEPTH 10% OF SHEET THICKNESS	C	NOT PERMITTED
CHORDS	A	B MAXIMUM DEPTH 20% OF FLANGE THICKNESS	NOT PERMITTED	NOT PERMITTED
VERTICAL STIFFENERS	A	B MAXIMUM DEPTH 10% OF FLANGE THICKNESS	NOT PERMITTED	SEE DETAIL IV
HORIZONTAL STIFFENERS	A	B MAXIMUM DEPTH 10% OF FLANGE THICKNESS	NOT PERMITTED	SEE DETAIL IV

NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- A ALL CRACKED PARTS MUST BE REPAIRED, EXCEPT EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAIL II OR V.

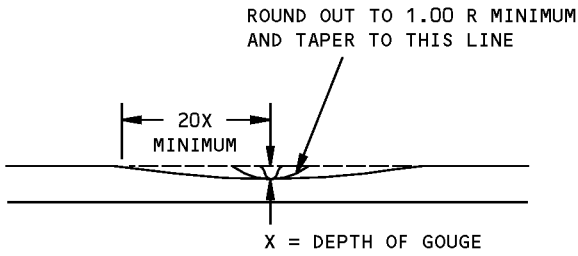
- B NICK, GOUGE, OR SCRATCH DAMAGE THAT IS REMOVED AS GIVEN IN DETAIL I IS PERMITTED IF THE DEPTH IS NOT MORE THAN THE MAXIMUM PERMITTED DEPTH.
- C DENT DAMAGE IS PERMITTED IF THE DEPTH Y DOES NOT EXCEED 0.125 INCH (3 mm), A/Y IS NOT LESS THAN 30 AND THERE IS NO EVIDENCE OF PULLED OR LOOSE RIVETS, SHARP CREASES, GOUGES, SCRATCHES, OR CRACKING. SEE DETAIL III.

**Allowable Damage - Horizontal Stabilizer Center Section Spars
Figure 101 (Sheet 2 of 4)**

D634T210

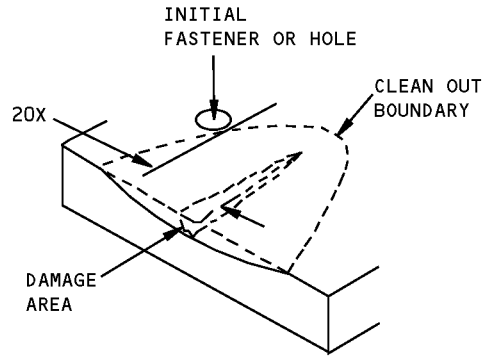
ALLOWABLE DAMAGE 2
55-10-10
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STRUCTURAL REPAIR MANUAL**

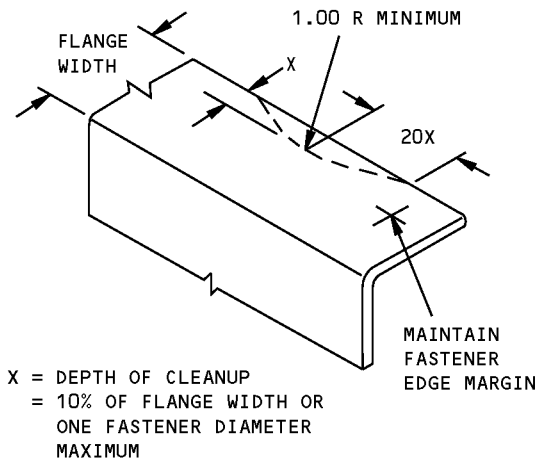


SECTION THROUGH GOUGE

THE DISTANCE OF A GOUGE OR NICK DAMAGE FROM AN EXISTING HOLE, FASTENER OR SKIN EDGE MUST NOT BE LESS THAN 20X



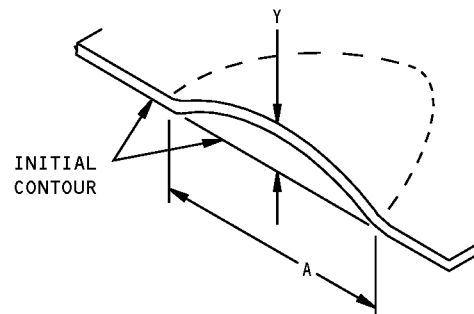
**REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL I**



X = DEPTH OF CLEANUP
= 10% OF FLANGE WIDTH OR
ONE FASTENER DIAMETER
MAXIMUM

**REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE**

DETAIL II

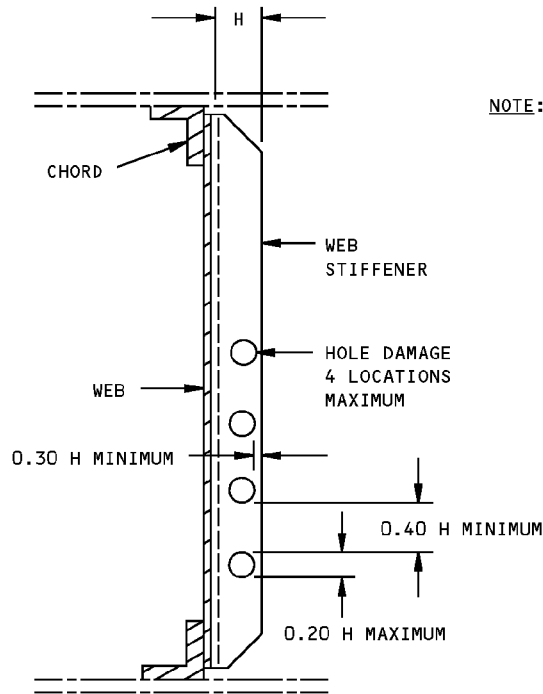


A = WIDTH OF MINOR AXIS OF DENT
Y = DEPTH OF DENT FROM CONTOUR

**ALLOWABLE DAMAGE FOR DENT
DETAIL III**

**Allowable Damage - Horizontal Stabilizer Center Section Spars
Figure 101 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

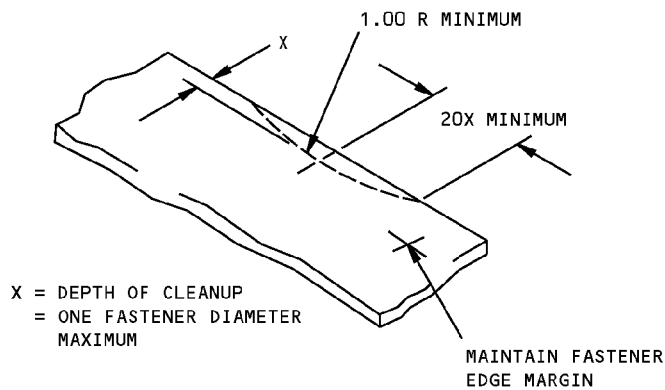


NOTE: HOLE DAMAGE IS NOT PERMITTED IN THE STIFFENER FLANGES THAT ARE FASTENED TO THE WEB. HOLE DAMAGE MUST NOT OCCUR IN MORE THAN FOUR LOCATIONS. FILL ALL HOLES WITH ALUMINUM RIVETS (2117-T3 OR T4) INSTALLED WET WITH BMS 5-95 SEALANT.

H = WIDTH OF STIFFENER FLANGE

ALLOWABLE DAMAGE LIMITS FOR
HOLES IN WEB STIFFENERS
VERTICAL STIFFENER SHOWN
HORIZONTAL STIFFENER SIMILAR

DETAIL IV



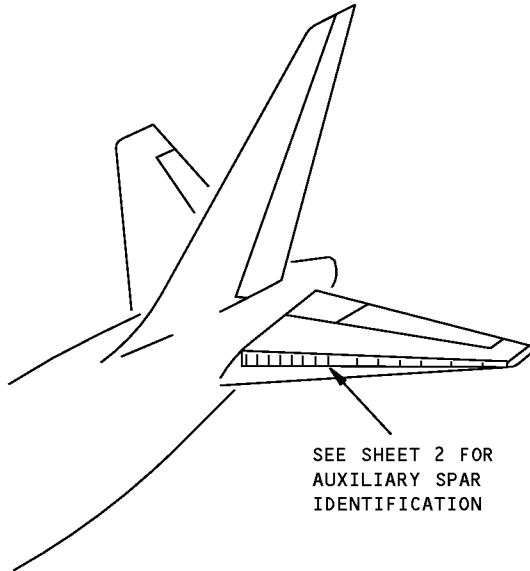
DETAIL V

**Allowable Damage - Horizontal Stabilizer Center Section Spars
Figure 101 (Sheet 4 of 4)**



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STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - HORIZONTAL STABILIZER AUXILIARY SPAR



NOTES

- FOR FRONT AND REAR SPAR IDENTIFICATION,
REFER TO SRM 55-10-10, IDENTIFICATION 1
AND IDENTIFICATION 2

Horizontal Stabilizer Auxiliary Spar Identification
Figure 1 (Sheet 1 of 3)

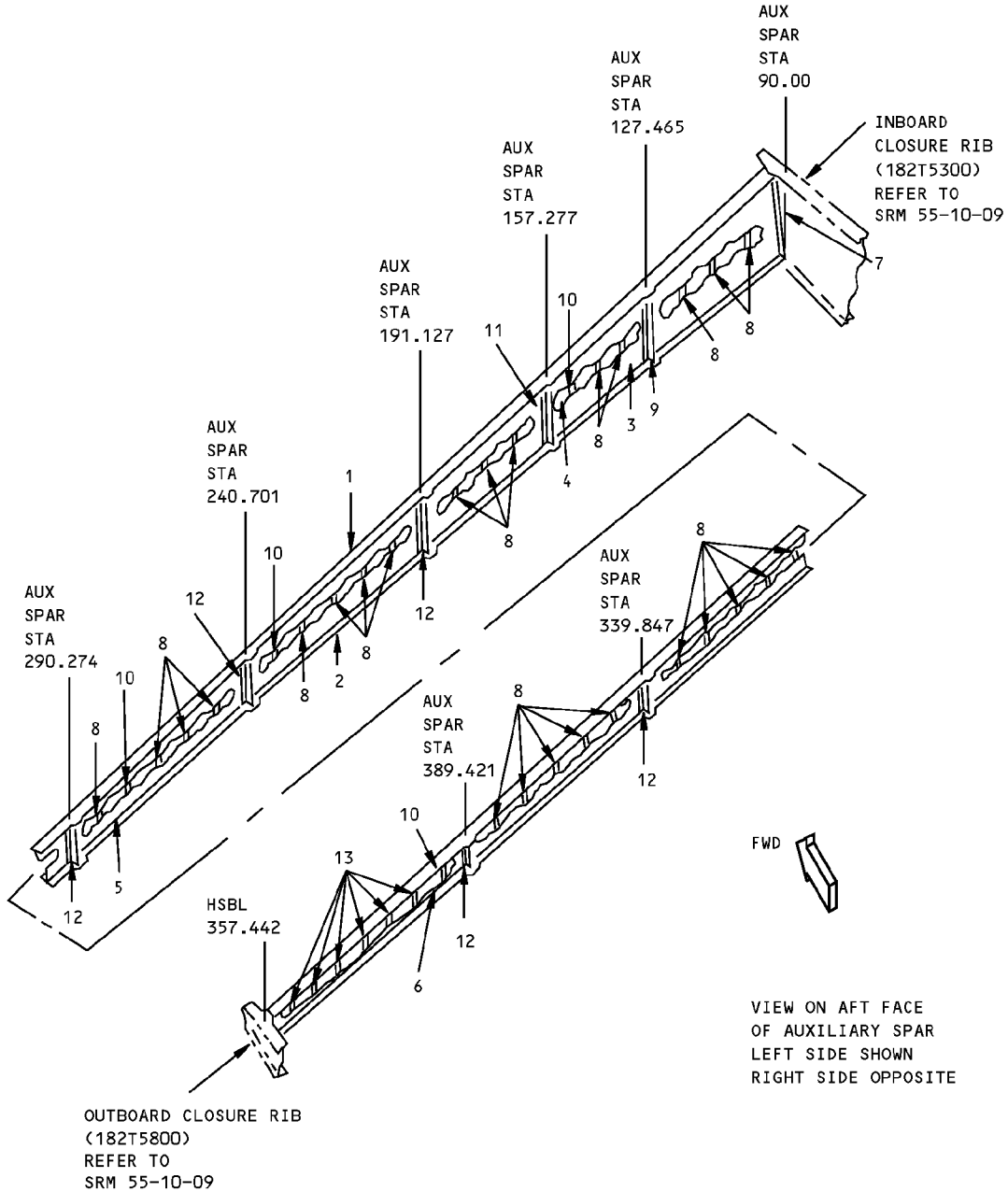
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55-10-11

IDENTIFICATION 1
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Dec 15/2007

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STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
185T4000



LIST OF
MATERIAL

**Horizontal Stabilizer Auxiliary Spar Identification
Figure 1 (Sheet 2 of 3)**

IDENTIFICATION 1
Page 2
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767-300
STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER CHORD		BAC1506-3135 7075-T6511	
2	LOWER CHORD		BAC1506-3136 7075-T6511	
3	WEB	0.070	CLAD 7075-T6	
4	WEB	0.050	CLAD 7075-T6	
5	WEB	0.056	CLAD 7075-T6	
6	WEB	0.032	CLAD 7075-T6	
7	TEE		BAC1506-3180 7075-T6511	
8	STIFFENER		AND10134-1205 7075-T6511	
9	RIB POST		AND10134-1403 7075-T6	
10	TEE		AND10136-1505 7075-T6511	
11	RIB POST		BAC1514-1627 7075-T6511	
12	RIB POST		BAC1514-749 7075-T6511	
13	STIFFENER		AND10133-0701 7075-T6511	

Horizontal Stabilizer Auxiliary Spar Identification
Figure 1 (Sheet 3 of 3)

IDENTIFICATION 1
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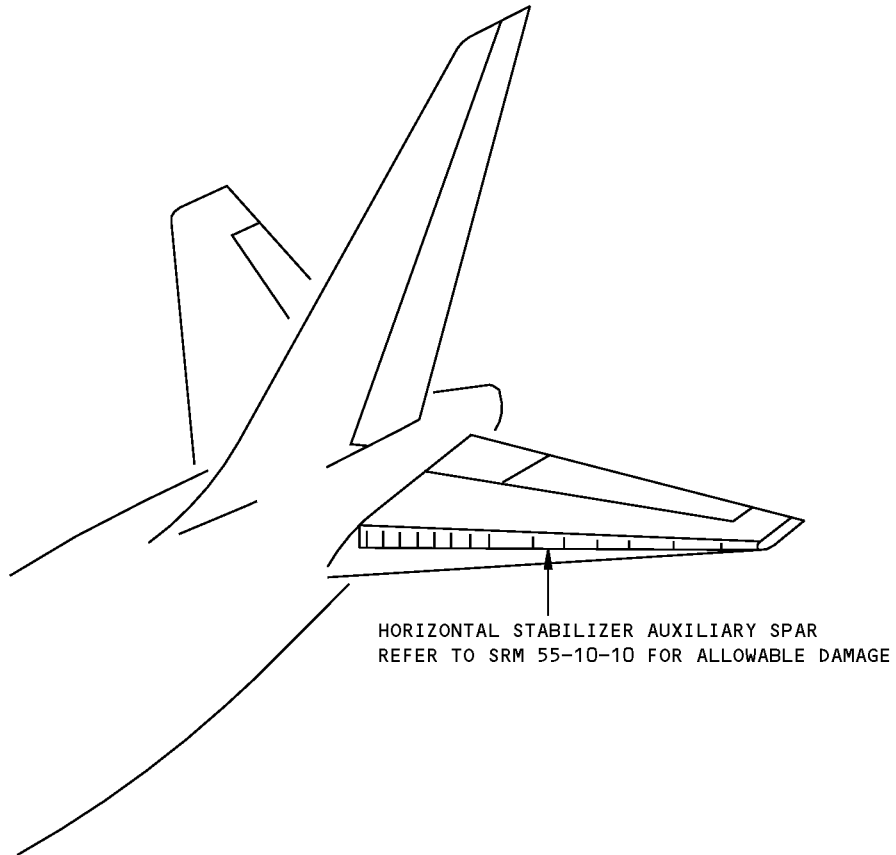
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767-300
STRUCTURAL REPAIR MANUAL

ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER AUXILIARY SPAR



Allowable Damage - Horizontal Stabilizer Auxiliary Spar
Figure 101

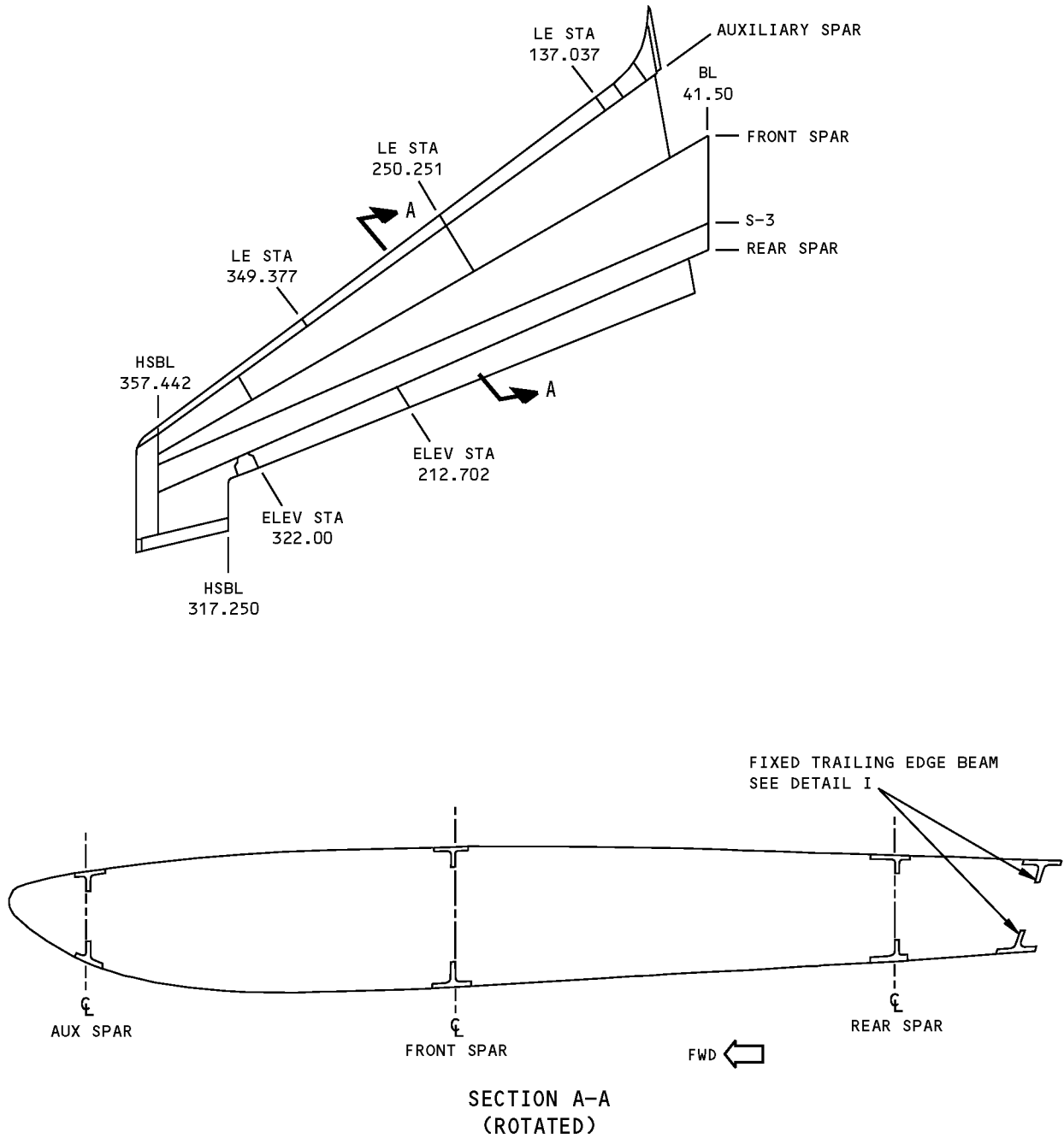
D634T210

ALLOWABLE DAMAGE 1
Page 101
55-10-11
Apr 01/2005

**767-300
STRUCTURAL REPAIR MANUAL**

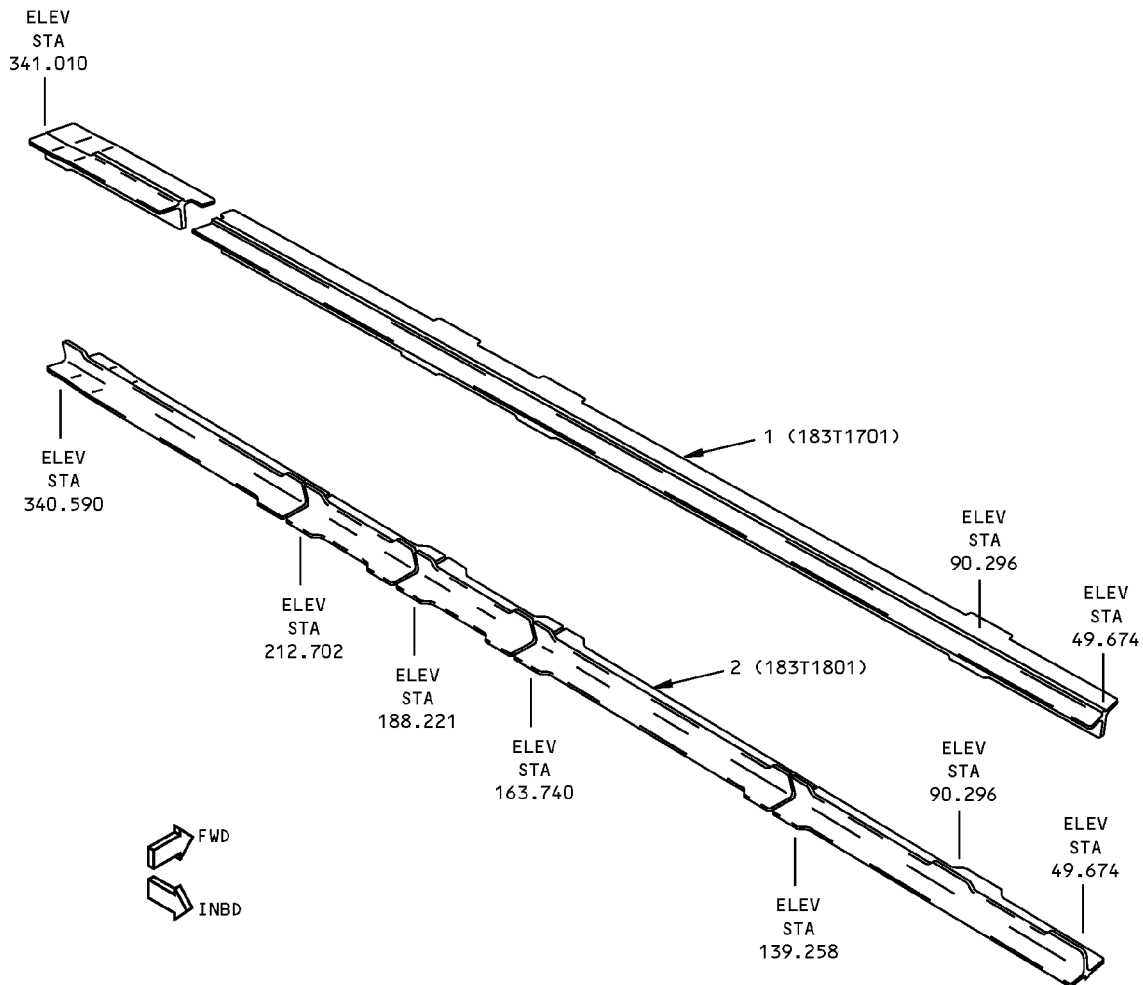
IDENTIFICATION 1 - HORIZONTAL STABILIZER FIXED TRAILING EDGE BEAM

REF DWG
183T1701
183T1801



**Horizontal Stabilizer Fixed Trailing Edge Beam Identification
Figure 1 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



DETAIL I

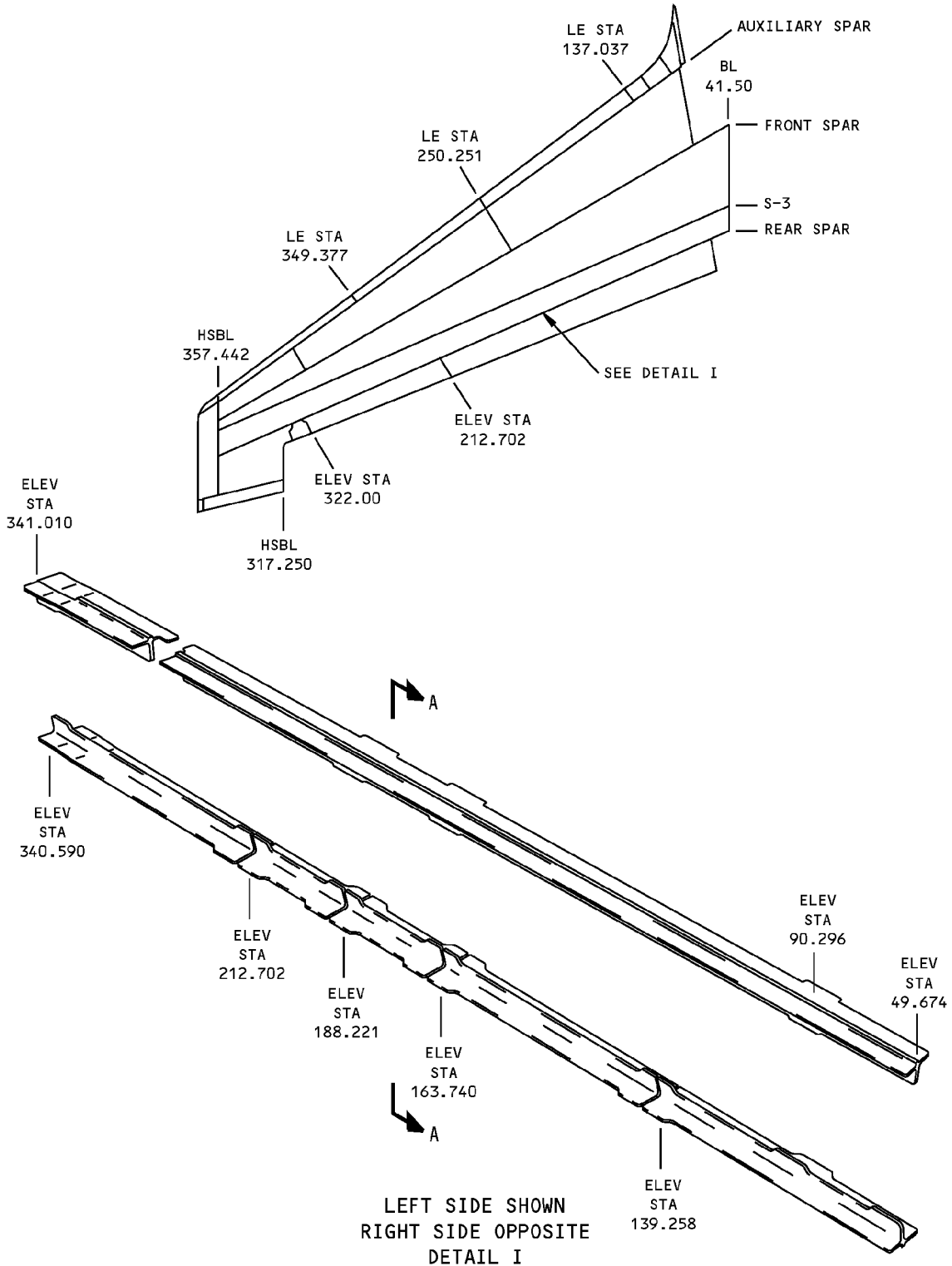
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER CHORD		BAC1506-3137 7075-T73511	
2	LOWER CHORD		BAC1506-3162 7075-T73511	

LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Fixed Trailing Edge Beam Identification
Figure 1 (Sheet 2 of 2)**

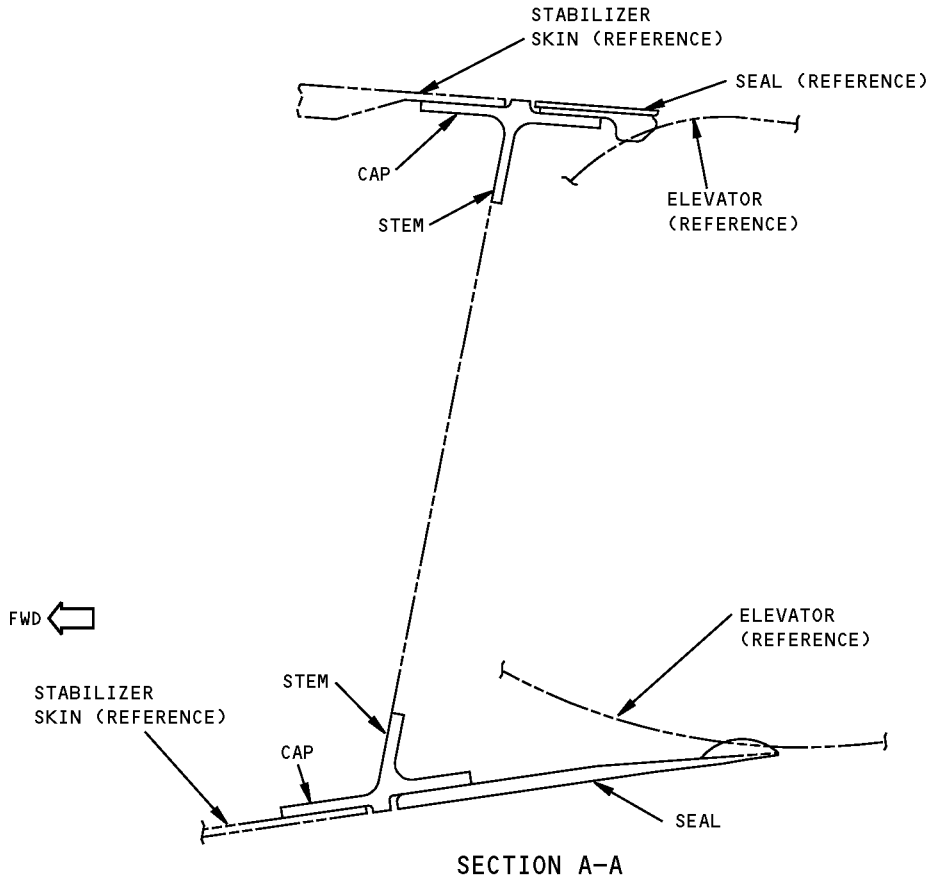
**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER FIXED TRAILING EDGE BEAM



**Allowable Damage - Horizontal Stabilizer Fixed Trailing Edge Beam
Figure 101 (Sheet 1 of 3)**

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STRUCTURAL REPAIR MANUAL**



LOCATION		CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
UPPER AND LOWER BEAMS	STEM	[A]	[B]	NOT PERMITTED	[C]
	CAP	[A]	[B]	NOT PERMITTED	NOT PERMITTED

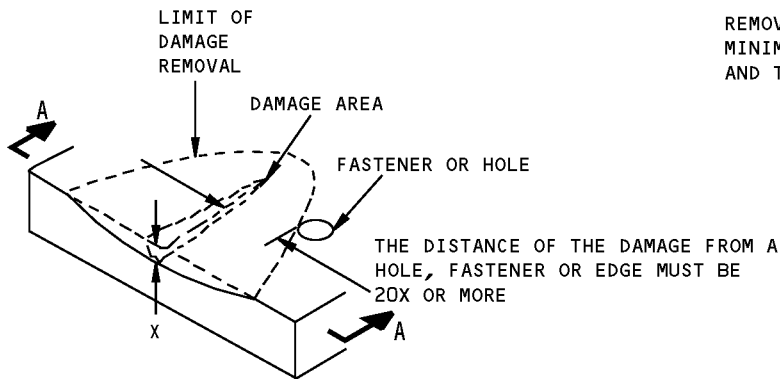
NOTES

- REFER TO AMM 51-21 TO APPLY THE FINISH TO THE REWORKED AREAS.
- [A] REMOVE THE EDGE CRACKS AS SHOWN IN DETAILS III AND IV. OTHER CRACKS ARE NOT PERMITTED
- [B] REMOVE DAMAGE AS SHOWN IN DETAILS II, III AND IV

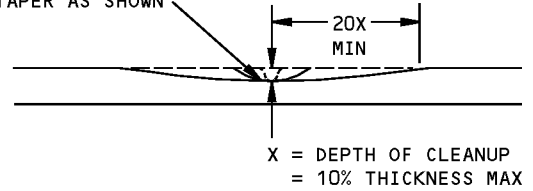
- [C] REMOVE THE DAMAGE TO A MAXIMUM DIAMETER OF 0.25 INCH. THE EDGE OF THE DAMAGE CLEANUP MUST BE MORE THAN 1.0 INCH FROM AN ADJACENT HOLE OR OTHER DAMAGE. THE DISTANCE TO THE EDGE OF THE DAMAGE CLEANUP TO THE EDGE OF THE PART MUST BE 2D OR MORE. FILL THE HOLE WITH A 2117-T4 RIVET INSTALLED DRY. ALL OTHER HOLES MUST BE REPAIRED.

**Allowable Damage - Horizontal Stabilizer Fixed Trailing Edge Beam
Figure 101 (Sheet 2 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

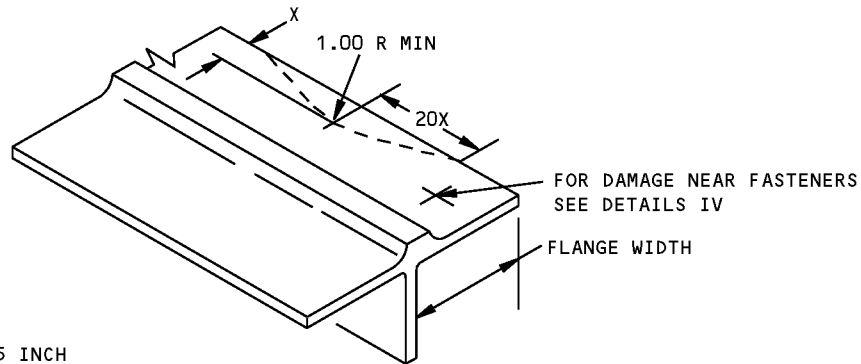


REMOVE THE DAMAGE TO A MINIMUM RADIUS OF 1.0 INCH AND TAPER AS SHOWN



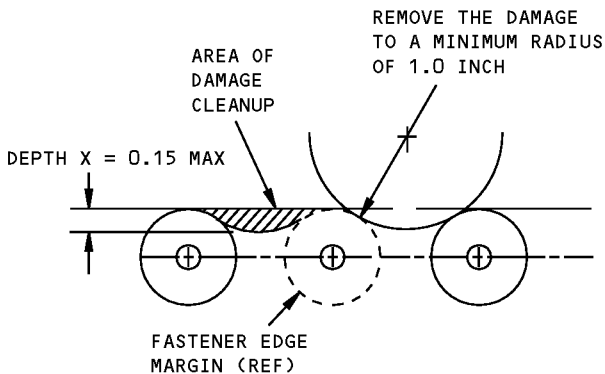
SECTION A-A

**REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL II**



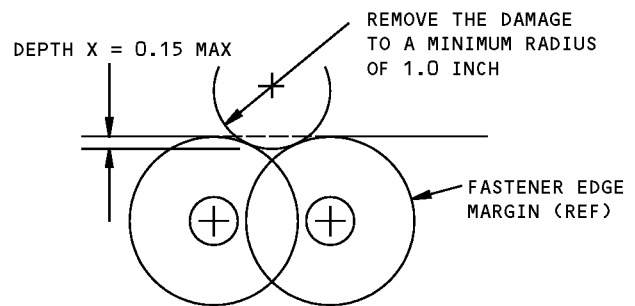
X = DEPTH OF GOUGE
= 15% OF FLANGE WIDTH
OR 0.15 INCH IF 0.15 INCH IS LESS

**REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE
DETAIL III**



DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

DETAIL IV

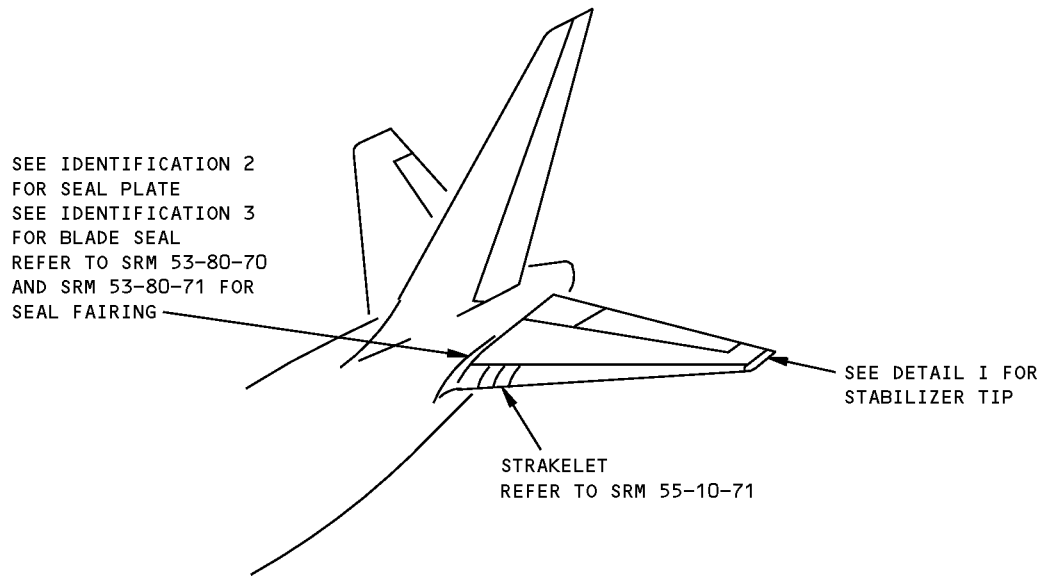


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

**Allowable Damage - Horizontal Stabilizer Fixed Trailing Edge Beam
Figure 101 (Sheet 3 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - HORIZONTAL STABILIZER TIP



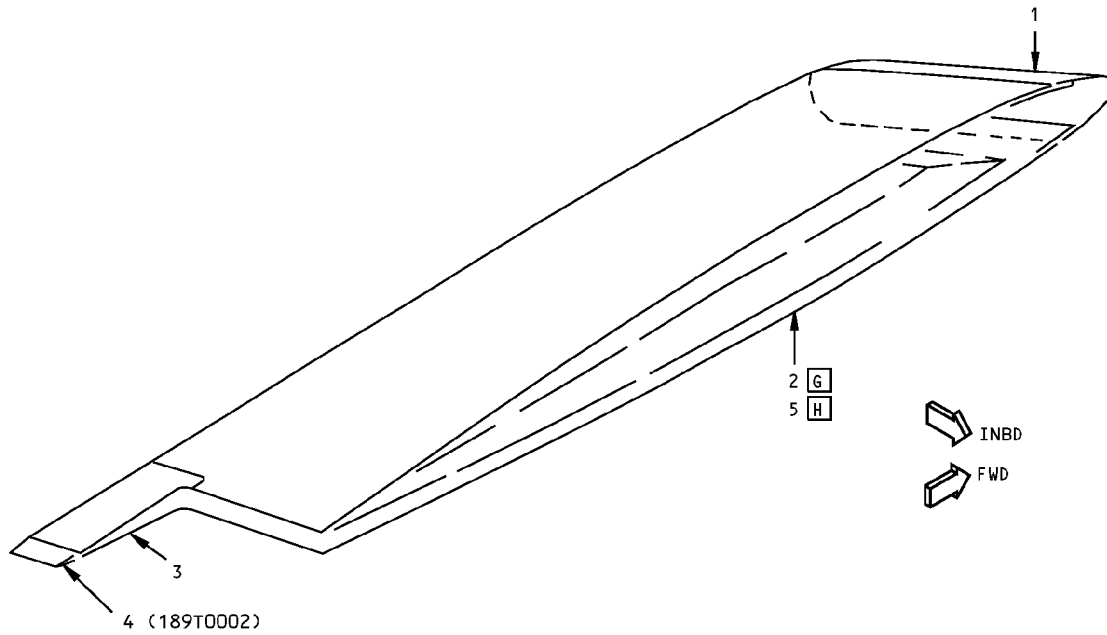
NOTES

- | | |
|--|--|
| <p>[A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION</p> <p>[B] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. REFER TO BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS</p> <p>[C] ARAMID/EPOXY FABRIC AS GIVEN IN BMS 8-219, STYLE 120, 250°F (121°C) CURE</p> <p>[D] ARAMID/EPOXY FABRIC AS GIVEN IN BMS 8-219, STYLE 285, 250°F (121°C) CURE</p> <p>[E] FIBERGLASS/EPOXY FABRIC AS GIVEN IN BMS 8-79, TYPE 120, CLASS III, GRADE I, 250°F (121°C) CURE</p> | <p>[F] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE I, 250°F (121°C) CURE</p> <p>[G] FOR CUM LINE NUMBERS: 132 AND 136</p> <p>[H] FOR ALL AIRPLANES NOT LISTED IN [G]</p> |
|--|--|

**Horizontal Stabilizer Tip Identification
Figure 1 (Sheet 1 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
189T0001



DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LE FAIRING	0.050	6061-T6	
2	FAIRING ASSY SKIN CORE		ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL II NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE VI, GRADE 3.0	G
3	TRAILING EDGE	0.050	6061-T6	
4	FILLER		BAC1520-2218 7075-T6511	
5	FAIRING ASSY SKIN CORE		FIBERGLASS/EPOXY HONEYCOMB SANDWICH SEE DETAIL III NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE VI, GRADE 3.0	H

LIST OF MATERIALS FOR DETAIL I

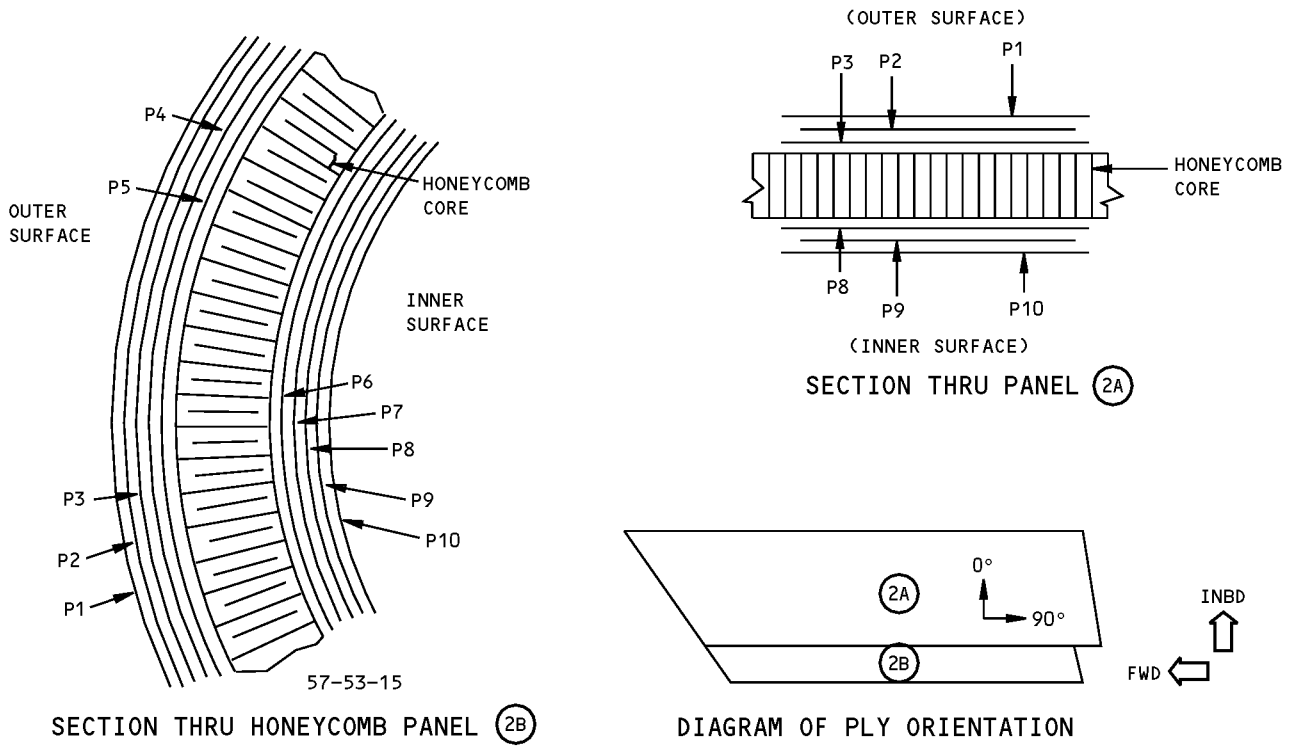
**Horizontal Stabilizer Tip Identification
Figure 1 (Sheet 2 of 4)**

IDENTIFICATION 1
Page 2
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**767-300
STRUCTURAL REPAIR MANUAL**



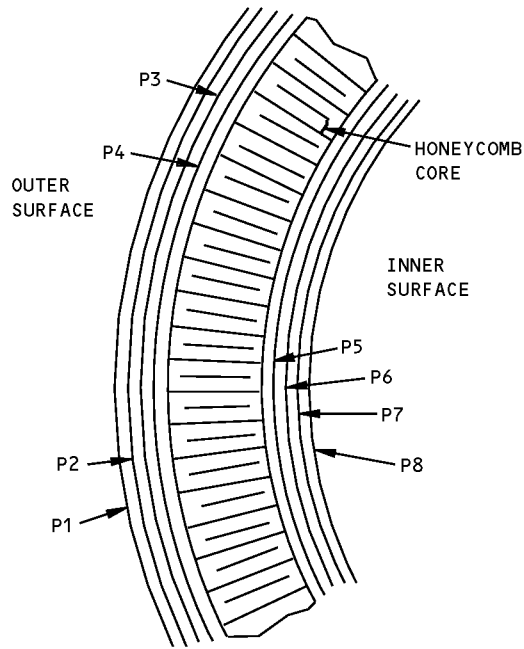
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION ^(A)
2	P1, P2, P3	(C)	90°
	P4, P5	(D)	90°
	P6, P7	(D)	90°
	P8, P9, P10	(C)	90°

PLY TABLE (B)

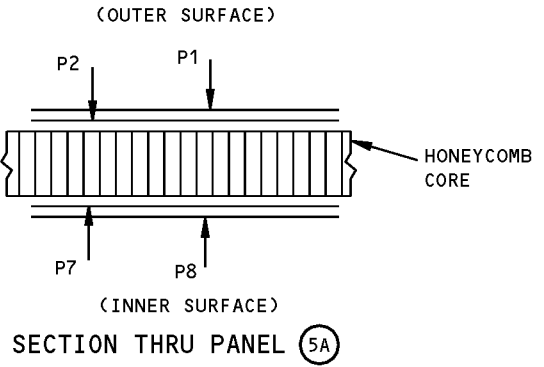
DETAIL II (G)

**Horizontal Stabilizer Tip Identification
Figure 1 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**



SECTION THRU HONEYCOMB PANEL (5B)



SECTION THRU PANEL (5A)

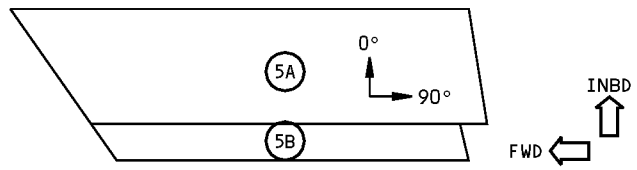


DIAGRAM OF PLY ORIENTATION

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION ^A
5	P1	E	90°
	P2, P3, P4	F	90°
	P5, P6, P7	F	90°
	P8	E	90°

PLY TABLE ^B

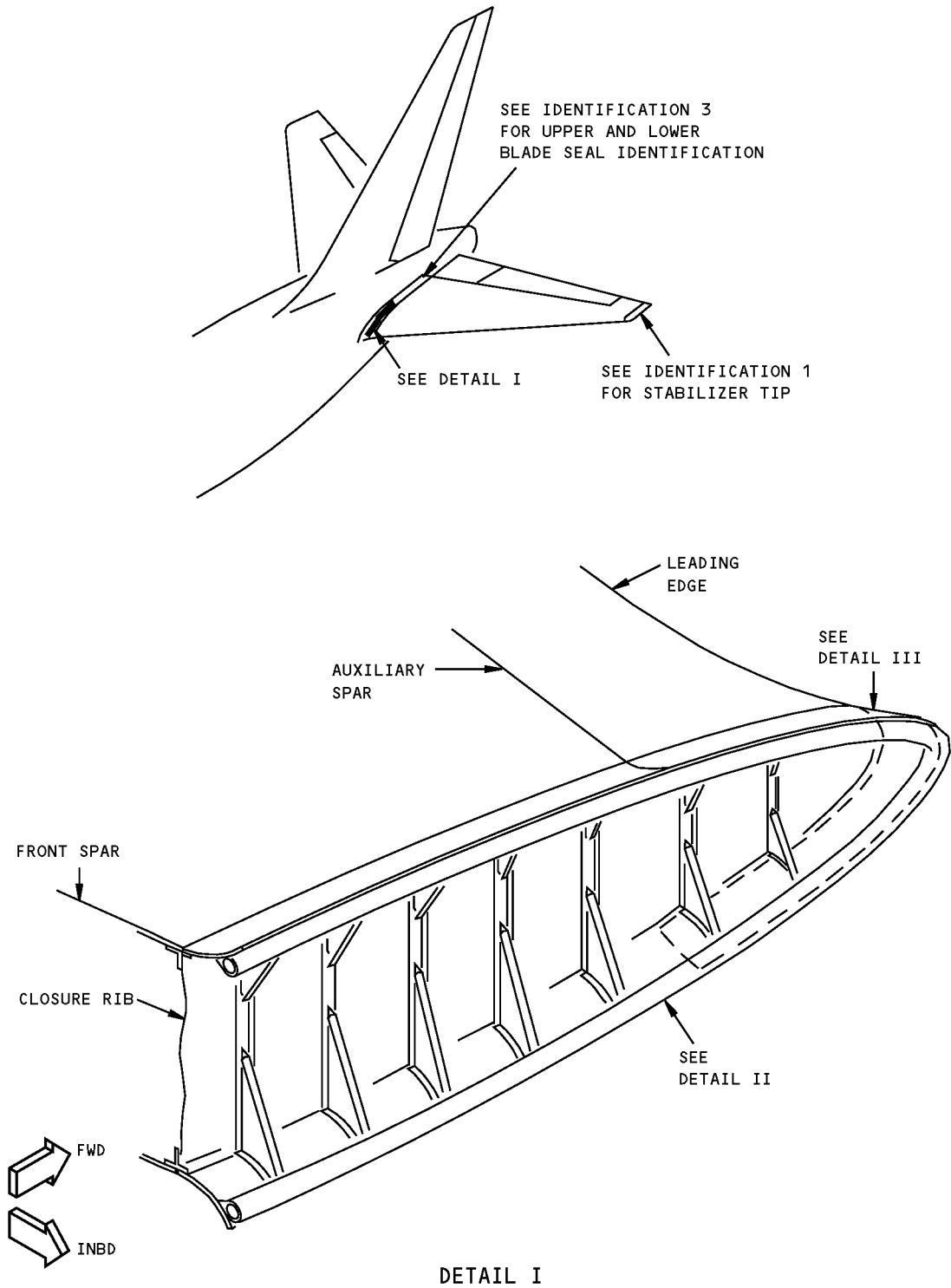
DETAIL III ^H

**Horizontal Stabilizer Tip Identification
Figure 1 (Sheet 4 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

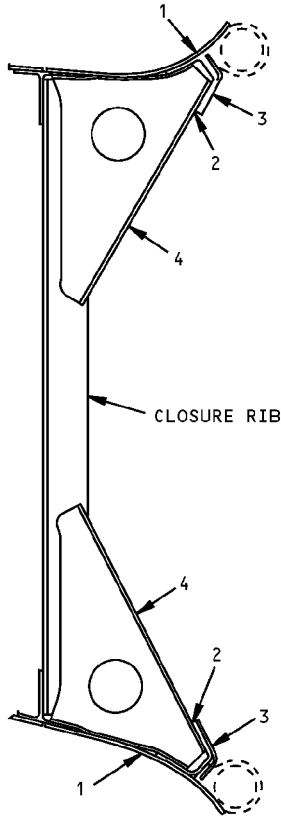
IDENTIFICATION 2 - HORIZONTAL STABILIZER SEAL PLATE

REFERENCE DRAWINGS
182T7112
182T7105
182T7104

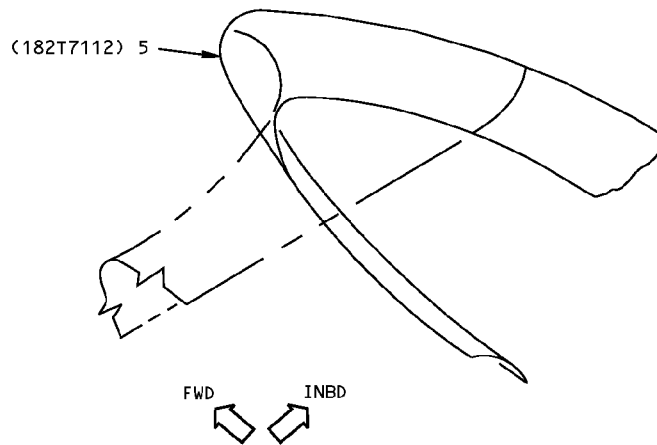


**Horizontal Stabilizer Seal Plate Identification
Figure 1 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



**DETAIL II
(TYPICAL)**



DETAIL III

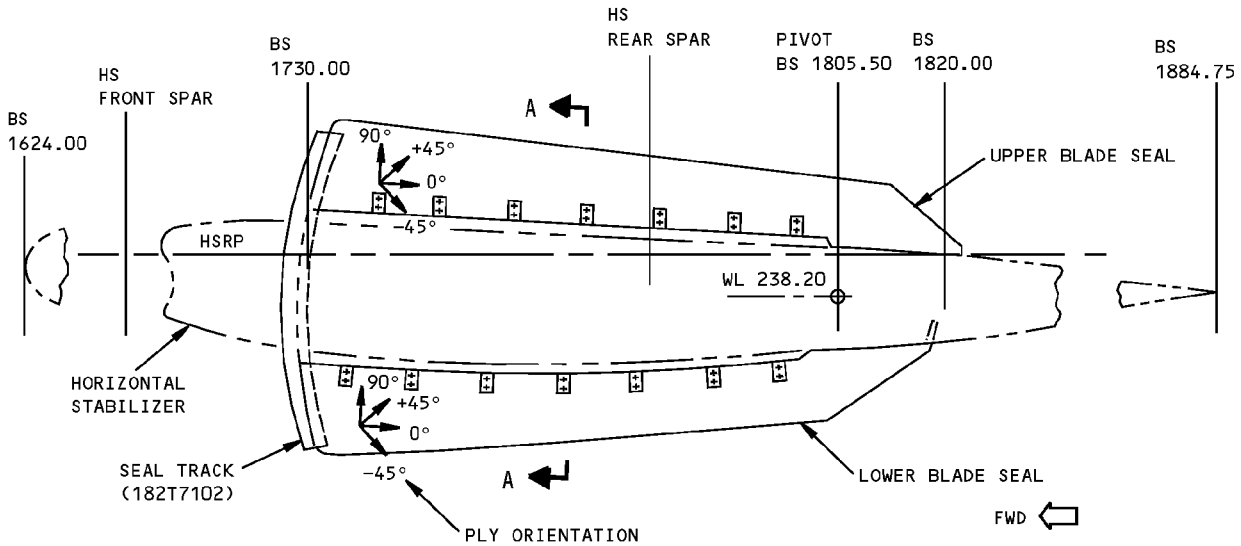
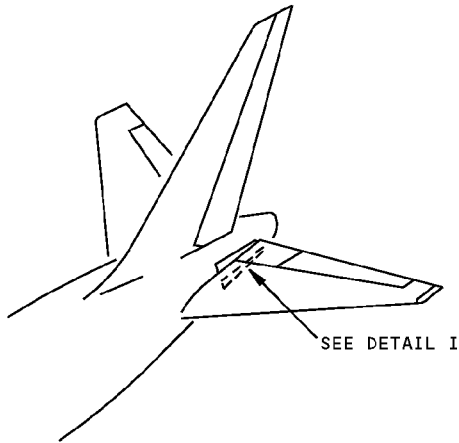
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN		ARAMID/EPOXY PER BMS 8-219, STYLE 120 OR 285, 250°F (121°C) CURE FIBERGLASS FABRIC PER BMS 8-79, TYPE 120, CLASS III, GRADE I, 250°F (121°C) CURE	
2	CHANNEL		FIBERGLASS PER BMS 8-79, TYPE 120 OR 1581, CLASS III, GRADE I, 250°F (121°C) CURE	
3	ANGLE		FIBERGLASS PER BMS 8-79, TYPE 120 OR 1581, CLASS III, GRADE I, 250°F (121°C) CURE	
4	GUSSET	0.050	CLAD 7075-T62	
5	SKIN L/E	0.090	CLAD 2024-T42	

**Horizontal Stabilizer Seal Plate Identification
Figure 1 (Sheet 2 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 3 - HORIZONTAL STABILIZER UPPER AND LOWER BLADE SEAL

REFERENCE DRAWINGS
182T7100
182T7101
182T7119



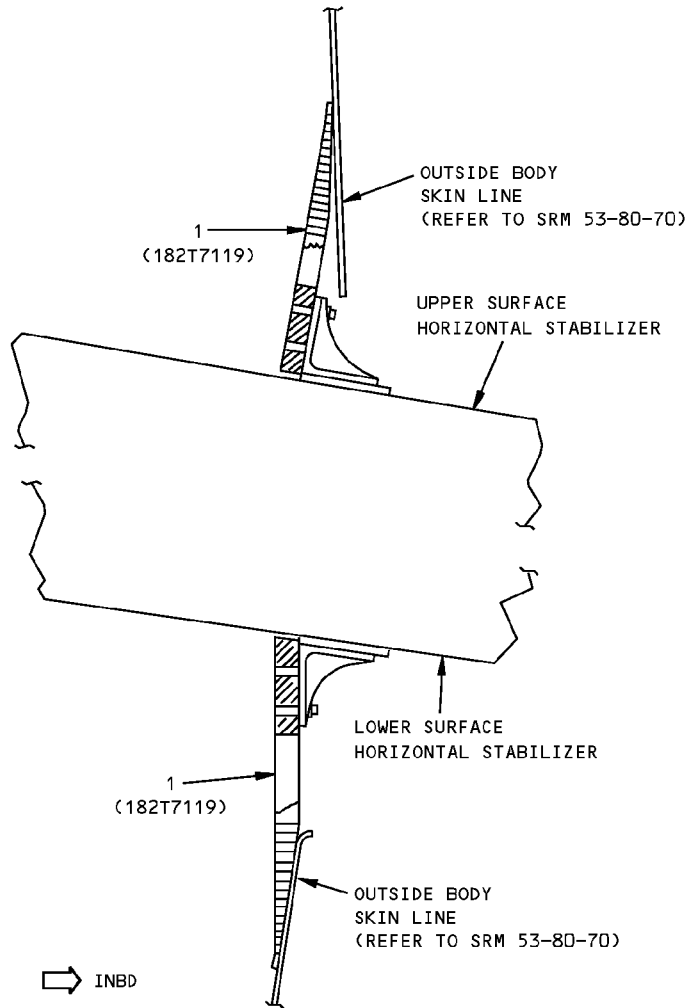
**VIEW LOOKING INBOARD [A]
DETAIL I**

NOTES

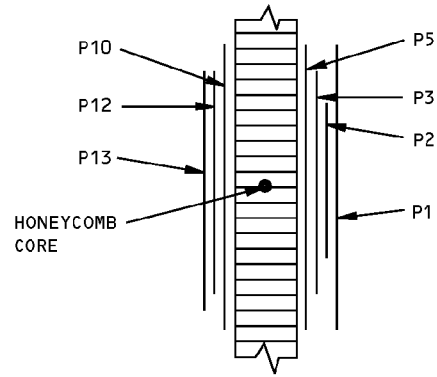
- REFER TO SRM 53-80-70 FOR SEAL FAIRING SKIN AND SRM 53-80-71 FOR SEAL FAIRING STRUCTURE
- [A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO FABRIC WARP DIRECTION
- [B] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, CLASS III, GRADE 1, TYPE 120, 250°F (121°C) CURE
- [C] GRAPHITE EPOXY FABRIC PER BMS 8-168, TYPE II, CLASS 2, STYLE 3K-70-PW, 250°F (121°C) CURE

**Horizontal Stabilizer Upper and Lower Blade Seal Identification
Figure 1 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



SECTION A-A



SECTION THRU HONEYCOMB PANEL

ITEM	PLY NO.	MATERIAL	PLY ORIENTATION ^A
1	P1	^B	OPTL
	P2	^C	0° OR 90°
	P3	^C	0° OR 90°
	P5	^C	+45° OR -45°
	P10	^C	+45° OR -45°
	P12	^C	0° OR 90°
	P13	^C	0° OR 90°

MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS

TABLE I

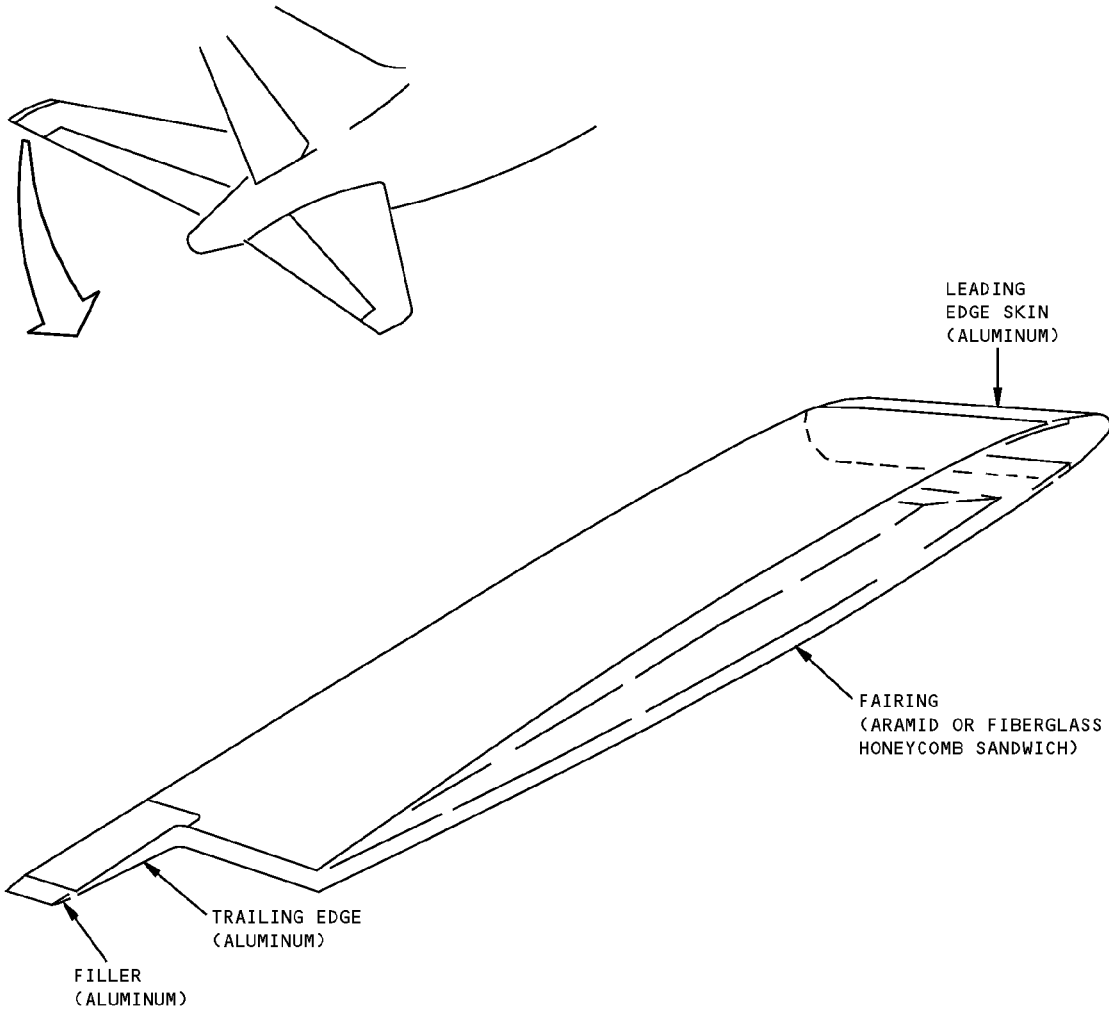
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PANEL ASSEMBLY SKINS		GRAPHITE/FIBERGLASS/EPOXY FABRIC SEE TABLE I	
	CORE		NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 5.0	

LIST OF MATERIALS FOR SECTION A-A

**Horizontal Stabilizer Upper and Lower Blade Seal Identification
Figure 1 (Sheet 2 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER TIP



LOCATION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	PUNCTURES AND HOLES	DELAMINATION
LEADING EDGE SKIN	A	B	C	D E	—
FAIRING	F	G	H	F	F
TRAILING EDGE	A	B	C	J	—
FILLER	A	B	C	J	—

TABLE I

**Allowable Damage - Horizontal Stabilizer Tip
Figure 101 (Sheet 1 of 4)**

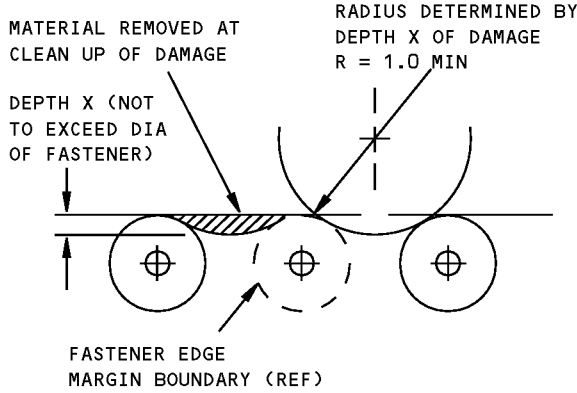
STRUCTURAL REPAIR MANUAL

NOTES

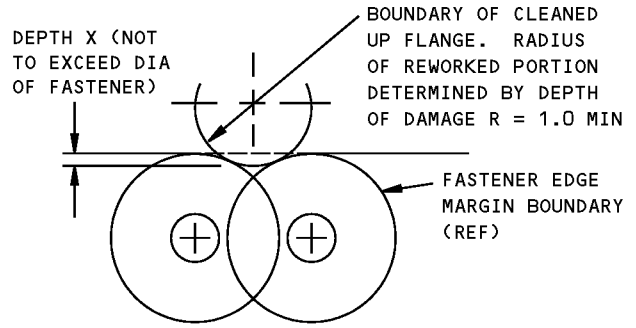
- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
 - WHEN YOU USE THIS REPAIR, REFER TO:
 - AMM 51-20 FOR THE FINISH TO REWORKED AREAS
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS GIVEN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
 - SRM 51-70-14 TO RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING
- A** CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND IV.
- B** REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND IV. AT OTHER LOCATIONS REMOVE THE DAMAGE AS GIVEN IN DETAILS II AND V.
- C** DENTS UP TO 0.125 INCH (3 mm) DEEP ARE PERMITTED IF A/Y IS NOT LESS THAN 30 (SEE DETAIL III), AND THERE ARE NO PULLED OR LOOSE RIVETS OR OTHER DAMAGE. FOR DENTS THAT EXCEED THESE LIMITS, REFER TO SRM 51-70-01.
- D** HOLES UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER AND NOT CLOSER THAN 1.00 INCH (25 mm) TO ANY ADJACENT HOLE ARE PERMITTED. FILL THE HOLES WITH 2117-T3 ALUMINUM RIVETS, INSTALLED WET WITH BMS 5-95 SEALANT.
- E** PUNCTURES ARE PERMITTED IF THEY CAN BE CLEANED UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER. FILL THE HOLE WITH A 2117-T3 ALUMINUM RIVET, INSTALLED WET WITH BMS 5-95 SEALANT.
- F** DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC., WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND IV. 2.00 INCH (50 mm) MAXIMUM DIAMETER IS PERMITTED FOR A SINGLE DAMAGE SITE IN THE HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF $a/d = 1.5$. REFER TO DETAIL VI FOR DAMAGE CRITERIA. DAMAGE IS PERMITTED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE THAT IS NOT REWORKED AS GIVEN IN **I**.
- G** DAMAGE IS PERMITTED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE AS GIVEN IN DETAILS I AND IV. REFER TO **F** FOR FIBER DAMAGE IN OTHER AREAS.
- H** DENTS RESULT IN DELAMINATION AND FIBER DAMAGE AND MUST BE TREATED AS A HOLE OR PUNCTURE DAMAGE.
- I** REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH AIRPLANE "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE IF THERE IS PEELING OR DETERIORATION OF THE TAPE. REPAIR NO LATER THAN THE NEXT AIRPLANE "C" CHECK.
- J** HOLES UP TO 0.50 INCH (12.7 mm) MAXIMUM DIAMETER ARE PERMITTED. REPAIR NO LATER THAN THE NEXT AIRPLANE "C" CHECK.

Allowable Damage - Horizontal Stabilizer Tip
Figure 101 (Sheet 2 of 4)

STRUCTURAL REPAIR MANUAL



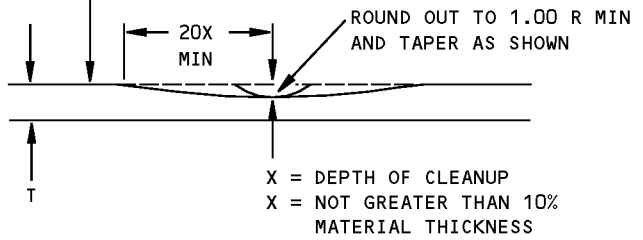
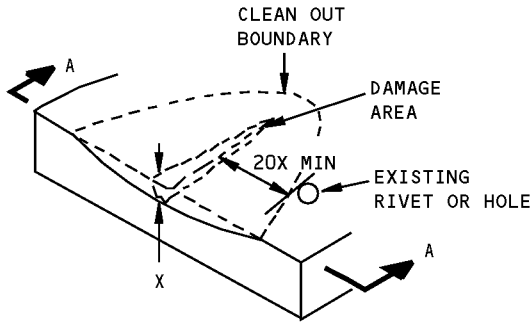
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

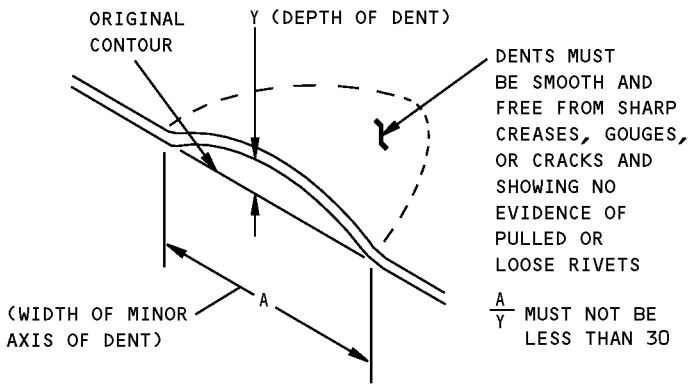
DETAIL I

THE DISTANCE OF THE DAMAGE FROM AN EXISTING HOLE, FASTENERS OR SKIN EDGE MUST NOT BE LESS THAN 20X

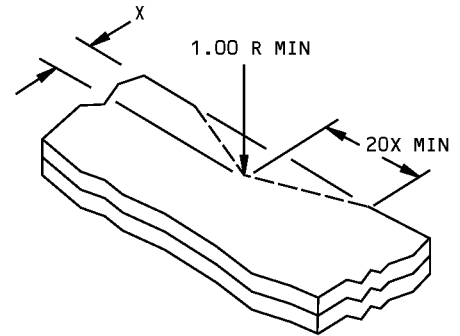


SECTION A-A

**REMOVAL OF NICK OR GOUGE DAMAGE ON A SURFACE
DETAIL II**



DETAIL III

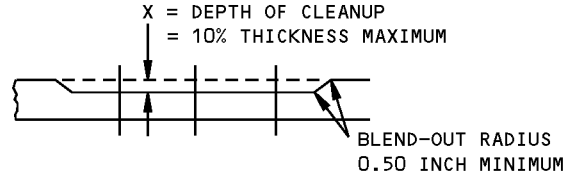
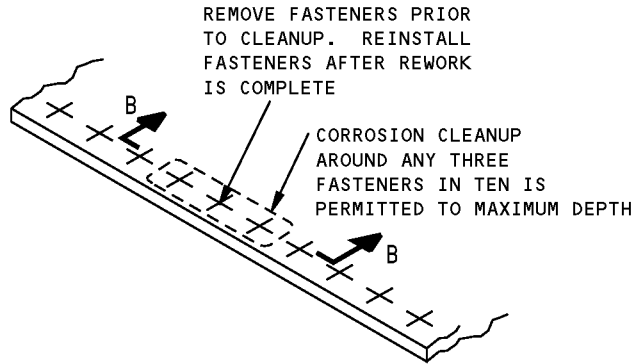


X = DEPTH OF CLEANUP = 0.10 MAX

**REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE
DETAIL IV**

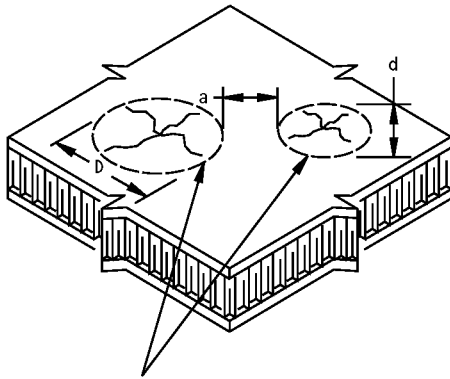
**Allowable Damage - Horizontal Stabilizer Tip
Figure 101 (Sheet 3 of 4)**

STRUCTURAL REPAIR MANUAL

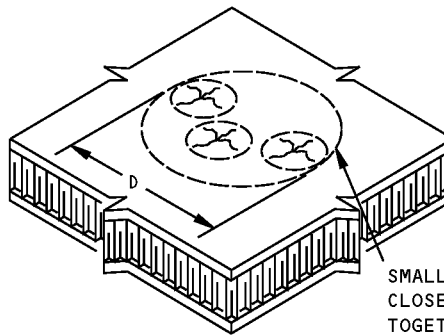


SECTION B-B

CORROSION CLEANUP
DETAIL V



ADJACENT DAMAGE SITES ON
SURFACE OF COMPOSITE PANEL



SMALL DAMAGE SITES THAT ARE
CLOSELY SPACED MAY BE GROUPED
TOGETHER AND CONSIDERED AS
ONE DAMAGE SITE

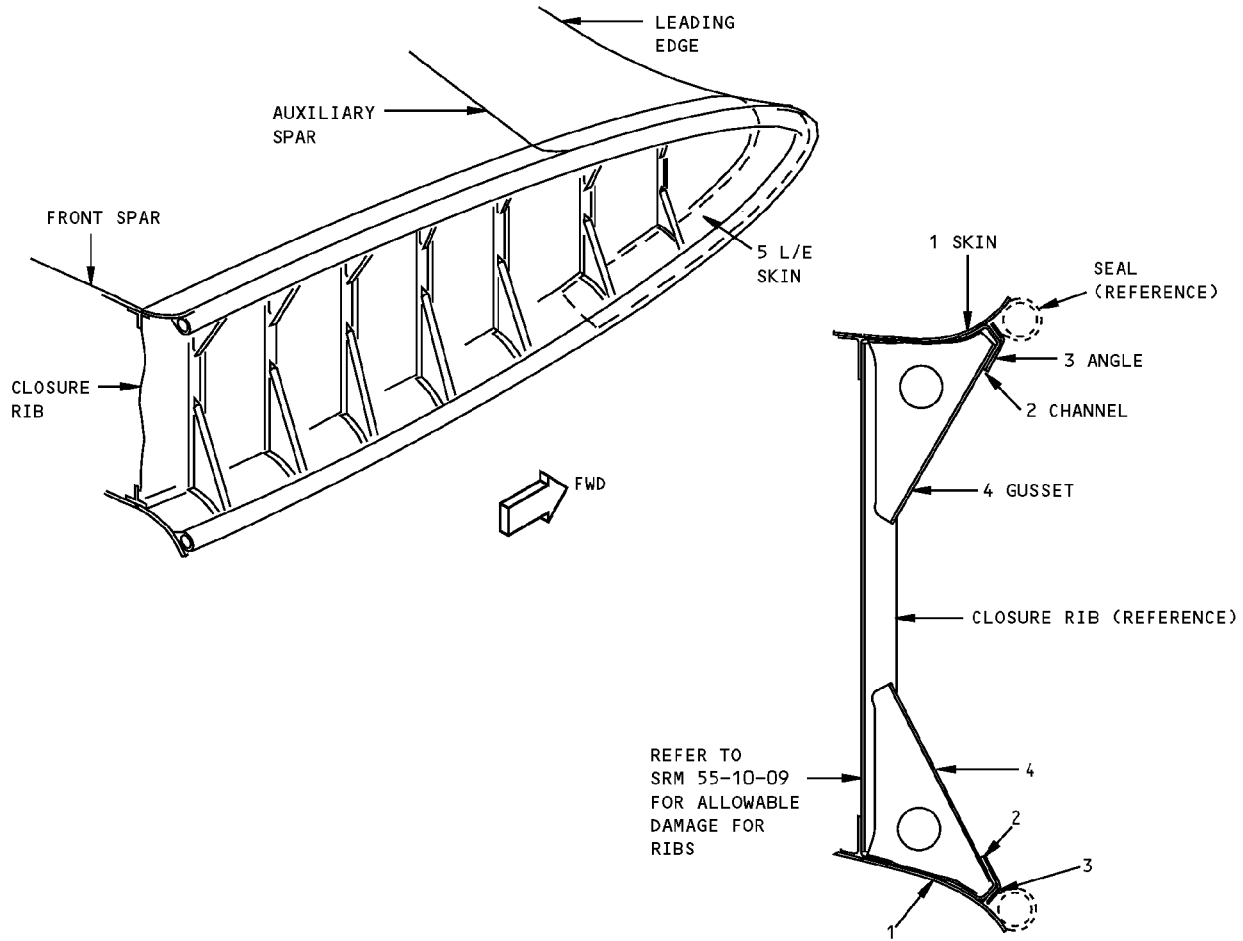
- DAMAGE SITE IS ANY SINGLE AREA OF A PANEL WHERE A DENT, CRACK, DELAMINATION, PUNCTURE OR ANY COMBINATION OF THESE EXIST. SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE.
- "D" IS DETERMINED BY MEASURING THE DIAMETER OF A CIRCLE DRAWN AROUND DENT, CRACK, OR OTHER DAMAGE, WHICHEVER IS GREATER.
- "a" IS THE DISTANCE BETWEEN TWO ADJACENT DAMAGE SITES.
- "d" IS THE DIAMETER OF THE SMALLER OF TWO ADJACENT DAMAGE SITES.
- CALCULATE a/d BY DIVIDING DISTANCE "a" BY DIAMETER "D".
- THE DAMAGE IS PERMITTED WHEN "D" AND a/d AGREE WITH THE LIMITS GIVEN IN TABLE I.

DAMAGE SIZING AND SPACING DATA
FOR COMPOSITE PANELS
DETAIL VI

Allowable Damage - Horizontal Stabilizer Tip
Figure 101 (Sheet 4 of 4)

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 2 - HORIZONTAL STABILIZER SEAL SUPPORT



TYPICAL SECTION THRU RIB

LOCATION	CRACKS	NICKS AND GOUGES	DENTS	PUNCTURES AND HOLES	DELAMINATION
1. SKIN (ARAMID/EPOXY/ FIBERGLASS)	A	B	C	D	ONE SQUARE INCH IS PERMITTED WITHOUT A REPAIR
2. CHANNEL (FIBERGLASS)	A	B	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED
3. ANGLE (FIBERGLASS)	A	B	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED
4. GUSSET (CLAD 7075-T62)	A	E	F	G	—
5. L/E SKIN (CLAD 2024-T42)	A	E	F	H	—

**Allowable Damage - Horizontal Stabilizer Seal Support
Figure 101 (Sheet 1 of 3)**

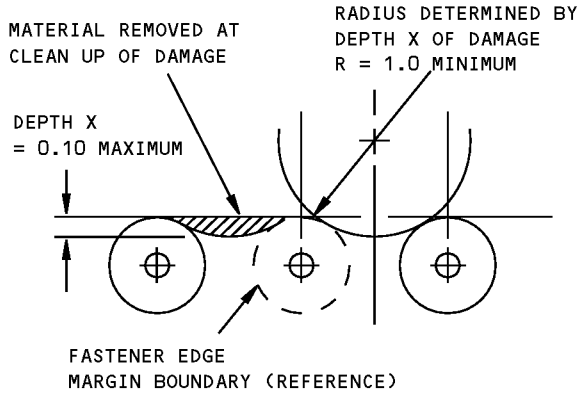
STRUCTURAL REPAIR MANUAL

NOTES

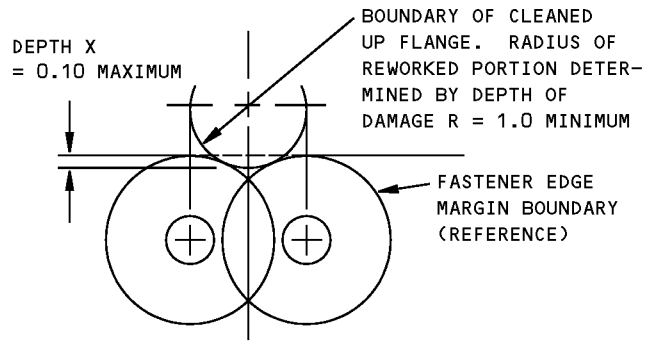
- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
 - APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
 - REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS GIVEN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
 - REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
 - DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR MAY TAKE A FORM WHICH RESULTS IN DAMAGE TO FIBERS AND A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. REMOVE THIS TYPE OF DAMAGE AND USE THE CONDITIONS FOR CRACKS.
- A** CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAIL I.
- B** DAMAGE IS PERMITTED ON THE SURFACE RESIN ONLY. DAMAGE TO FIBERS IS NOT PERMITTED. **I**
- C** DENTS FREQUENTLY CAUSE FIBER DAMAGE OR DELAMINATION. HOWEVER, IF THERE IS NO FIBER DAMAGE OR DELAMINATION, DENTS UP TO 1.0 INCH (25 mm) DIAMETER MAXIMUM ARE PERMITTED. ONE DENT PER SQUARE FOOT OF AREA IS PERMITTED. IT MUST BE A MINIMUM OF 6.0 INCHES (150 mm) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR PANEL EDGE. IF THERE IS FIBER DAMAGE OR DELAMINATION, REFER TO THE APPLICABLE DAMAGE DATA IN THE TABLE.
- D** 0.19 (4.8 mm) INCH IS THE MAXIMUM DIAMETER THAT IS PERMITTED. **I**
- E** REMOVE EDGE DAMAGE AS GIVEN IN DETAIL I. AT OTHER LOCATIONS REMOVE THE DAMAGE AS GIVEN IN DETAIL II.
- F** DENTS UP TO 0.125 INCH (3 mm) DEEP ARE PERMITTED IF A/Y IS NOT LESS THAN 30 (REFER TO DETAIL III), AND THERE ARE NO PULLED OR LOOSE RIVETS OR OTHER DAMAGE.
- G** HOLES, UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER, AND PUNCTURES THAT CAN BE CLEANED UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER AND NOT CLOSER THAN 1.00 INCH (25 mm) TO ANY ADJACENT HOLE, ARE PERMITTED.
- H** HOLES UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER, AND PUNCTURES THAT CAN BE CLEANED UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER, AND NOT CLOSER THAN 1.00 INCH (25 mm) TO ANY ADJACENT HOLE, ARE PERMITTED. FILL THE HOLE WITH A FLUSH HEAD, ALUMINUM (2117-T3) RIVET INSTALLED WET WITH BMS 5-95 SEALANT.
- I** REMOVE MOISTURE FROM THE DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM THE HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH AIRPLANE "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE IF THERE IS PEELING OR DETERIORATION OF THE TAPE. REPAIR NO LATER THAN THE NEXT AIRPLANE "C" CHECK.

Allowable Damage - Horizontal Stabilizer Seal Support
Figure 101 (Sheet 2 of 3)

**767-300
STRUCTURAL REPAIR MANUAL**

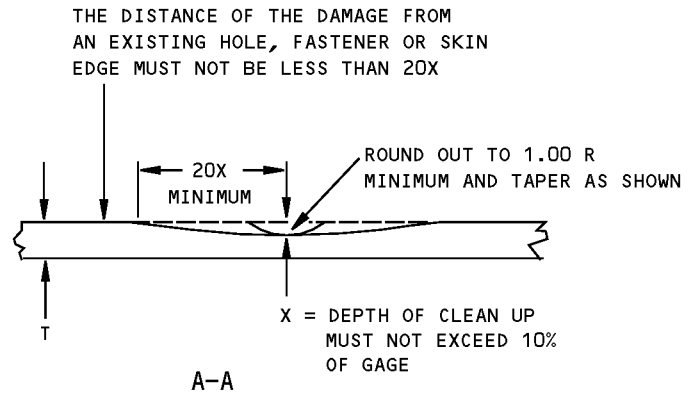
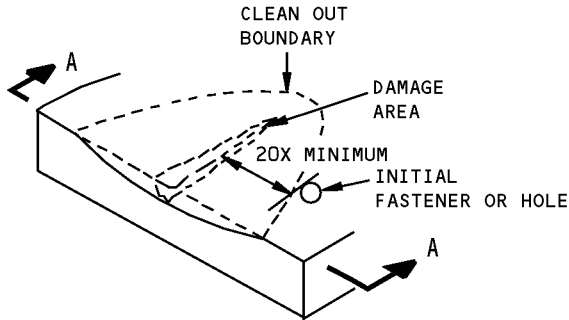


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

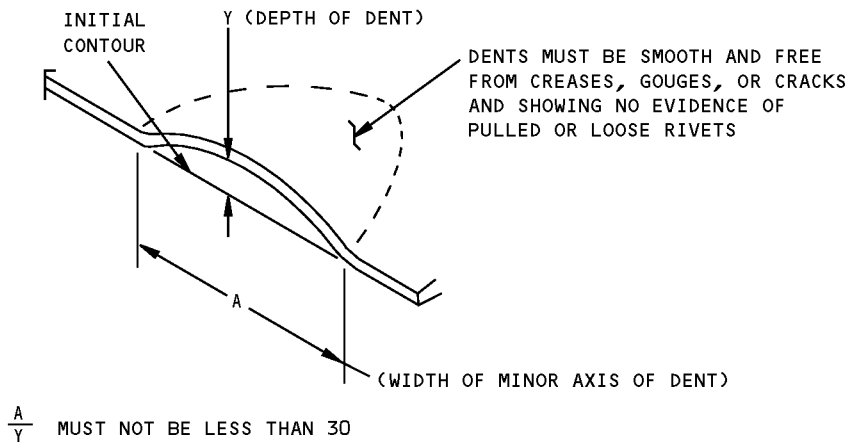


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I



DETAIL II

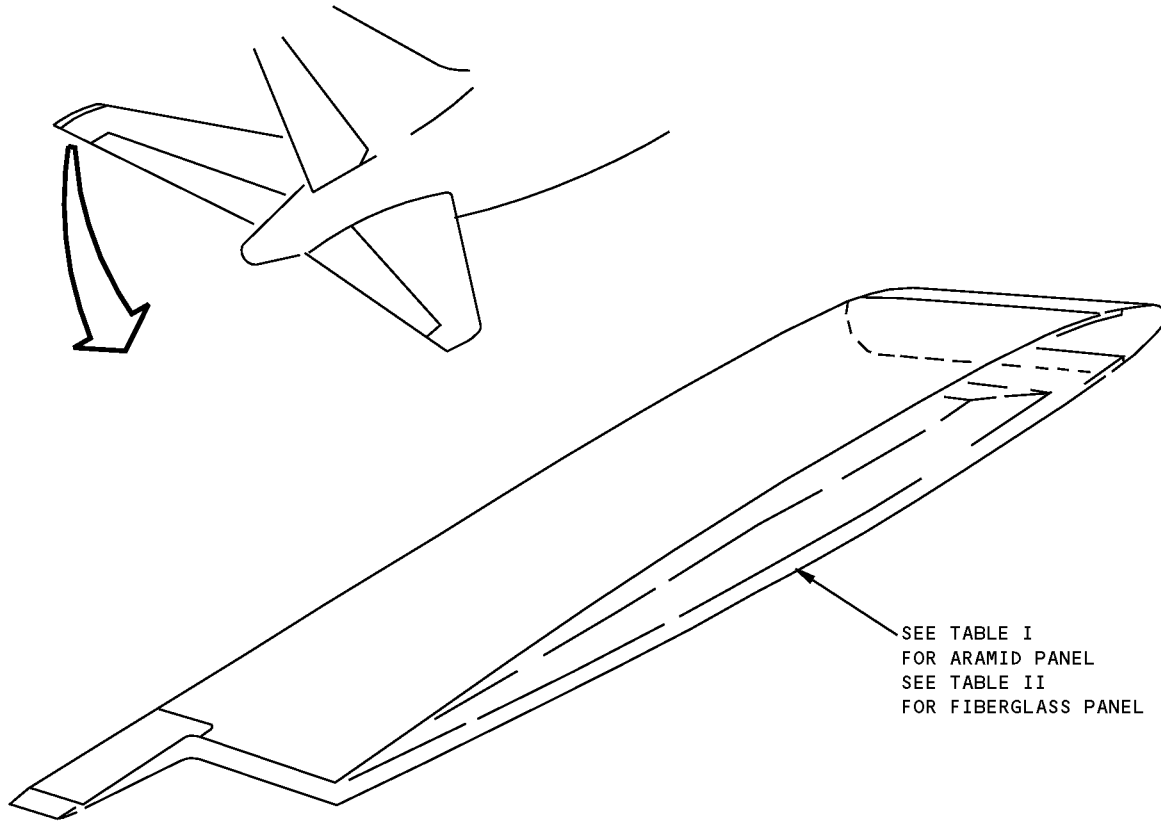


$\frac{A}{Y}$ MUST NOT BE LESS THAN 30

DETAIL III

**Allowable Damage - Horizontal Stabilizer Seal Support
Figure 101 (Sheet 3 of 3)**

STRUCTURAL REPAIR MANUAL

REPAIR 1 - HORIZONTAL STABILIZER TIP

SEE TABLE I
FOR ARAMID PANEL
SEE TABLE II
FOR FIBERGLASS PANEL

NOTES

- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20
 - REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED
 - REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING AS GIVEN IN SRM 51-70-14
- A** MINIMUM SPACING (EDGE TO EDGE), 6 INCHES (150 mm) BETWEEN CORE REPAIRS
- B** LIMITED TO REPAIR OF ONE FACESHEET SKIN AND HONEYCOMB CORE. INSPECT INTERIM REPAIR USING INSTRUMENTED NDI METHODS OR "TAP" TEST EVERY AIRPLANE "2A" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
- C** WHERE BMS 5-95 SEALANT IS APPLIED ON EXTERIOR SURFACE OF PANEL AT MANUFACTURE, REAPPLY BMS 5-95 SEALANT ON REWORKED AREAS PRIOR TO THE APPLICATION OF ENAMEL FINISH. REFER TO AMM 51-21-12

Horizontal Stabilizer Tip Repair
Figure 201 (Sheet 1 of 3)

**767-300
STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (51-70-03)	WET LAYUP 150°F (66°C) CURE (51-70-03) [A]	WET LAYUP 200°F (93°C) CURE (51-70-17)	250°F (121°C) CURE (51-70-05)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [A]	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [A]	8.0 INCHES (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	16.0 INCHES (400 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	NO SIZE LIMIT
DELAMINATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	UP TO 4.0 INCHES (100 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.L. OVER 4.0 INCHES (100 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F (121° C) CURE ARAMID HONEYCOMB PANEL [C]
TABLE I

**Horizontal Stabilizer Tip Repair
Figure 201 (Sheet 2 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS B	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (51-70-06)	WET LAYUP 150°F (66°C) CURE (51-70-06) A	WET LAYUP 200°F (93°C) CURE (51-70-17)	250°F (121°C) CURE (51-70-07)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. A	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. A	8.0 INCHES (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	16.0 INCHES (400 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	NO SIZE LIMIT
DELAMI- NATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	UP TO 4.0 INCHES (100 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.L. OVER 4.0 INCHES (100 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

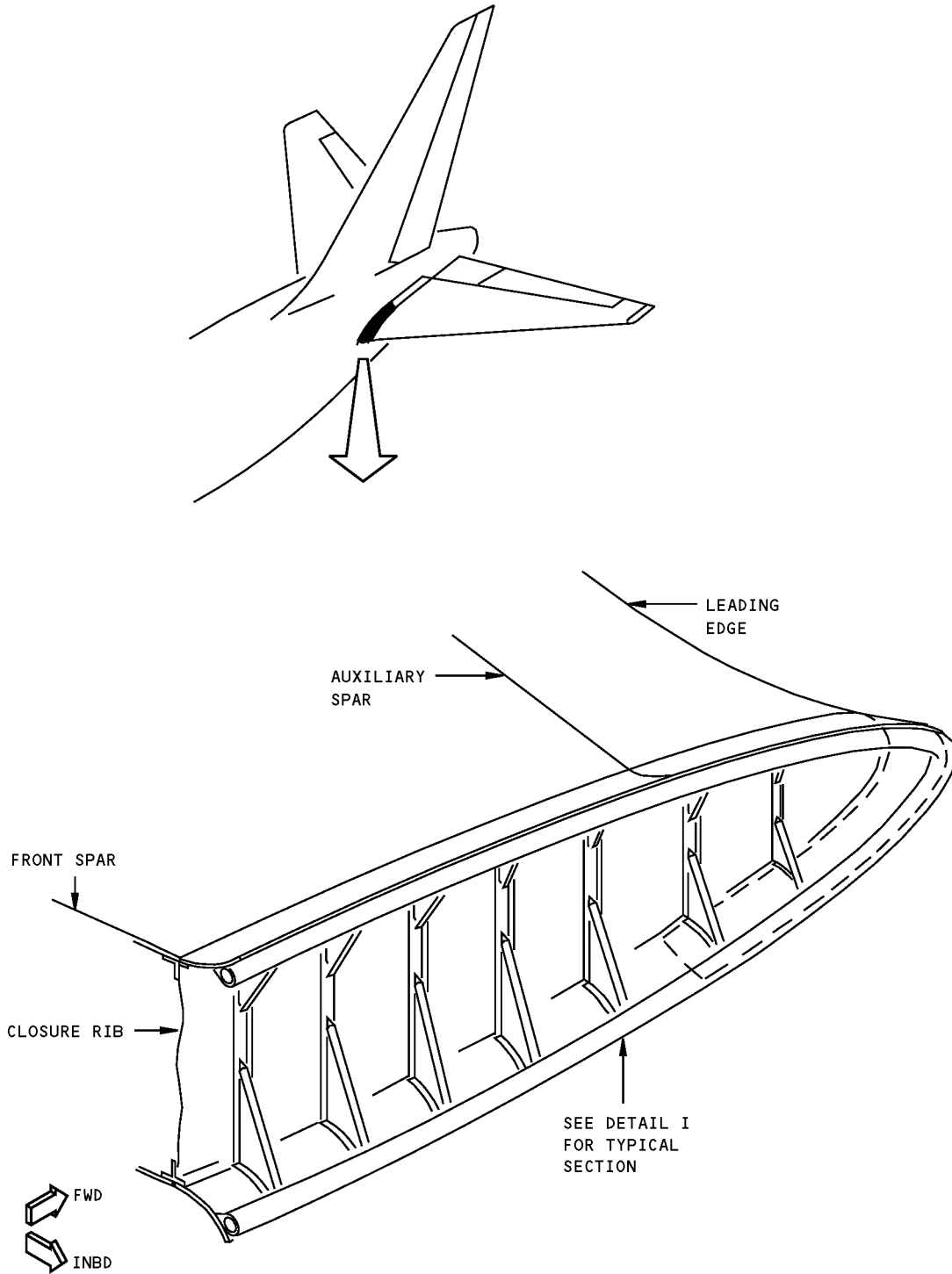
REPAIR DATA FOR 250°F (121°C) CURE FIBERGLASS HONEYCOMB PANEL
TABLE II **C**

**Horizontal Stabilizer Tip Repair
Figure 201 (Sheet 3 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

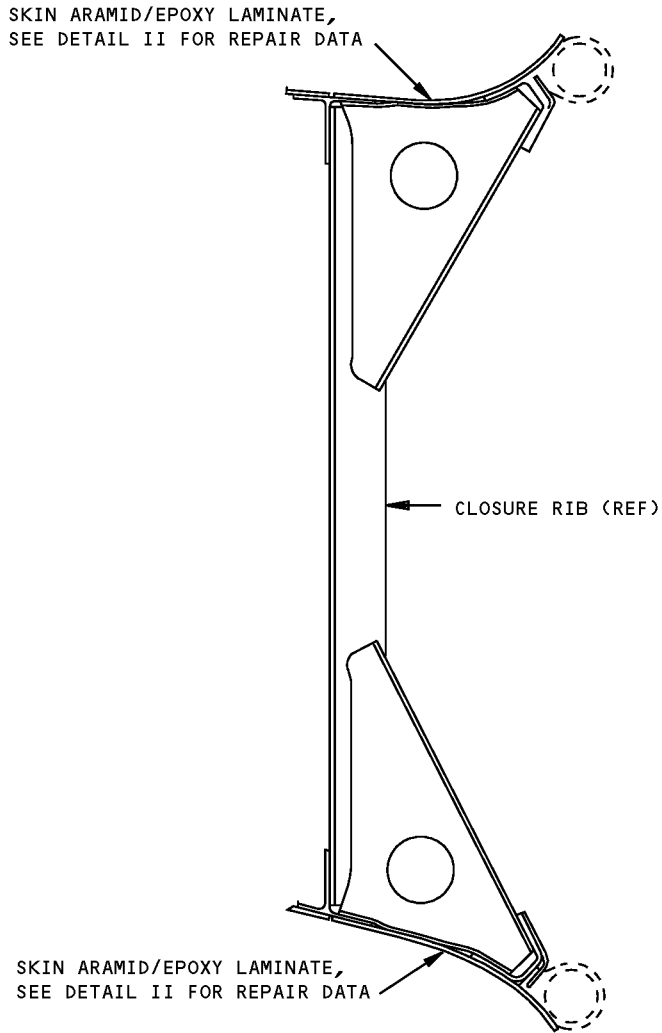
REPAIR 2 - HORIZONTAL STABILIZER SEAL PLATE

REF DWG
182T7112
182T7105
182T7104



**Horizontal Stabilizer Seal Plate Repairs
Figure 201 (Sheet 1 of 3)**

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STRUCTURAL REPAIR MANUAL



TYPICAL SECTION THRU RIB
DETAIL I

Horizontal Stabilizer Seal Plate Repairs
Figure 201 (Sheet 2 of 3)

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REPAIR 2
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STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS B	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (51-70-03)	WET LAYUP 150°F (66°C) CURE (51-70-03)	WET LAYUP 200°F (93°C) CURE (51-70-17)	250°F (121°C) CURE (51-70-05)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03 A	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	3.0 INCHES (75 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03 A	3.0 INCHES (75 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED A	6.0 INCHES (150 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	NO SIZE LIMIT
DELAMI- NATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	CUT OUT AND REPAIR AS HOLE			

DETAIL II

NOTES

- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-21.
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE REPAIR EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- SEE SRM 55-10-30, IDENTIFICATION 2 FOR HORIZONTAL STABILIZER SEAL PLATE.
- SEE SRM 55-10-30, ALLOWABLE DAMAGE 2 FOR HORIZONTAL STABILIZER SEAL SUPPORT.

A MINIMUM SPACING (EDGE TO EDGE). 7 INCHES (175 mm) BETWEEN REPAIRS.

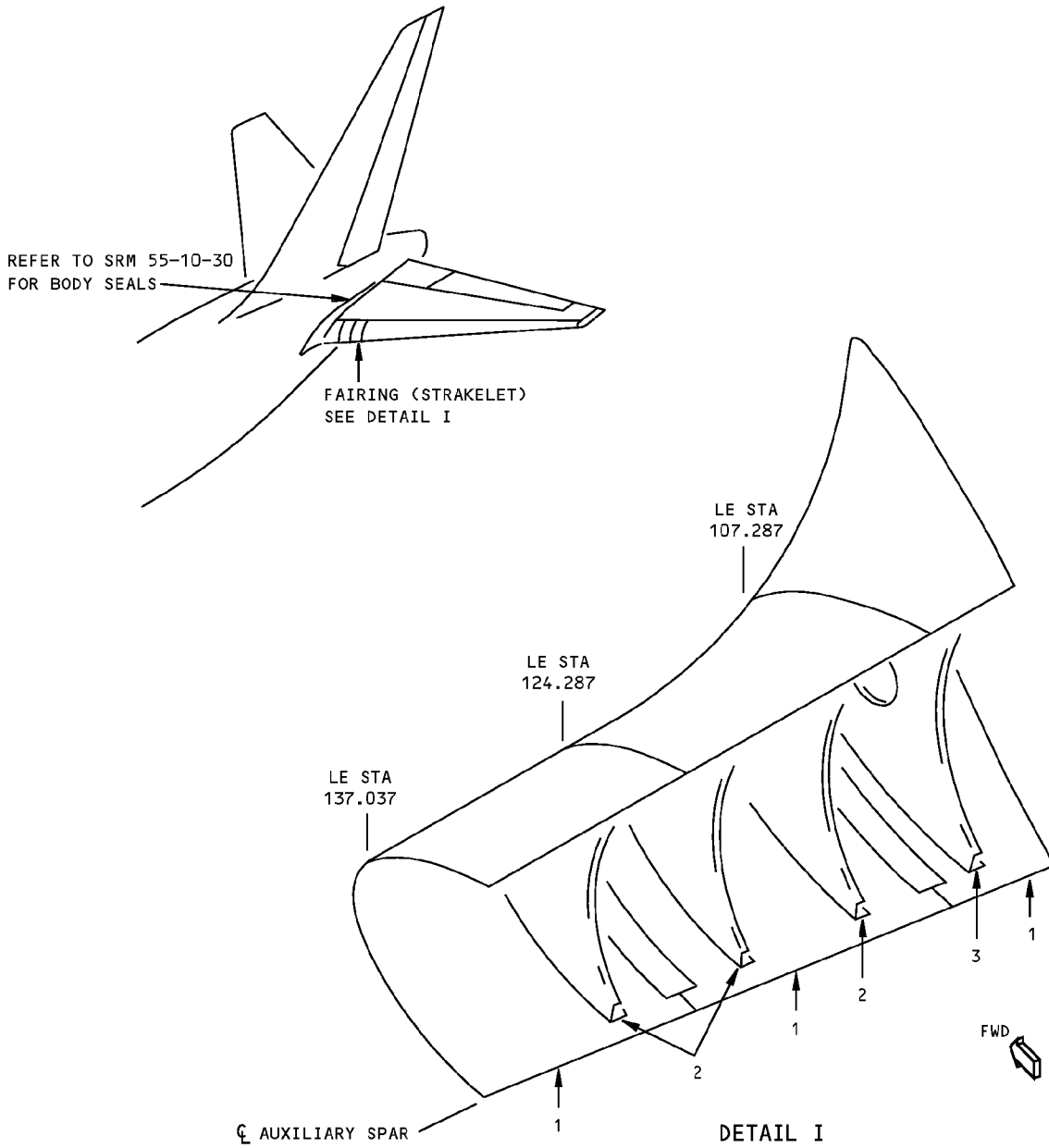
B INSPECT INTERIM REPAIR USING INSTRUMENTED NDI METHODS OR "TAP" TEST EVERY AIRPLANE "C" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN

Horizontal Stabilizer Seal Plate Repairs
Figure 201 (Sheet 3 of 3)

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - HORIZONTAL STABILIZER FAIRING STRUCTURE

REF DWG
184T1001



ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.090	CLAD 2024-T42	
2	RIB	0.040	CLAD 7075-T6	
3	RIB	0.050	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Fairing Identification
Figure 1**

IDENTIFICATION 1
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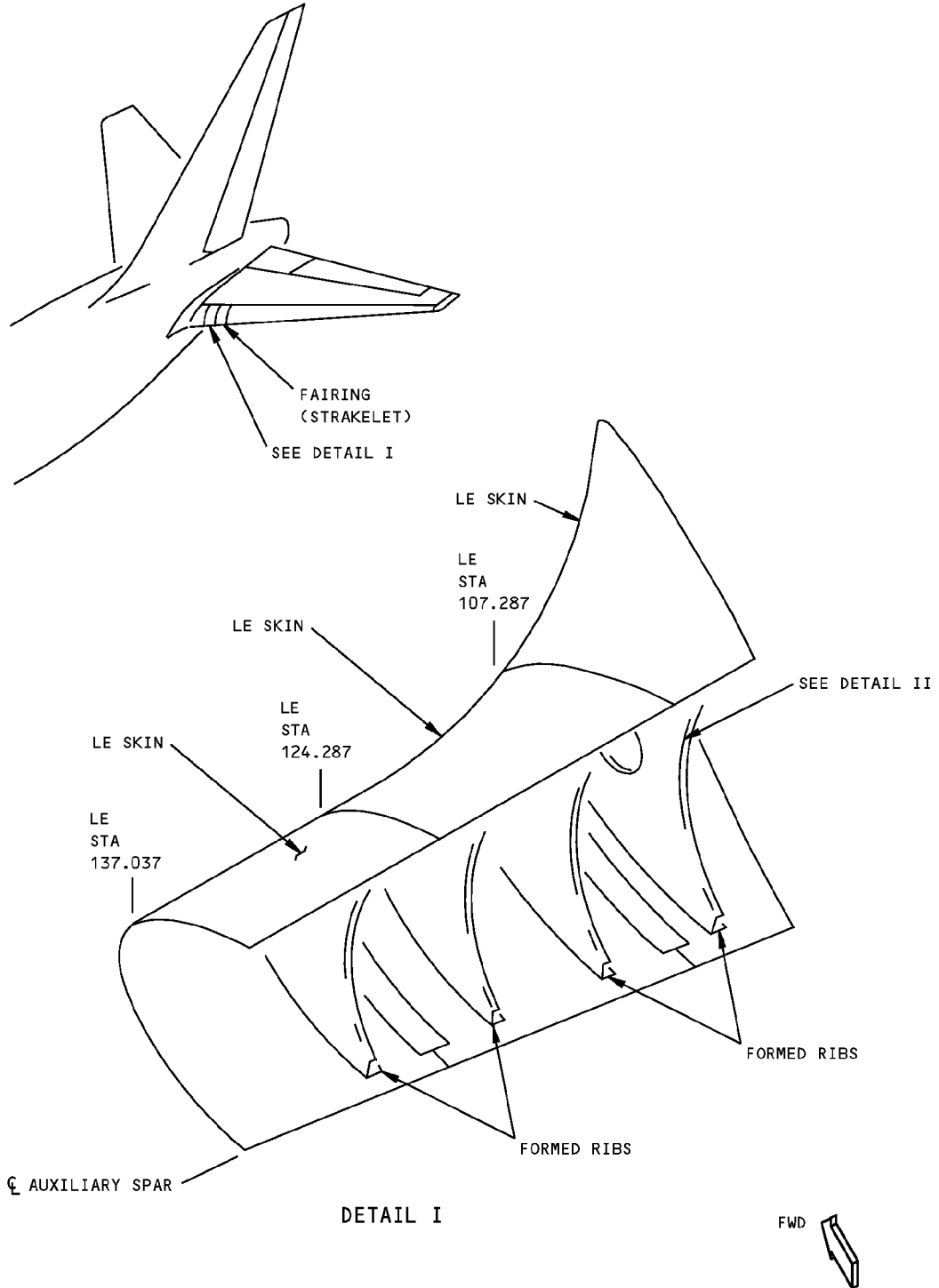
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**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER FAIRING

REFERENCE DRAWING
184T1001

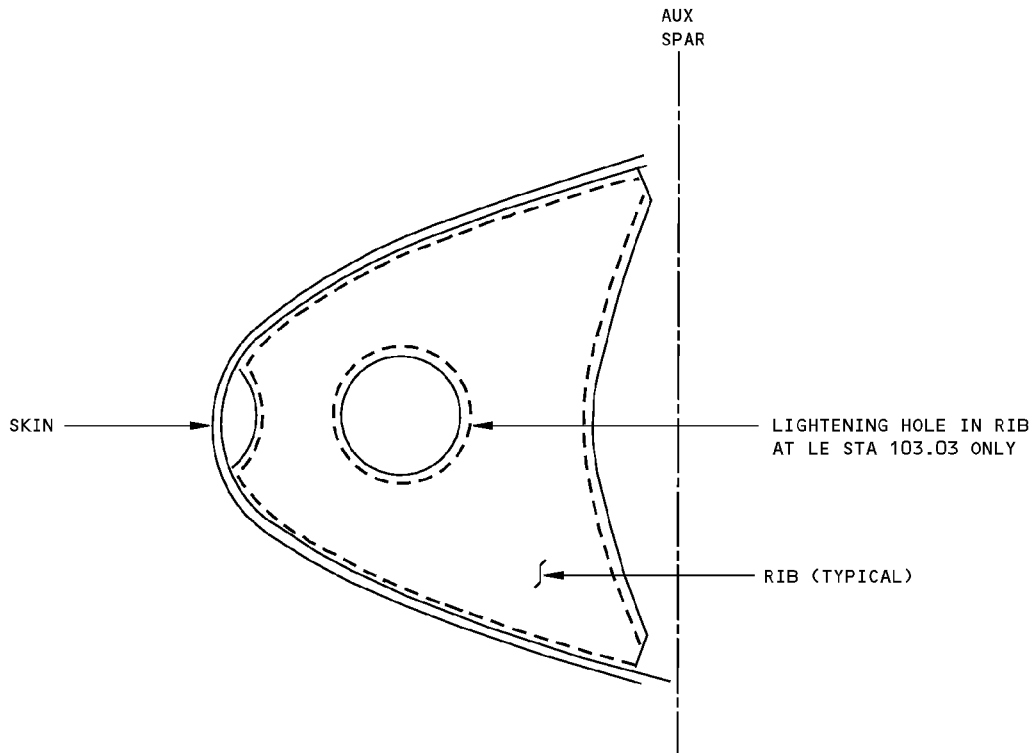


**Allowable Damage - Horizontal Stabilizer Fairing
Figure 101 (Sheet 1 of 4)**

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ALLOWABLE DAMAGE 1
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STRUCTURAL REPAIR MANUAL**



DETAIL II

LOCATION	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES
SKIN	A	B MAXIMUM DEPTH 10% OF GAGE	C	E
RIBS	A	B MAXIMUM DEPTH 10% OF GAGE	D	E

**Allowable Damage - Horizontal Stabilizer Fairing
Figure 101 (Sheet 2 of 4)**



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STRUCTURAL REPAIR MANUAL

NOTES

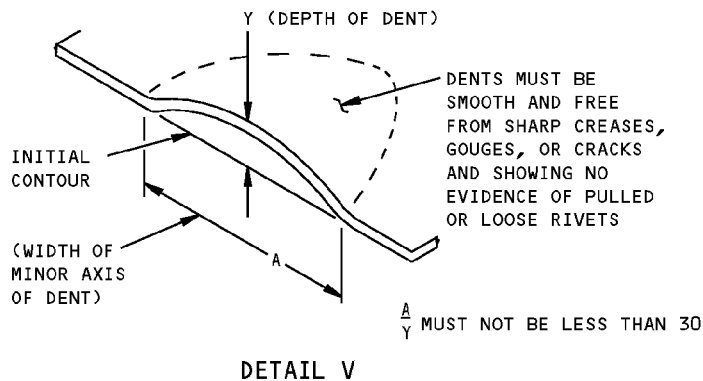
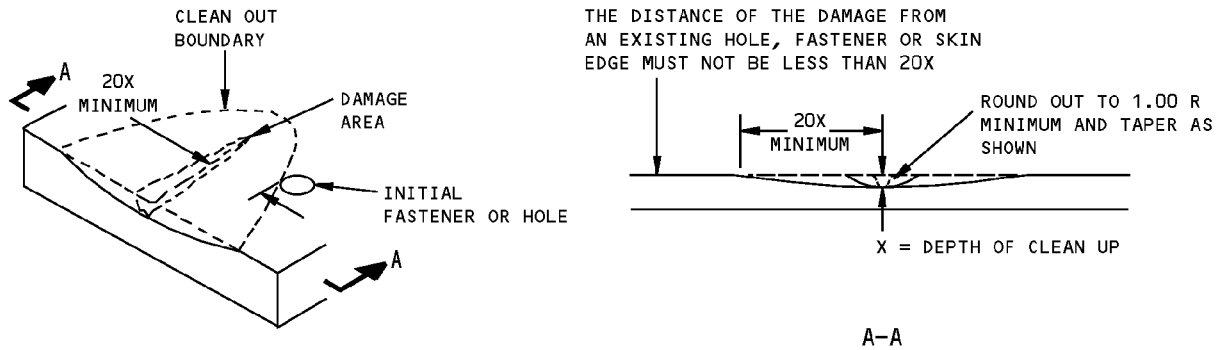
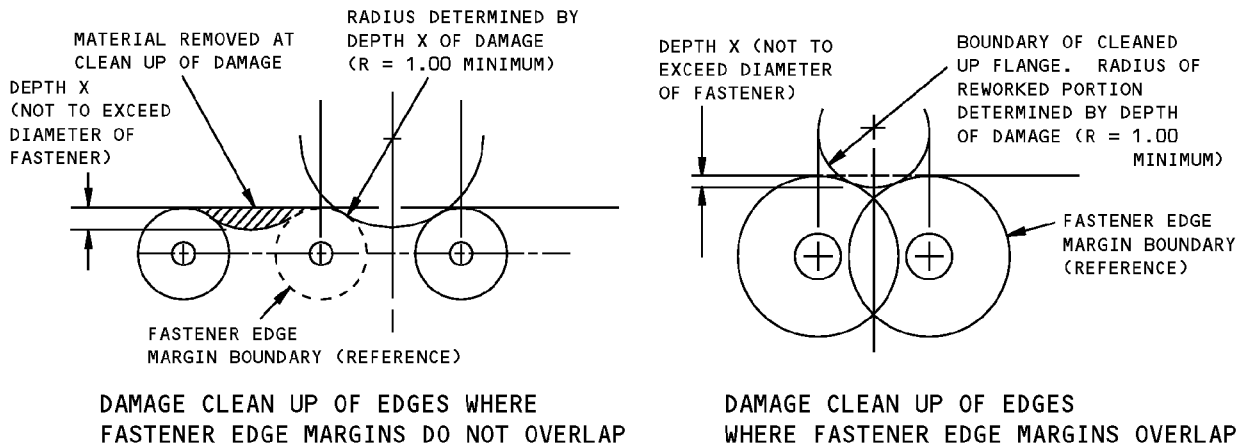
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- A** CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAIL III.
- B** REMOVE EDGE DAMAGE AS GIVEN IN DETAIL III. AT OTHER LOCATIONS REMOVE DAMAGE AS GIVEN IN DETAIL IV.
- C** REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. DENTS UP TO 0.125 INCH (3 mm) DEEP ARE PERMITTED IF A/Y IS NOT LESS THAN 30 (SEE DETAIL V) AND THERE ARE NO PULLED OR LOOSE RIVETS OR OTHER DAMAGE. WHERE THE DENT IS MORE THAN THE LIMIT GIVEN IN SRM 51-10-01, CONSIDERATION MUST BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- D** DENT DAMAGE IS PERMITTED IF THE DEPTH Y DOES NOT EXCEED 0.125 INCH (3 mm), A/Y IS NOT LESS THAN 30 AND THERE IS NO EVIDENCE OF LOOSE OR PULLED RIVETS, SHARP GOUGES, SCRATCHES OR CRACKS. SEE DETAIL V.
- E** HOLES UP TO 0.25 INCH (6 mm) DIAMETER, NOT CLOSER THAN 1.0 INCH (25 mm) TO AN ADJACENT HOLE MUST BE FILLED WITH A 2117-T3 OR 2117-T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95. ALL OTHER HOLES MUST BE REPAIRED.

**Allowable Damage - Horizontal Stabilizer Fairing
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ALLOWABLE DAMAGE 1
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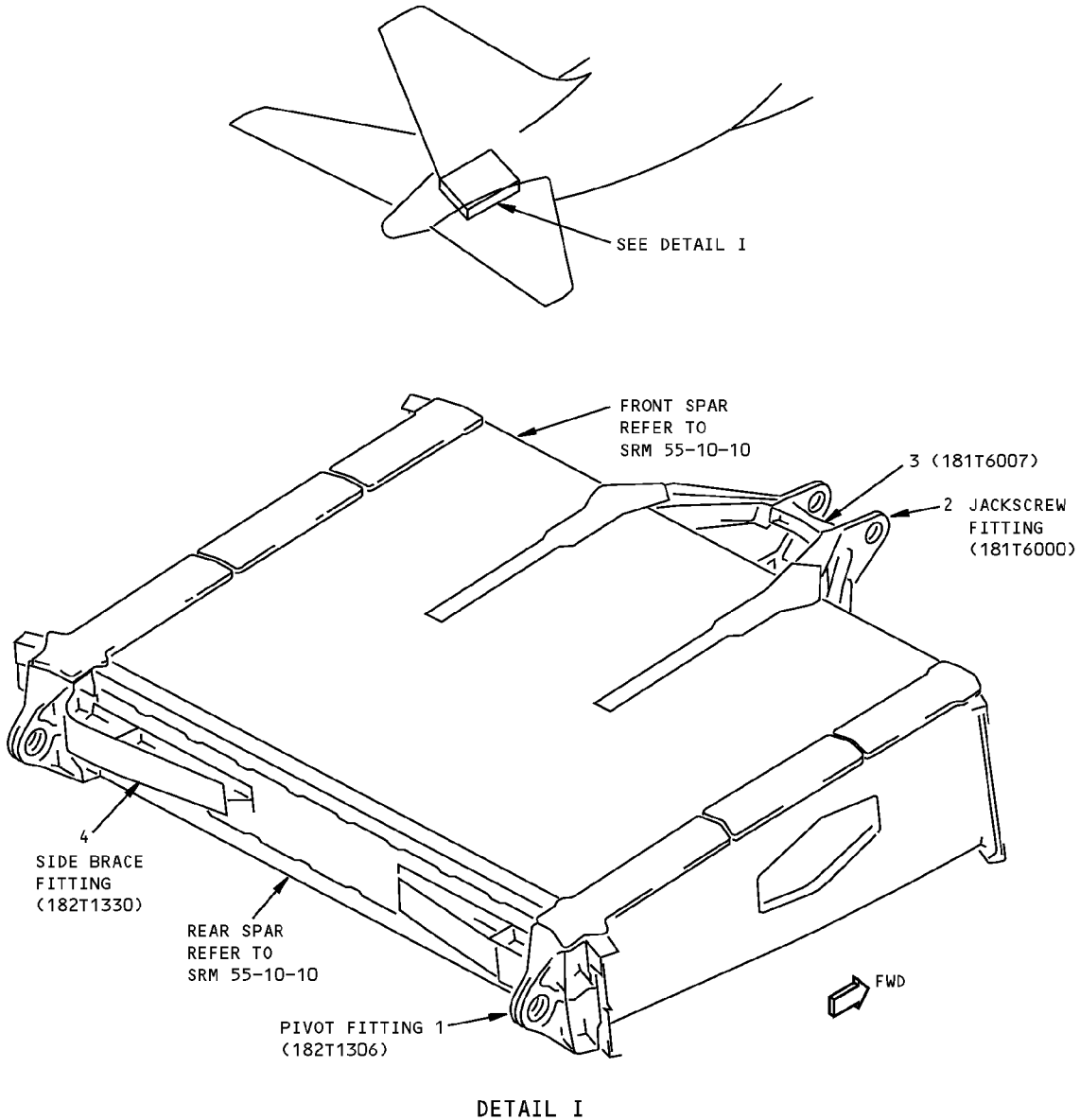
**767-300
STRUCTURAL REPAIR MANUAL**



**Allowable Damage - Horizontal Stabilizer Fairing
Figure 101 (Sheet 4 of 4)**

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STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - HORIZONTAL STABILIZER CENTER SECTION ATTACHMENT FITTINGS



DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PIVOT FITTING		FORGING 7075-T73	
2	JACKSCREW FITTING		FORGING 7075-T73	
3	CROSSBRACE		FORGING 7075-T73	
4	SIDE BRACE FITTING		FORGING 7075-T73	

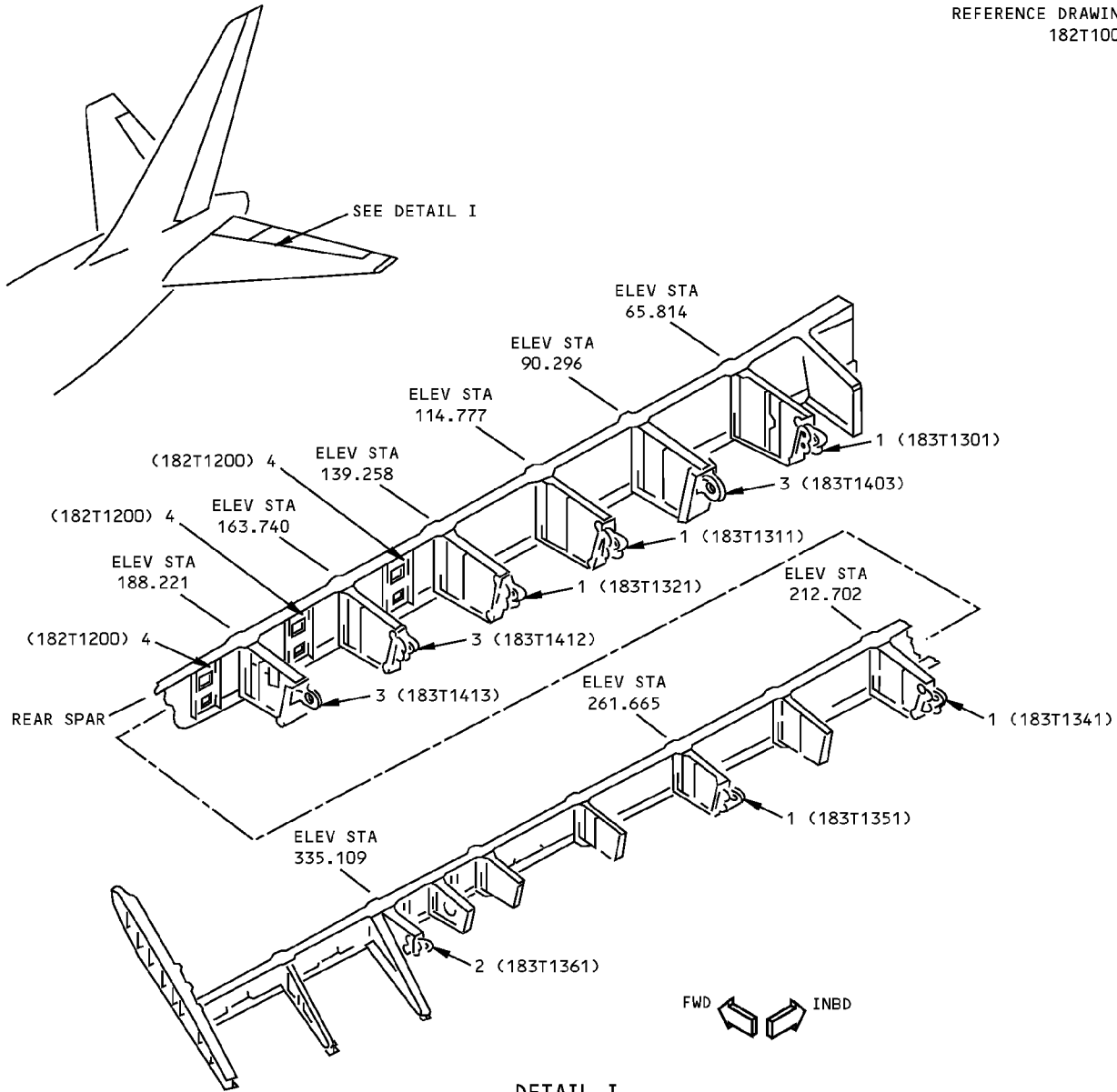
LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Center Section Attachment Fitting Identification
Figure 1**

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 2 - HORIZONTAL STABILIZER ATTACHMENT FITTINGS

REFERENCE DRAWING
182T1000



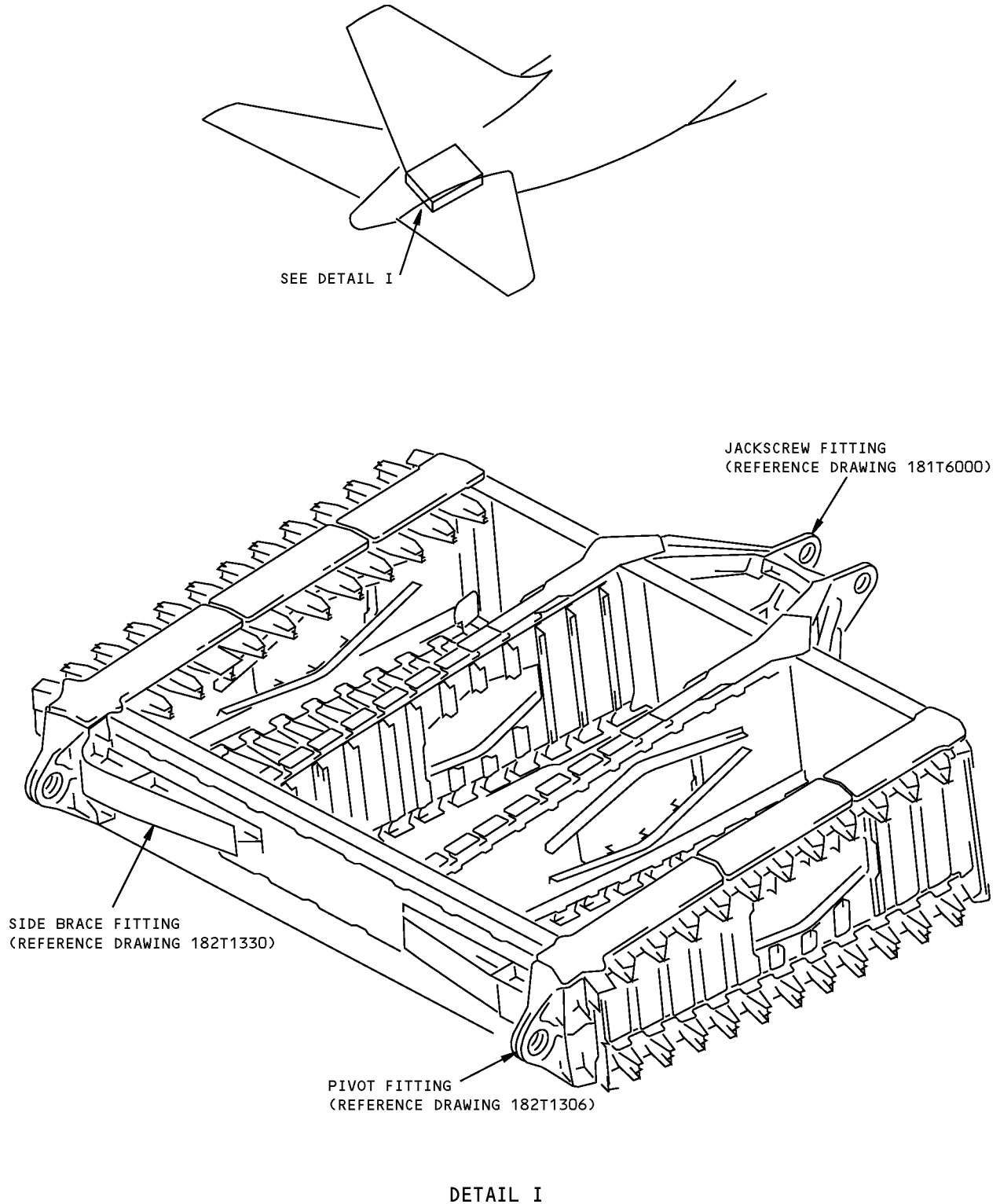
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	HINGE FITTING		BAC1519-143 7075-T73511	
2	HINGE FITTING		BAC1519-144 7075-T73511	
3	HINGE FITTING		DIE FORGING 7075-T73	
4	ELEVATOR CONTROL FITTING		DIE FORGING 7075-T73	

LIST OF MATERIALS FOR DETAIL I

**Horizontal Stabilizer Attachment Fittings Identification
Figure 1**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - HORIZONTAL STABILIZER CENTER SECTION ATTACHMENT FITTINGS



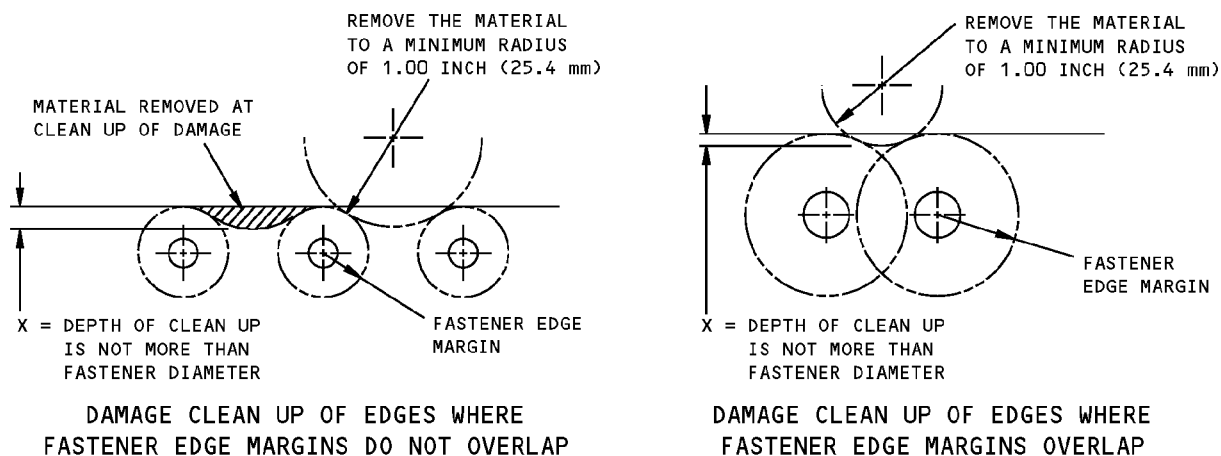
**Allowable Damage - Horizontal Stabilizer Center Section Attachment Fittings
Figure 101 (Sheet 1 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

LOCATION	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES
JACKSCREW FITTING	[B]	FOR EDGE DAMAGE SEE DETAIL II FOR OTHER DAMAGE SEE DETAIL III [A] FOR LUG DAMAGE SEE DETAIL IV	NOT PERMITTED	NOT PERMITTED
PIVOT FITTING	[B]	FOR EDGE DAMAGE SEE DETAIL II FOR OTHER DAMAGE SEE DETAIL III [A] FOR LUG DAMAGE SEE DETAIL IV	NOT PERMITTED	NOT PERMITTED
SIDE BRACE FITTING	[B]	FOR EDGE DAMAGE SEE DETAIL II FOR OTHER DAMAGE SEE DETAIL III [A]	NOT PERMITTED	NOT PERMITTED

NOTES

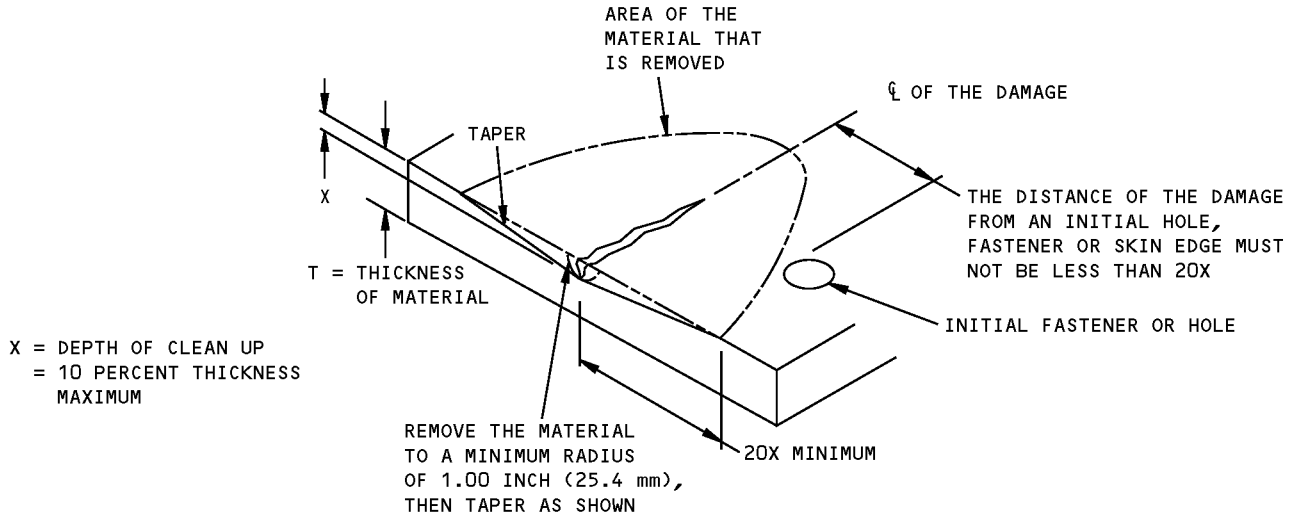
- [A] DAMAGE IS NOT PERMITTED NEAR THE BUSHING.
- [B] CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL V. OTHER CRACKS ARE NOT PERMITTED.



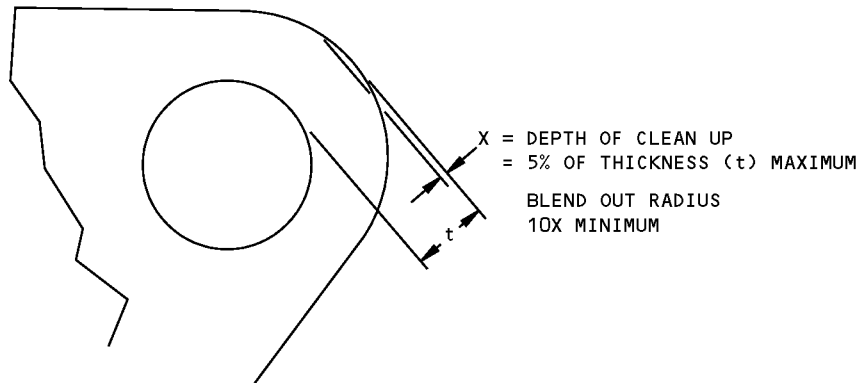
DETAIL II

**Allowable Damage - Horizontal Stabilizer Center Section Attachment Fittings
Figure 101 (Sheet 2 of 4)**

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STRUCTURAL REPAIR MANUAL**



DETAIL III

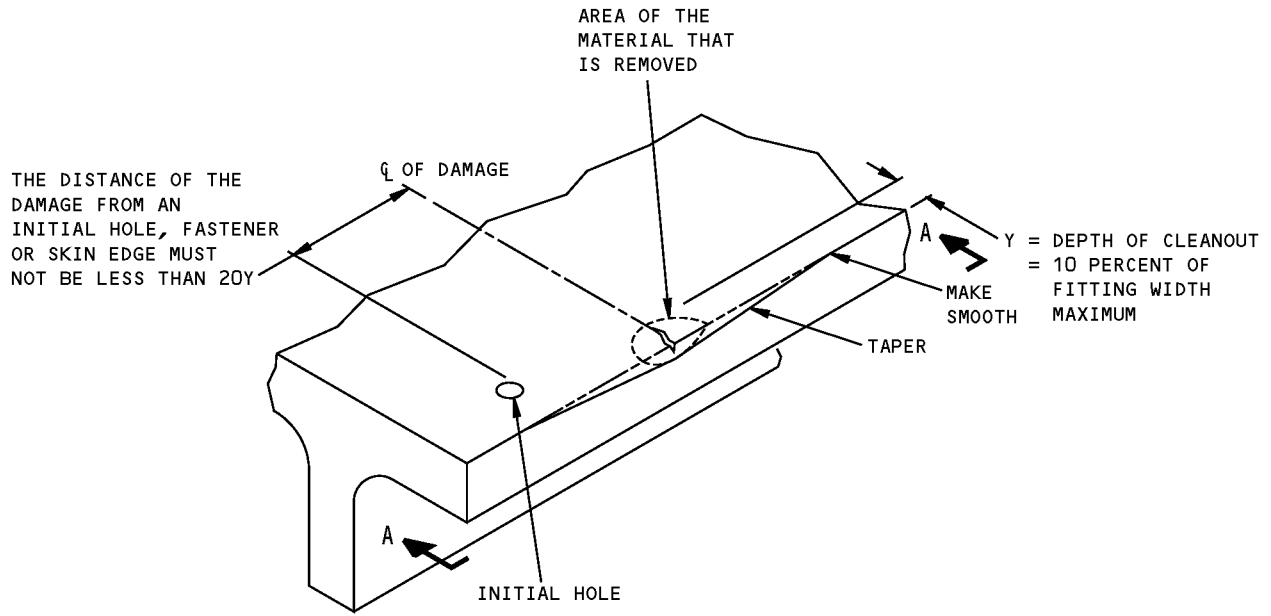


DAMAGE CLEAN UP FOR EDGES OF LUG

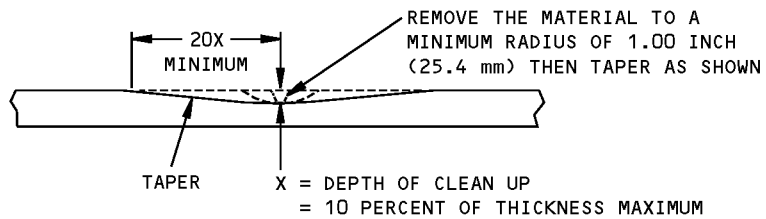
DETAIL IV

**Allowable Damage - Horizontal Stabilizer Center Section Attachment Fittings
Figure 101 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**



DETAIL V

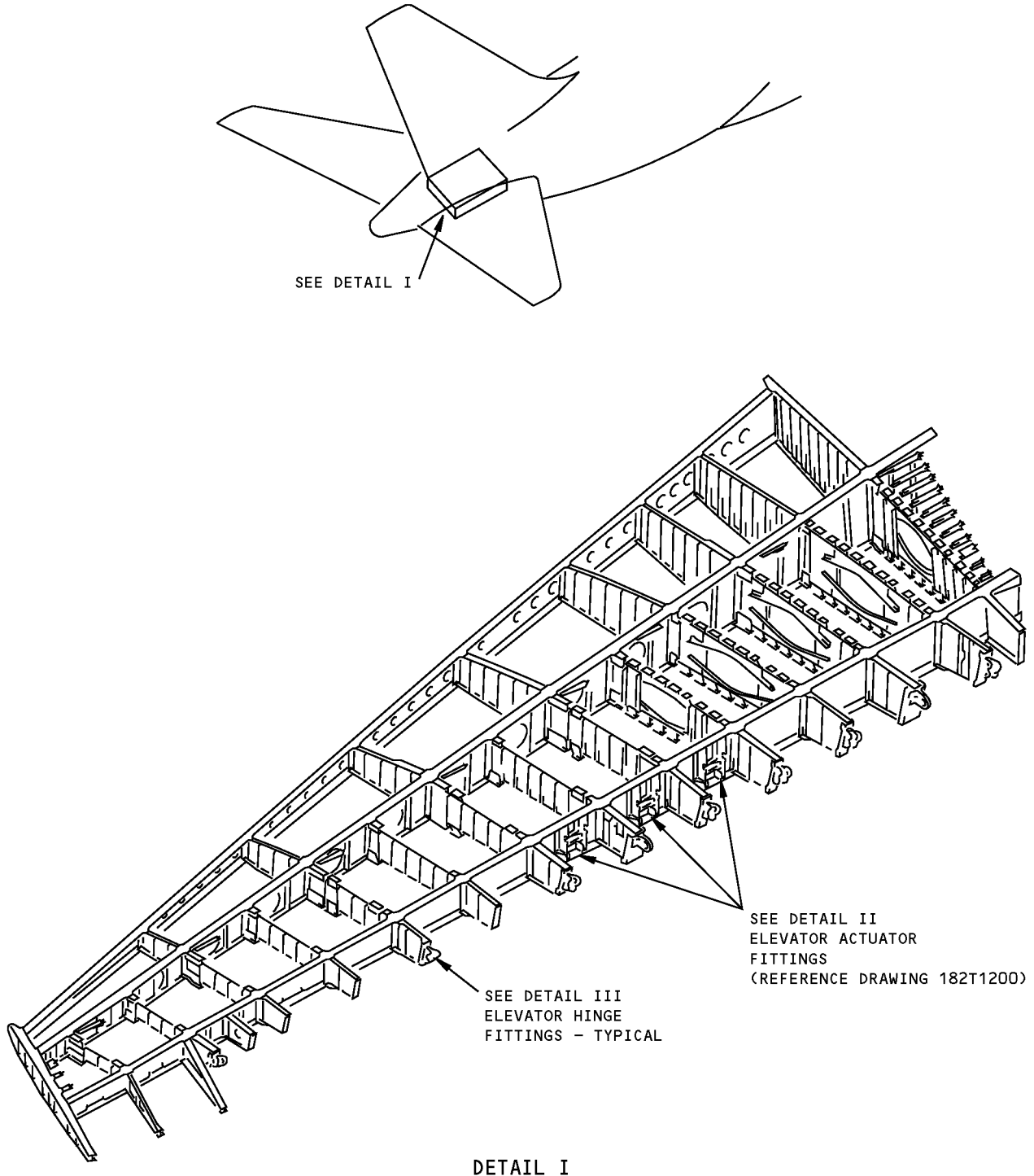


SECTION A-A

**Allowable Damage - Horizontal Stabilizer Center Section Attachment Fittings
Figure 101 (Sheet 4 of 4)**

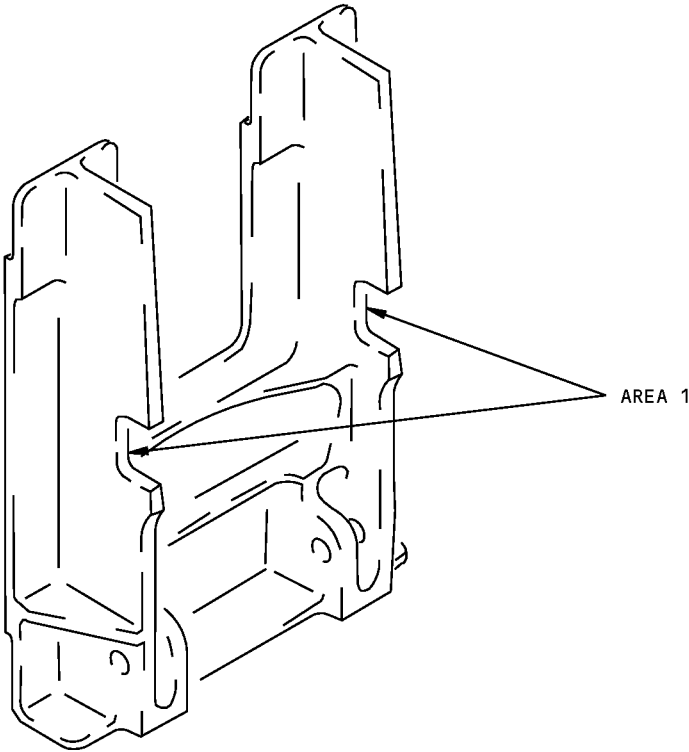
**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 2 - HORIZONTAL STABILIZER ATTACHMENT FITTINGS

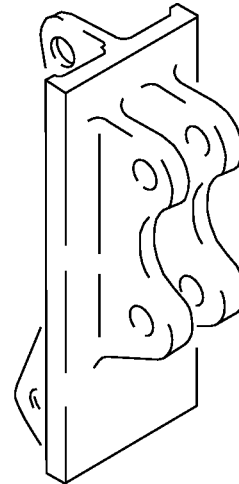


**Allowable Damage - Horizontal Stabilizer Attachment Fittings
Figure 101 (Sheet 1 of 4)**

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STRUCTURAL REPAIR MANUAL**



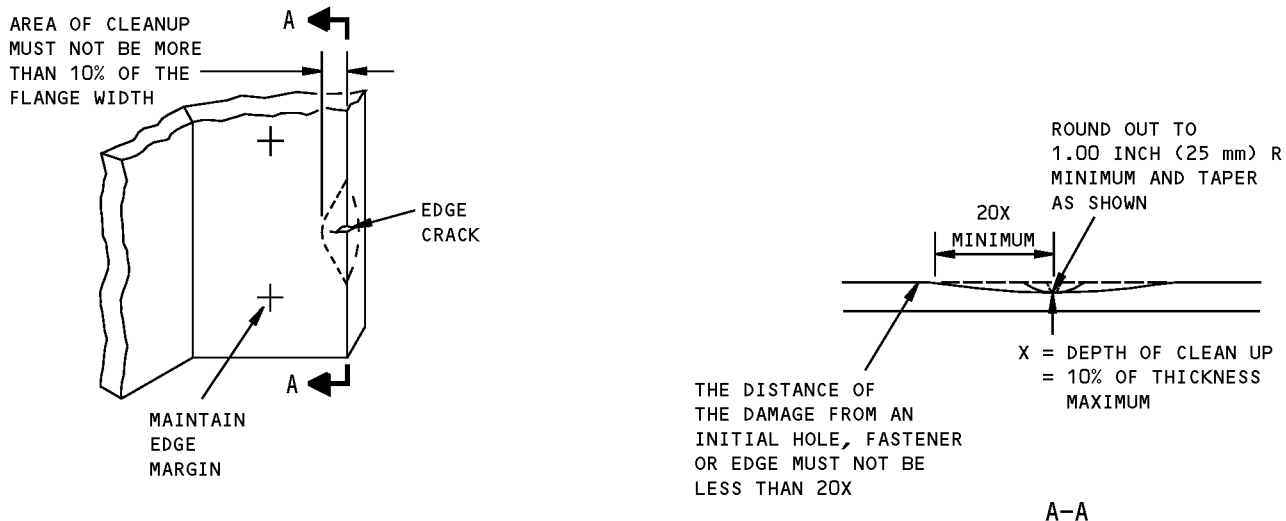
**ELEVATOR ACTUATOR FITTING
DETAIL II**



**HINGE FITTING
DETAIL III**

**Allowable Damage - Horizontal Stabilizer Attachment Fittings
Figure 101 (Sheet 2 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**



DETAIL IV

FITTING	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES
ACTUATOR FITTING	[A] [C]	FOR EDGE DAMAGE SEE DETAIL V FOR OTHER DAMAGE SEE DETAIL VI [C] FOR LUG DAMAGE SEE DETAIL VII [B]	NOT PERMITTED	NOT PERMITTED
HINGE FITTING	[A]	FOR EDGE DAMAGE SEE DETAIL V FOR OTHER DAMAGE SEE DETAIL VI FOR LUG DAMAGE SEE DETAIL VII [B]	NOT PERMITTED	NOT PERMITTED

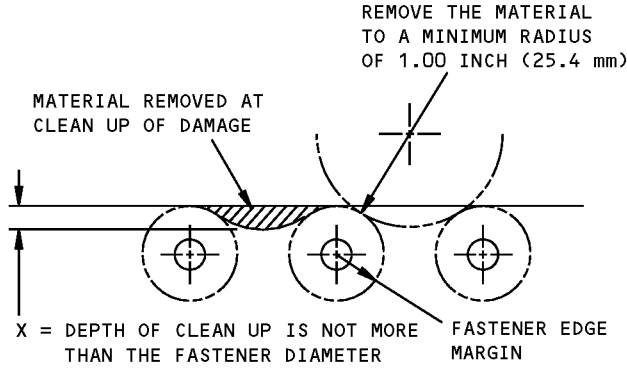
NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

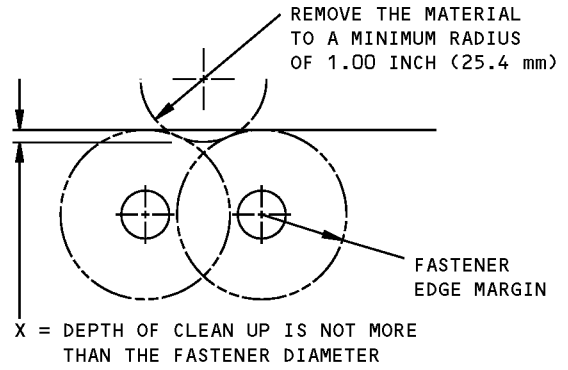
- [A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAIL IV.
- [B] DAMAGE IS NOT PERMITTED NEAR BUSHINGS.
- [C] DAMAGE IS NOT PERMITTED IN AREA I. SEE DETAIL II.

**Allowable Damage - Horizontal Stabilizer Attachment Fittings
Figure 101 (Sheet 3 of 4)**

STRUCTURAL REPAIR MANUAL

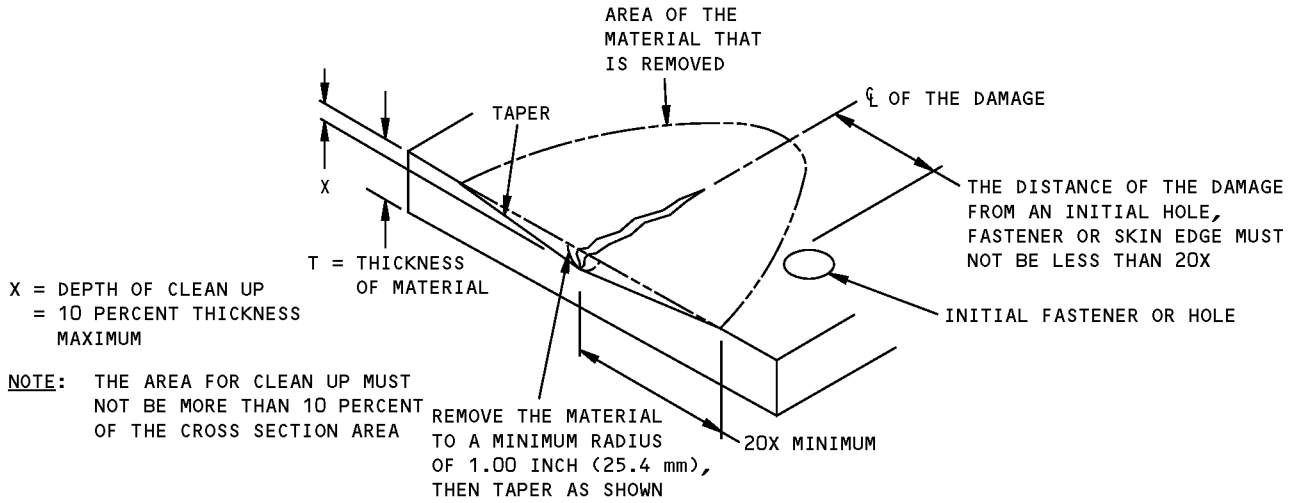


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

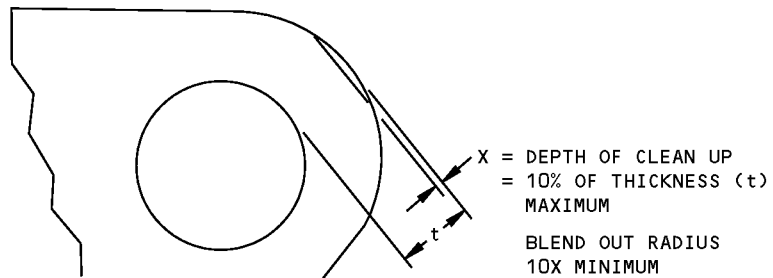


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

**REMOVAL OF DAMAGED MATERIAL ON AN EDGE
DETAIL V**



**REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL VI**

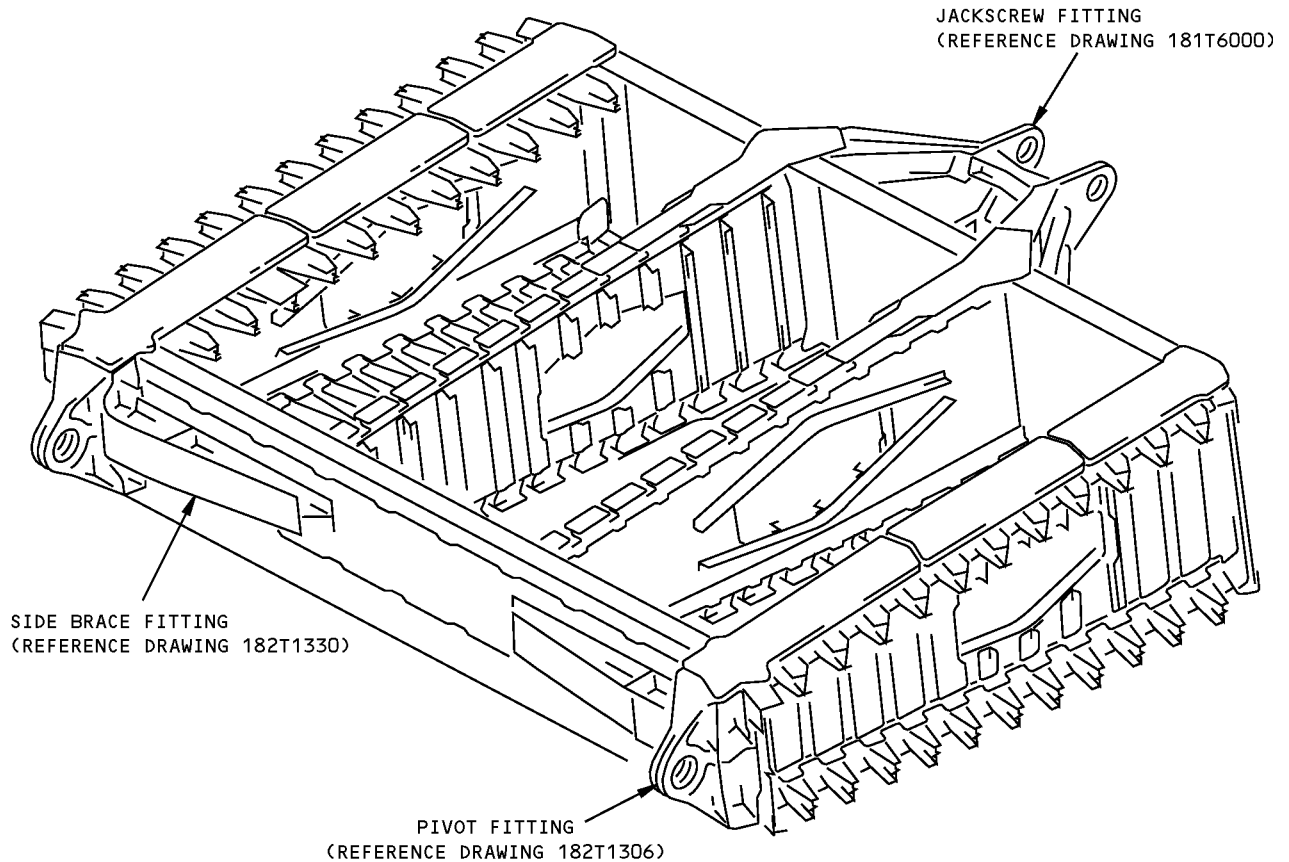


**DAMAGE CLEAN UP FOR EDGES OF LUG
DETAIL VII**

**Allowable Damage - Horizontal Stabilizer Attachment Fittings
Figure 101 (Sheet 4 of 4)**

767-300
STRUCTURAL REPAIR MANUAL

REPAIR 1 - HORIZONTAL STABILIZER CENTER SECTION ATTACHMENT FITTINGS



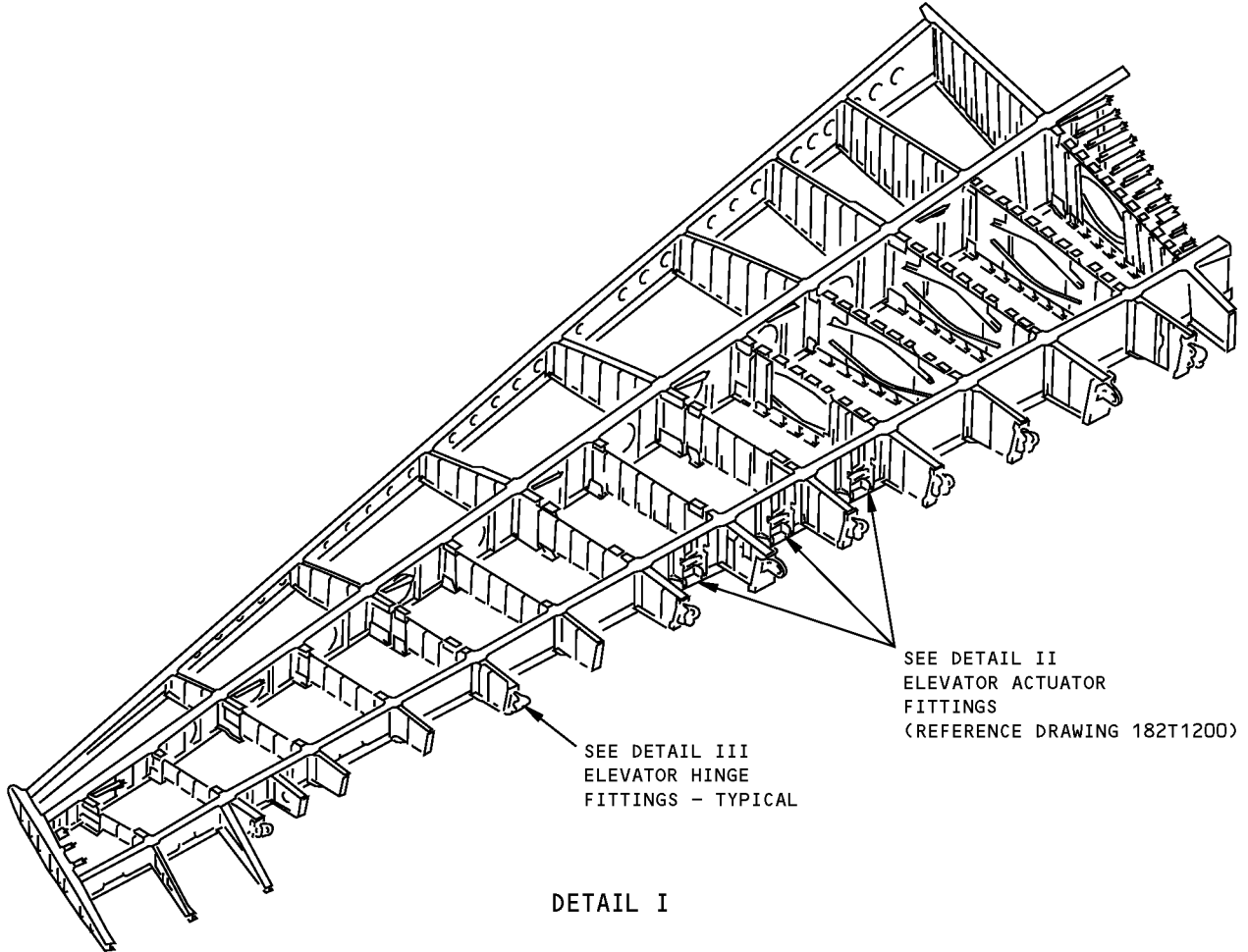
NOTES

- THERE ARE NO TYPICAL REPAIRS TO FITTINGS AVAILABLE. SPECIFIC REPAIRS TO FITTINGS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 55-10-90 FOR CENTER SECTION ATTACHMENT FITTINGS IDENTIFICATION.

Horizontal Stabilizer Center Section Attachment Fittings Repair
Figure 201

767-300
STRUCTURAL REPAIR MANUAL

REPAIR 2 - HORIZONTAL STABILIZER ATTACHMENT FITTINGS

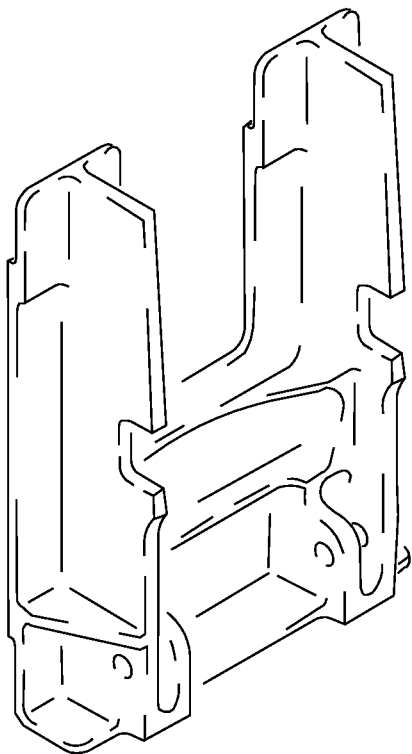


NOTES

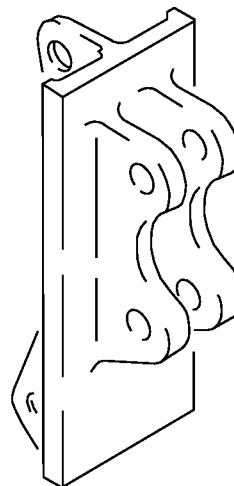
- THERE ARE NO TYPICAL REPAIRS TO FITTINGS AVAILABLE. SPECIFIC REPAIRS TO FITTINGS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 55-10-10 FOR HORIZONTAL STABILIZER SPAR IDENTIFICATION.

Horizontal Stabilizer Attachment Fittings Repair
Figure 201 (Sheet 1 of 2)

**767-300
STRUCTURAL REPAIR MANUAL**



**ELEVATOR ACTUATOR FITTING
DETAIL II**

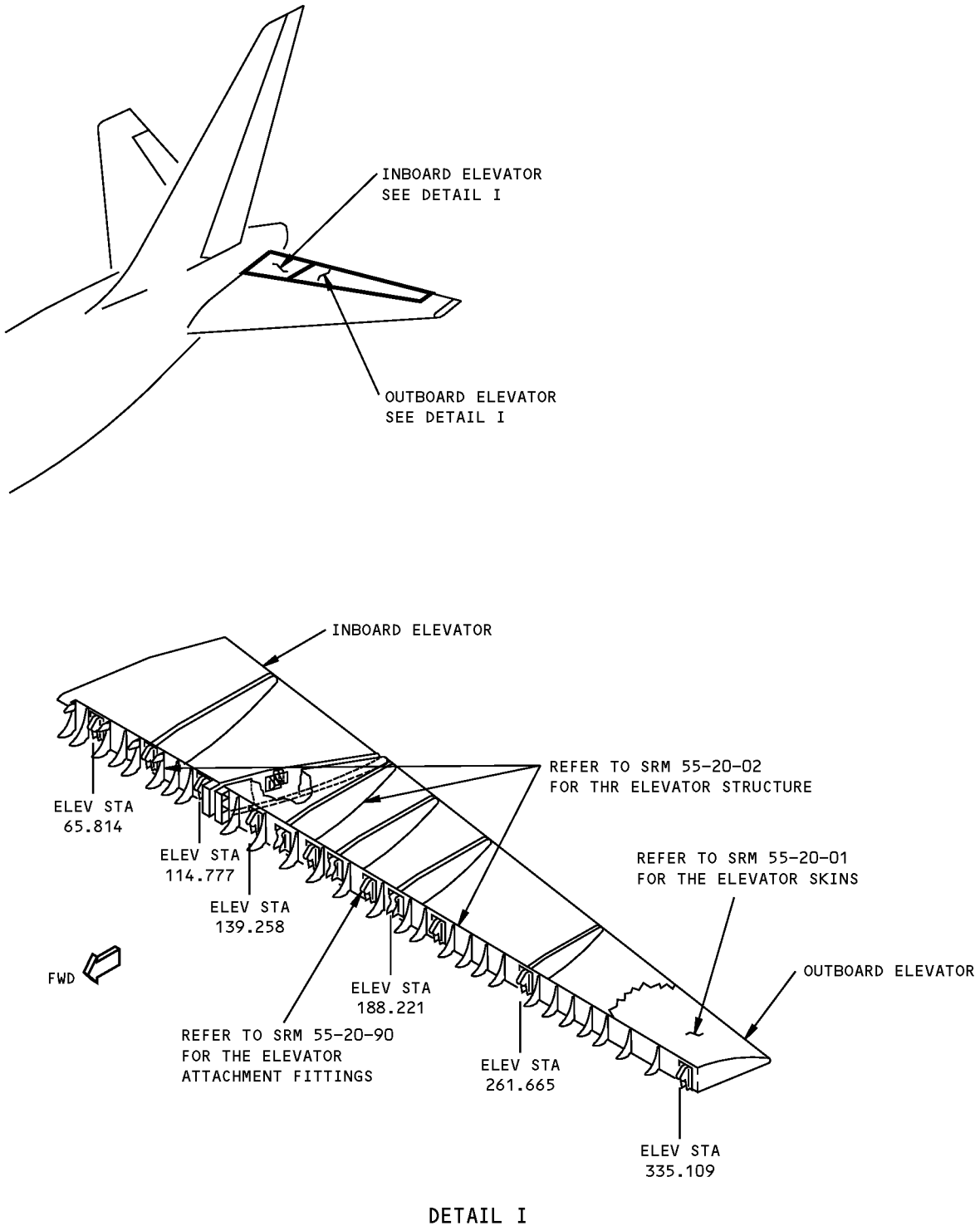


**HINGE FITTING
DETAIL III**

**Horizontal Stabilizer Attachment Fittings Repair
Figure 201 (Sheet 2 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

GENERAL - ELEVATOR STRUCTURAL DIAGRAM



**Elevator Structure Diagram
Figure 1**

D634T210

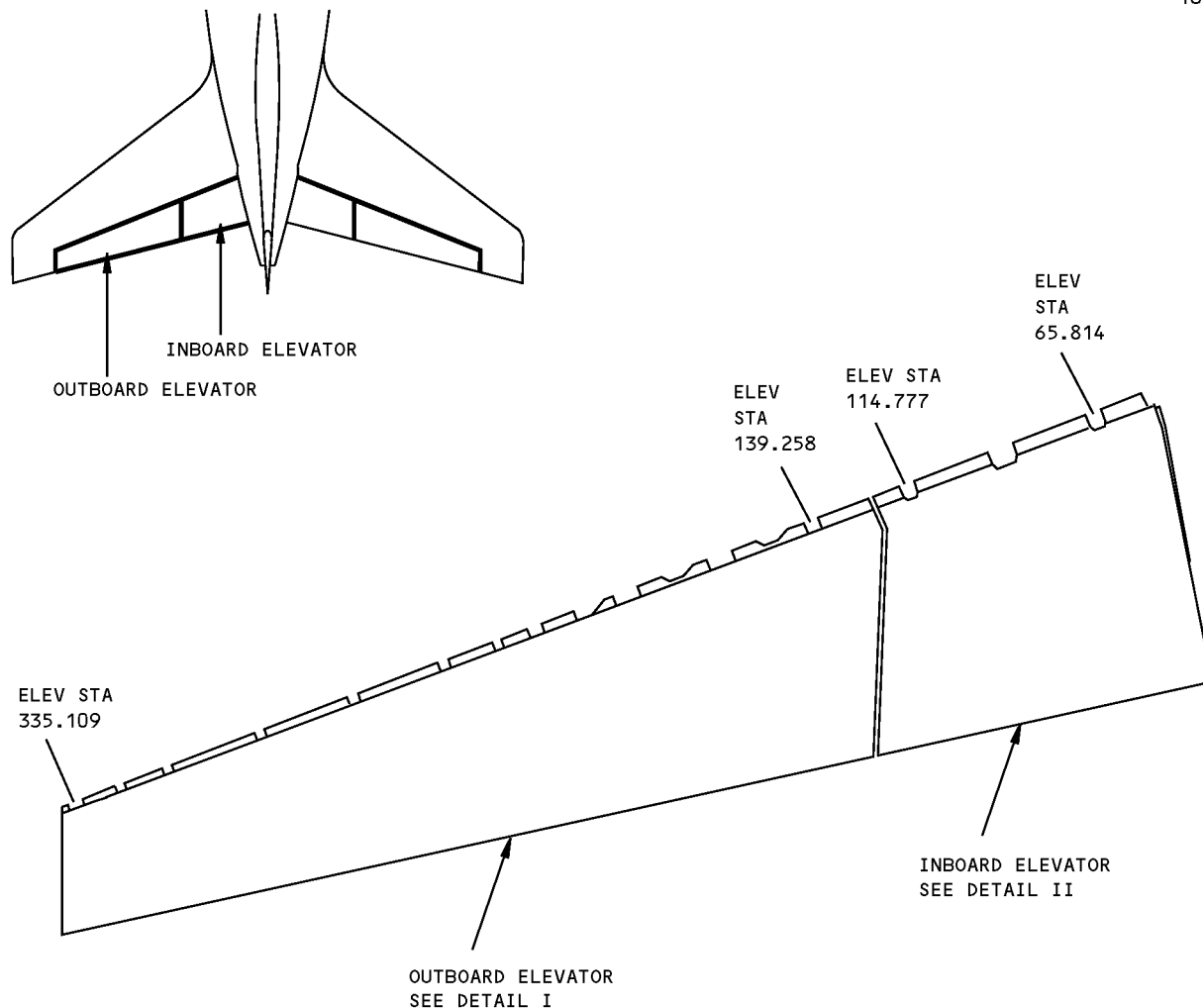
55-20-00

GENERAL
Page 1
Apr 01/2005

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - ELEVATOR SKIN

REFERENCE DRAWING
183T2009
183T2001
183T3001

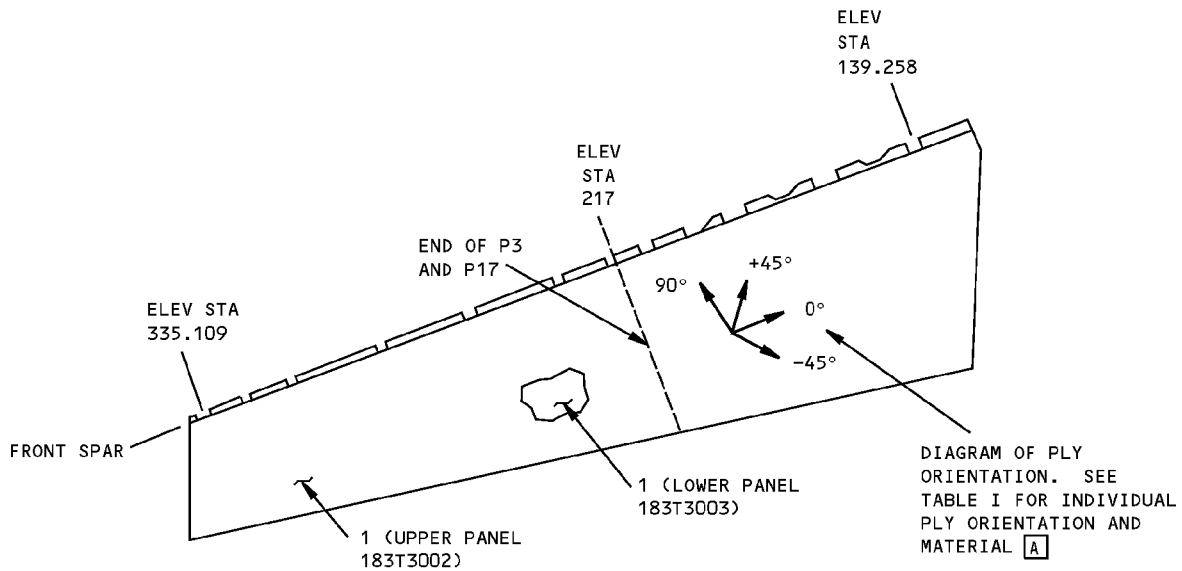


NOTES

- [A]** PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION
- [B]** GRAPHITE/EPOXY PREPREG FABRIC PER BMS 8-212, TYPE IV, CLASS 2 STYLE 3K-70-PW, 350°F (177°C) CURE
- [C]** GRAPHITE/EPOXY PREPREG TAPE PER BMS 8-212, TYPE III, CLASS 1, GRADE 95, 350°F (177°C) CURE

**Elevator Skin Identification
Figure 1 (Sheet 1 of 3)**

767-300 STRUCTURAL REPAIR MANUAL

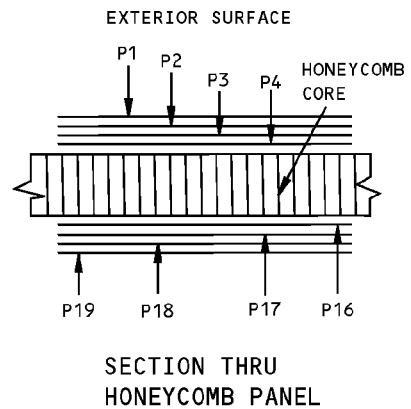


OUTBOARD ELEVATOR

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	ELEVATOR PANEL SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL I NON-METALLIC HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS

ITEM	PLY NO.	MATERIAL	PLY ORIENTATION	A
1	P1	B	+45°	
	P2	C	90°	
	P3	C	90°	
	P4	B	+45°	
	P16	B	+45°	
	P17	C	90°	
	P18	C	90°	
	P19	B	+45°	



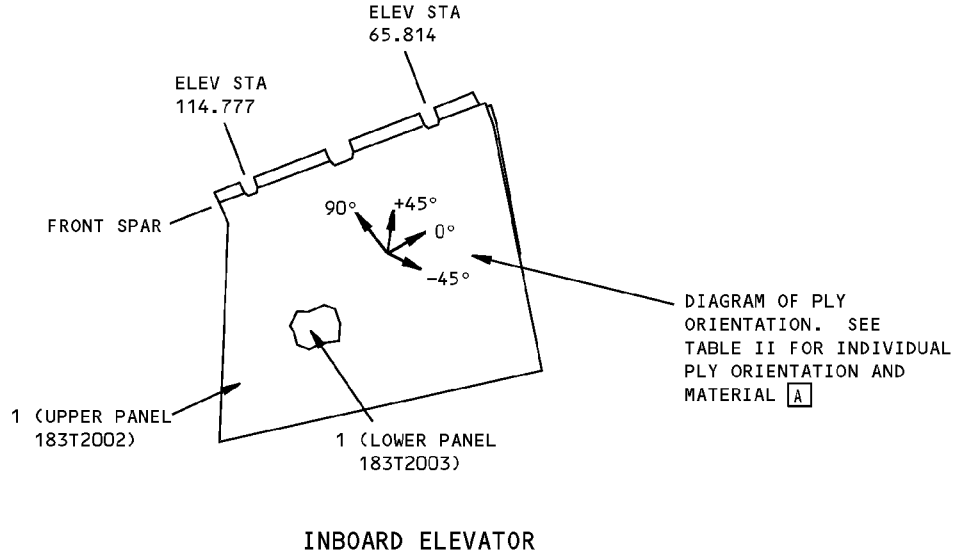
MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY.
SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS

TABLE I

DETAIL I

Elevator Skin Identification Figure 1 (Sheet 2 of 3)

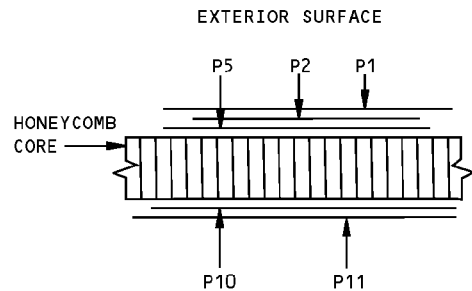
**767-300
STRUCTURAL REPAIR MANUAL**



ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	ELEVATOR PANEL CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH NONMETALLIC HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0.	

LIST OF MATERIALS

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
1	P1	[B]	0°
	P2	[B]	±45°
	P5	[B]	±45°
	P10	[B]	±45°
	P11	[B]	0°



SECTION THRU HONEYCOMB PANEL

MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY.
SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS

TABLE II

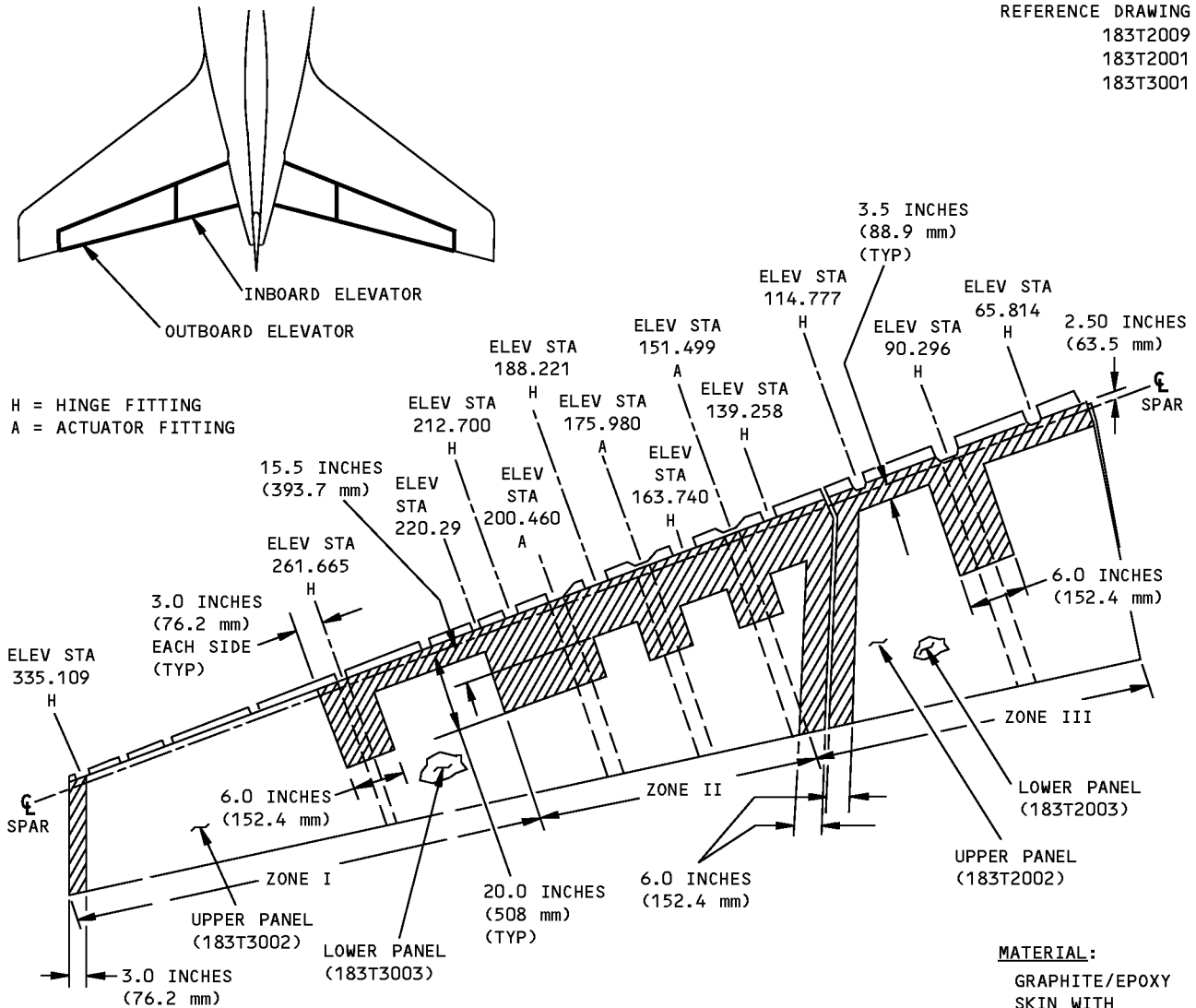
DETAIL II

**Elevator Skin Identification
Figure 1 (Sheet 3 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - ELEVATOR SKIN

REFERENCE DRAWING
183T2009
183T2001
183T3001



CRITICAL AREA CONTACT THE BOEING COMPANY FOR ALLOWABLE DAMAGE

MATERIAL:
GRAPHITE/EPOXY
SKIN WITH
NON-METALLIC
HONEYCOMB CORE

LOCATION	CRACKS	NICKS AND GOUGES	DENTS	HOLES AND PUNCTURES	DELAMINATION
SKIN PANEL ZONE I	A	D	G	A	A
ZONE II	B	E	G	B	B
ZONE III	C	F	G	C	C

TABLE 1

**Allowable Damage - Elevator Skin
Figure 101 (Sheet 1 of 3)**

STRUCTURAL REPAIR MANUAL

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20-00
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO LOSS OF PERFORMANCE INVOLVED
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE

A DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC. WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND II. 2.00 INCHES (50 mm) MAX DIA ALLOWED FOR SINGLE DAMAGE SITE IN HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF $a/D = 3.0$. SEE DETAIL III FOR DAMAGE CRITERIA. DAMAGE ALLOWED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE NOT REWORKED AS GIVEN IN **H**

B DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC. WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND II. 1.50 INCHES (38 mm) MAX DIA ALLOWED FOR SINGLE DAMAGE SITE IN HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF $a/D = 3.0$. REFER TO DETAIL III FOR DAMAGE CRITERIA. DAMAGE ALLOWED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE NOT REWORKED AS GIVEN IN **H**

C DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC. WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE AS SHOWN IN DETAILS I AND II. 1.20 INCHES (30.5 mm) MAX DIA ALLOWED FOR SINGLE DAMAGE SITE IN HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF $a/D = 3.0$. SEE DETAIL III FOR DAMAGE CRITERIA. DAMAGE ALLOWED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE NOT REWORKED AS GIVEN IN **H**

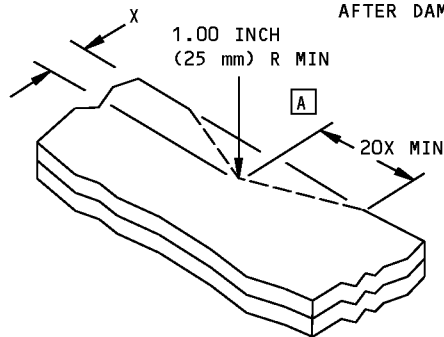
D DAMAGE ALLOWED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE AS GIVEN IN DETAILS I AND II. REFER TO FOR FIBER **A** DAMAGE IN OTHER AREAS

E DAMAGE ALLOWED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE AS GIVEN IN DETAILS I AND II. REFER TO **B** FOR FIBER DAMAGE IN OTHER AREAS

F DAMAGE ALLOWED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE AS GIVEN IN DETAILS I AND II. REFER TO **C** FOR FIBER DAMAGE IN OTHER AREAS

G DENTS RESULT IN DELAMINATION AND FIBER DAMAGE AND MUST BE TREATED AS A HOLE OR PUNCTURE DAMAGE

H REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH 50 FLIGHTS. REPLACE THE ALUMINUM FOIL TAPE IF ANY PEELING OR DETERIORATION IS EVIDENT. REPAIR NO LATER THAN 300 FLIGHTS AFTER DAMAGE

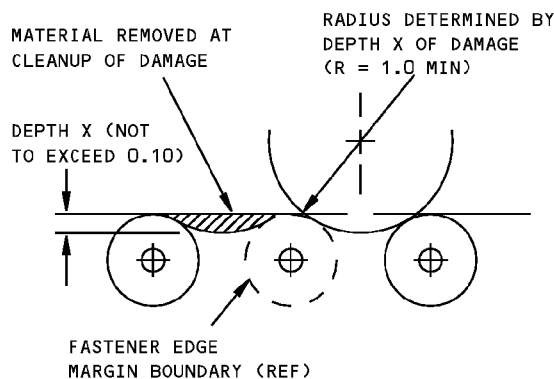


X = DEPTH OF CLEANUP = 0.10 INCH (2.5 mm) MAX

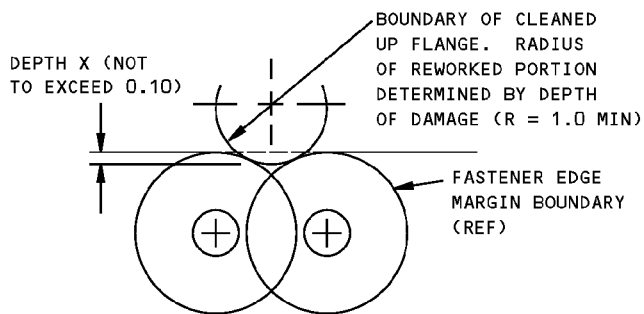
DETAIL I

Allowable Damage - Elevator Skin
Figure 101 (Sheet 2 of 3)

STRUCTURAL REPAIR MANUAL

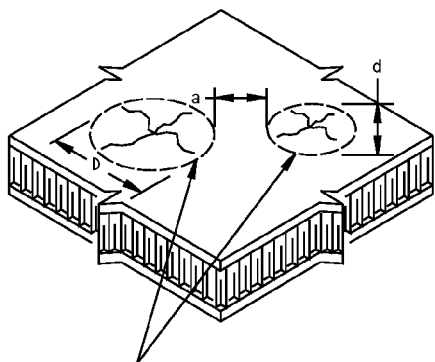


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

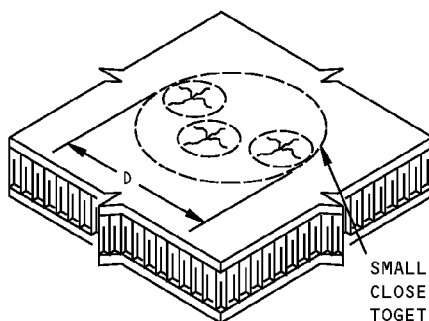


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL II



ADJACENT DAMAGE SITES ON SURFACE OF COMPOSITE PANEL



SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE

- DAMAGE TO COMPOSITE PANELS EXPOSED TO MULTIPLE IMPACTS, I.E., HAIL DAMAGE, CAN BE DETECTED BY USING INSTRUMENTED NON-DESTRUCTIVE INSPECTION METHODS OR BY TAPPING THE SUSPECTED DAMAGE AREA WITH A SMALL METALLIC DISK OBJECT. INSPECTION SHOULD COVER THE AREA WITHIN 3 DIAMETERS AROUND THE EDGE OF THE VISIBLE DAMAGE SITE. FOR TAP TEST, USE A SOLID METAL DISK AND TAP THE DAMAGE AREA LIGHTLY BUT FIRMLY. VOID AREAS SHOULD PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA
- DAMAGE SITE IS ANY SINGLE AREA OF A PANEL WHERE A DENT, CRACK, DELAMINATION, PUNCTURE OR ANY COMBINATION OF THESE EXIST. SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE

- "d" IS DETERMINED BY MEASURING THE DIAMETER OF A CIRCLE DRAWN AROUND DENT, CRACK, OR OTHER DAMAGE, WHICHEVER IS GREATER
- "a" IS THE DISTANCE BETWEEN TWO ADJACENT DAMAGE SITES
- "d" IS THE DIAMETER OF THE SMALLER OF TWO ADJACENT DAMAGE SITES
- CALCULATE a/D BY DIVIDING DISTANCE "a" BY DIAMETER "d"
- DAMAGE IS ALLOWED WHEN "d" IS EQUAL TO OR LESS THAN THE MAXIMUM ALLOWABLE "d" FROM TABLE I AND WHEN a/D IS EQUAL TO OR GREATER THAN THE MINIMUM a/D GIVEN IN TABLE I

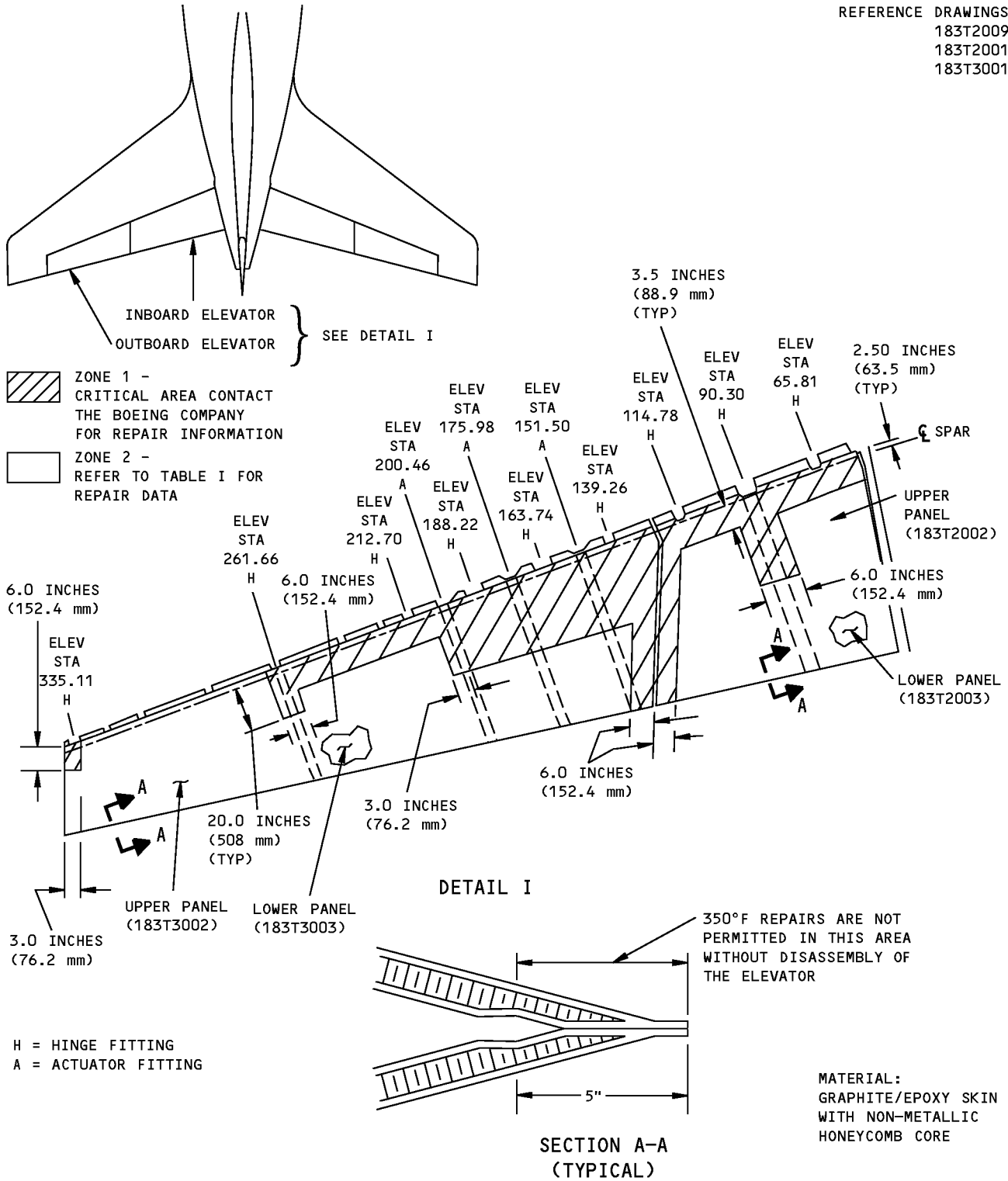
DAMAGE SIZING AND SPACING DATA FOR COMPOSITE PANELS
DETAIL III

Allowable Damage - Elevator Skin
Figure 101 (Sheet 3 of 3)

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 1 - ELEVATOR SKIN

REFERENCE DRAWINGS
183T2009
183T2001
183T3001



**Elevator Skin Repairs
Figure 201 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200°F-230°F (93°C-110°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05) [D]	350°F (177°C) CURE (SRM 51-70-04)
CRACKS	UP TO 2.0 INCHES (50 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03. [A]	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.
HOLES	2.0 INCHES (50 mm) MAX DIA, NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03. [A]	10.0 INCHES (250 mm) MAX DIA, NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLYS FOR EACH FACESHEET REPAIRED. [C]	5.0 INCHES (125 mm) MAX DIA, NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLYS FOR EACH FACESHEET REPAIRED. [C]	NO SIZE LIMIT
DELAMI-NATION	CUT OUT AND REPAIR AS A HOLE.			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03. IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			
DENTS	UP TO 2.0 INCHES (50 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03. OVER 2.0 INCHES (50 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			

**REPAIR DATA FOR ZONE 2
350°F (177°C) CURE GRAPHITE HONEYCOMB PANELS**

TABLE I

NOTES

- FINISH REWORKED AREAS AS GIVEN IN AMM 51-20.
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFER TO SRM 51-20-01 FOR THE REPAIR OF FINISH CRACKS ON GRAPHITE COMPOSITE PARTS.
- REFER TO SRM 51-60-02 FOR BALANCING REQUIREMENTS.

[A] LIMITED TO REPAIR OF DAMAGE TO ONE FACE-SHEET SKIN AND HONEYCOMB CORE. ONE REPAIR PER SQUARE FOOT OF AREA AND MINIMUM OF 6.0 INCHES (150 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL.

[B] INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EVERY AIRPLANE "A" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.

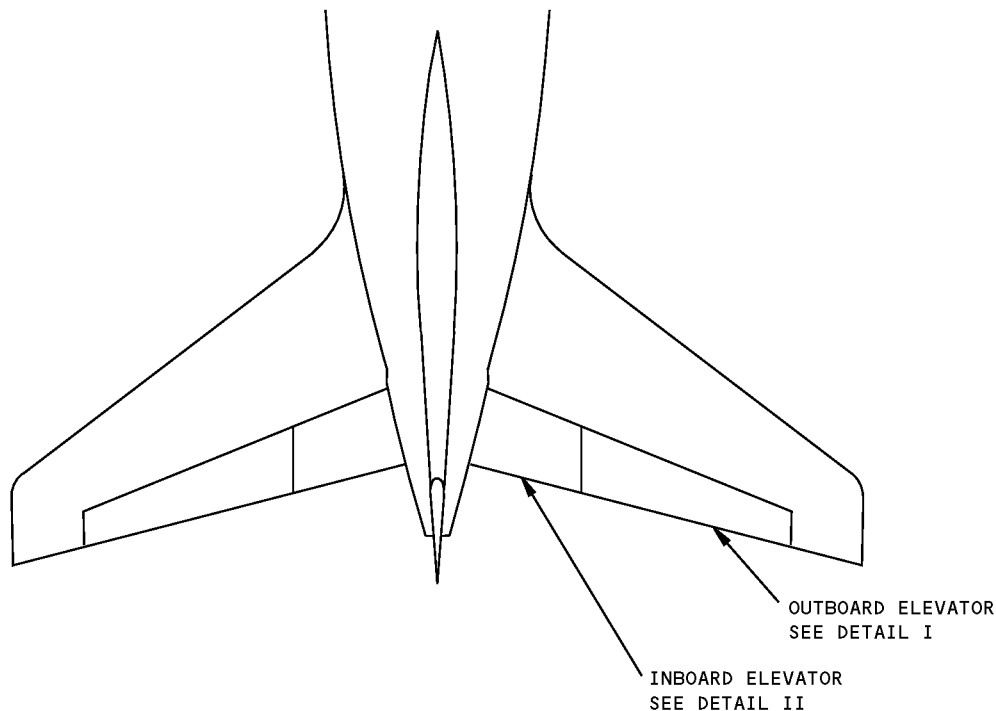
[C] ONE REPAIR PER SQUARE FOOT OF AREA AND A MINIMUM OF 6.00 INCHES (150 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL.

[D] FOR 250°F (121°C) PREPREG REPAIR OF 350°F (177°C) GRAPHITE STRUCTURE USE BMS 8-168 TYPE II TAPE OR FABRIC. THE CLASS, GRADE AND STYLE SHALL BE THE SAME AS THE INITIAL PLYS.

**Elevator Skin Repairs
Figure 201 (Sheet 2 of 2)**

767-300
STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - ELEVATOR STRUCTURE



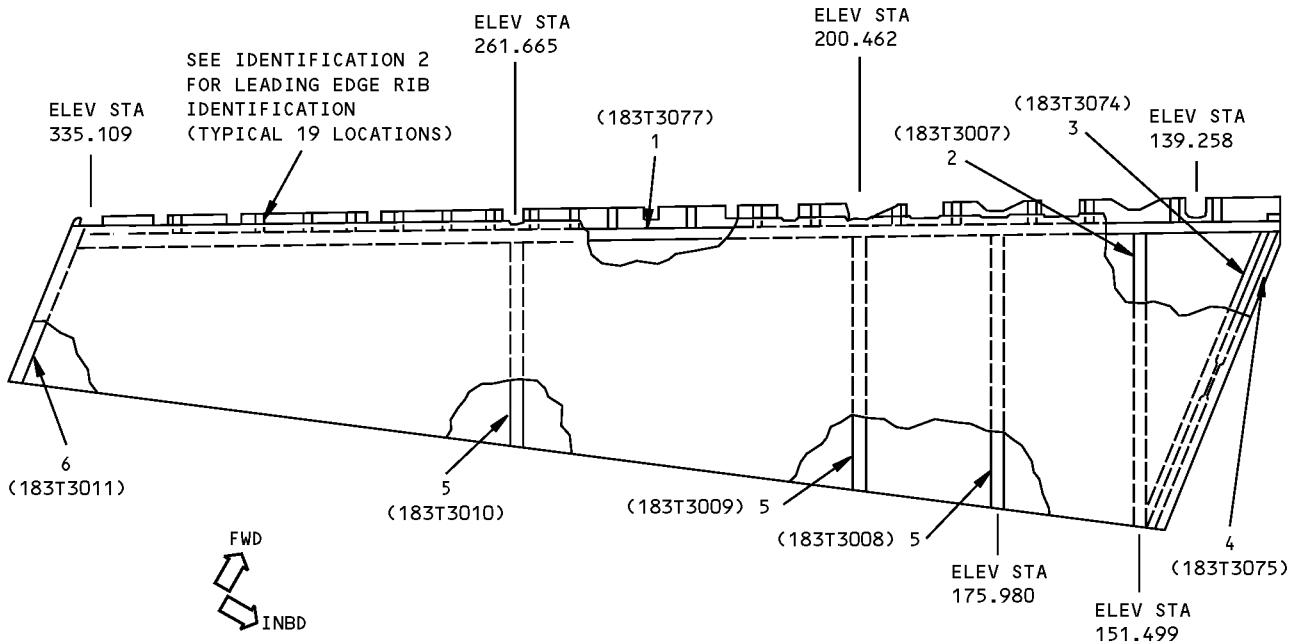
NOTES

- [A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION
- [B] FIBERGLASS PREPREG PER BMS 8-139, TYPE 120, 350°F (177°C) CURE
- [C] GRAPHITE/EPOXY PREPREG FABRIC PER BMS 8-212, TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE
- [D] GRAPHITE/EPOXY PREPREG FABRIC PER BMS 8-212, TYPE III, CLASS 2, STYLE 3K-135-8H, 350°F (177°C) CURE
- [E] DIAGRAM OF PLY ORIENTATION. SEE PLY TABLE FOR PLY ORIENTATION
- [F] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BAND AND AREAS WITH DOUBLERS
- [G] PLY P1 USED ONLY IN AREAS WHERE RIBS AND FITTINGS ARE ATTACHED TO SPAR. REFER TO BOEING DRAWING

**Elevator Structure Identification
Figure 1 (Sheet 1 of 7)**

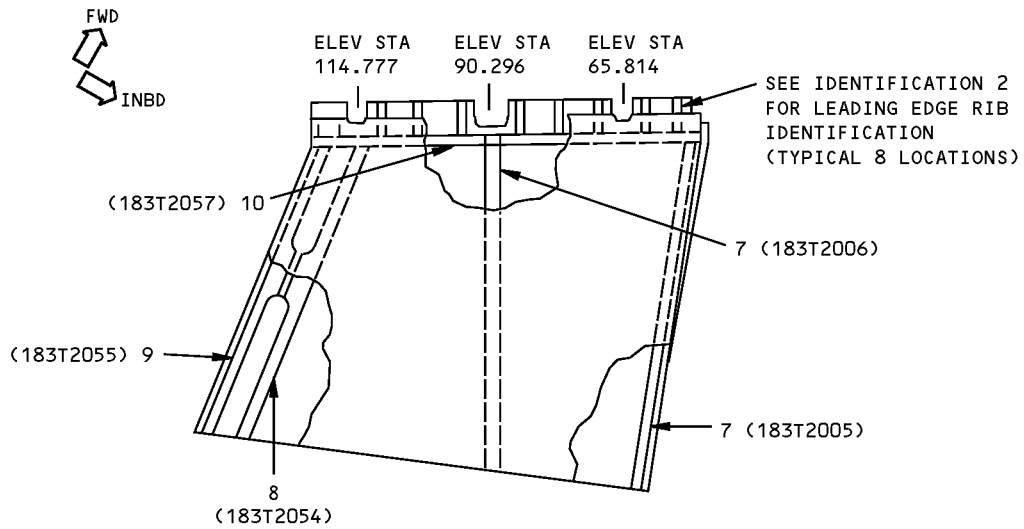
**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
183T3001



**OUTBOARD ELEVATOR
DETAIL I**

REFERENCE DRAWING
183T2001



**INBOARD ELEVATOR
DETAIL II**

LIST OF
MATL

**Elevator Structure Identification
Figure 1 (Sheet 2 of 7)**

IDENTIFICATION 1
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Apr 01/2005

55-20-02

D634T210



**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SPAR ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL III NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
2	RIB ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	RIB ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL IV NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
4	RIB ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL V NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
5	SPAR ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
6	RIB ASSY		GRAPHITE/EPOXY LAMINATE SEE DETAIL VII	
7	RIB ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VIII NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
8	RIB ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL IX NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
9	RIB ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
10	SPAR ASSY SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL X NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAILS I AND II

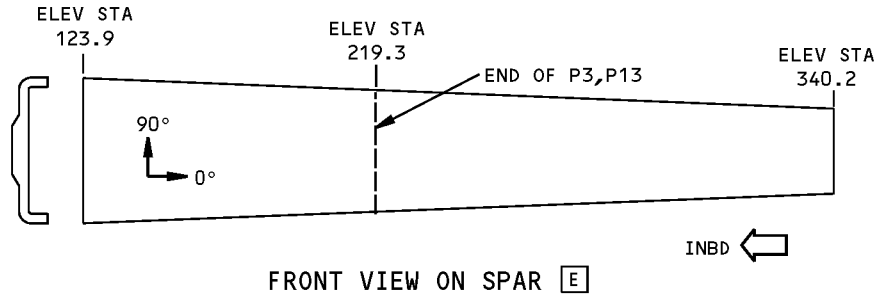
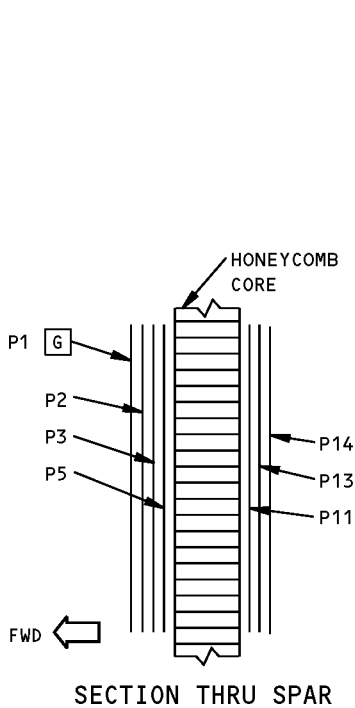
**Elevator Structure Identification
Figure 1 (Sheet 3 of 7)**

IDENTIFICATION 1
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55-20-02

D634T210

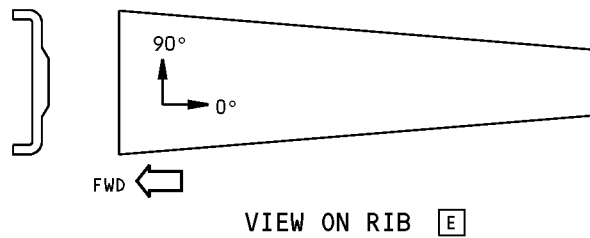
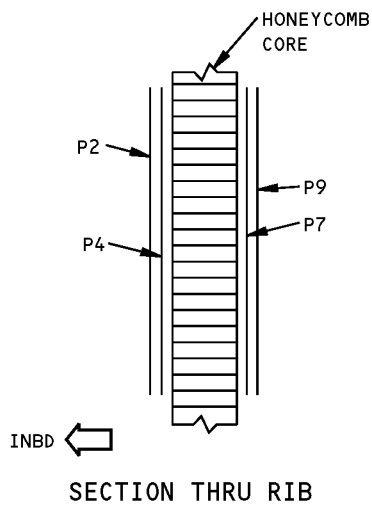
**767-300
STRUCTURAL REPAIR MANUAL**



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
1	P1 [G]	[B]	---
	P2, P5, P11, P14	[C]	+45°
	P3, P13	[D]	+45°

PLY TABLE [F]

DETAIL III



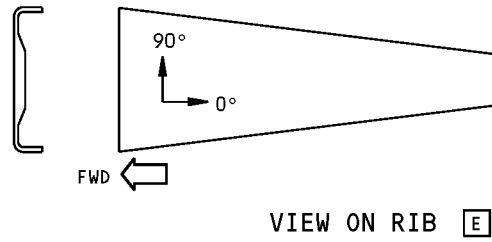
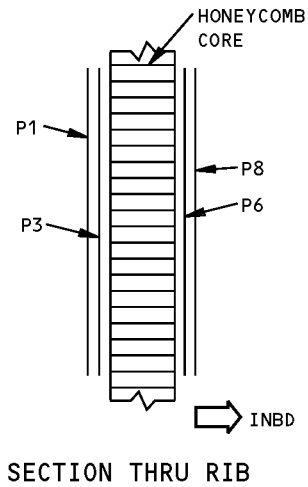
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
3	P2, P9	[C]	0° OR 90°
	P4, P7	[C]	± 45°

PLY TABLE [F]

DETAIL IV

**Elevator Structure Identification
Figure 1 (Sheet 4 of 7)**

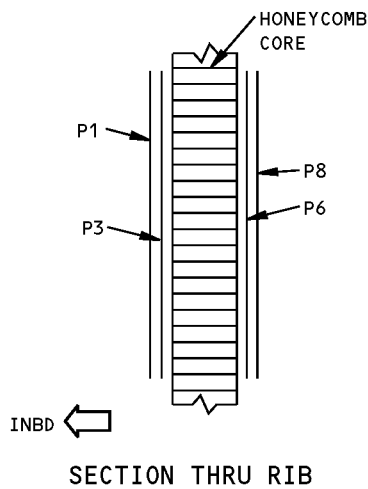
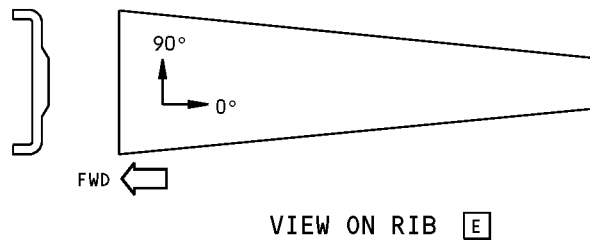
**767-300
STRUCTURAL REPAIR MANUAL**



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
4	P1,P3, P6,P8	C	$\pm 45^\circ$

PLY TABLE **F**

DETAIL V



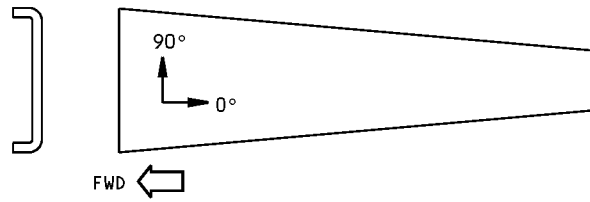
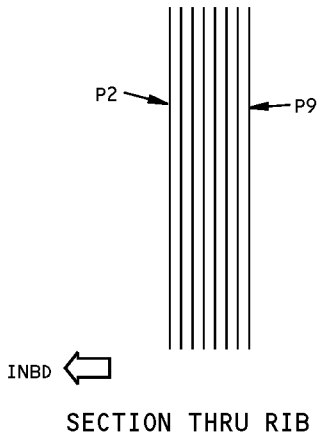
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
2	P1,P8	C	0°
	P3,P6	C	$\pm 45^\circ$
5	P1,P8	C	0° OR 90°
	P3,P6	C	$\pm 45^\circ$
9	P1,P3, P6,P8	C	$\pm 45^\circ$

PLY TABLE **F**

DETAIL VI

**Elevator Structure Identification
Figure 1 (Sheet 5 of 7)**

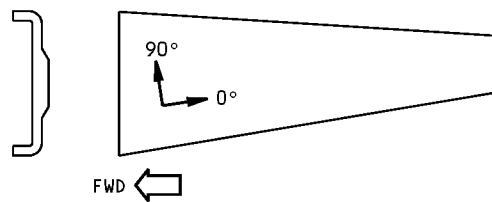
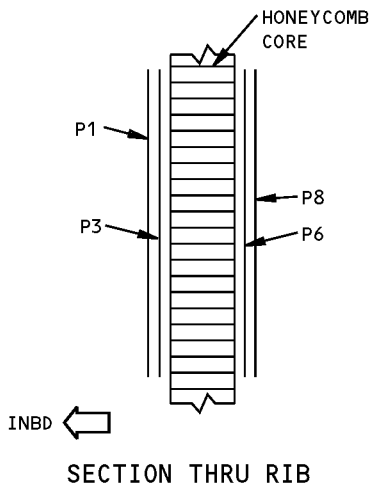
**767-300
STRUCTURAL REPAIR MANUAL**



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION ^A
6	P2	C	0° OR 90°
	P3	D	0° OR 90°
	P4	C	± 45°
	P5	D	± 45°
	P6	D	± 45°
	P7	C	± 45°
	P8	D	0° OR 90°
	P9	C	0° OR 90°

PLY TABLE F

DETAIL VII



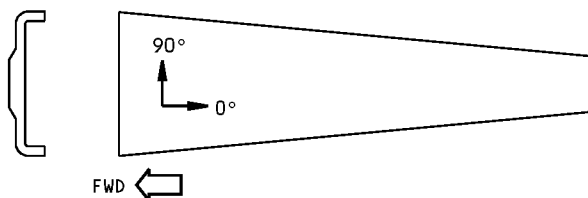
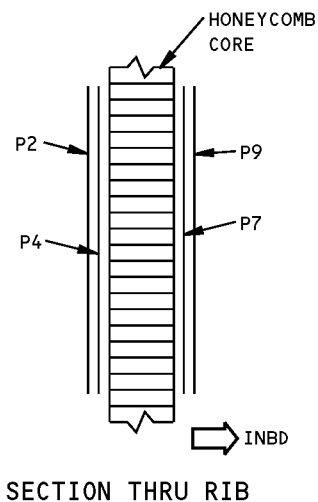
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION ^A
7	P1,P8	C	0°
	P3,P6	C	±45°

PLY TABLE F

DETAIL VIII

**Elevator Structure Identification
Figure 1 (Sheet 6 of 7)**

**767-300
STRUCTURAL REPAIR MANUAL**

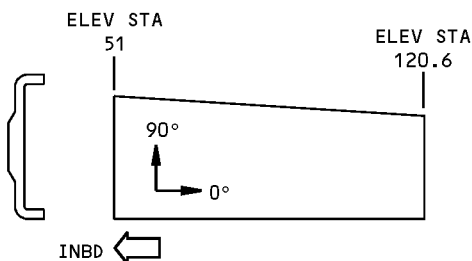
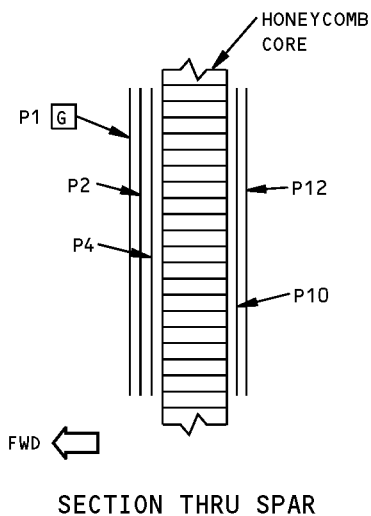


VIEW ON RIB **E**

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
8	P2,P9	C	0°
	P4,P7	C	± 45°

PLY TABLE **F**

DETAIL IX



FRONT VIEW ON SPAR **E**

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
10	P1 G	B	---
	P2,P4,P10,P12	C	+ 45°

PLY TABLE **F**

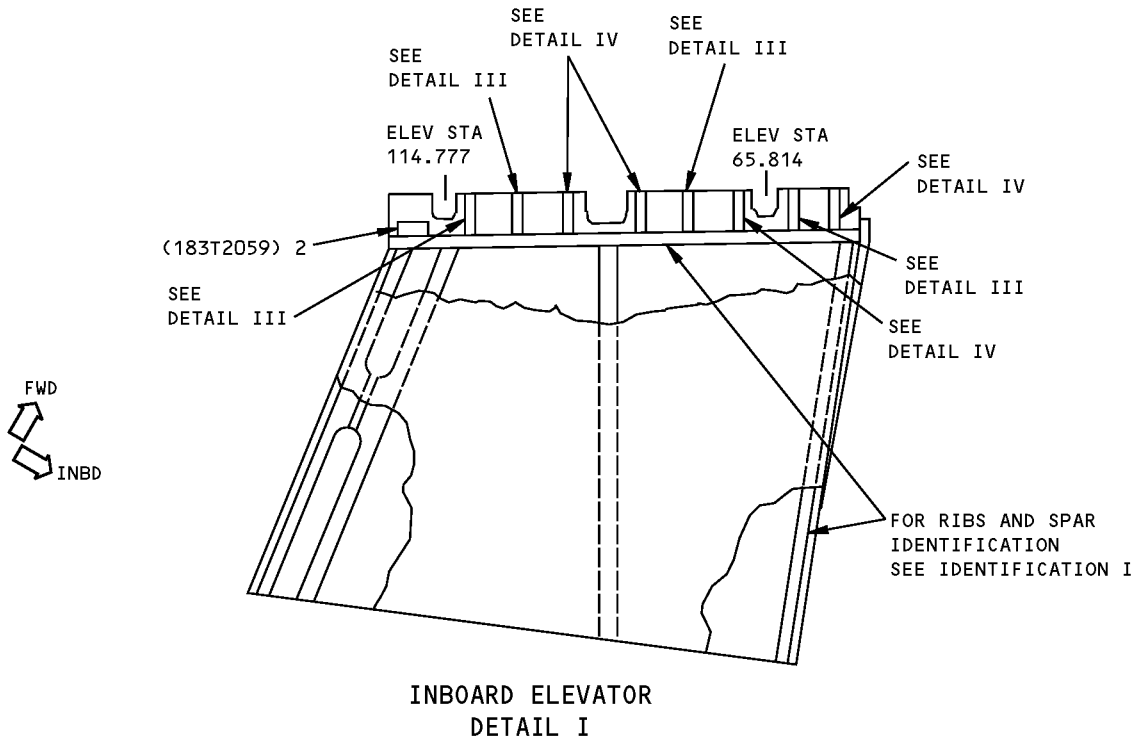
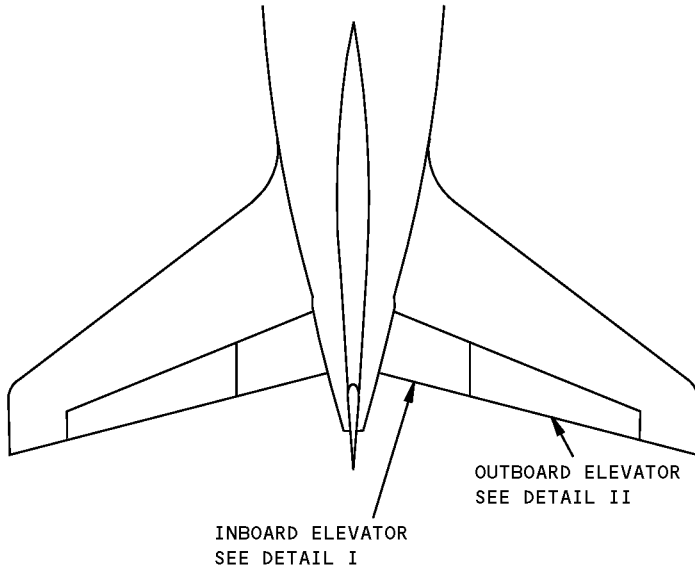
DETAIL X

**Elevator Structure Identification
Figure 1 (Sheet 7 of 7)**

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 2 - ELEVATOR LEADING EDGE RIBS

REFERENCE DRAWING
183T2010

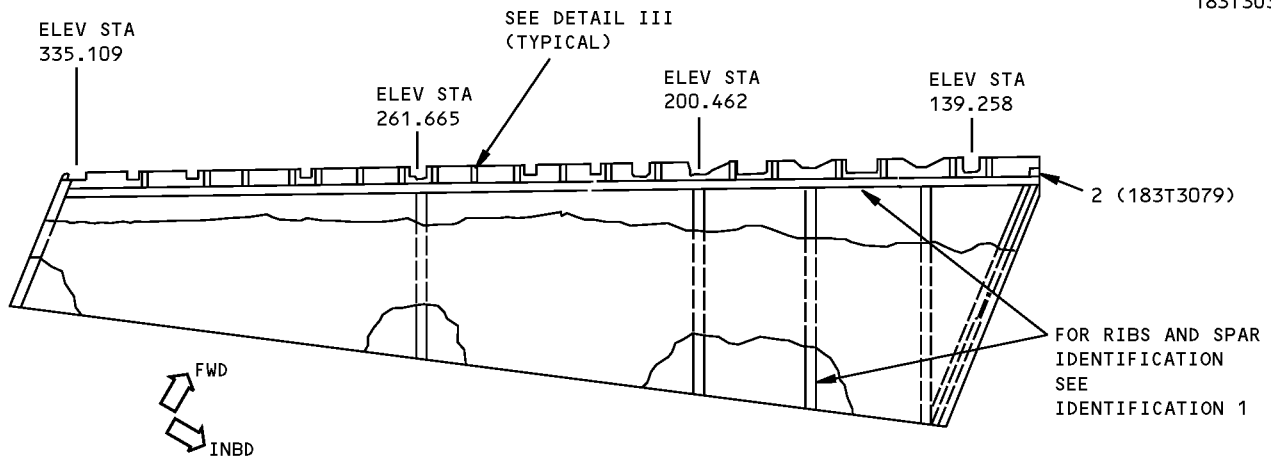


LIST OF
MATL

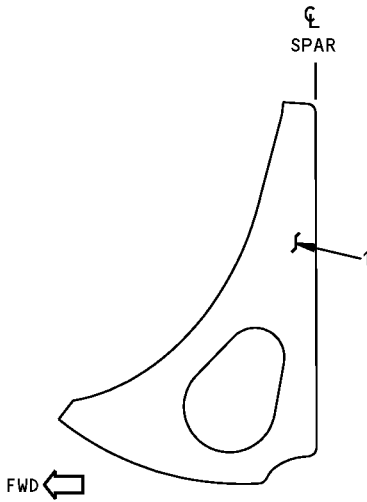
**Elevator Leading Edge Rib Identification
Figure 1 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

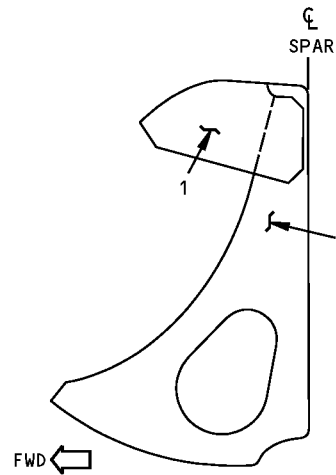
REFERENCE DRAWING
183T3034



**OUTBOARD ELEVATOR
DETAIL II**



**SECTION THRU SPAR
RIB SHOWN ONLY
DETAIL III**



**SECTION THRU SPAR
RIB SHOWN ONLY
DETAIL IV**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB		GRAPHITE/EPOXY LAMINATE	
2	INTERCONNECT RIB	1.500	7075-T7351 PLATE	

LIST OF MATERIALS FOR DETAILS I, II, III AND IV

**Elevator Leading Edge Rib Identification
Figure 1 (Sheet 2 of 2)**

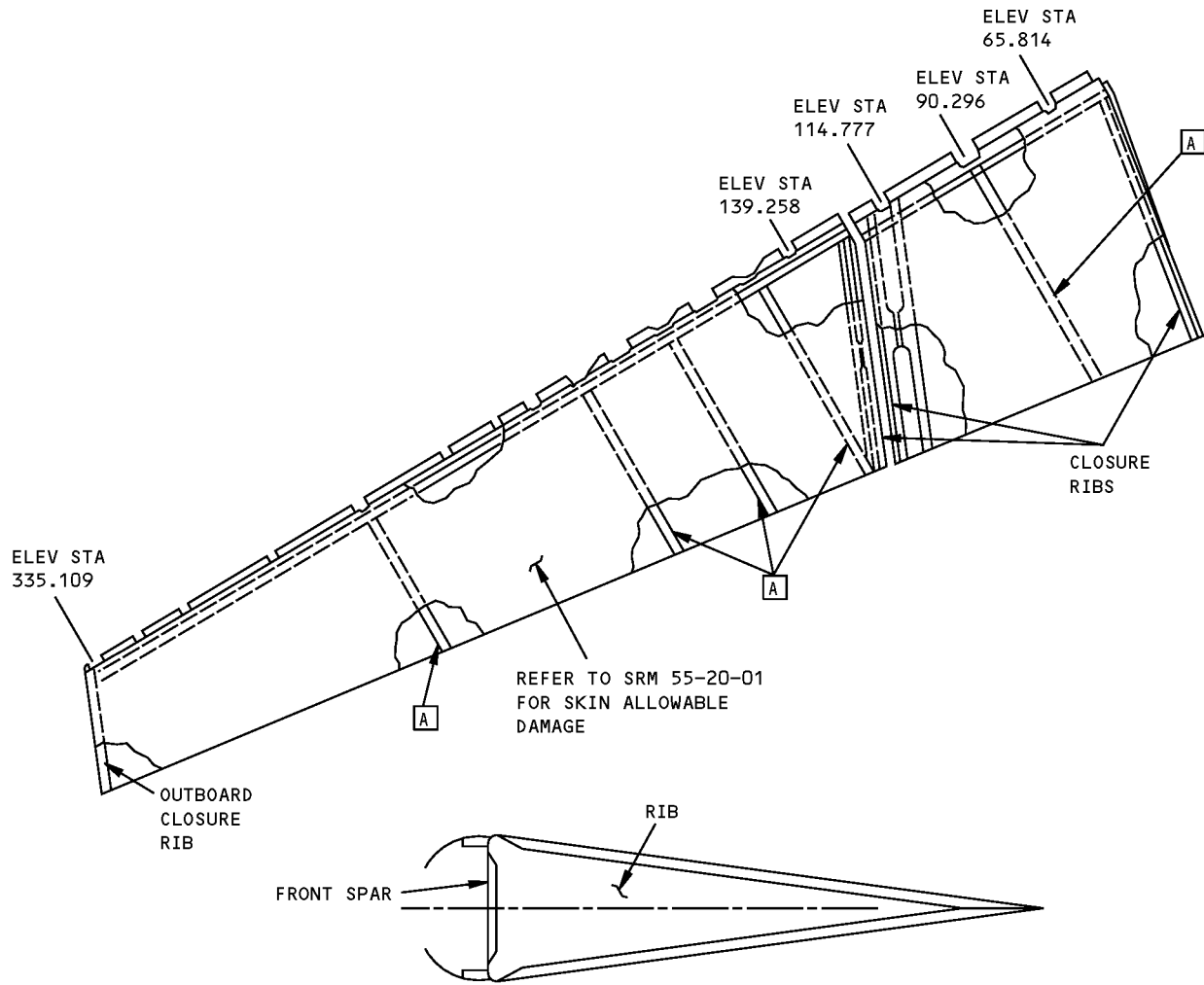
IDENTIFICATION 2
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55-20-02

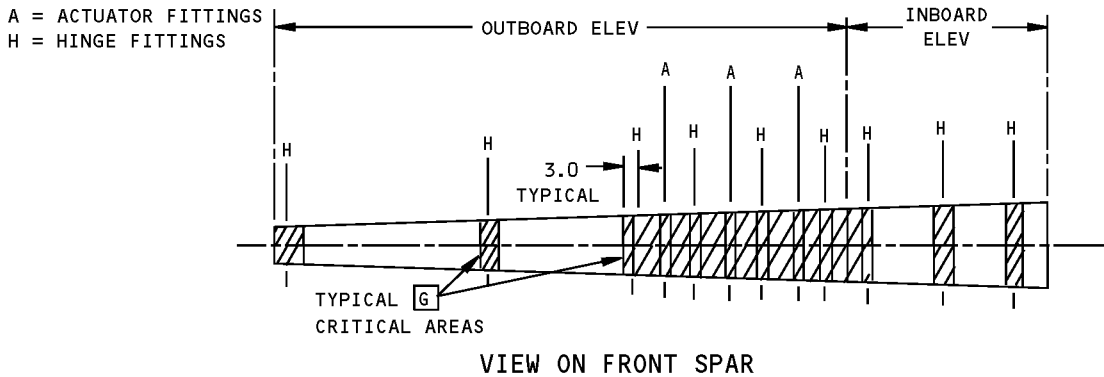
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STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - ELEVATOR STRUCTURE



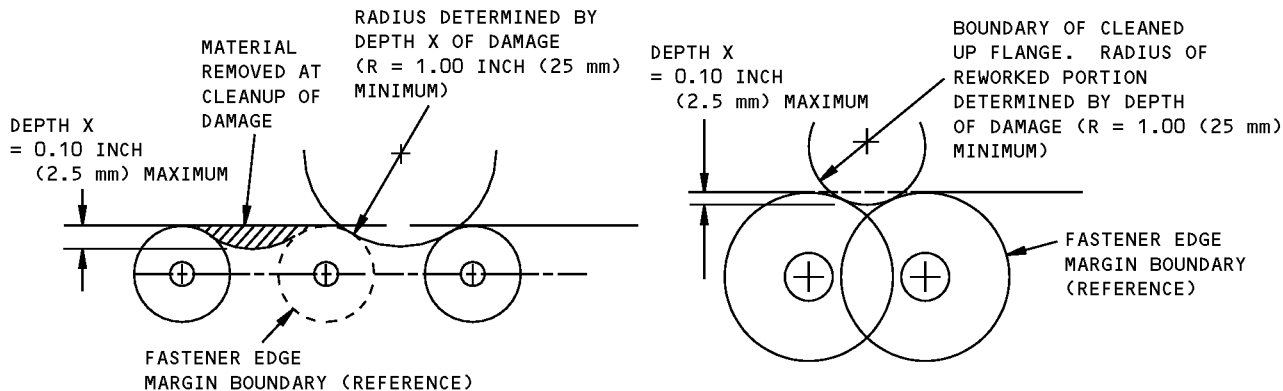
SECTION THRU ELEVATOR



VIEW ON FRONT SPAR

**Allowable Damage - Elevator Structure
Figure 101 (Sheet 1 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**



DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I

LOCATION	CRACKS	NICKS AND GOUGES	DENTS	PUNCTURES AND HOLES	DELAMINATION
RIBS	B	C	D	E	F
FRONT SPAR	B	C	D	E	F

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS GIVEN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR MAY TAKE A FORM WHICH RESULTS IN DAMAGE TO FIBERS AND A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. REMOVE THIS TYPE OF DAMAGE AND USE THE CONDITIONS GIVEN FOR CRACKS.

- A** REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATIONS AND REPAIR DAMAGE AS GIVEN IN SRM 51-70 BEFORE THE EXPIRATION OF 60 CALENDER DAYS.
- B** EDGE CRACKS MUST BE REMOVED AS SHOWN IN DETAIL I. 0.50 INCH (12.7 mm) MAXIMUM LENGTH IN HONEYCOMB AREA IS PERMITTED AS GIVEN IN SQUARE FOOT OF AREA. IT MUST BE A MINIMUM OF 6.0 INCHES (150 mm) FROM ANY OTHER DAMAGE. **A**
- C** DAMAGE IS PERMITTED ON SURFACE RESIN ONLY. DAMAGE TO FIBERS IS NOT PERMITTED. **A**
- D** DENTS GENERALLY RESULT IN FIBER DAMAGE OR DELAMINATION. HOWEVER, IF THERE IS NO FIBER DAMAGE OR DELAMINATION, DENTS UP TO 0.50 INCH (12.7 mm) MAXIMUM DIAMETER ARE PERMITTED. ONE DENT PER SQUARE FOOT OF AREA IS PERMITTED. IT MUST BE A MINIMUM OF 6.00 INCHES (150 mm) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR PANEL EDGE. IF THERE IS FIBER DAMAGE OR DELAMINATION, REFER TO THE APPLICABLE DAMAGE DATA IN THE TABLE.

**Allowable Damage - Elevator Structure
Figure 101 (Sheet 2 of 3)**



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STRUCTURAL REPAIR MANUAL

NOTES (CONTINUED)

- E** 0.50 INCH (12.7 mm) MAXIMUM DIAMETER IS PERMITTED IF THE DAMAGE IS A MINIMUM OF 3.0 D FROM OTHER DAMAGE, NEAREST HOLE, OR MATERIAL EDGE. DO NOT CLEAN UP DAMAGE EXCEPT TO REMOVE RESIN BURRS THAT EXTEND INTO THE SURFACE CONTOUR. **A**
- F** 0.50 INCH (12.7 mm) MAXIMUM DIAMETER IS PERMITTED IN THE HONEYCOMB AREA. A MAXIMUM OF 0.03 INCH (.76 mm) DELAMINATION FROM THE EDGE IS PERMITTED. REPAIR THE DELAMINATION IN HONEYCOMB AREA BEFORE THE EXPIRATION OF 60 CALENDAR DAYS. PROTECT EDGE DAMAGE AS GIVEN IN **A**.
- G** CRITICAL AREA (SHADED). CALL THE BOEING COMPANY FOR ALLOWABLE DAMAGE.

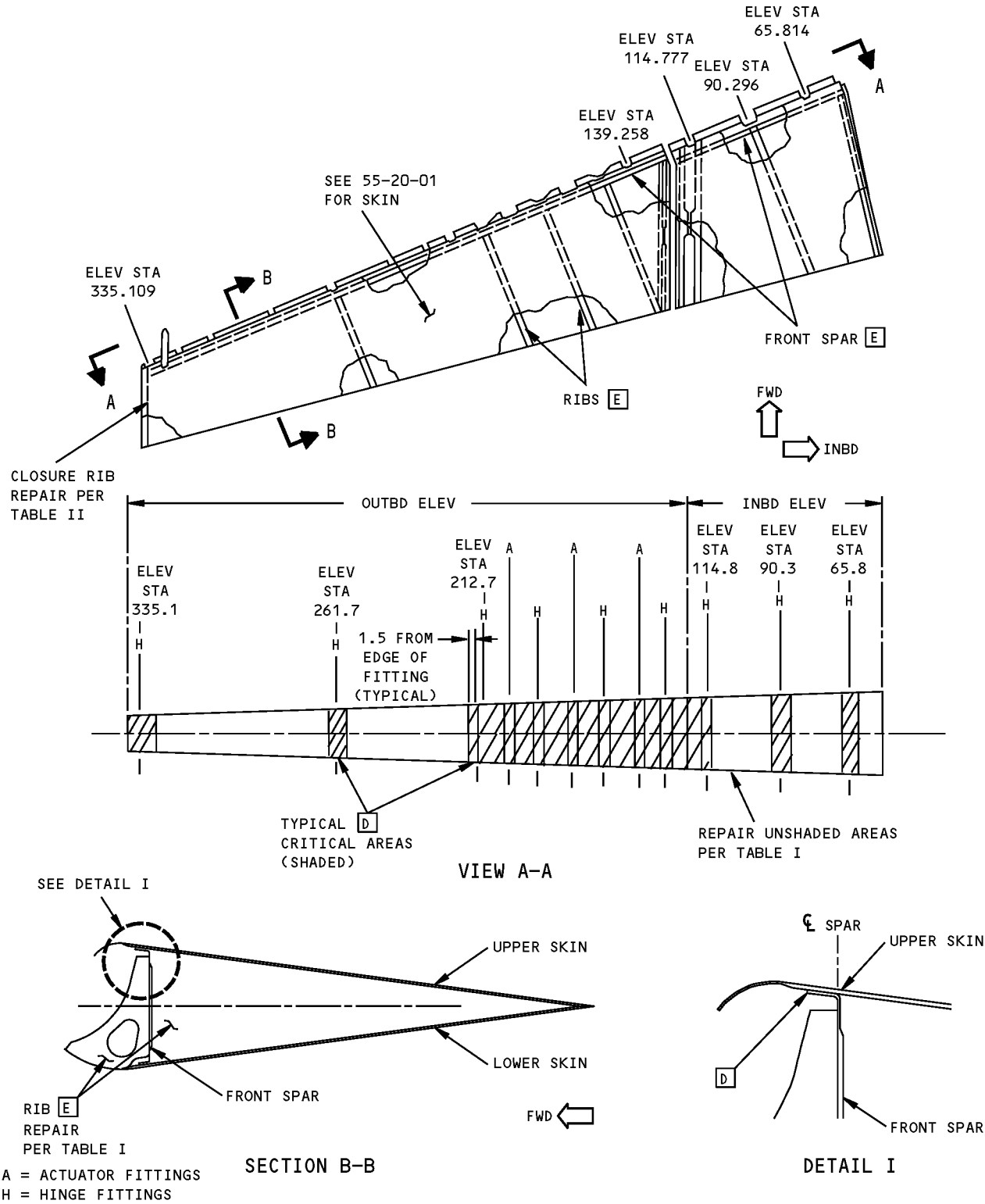
**Allowable Damage - Elevator Structure
Figure 101 (Sheet 3 of 3)**

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STRUCTURAL REPAIR MANUAL**

REPAIR 1 - ELEVATOR SPARS AND RIBS



**Elevator Spar and Rib Repairs
Figure 201 (Sheet 1 of 4)**

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STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS		
	WET LAYUP 150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200°F-230°F (93°C-110°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)	350°F (177°C) CURE (SRM 51-70-04)
CRACKS	UP TO 2.0 INCHES (50 mm) LONG, REPAIR WITH A PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [A]	REMOVE THE DAMAGE AND REPAIR AS A HOLE. [A]	REMOVE THE DAMAGE AND REPAIR AS A HOLE.	REMOVE THE DAMAGE AND REPAIR AS A HOLE.
HOLES AND PUNCTURES	2.0 INCHES (50 mm) MAXIMUM DIAMETER, NOT MORE THAN 30% OF THE SMALLEST DIMENSION ACROSS THE HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND REPAIR WITH A PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [A]	5.0 INCHES (125 mm) MAXIMUM DIAMETER, NOT MORE THAN 50% OF THE SMALLEST DIMENSION ACROSS THE HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH REPAIRED FACESHEET. [C]	5.0 INCHES (125 mm) MAXIMUM DIAMETER, NOT MORE THAN 50% OF THE SMALLEST DIMENSION ACROSS THE HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH REPAIRED FACESHEET. [C]	NO SIZE LIMIT
DELAMINATION	CUT OUT AND REPAIR AS A HOLE.			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03. IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			
DENTS	UP TO 2.0 INCHES (50 mm) DIAMETER WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND REPAIR WITH A PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.L. OVER 2.0 INCHES (50 mm) DIAMETER OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			

REPAIR DATA FOR 350°F (177°C) CURE GRAPHITE HONEYCOMB PANELS
TABLE I

Elevator Spar and Rib Repairs
Figure 201 (Sheet 2 of 4)

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REPAIR 1
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STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS		
	WET LAYUP 150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200°F-230°F (93°C-110°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)	350°F (177°C) CURE (SRM 51-70-04)
CRACKS	UP TO 2.0 INCHES (50 mm) LONG, REPAIR WITH A PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [C]	REMOVE THE DAMAGE AND REPAIR AS A HOLE.	REMOVE THE DAMAGE AND REPAIR AS A HOLE.	REMOVE THE DAMAGE AND REPAIR AS A HOLE.
HOLES	2.0 INCHES (50 mm) MAXIMUM DIAMETER, NOT MORE THAN 30% OF THE SMALLEST DIMENSION ACROSS THE LAMINATE PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND REPAIR WITH A PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [C]	5.0 INCHES (125 mm) MAXIMUM DIAMETER, NOT MORE THAN 50% OF THE SMALLEST DIMENSION ACROSS THE LAMINATE PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH REPAIRED FACESHEET. [C]	5.0 INCHES (125 mm) MAXIMUM DIAMETER, NOT MORE THAN 50% OF THE SMALLEST DIMENSION ACROSS THE LAMINATE PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH REPAIRED FACESHEET. [C]	NO SIZE LIMIT
DELAMINATION	CUT OUT AND REPAIR AS A HOLE.			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03. IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			
DENTS	UP TO 2.0 INCHES (50 mm) DIAMETER WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND REPAIR WITH A PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.L. [C] OVER 2.0 INCHES (50 mm) DIAMETER OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			

**REPAIR DATA FOR 350°F (177°C) CURE GRAPHITE LAMINATES
TABLE II**

NOTES

- FINISH REWORKED AREAS AS GIVEN IN AMM 51-20.
 - REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE DAMAGE IS MORE THAN THE LIMITS SHOWN IN SRM 51-10-01, THERE IS ALSO A LOSS OF PERFORMANCE.
 - REFER TO SRM 51-20-01 FOR THE REPAIR OF FINISH CRACKS ON GRAPHITE COMPOSITE PARTS.
 - REFER TO SRM 51-60-02 FOR BALANCING REQUIREMENTS.
- [A]** LIMITED TO REPAIR OF DAMAGE TO ONE FACESHEET SKIN AND HONEYCOMB CORE. ONE REPAIR PER 12.0 INCHES (300 mm) OF SPAN AND A MINIMUM OF 3.0 INCHES (75 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF THE PANEL.
- [B]** INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EACH AIRPLANE AT A "2A" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIRED AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL MAKE A DULL SOUND COMPARED TO A SHARP RING ON A SOLID BONDED AREA. A PERMANENT REPAIR IS REQUIRED IF THERE IS ANY DETERIORATION. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. **[F]**
- [C]** ONE REPAIR PER 12.0 INCHES (300 mm) OF SPAN AND A MINIMUM OF 3.0 INCHES (75 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF THE PANEL.
- [D]** CONTACT THE BOEING COMPANY FOR NECESSARY REPAIRS IN CRITICAL AREAS.

**Elevator Spar and Rib Repairs
Figure 201 (Sheet 3 of 4)**

STRUCTURAL REPAIR MANUAL

NOTES (CONT)

- E** ON BOTH ENDS AND IF NECESSARY IN THE MIDDLE OF THE ELEVATOR, PUT STABLE SUPPORTS UNDERNEATH OR ON A WORKBENCH WHEN YOU REPAIR THE SPAR OR THE RIBS. REMOVE THE FASTENERS AS NECESSARY ALONG THE UPPER AND LOWER SKIN PANELS TO GET ACCESS TO THE RIBS OR THE SPAR. BE CAREFUL NOT TO BEND THE SKIN PANELS TOO MUCH WHEN YOU PULL THE SKIN PANEL BACK TO REPAIR THE RIB OR THE SPAR. IF THE REPAIR IS ADJACENT TO THE TRAILING EDGE OF THE ELEVATOR, REMOVE THE FASTENERS AT THE TRAILING EDGE OF THE ELEVATOR. BE CAREFUL WHEN YOU USE A WOODEN, PLASTIC OR NYLON WEDGE TO SEPARATE THE UPPER AND LOWER SKIN PANELS TO BREAK THE FAY SURFACE SEAL BETWEEN THE MATING SKINS. IF THE SKINS DO NOT SEPARATE WITH THE WEDGE, APPLY HEAT TO THE TRAILING EDGE TO SEPARATE THE SKINS. USE AN EXTERNAL HEAT SOURCE AND APPLY HEAT UP TO 180°F TO MAKE THE FAY SURFACE SEALANT SOFT. USE A DEVICE LIKE A THERMOCOUPLE THAT WILL MEASURE THE AMOUNT OF HEAT APPLIED.

REFER TO SRM 51-40-02 FOR FASTENER HOLES AND LOOSE FASTENERS.

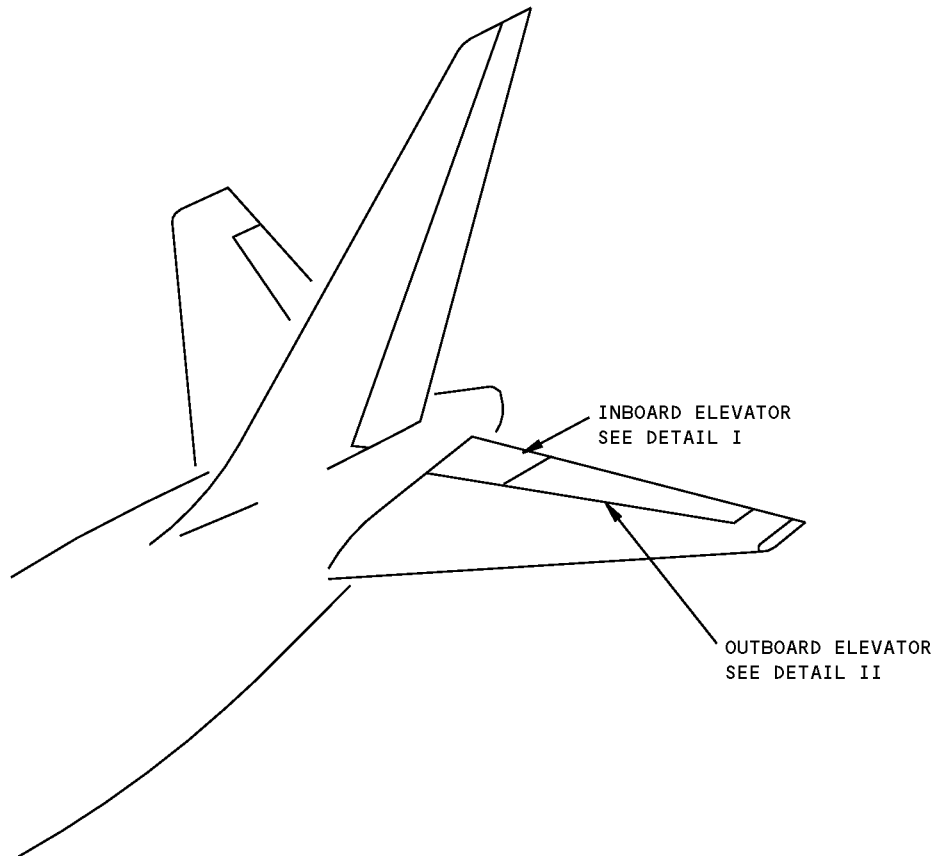
- F** THIS REPAIR REQUIRES FAA APPROVAL IF THE INSPECTIONS SHOWN IN THIS FIGURE ARE COMPLETED AT THE SPECIFIED TIMES.

**Elevator Spar and Rib Repairs
Figure 201 (Sheet 4 of 4)**



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IDENTIFICATION 1 - ELEVATOR ATTACHMENT FITTINGS



**Elevator Attachment Fittings Identification
Figure 1 (Sheet 1 of 3)**

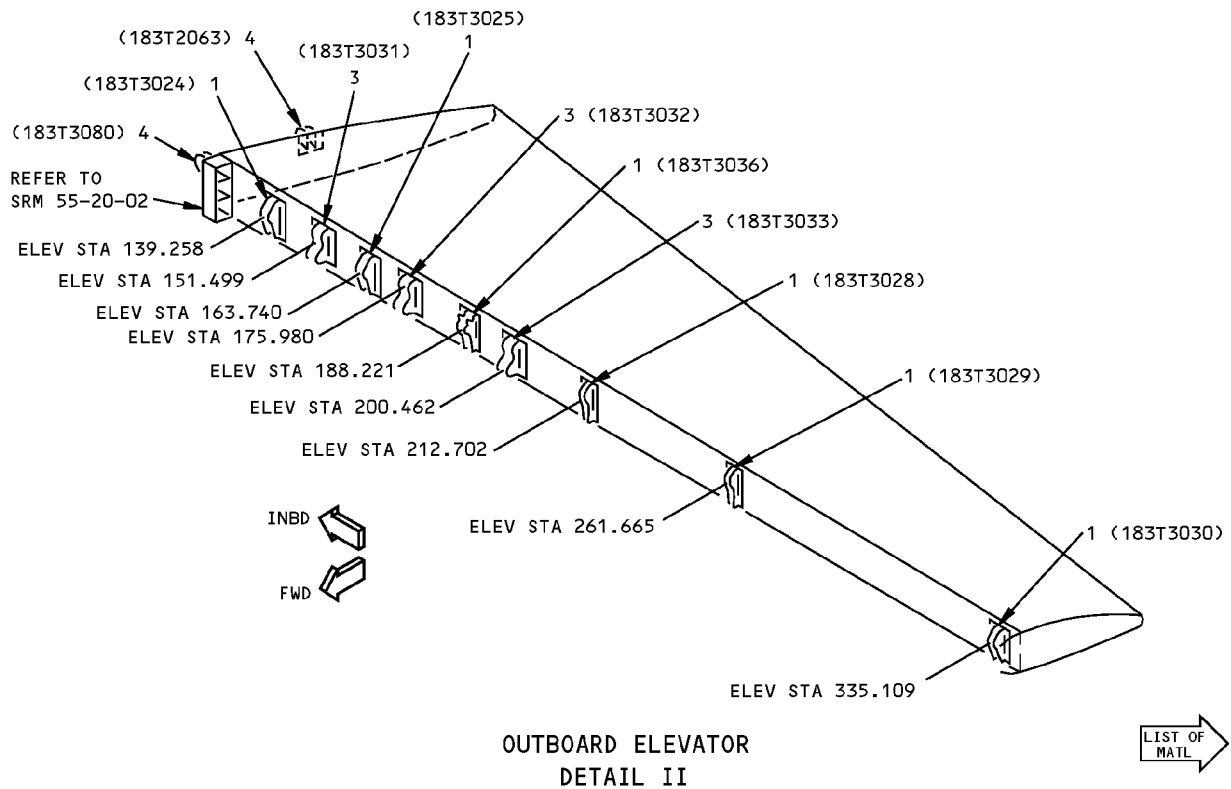
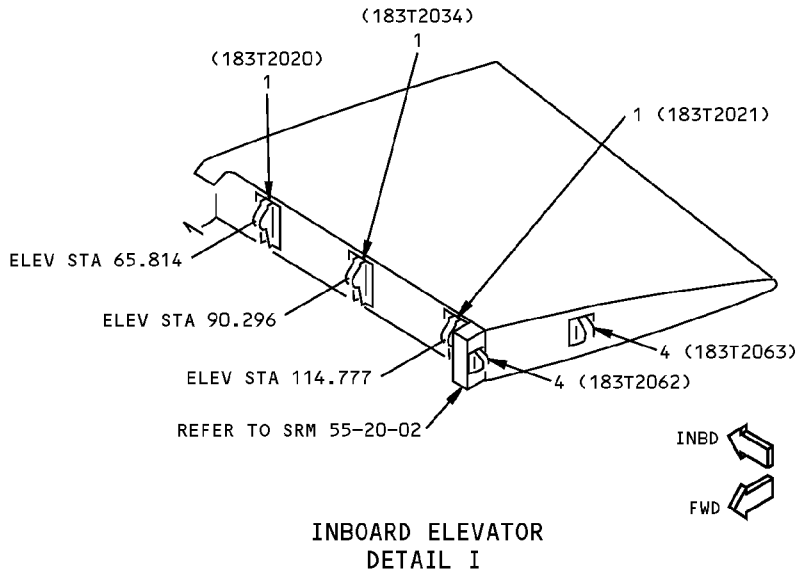
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REFERENCE DRAWINGS
183T2001
183T3001



**Elevator Attachment Fittings Identification
Figure 1 (Sheet 2 of 3)**

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STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	HINGE FITTING		FORGING 7075-T73	
2	HINGE FITTING		FORGING 7075-T73 (3 PIECES)	
3	ACTUATOR FITTING		FORGING TI-6AL-4V	
4	FITTING		BAR 7075-T7351	

LIST OF MATERIALS FOR DETAILS I AND II

**Elevator Attachment Fittings Identification
Figure 1 (Sheet 3 of 3)**

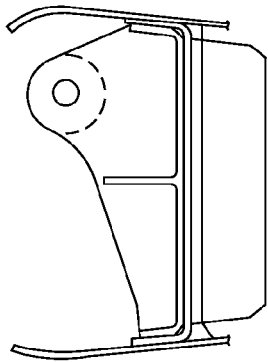
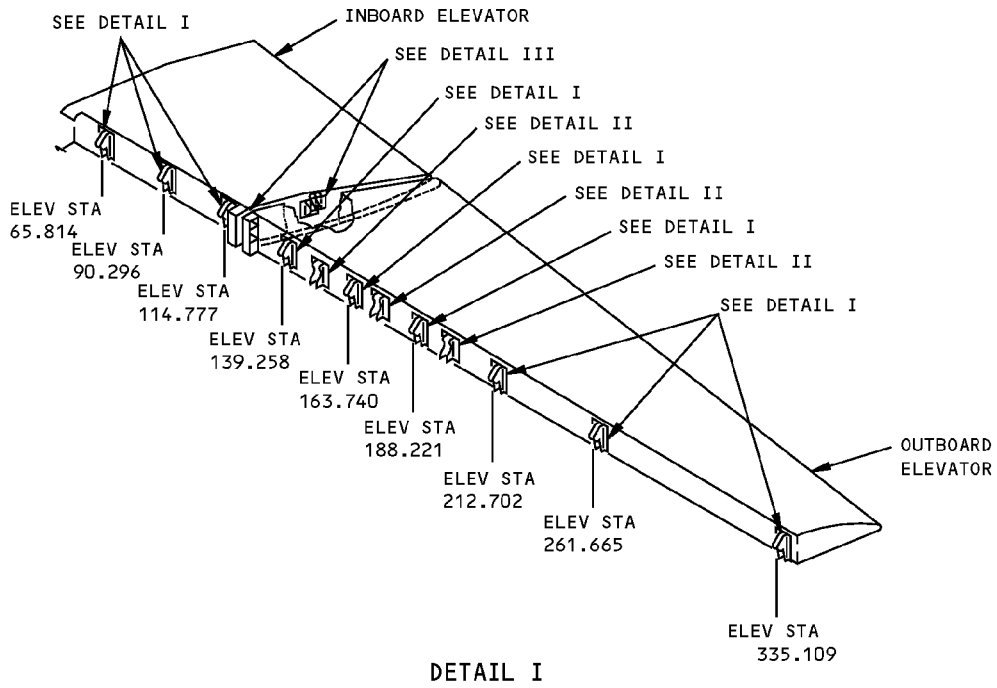
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55-20-90

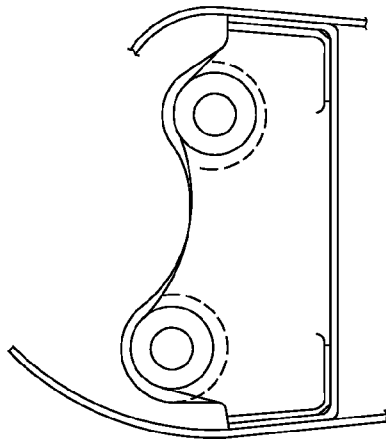
IDENTIFICATION 1
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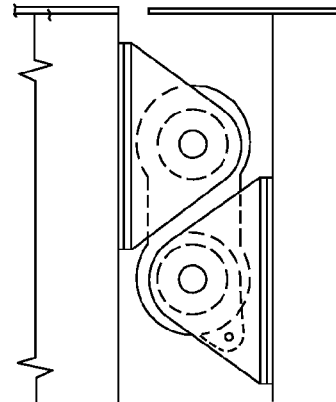
ALLOWABLE DAMAGE 1 - ELEVATOR ATTACHMENT FITTINGS



HINGE FITTING (TYPICAL)
DETAIL II



ACTUATOR FITTING (TYPICAL)
DETAIL III



INTERCONNECT FITTING
(INBOARD-TO-OUTBOARD
ELEVATOR)
DETAIL IV

**Allowable Damage - Elevator Attachment Fittings
Figure 101 (Sheet 1 of 4)**



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STRUCTURAL REPAIR MANUAL

ITEM	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES
HINGE FITTING	A	FOR EDGE DAMAGE SEE DETAIL VI FOR OTHER DAMAGE SEE DETAIL V FOR LUG DAMAGE SEE DETAIL VII B	NOT PERMITTED	NOT PERMITTED
ACTUATOR FITTING	A	FOR EDGE DAMAGE SEE DETAIL VI FOR OTHER DAMAGE SEE DETAIL V FOR LUG DAMAGE SEE DETAIL VII B	NOT PERMITTED	NOT PERMITTED
INTERCONNECT FITTING	A	FOR EDGE DAMAGE SEE DETAIL VI FOR OTHER DAMAGE SEE DETAIL V FOR LUG DAMAGE SEE DETAIL VII B	NOT PERMITTED	NOT PERMITTED
LINK	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED

NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

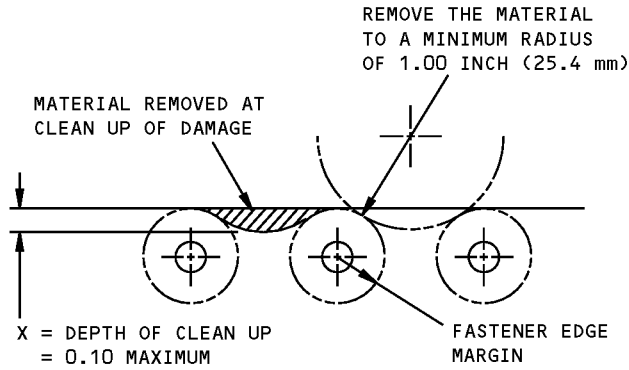
- A** CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL VIII. OTHER CRACKS ARE NOT PERMITTED.
- B** DAMAGE IS NOT PERMITTED NEAR BUSHINGS.

Allowable Damage - Elevator Attachment Fittings
Figure 101 (Sheet 2 of 4)

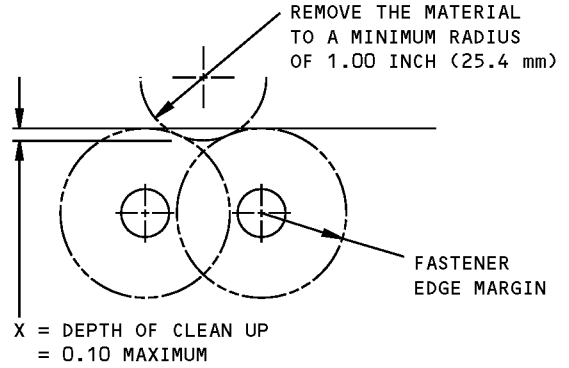
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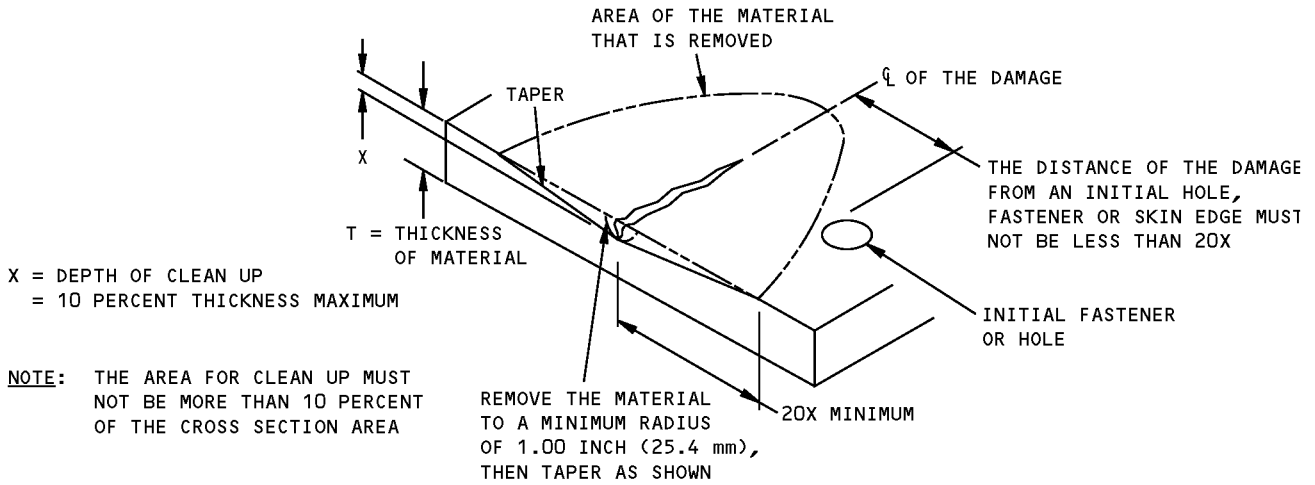


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

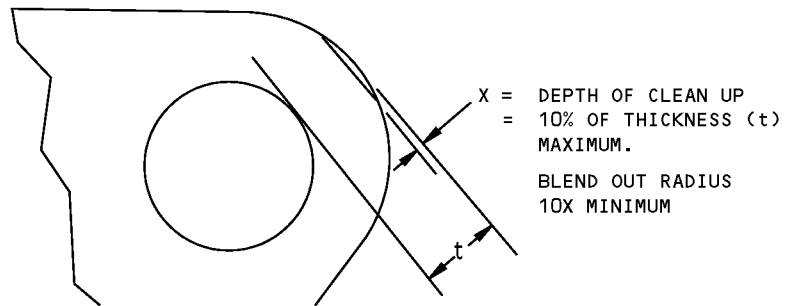


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

**REMOVAL OF DAMAGED MATERIAL ON AN EDGE
DETAIL V**



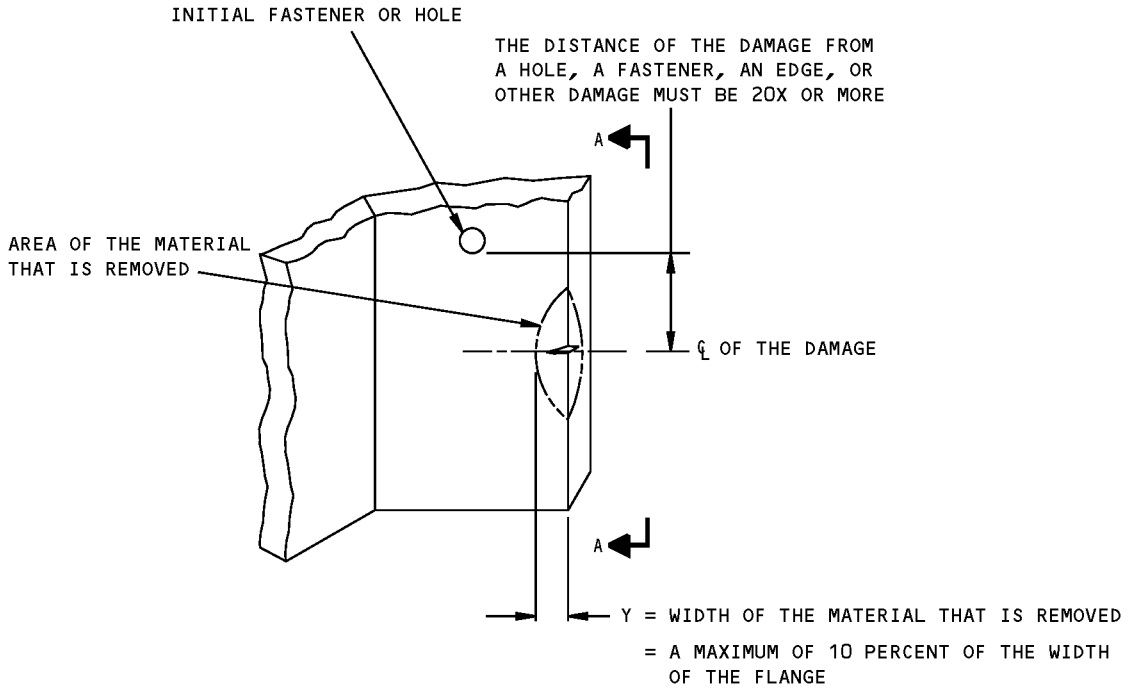
**REMOVAL OF NICK, GOUGE AND SCRATCH
DAMAGE ON A SURFACE
DETAIL VI**



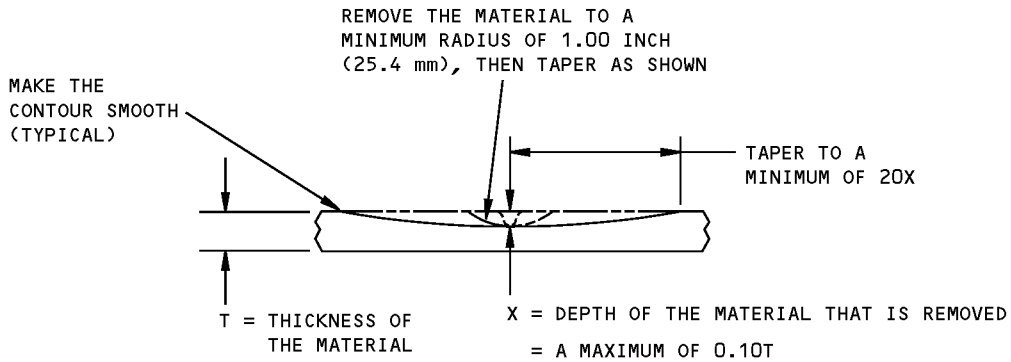
**DAMAGE CLEAN UP FOR EDGES OF LUG
DETAIL VII**

**Allowable Damage - Elevator Attachment Fittings
Figure 101 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**



DETAIL VIII

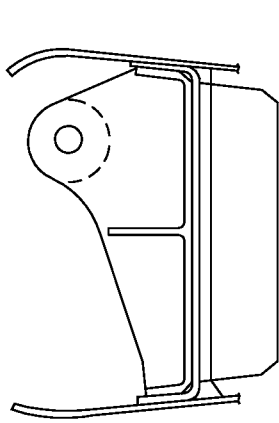
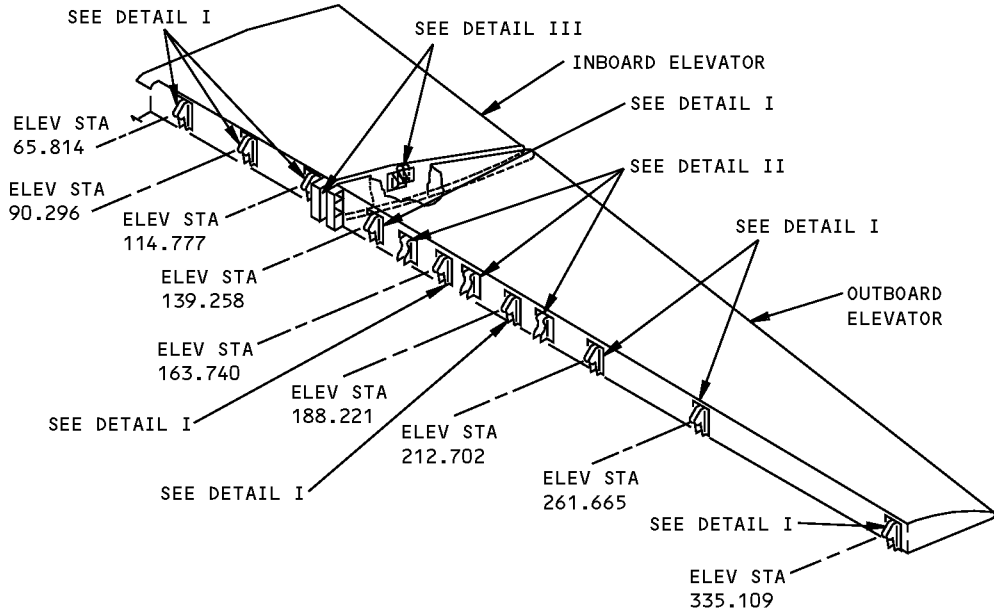


SECTION A-A

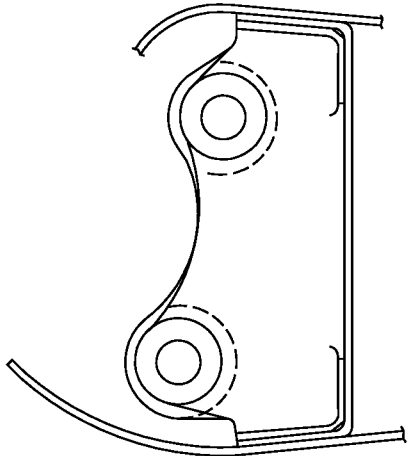
**Allowable Damage - Elevator Attachment Fittings
Figure 101 (Sheet 4 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

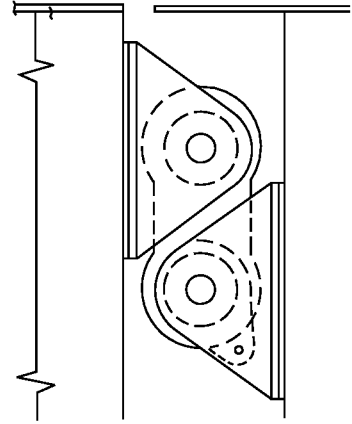
REPAIR GENERAL - ELEVATOR ATTACHMENT FITTINGS



**HINGE FITTING (TYPICAL)
DETAIL I**



**ACTUATOR FITTING (TYPICAL)
DETAIL II**



**INTERCONNECT FITTING
(INBOARD-TO-OUTBOARD
ELEVATOR)
DETAIL III**

NOTES

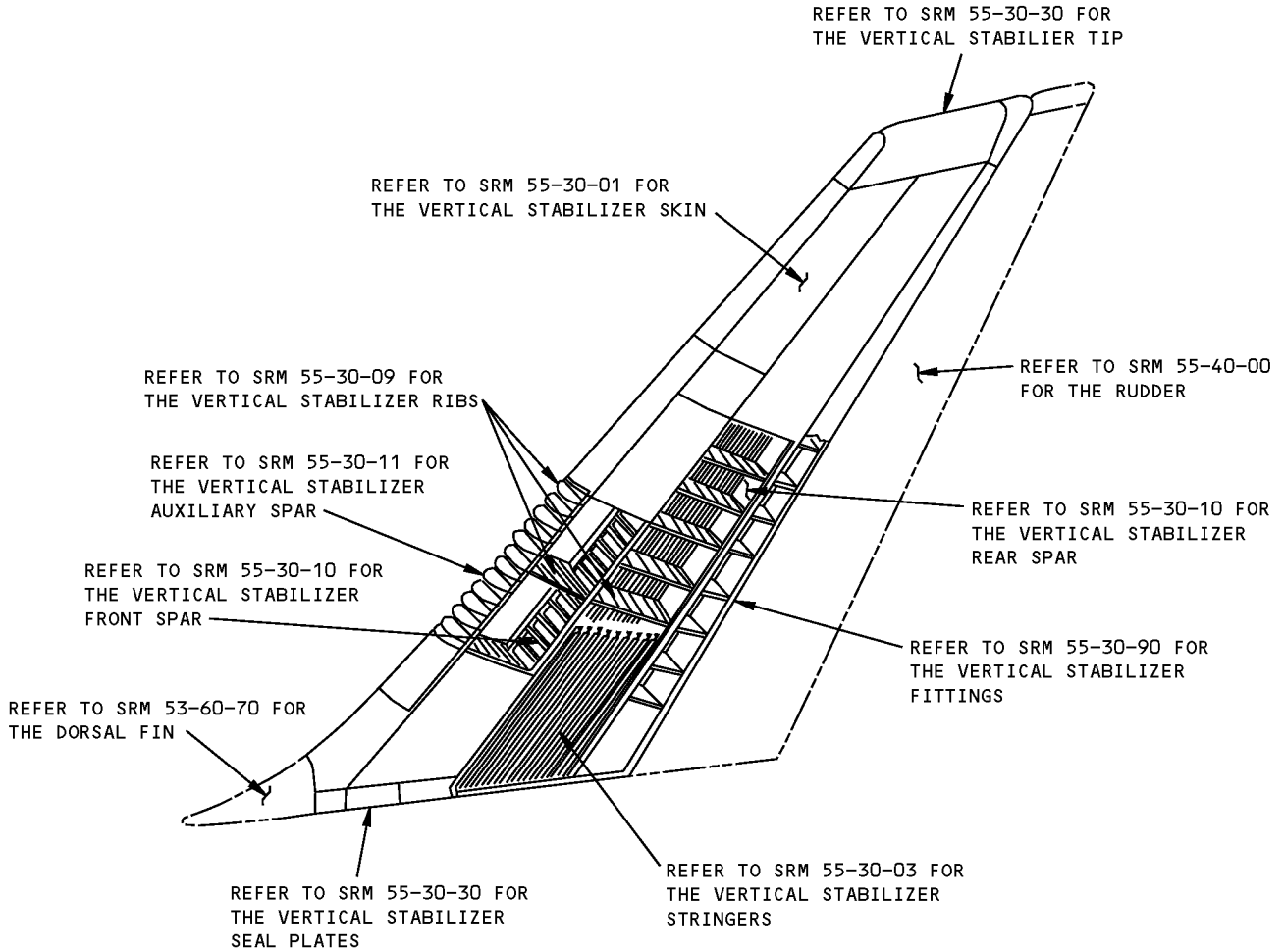
- THERE ARE NO TYPICAL REPAIRS TO FITTINGS AVAILABLE. SPECIFIC REPAIRS TO FITTINGS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 57-20-02 FOR STRUCTURE IDENTIFICATION.

**Elevator Attachment Fittings Repair
Figure 201**

D634T210

**767-300
STRUCTURAL REPAIR MANUAL**

GENERAL - VERTICAL STABILIZER



**Vertical Stabilizer Structure Diagram
Figure 1**



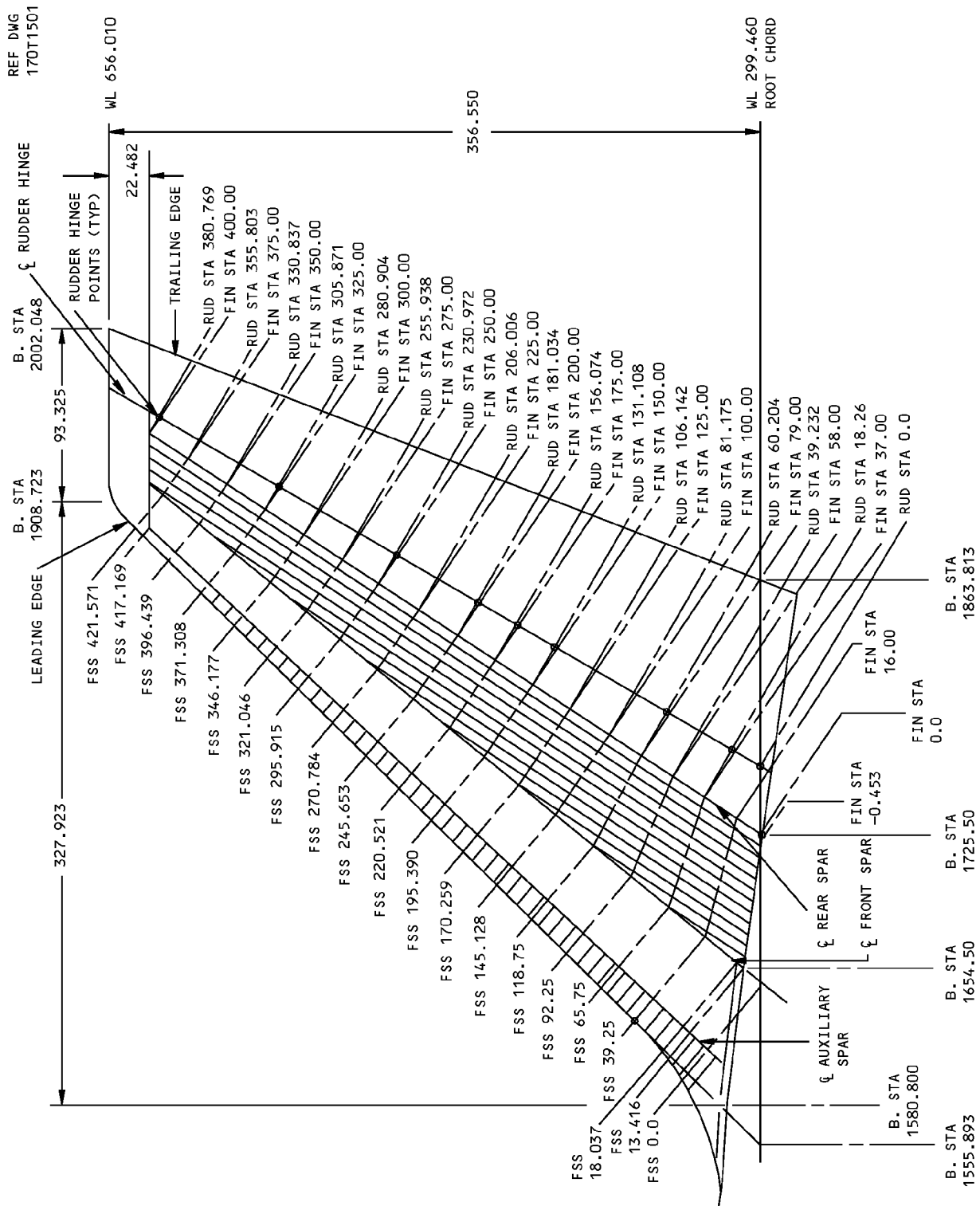
767-300
STRUCTURAL REPAIR MANUAL

D634T210

55-30-00

GENERAL
Page 2
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**767-300
STRUCTURAL REPAIR MANUAL**

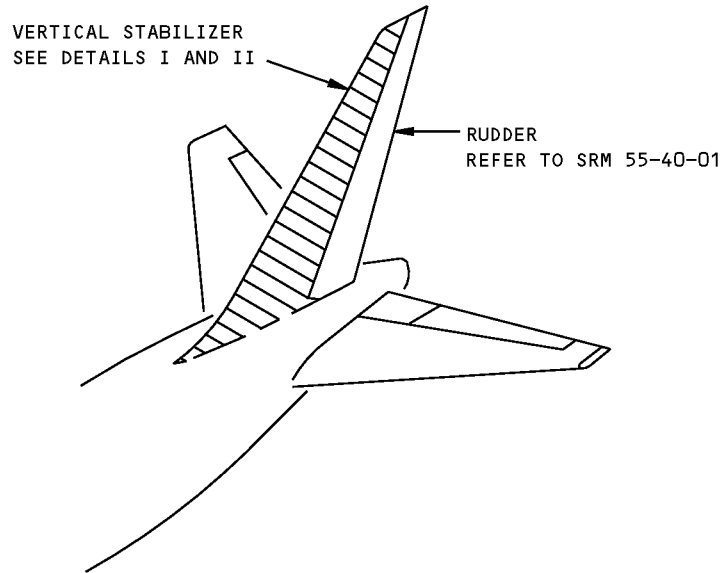


**Vertical Stabilizer Station Diagram
Figure 2**

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - VERTICAL STABILIZER SKINS

REF DWG
170T1520
172T1000
173T1000
174T1000

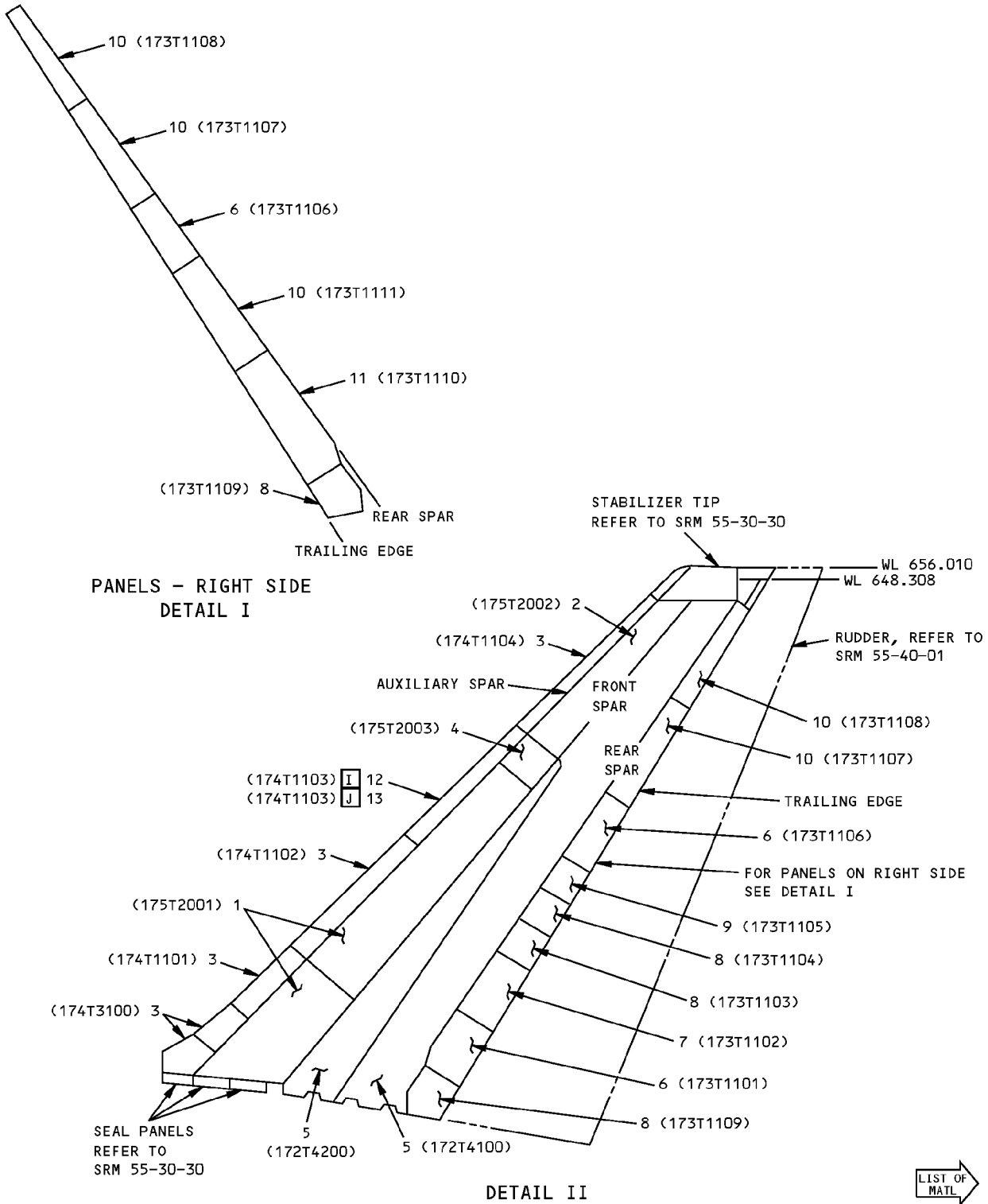


NOTES

- | | |
|---|---|
| <p>A DIAGRAM OF PLY ORIENTATION. REFER TO THE PLY TABLE FOR INDIVIDUAL PLY ORIENTATION AND MATERIAL.</p> <p>B MATERIAL AND PLY ORIENTATION IS SHOWN FOR FIELD AREAS ONLY. REFER TO BOEING DRAWINGS FOR THE EDGE BANDS AND AREAS WITH DOUBLERS.</p> <p>C PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION.</p> <p>D ARAMID/EPOXY PREIMPREGNATED FABRIC PER BMS 8-219, STYLE 285, 250°F (121°C) CURE</p> <p>E GRAPHITE/EPOXY TAPE PER BMS 8-168 TYPE II, CLASS I, GRADE 95, 250°F (121°C) CURE</p> <p>OPTIONAL: GRAPHITE/EPOXY TAPE AS GIVEN IN BMS 8-168, TYPE II OR III, CLASS 2, GRADE 95, STYLE 3K-70-PW, 250°F (121°C) CURE</p> | <p>F FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE 1, 250°F (121°C) CURE</p> <p>G FOR CUM LINE NUMBERS: 132 THRU 218</p> <p>H FOR CUM LINE NUMBERS: 219 AND ON</p> <p>I FOR CUM LINE NUMBERS: 132 AND ON THAT ARE NOT LISTED IN J</p> <p>J FOR VARIABLE EFFECTIVITIES: VF181 THRU VF190</p> |
|---|---|

**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 1 of 10)**

**767-300
STRUCTURAL REPAIR MANUAL**



**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 2 of 10)**



**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PANEL ASSEMBLY OUTER SKIN INNER SKIN CORE	0.100 0.012	CLAD 7075-T6 (CHEM-MILLED TO 0.017 MIN) 7075-T6 HONEYCOMB PER MIL-C-7438, GRADE B, CLASS 2, CODE 3.1-3/16-10 (5056)T	
2	PANEL SKIN CORE		GLASS FABRIC PREPREG EPOXY PER BMS 8-79, CLASS III, TYPE 1581, GRADE 1, 250°F (121°C) CURE NOMEX HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	SKIN	0.090	CLAD 2024-T3 (CHEM-MILLED TO 0.040 MIN)	
4	PANEL SKIN - OUTER SKIN - INNER CORE	0.050 0.012	CLAD 7075-T6 7075-T6 NOMEX HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
5	SKIN	0.313	CLAD 7075-T651 (MACHINED TO 0.050 MIN)	
6	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL III HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
7	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL IV HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
8	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL V HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
9	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
10	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VII G OR DETAIL VIII H HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
11	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL IX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
12	PANEL ASSEMBLY PANEL WINDOW COVER	0.090 0.090	CLAD 2024-T3 (CHEM-MILLED TO 0.040 MIN) GLASS FABRIC PREPREG EPOXY PER BMS 8-79, CLASS III, TYPE 1581, GRADE 1, 250°F (121°C) CURE CLAD 2024-T3	I
13	PANEL ASSEMBLY PANEL	0.090	CLAD 2024-T3. THE PANEL IS CHEM-MILLED AND VARIES IN THICKNESS. REFER TO THE BOEING DRAWING TO DETERMINE LOCAL THICKNESS	J

LIST OF MATERIAL FOR DETAILS I AND II

**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 3 of 10)**

IDENTIFICATION 1

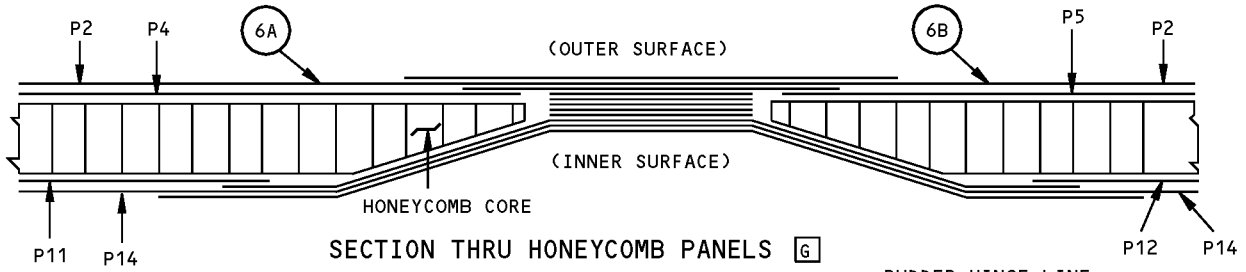
Page 3

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55-30-01

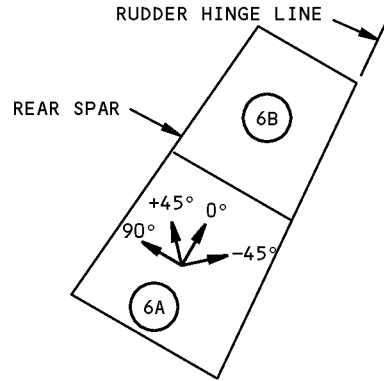
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**767-300
STRUCTURAL REPAIR MANUAL**



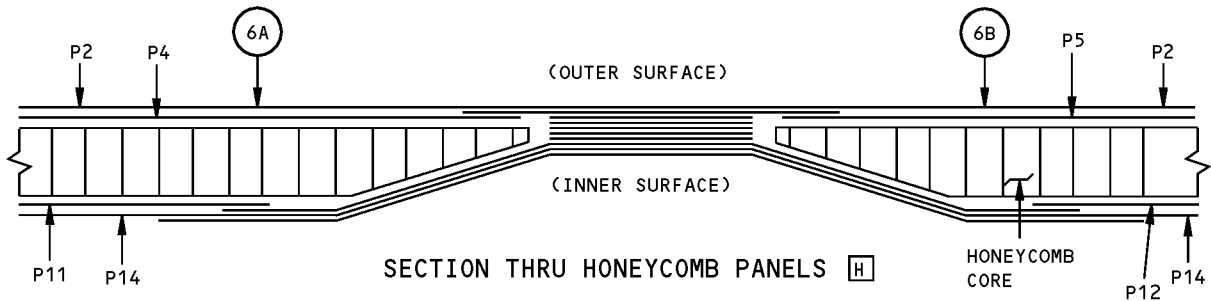
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION C
6	A	P2, P14	D 0° OR 90°
		P4, P11	E 90°
	B	P2, P14	D 0° OR 90°
		P5, P12	E 90°

PLY TABLE B G



VIEW ON PANEL A

DETAIL III



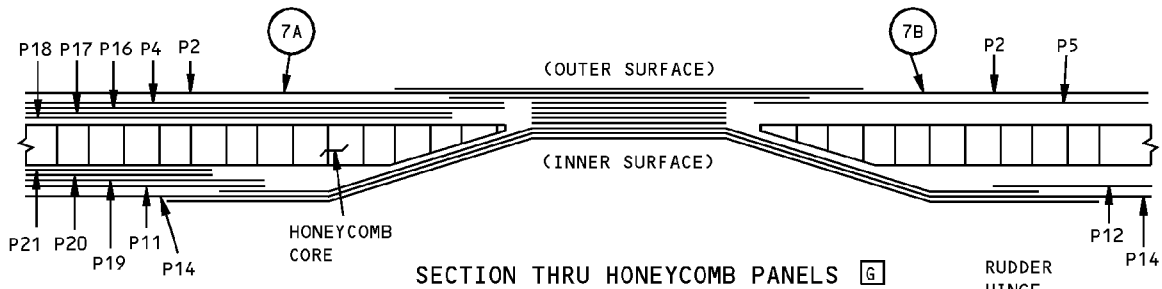
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION C
6	A	P2	F 0° OR 90°
		P4, P11	E 90°
		P14	D 0° OR 90°
	B	P2	F 0° OR 90°
		P5, P12	E 90°
		P14	D 0° OR 90°

PLY TABLE B H

DETAIL III

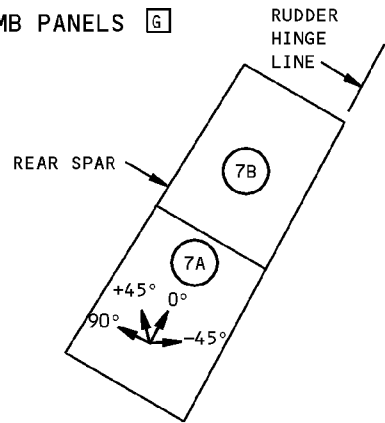
**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 4 of 10)**

**767-300
STRUCTURAL REPAIR MANUAL**

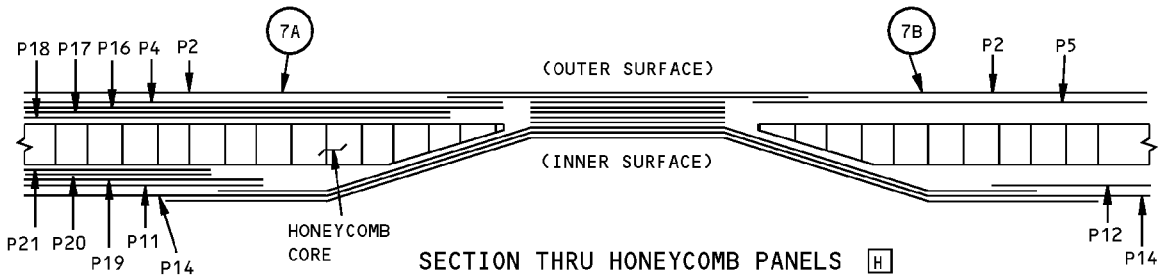


ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION
7	A	P2, P14	0° OR 90°
		P4, P11, P16, P17, P18, P19, P20, P21	90°
	B	P2, P14	0° OR 90°
		P5, P12	90°

PLY TABLE [B] [G]



VIEW ON PANEL [A]



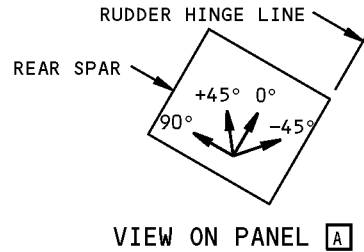
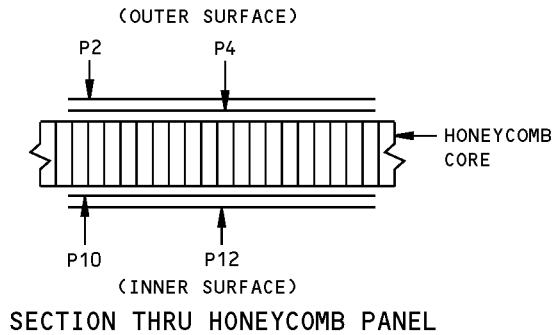
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION
7	A	P2	0° OR 90°
		P4, P11, P16, P17, P18, P19, P20, P21	90°
		P14	0° OR 90°
	B	P2	0° OR 90°
		P5, P12	90°
		P14	0° OR 90°

PLY TABLE [B] [H]

DETAIL IV

**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 5 of 10)**

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STRUCTURAL REPAIR MANUAL**



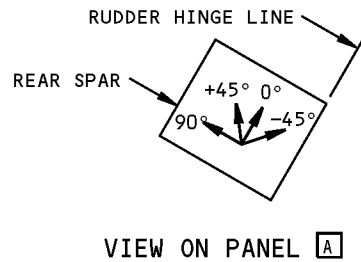
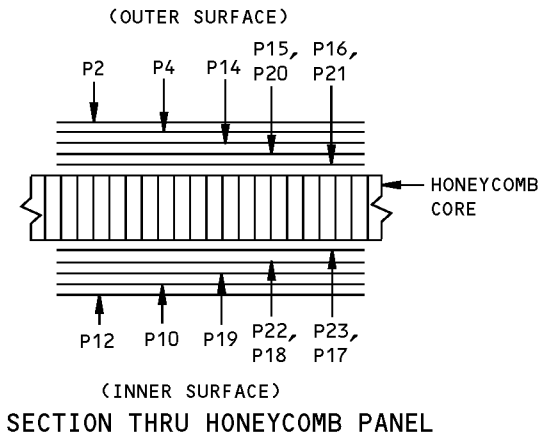
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [C]
8	P2,P12	[D]	0° OR 90°
	P4,P10	[E]	90°

PLY TABLE [B] [G]

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [C]
8	P2	[F]	0° OR 90°
	P12	[D]	0° OR 90°
	P4,P10	[E]	90°

PLY TABLE [B] [H]

DETAIL V



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [C]
9	P2,P12	[D]	0° OR 90°
	P4,P10,P14,P15,P16,P17,P18,P19,P20,P21,P22,P23	[E]	90°

PLY TABLE [B] [G]

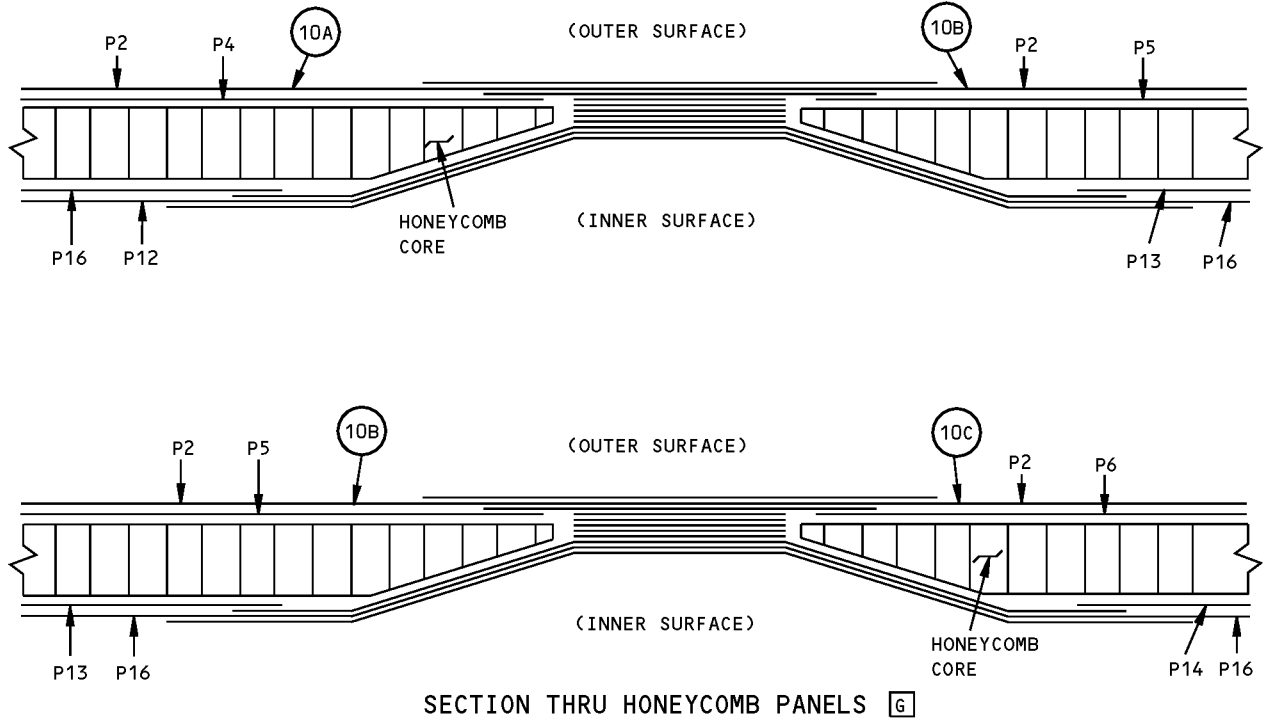
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [C]
9	P2	[F]	0° OR 90°
	P12	[D]	0° OR 90°
	P4,P10,P14,P15,P16,P17,P18,P19,P20,P21,P22,P23	[E]	90°

PLY TABLE [B] [H]

DETAIL VI

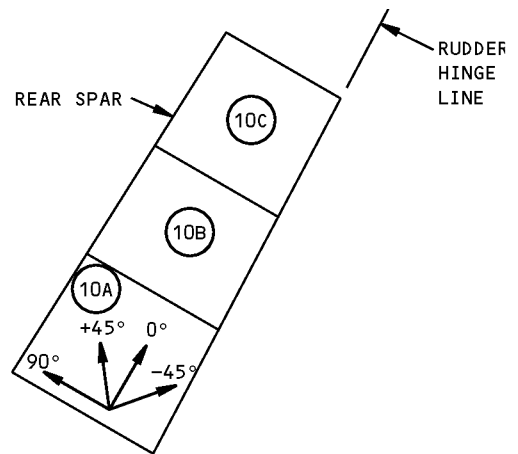
**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 6 of 10)**

**767-300
STRUCTURAL REPAIR MANUAL**



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [C]
10	A	P2,P16 [D]	0° OR 90°
		P4,P12 [E]	90°
	B	P2,P16 [D]	0° OR 90°
		P5,P13 [E]	90°
	C	P2,P16 [D]	0° OR 90°
		P6,P14 [E]	90°

PLY TABLE [B] [G]

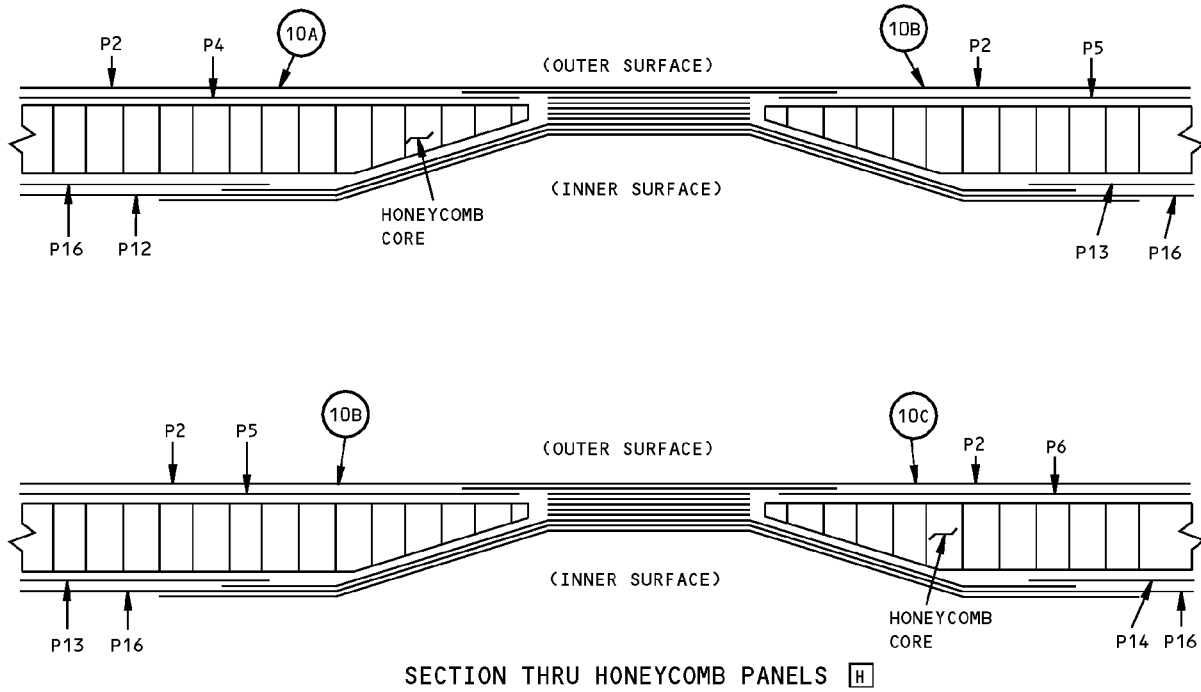


VIEW ON PANEL [A]

DETAIL VII

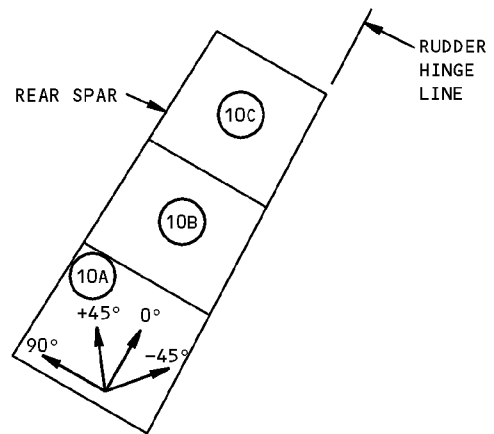
**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 7 of 10)**

**767-300
STRUCTURAL REPAIR MANUAL**



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION	
10	A	P2	F	0° OR 90°
		P16	D	0° OR 90°
		P4, P12	E	90°
	B	P2	F	0° OR 90°
		P16	D	0° OR 90°
		P5, P13	E	90°
	C	P2	F	0° OR 90°
		P16	D	0° OR 90°
		P6, P14	E	90°

PLY TABLE B H

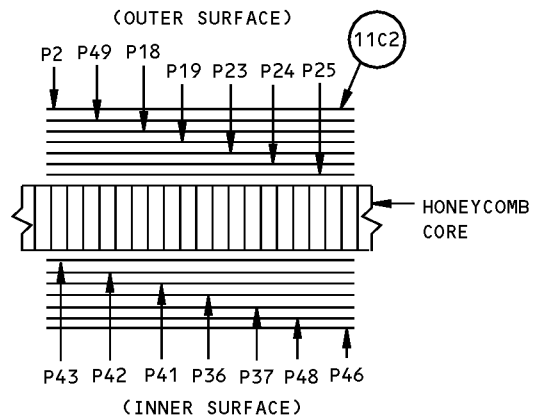
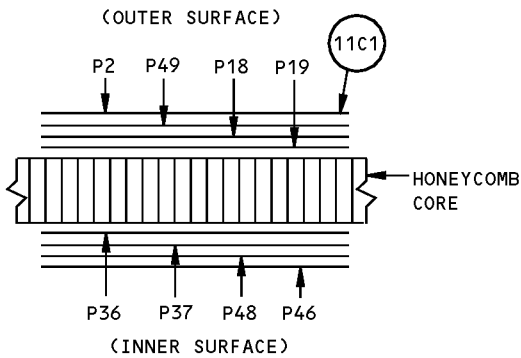
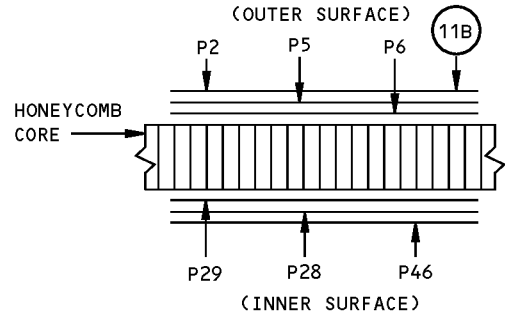
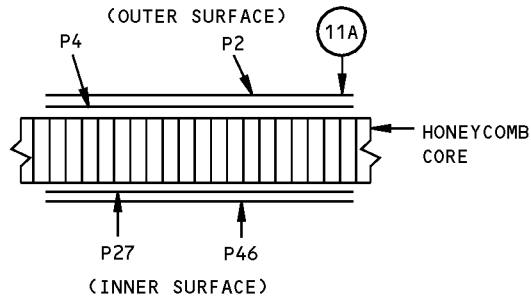


VIEW ON PANEL A

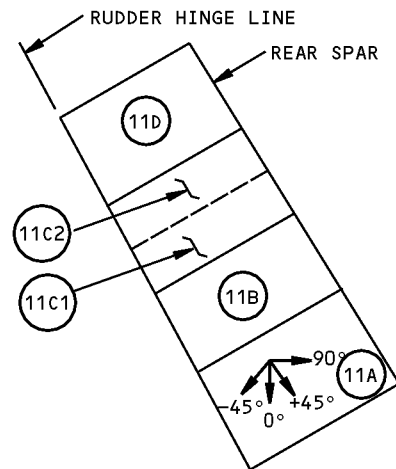
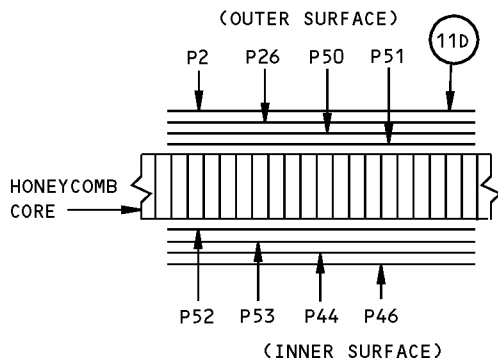
DETAIL VIII

**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 8 of 10)**

**767-300
STRUCTURAL REPAIR MANUAL**



SECTIONS THRU HONEYCOMB PANELS



DETAIL IX

VIEW ON PANEL A

**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 9 of 10)**

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STRUCTURAL REPAIR MANUAL**

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION C	
11	A	P2,P46	D	0° OR 90°
		P4,P27	E	90°
	B	P2,P46	D	0° OR 90°
		P5,P6,P28,P29	E	90°
	C1	P2,P46	D	0° OR 90°
		P18,P19,P36,P37,P48,P49	E	90°
	C2	P2,P46	D	0° OR 90°
		P18,P19,P23,P24,P25,P36,P37,P41,P42,P43,P48,P49	E	90°
	D	P2,P46	D	0° OR 90°
		P26,P44,P50,P51,P52,P53	E	90°

PLY TABLE FOR DETAIL IX B G

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION C	
11	A	P2	F	0° OR 90°
		P46	D	0° OR 90°
		P4,P27	E	90°
	B	P2	F	0° OR 90°
		P46	D	0° OR 90°
		P5,P6,P28,P29	E	90°
	C1	P2	F	0° OR 90°
		P46	D	0° OR 90°
		P18,P19,P36,P37,P48,P49	E	90°
	C2	P2	F	0° OR 90°
		P46	D	0° OR 90°
		P18,P19,P23,P24,P25,P36,P37,P41,P42,P43,P48,P49	E	90°
	D	P2	F	0° OR 90°
		P46	D	0° OR 90°
		P26,P44,P50,P51,P52,P53	E	90°

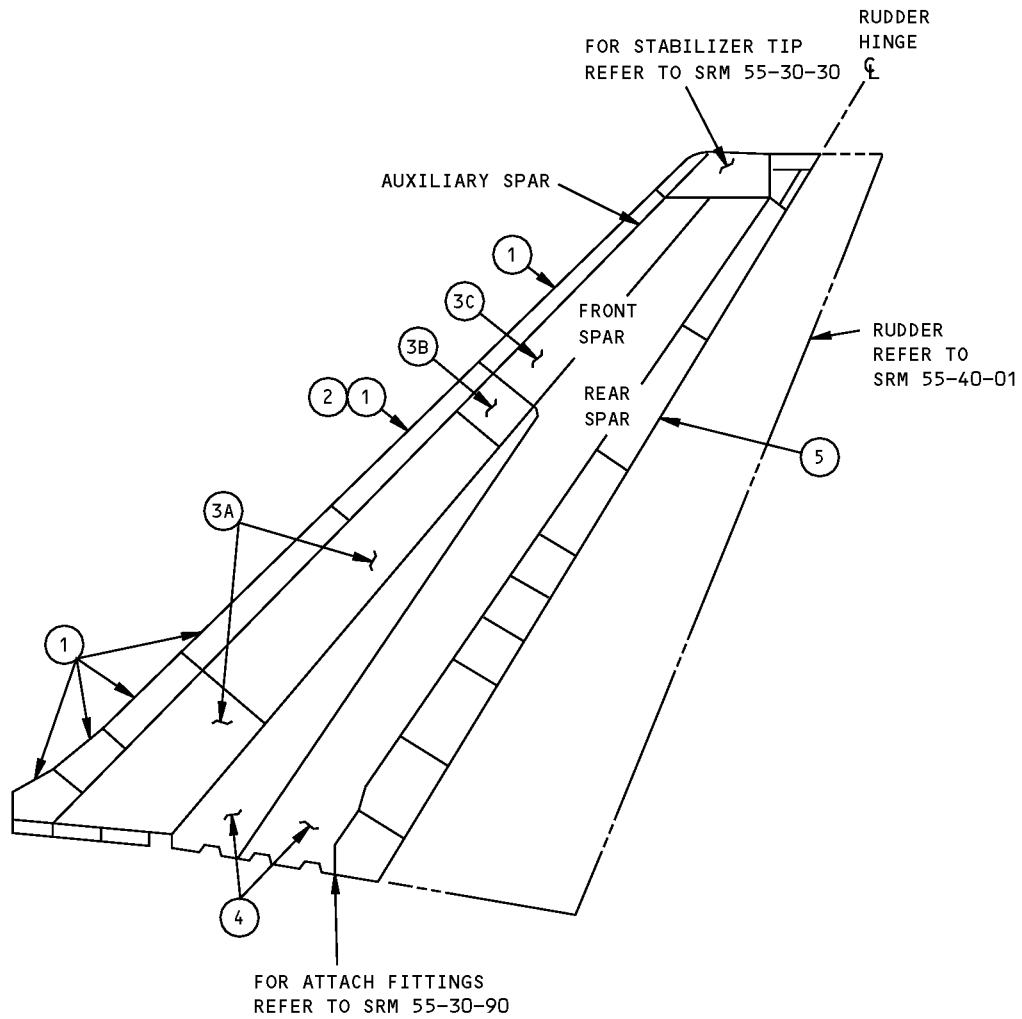
PLY TABLE FOR DETAIL IX B H

**Vertical Stabilizer Skin Identification
Figure 1 (Sheet 10 of 10)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - VERTICAL STABILIZER SKINS

REFERENCE DRAWING
170T1520



**Allowable Damage - Vertical Stabilizer Skin
Figure 101 (Sheet 1 of 6)**

**767-300
STRUCTURAL REPAIR MANUAL**

LOCATION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES	DELAMI-NATION	EDGE EROSION	SURFACE EROSION
① LEADING EDGE (ALUMINUM)	A J	REMOVE DAMAGE PER DETAILS I, II AND IV. MAXIMUM DEPTH 25% OF GAGE NOT TO EXCEED 0.50 DIA E J .	P	F	-----	-----	-----
② LEADING EDGE (FIBERGLASS PANEL)	A I	REMOVE DAMAGE PER DETAILS I AND II. MAX DEPTH 0.02. INCH OTHER DAMAGE NOT CLOSER THAN 1.0 INCH TO ANY OTHER DAMAGE, HOLE OR EDGE ALLOWED PER E I .	C	H I	0.50 DIA (MAXIMUM)	SEE DETAIL V	M
SKIN BETWEEN AUX SPAR AND FRONT SPAR ③A ALUMINUM HONEYCOMB PANEL	A G	REMOVE DAMAGE PER DETAILS I, II AND IV. MAX DEPTH 10% OF GAGE E G .	SEE DETAIL III	H Q	K	-----	-----
③B ALUMINUM SANDWICH PANEL NOME X CORE	A G	REMOVE DAMAGE PER DETAILS I, II AND IV. MAX DEPTH 10% OF GAGE E G .	SEE DETAIL III	H Q	K	-----	-----
③C FIBERGLASS PANEL HONEYCOMB CORE	A Q	REMOVE DAMAGE PER DETAILS I AND II N .	C	H Q	K	SEE DETAIL V	-----
④ SKIN BETWEEN FRONT AND REAR SPAR (ALUMINUM)	A J	REMOVE DAMAGE PER DETAILS I, II AND IV. MAX DEPTH 10% OF GAGE E J .	SEE DETAIL III	F	-----	-----	-----
⑤ SKIN PANELS AFT OF REAR SPAR. (ARAMID/ GRAPHITE/EPOXY) HONEYCOMB CORE	B	M	D	L	O	SEE DETAIL V	-----

**Allowable Damage - Vertical Stabilizer Skin
Figure 101 (Sheet 2 of 6)**

STRUCTURAL REPAIR MANUAL

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
- DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR FIBER DAMAGE, THAT RESULTS IN A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. THIS TYPE OF DAMAGE SHOULD BE REMOVED AND THE LIMITATIONS GIVEN FOR CRACKS APPLIED.
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20.
- REFER TO SOPM 20-44-03 FOR THE APPLICATION OF RAIN EROSION COATING.

- A** FOR EDGE CRACKS SEE DETAIL I. OTHER CRACKS ALLOWED UP TO 0.25 INCH (6 mm) MAXIMUM LENGTH.
- B** 2.00 INCHES (50 mm) MAXIMUM LENGTH IN HONEYCOMB AREA. CLEAN UP EDGE CRACKS AS GIVEN IN DETAILS I AND II. CRACK THROUGH CONSECUTIVE FASTENERS OR THROUGH THE PANEL EDGE BAND IS ALLOWED PROVIDED IT DOES NOT EXCEED 10% OF PANEL EDGE BAND **Q**.
- C** DENTS GENERALLY RESULT IN FIBER DAMAGE OR DELAMINATION. HOWEVER, PROVIDED THAT THERE IS NO FIBER DAMAGE OR DELAMINATION, DENTS UP TO 1.00 INCH (25 mm) MAXIMUM DIAMETER ARE ALLOWED. ONE DENT PER SQUARE FOOT OF AREA ALLOWED WHICH MUST BE A MINIMUM OF 6.00 INCHES (150 mm) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR PANEL EDGE. IF FIBER DAMAGE OR DELAMINATION IS PRESENT, REFER TO APPLICABLE DAMAGE DATA IN TABLE.
- D** 2.00 INCHES (50 mm) MAXIMUM DIAMETER IS ALLOWED. DENTS NOT ACCOMPANIED WITH DELAMINATION, FIBER DAMAGE, OR OTHER DAMAGE ARE ACCEPTABLE.
- E** DEEPER DAMAGE ALLOWED UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER.
- F** CLEAN PUNCTURES UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER. HOLES ALLOWED UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER, NOT CLOSER THAN 1.00 INCH (25 mm) TO ANY ADJACENT HOLE. HOLE IS TO BE FILLED WITH 2117-T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. MAINTAIN MINIMUM EDGE MARGIN OF 1.5 FASTENER DIAMETER. ALL OTHER HOLES ARE TO BE REPAIRED.

- G** ALLOWED NOT CLOSER THAN 1.00 INCH (25 mm) TO ANY OTHER DAMAGE, EDGE OR ADJACENT HOLE **Q**. DAMAGE IN EDGE BANDS MAY BE DRILLED OUT AND FILLED WITH 2117-T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. MAINTAIN MINIMUM EDGE MARGIN OF 1.5 FASTENER DIAMETER AND 1.00 INCH (25 mm) FROM ADJACENT HOLE OR OTHER DAMAGE. ALL OTHER DAMAGE TO BE REPAIRED.
- H** HOLES ALLOWED UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER NO CLOSER THAN 1.00 INCH (25 mm) TO ANY OTHER DAMAGE, HOLE, OR EDGE. CLEAN PUNCTURE UP TO 0.25 INCH (6 mm) MAXIMUM DIAMETER.
- I** REMOVE MOISTURE FROM DAMAGE AREA. IT IS RECOMMENDED TO USE A VACUUM AND HEAT SOURCE (MAXIMUM OF 125°F [52°C]) TO REMOVE MOISTURE FROM THE HONEYCOMB CELLS. PROTECT DAMAGED AREA FROM THE ENTRANCE OF WATER, SUNLIGHT OR ANY OTHER TYPE OF FOREIGN MATTER BY SEALING THE AREA WITH NONMETALLIC SCOTCH 850 OR 853, OR PERMACEL P95 POLYESTER TAPE OR AN EQUIVALENT RECOMMENDED. RECORD THE LOCATION AND INSPECT AT THE NEXT AIRPLANE "A" CHECK. REPLACE THE TAPE IF PEELING OR DETERIORATION IS EVIDENT. REPAIR THE DAMAGED AREA, NO LATER THAN NEXT AIRPLANE "C" CHECK.
- J** ALLOWED NOT CLOSER THAN 1.00 INCH (25 mm) FROM ADJACENT HOLES OR OTHER DAMAGE. MAINTAIN AN EDGE MARGIN OF 1.5 FASTENER DIAMETER, DRILL OUT DAMAGE AND FILL WITH 2117-T4 ALUMINUM RIVET. ALL OTHER DAMAGE TO BE REPAIRED.
- K** DELAMINATION OF SKIN FROM HONEYCOMB CORE UP TO 4.00 INCHES (100 mm) MAXIMUM DIAMETER IS ALLOWED.
- L** 1.00 INCH (25 mm) MAXIMUM DIAMETER IS ALLOWED IN HONEYCOMB AREA ONLY PROVIDED DAMAGE IS MINIMUM OF 2.5 INCHES (64 mm) DIAMETER FROM OTHER DAMAGE, NEAREST HOLE, OR MATERIAL EDGE. DO NOT CLEAN UP DAMAGE EXCEPT TO REMOVE RESIN BURRS EXTENDING INTO SURFACE CONTOUR **Q**.
- M** DAMAGE IS ALLOWED ON THE SURFACE RESIN ONLY. DAMAGE TO FIBERS IS NOT ALLOWED. CLEAN UP EDGE DAMAGE AS GIVEN IN DETAIL I. CLEAN UP SURFACE DAMAGE AS GIVEN IN DETAIL II. IF FIBER DAMAGE IS PRESENT, THEN TREAT IT LIKE A HOLE OR PUNCTURE DAMAGE **I**.
- N** DAMAGE UP TO 2.00 INCHES (50 mm) MAXIMUM DIAMETER IS ALLOWED TO A DEPTH OF 0.009 INCH (0.229 mm) FOR EDGE BANDS AND 0.002 INCH (0.051 mm) ELSEWHERE. DEEPER DAMAGED ALLOWED AS GIVEN IN **H** AND **Q**.

Allowable Damage - Vertical Stabilizer Skin
Figure 101 (Sheet 3 of 6)



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STRUCTURAL REPAIR MANUAL

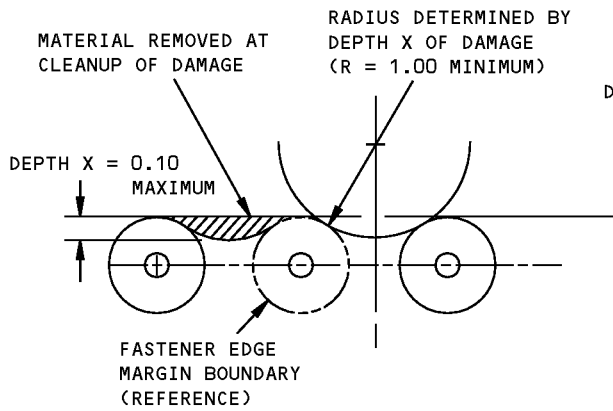
- O** 4.00 INCHES MAXIMUM DIAMETER IN HONEYCOMB AREA. DO NOT EXCEED 25% OF HONEYCOMB CORE LENGTH PER SIDE. A 0.10 INCH MAXIMUM OF DELAMINATION FROM EDGE IS ALLOWED. TREAT EDGE DELAMINATION AS GIVEN IN **Q**. REPAIR DELAMINATION IN THE HONEYCOMB AREA NO LATER THAN THE NEXT AIRPLANE "C" CHECK.
- P** SEE DETAIL III. FOR DENTS THAT EXCEED THESE LIMITS, REFER TO SRM 51-70-01.
- Q** REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F [52°C]) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT AT EACH AIRPLANE "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE (SPEED TAPE) IF ANY PEELING OR DETERIORATION IS EVIDENT. REPAIR NO LATER THAN THE NEXT AIRPLANE "C" CHECK.

**Allowable Damage - Vertical Stabilizer Skin
Figure 101 (Sheet 4 of 6)**

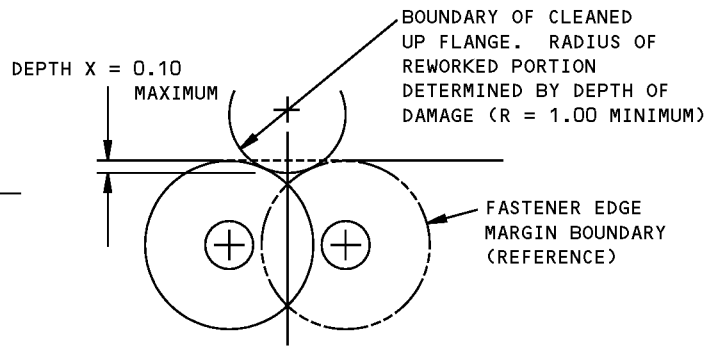
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ALLOWABLE DAMAGE 1
55-30-01
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**767-300
STRUCTURAL REPAIR MANUAL**

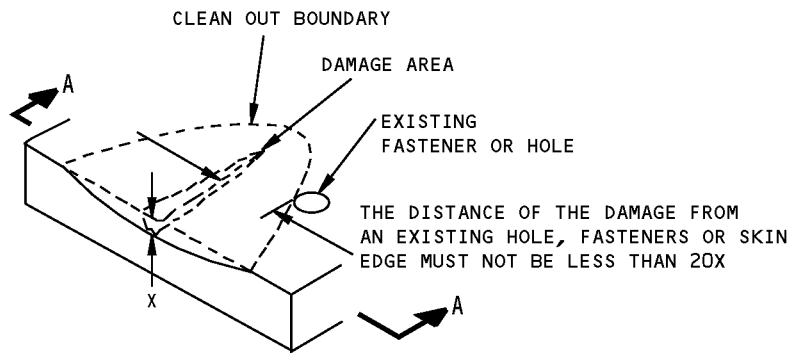


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

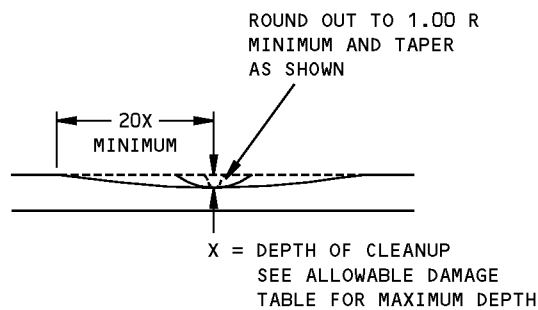


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I



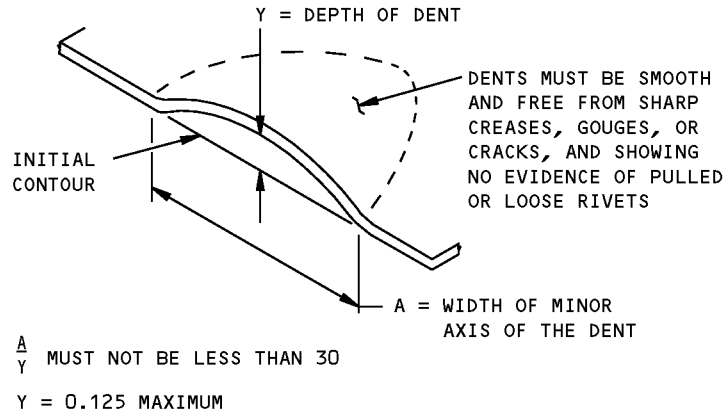
DETAIL II



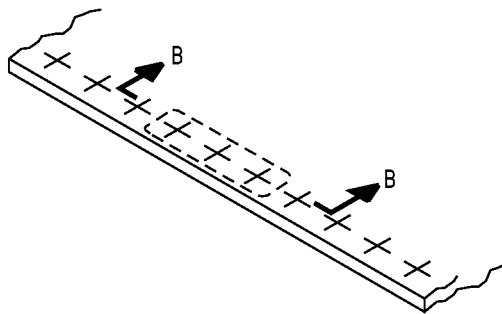
SECTION A-A

**Allowable Damage - Vertical Stabilizer Skin
Figure 101 (Sheet 5 of 6)**

**767-300
STRUCTURAL REPAIR MANUAL**

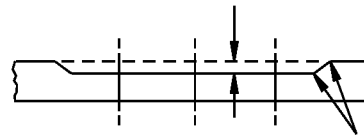


DETAIL III



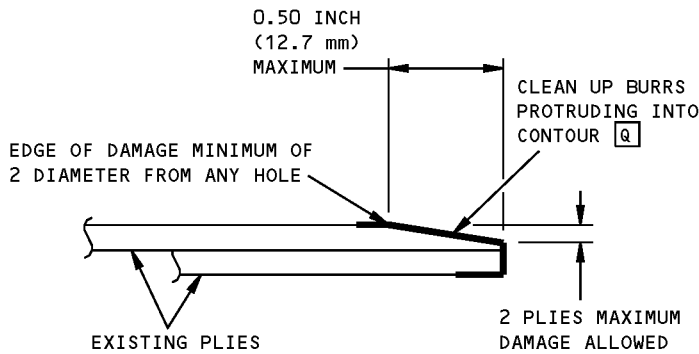
DETAIL IV

X = DEPTH OF CLEANUP
SEE ALLOWABLE DAMAGE TABLE FOR MAXIMUM DEPTH



SMOOTH BLEND-OUT RADIUS 0.50 INCH (12.7 mm) MINIMUM. CORROSION CLEANUP AROUND ANY THREE FASTENERS IN TEN IS PERMITTED TO MAXIMUM DEPTH

SECTION B-B



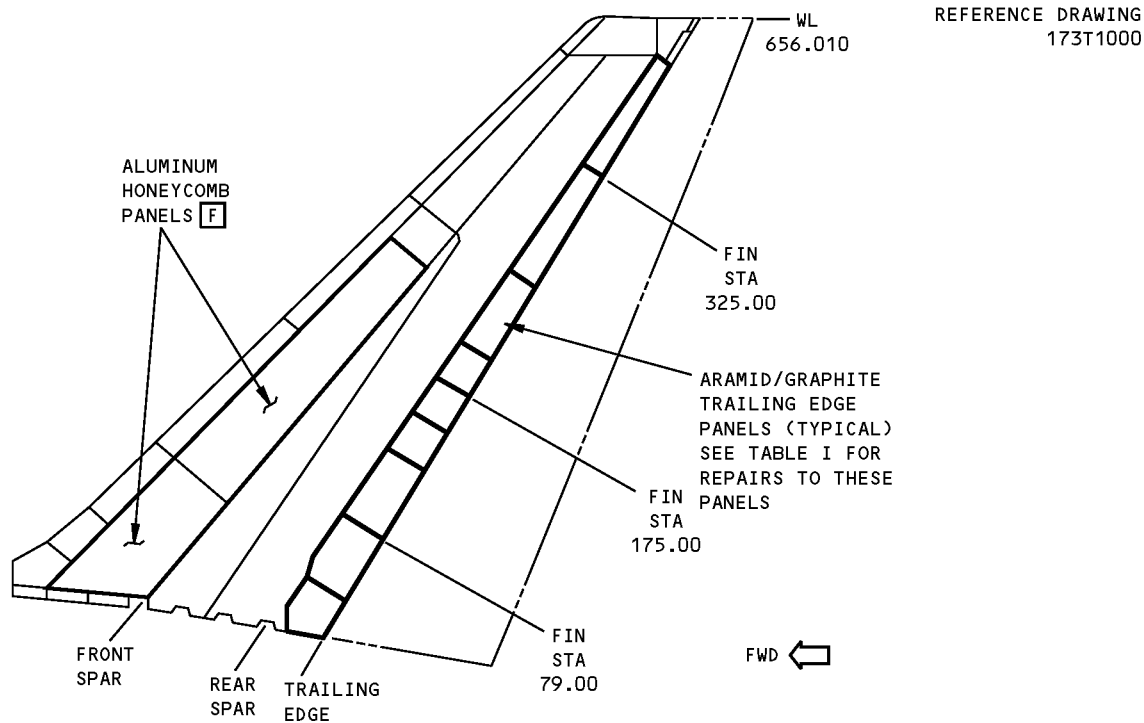
DAMAGE CLEANUP AND SEALING OF EDGE EROSION

DETAIL V

**Allowable Damage - Vertical Stabilizer Skin
Figure 101 (Sheet 6 of 6)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 1 - VERTICAL STABILIZER AUXILIARY BOX AND TRAILING EDGE SKIN



LEFT SIDE IS SHOWN,
RIGHT SIDE IS OPPOSITE

DETAIL I

NOTES

- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20

- [A] DO NOT EXTEND GRAPHITE/EPOXY REPAIR PLYS INTO PANEL EDGE BAND
- [B] INSPECT INTERIM REPAIR USING INSTRUMENTED NDI METHODS OR "TAP" TEST EVERY AIRPLANE "C" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN

- [C] LIMITED TO REPAIR OF DAMAGE TO ONE FACE-SHEET SKIN AND HONEYCOMB CORE
- [D] MINIMUM SPACING (EDGE TO EDGE), 6 INCHES (150 mm) BETWEEN CORE REPAIRS
- [E] WHERE BMS 5-95 SEALANT IS APPLIED ON EXTERIOR SURFACE OF PANEL AT MANUFACTURING, REAPPLY BMS 5-95 SEALANT ON REWORKED AREAS PRIOR TO THE APPLICATION OF ENAMEL FINISH. REFER TO AMM 51-21-12
- [F] FOR TYPICAL ALUMINUM HONEYCOMB REPAIRS, REFER TO SRM 51-70-10.

**Vertical Stabilizer Auxiliary Box and Trailing Edge Skin Repairs
Figure 201 (Sheet 1 of 2)**



**767-300
STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS D	PERMANENT REPAIRS A		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 150°F (66°C) CURE (SRM 51-70-03) D	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03 B C	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03 B C	8.0 INCHES (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	16.0 INCHES (400 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	NO SIZE LIMIT
DELAMI- NATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	CUT OUT AND REPAIR AS HOLE			

TABLE I - REPAIR DATA FOR 250°F (121°C) CURE ARAMID/GRAPHITE
HONEYCOMB PANELS **E**

**Vertical Stabilizer Auxiliary Box and Trailing Edge Skin Repairs
Figure 201 (Sheet 2 of 2)**

STRUCTURAL REPAIR MANUAL

REPAIR 2 - VERTICAL STABILIZER INTERSPAR SKIN FLUSH REPAIR BETWEEN STRINGERS

REPAIR INSTRUCTIONS

1. Cut out damaged portion of skin to give a hole with the major axis parallel to the stringer.

NOTE: Access to the inside of the stabilizer, outboard of Rib No. 10, may be obtained through the access holes in the front and rear spars.
2. Make the repair parts.
3. Assemble the repair parts and drill the fastener holes.
4. Remove the repair parts.
5. Break sharp edges of initial and repair parts 0.015R to 0.030R.
6. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-11, Type I primer to repair parts and the cut edges of the initial parts as given in AMM 51-24.
9. Install the repair parts making a faying surface seal with BMS 5-95 as given in SRM 51-20-05. Install fasteners wet with BMS 5-95.
10. Fill gap between parts with aerodynamic smoother. (BMS 5-79 or BMS 5-95)
11. Restore initial finish as given in AMM 51-21.

NOTES (CONT)

- D = FASTENER DIAMETER
- A** ONE GAGE THICKER THAN SKIN
- B** SAME GAGE AS SKIN
- C** OUTBOARD OF RIB NO. 11 USE 5/32 DIA FASTENER. INBOARD OF RIB NO. 11 USE 3/16 DIA FASTENER

SYMBOLS

 REPAIR FASTENER LOCATION

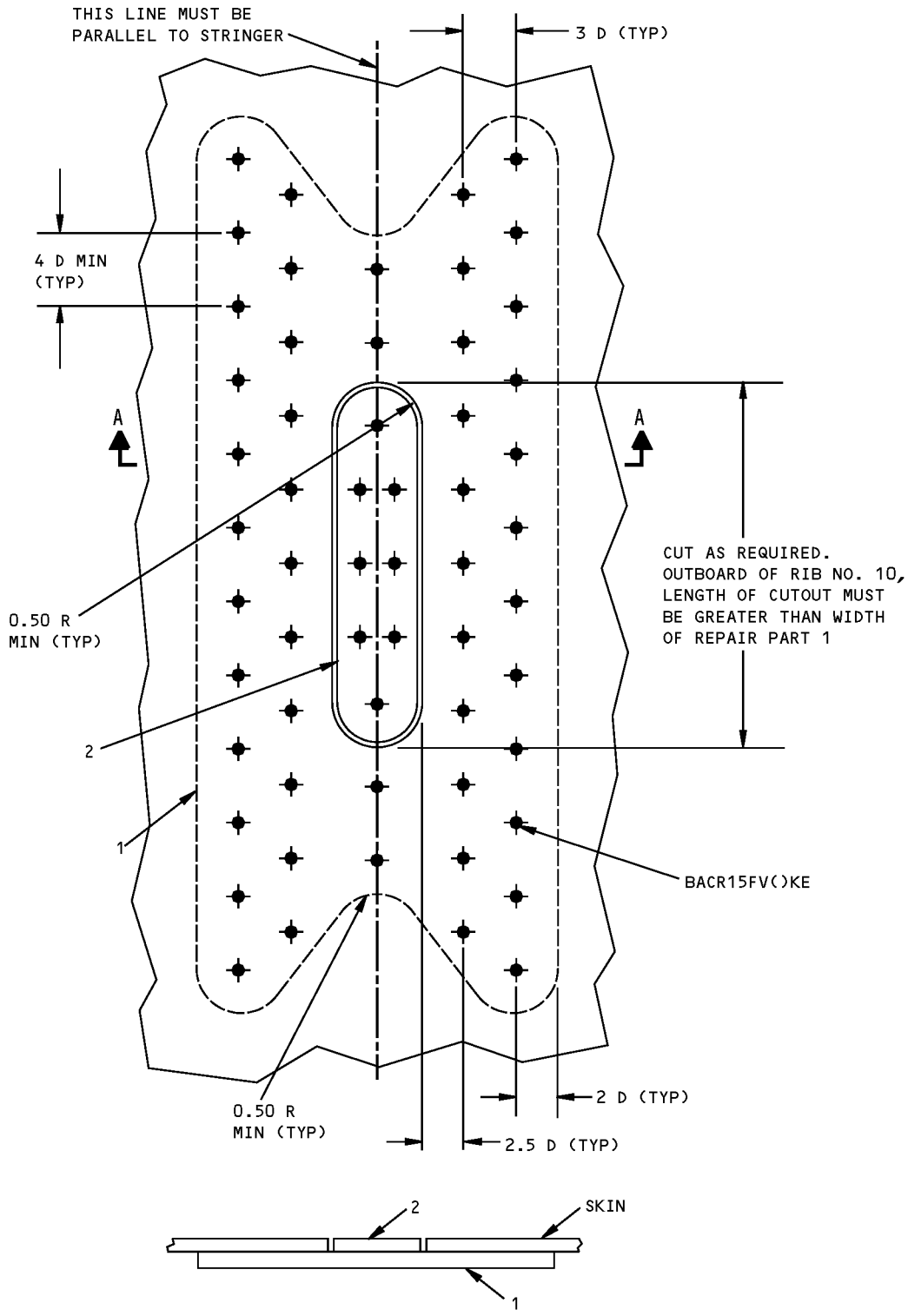
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	7075-T6 A
2	FILLER	1	CLAD 7075-T6 B

NOTES

- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

**Vertical Stabilizer Interspar Skin Flush Repair Between Stringers
Figure 201 (Sheet 1 of 2)**

STRUCTURAL REPAIR MANUAL



**Vertical Stabilizer Interspar Skin Flush Repair Between Stringers
Figure 201 (Sheet 2 of 2)**

STRUCTURAL REPAIR MANUAL

REPAIR 3 - VERTICAL STABILIZER INTERSPAR SKIN FLUSH REPAIR AT A STRINGER

REPAIR INSTRUCTIONS

1. Cut out damaged portion of skin to give a rectangular hole with radiused corners. Do not cut into stringer. If stringer is damaged, see SRM 55-30-03.

NOTE: Access to the inside of the stabilizer, outboard of Rib No. 10, may be obtained through the access holes in the front and rear spars.

2. Drill out initial fasteners in the skin to stringer attachment as required.
3. Make the repair parts.
4. Assemble the repair parts and drill the fastener holes.
5. Remove the repair parts.
6. Break sharp edges of the initial and repair parts 0.015R to 0.030R.
7. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply one coat of BMS 10-11, Type I primer to the repair parts and the cut edges of the initial parts as shown in AMM 51-24.
10. Install the repair parts making a faying surface seal with BMS 5-95 as shown in SRM 51-20-05. Install fasteners wet with BMS 5-95.
11. Fill gap between parts with aerodynamic smoother. (BMS 5-79 or BMS 5-95)
12. Restore initial finish as given in AMM 51-21.

NOTES

- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
- AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
- AMM 51-31 FOR SEALS AND SEALING
- SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS

NOTES (CONT)

- SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
- SRM 51-20-05 FOR SEALING OF REPAIRS
- SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS
- D = FASTENER DIAMETER

- A** ONE GAGE HEAVIER THAN SKIN
- B** SAME GAGE AS SKIN
- C** OUTBOARD OF RIB NO. 11 USE 5/32 DIA FASTENER. INBOARD OF RIB NO. 11 USE 3/16 DIA FASTENER
- D** IF FASTENER HOLE IS DAMAGED USE NEXT SIZE FASTENER. INITIAL DEPTH OF COUNTERSINK MUST BE MAINTAINED, MICROSHAVE FLUSH PROTRUDING PORTION OF FASTENER HEAD AS GIVEN IN SRM 51-10-01.

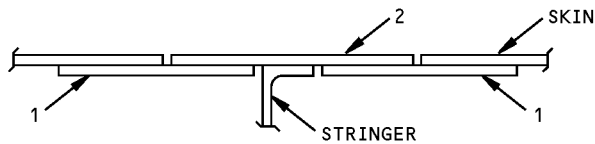
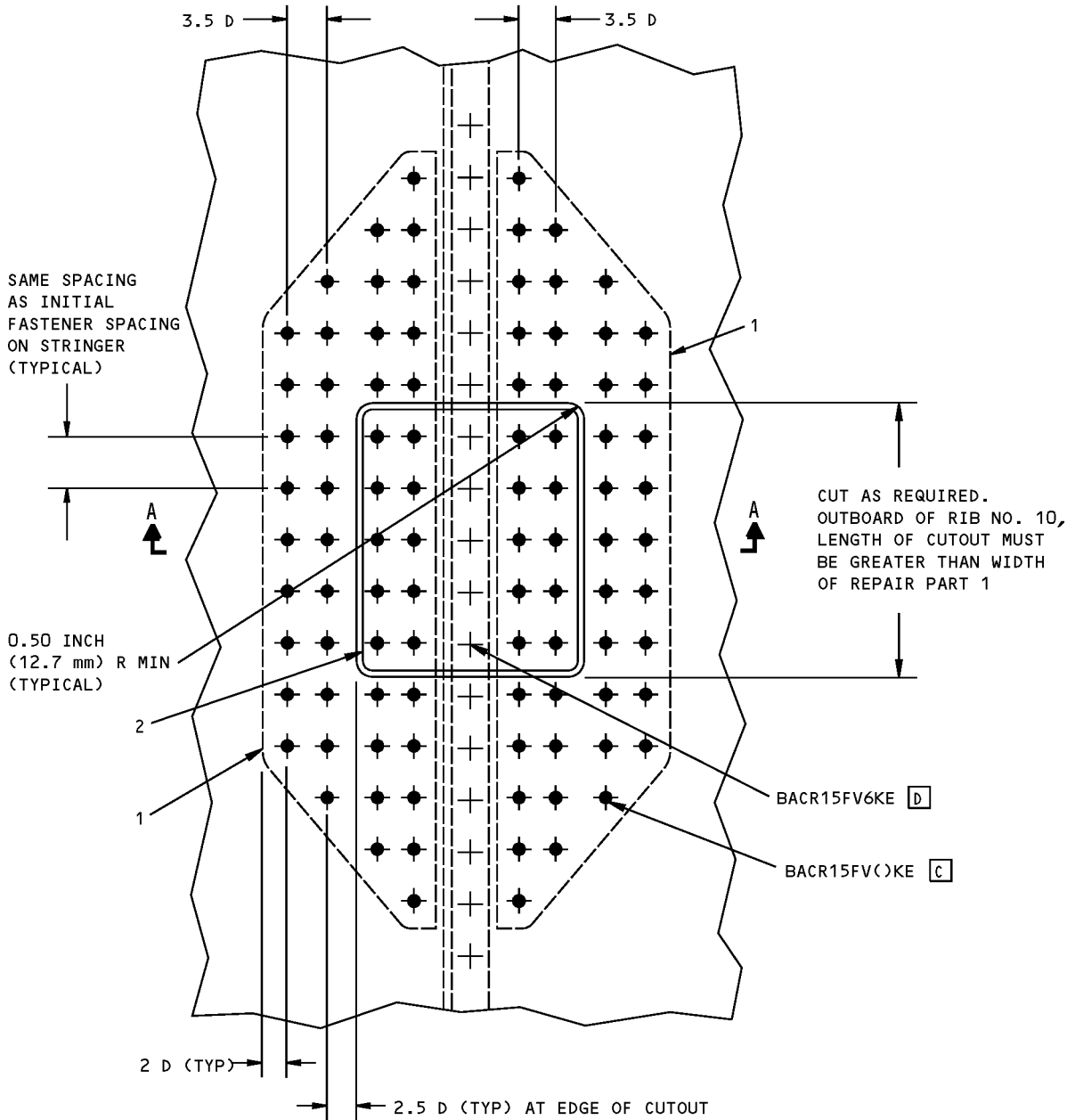
SYMBOLS

- ⊕ INITIAL FASTENER LOCATION
- REPAIR FASTENER LOCATION

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	2	7075-T6 A
2	FILLER	1	CLAD 7075-T6 B

**Vertical Stabilizer Interspar Skin Flush Repair at a Stringer
Figure 201 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



SECTION A-A

**Vertical Stabilizer Interspar Skin Flush Repair at a Stringer
Figure 201 (Sheet 2 of 2)**

STRUCTURAL REPAIR MANUAL

REPAIR 4 - VERTICAL STABILIZER LEADING EDGE SKIN EXTERNAL PATCH REPAIR (BETWEEN RIBS)

REPAIR INSTRUCTIONS

NOTE: Replace external repair with a flush repair at the earliest convenient time.

1. For skin cracks, drill 0.25 inch (6.35 mm) stop hole at each end of all cracks that do not extend into fastener holes.
2. For other damage, cut out damage making a hole with its major axis parallel to the leading edge ribs.
3. Make the repair doubler from the material specified in Table I. Form to required contour.
4. Break sharp edge of initial part and repair part to a 0.015-0.030 radius.
5. Remove all nicks, gouges, scratches, and burrs from skin at cutout and repair doubler.
6. Return all indented or projecting skin to its initial contour.
7. Prefit the repair doubler and drill the fastener holes as shown in Detail I.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Install the repair doubler making a faying surface seal between the doubler and leading edge skin with BMS 5-95 as given in SRM 51-20-05.
10. Install fasteners wet with BMS 5-95 sealant.
11. Apply aerodynamic sealant BMS 5-79 as given in SRM 51-20-05.
12. Restore initial finish as given in AMM 51-21.

NOTES

- BLIND RIVET REPAIRS SHOULD BE INSPECTED EVERY "A" CHECK AND REPLACED WITH FLUSH REPAIRS NO LATER THAN THE NEXT "C" CHECK **[B]**
- D = FASTENER DIAMETER
- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-05 FOR SEALING REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES, AND EDGE MARGINS, EXCEPT AS NOTED

[A] FOR REPAIR MATERIAL GAGE SEE TABLE I

[B] THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN

SYMBOLS

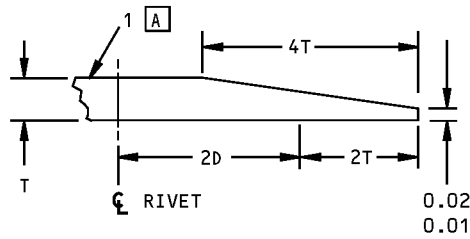
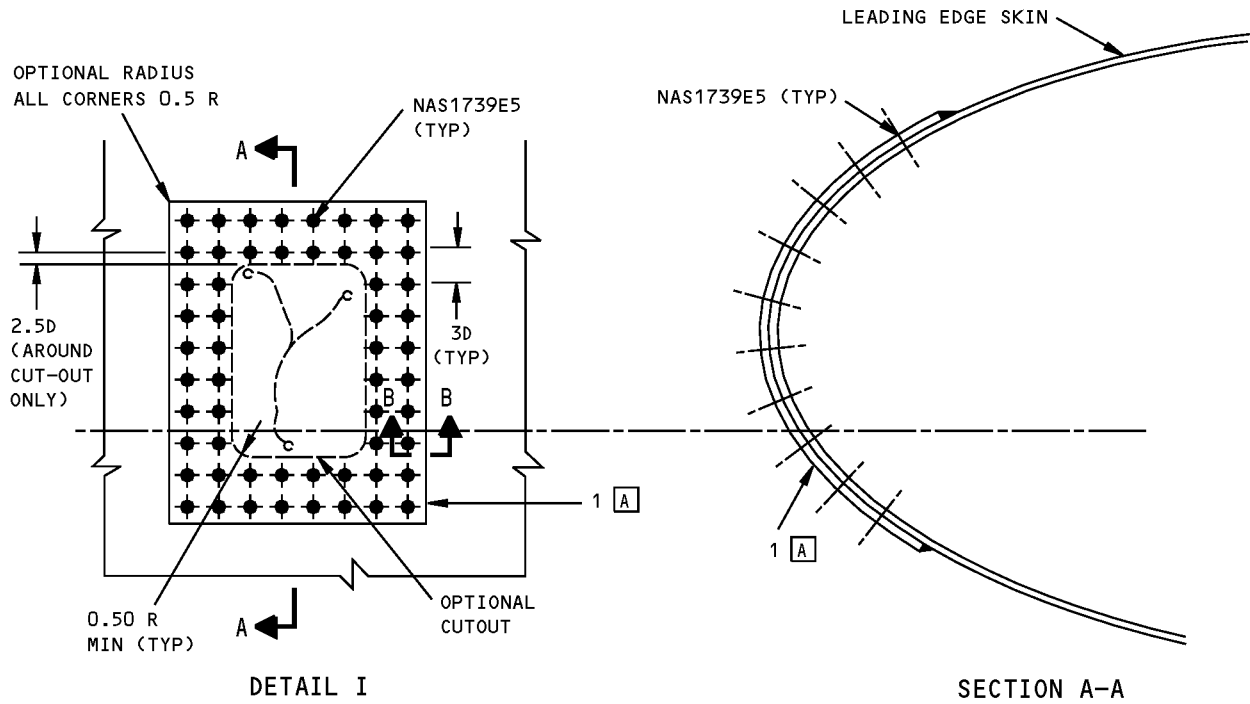
 REPAIR FASTENER LOCATIONS

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.071 CLAD 2024-T3

TABLE I

**Vertical Stabilizer Leading Edge Skin External Patch Repair (Between Ribs)
Figure 201 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**



DETAIL OF CHAMFER
SECTION B-B

**Vertical Stabilizer Leading Edge Skin External Patch Repair (Between Ribs)
Figure 201 (Sheet 2 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 5 - VERTICAL STABILIZER LEADING EDGE SKIN FLUSH REPAIR (BETWEEN RIBS)

REPAIR INSTRUCTIONS

1. Cut out the damaged skin to a rectangular shape. Radius corners 0.50 inch (12.7 mm) min.
2. Make repair plate 1. Form to required contour.
3. Make the repair doublers, and strap items 2, 3, and 4 into required contour.
4. Break all sharp edges of initial and repair parts 0.015 to 0.030 inches.
5. Locate, drill and countersink fastener holes.
6. Remove all nicks, burrs, scratches and corners from initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the initial parts, as shown in AMM 51-24.
9. Install repair doublers, and strap items 2, 3, and 4 through rectangular hole in skin making a faying surface seal with BMS 5-95 sealant. Rivet in place using solid BACR15CE(5)D rivets installed wet with BMS 5-95 sealant.
10. Fit repair plate onto doubler and fasten using blind rivets NAS1739E5 installed wet with BMS 5-95 sealant.
11. Fill gaps between skin and repair plate with BMS 5-79 or BMS 5-95 sealant.

NOTES

- REFER TO THE FOLLOWING WHEN MAKING THIS REPAIR
 - AMM 51-20 FOR FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS, WHERE THE REPAIR EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL REPAIR PARTS
 - SRM 51-20-05 FOR SEALING REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES, AND EDGE MARGINS, EXCEPT AS NOTED

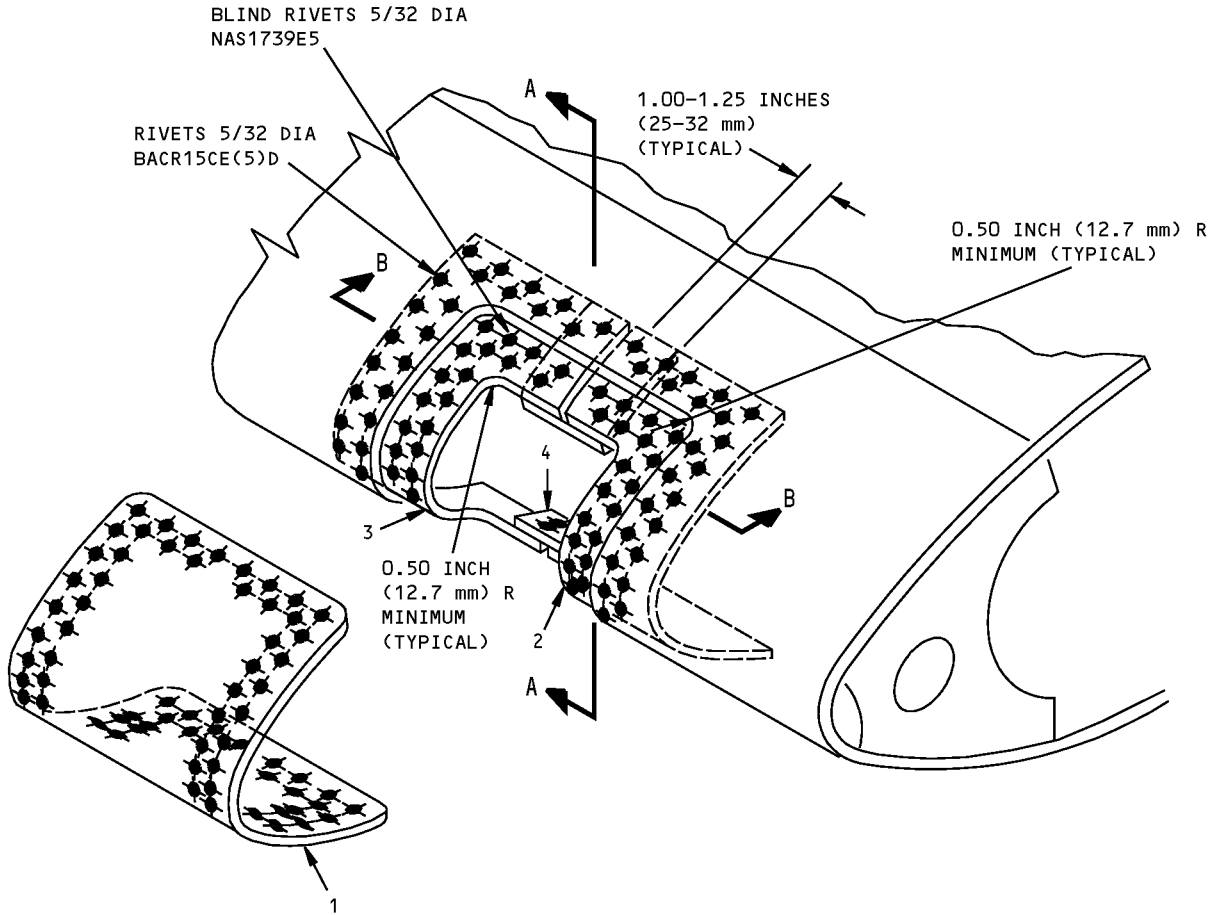
SYMBOLS

 REPAIR FASTENER LOCATION

REPAIR MATERIAL			
PART	QTY	MATERIAL	
1	REPAIR PLATE	1	0.063 CLAD 7075-T6
2	DOUBLER	1	0.071 CLAD 7075-T6
3	DOUBLER	1	0.071 CLAD 7075-T6
4	STRAP	1	0.071 CLAD 7075-T6
5	FILLER	2	0.025 CLAD 7075-T6

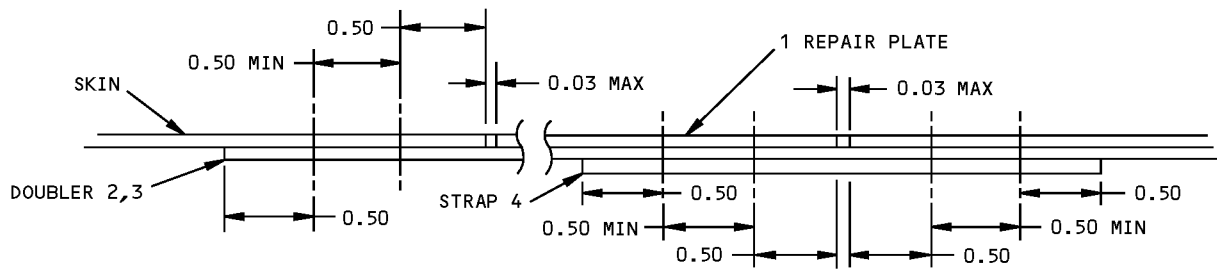
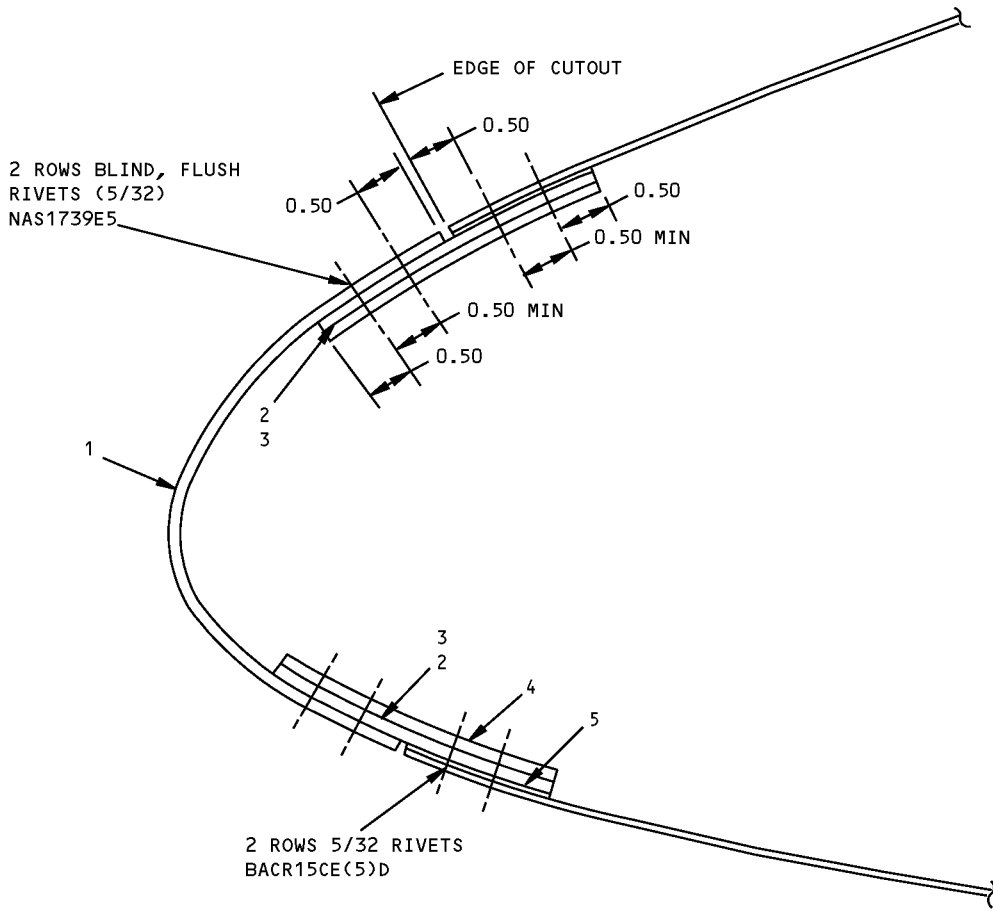
**Vertical Stabilizer Leading Edge Skin Flush Repair (Between Ribs)
Figure 201 (Sheet 1 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**



**Vertical Stabilizer Leading Edge Skin Flush Repair (Between Ribs)
Figure 201 (Sheet 2 of 3)**

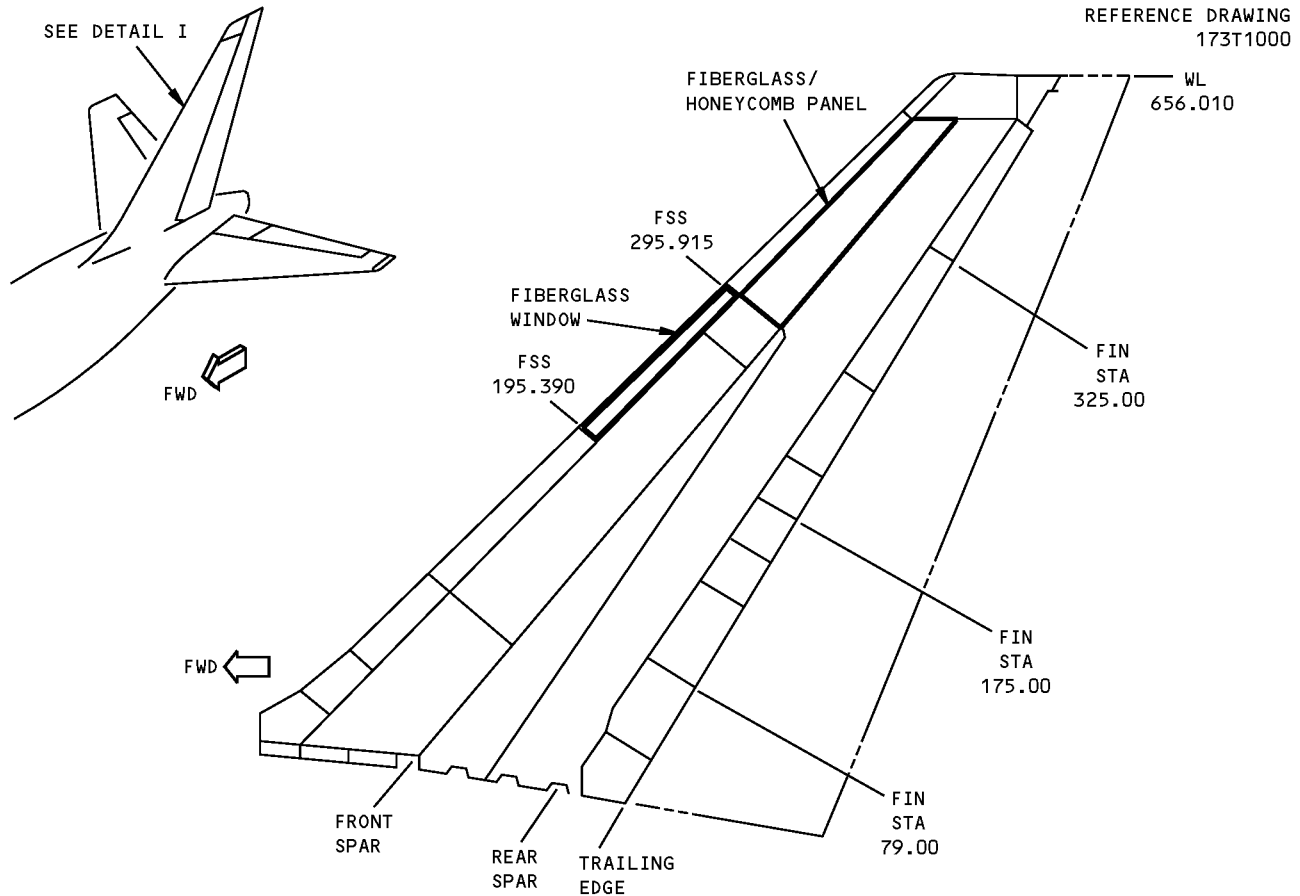
**767-300
STRUCTURAL REPAIR MANUAL**



**Vertical Stabilizer Leading Edge Skin Flush Repair (Between Ribs)
Figure 201 (Sheet 3 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 6 - VERTICAL STABILIZER LEADING EDGE FIBERGLASS PANEL



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
DETAIL I

NOTES

- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS.
 - REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20
 - RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING AS GIVEN IN SRM 51-70-14
- [A]** ONE REPAIR FOR EACH SQUARE FOOT OF AREA AND A MINIMUM SPACING (EDGE TO EDGE) OF 6 INCHES (150 mm) TO ANY OTHER DAMAGE OR REPAIRS.
- [B]** LIMITED TO REPAIR OF ONE FACESHEET SKIN AND HONEYCOMB CORE. INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EVERY AIRPLANE "2A" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
- [C]** WHERE BMS 5-95 SEALANT IS APPLIED ON EXTERIOR SURFACE OF PANEL AT MANUFACTURE, REAPPLY BMS 5-95 SEALANT ON REWORKED AREAS PRIOR TO THE APPLICATION OF ENAMEL FINISH. REFER TO AMM 51-21-12

**Vertical Stabilizer Leading Edge Fiberglass Panel Repair
Figure 201 (Sheet 1 of 2)**

STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS B	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (SRM 51-70-06)	WET LAYUP 150°F (66°C) CURE (SRM 51-70-06) A	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17) A	250°F (121°C) CURE (SRM 51-70-07)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. A	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. A	8.0 INCHES (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	12.0 INCHES (300 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED	NO SIZE LIMIT
DELAMI- NATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	UP TO 2.0 INCHES (50 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.L. OVER 2.0 INCHES (50 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F (121°C) CURE FIBERGLASS HONEYCOMB
OR SOLID LAMINATE FIBERGLASS PANEL **C**

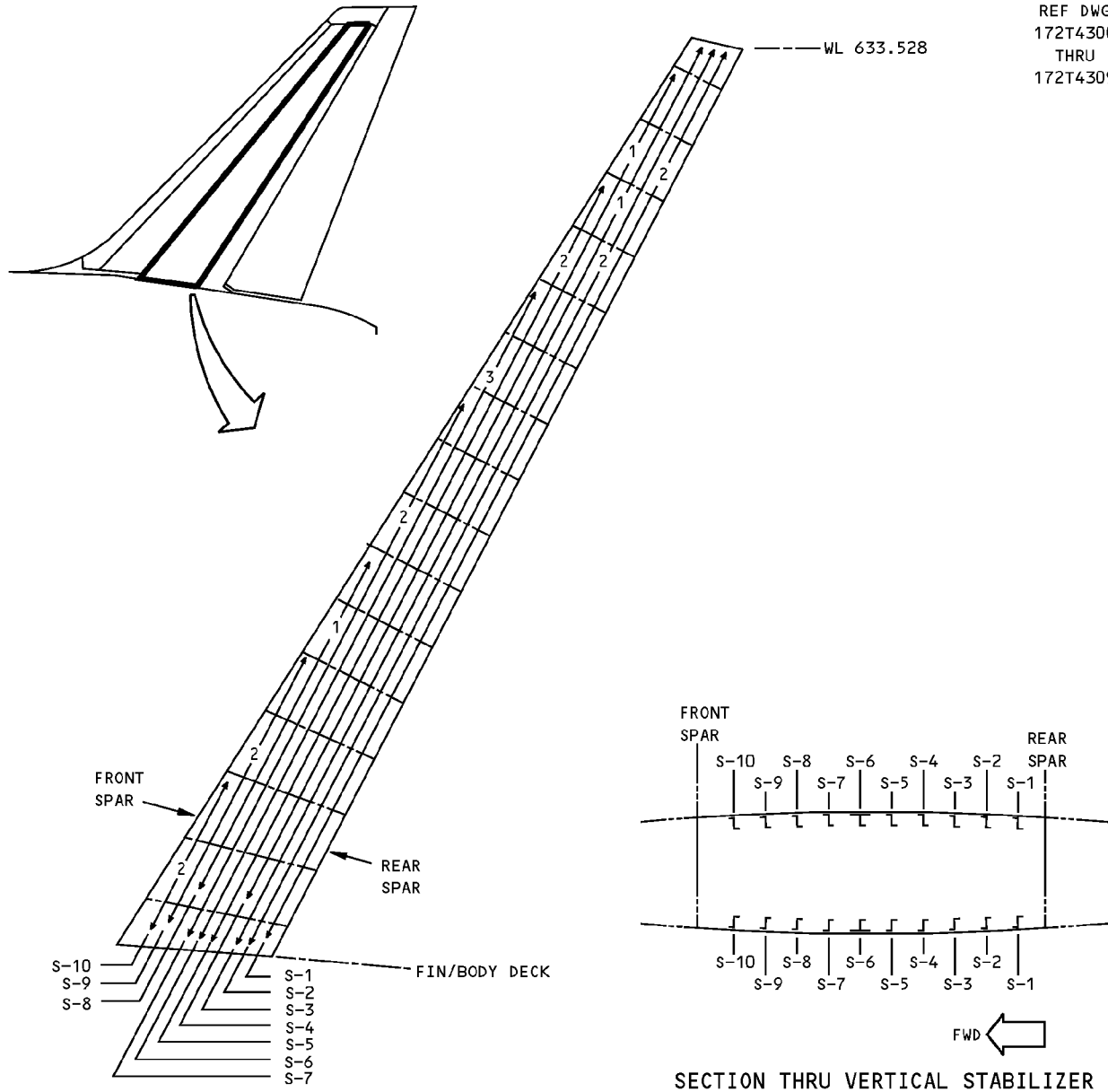
TABLE II

Vertical Stabilizer Leading Edge Fiberglass Panel Repair
Figure 201 (Sheet 2 of 2)

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - VERTICAL STABILIZER STRINGERS

REF DWG
172T4300
THRU
172T4309

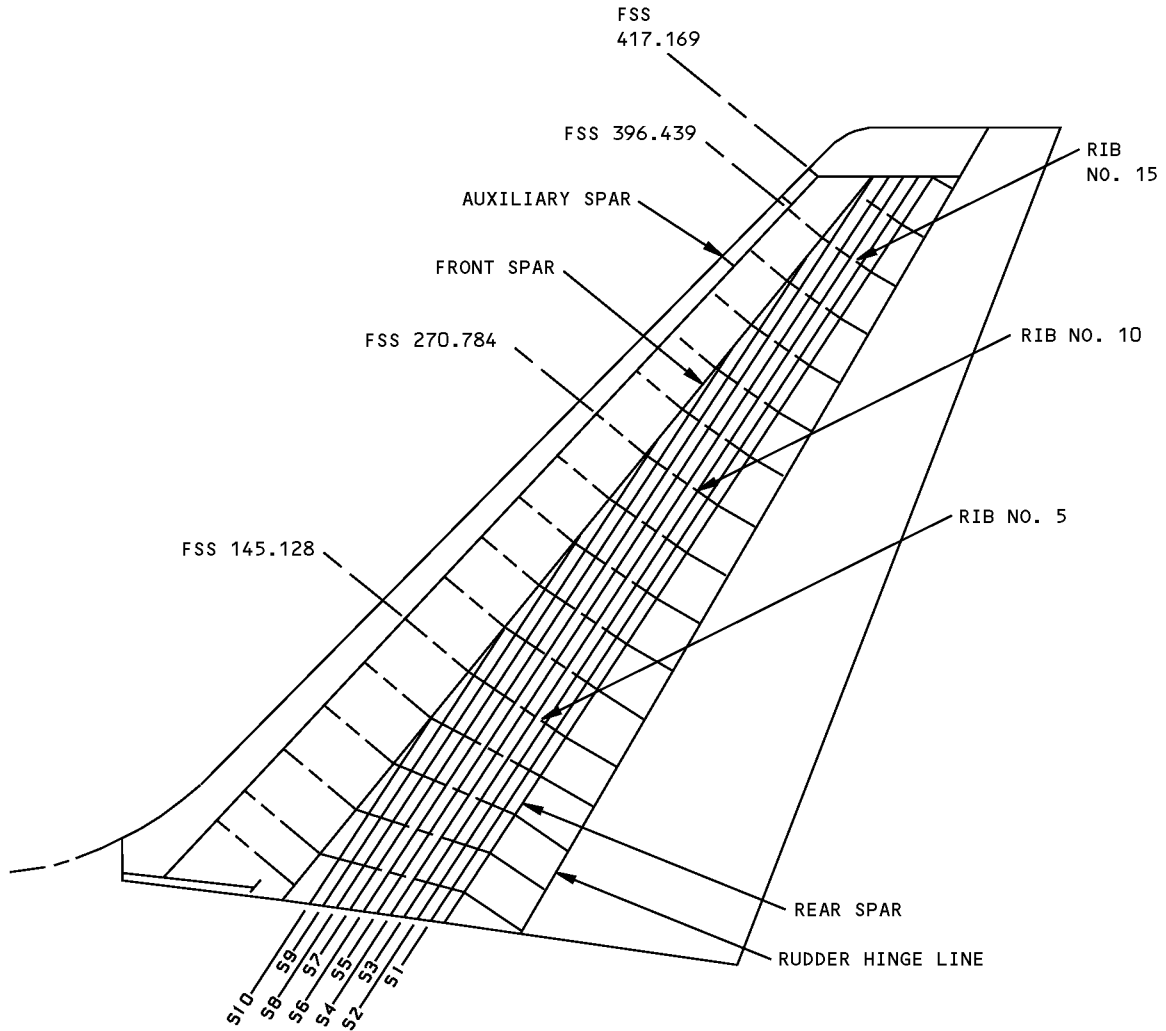


ITEM	DESCRIPTION	GAGE	MATERIAL	STRINGER TYPE	EFFECTIVITY
1	STRINGER		BAC1517-2103 7075-T6511		
2	STRINGER		BAC1517-2104 7075-T6511		
3	STRINGER		BAC1506-3101 7075-T6511		

**Vertical Stabilizer Stringer Identification
Figure 1**

767-300
STRUCTURAL REPAIR MANUAL

ALLOWABLE DAMAGE 1 - VERTICAL STABILIZER STRINGERS



Allowable Damage - Vertical Stabilizer Stringers
Figure 101 (Sheet 1 of 3)



767-300
STRUCTURAL REPAIR MANUAL

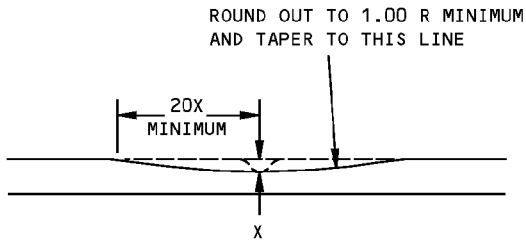
LOCATION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES
STIFFENER SKIN FLANGE	REMOVE EDGE CRACKS AS GIVEN IN DETAIL II OTHER CRACKS ARE NOT PERMITTED	SEE DETAILS I AND II	NOT PERMITTED	NO HOLES PERMITTED
STIFFENER VERTICAL LEG	REMOVE EDGE CRACKS AS GIVEN IN DETAIL II OTHER CRACKS ARE NOT PERMITTED	SEE DETAILS I AND II	NOT PERMITTED	SEE DETAIL II
STIFFENER FREE FLANGE	REMOVE EDGE CRACKS AS GIVEN IN DETAIL II OTHER CRACKS ARE NOT PERMITTED	SEE DETAILS I AND II	NOT PERMITTED	NOT PERMITTED

Allowable Damage - Vertical Stabilizer Stringers
Figure 101 (Sheet 2 of 3)

D634T210

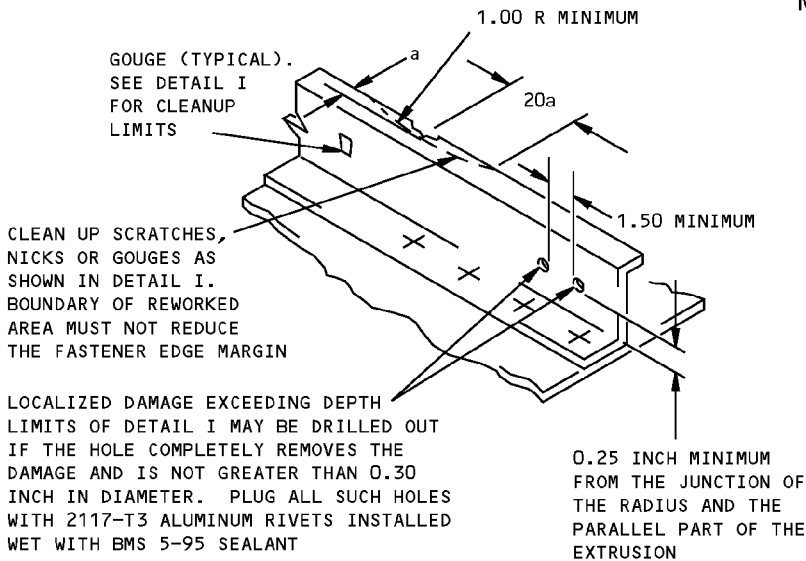
ALLOWABLE DAMAGE 1
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767-300 STRUCTURAL REPAIR MANUAL



NOTE: THE MAXIMUM PERMISSIBLE REWORK DEPTH OF A CRACK, SCRATCH OR GOUGE IS 0.005 INCH, BUT MUST NOT EXCEED 20% OF MATERIAL THICKNESS.

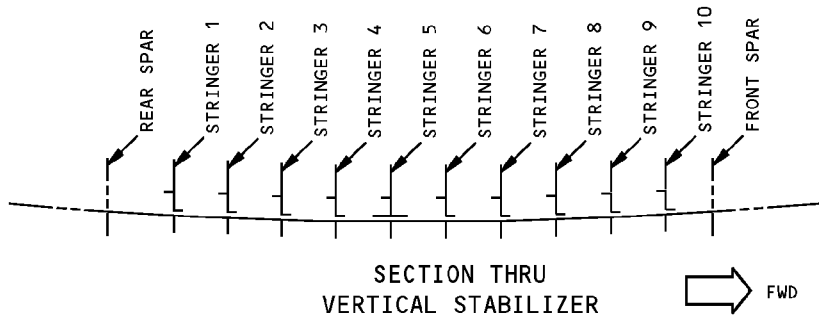
**SECTION THROUGH GOUGE
DETAIL I**



NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- a IS EQUAL TO, OR LESS THAN, THE DIAMETER OF THE LARGEST RIVET OR BOLT HOLE IN THE IMMEDIATE VICINITY OF THE DAMAGE.
- DAMAGE CLEANUP IS NOT PERMITTED IN ANY CROSS-SECTION WHERE A HOLE IS LOCATED.
- CORROSION - APPLY GOUGE CLEANUP LIMITS WHEN CLEANING UP CORROSION. SEE DETAIL I.
- EDGE CRACKS - APPLY GOUGE CLEANUP LIMITS WHEN CLEANING UP CRACKS. SEE DETAIL I.

DETAIL II



**Allowable Damage - Vertical Stabilizer Stringers
Figure 101 (Sheet 3 of 3)**

STRUCTURAL REPAIR MANUAL

REPAIR 1 - VERTICAL STABILIZER ZEE STRINGER REPAIR

REPAIR INSTRUCTIONS

1. Cut and remove the damaged portion of stringer. The cut lines must be located far enough from the adjacent rib to allow for the length of the repair parts which would otherwise interfere with the pad at the rib attachment. If skin is damaged, refer to SRM 55-30-01.

NOTE: Access to stabilizer stringers above Rib No. 10 may be obtained through the access holes in the front and rear spars.
2. Calculate the dimensions and gages of the repair parts. Refer to SRM 55-10-03, Repair 1 for a sample calculation.
3. Make the repair parts.
4. Assemble the repair parts and drill the fastener holes.
5. Remove the repair parts.
6. Break sharp edges of initial and repair parts 0.015 R to 0.030 R.
7. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
8. Shot peen the cut edges of stringer as given in SRM 51-20-06.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply one coat of BMS 10-11, Type I primer to the repair parts and the cut edges of the stringer as given in AMM 51-24.
11. Install the repair parts making a faying surface seal as given in SRM 51-20-05. Install fasteners wet with BMS 5-95.
12. Restore initial finish as given in AMM 51-21.

NOTES

- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
 - AMM 51-21 FOR FOR INTERIOR AND EXTERIOR FINISHES
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES, AND EDGE MARGINS
 - D = FASTENER DIAMETER
- A** SELECTION OF GAGE TO BE DETERMINED BY INITIAL STRINGER THICKNESS AS SHOWN IN TABLE I AND AREA REQUIREMENTS IN CONJUNCTION WITH OTHER REPAIR PARTS
- B** SELECTION OF GAGE TO BE DETERMINED IN CONJUNCTION WITH OTHER REPAIR PARTS TO GIVE A COMBINED CROSS-SECTIONAL AREA OF ALL REPAIR ANGLES AT LEAST 1.25 TIMES GREATER THAN INITIAL STRINGER CROSS-SECTIONAL AREA. EACH FLANGE SHOULD BE JOINED BY MATERIAL 1.25 TIMES GREATER THAN THE INITIAL CROSS-SECTIONAL AREA
- C** IF HOLE IS DAMAGED USE NEXT SIZE FASTENER. INITIAL DEPTH OF COUNTERSINK MUST BE MAINTAINED. MICROSHAVE FLUSH PROTRUDING PORTION OF FASTENER HEAD AS GIVEN IN SRM 51-10-01
- D** WHEN CALCULATING FASTENER REQUIREMENTS, FRACTIONS OF A FASTENER MUST BE TAKEN TO THE NEXT HIGHER WHOLE NUMBER
- E** FOR CALCULATION OF FASTENER REQUIREMENTS IN STRINGER WEB, DIVIDE VALUES IN TABLE II BY 2
- F** FOR DAMAGE BELOW RIB NO. 13 SEE DETAIL I. FOR DAMAGE ABOVE RIB NO. 13 SEE DETAIL II.

Vertical Stabilizer Zee Stringer Repair
Figure 201 (Sheet 1 of 5)



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STRUCTURAL REPAIR MANUAL

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	ANGLE	1	7075-0 HT TR-T6 A
2	ANGLE	1	7075-0 HT TR-T6 A
3	ANGLE	1	7075-0 HT TR-T6 A
4	ANGLE	1	7075-0 HT TR-T6 A
5	ANGLE	1	7075-0 HT TR-T6 B
6	ANGLE	1	7075-0 HT TR-T6 B
7	FILLER	1	SAME AS INITIAL STRINGER
8	ANGLE	1	0.040 7075-0 HT TR-T6
9	ANGLE	1	0.040 7075-0 HT TR-T6
10	ANGLE	1	0.040 7075-0 HT TR-T6
11	ANGLE	1	0.040 7075-0 HT TR-T6
12	STRAP	1	0.040 7075-T6
13	STRAP	1	0.040 7075-T6

Vertical Stabilizer Zee Stringer Repair
Figure 201 (Sheet 2 of 5)

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REPAIR 1
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STRUCTURAL REPAIR MANUAL**

INITIAL STRINGER THICKNESS	THICKNESS OF REPAIR PARTS 1 AND 2	THICKNESS OF REPAIR PARTS 3 AND 4
UP TO 0.112	0.040	0.040
OVER 0.112 THRU 0.125	0.040	0.045
OVER 0.125 THRU 0.140	0.040	0.050
OVER 0.140 THRU 0.150	0.040	0.056

TABLE I

GAGE OF REPAIR	MINIMUM NUMBER OF FASTENERS PER INCH OF WIDTH OF REPAIR PART FLANGE <input type="checkbox"/> <input type="checkbox"/>		
	INITIAL FASTENERS	REPAIR FASTENERS	
	3/16 DIA	5/32 DIA	3/16 DIA
0.040	5.3	4.1	3.5
0.045	5.1		3.5
0.050	4.8		3.5
0.056	4.5		3.5
0.063	4.3		3.5
0.071	4.5		3.5
0.080	5.0		3.5
0.090	5.6		3.5
0.100	6.2		3.5

TABLE II

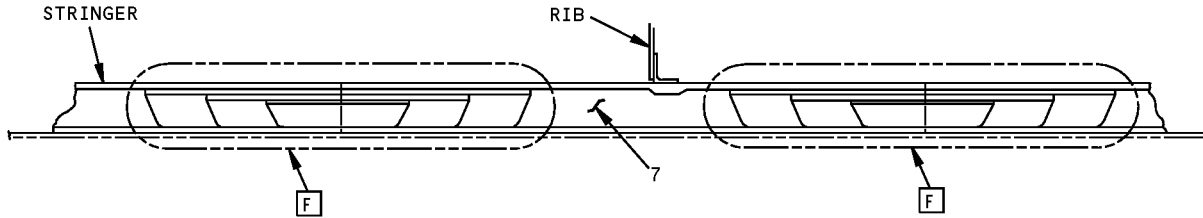
**Vertical Stabilizer Zee Stringer Repair
Figure 201 (Sheet 3 of 5)**

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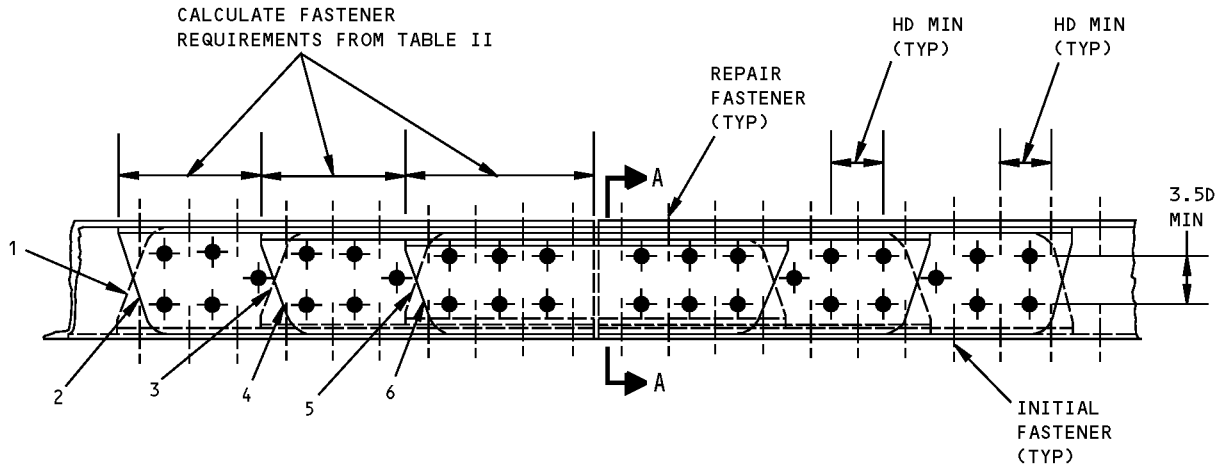
55-30-03

REPAIR 1
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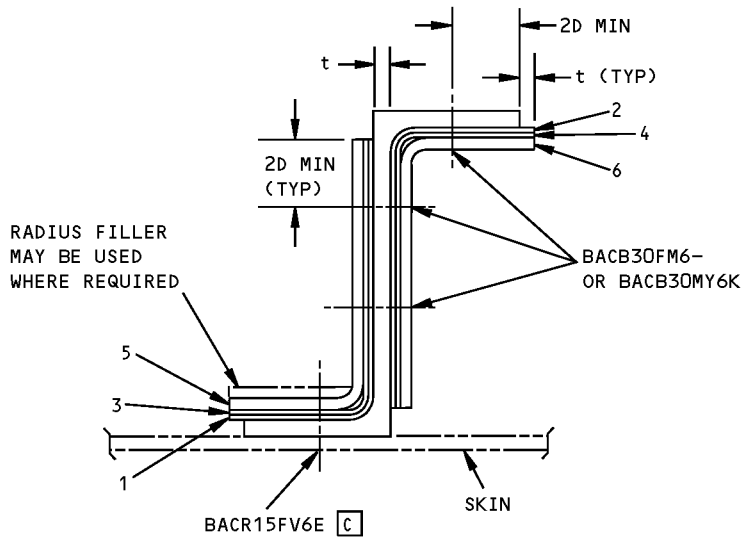
**767-300
STRUCTURAL REPAIR MANUAL**



TYPICAL REPAIR INSTALLATION



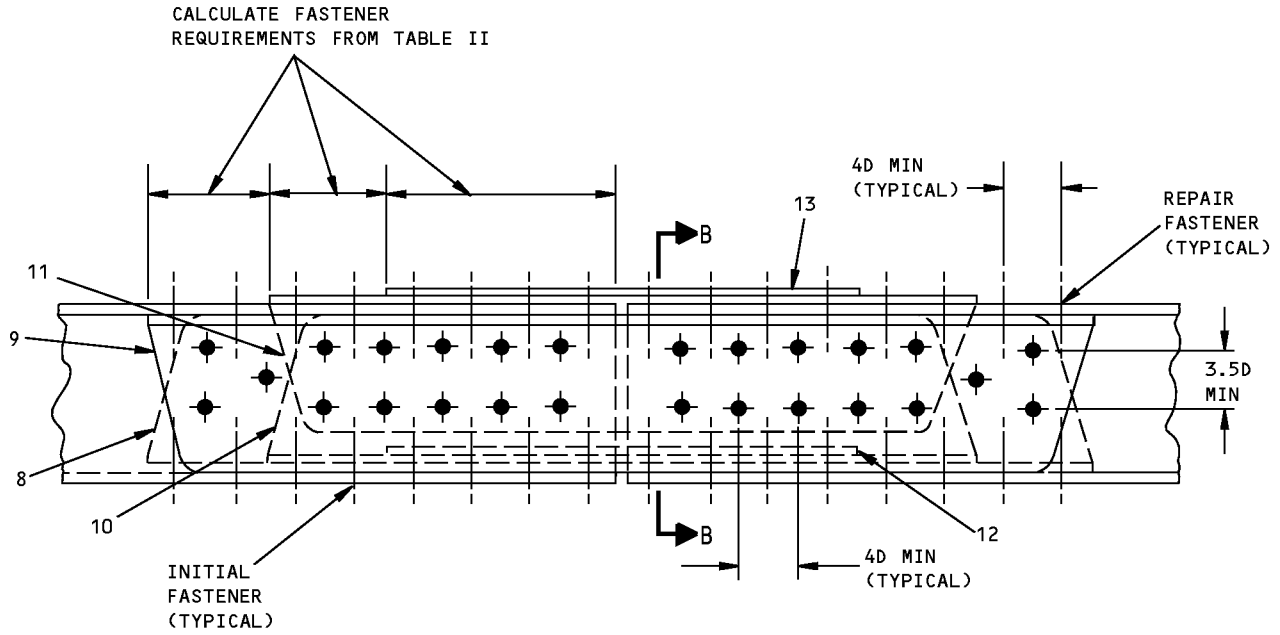
DETAIL I



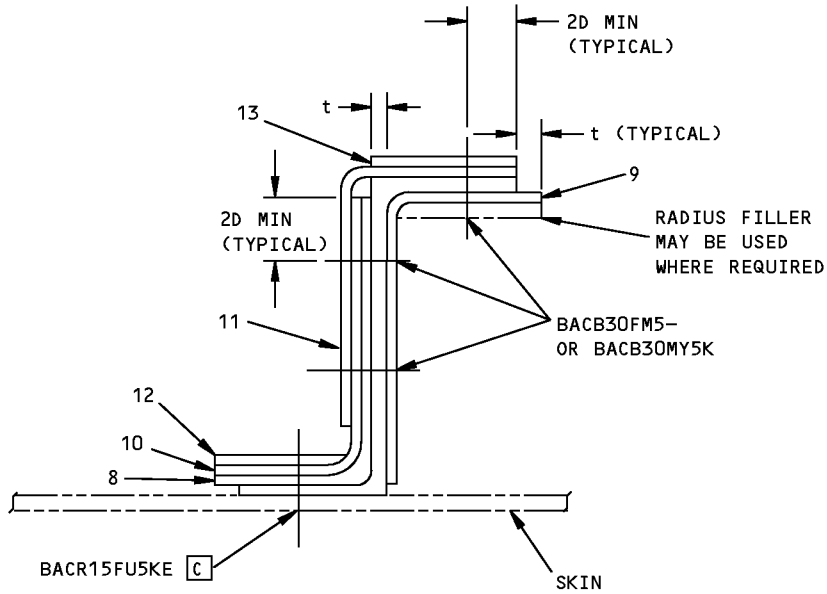
SECTION A-A

**Vertical Stabilizer Zee Stringer Repair
Figure 201 (Sheet 4 of 5)**

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STRUCTURAL REPAIR MANUAL**



DETAIL II

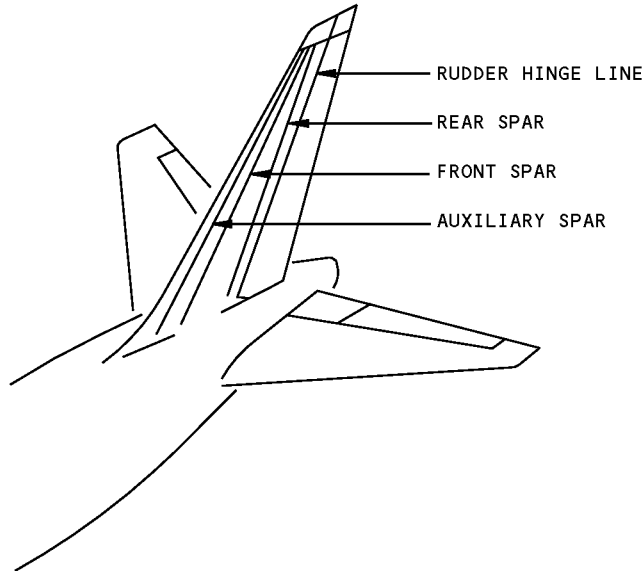


SECTION B-B

**Vertical Stabilizer Zee Stringer Repair
Figure 201 (Sheet 5 of 5)**

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STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - VERTICAL STABILIZER RIBS



NOTES

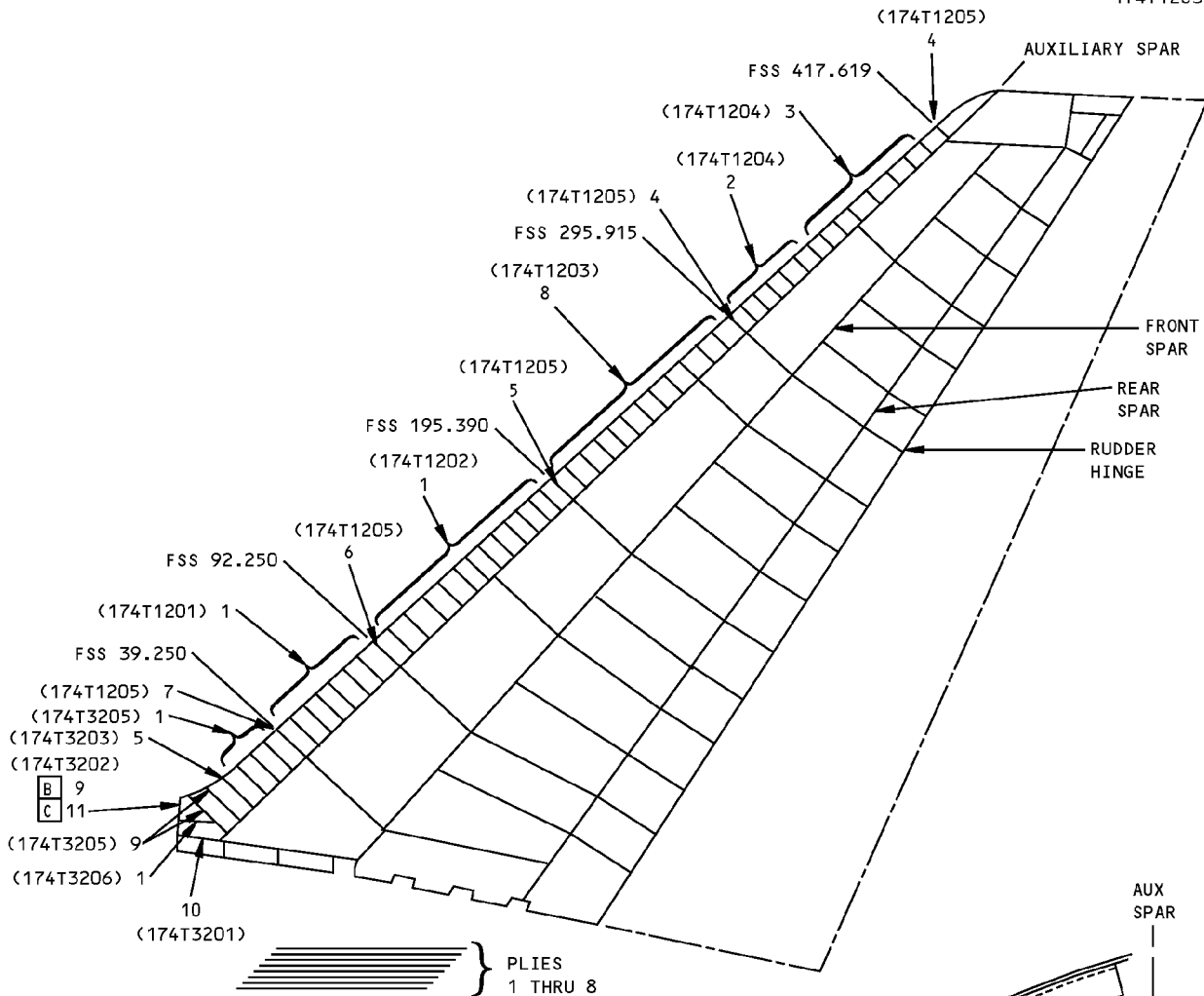
- FOR RIBS FORWARD OF AUXILIARY SPAR SEE DETAIL I
- FOR RIBS BETWEEN AUXILIARY SPAR AND FRONT SPAR SEE DETAIL II
- FOR RIBS BETWEEN FRONT SPAR AND REAR SPAR SEE DETAIL III
- FOR RIBS BETWEEN REAR SPAR AND RUDDER HINGE LINE SEE DETAIL IV

- A** PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION
- B** FOR AIRPLANES WITH CUM LINE NUMBERS 132 THRU 214
- C** FOR AIRPLANES WITH CUM LINE NUMBERS 215 AND ON AND AIRPLANES WITH SERVICE BULLETIN 767-55A0007 INCORPORATED

Vertical Stabilizer Rib Identification
Figure 1 (Sheet 1 of 9)

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STRUCTURAL REPAIR MANUAL**

REF DWG
175T0000
174T1000
174T1203

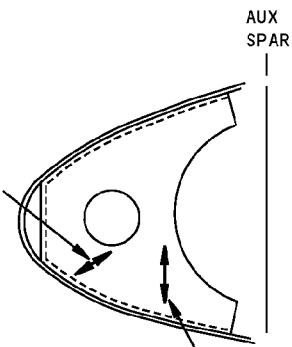


SECTION THRU RIB

ITEM	PLY NO	MATERIAL	PLY ORIENTATION A
8 (DETAIL I)	1,2,7,8	SEE LIST OF MATERIAL	0° OR 90°
	3,4,5,6	SEE LIST OF MATERIAL	± 45°

**DETAIL OF PLY ORIENTATION FOR ITEM 8
DETAIL I**

WARP DIRECTION FOR PLYS NO. 3,4,5 AND 6



WARP DIRECTION FOR PLYS NO. 1,2,7 AND 8

LIST OF MATL

**Vertical Stabilizer Rib Identification
Figure 1 (Sheet 2 of 9)**



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STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB	0.050	CLAD 2024-T42	
2	RIB	0.040	CLAD 2024-T42	
3	RIB	0.032	CLAD 2024-T42	
4	RIB ASSY WEB STRAP	0.032 0.063	CLAD 2024-T42 CLAD 7075-T6	
5	RIB ASSY WEB STRAP	0.050 0.063	CLAD 2024-T42 CLAD 7075-T6	
6	RIB ASSY CHORD WEB	 0.050	BAC1506-1838 7075-T6511 OPTIONAL: BAC1506-2681 7075-T6511 CLAD 2024-T42	
7	RIB ASSY CHORD WEB	0.050	BAC1506-2251 7075-T6511 CLAD 2024-T42	
8	RIB		FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE I, 250°F (121°C) CURE	
9	RIB	0.063	CLAD 2024-T42	
10	RIB ASSY CHORD WEB	0.050	BAC1506-2374 7075-T6511 CLAD 7075-T6	
11	RIB ASSY RIB ACCESS PANEL	0.063 0.063	CLAD 2024-T42 CLAD 2024-T62	

LIST OF MATERIALS FOR DETAIL I

**Vertical Stabilizer Rib Identification
Figure 1 (Sheet 3 of 9)**

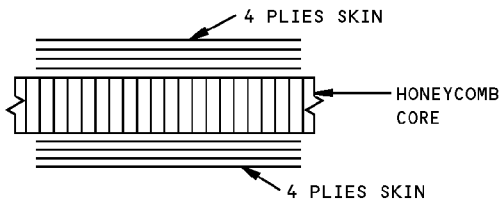
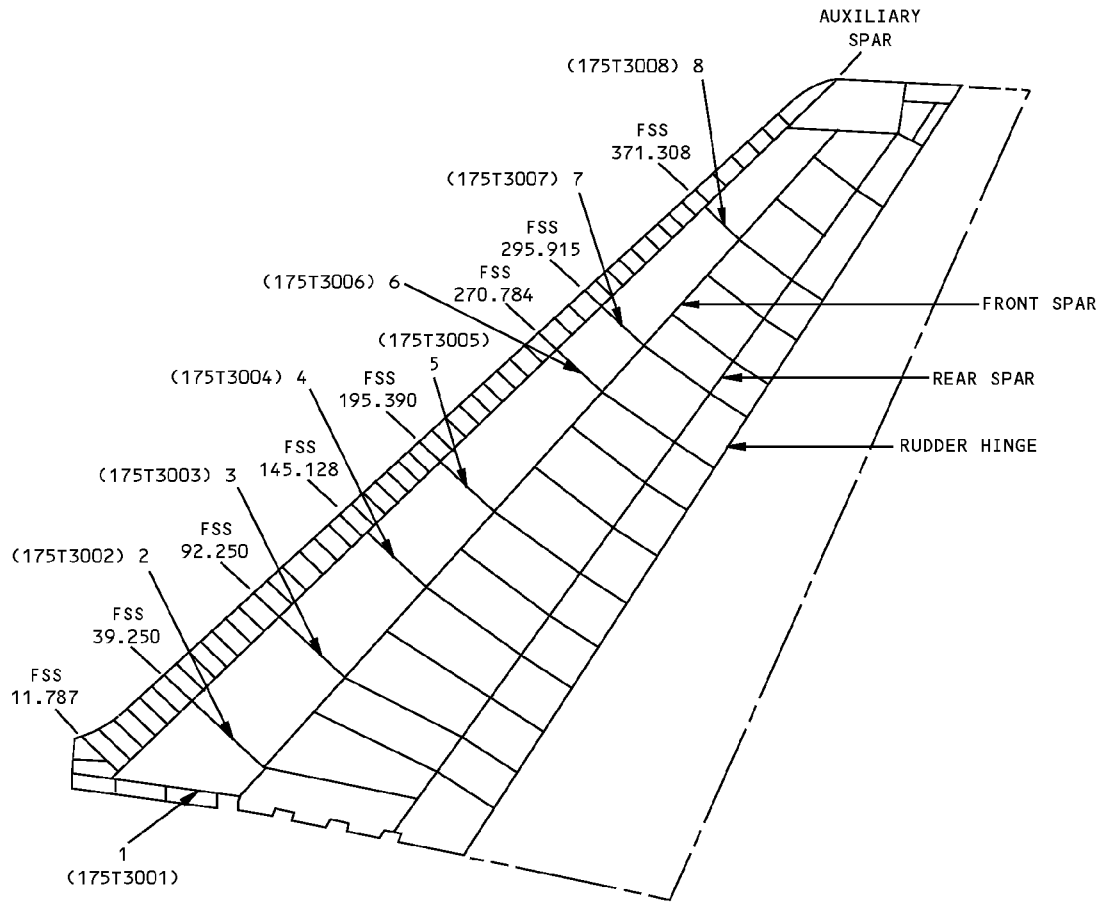
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REF DWG
175T0000
175T3008



SECTION THROUGH RIB

ITEM	PLY NO	MATERIAL	PLY ORIENTATION A
8 (DETAIL II)	1 THRU 8	SEE LIST OF MATERIAL	$\pm 45^\circ$

MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY.
SEE BOEING DRAWING FOR EDGE BAND AND AREAS WITH DOUBLERS.

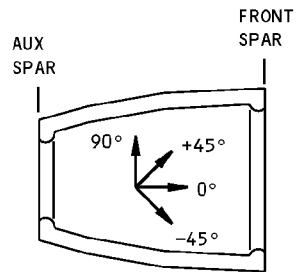


DIAGRAM OF PLY ORIENTATION

DETAIL OF PLY ORIENTATION FOR ITEM 8

DETAIL II



**Vertical Stabilizer Rib Identification
Figure 1 (Sheet 4 of 9)**

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STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB ASSY CHORD WEB	0.050	BAC1505-101212 7075-T6511 OPTIONAL: BAC1505-101101 7075-T6511 CLAD 7075-T6	
2	RIB ASSY CHORD WEB	0.032	BAC1505-101213 7075-T6511 OPTIONAL: BAC1505-101101 7075-T6511 CLAD 7075-T6	
3	RIB ASSY CHORD WEB	0.050	BAC1505-101210 7075-T6511 OPTIONAL: BAC1505-101101 7075-T6511 CLAD 7075-T6	
4	RIB ASSY CHORD WEB	0.050	BAC1505-101211 7075-T6511 OPTIONAL: BAC1505-100999 7075-T6511 CLAD 7075-T6	
5	RIB ASSY CHORD WEB	0.025	BAC1505-101211 7075-T6511 OPTIONAL: BAC1505-100999 7075-T6511 CLAD 7075-T6	
6	RIB ASSY CHORD WEB	0.032	BAC1505-101211 7075-T6511 OPTIONAL: BAC1505-100586 7075-T6511 CLAD 7075-T6	
7	RIB ASSY CHORD WEB	0.050	BAC1505-101215 7075-T6511 OPTIONAL: BAC1505-100586 7075-T6511 CLAD 7075-T6	
8	RIB ASSY CHORD WEB CORE		BAC1505-101214 7075-T6511 OPTIONAL: BAC1505-100068 FIBERGLASS/EPOXY FABRIC AS GIVEN IN BMS 8-79, CLASS III, TYPE 1581, GRADE I, 250°F (121°C) CURE NONMETALLIC HONEYCOMB (NOMEX) AS GIVEN IN BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAIL II

**Vertical Stabilizer Rib Identification
Figure 1 (Sheet 5 of 9)**

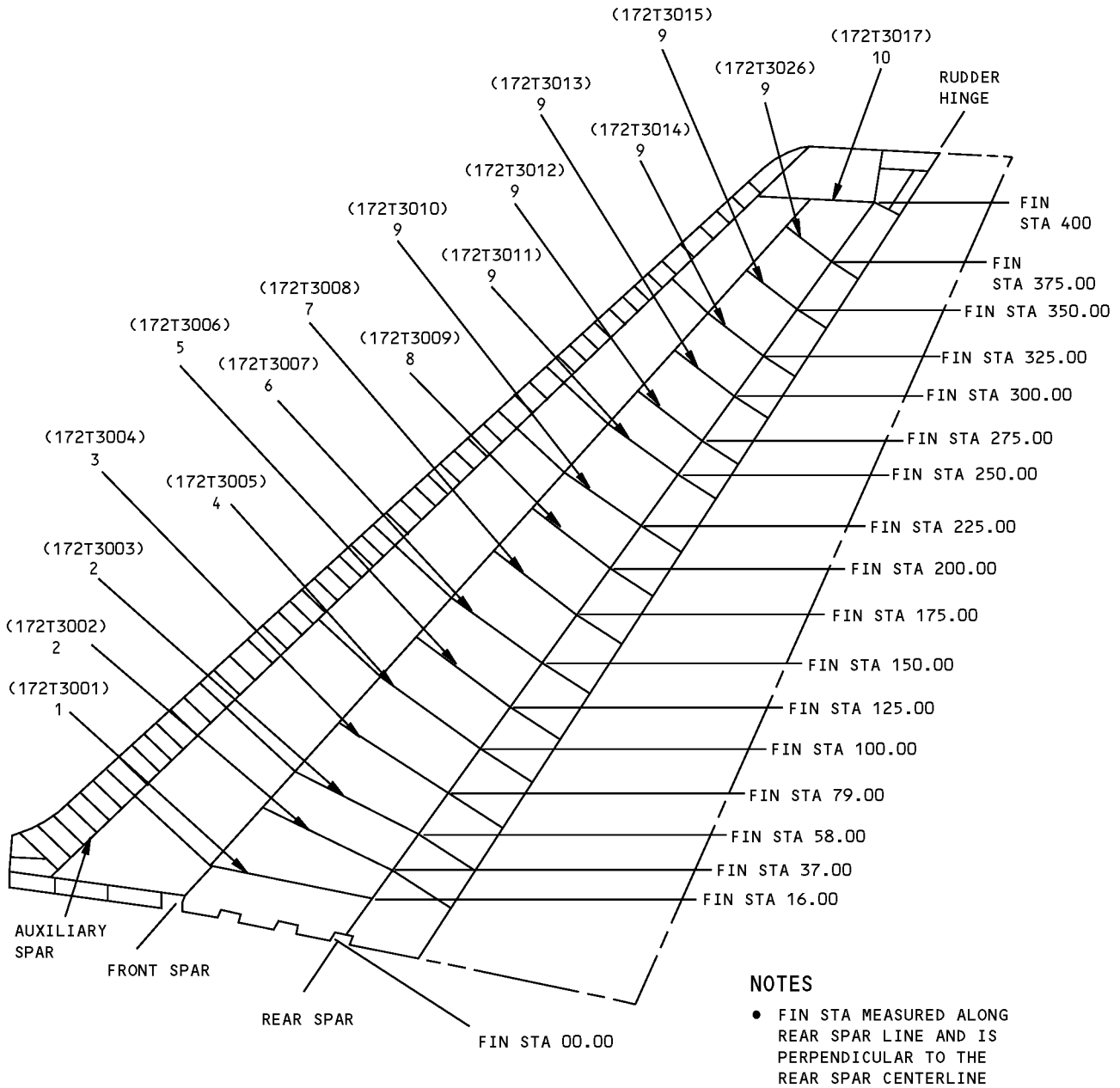
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STRUCTURAL REPAIR MANUAL**

REF DWG
172T0100



DETAIL III



**Vertical Stabilizer Rib Identification
Figure 1 (Sheet 6 of 9)**

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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB ASSY CHORD WEB	0.032	BAC1520-2185 7075-T6511 CLAD 7075-T6	
2	RIB ASSY CHORD WEB	0.032	BAC1503-100524 7075-T6511 CLAD 7075-T6	
3	RIB ASSY CHORD WEB	0.032	BAC1503-100102 7075-T6511 CLAD 7075-T6	
4	RIB ASSY CHORD WEB	0.025	BAC1503-100412 7075-T6511 CLAD 7075-T6	
5	RIB ASSY CHORD WEB	0.025	BAC1520-2181 7075-T6511 CLAD 7075-T6	
6	RIB ASSY CHORD WEB	0.025	BAC1520-2182 7075-T6511 CLAD 7075-T6	
7	RIB ASSY CHORD WEB	0.025	BAC1520-2183 7075-T6511 CLAD 7075-T6	
8	RIB ASSY CHORD WEB	0.025	BAC1520-2184 7075-T6511 CLAD 7075-T6	
9	RIB ASSY CHORD WEB	0.025	BAC1503-100079 7075-T6511 CLAD 7075-T6	
10	RIB ASSY CHORD WEB	0.040	BAC1506-2515 7075-T6511 CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL III

Vertical Stabilizer Rib Identification
Figure 1 (Sheet 7 of 9)

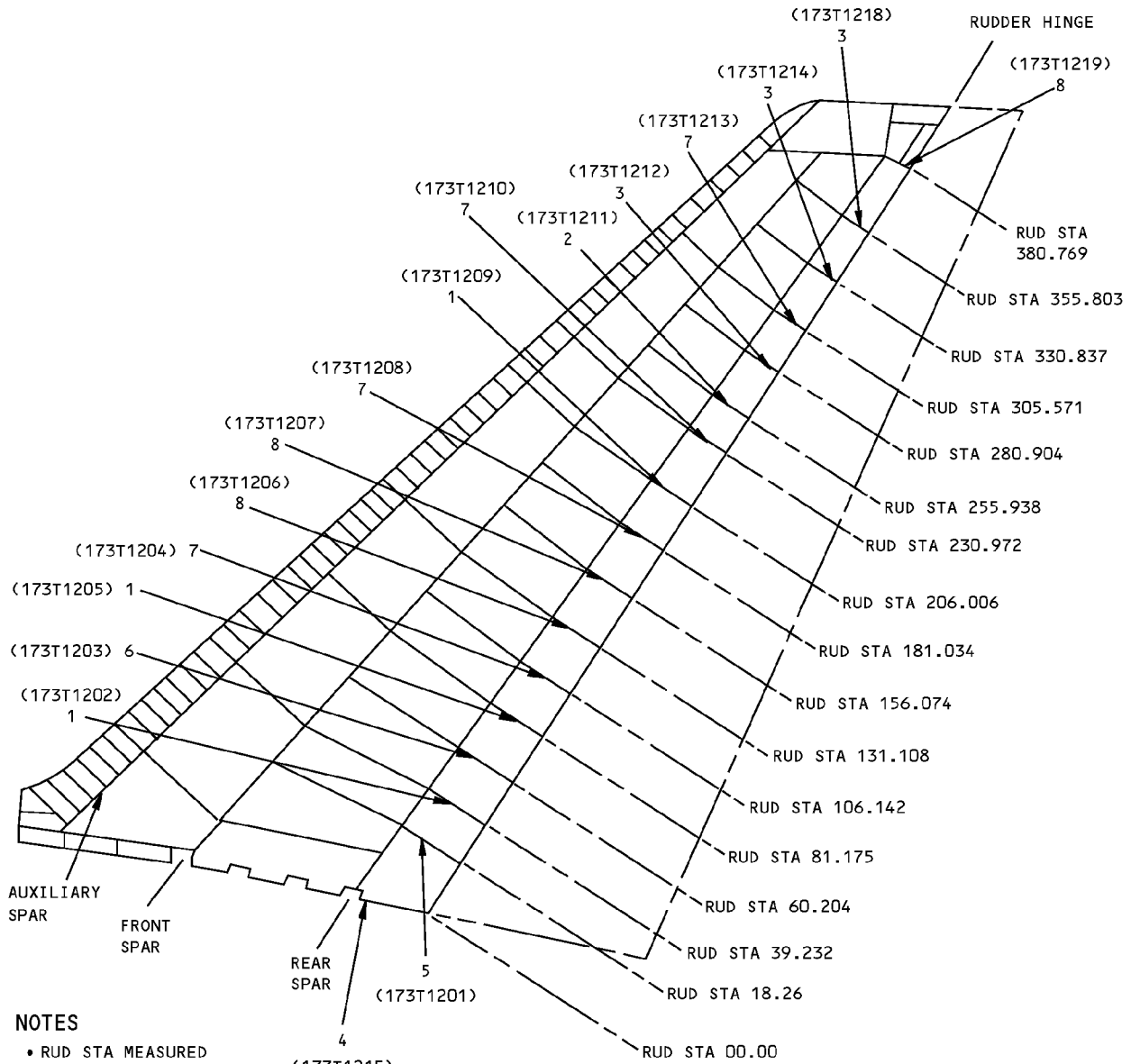
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STRUCTURAL REPAIR MANUAL**

REF DWG
173T1000



NOTES
• RUD STA MEASURED
ALONG RUDDER
HINGE LINE

DETAIL IV



**Vertical Stabilizer Rib Identification
Figure 1 (Sheet 8 of 9)**



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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB ASSY CHORD WEB	0.032	BAC1503-100160 7075-T6511 CLAD 2024-T3	
2	RIB ASSY CHORD WEB	0.032	BAC1503-100490 7075-T6511 CLAD 2024-T3	
3	RIB ASSY CHORD WEB	0.025	BAC1503-100490 7075-T6511 CLAD 2024-T3	
4	RIB ASSY CHORD WEB	0.032	BAC1505-101100 7075-T6511 CLAD 2024-T3	
5	RIB ASSY CHORD WEB	0.050	BAC1505-100436 7075-T6511 7075-T6	
6	RIB ASSY CHORD WEB	0.056	BAC1505-100820 7075-T6511 7075-T6	
7	RIB		FORGING OR PLATE 7075-T7351	
8	RIB		FORGING OR PLATE 7075-T73	

LIST OF MATERIALS FOR DETAIL IV

Vertical Stabilizer Rib Identification
Figure 1 (Sheet 9 of 9)

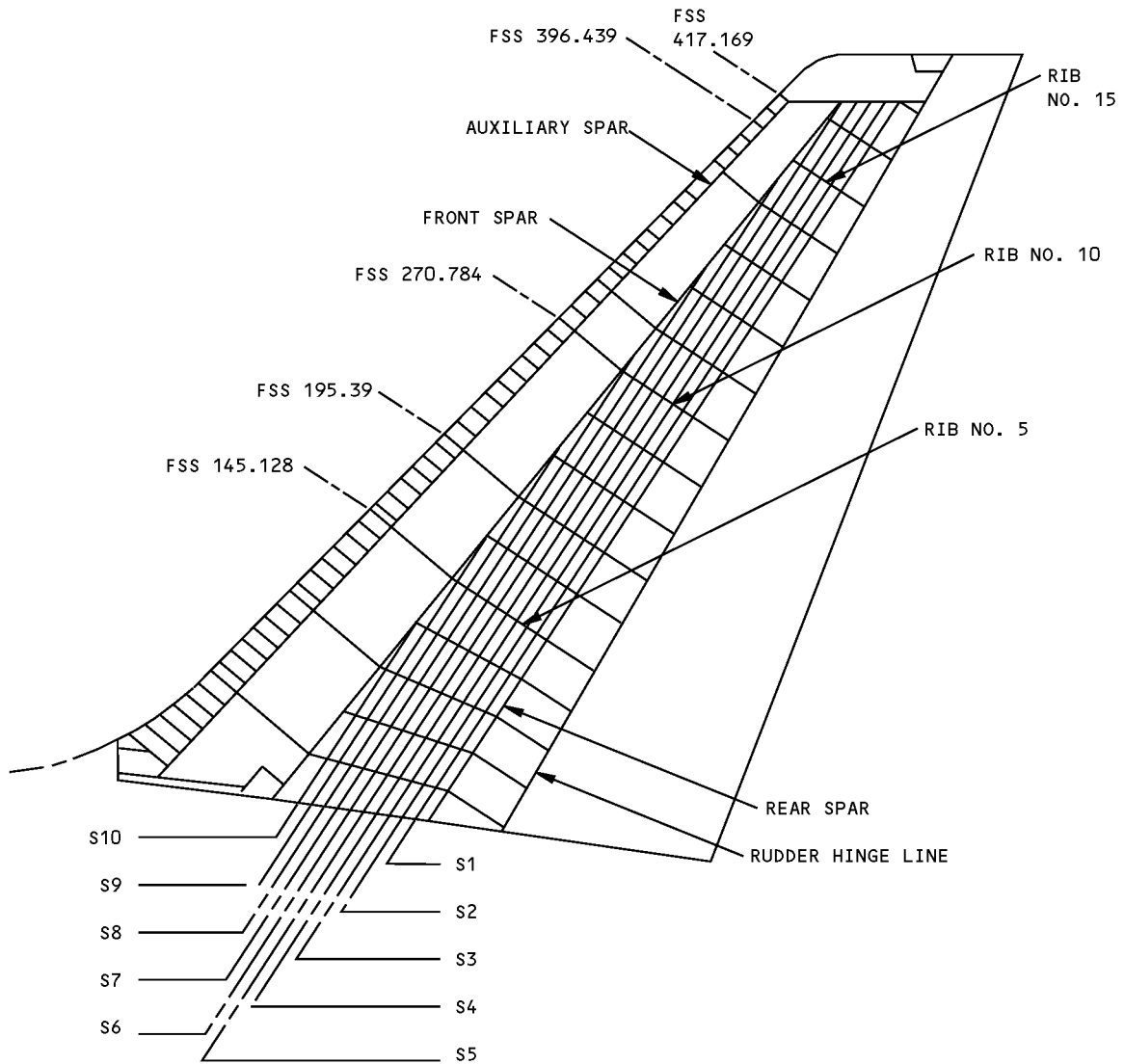
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IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - VERTICAL STABILIZER RIBS



**Allowable Damage - Vertical Stabilizer Ribs
Figure 101 (Sheet 1 of 5)**

STRUCTURAL REPAIR MANUAL

LOCATION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES	DELAMI-NATION
LE RIBS SEE DETAIL VII ALUMINUM - FORMED FLANGE	CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. OTHER CRACKS ARE NOT PERMITTED	CLEAN UP AS GIVEN IN DETAILS I,II AND IV A	SEE DETAIL III	HOLES UP TO 0.45 INCH (11.43 mm) MAXIMUM ARE PERMITTED IN THE WEB ONLY A	--
ALUMINUM WITH - CHORDS	CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. OTHER CRACKS ARE NOT PERMITTED	CLEAN UP AS GIVEN IN DETAILS I,II AND IV A	SEE DETAIL III	HOLES UP TO 0.45 INCH (11.43 mm) MAXIMUM ARE PERMITTED IN THE WEB ONLY A	--
FIBERGLASS	CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. OTHER CRACKS ARE NOT PERMITTED	CLEAN UP AS GIVEN IN DETAILS I AND II	SEE DETAIL III	HOLES UP TO 0.45 INCH (11.43 mm) MAXIMUM ARE PERMITTED IN THE WEB ONLY A	UP TO 0.50 INCH (12.7 mm) DIAMETER MAXIMUM D
RIBS BETWEEN AUX SPAR AND FRONT SPAR WEB CHORDS	CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. OTHER CRACKS ARE NOT PERMITTED	CLEAN UP AS GIVEN IN DETAILS I,II AND IV A	SEE DETAIL III B	HOLES UP TO 0.45 INCH (11.43 mm) MAXIMUM ARE PERMITTED IN THE WEB. HOLES ARE NOT PERMITTED IN THE CHORD. SEE DETAIL V A	--
RIBS BETWEEN FRONT SPAR AND REAR SPAR WEB	CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. OTHER CRACKS ARE NOT PERMITTED	CLEAN UP AS GIVEN IN DETAILS I,II AND IV A	SEE DETAIL III B	HOLES UP TO 0.45 INCH (11.43 mm) MAXIMUM ARE PERMITTED. SEE DETAIL V A	--
CHORD				NOT PERMITTED IN CHORDS	--
STIFFENER				HOLES IN FREE FLANGE ONLY. SEE DETAIL VI	--
RIBS AFT OF REAR SPAR WEB	CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. OTHER CRACKS ARE NOT PERMITTED	CLEAN UP AS GIVEN IN DETAILS I,II AND IV A	SEE DETAIL III B	HOLES UP TO 0.45 INCH (11.43 mm) MAXIMUM ARE PERMITTED. SEE DETAIL V A	--
CHORD				NOT PERMITTED IN CHORDS	--
STIFFENER				HOLES IN FREE FLANGE ONLY. SEE DETAIL VI	--

Allowable Damage - Vertical Stabilizer Ribs
Figure 101 (Sheet 2 of 5)



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STRUCTURAL REPAIR MANUAL

NOTES

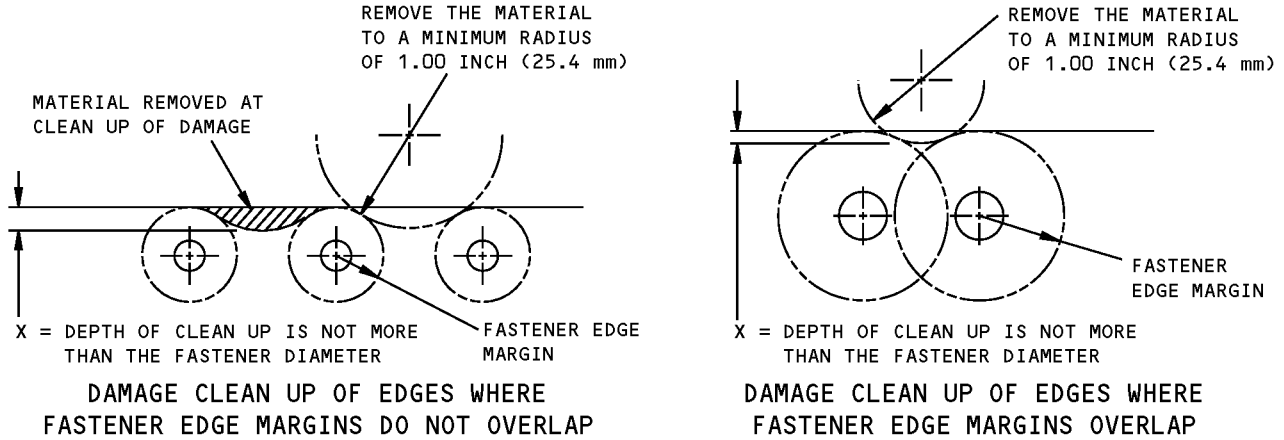
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- A** ON A REFERENCE LINE A-B DRAWN BETWEEN RIB CHORDS/FLANGES OR RIB CHORD/FLANGE AND LIGHTENING HOLE, AS SHOWN IN DETAILS V AND VII, THE MAXIMUM PERMITTED CROSS-SECTIONAL AREA THAT YOU CAN REMOVE FROM THE WEB (INCLUDING ALL FASTENER HOLES, SCRATCHES AND GOUGES) MUST NOT BE MORE THAN 10% OF THE TOTAL CROSS SECTIONAL AREA OF THE WEB BETWEEN A AND B.
- B** DENT DAMAGE IS NOT PERMITTED ON CHORDS OR STIFFENERS. REPAIR OR REPLACE ALL ITEMS THAT HAVE DAMAGE FROM DENTS.
- C** FILL HOLES WITH 2117-T4 ALUMINUM RIVETS. INSTALL WET WITH BMS 5-95 SEALANT.
- D** REWORK DELAMINATION AS SOON AS POSSIBLE.

Allowable Damage - Vertical Stabilizer Ribs
Figure 101 (Sheet 3 of 5)

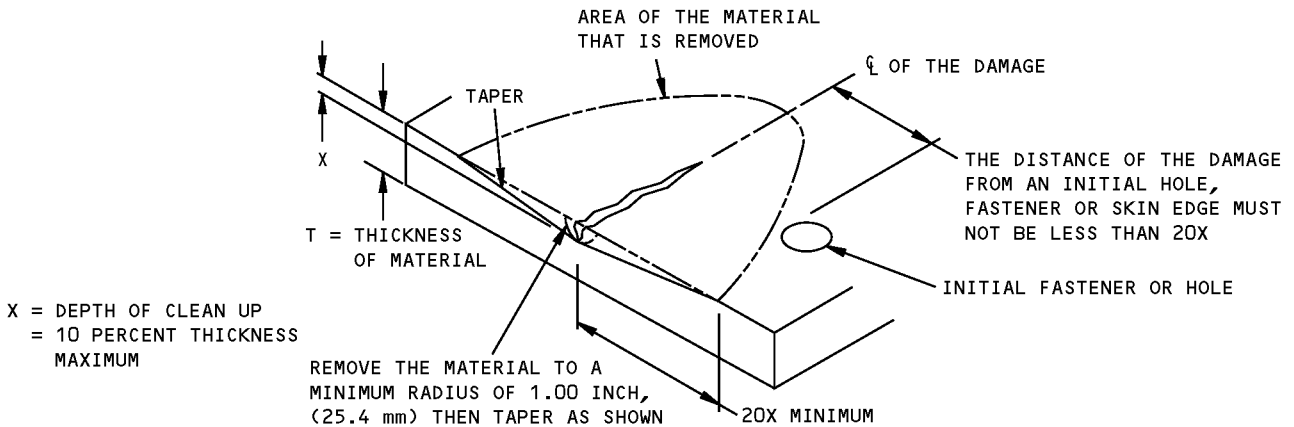
D634T210

ALLOWABLE DAMAGE 1
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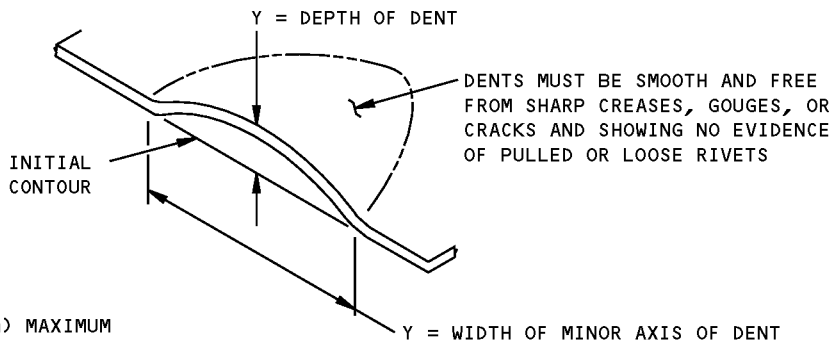
STRUCTURAL REPAIR MANUAL



REMOVAL OF DAMAGED MATERIAL ON AN EDGE
DETAIL I



REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL II

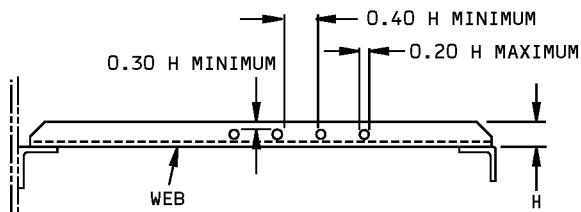
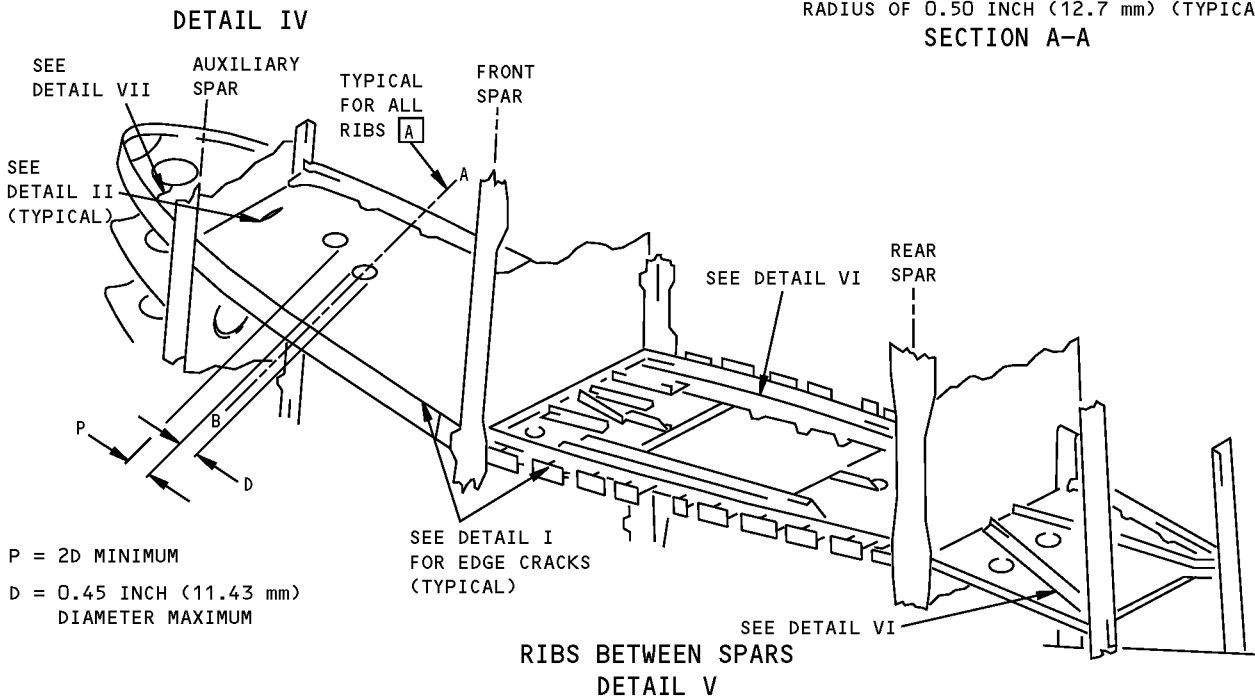
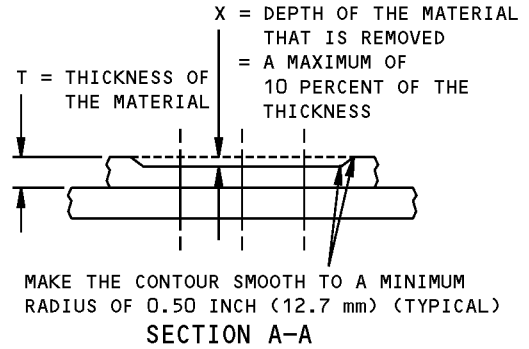
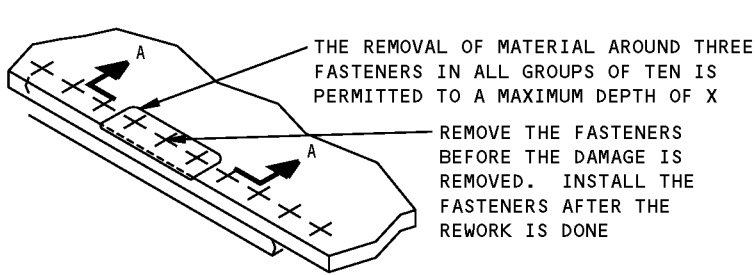


$\frac{A}{Y}$ MUST NOT BE LESS THAN 30
 FOR WEBS Y = 0.125 INCH (3.175 mm) MAXIMUM
 FOR FLANGES OF STIFFENERS, FRAMES, AND CHORDS
 Y = 0.05 INCH (1.27 mm) MAXIMUM

DETAIL III

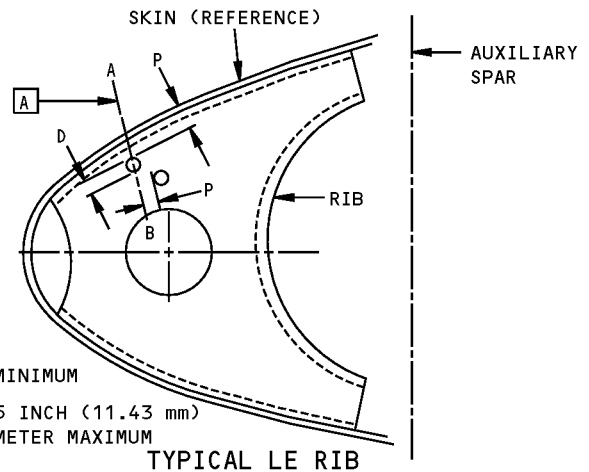
**Allowable Damage - Vertical Stabilizer Ribs
Figure 101 (Sheet 4 of 5)**

**767-300
STRUCTURAL REPAIR MANUAL**



NOTE: MAXIMUM OF 4 HOLES IN ANY ONE STIFFENER [C]

**ALLOWABLE LIMITS FOR HOLES IN WEB STIFFENERS
DETAIL VI**

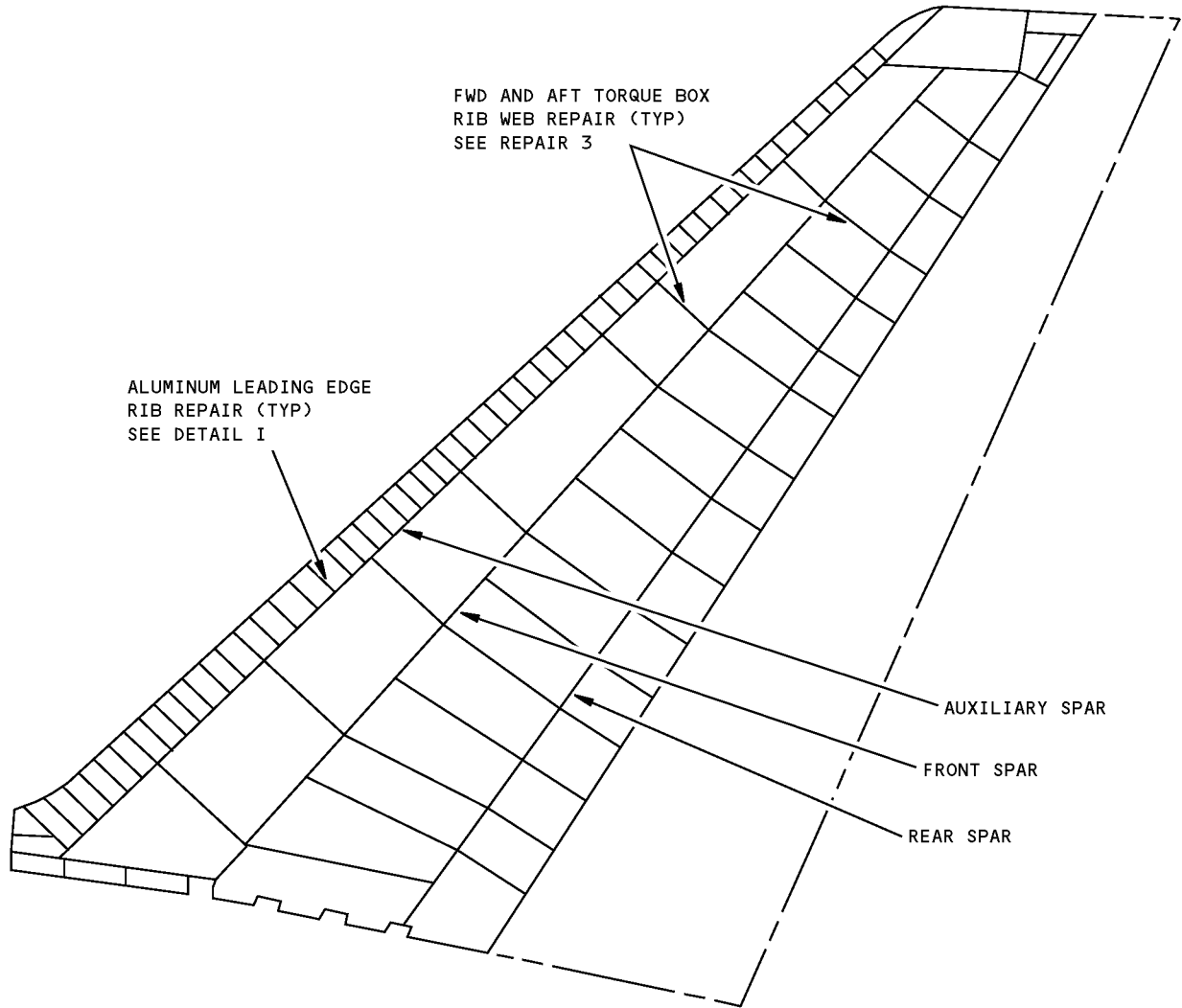


**TYPICAL LE RIB
FORMED RIB IS SHOWN, BUILT UP RIB SIMILAR
DETAIL VII**

**Allowable Damage - Vertical Stabilizer Ribs
Figure 101 (Sheet 5 of 5)**

767-300
STRUCTURAL REPAIR MANUAL

REPAIR 1 - VERTICAL STABILIZER LEADING EDGE RIBS



NOTE: SEE REPAIR 2 FOR TYPICAL
RIB CHORD REPAIRS

Vertical Stabilizer Leading Edge Rib Repair
Figure 201 (Sheet 1 of 3)

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REPAIR 1
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REPAIR INSTRUCTIONS

1. Cut and remove damaged portion of rib.
2. Make repair parts.
3. Assemble repair parts in installed positions and drill fastener holes.
4. Remove repair parts and deburr holes.
5. Break sharp edges of initial and repair parts 0.015R to 0.030R.
6. Remove all nicks, scratches, sharp edges, and corners from repair parts and initial structure.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-11, Type I primer to all surfaces of repair parts and the reworked areas of the initial parts as given in AMM 51-21-00.
9. Install repair parts, making a faying surface seal with BMS 5-95 sealant as given in SRM 51-20-05.
10. Install fasteners wet with BMS 5-95 sealant.
11. Remove loose debris from leading edge.
12. Restore initial finish as given in AMM 51-21-00.

SYMBOLS

 REPAIR FASTENER LOCATION

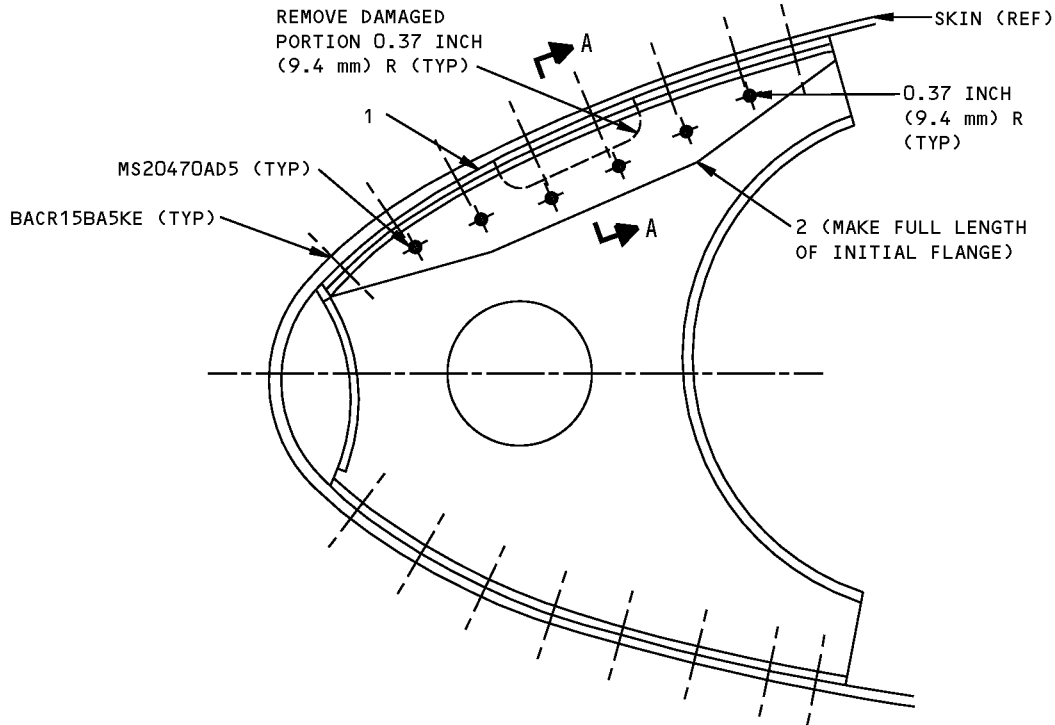
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER	1	CLAD 2024-T4 SAME GAGE AS RIB
2	ANGLE	1	CLAD 2024-T4 ONE GAGE THICKER THAN RIB

NOTES

- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
 - AMM 51-21 FOR RESTORATION OF FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES, EDGE MARGINS AND SUBSTITUTIONS

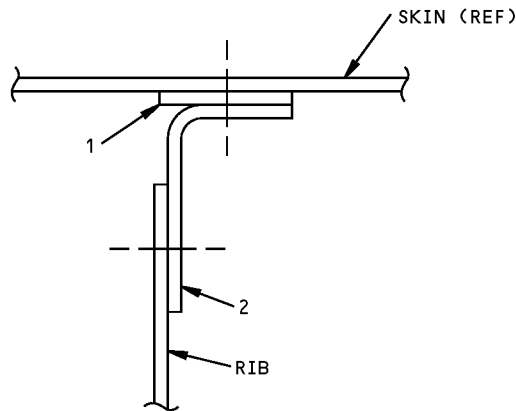
Vertical Stabilizer Leading Edge Rib Repair Figure 201 (Sheet 2 of 3)

STRUCTURAL REPAIR MANUAL



VIEW ON UNDERSIDE OF RIB

TYPICAL FORMED RIB SHOWN
FIBERGLASS AND BUILT UP RIB SIMILAR



SECTION A-A

DETAIL I

**Vertical Stabilizer Leading Edge Rib Repair
Figure 201 (Sheet 3 of 3)**

STRUCTURAL REPAIR MANUAL

REPAIR 2 - VERTICAL STABILIZER RIB CHORD

REPAIR INSTRUCTIONS

1. Cut out damaged portion of chord midway between initial chord to web fasteners. Do not damage the web or skin.
2. Make repair parts.
3. Assemble repair parts in installed positions and drill fastener holes.
4. Remove repair parts and deburr holes.
5. Break sharp edges of initial and repair parts 0.015R to 0.030R.
6. Remove all nicks, scratches, sharp edges, and corners from repair parts and initial structure.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-11, Type I primer to all surfaces of repair parts and the reworked areas of the initial parts as given in AMM 51-21-00.
9. Install repair parts, making a faying surface seal with BMS 5-95 sealant as given in SRM 51-20-05.
10. Install fasteners wet with BMS 5-95 sealant.
11. Remove loose debris from repair area.
12. Restore initial finish as given in AMM 51-21-00.

NOTES

- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
 - AMM 51-21 FOR RESTORATION OF FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING OF REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES, EDGE MARGINS AND SUBSTITUTIONS

- A** REPAIR PARTS 3 AND 4 MAY BE USED AS AN ALTERNATIVE TO REPAIR PART 2. SEE TABLE I FOR MATERIAL GAGE
- B** SEE TABLE I FOR MINIMUM FASTENER REQUIREMENTS ON EACH SIDE OF SPLICE
- C** USE SAME TYPE AND SIZE FASTENER AS THE INITIAL FASTENER
- D** WHEN CALCULATING FASTENER REQUIREMENTS, FRACTIONS OF A FASTENER SHOULD BE TAKEN TO THE NEXT HIGHER WHOLE NUMBER
- E** USE SAME THICKNESS AS INITIAL CHORD FLANGE THICKNESS

SYMBOLS

- + INITIAL FASTENER LOCATION

Vertical Stabilizer Rib Chord Repair
Figure 201 (Sheet 1 of 4)



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STRUCTURAL REPAIR MANUAL**

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER ANGLE	1	MAKE FROM SAME EXTRUSION AS INITIAL CHORD 7075-T6511 (ANGLE SECTION)
2	ANGLE	1	MAKE FROM SAME EXTRUSION AS INITIAL CHORD 7075-T6511
3	ANGLE	1	7075-T6511 A
4	ANGLE	1	7075-T6511 A
5	FILLER TEE	1	MAKE FROM SAME EXTRUSION AS INITIAL CHORD 7075-T6511 (TEE SECTION)
6	PLATE	1	7075-T6511 E

CHORD THICKNESS	GAGE OF REPAIR PARTS 3 AND 4	MINIMUM FASTENER REQUIREMENT PER INCH WIDTH OF FLANGE D	
		5/32 DIA	3/16 DIA
0.070	0.040	3.8	3.2
0.080	0.050	3.9	3.2
0.090	0.063	4.1	3.2
0.100	0.071	4.5	3.3
0.110	0.071	4.9	3.5
0.120	0.080	5.4	3.7
0.150	0.090	6.7	4.6

TABLE I

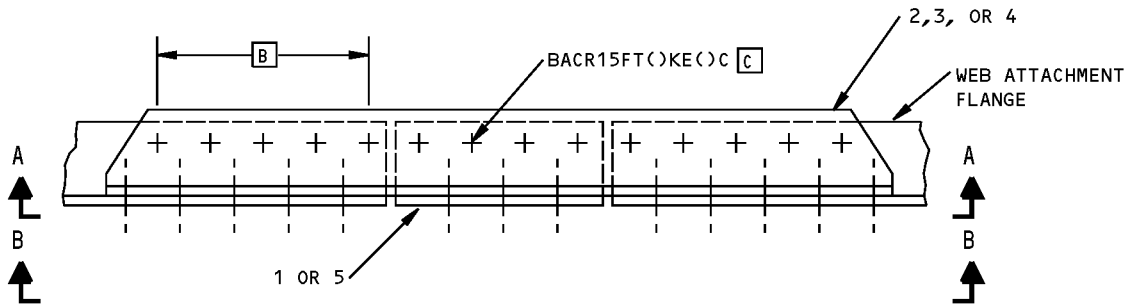
**Vertical Stabilizer Rib Chord Repair
Figure 201 (Sheet 2 of 4)**

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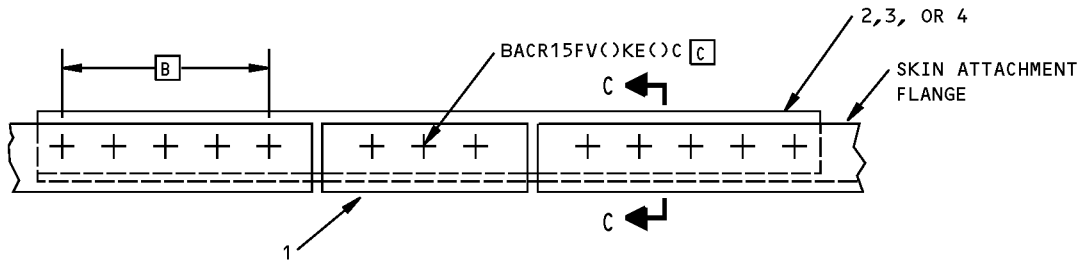
55-30-09

REPAIR 2
Page 202
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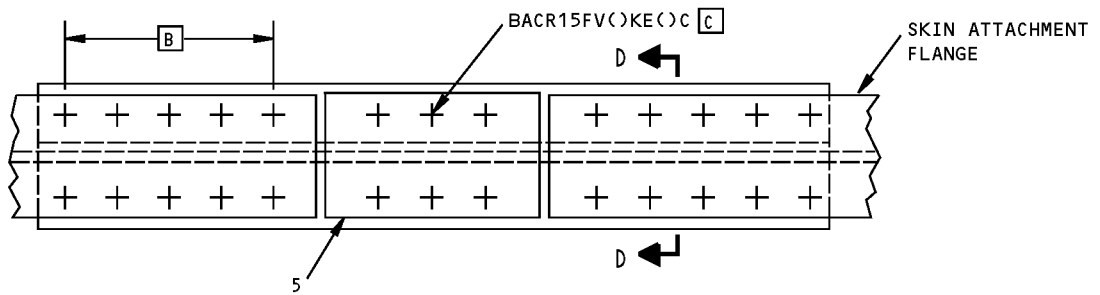
**767-300
STRUCTURAL REPAIR MANUAL**



SIDE VIEW



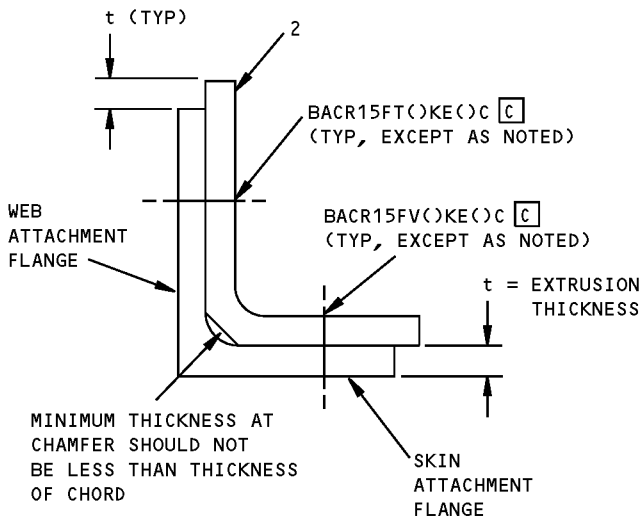
(ANGLE REPAIR)
VIEW A-A



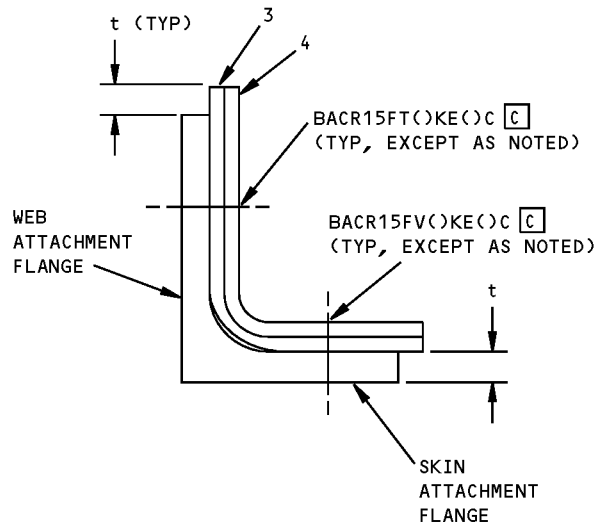
(TEE SECTION REPAIR)
VIEW B-B

**Vertical Stabilizer Rib Chord Repair
Figure 201 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

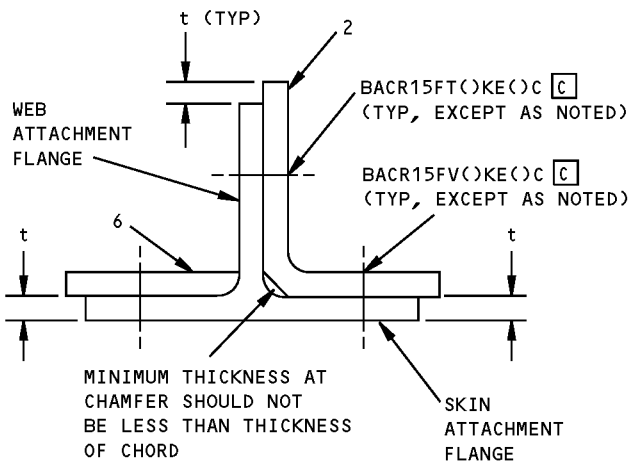


PREFERRED

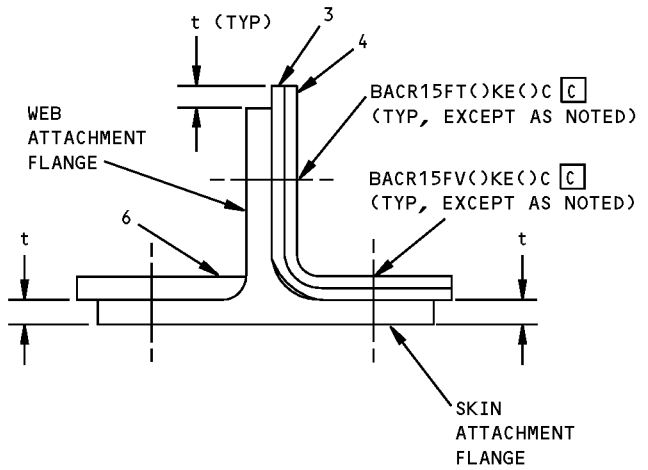


ALTERNATE

SECTION C-C



PREFERRED



ALTERNATE

SECTION D-D

**Vertical Stabilizer Rib Chord Repair
Figure 201 (Sheet 4 of 4)**

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STRUCTURAL REPAIR MANUAL**

REPAIR 3 - VERTICAL STABILIZER FORWARD AND AFT TORQUE BOX RIB WEB

REPAIR INSTRUCTIONS

1. Remove any web stiffener which will interfere with the repair.
2. Cut and remove damaged portion of web.
3. Make repair parts.
4. Assemble repair parts in installed positions and drill fastener holes.
5. Remove repair parts and deburr holes.
6. Break sharp edges of initial and repair parts 0.015 R to 0.030 R.
7. Remove all nicks, scratches, sharp edges, and corners from repair parts and initial structure.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply one coat of BMS 10-11, Type I primer to all surfaces of repair parts and the reworked areas of the initial parts.
10. Install repair parts and web stiffener, making a faying surface seal with BMS 5-95 sealant as given in SRM 51-20-05.
11. Install fasteners wet with BMS 5-95 sealant.
12. Remove loose debris from repair area.
13. Fillet seal repair parts.
14. Restore initial finish as given in AMM 51-21.

NOTES

- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
 - AMM 51-21 FOR RESTORATION OF FINISHES
 - AMM 51-31 FOR SEALS AND SEALING
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING REPAIRS
 - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES, AND EDGE MARGINS, EXCEPT AS NOTED
- SEE LEFT SIDE VIEW FOR LOCATION OF TORQUE BOXES

A FILLER EXTENDS TO END OF STIFFENER

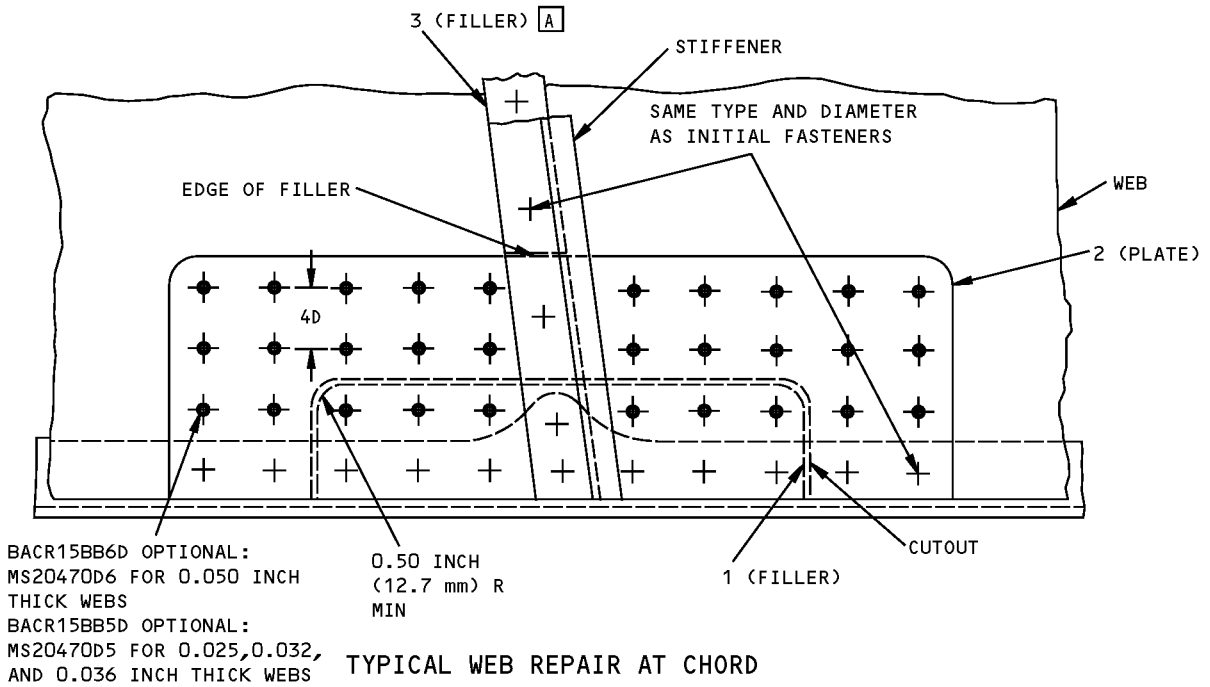
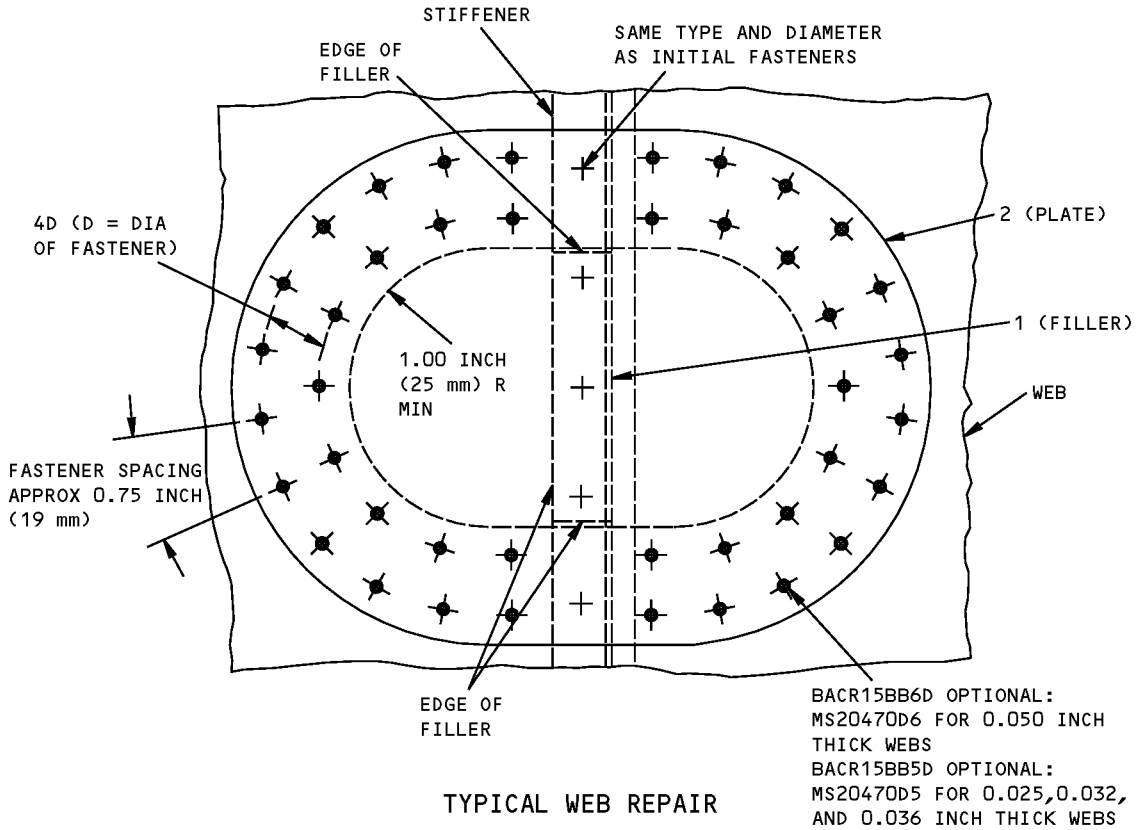
FASTENER SYMBOLS

- + INITIAL FASTENER LOCATIONS
- REPAIR FASTENER LOCATIONS

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER	1	CLAD 7075-T6 SAME GAGE AS WEB
2	PLATE	1	CLAD 7075-T6 ONE GAGE HEAVIER THAN WEB
3	FILLER	1	CLAD 7075-T6 SAME GAGE AS 2 (PLATE)

**Vertical Stabilizer Forward and Aft Torque Box Rib Web Repair
Figure 201 (Sheet 1 of 2)**

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STRUCTURAL REPAIR MANUAL**



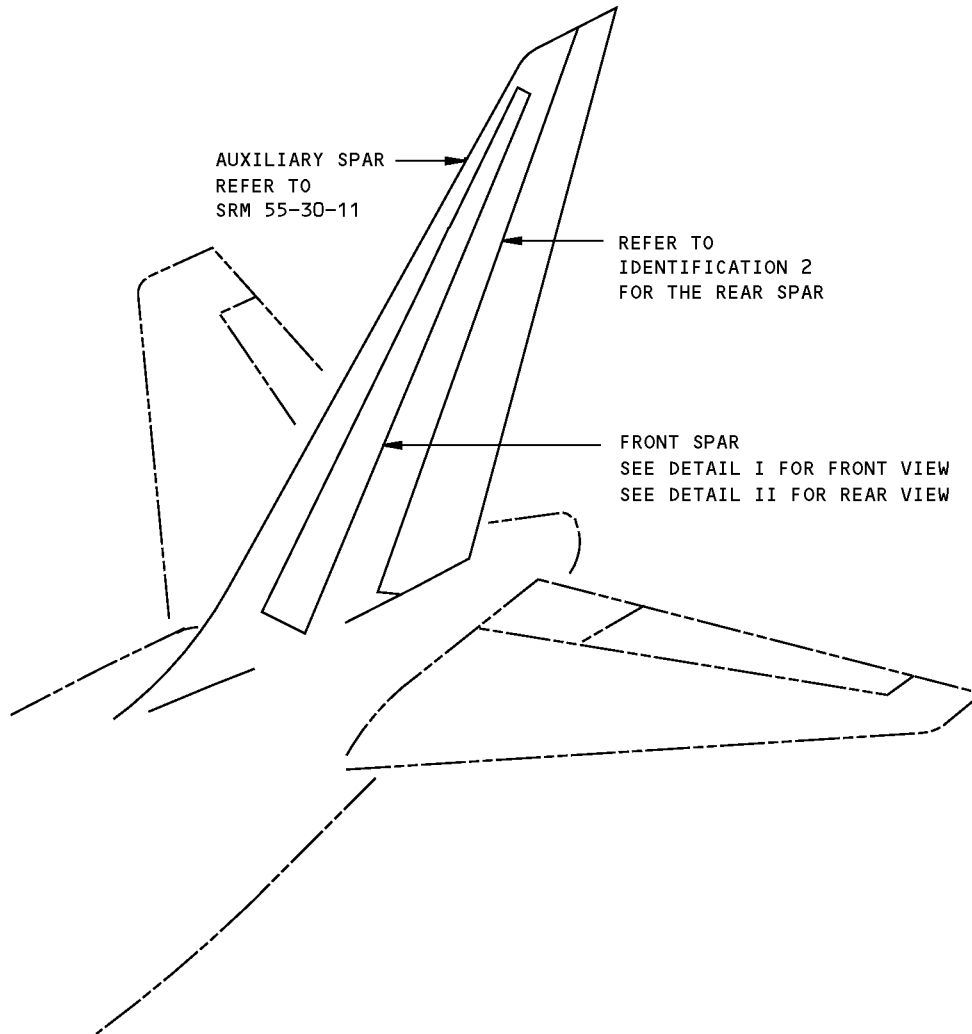
**Vertical Stabilizer Forward and Aft Torque Box Rib Web Repair
Figure 201 (Sheet 2 of 2)**



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STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - VERTICAL STABILIZER FRONT SPAR

REFERENCE DRAWING
172T2000



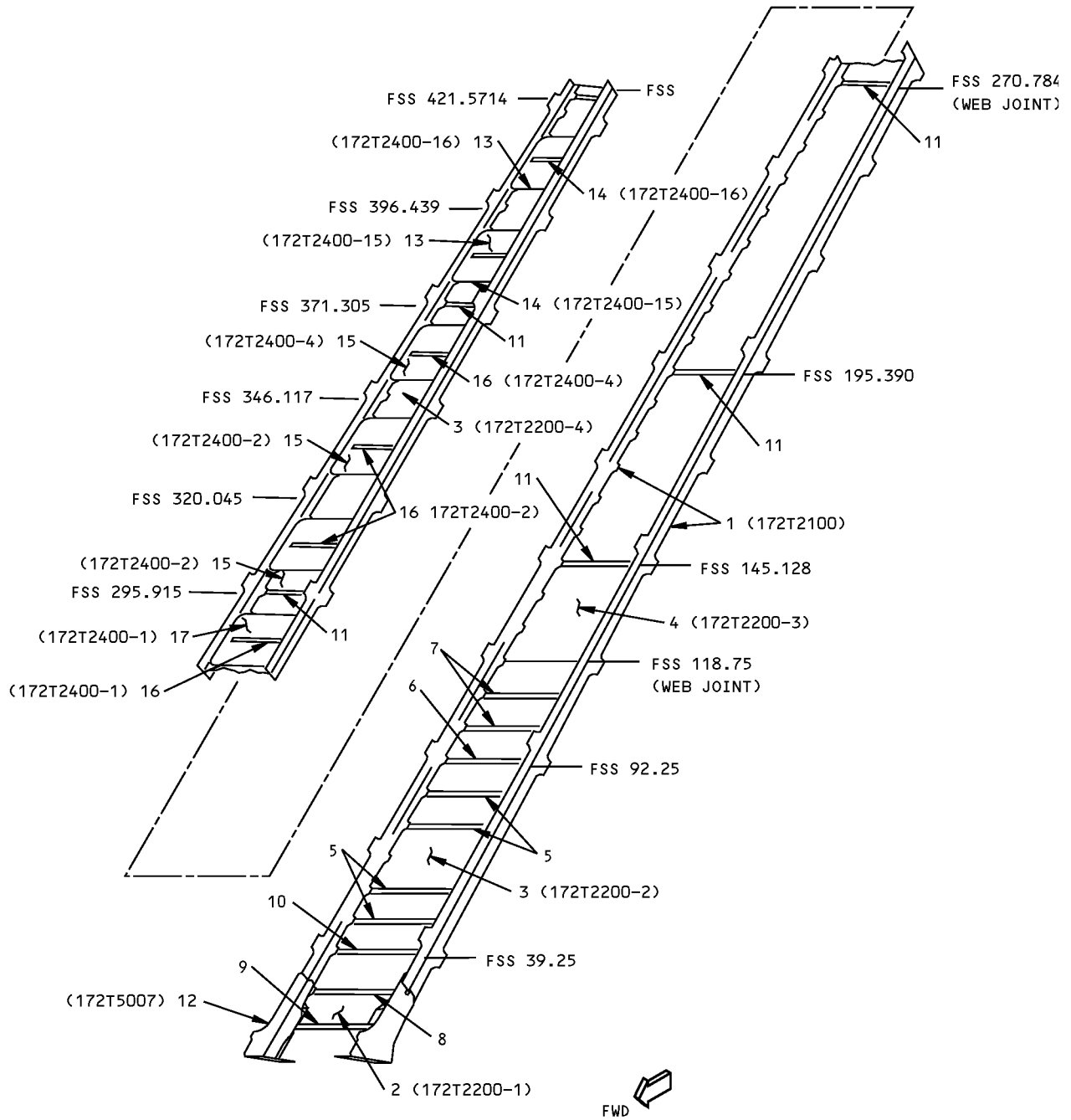
**Vertical Stabilizer Front Spar Identification
Figure 1 (Sheet 1 of 5)**

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STRUCTURAL REPAIR MANUAL**



FRONT VIEW
DETAIL I



**Vertical Stabilizer Front Spar Identification
Figure 1 (Sheet 2 of 5)**



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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD		BAC1506-3127 7075-T73511	
2	WEB	0.125	7075-T6 (CHEM-MILLED TO 0.082 INCH MINIMUM)	
3	WEB	0.071	7075-T6 (CHEM-MILLED TO 0.027 INCH MINIMUM)	
4	WEB	0.080	7075-T6 (CHEM-MILLED TO 0.040 INCH MINIMUM)	
5	ANGLE		BAC1514-2575 7075-T6511	
6	ANGLE		BAC1514-2568 7075-T6511	
7	ANGLE		BAC1514-2570 7075-T6511	
8	ANGLE		BAC1514-2598 7075-T6511	
9	ANGLE		BAC1514-2571 7075-T6511	
10	ANGLE		BAC1514-2563 7075-T6511	
11	ANGLE		BAC1514-2578 7075-T6511	
12	FITTING		FORGING 7075--T411	
13	PLATE	0.071	7075-T62	
14	ANGLE		BAC1514-2577 7075-T6511	
15	DOOR	0.080	7075-T62	
16	ANGLE		BAC1514-2578 7075-T6511	
17	DOOR	0.090	7075-T62	

LIST OF MATERIALS FOR DETAIL I

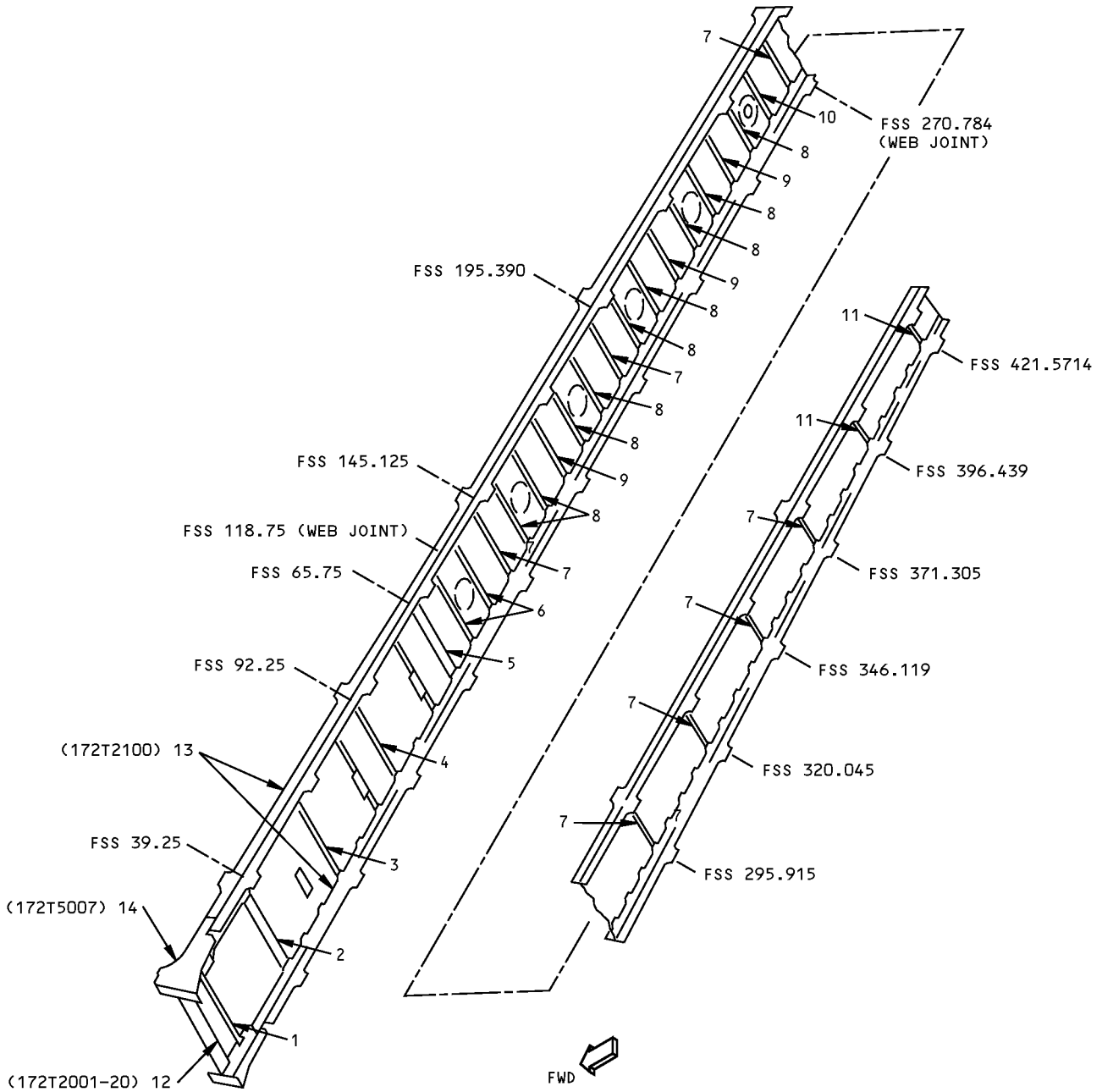
Vertical Stabilizer Front Spar Identification
Figure 1 (Sheet 3 of 5)

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STRUCTURAL REPAIR MANUAL**



REAR VIEW
DETAIL II



**Vertical Stabilizer Front Spar Identification
Figure 1 (Sheet 4 of 5)**



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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	ANGLE		BAC1514-2598 7075-T6511	
2	TEE		BAC1506-3274 7075-T6511	
3	ANGLE		BAC1514-2564 7075-T6511	
4	ANGLE		BAC1514-2568 7075-T6511	
5	ANGLE		BAC1514-3275 7075-T6511	
6	ANGLE		BAC1514-2570 7075-T6511	
7	ANGLE		BAC1514-2576 7075-T6511	
8	ANGLE		BAC1514-2569 7075-T6511	
9	ANGLE		BAC1514-2565 7075-T6511	
10	TEE		BAC1505-101195 7075-T6511	
11	ANGLE		BAC1514-2599 7075-T6511	
12	ANGLE	0.160	7075-T62	
13	CHORD		BAC1506-3127 7075-T73511	
14	FITTING		FORGING 7075-T411	

LIST OF MATERIALS FOR DETAIL II

Vertical Stabilizer Front Spar Identification
Figure 1 (Sheet 5 of 5)

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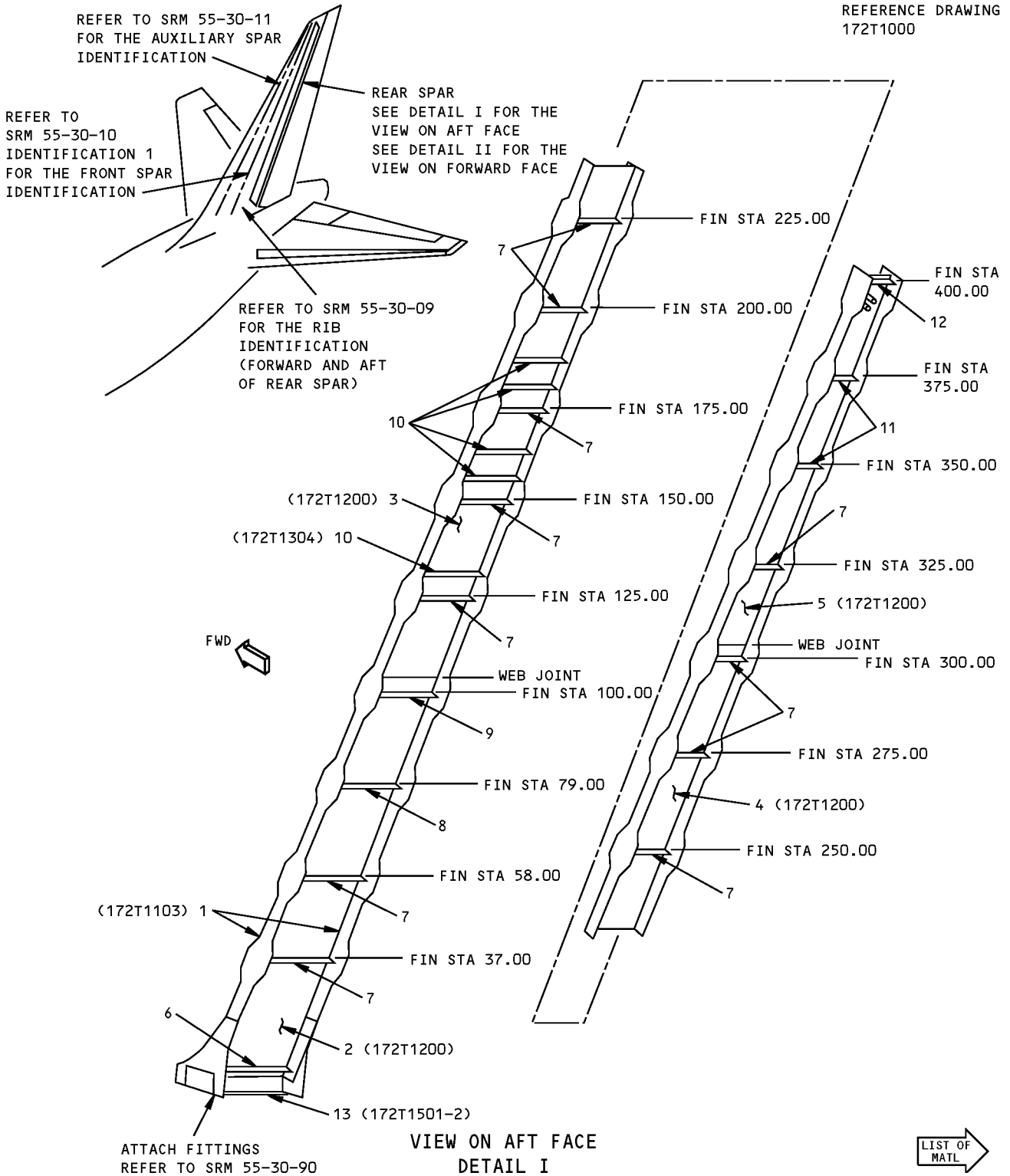
55-30-10

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**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 2 - VERTICAL STABILIZER REAR SPAR

REFERENCE DRAWING
172T1000



**Vertical Stabilizer Rear Spar Identification
Figure 1 (Sheet 1 of 4)**



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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD		BAC1506-3128 7075-T73511	
2	WEB	0.125	7075-T6 (CHEM-MILLED TO 0.057 INCH MINIMUM)	
3	WEB	0.063	7075-T6 (CHEM-MILLED TO 0.038 INCH MINIMUM)	
4	WEB	0.040	CLAD 7075-T6 (CHEM-MILLED TO 0.027 INCH MINIMUM)	
5	WEB	0.032	CLAD 7075-T6	
6	ANGLE		BAC1514-1522 7075-T6511	
7	ANGLE		BAC1514-2515 7075-T6511	
8	TEE		BAC1506-1455 7075-T6511	
9	ANGLE		BAC1506-3202 7075-T6511	
10	SUPPORT FITTING		FORGING 7075-T73	
11	ANGLE		BAC1514-849 7075-T6511	
12	TEE		BAC1506-1212 7075-T6511	
13	ANGLE	0.100	7075-T62	

LIST OF MATERIALS FOR DETAIL I

Vertical Stabilizer Rear Spar Identification
Figure 1 (Sheet 2 of 4)

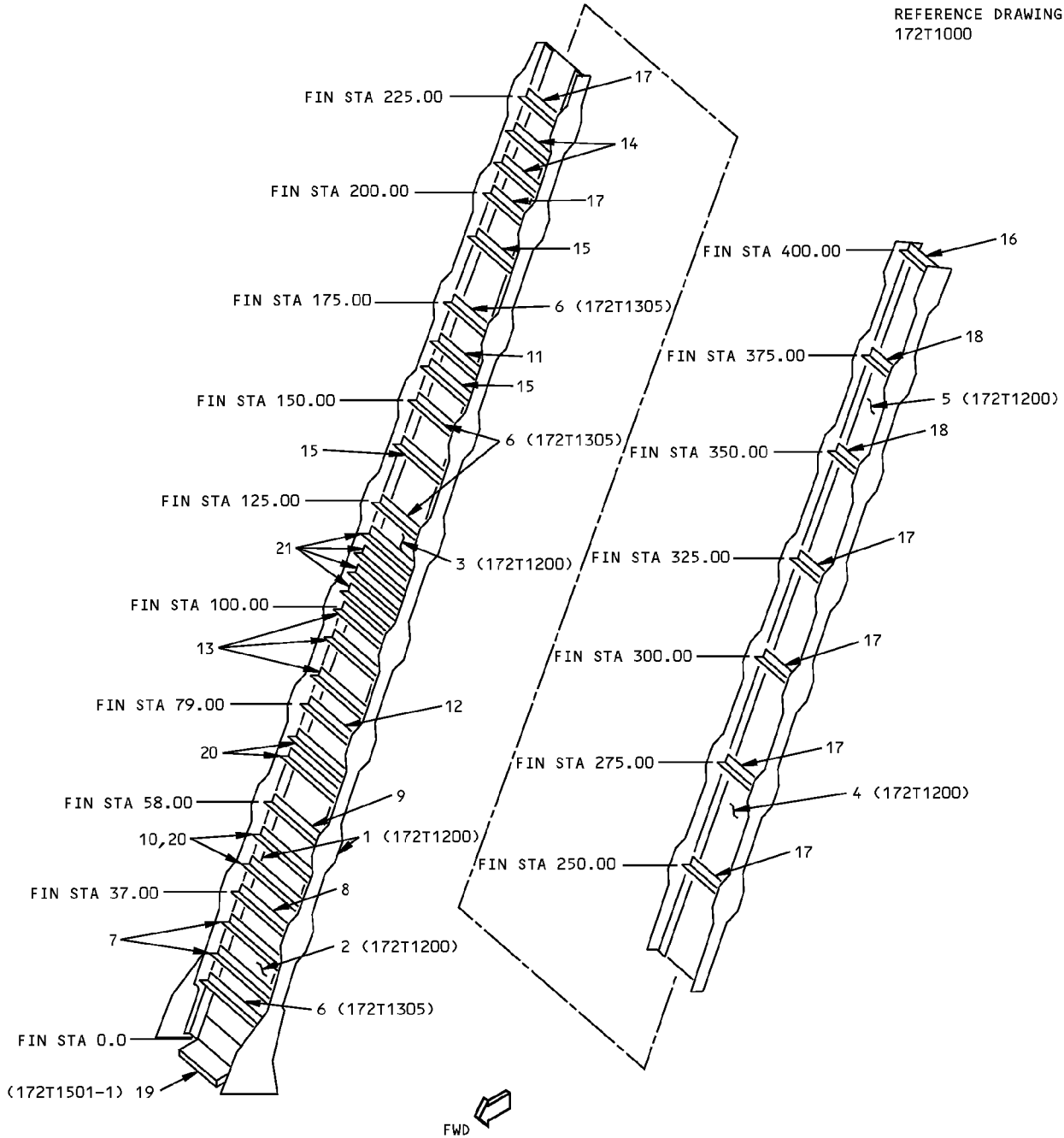
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IDENTIFICATION 2
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**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWING
172T1000



VIEW ON FORWARD FACE
DETAIL II



**Vertical Stabilizer Rear Spar Identification
Figure 1 (Sheet 3 of 4)**

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**767-300
STRUCTURAL REPAIR MANUAL**

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD		BAC1506-3128 7075-T73511	
2	WEB	0.125	7075-T6 (CHEM-MILLED TO 0.057 INCH MINIMUM)	
3	WEB	0.063	7075-T6 (CHEM-MILLED TO 0.038 INCH MINIMUM)	
4	WEB	0.040	CLAD 7075-T6 (CHEM-MILLED TO 0.027 INCH MINIMUM)	
5	WEB	0.032	CLAD 7075-T6	
6	STIFFENER		BAR 7075-T7351	
7	ANGLE		BAC1514-792 7075-T6511	
8	ANGLE		BAC1514-2512 7075-T6511	
9	ANGLE		BAC1514-2513 7075-T6511	
10	ANGLE		BAC1503-5827 7075-T6511	
11	ANGLE		BAC1505-100265 7075-T6511	
12	TEE		BAC1506-1455 7075-T6511	
13	TEE		BAC1505-100603 7075-T6511	
14	ANGLE		BAC1514-1391 7075-T6511	
15	ANGLE		BAC1514-1522 7075-T6511	
16	TEE		BAC1505-101195 7075-T6511	
17	ANGLE		BAC1514-2578 7075-T6511	
18	ANGLE		BAC1503-100037 7075-T6511	
19	ANGLE	0.160	7075-T62	
20	ANGLE		BAC1504-8247 7075-T6511	
21	ANGLE		BAC1503-100021 7075-T6511	

LIST OF MATERIALS FOR DETAIL II

**Vertical Stabilizer Rear Spar Identification
Figure 1 (Sheet 4 of 4)**

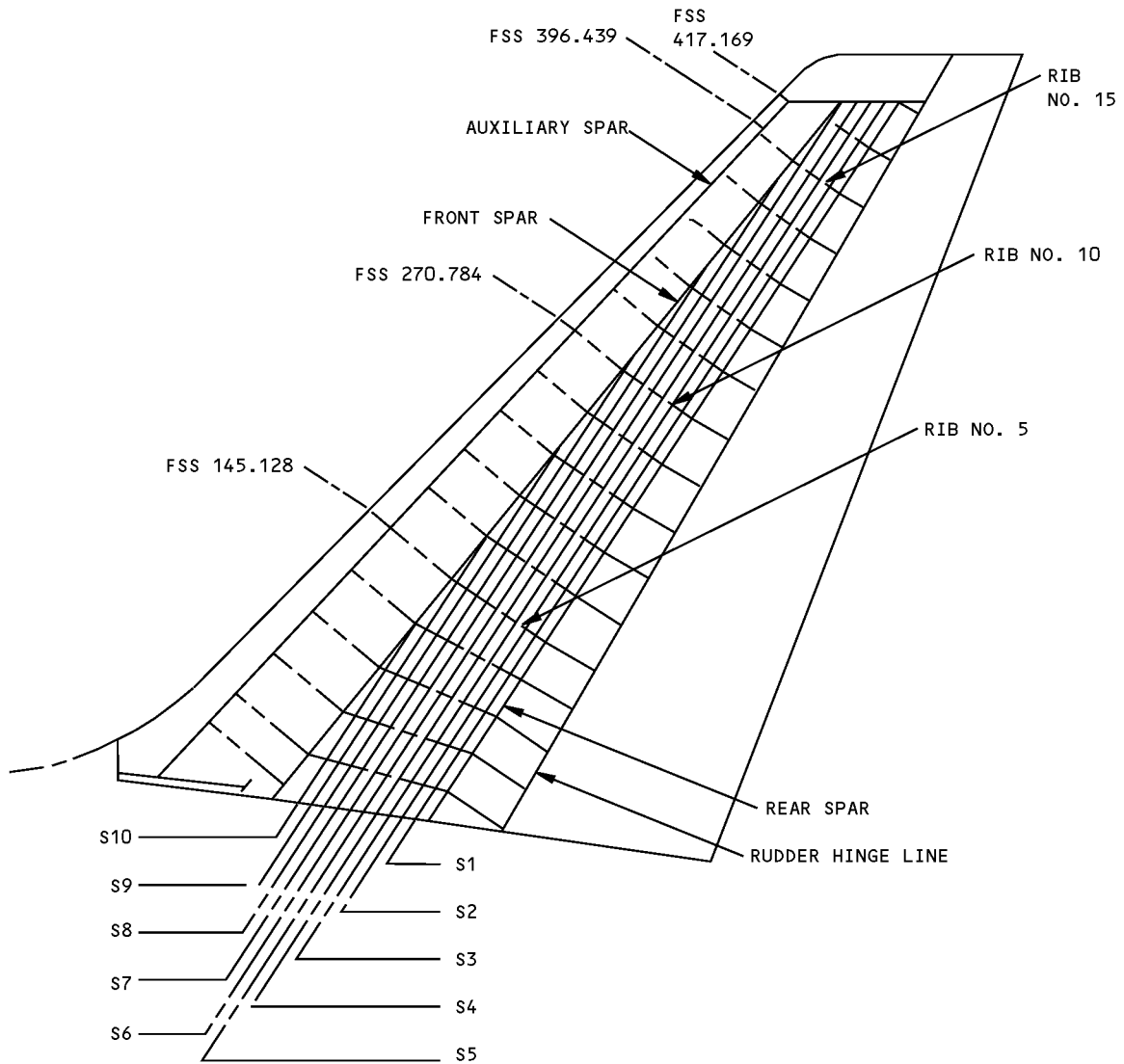
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**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - VERTICAL STABILIZER SPARS



**Allowable Damage - Vertical Stabilizer Spars
Figure 101 (Sheet 1 of 5)**

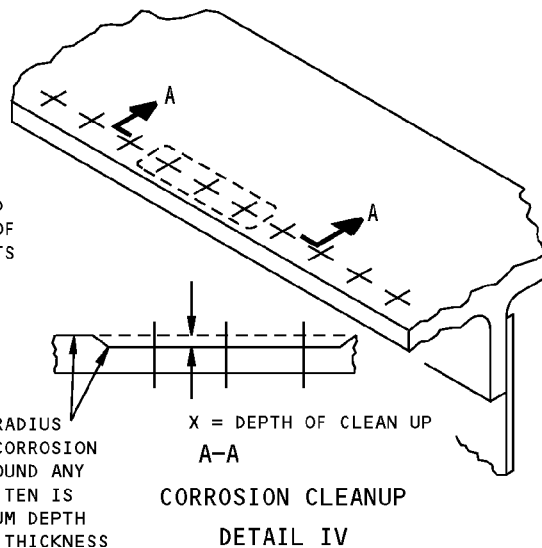
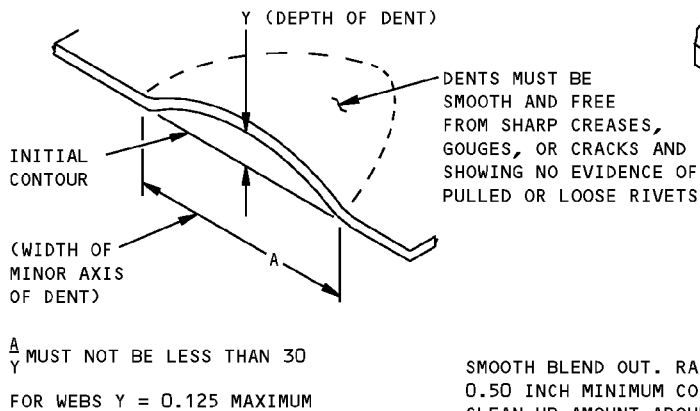
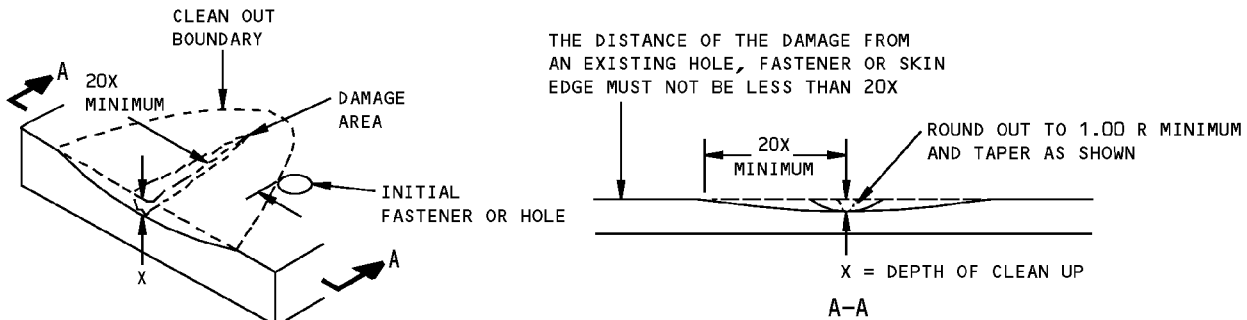
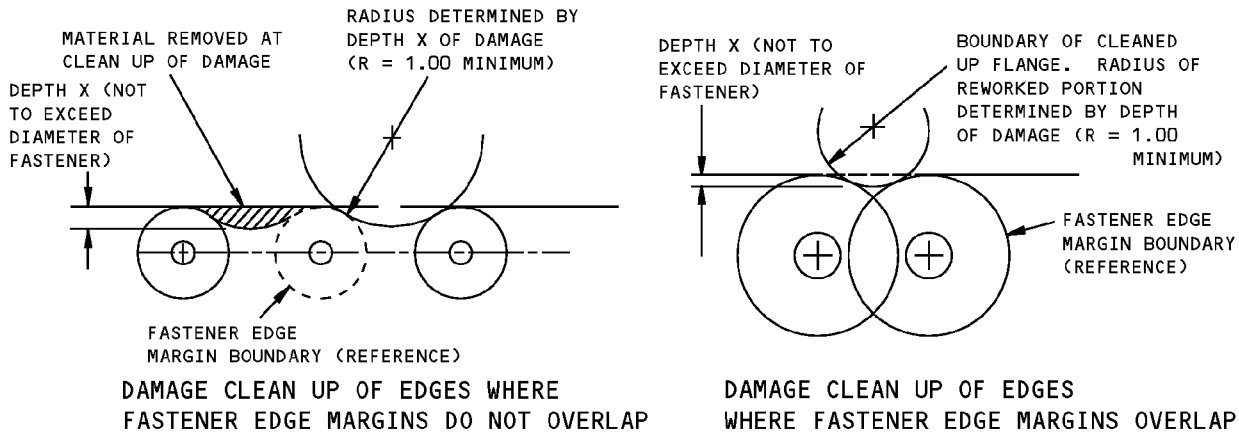


**767-300
STRUCTURAL REPAIR MANUAL**

LOCATION	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES
AUX SPAR CHORDS	A	REMOVE AS GIVEN IN DETAILS I,II AND IV. MAXIMUM DEPTH 20% OF MATERIAL THICKNESS	NOT PERMITTED	NOT PERMITTED
AUX SPAR WEBS	A	REMOVE AS GIVEN IN DETAILS I AND II. MAXIMUM DEPTH 10% OF MATERIAL THICKNESS B	SEE DETAIL III	SEE DETAIL V
AUX SPAR STIFFENERS	A	REMOVE AS GIVEN IN DETAILS I AND II. MAXIMUM DEPTH 10% OF MATERIAL THICKNESS	NOT PERMITTED	SEE DETAIL V
FRONT SPAR CHORDS	A	REMOVE AS GIVEN IN DETAILS I,II AND IV. MAXIMUM DEPTH 20% OF MATERIAL THICKNESS	NOT PERMITTED	NOT PERMITTED
FRONT SPAR WEBS	A	REMOVE AS GIVEN IN DETAILS I AND II. MAXIMUM DEPTH 10% OF MATERIAL THICKNESS B	SEE DETAIL III	SEE DETAIL VI
FRONT SPAR STIFFENER	A	REMOVE AS GIVEN IN DETAILS I AND II. MAXIMUM DEPTH 10% OF MATERIAL THICKNESS	NOT PERMITTED	SEE DETAIL VI
REAR SPAR CHORDS	A	REMOVE AS GIVEN IN DETAILS I,II AND IV. MAXIMUM DEPTH 20% OF MATERIAL THICKNESS	NOT PERMITTED	NOT PERMITTED
REAR SPAR WEBS	A	REMOVE AS GIVEN IN DETAILS I AND II. MAXIMUM DEPTH 10% OF MATERIAL THICKNESS	SEE DETAIL III	SEE DETAIL VI
REAR SPAR STIFFENERS	A	REMOVE AS GIVEN IN DETAILS I AND II. MAXIMUM DEPTH 10% OF MATERIAL THICKNESS	NOT PERMITTED	SEE DETAIL VI

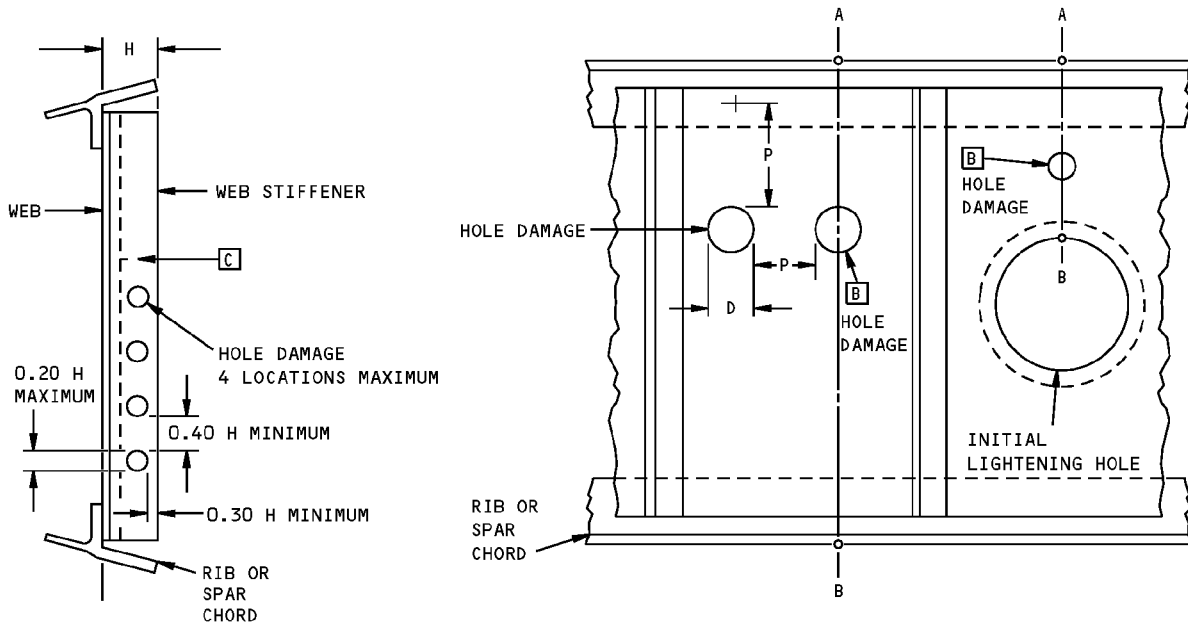
**Allowable Damage - Vertical Stabilizer Spars
Figure 101 (Sheet 2 of 5)**

**767-300
STRUCTURAL REPAIR MANUAL**



**Allowable Damage - Vertical Stabilizer Spars
Figure 101 (Sheet 3 of 5)**

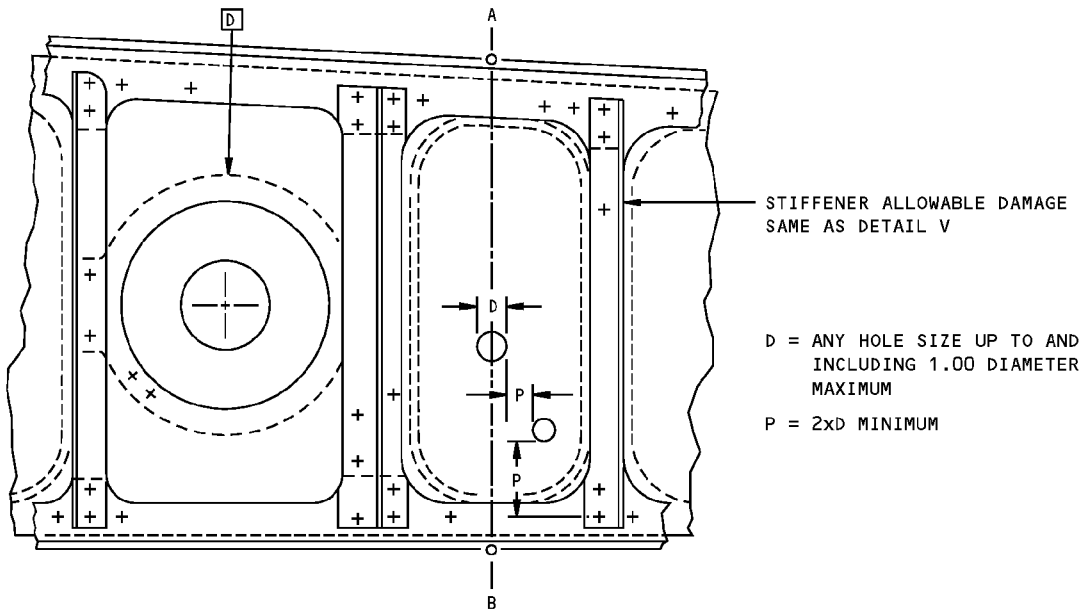
**767-300
STRUCTURAL REPAIR MANUAL**



D = ANY HOLE SIZE UP TO AND INCLUDING 1.00 DIAMETER MAXIMUM
P = 2xD MINIMUM

ALLOWABLE DAMAGE IN WEB AND STIFFENER - TYPICAL AUX SPARS

DETAIL V



D = ANY HOLE SIZE UP TO AND INCLUDING 1.00 DIAMETER MAXIMUM
P = 2xD MINIMUM

**ALLOWABLE DAMAGE IN WEB - TYPICAL FRONT AND REAR SPARS
DETAIL VI**

**Allowable Damage - Vertical Stabilizer Spars
Figure 101 (Sheet 4 of 5)**



767-300

STRUCTURAL REPAIR MANUAL

NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- A** CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL I. OTHER CRACKS MUST BE REPAIRED.
- B** LOOK AT THE REFERENCE LINE A-B THAT IS DRAWN BETWEEN THE SPAR CHORDS AND A LIGHTENING HOLE. REFER TO DETAILS V AND VI. THE MAXIMUM PERMITTED CROSS SECTIONAL AREA THAT YOU CAN REMOVE FROM THE WEB, INCLUDING ALL FASTENER HOLES, SCRATCHES AND GOUGES, MUST NOT BE MORE THAN 10% OF THE CROSS SECTIONAL AREA OF THE WEB BETWEEN A AND B.
- C** HOLES ARE NOT PERMITTED IN THE STIFFENER FLANGE THAT IS FASTENED TO THE WEB. A MAXIMUM OF 4 HOLES IS PERMITTED IN THE FREE FLANGE, INCLUDING HOLE(S) DRILLED DURING MANUFACTURE. FILL HOLE DAMAGE WITH PROTRUDING HEAD RIVETS (2117-T4: ALUMINUM) INSTALLED WET WITH BMS 5-95 SEALANT.
- D** HOLES ARE NOT PERMITTED IN THE WEB BAY THAT HAS LARGE PENETRATION HOLES.

**Allowable Damage - Vertical Stabilizer Spars
Figure 101 (Sheet 5 of 5)**

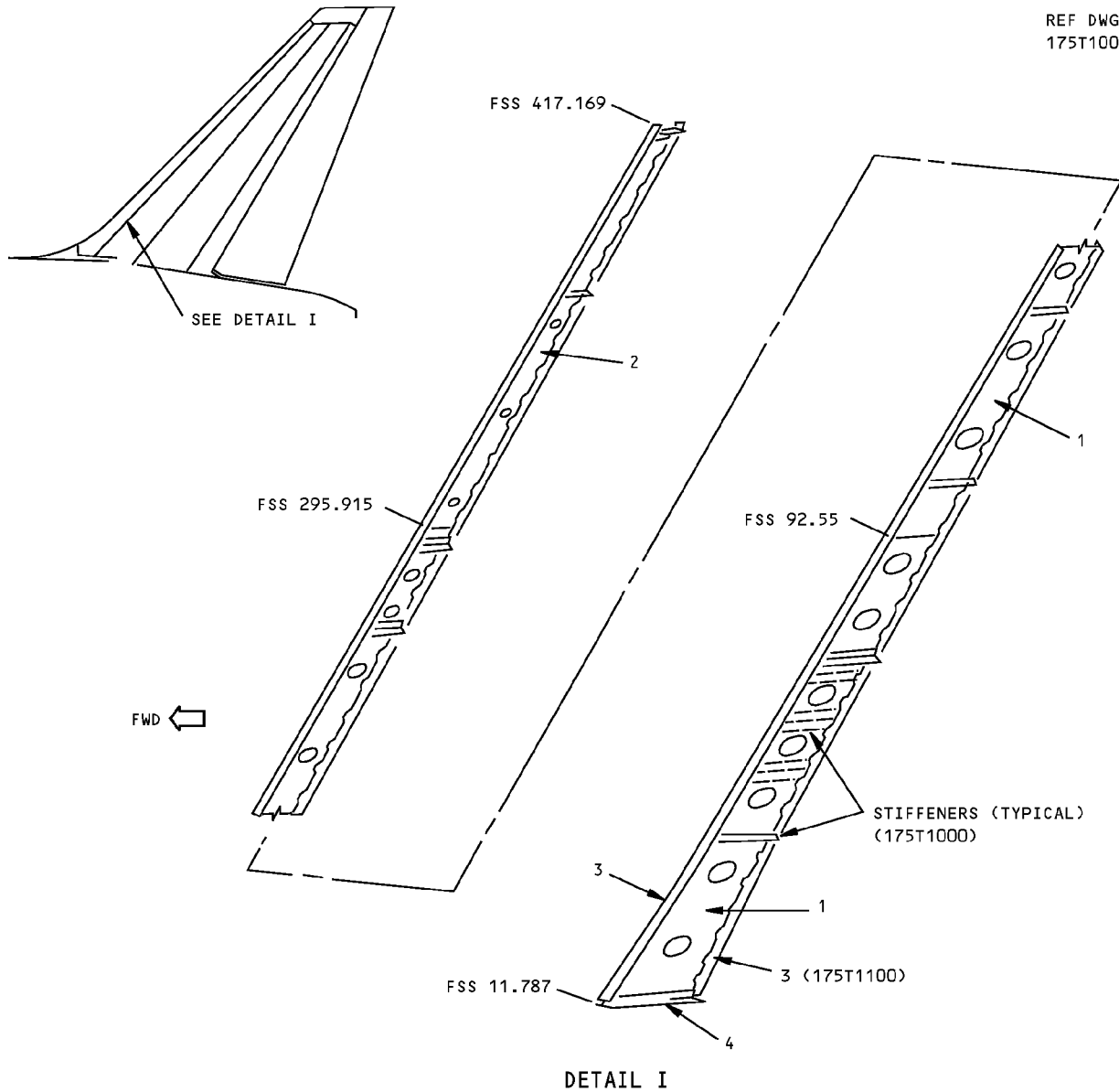
D634T210

ALLOWABLE DAMAGE 1
55-30-10
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**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - VERTICAL STABILIZER AUXILIARY SPAR

REF DWG
175T1000



ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.050	CLAD 7075-T6 (CHEM-MILLED TO 0.026 MIN)	
2	WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.026 MIN)	
3	CHORD		BAC 1506-3196 7075-T73511	
4	STIFFENER		BAC 1506-1671 7075-T6511	

LIST OF MATERIAL FOR DETAIL I

**Vertical Stabilizer - Auxiliary Spar Identification
Figure 1**

IDENTIFICATION 1
Page 1
Apr 01/2005

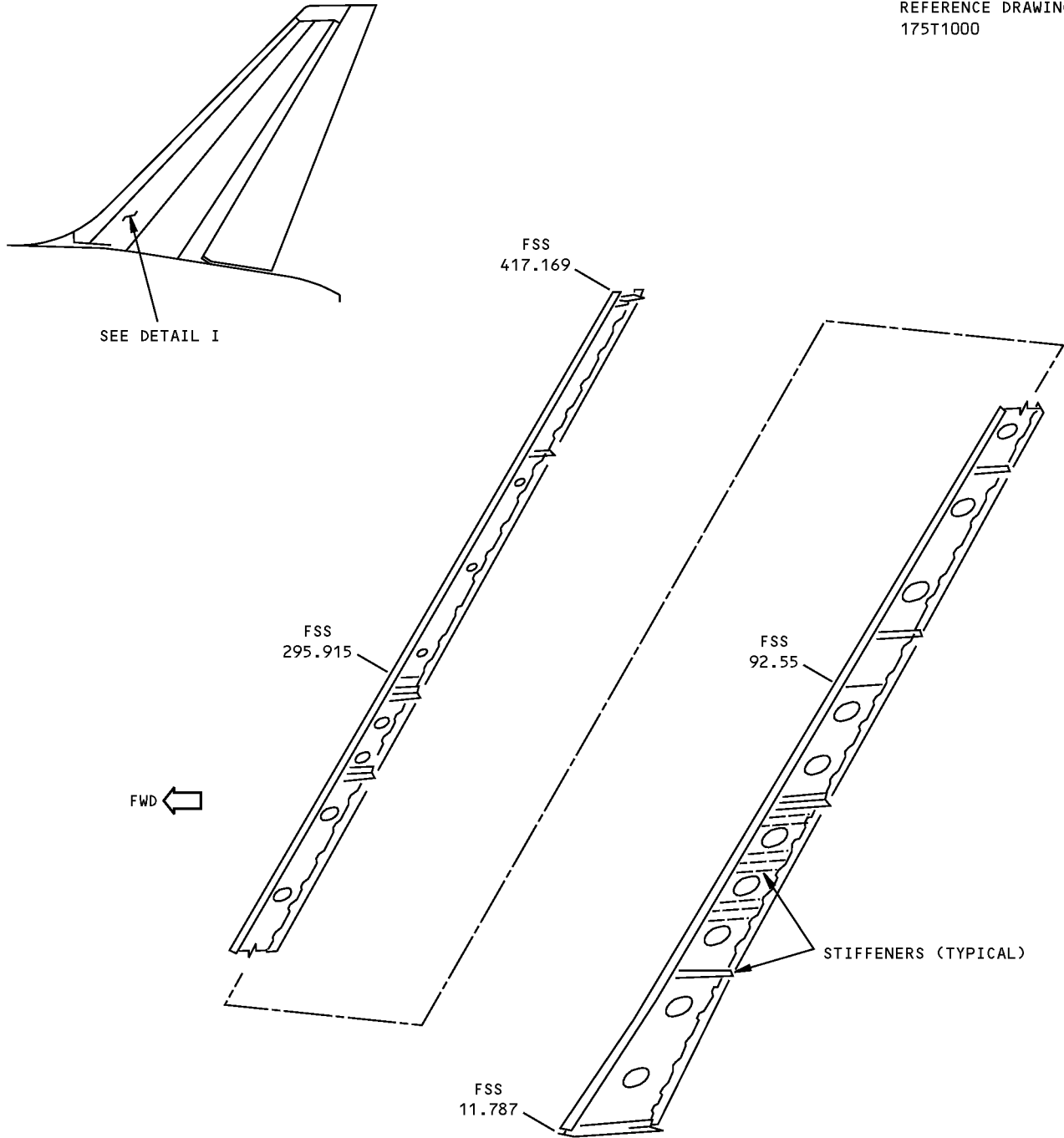
55-30-11

D634T210

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - VERTICAL STABILIZER AUXILIARY SPAR

REFERENCE DRAWING
175T1000



NOTES

- FOR ALLOWABLE DAMAGE REFER TO SRM 55-30-10, ALLOWABLE DAMAGE 1

DETAIL I

**Allowable Damage - Vertical Stabilizer Auxiliary Spar
Figure 101**

D634T210

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR GENERAL - VERTICAL STABILIZER AUXILIARY SPAR WEB

APPLICABILITY
THIS REPAIR APPLIES TO ALL FLANGED HOLES IN THE AUXILIARY SPAR EXCEPT FOR THE TWO HOLES BETWEEN FSS 270 AND FSS 290.

REPAIR INSTRUCTIONS

1. Remove the leading edge skin and get access to the damaged auxiliary spar web.
2. Inspect the crack using the dye penetrant inspection procedure. If the crack does not end at a fastener hole, drill a 0.25 inch (6.35 mm) diameter hole at the end of the crack.
3. Remove the stiffeners and fasteners as necessary to install the part 1 doubler.
4. Make the part 1 doubler. See Table I and Detail I.
5. Assemble the part 1 doubler and the stiffeners. Drill the holes in the part 1 doubler to align with the locations of the initial fastener holes in the spar web. Drill the repair fastener holes as shown in Detail I.
6. Disassemble the part 1 doubler and the stiffeners.
7. Remove all the nicks, scratches, gouges, burrs and sharp edges from the web, the stiffeners, and the part 1 doubler.
8. Apply a chemical conversion coating to the part 1 doubler and to the bare edges of the web and the stiffeners. Refer to SRM 51-20-01.
9. Apply one layer of BMS 10-11, Type 1 primer to the part 1 doubler and to the bare edges of the web and the stiffeners.
10. Install the part 1 doubler and the stiffeners with BMS 5-95 sealant between the mating surfaces. Install the fasteners wet with BMS 5-95 sealant.
11. Apply the finish to the repair area. Refer to AMM 51-21.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
 - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
 - SOPM 20-20-02 FOR DYE PENETRANT INSPECTION PROCEDURES
 - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
 - SRM 51-20-05 FOR SEALING REPAIRS
 - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS

- A** MAKE THE CUTOUT IN THE PART 1 DOUBLER AS CLOSE AS POSSIBLE TO THE RADIUS OF THE HOLE.
- B** DO NOT INSTALL ANY FASTENERS IN THE CHEM-MILLED AREAS. KEEP ALL FASTENERS IN THE 'PADDED' AREA.
- C** USE MATERIAL THAT IS ONE GAGE THICKER THAN THE 'PADDED' AREA.

FASTENER SYMBOLS

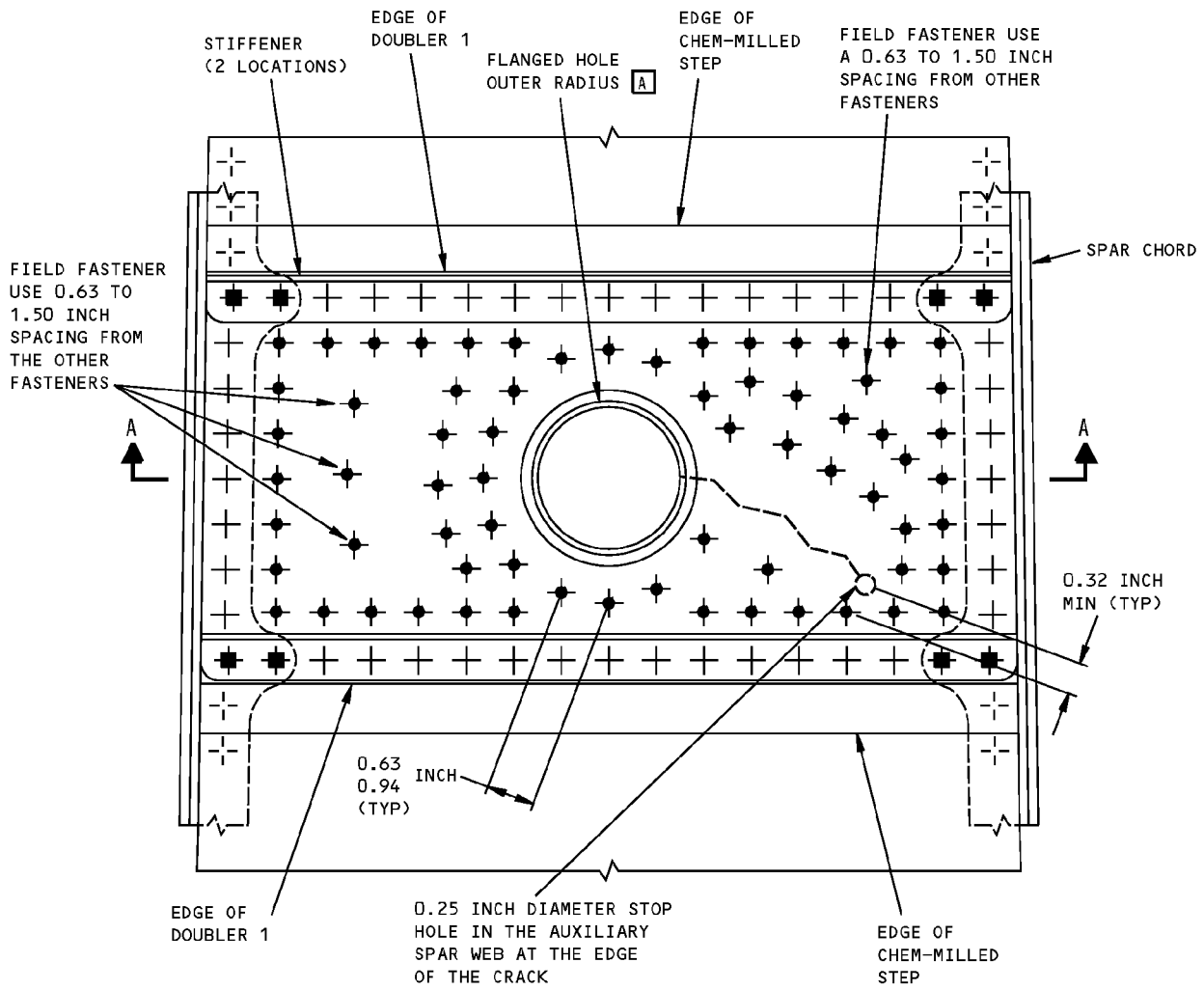
- REFERENCE FASTENER LOCATION.
- INITIAL FASTENER LOCATION. FOR THE INITIAL 5/32 FASTENER LOCATIONS, INSTALL A BACR15FT6KE RIVET. FOR THE INITIAL 6/32 FASTENER LOCATIONS, INSTALL A BACR15FT7KE RIVET. MAINTAIN A 1.7D EDGE MARGIN.
- REPAIR FASTENER LOCATION. INSTALL A BACR15FT5D RIVET. MAINTAIN A 2.0D EDGE MARGIN.
- INITIAL FASTENER LOCATION. INSTALL A BACR15FT7KE RIVET. MAINTAIN A 1.7D EDGE MARGIN.

REPAIR MATERIAL			
	PART	QTY	MATERIAL
1	DOUBLER	1	CLAD 7075-T6 C

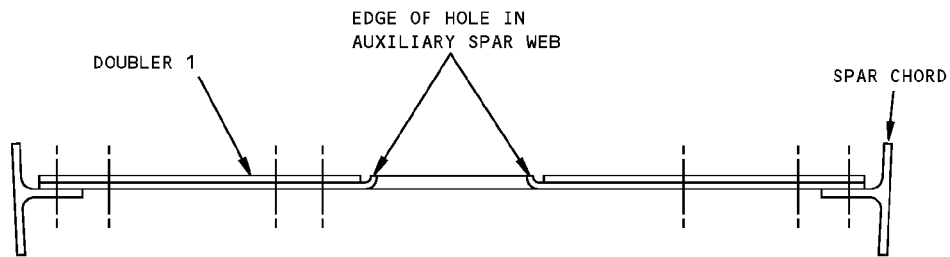
TABLE I

**Vertical Stabilizer Auxiliary Spar Web Repair
Figure 201 (Sheet 1 of 2)**

STRUCTURAL REPAIR MANUAL



VIEW IN THE AFT DIRECTION
DETAIL I

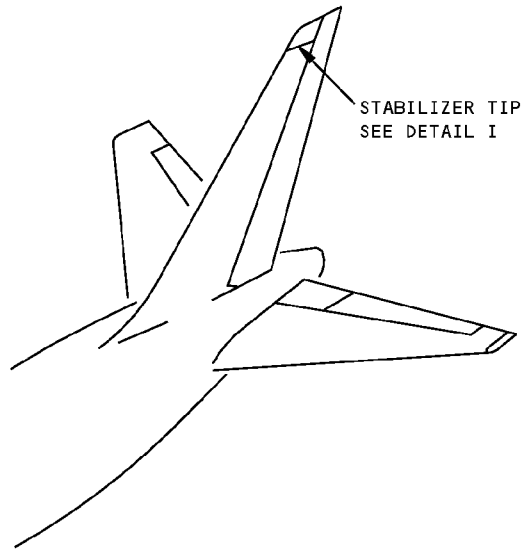


SECTION A-A

Vertical Stabilizer Auxiliary Spar Web Repair
Figure 201 (Sheet 2 of 2)

767-300
STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - VERTICAL STABILIZER TIP



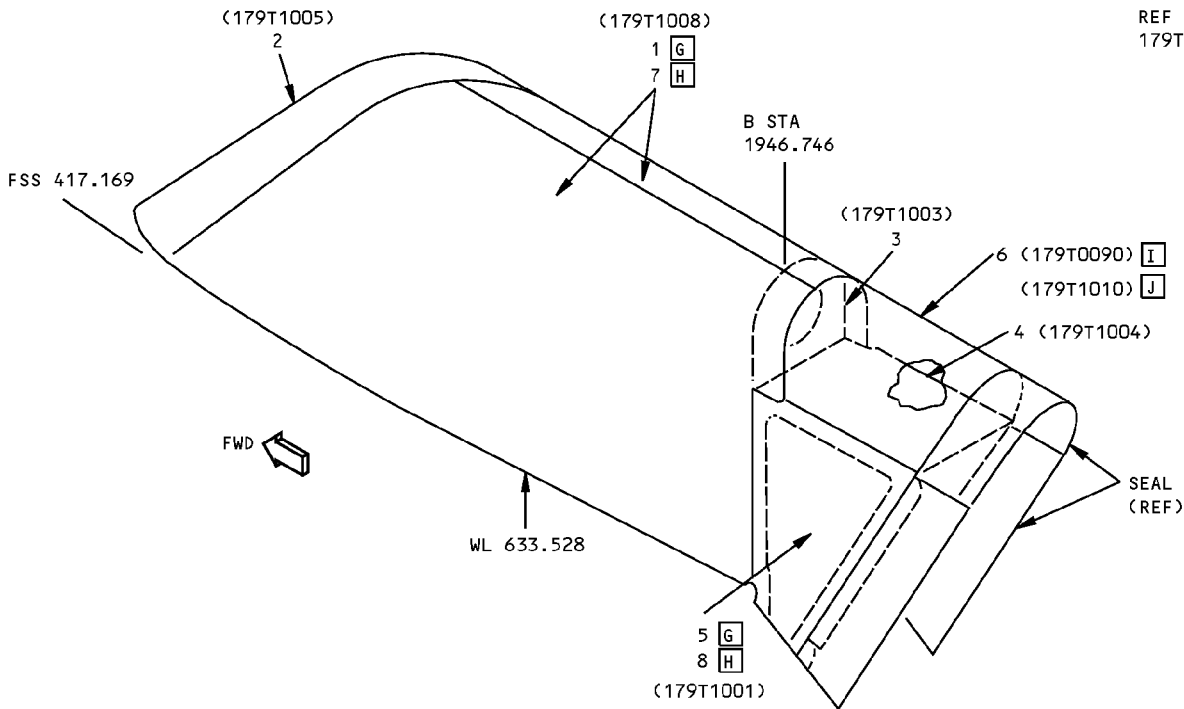
NOTES

- | | |
|---|--|
| <p>A PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION</p> <p>B MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWING FOR EDGE BANDS AND AREAS WITH DOUBLERS</p> <p>C ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 120, 250°F (121°C) CURE</p> <p>D ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 285, 250°F (121°C) CURE</p> | <p>E FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 120, CLASS III, GRADE I, 250°F (121°C) CURE</p> <p>F FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581 OR 7781, CLASS III, GRADE I, 250°F (121°C) CURE</p> <p>G FOR CUM LINE NUMBER 132 ONLY</p> <p>H FOR CUM LINE NUMBERS: 136 AND ON</p> |
|---|--|

Vertical Stabilizer Tip Identification
Figure 1 (Sheet 1 of 4)

**767-300
STRUCTURAL REPAIR MANUAL**

REF DWG
179T1000



DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PANEL ASSY SKIN CORE		ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL II HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE VI, GRADE 3.0	G
2	LEADING EDGE SKIN	0.090	CLAD 2024-T3 (CHEM-MILLED TO 0.040 MIN)	
3	RIB ASSY RIB DOUBLER	0.032 0.063	CLAD 2024-T3 CLAD 2024-T3	
4	RIB	0.032	CLAD 2024-T3	
5	AFT PANEL SKIN CORE		ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL III HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE VI, GRADE 3.0	G
6	UPPER AFT PANEL		GLASS FABRIC LAMINATE PER BMS 8-79, TYPE 1581 OR 7781, CLASS III, GRADE I, 250°F (121°C) CURE	
7	PANEL ASSY SKIN CORE		FIBERGLASS/EPOXY HONEYCOMB SANDWICH SEE DETAIL II HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE VI, GRADE 3.0	H
8	AFT PANEL SKIN CORE		FIBERGLASS/EPOXY HONEYCOMB SANDWICH SEE DETAIL III HONEYCOMB CORE PER BMS 8-124, CLASS IV, TYPE VI, GRADE 3.0	H

LIST OF MATERIALS FOR DETAIL I

**Vertical Stabilizer Tip Identification
Figure 1 (Sheet 2 of 4)**

IDENTIFICATION 1
Page 2
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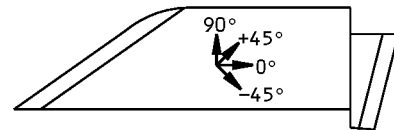
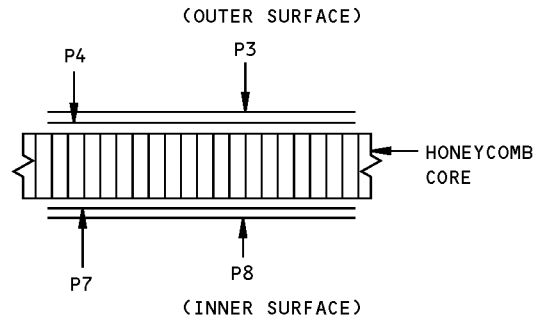
55-30-30

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**767-300
STRUCTURAL REPAIR MANUAL**

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
1	P3	D	0° - 90°
	P4	D	0° - 90°
	P7	D	0° - 90°
	P8	D	0° - 90°

PLY TABLE B G



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
7	P3	F	0° - 90°
	P4	F	0° - 90°
	P7	F	0° - 90°
	P8	F	0° - 90°

PLY TABLE B H

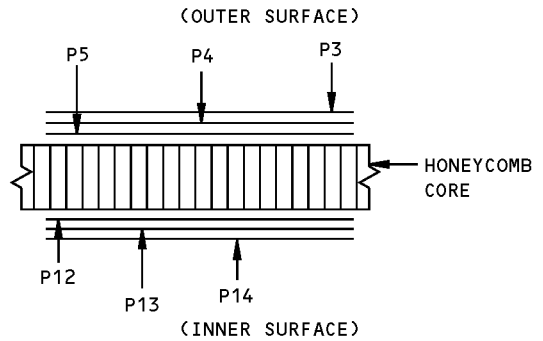
DETAIL II

**Vertical Stabilizer Tip Identification
Figure 1 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
5	P3	C	0° - 90°
	P4	C	0° - 90°
	P5	C	0° - 90°
	P12	C	0° - 90°
	P13	C	0° - 90°
	P14	C	0° - 90°

PLY TABLE **B** **G**



SECTION THRU HONEYCOMB PANEL

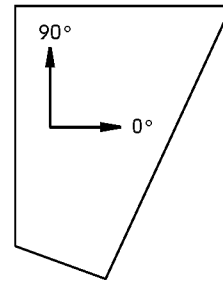


DIAGRAM OF PLY ORIENTATION

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
8	P3	E	0° - 90°
	P4	E	0° - 90°
	P5	E	0° - 90°
	P12	E	0° - 90°
	P13	E	0° - 90°
	P14	E	0° - 90°

PLY TABLE **B** **H**

DETAIL III

**Vertical Stabilizer Tip Identification
Figure 1 (Sheet 4 of 4)**

IDENTIFICATION 1
Page 4
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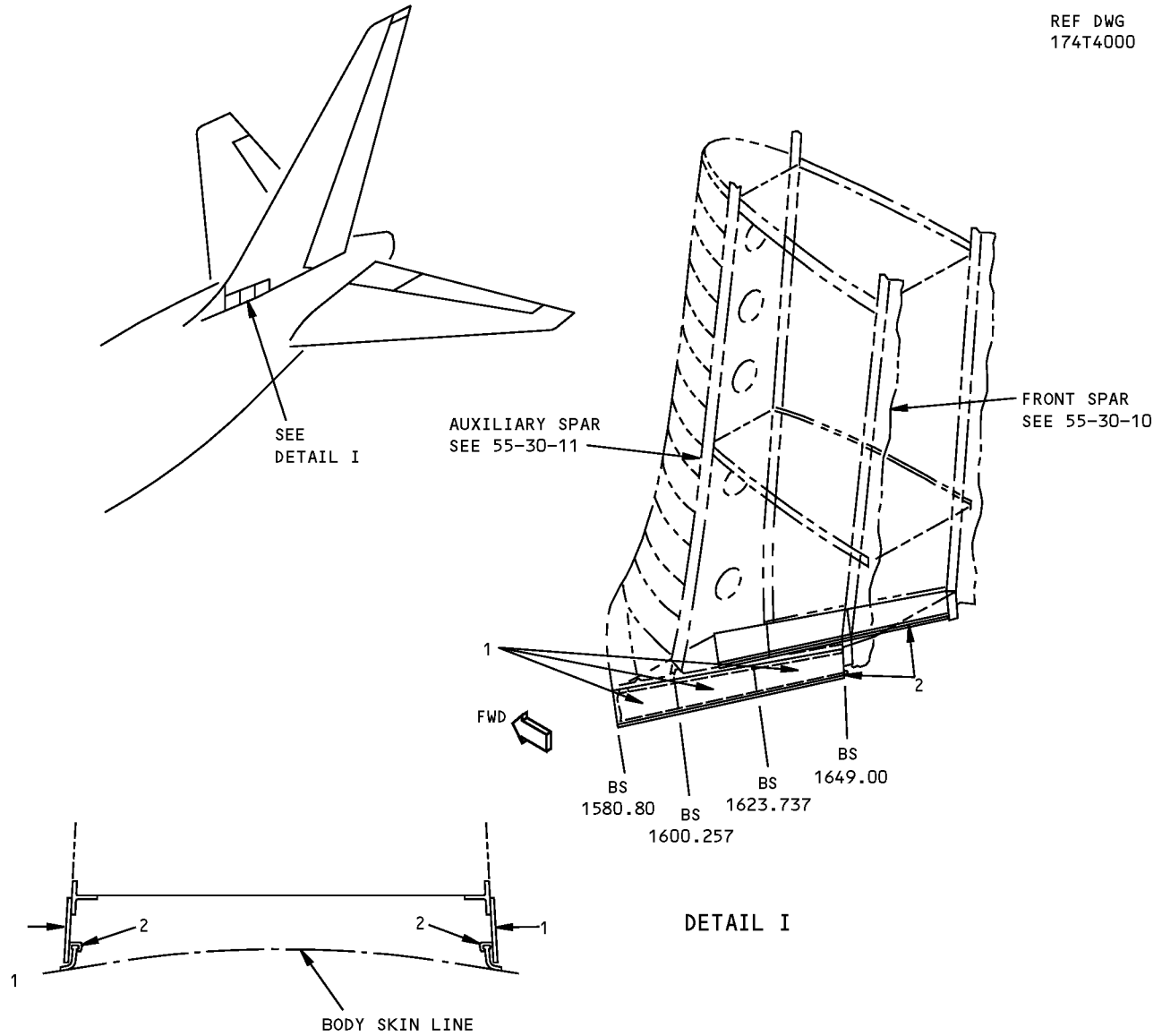
55-30-30

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**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 2 - VERTICAL STABILIZER SEAL PLATE

REF DWG
174T4000



SECTION THRU VERTICAL STABILIZER

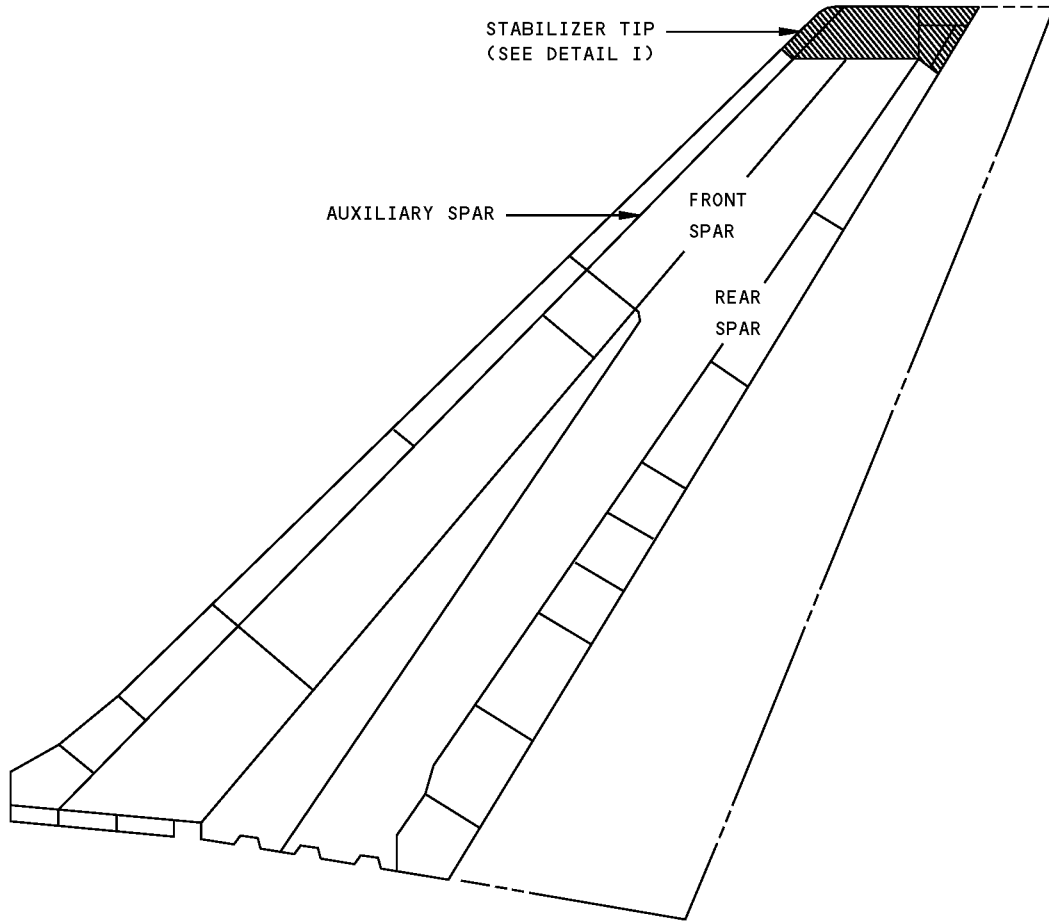
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SEAL PLATE		FIBERGLASS/EPOXY LAMINATE PER BMS 8-79, CLASS III, TYPE 1581, GRADE 1, 250°F (121°C) CURE	
2	SEAL RETAINER		BAC1520-1653 7075-T6511	

LIST OF MATERIALS FOR DETAIL I

**Vertical Stabilizer Seal Plate Identification
Figure 1**

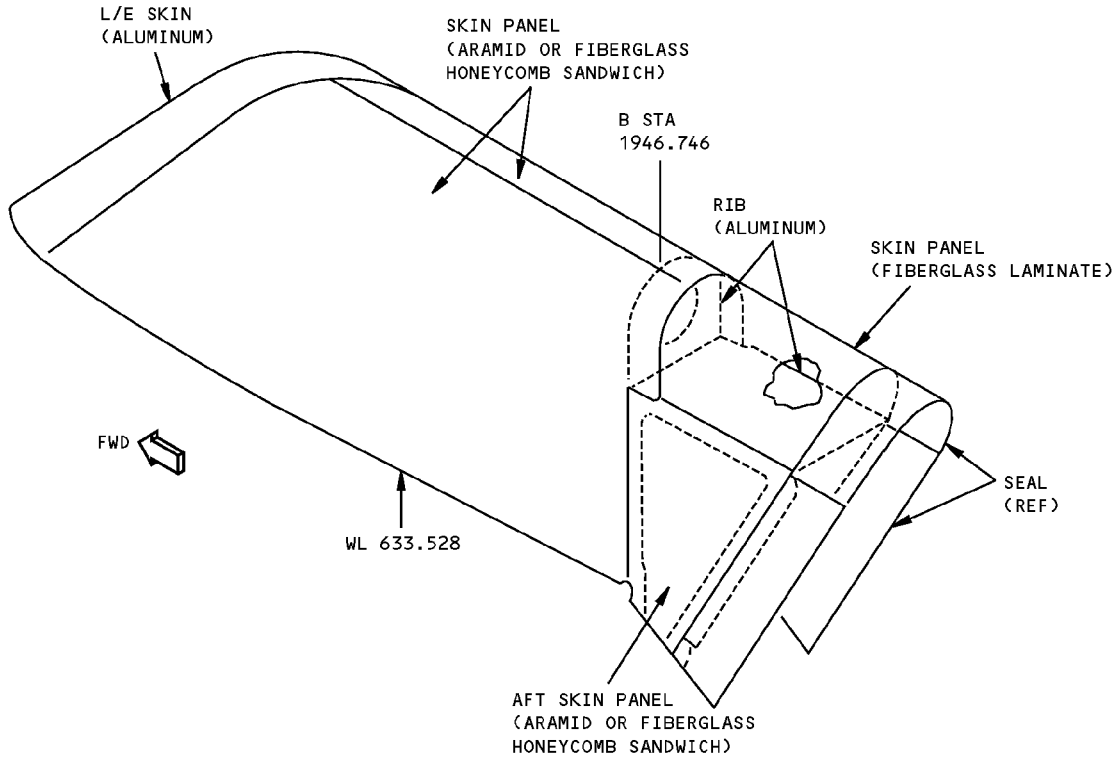
767-300
STRUCTURAL REPAIR MANUAL

ALLOWABLE DAMAGE 1 - VERTICAL STABILIZER TIP



Allowable Damage - Vertical Stabilizer Tip
Figure 101 (Sheet 1 of 5)

**767-300
STRUCTURAL REPAIR MANUAL**



DETAIL I

LOCATION	CRACKS	NICKS AND GOUGES	DENTS	HOLES AND PUNCTURES	DELAMINATION
LEADING EDGE SKIN	A	B	C	D	—
RIBS	A	B	SEE DETAIL V	E	—
SKIN PANELS					
HONEYCOMB PANELS	F	G	H	F	F
LAMINATE PANELS	A	B	H	J	K

TABLE I

**Allowable Damage - Vertical Stabilizer Tip
Figure 101 (Sheet 2 of 5)**

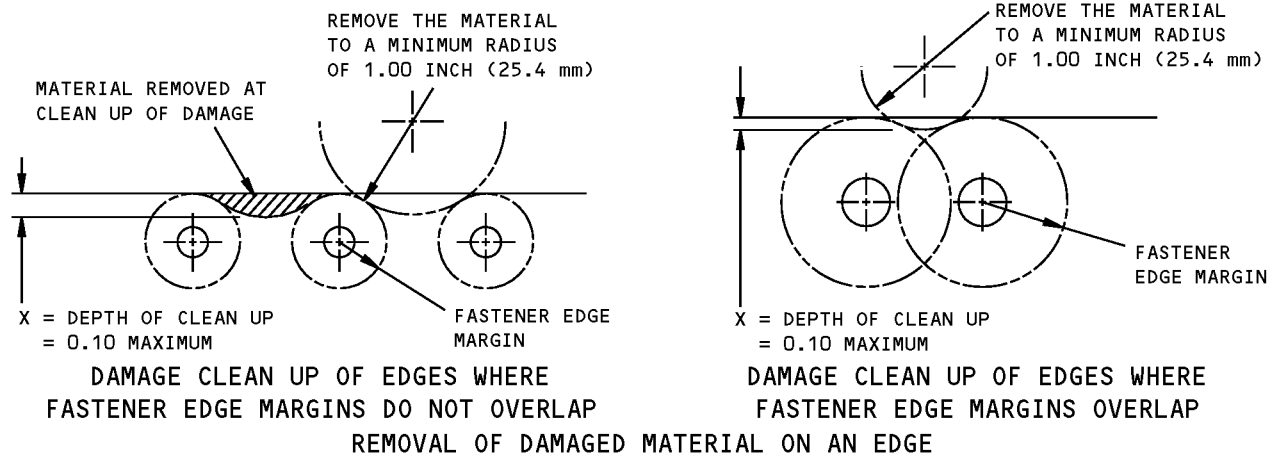
STRUCTURAL REPAIR MANUAL

NOTES

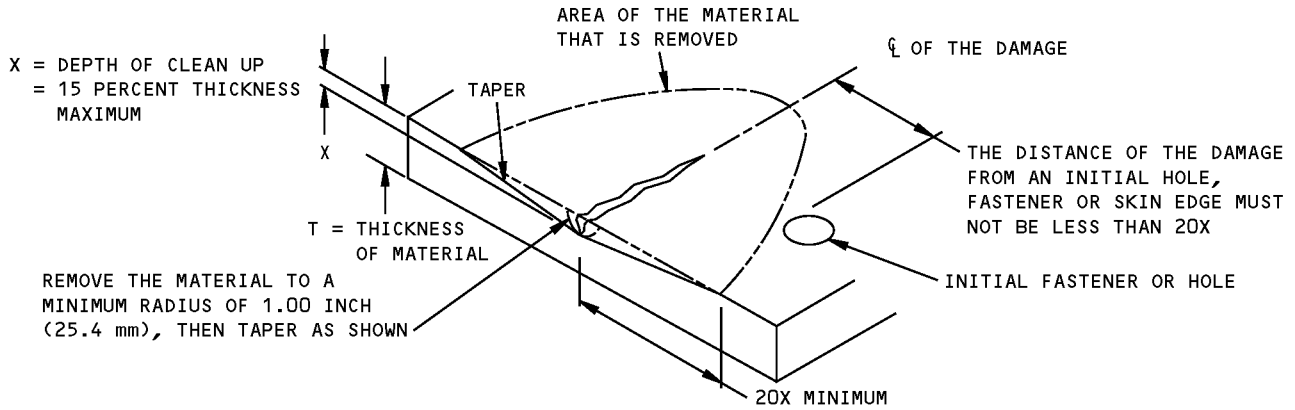
- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
 - REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEED THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
 - REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
 - REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20.
 - DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR MAY TAKE A FORM WHICH RESULTS IN DAMAGE TO FIBERS AND A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. THIS TYPE OF DAMAGE SHOULD BE REMOVED AND THE LIMITATIONS GIVEN FOR CRACKS APPLIED.
- [A] FOR EDGE CRACKS SEE DETAILS II OR IV. ALL OTHER CRACKS UP TO 1.00 INCH (25 mm) ALLOWED. REPAIR NO LATER THAN NEXT "C" CHECK.
 - [B] REMOVE EDGE DAMAGE AS GIVEN IN DETAILS II OR IV. ELSEWHERE REMOVE DAMAGE AS GIVEN IN DETAIL III.
 - [C] DENTS UP TO 0.125 INCH (3 mm) DEEP ARE ALLOWED PROVIDED THAT A/Y IS NOT LESS THAN 30 (SEE DETAIL V) AND THERE ARE NO PULLED OR LOOSE RIVETS OR OTHER DAMAGE. DISTANCE BETWEEN DENT AND ADJACENT DAMAGE MUST NOT BE LESS THAN ONE HALF THE MAXIMUM DIMENSION OF THE DENT. FOR DENTS THAT EXCEED THESE LIMITS, REFER TO SRM 51-70-01.
 - [D] HOLES UP TO 0.25 INCH (6 mm) MAX DIA AND PUNCTURES THAT CAN BE CLEANED UP TO 0.25 INCH (6 mm) MAX DIA ARE ALLOWED NOT CLOSER THAN 1.00 INCH (25 mm) TO ANY ADJACENT HOLE. HOLE IS TO BE FILLED WITH A FLUSH HEAD ALUMINUM (2117-T3) RIVET AND INSTALLED WET WITH BMS 5-95 SEALANT.
 - [E] HOLES UP TO 0.50 INCH (12 mm) MAX DIA AND PUNCTURES THAT CAN BE CLEANED UP TO 0.50 INCH (12 mm) MAX DIA ARE ALLOWED NOT CLOSER THAN 1.00 INCH (25 mm) TO ANY ADJACENT HOLE.
 - [F] DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC., WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE AS GIVEN IN DETAILS II AND IV. 2.00 INCHES (50 mm) MAX DIA ALLOWED FOR SINGLE DAMAGE SITE IN HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF a/D = 1.5. SEE DETAIL VI FOR DAMAGE CRITERIA. DAMAGE ALLOWED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE NOT REWORKED AS GIVEN IN [I].
 - [G] DAMAGE ALLOWED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE AS GIVEN IN DETAILS II AND IV. REFER TO [F] FOR FIBER DAMAGE IN OTHER AREAS.
 - [H] DENTS RESULT IN DELAMINATION AND FIBER DAMAGE AND MUST BE TREATED AS A HOLE OR PUNCTURE DAMAGE.
 - [I] REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT AIRPLANE AT EACH "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE IF ANY PEELING OR DETERIORATION IS EVIDENT. REPAIR NO LATER THAN NEXT AIRPLANE "C" CHECK.
 - [J] HOLES UP TO 1.00 INCH (25 mm) MAX DIA AND PUNCTURES THAT CAN BE CLEANED UP TO 1.00 INCH (25 mm) MAX DIA [I].
 - [K] REMOVE EDGE DELAMINATION PER DETAILS II OR IV. 1.00 INCH (25 mm) MAX DIA ALLOWED IN OTHER AREAS. REPAIR DELAMINATIONS AS GIVEN IN SRM 51-70 NO LATER THAN THE NEXT AIRPLANE "C" CHECK.

Allowable Damage - Vertical Stabilizer Tip
Figure 101 (Sheet 3 of 5)

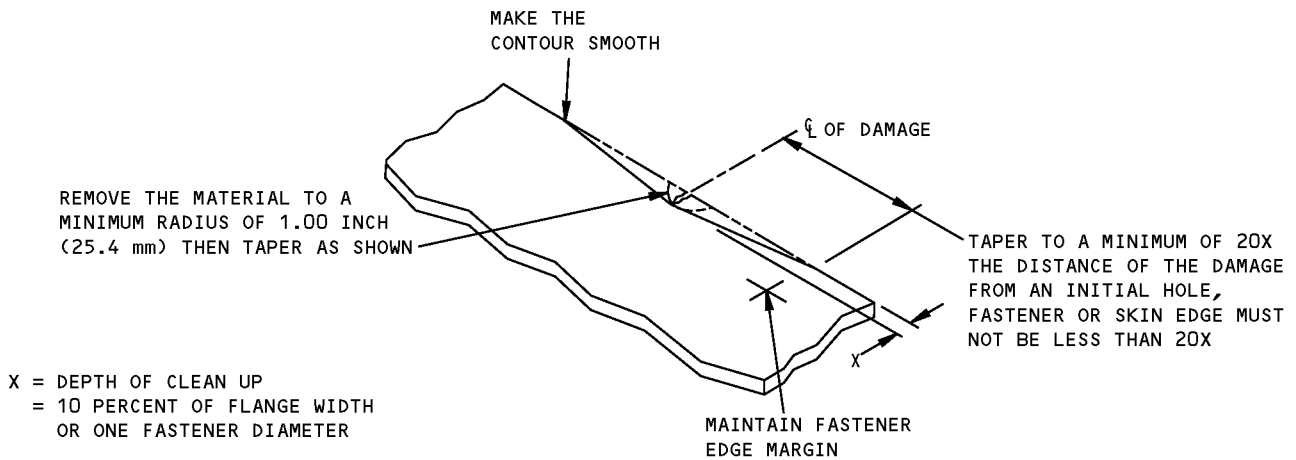
STRUCTURAL REPAIR MANUAL



DETAIL II



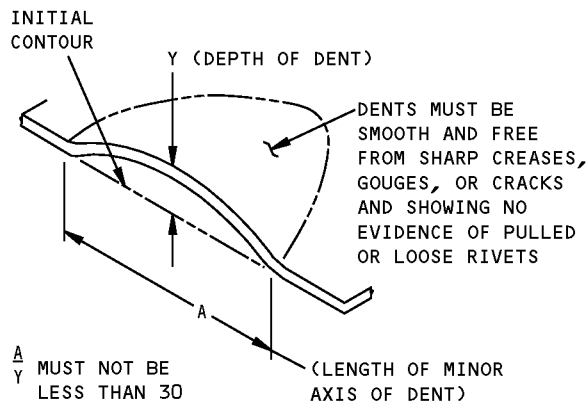
REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL III



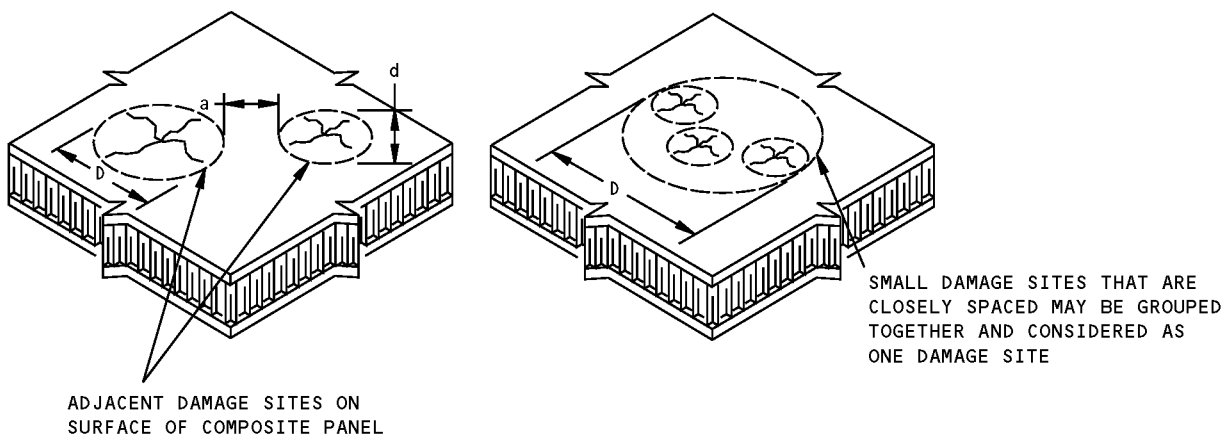
REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE
DETAIL IV

Allowable Damage - Vertical Stabilizer Tip
Figure 101 (Sheet 4 of 5)

**767-300
STRUCTURAL REPAIR MANUAL**



DETAIL V



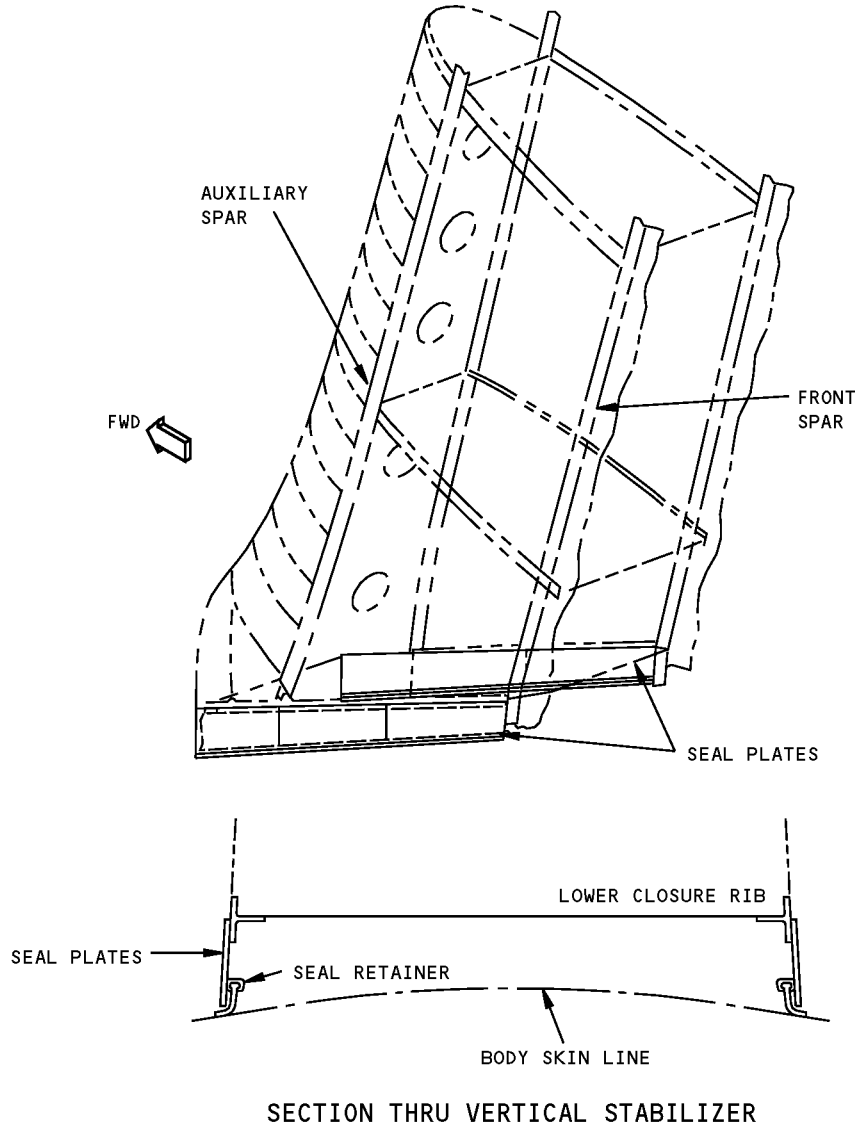
- DAMAGE SITE IS ANY SINGLE AREA OF A PANEL WHERE A DENT, CRACK, DELAMINATION, PUNCTURE OR ANY COMBINATION OF THESE EXIST. SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE
- "D" IS DETERMINED BY MEASURING THE DIAMETER OF A CIRCLE DRAWN AROUND DENT, CRACK, OR OTHER DAMAGE, WHICHEVER IS GREATER
- "a" IS THE DISTANCE BETWEEN TWO ADJACENT DAMAGE SITES
- "d" IS THE DIAMETER OF THE SMALLER OF TWO ADJACENT DAMAGE SITES
- CALCULATE a/D BY DIVIDING DISTANCE "a" BY DIAMETER "D"
- DAMAGE IS ALLOWED WHEN "D" IS EQUAL TO OR LESS THAN THE MAXIMUM ALLOWABLE "D" FROM TABLE I AND WHEN a/D IS EQUAL TO OR GREATER THAN THE MINIMUM a/D GIVEN IN TABLE I

**DAMAGE SIZING AND SPACING DATA
FOR COMPOSITE PANELS
DETAIL VI**

**Allowable Damage - Vertical Stabilizer Tip
Figure 101 (Sheet 5 of 5)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 2 - VERTICAL STABILIZER SEAL PLATE



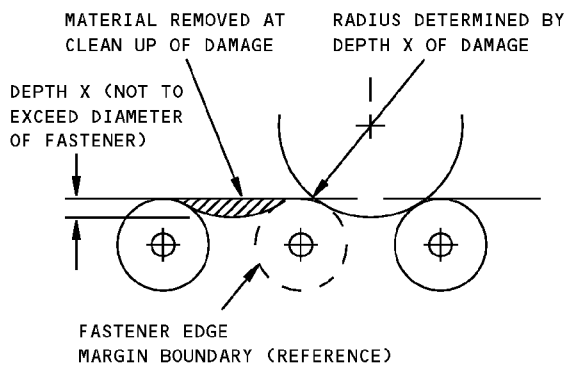
NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- A** THE MAXIMUM HOLE DIAMETER THAT IS PERMITTED IS 0.19 INCH. PROTECT THE DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH AIRPLANE "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE IF THERE IS PEELING OR DETERIORATION OF TAPE. REPAIR NO LATER THAN THE NEXT AIRPLANE "C" CHECK.

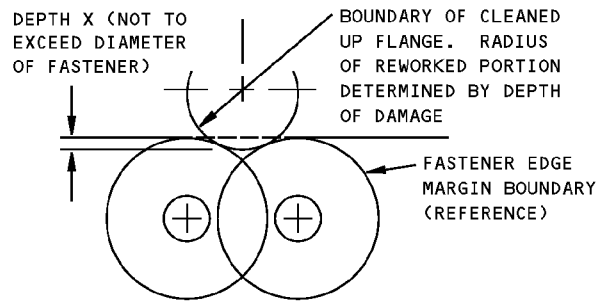
**Allowable Damage - Vertical Stabilizer Seal Plates
Figure 101 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

LOCATION	CRACKS	NICKS AND GOUGES	DENTS	PUNCTURES AND HOLES	DELAMINATION
SEAL PLATE	CLEAN UP AS GIVEN IN DETAIL I. OTHER CRACKS MUST BE REPAIRED	CLEAN UP AS GIVEN IN DETAILS I AND II TO A LIMIT OF 10% OF THE MATERIAL THICKNESS MAXIMUM	0.02 INCH (0.51 mm) MAXIMUM	A	UP TO 1.0 SQUARE INCH (645.2 SQUARE mm) AREA IS PERMITTED
SEAL RETAINER	CLEAN UP AS GIVEN IN DETAIL I, OR REPLACE THE PART	CLEAN UP AS GIVEN IN DETAILS I AND II	0.02 INCH (0.51 mm) MAXIMUM	NOT PERMITTED	--

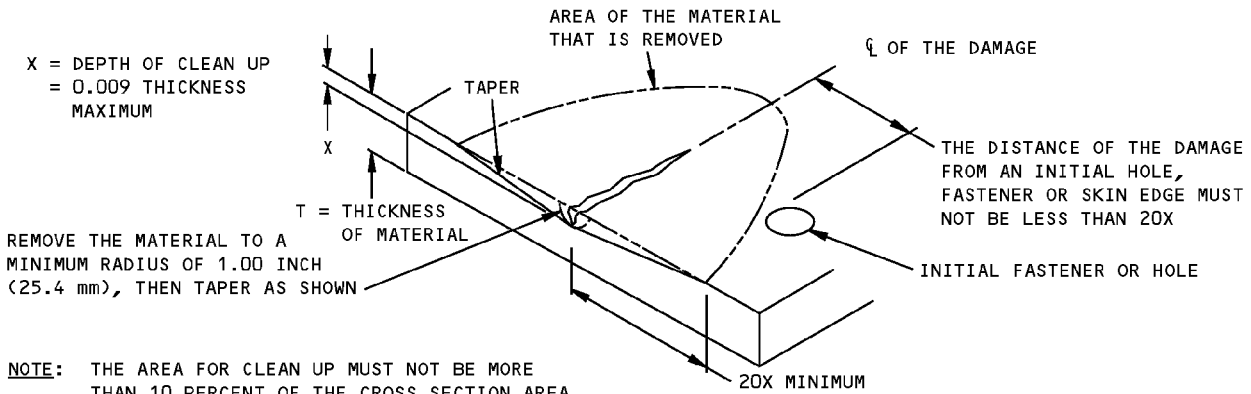


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I

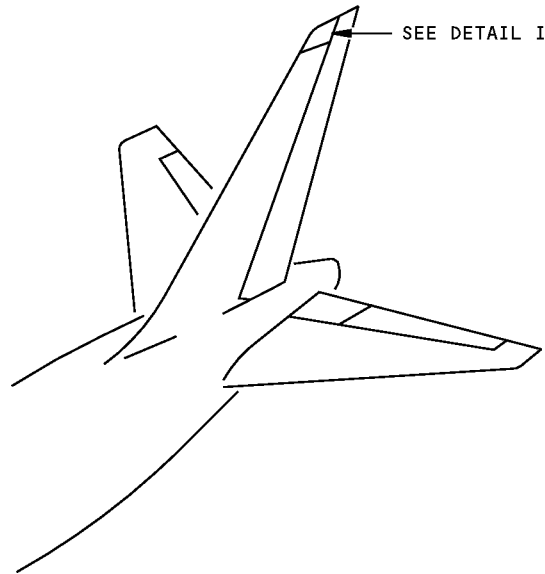


**REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL II**

**Allowable Damage - Vertical Stabilizer Seal Plates
Figure 101 (Sheet 2 of 2)**

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STRUCTURAL REPAIR MANUAL

REPAIR 1 - VERTICAL STABILIZER TIP

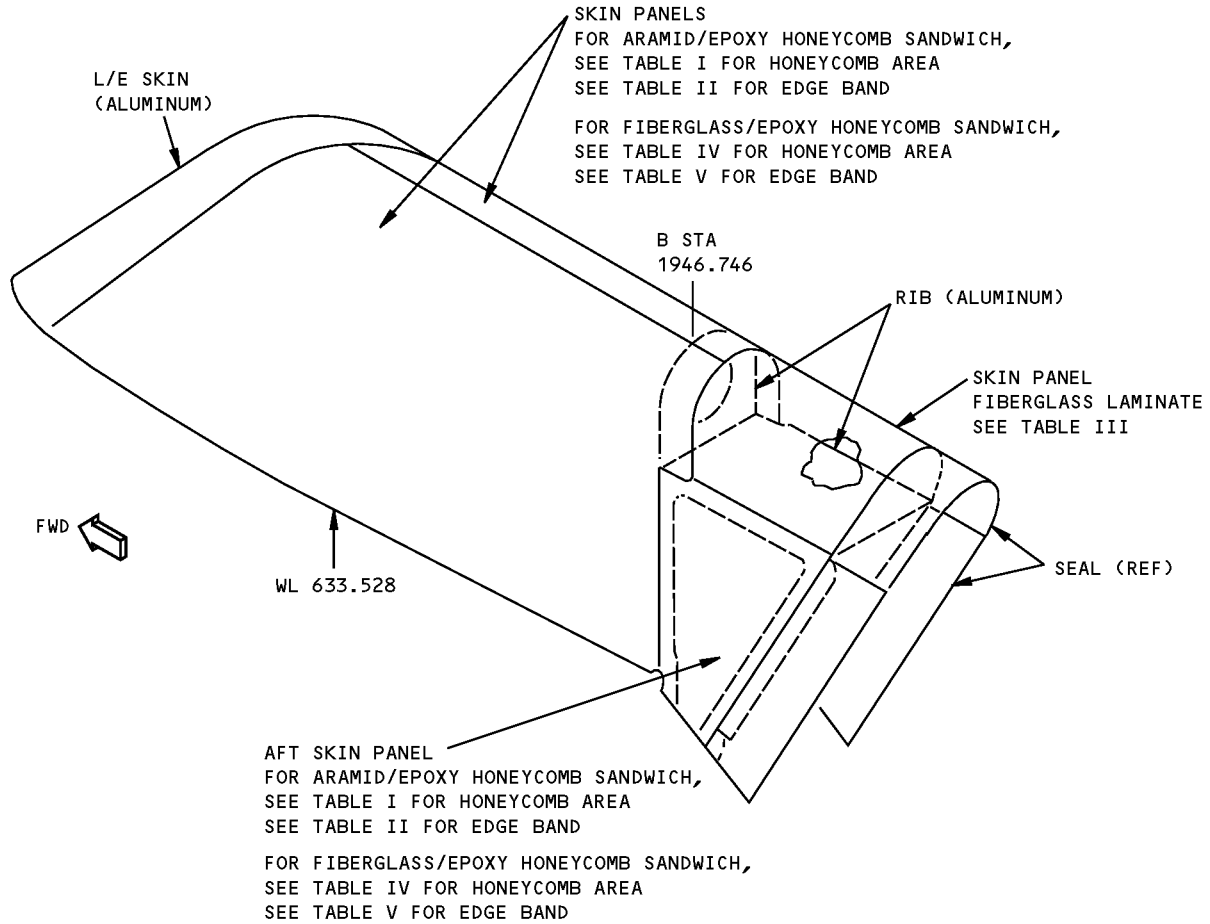


NOTES

- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20
 - REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED
 - REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- A** LIMITED TO REPAIR OF DAMAGE TO ONE FACE-SHEET SKIN AND HONEYCOMB CORE. ONE REPAIR FOR EACH SQUARE FOOT OF AREA AND MINIMUM OF 6.0 INCHES (150 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL
- B** INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EVERY AIRPLANE "2A" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
- C** ONE REPAIR FOR EACH SQUARE FOOT OF AREA AND A MINIMUM OF 6.0 INCHES (150 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL
- D** MINIMUM (EDGE TO EDGE), 6 INCHES (150 mm) BETWEEN REPAIRS OR FROM A FASTENER HOLE OR EDGE OF PANEL
- E** WHERE BMS 5-95 SEALANT IS APPLIED ON EXTERIOR SURFACE OF PANEL AT MANUFACTURE, REAPPLY BMS 5-95 SEALANT ON REWORKED AREAS PRIOR TO THE APPLICATION OF ENAMEL FINISH. REFER TO AMM 51-21-12

Vertical Stabilizer Tip Repairs
Figure 201 (Sheet 1 of 7)

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STRUCTURAL REPAIR MANUAL**



DETAIL I

**Vertical Stabilizer Tip Repairs
Figure 201 (Sheet 2 of 7)**



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STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS B	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP (SRM 51-70-03)	WET LAYUP 150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. A	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. A	8.0 INCHES (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED C	12.0 INCHES (300 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED C	NO SIZE LIMIT
DELAMI-NATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	UP TO 4.0 INCHES (100 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.L. C OVER 4.0 INCHES (100 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F (121°C) CURE ARAMID HONEYCOMB PANELS **E**
SEE TABLE II FOR EDGE BANDS
TABLE I

Vertical Stabilizer Tip Repairs
Figure 201 (Sheet 3 of 7)

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STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS B	PERMANENT REPAIRS	
	ROOM TEMP (SRM 51-70-03)	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)
HOLES AND PUNCTURES	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-03, PAR. 5.K. FOR ALL OTHER DAMAGE, USE A PERMANENT REPAIR PROCEDURE	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-17, PAR. 4.K. FOR ALL OTHER DAMAGE, REPAIR AS GIVEN IN SRM 51-70-17, PAR. 4.G.	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-05, PAR. 5.K. FOR ALL OTHER DAMAGE, REPAIR AS GIVEN IN SRM 51-70-05, PAR. 5.G.
DELAMINATION	IF DELAMINATION FROM PANEL EDGE IS NOT LESS THAN 2D FROM ANY FASTENER HOLE, REPAIR AS GIVEN IN SRM 51-70-03, PAR. 5.A.(2). ANY OTHER DELAMINATION MUST BE CUT OUT AND REPAIRED AS A HOLE	CUT OUT AND REPAIR AS A HOLE	CUT OUT AND REPAIR AS A HOLE
CRACKS	REPAIR AS A HOLE		
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE OR DELAMINATION, WHICHEVER IS APPLICABLE		
DENTS	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL DENTS AS GIVEN IN SRM 51-70-03 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE OR DELAMINATION, WHICHEVER IS APPLICABLE		

REPAIR DATA FOR EDGE BANDS OF 250°F (121°C) CURE ARAMID HONEYCOMB PANELS E
TABLE II

**Vertical Stabilizer Tip Repairs
Figure 201 (Sheet 4 of 7)**

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STRUCTURAL REPAIR MANUAL**

	INTERIM REPAIRS B	PERMANENT REPAIRS	
DAMAGE	WET LAYUP ROOM TEMP CURE (SRM 51-70-06)	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-06	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES AND PUNCTURES	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-06, PAR. 5.K. REPAIR PUNCTURE DAMAGE AS GIVEN IN SRM 51-70-06, PAR. 5.I. 2.0 INCHES (50 mm) MAX DIA D	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-17, PAR. 4.K. REPAIR PUNCTURE DAMAGE AS GIVEN IN SRM 51-70-17, PAR. 4.I. 4.0 INCHES (100 mm) MAX DIA	NO SIZE LIMIT
DELAMI- NATION	CUT OUT AND REPAIR AS HOLE		
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE		
DENTS	CUT OUT AND REPAIR AS HOLE		

REPAIR DATA FOR 250°F (121°C) CURE FIBERGLASS LAMINATE PANEL
TABLE III

**Vertical Stabilizer Tip Repairs
Figure 201 (Sheet 5 of 7)**

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STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP CURE (SRM 51-70-06)	WET LAYUP 150°F (66°C) CURE (SRM 51-70-06)	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-07)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. [A]	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCHES (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.N. [A]	8.0 INCHES (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED [C]	12.0 INCHES (300 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED [C]	NO SIZE LIMIT
DELAMINATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE			
DENTS	UP TO 4.0 INCHES (100 mm) DIAMETER WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-06, PAR. 5.L. [C] OVER 4.0 INCHES (100 mm) DIAMETER OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F (121°C) CURE FIBERGLASS HONEYCOMB PANELS
SEE TABLE V FOR EDGE BANDS
TABLE IV

Vertical Stabilizer Tip Repairs
Figure 201 (Sheet 6 of 7)

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STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS B	PERMANENT REPAIRS	
	ROOM TEMP (SRM 51-70-06)	WET LAYUP 200°F (93°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-07)
HOLES AND PUNCTURES	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-06, PAR. 5.K. FOR ALL OTHER DAMAGE, USE A PERMANENT REPAIR PROCEDURE	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-17, PAR. 4.K. FOR ALL OTHER DAMAGE, REPAIR AS GIVEN IN SRM 51-70-17, PAR. 4.G.	REPAIR DAMAGE TO FASTENER HOLES AS GIVEN IN SRM 51-70-07, PAR. 5.K. FOR ALL OTHER DAMAGE, REPAIR AS GIVEN IN SRM 51-70-07, PAR. 5.G.
DELAMINATION	IF DELAMINATION FROM PANEL EDGE IS NOT LESS THAN 2D FROM ANY FASTENER HOLE, REPAIR AS GIVEN IN SRM 51-70-06, PAR. 5.A.(2). ANY OTHER DELAMINATION MUST BE CUT OUT AND REPAIRED AS A HOLE	CUT OUT AND REPAIR AS A HOLE	CUT OUT AND REPAIR AS A HOLE
CRACKS	REPAIR AS A HOLE		
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE OR DELAMINATION, WHICHEVER IS APPLICABLE		
DENTS	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL DENTS AS GIVEN IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE OR DELAMINATION, WHICHEVER IS APPLICABLE		

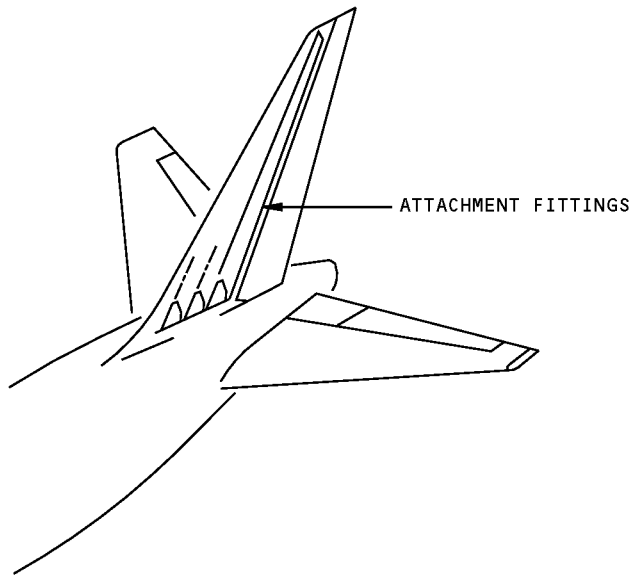
REPAIR DATA FOR EDGE BANDS OF 250°F (121°C) CURE FIBERGLASS HONEYCOMB PANELS
TABLE V

**Vertical Stabilizer Tip Repairs
Figure 201 (Sheet 7 of 7)**



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STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - VERTICAL STABILIZER ATTACHMENT FITTING



Vertical Stabilizer Fitting Identification
Figure 1 (Sheet 1 of 3)

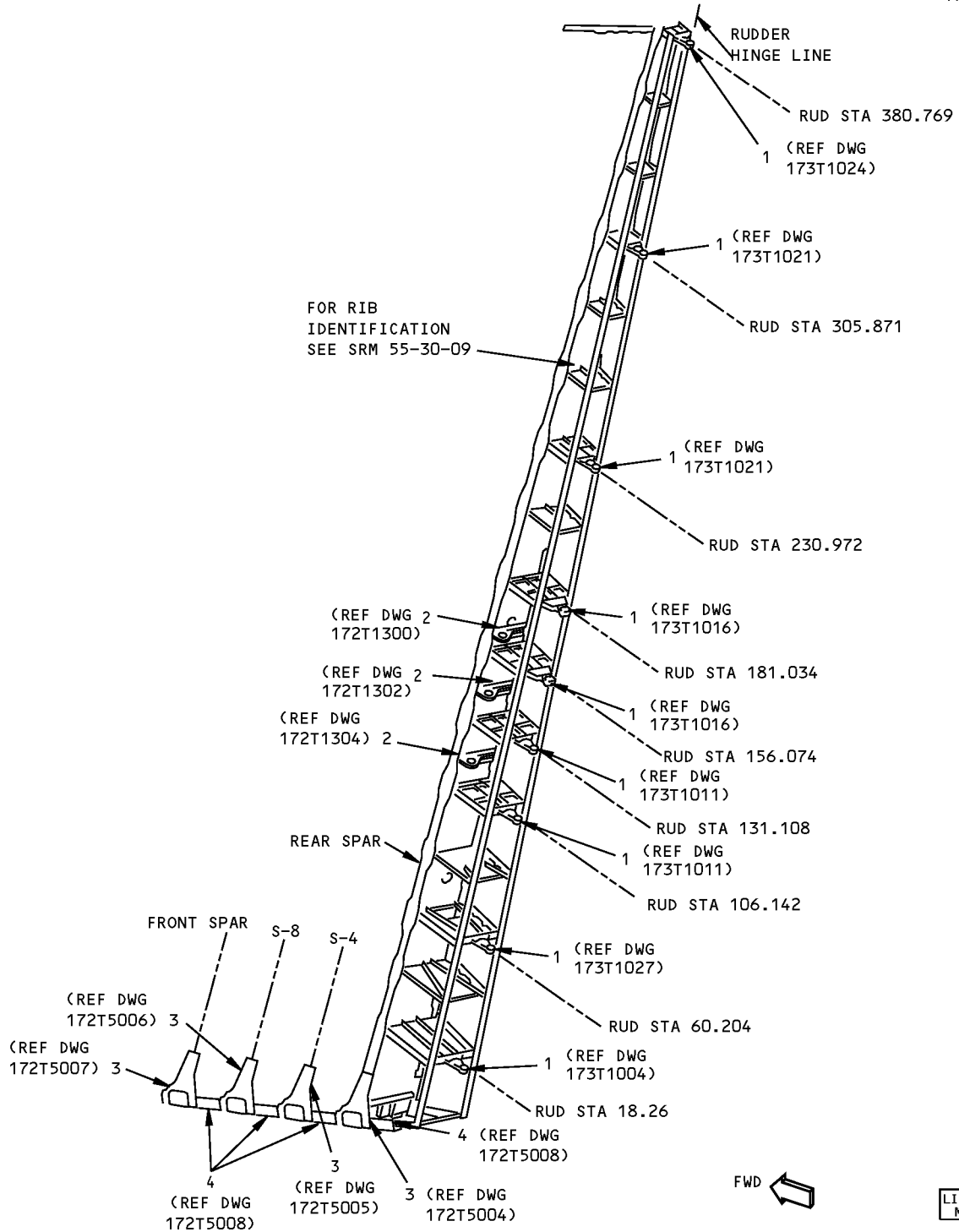
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IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**

REFERENCE DRAWINGS
173T1000
172T5000



**Vertical Stabilizer Fitting Identification
Figure 1 (Sheet 2 of 3)**



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STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	HINGE FITTING		PLATE 7075-T7351	
2	ACTUATOR FITTING		FORGING 7075-T73	
3	FIN/BODY FITTING		FORGING 7075-T73	
4	FIN/BODY ANGLE		BAC1514-2450 7075-T73511	

Vertical Stabilizer Fitting Identification
Figure 1 (Sheet 3 of 3)

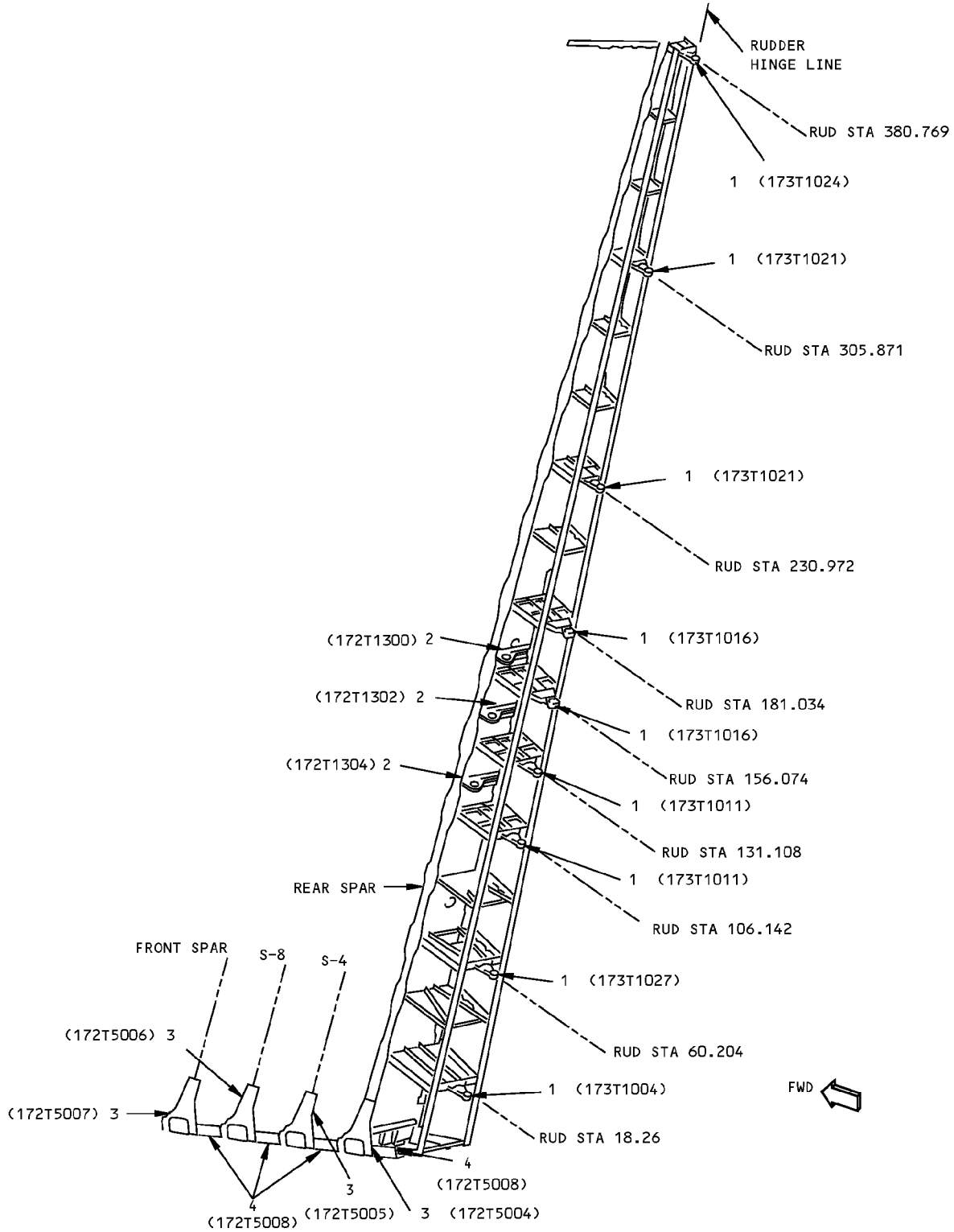
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**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - VERTICAL STABILIZER ATTACHMENT FITTING



**Allowable Damage - Vertical Stabilizer Fittings
Figure 101 (Sheet 1 of 4)**



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STRUCTURAL REPAIR MANUAL

FITTING	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES
1 RUDDER HINGE FITTING	A	FOR EDGE DAMAGE, SEE DETAIL I. FOR OTHER DAMAGE, SEE DETAIL II. FOR LUG DAMAGE, SEE DETAIL III B	NOT PERMITTED	NOT PERMITTED
2 RUDDER ACTUATOR FITTING	A	FOR EDGE DAMAGE, SEE DETAIL I. FOR OTHER DAMAGE, SEE DETAIL II. FOR LUG DAMAGE, SEE DETAIL III B	NOT PERMITTED	NOT PERMITTED
3 FIN/BODY FITTING	A	FOR EDGE DAMAGE, SEE DETAIL I. FOR OTHER DAMAGE, SEE DETAIL II.	NOT PERMITTED	NOT PERMITTED
4 FIN/BODY ANGLE	A	FOR EDGE DAMAGE, SEE DETAIL I. FOR OTHER DAMAGE, SEE DETAIL II.	NOT PERMITTED	NOT PERMITTED

NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

A CLEAN UP EDGE CRACKS AS GIVEN IN DETAIL IV. OTHER CRACKS ARE NOT PERMITTED.

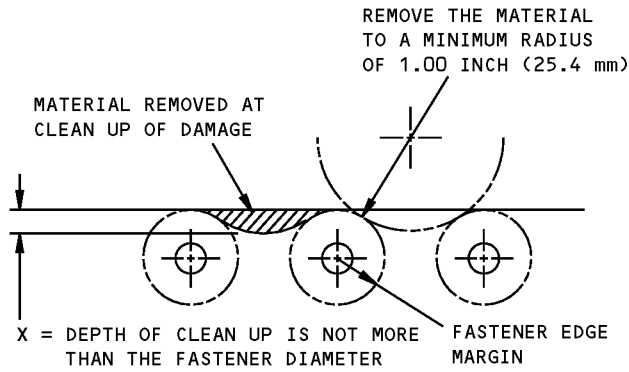
B DAMAGE IS NOT PERMITTED NEAR BUSHINGS.

Allowable Damage - Vertical Stabilizer Fittings
Figure 101 (Sheet 2 of 4)

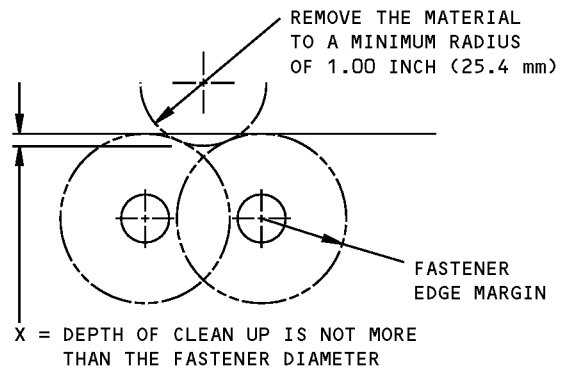
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ALLOWABLE DAMAGE 1
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STRUCTURAL REPAIR MANUAL**

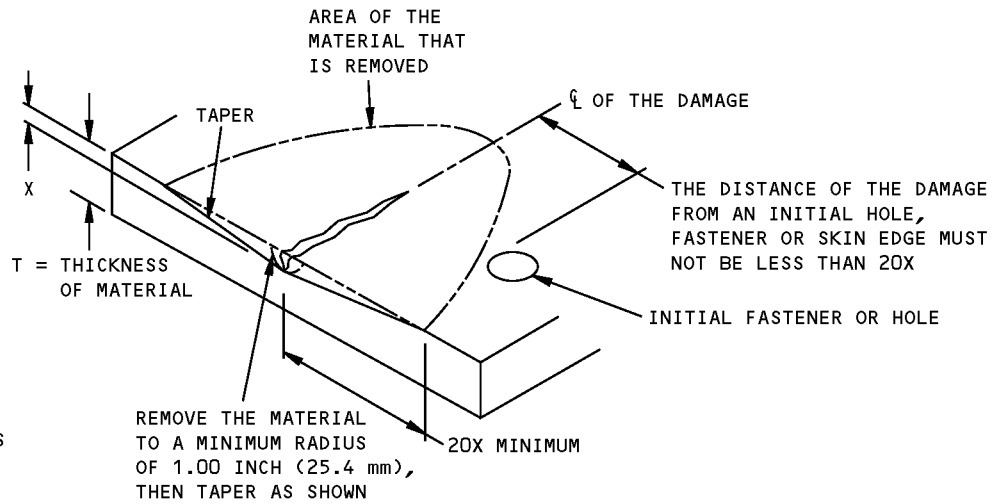


**DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP**



**DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP**

**REMOVAL OF DAMAGED MATERIAL ON AN EDGE
DETAIL I**



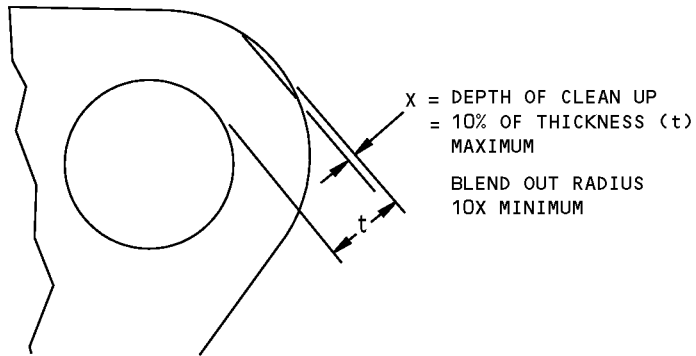
**X = DEPTH OF CLEAN UP
= 10 PERCENT THICKNESS
MAXIMUM**

NOTE: THE AREA FOR CLEAN UP MUST
NOT BE MORE THAN 10 PERCENT
OF THE CROSS SECTION AREA

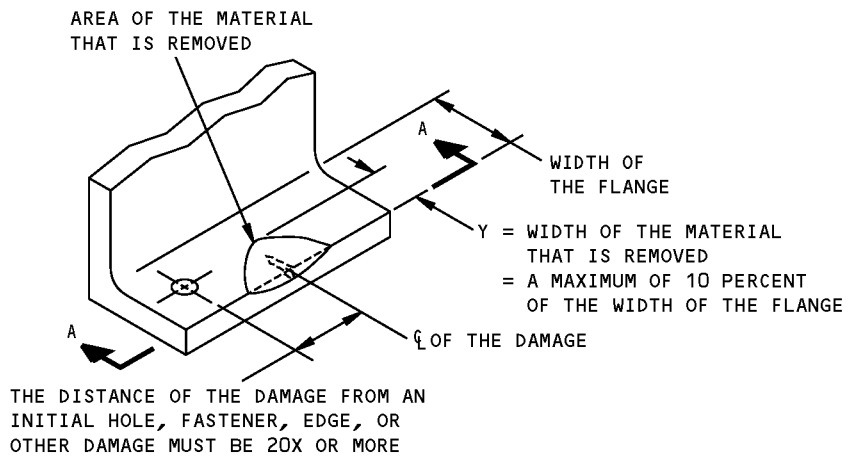
**REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL II**

**Allowable Damage - Vertical Stabilizer Fittings
Figure 101 (Sheet 3 of 4)**

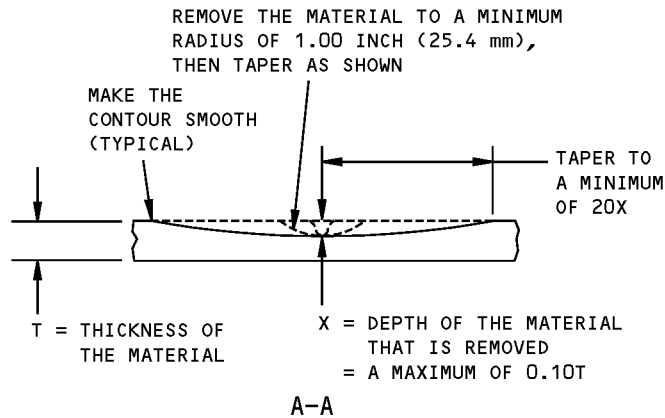
**767-300
STRUCTURAL REPAIR MANUAL**



**DAMAGE CLEAN UP FOR EDGES OF LUG
DETAIL III**



**REMOVAL OF DAMAGED MATERIAL ON A SURFACE AT AN EDGE
DETAIL IV**



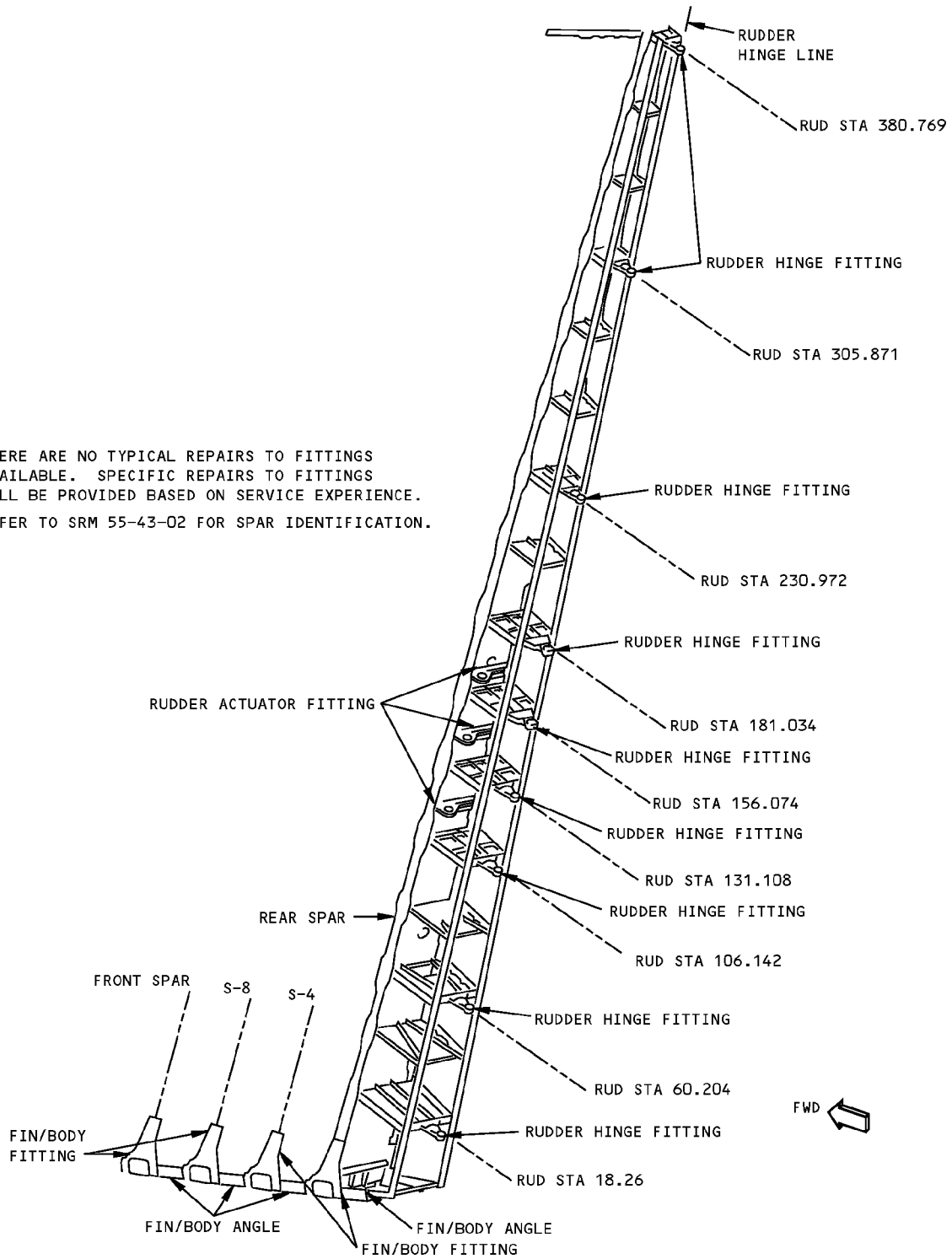
**Allowable Damage - Vertical Stabilizer Fittings
Figure 101 (Sheet 4 of 4)**

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STRUCTURAL REPAIR MANUAL**

REPAIR GENERAL - VERTICAL STABILIZER ATTACHMENT FITTINGS

NOTES

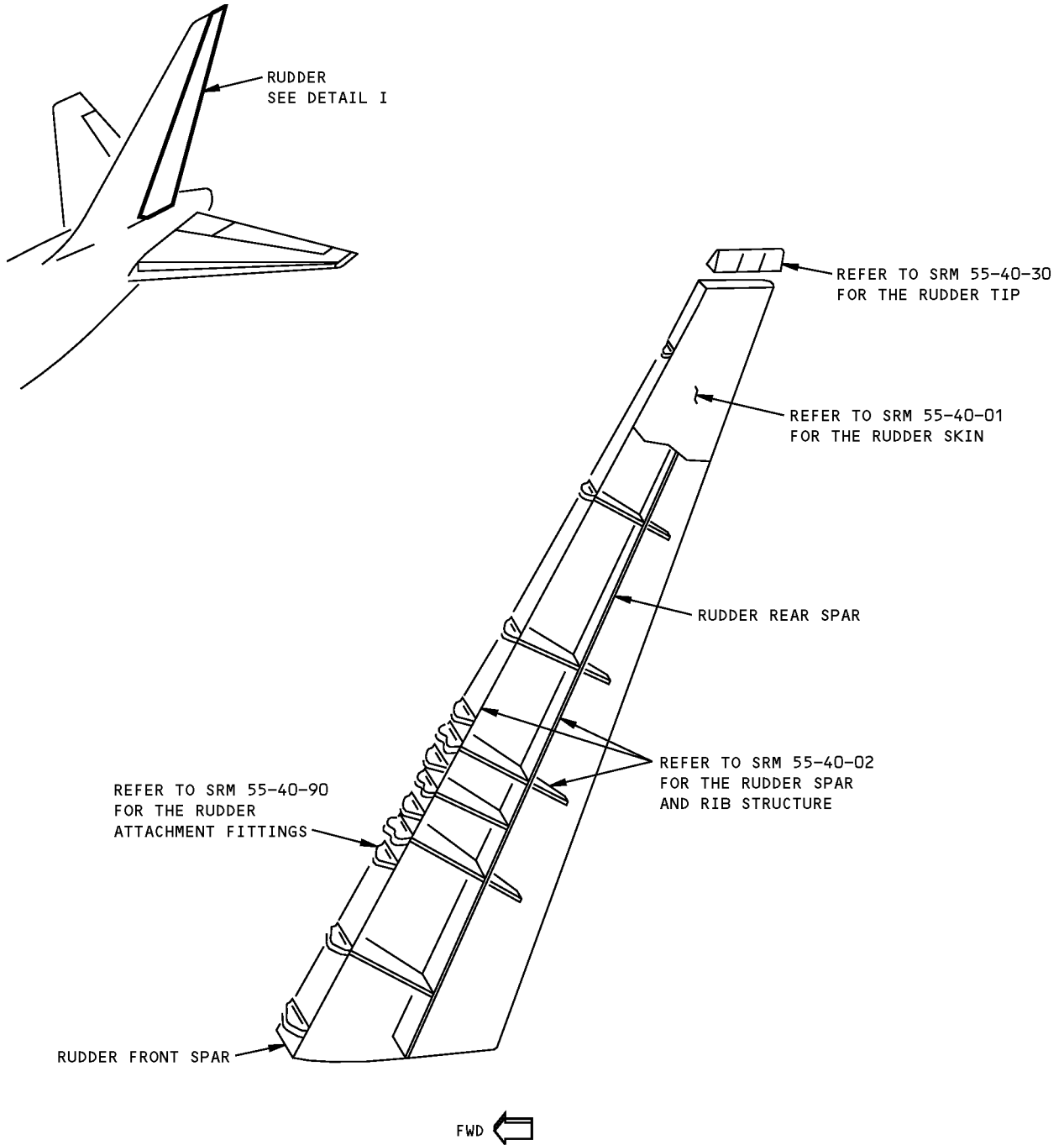
- THERE ARE NO TYPICAL REPAIRS TO FITTINGS AVAILABLE. SPECIFIC REPAIRS TO FITTINGS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 55-43-02 FOR SPAR IDENTIFICATION.



**Vertical Stabilizer Attachment Fittings Repair
Figure 201**

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STRUCTURAL REPAIR MANUAL**

GENERAL - RUDDER STRUCTURE DIAGRAM



**RUDDER
DETAIL I**

**Rudder Structure Diagram
Figure 1**

D634T210

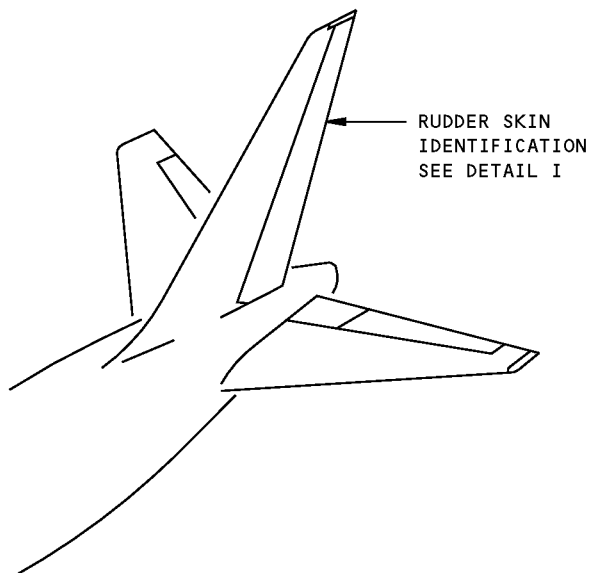
55-40-00

GENERAL
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STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - RUDDER SKINS



NOTES

- A** PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION
- B** GRAPHITE/EPOXY FABRIC PER BMS 8-212, TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE
- C** MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS
- D** FOR AIRPLANES WITH CUM LINE NUMBERS 250 AND ON AND FOR AIRPLANES WITH SERVICE BULLETIN 767-51-0010 OR 767-51-0012 INCORPORATED

**Rudder Skin Identification
Figure 1 (Sheet 1 of 5)**

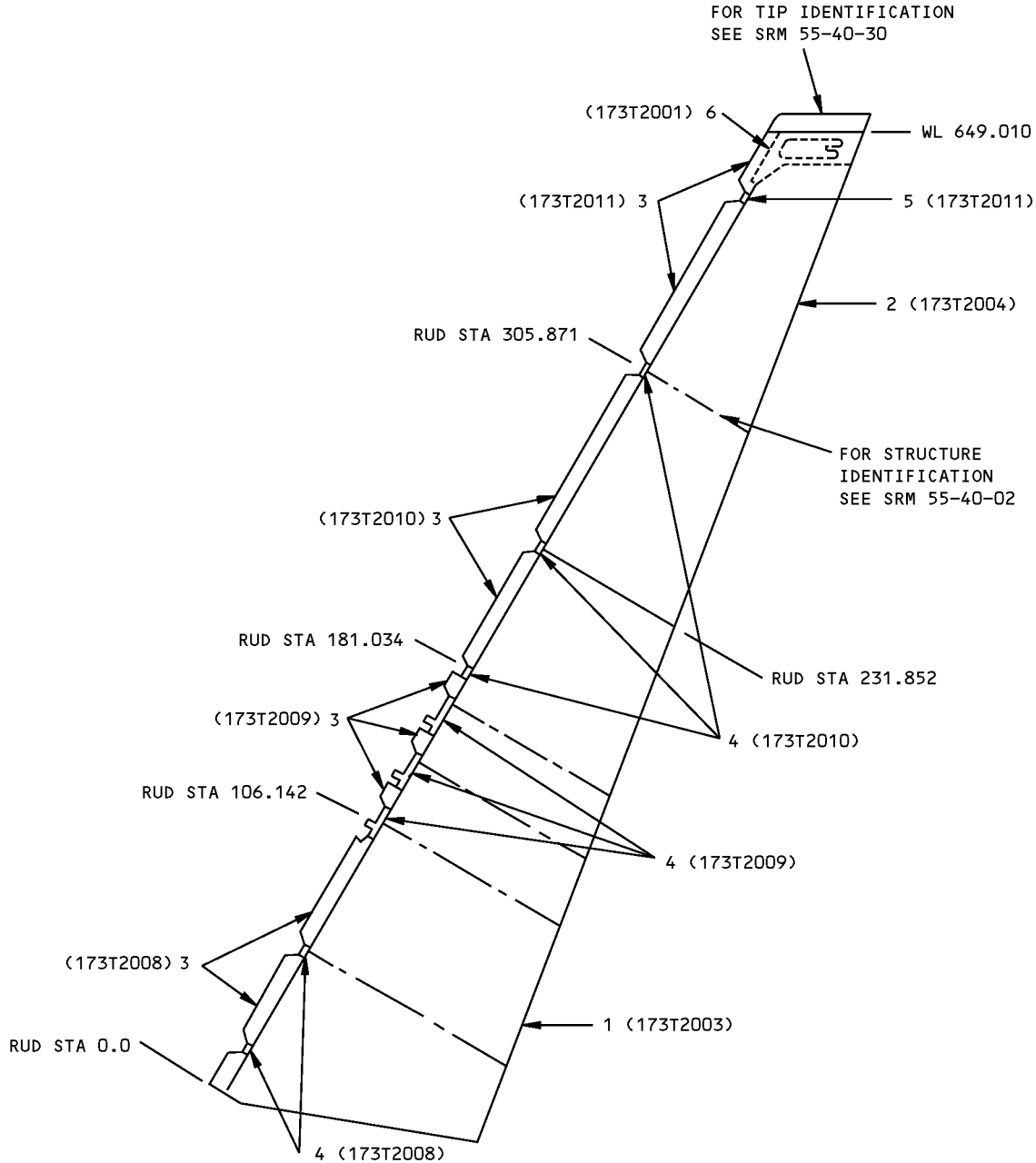
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REFERENCE DRAWINGS
173T2001
173T2007



DETAIL I



**Rudder Skin Identification
Figure 1 (Sheet 2 of 5)**

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ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN PANEL SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL I NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
2	SKIN PANEL SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL II NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	LE PANEL SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL III NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
4	LE PANEL		GRAPHITE/EPOXY FABRIC PER BMS 8-212, TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE FIBERGLASS/EPOXY FABRIC PER BMS 8-139, TYPE 120, 350°F (177°C) CURE	
5	LE PANEL		GRAPHITE/EPOXY FABRIC PER BMS 8-212 TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE	
6	CONDUCTIVE FRAME	0.020	2024-T3	D

LIST OF MATERIALS FOR DETAIL I

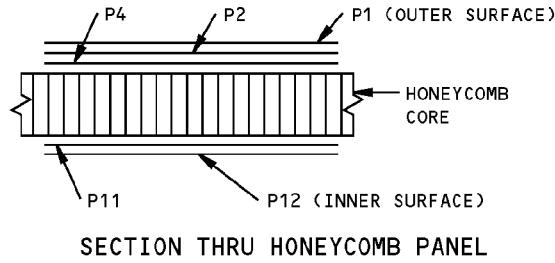
Rudder Skin Identification
Figure 1 (Sheet 3 of 5)

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ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
1	P1	[B]	+45°
	P2	[B]	0°
	P4	[B]	+45°
	P11	[B]	0°
	P12	[B]	+45°

TABLE I [C]

DETAIL I

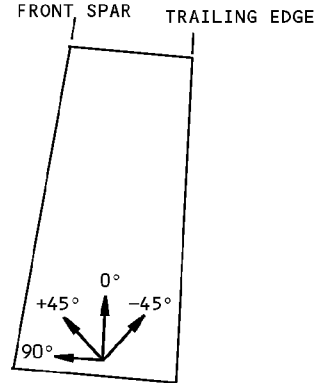
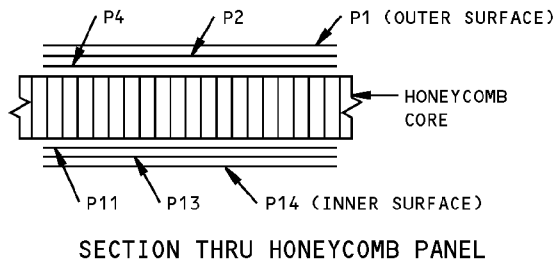


DIAGRAM OF PLY ORIENTATION



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
2	P1	[B]	+45°
	P2	[B]	0° - 90°
	P4	[B]	+45°
	P11	[B]	+45°
	P13	[B]	0° - 90°
	P14	[B]	+45°

TABLE II [C]

DETAIL II

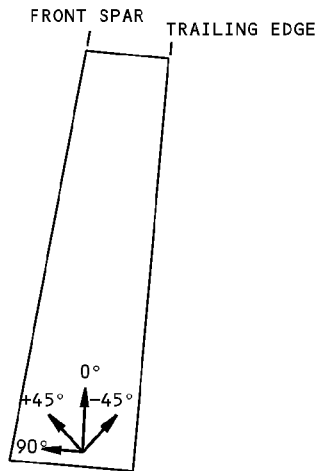
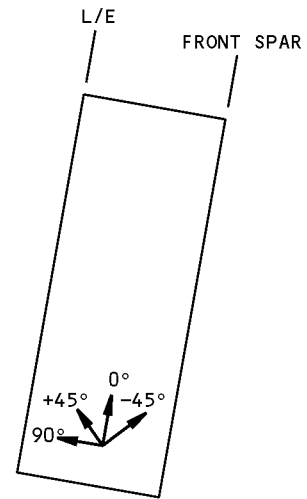
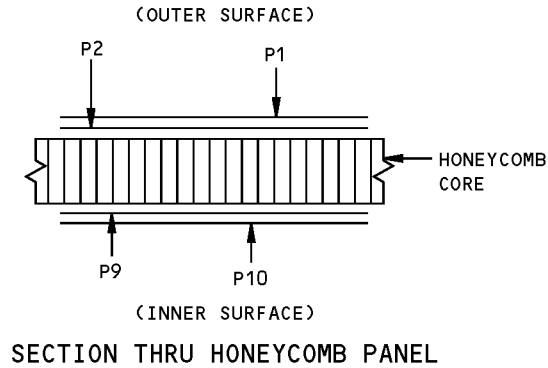


DIAGRAM OF PLY ORIENTATION

**Rudder Skin Identification
Figure 1 (Sheet 4 of 5)**

**767-300
STRUCTURAL REPAIR MANUAL**



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
3	P1	B	+45°
	P2	B	0°
	P9	B	0°
	P10	B	+45°

TABLE III B

DIAGRAM OF PLY ORIENTATION

DETAIL III

**Rudder Skin Identification
Figure 1 (Sheet 5 of 5)**

D634T210

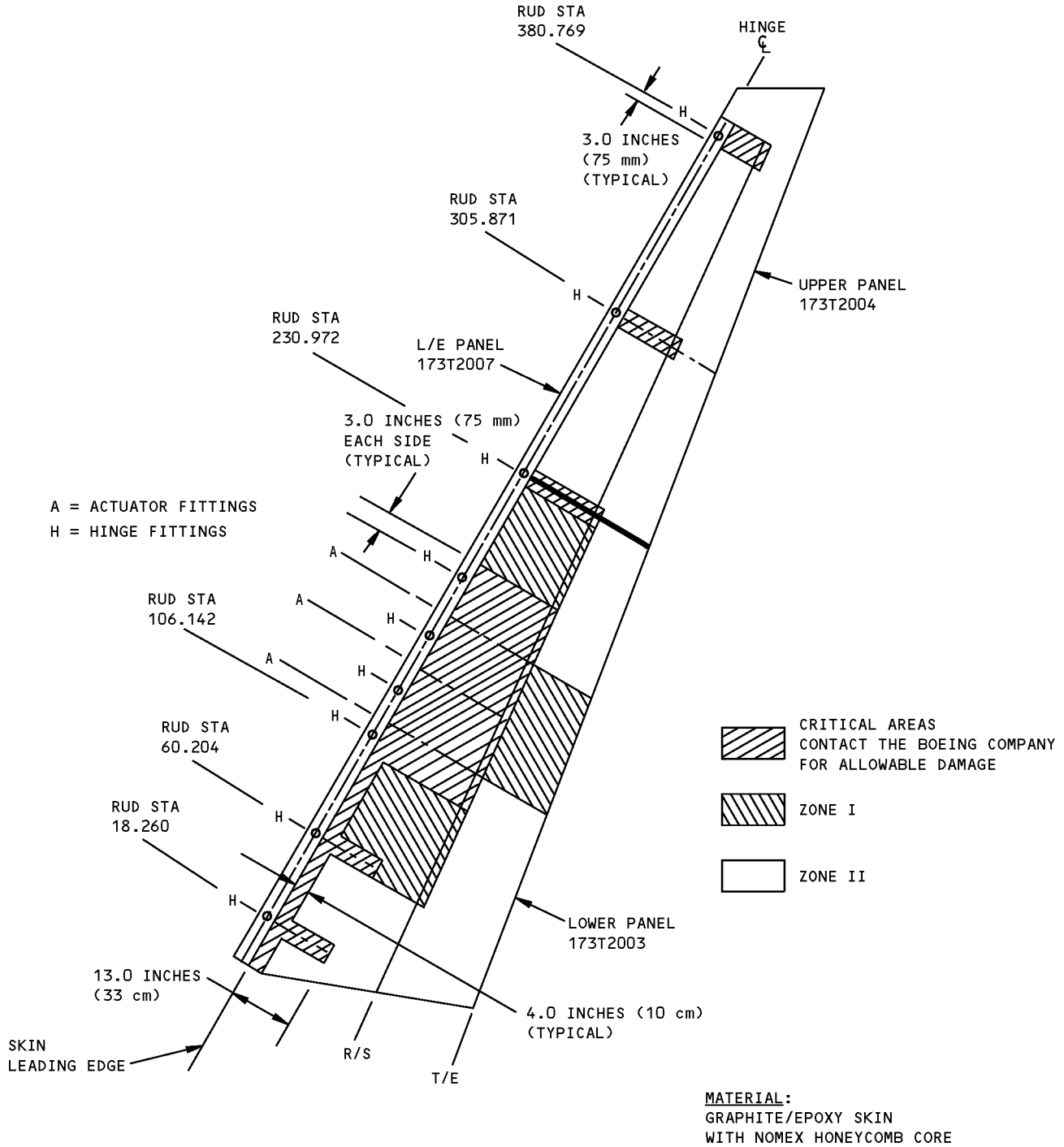
55-40-01

IDENTIFICATION 1
Page 5
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**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - RUDDER SKINS

REFERENCE DRAWING
173T2021



**Allowable Damage - Rudder Skin
Figure 101 (Sheet 1 of 4)**

D634T210

**767-300
STRUCTURAL REPAIR MANUAL**

LOCATION		CRACKS	NICKS AND GOUGES	DENTS	HOLES AND PUNCTURES	DELAMINATION
SKIN PANEL	ZONE I	A	C	E	A	A
	ZONE II	B	D	E	B	B

TABLE I

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO LOSS OF PERFORMANCE INVOLVED
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING AS GIVEN IN SRM 51-70-14
- REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20

A DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC., WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND II. 1.00 INCH (25 mm) MAX DIA ALLOWED FOR SINGLE DAMAGE SITE IN HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF $a/D = 3.0$. SEE DETAIL III FOR DAMAGE CRITERIA. DAMAGE ALLOWED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE NOT REWORKED AS GIVEN IN **F**

B DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC., WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE AS GIVEN IN DETAILS I AND II. 1.50 INCHES (38 mm) MAX DIA ALLOWED FOR SINGLE DAMAGE SITE IN HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF $a/D = 3.0$. SEE DETAIL III FOR DAMAGE CRITERIA. DAMAGE ALLOWED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE NOT REWORKED AS GIVEN IN **F**

C DAMAGE ALLOWED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE AS GIVEN IN DETAILS I AND II. REFER TO **A** FOR FIBER DAMAGE IN OTHER AREAS

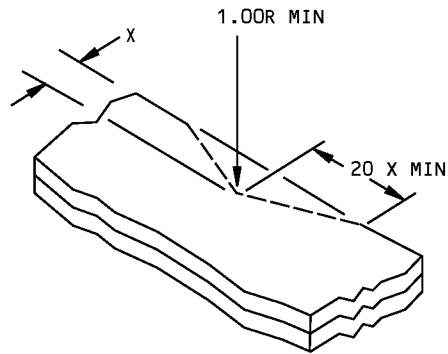
D DAMAGE ALLOWED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE PER DETAILS I AND II. REFER TO **B** FOR FIBER DAMAGE IN OTHER AREAS

E DENTS GENERALLY RESULT IN DELAMINATION AND FIBER DAMAGE AND MUST BE TREATED AS A HOLE OR PUNCTURE DAMAGE

F REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH 50 FLIGHTS. REPLACE THE ALUMINUM FOIL TAPE IF ANY PEELING OR DETERIORATION IS EVIDENT. REPAIR NO LATER THAN 300 FLIGHTS AFTER DAMAGE

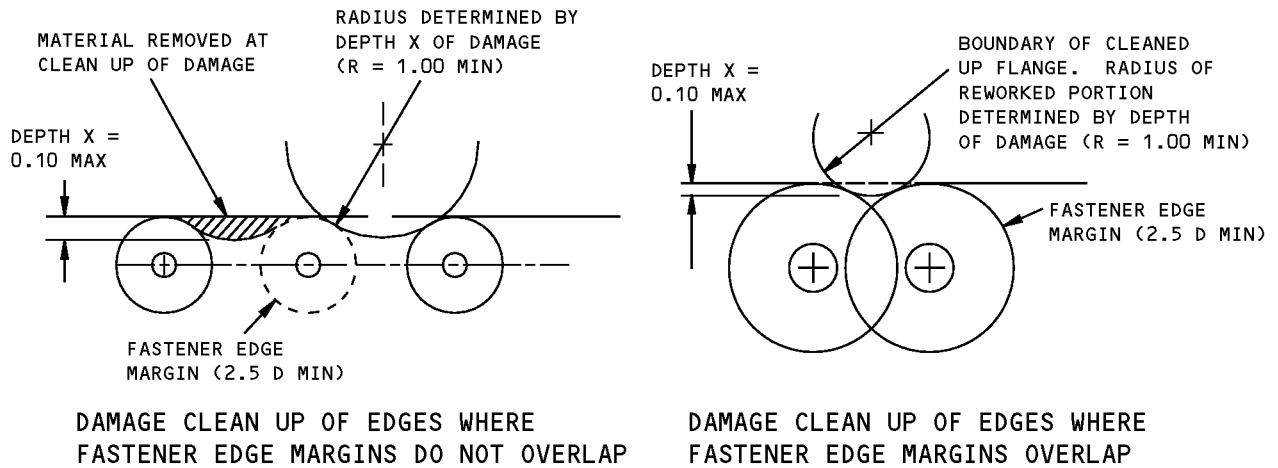
**Allowable Damage - Rudder Skin
Figure 101 (Sheet 2 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**



X = DEPTH OF CLEANUP = 0.10 MAX

DETAIL I



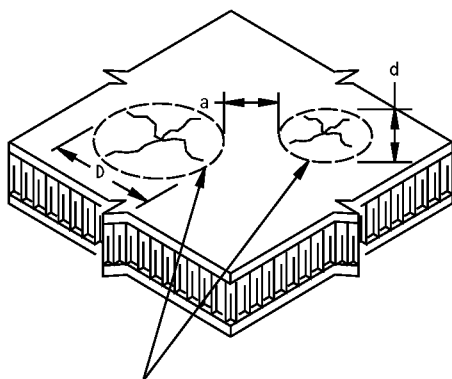
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

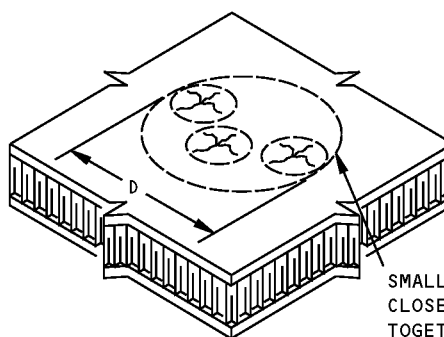
DETAIL II

**Allowable Damage - Rudder Skin
Figure 101 (Sheet 3 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**



ADJACENT DAMAGE SITES ON SURFACE OF COMPOSITE PANEL



SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE

- DAMAGE TO COMPOSITE PANELS EXPOSED TO MULTIPLE IMPACTS, I.E., HAIL DAMAGE, CAN BE DETECTED BY USING INSTRUMENTED NON-DESTRUCTIVE INSPECTION METHODS OR BY TAPPING THE SUSPECTED DAMAGE AREA WITH A SMALL METALLIC DISK OBJECT. INSPECTION SHOULD COVER THE AREA WITHIN 3 DIAMETERS AROUND THE EDGE OF THE VISIBLE DAMAGE SITE. FOR TAP TEST, USE A SOLID METAL DISK AND TAP THE DAMAGE AREA LIGHTLY BUT FIRMLY. VOID AREAS SHOULD PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA
- DAMAGE SITE IS ANY SINGLE AREA OF A PANEL WHERE A DENT, CRACK, DELAMINATION, PUNCTURE OR ANY COMBINATION OF THESE EXIST. SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE
- "D" IS DETERMINED BY MEASURING THE DIAMETER OF A CIRCLE DRAWN AROUND DENT, CRACK, OR OTHER DAMAGE, WHICHEVER IS GREATER
- "a" IS THE DISTANCE BETWEEN TWO ADJACENT DAMAGE SITES
- "d" IS THE DIAMETER OF THE SMALLER OF TWO ADJACENT DAMAGE SITES
- CALCULATE a/D BY DIVIDING DISTANCE "a" BY DIAMETER "D"
- DAMAGE IS ALLOWED WHEN "D" IS EQUAL TO OR LESS THAN THE MAXIMUM ALLOWABLE "D" FROM TABLE I AND WHEN a/D IS EQUAL TO OR GREATER THAN THE MINIMUM a/D GIVEN IN TABLE I

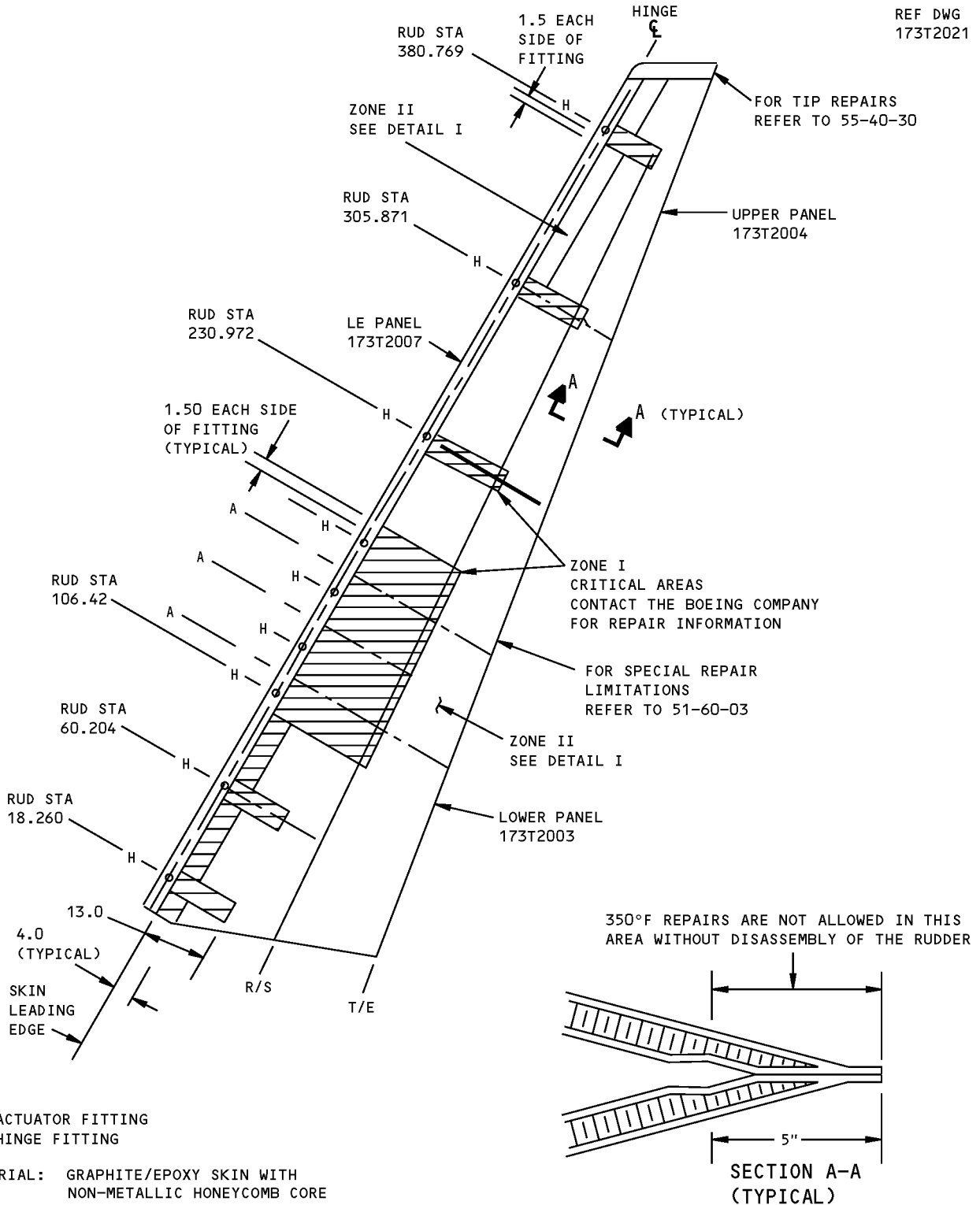
**DAMAGE SIZING AND SPACING DATA
FOR COMPOSITE PANELS
DETAIL III**

**Allowable Damage - Rudder Skin
Figure 101 (Sheet 4 of 4)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 1 - RUDDER SKIN

REF DWG
173T2021



A = ACTUATOR FITTING
H = HINGE FITTING

MATERIAL: GRAPHITE/EPOXY SKIN WITH
NON-METALLIC HONEYCOMB CORE

**Rudder Skin Repairs
Figure 201 (Sheet 1 of 2)**

**767-300
STRUCTURAL REPAIR MANUAL**

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/ 150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200-230°F (93°-110°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05) [D]	350°F (177°C) CURE (SRM 51-70-04)
CRACKS	UP TO 2.0 INCHES (50 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03. [A]	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.
HOLES	2.0 INCHES (50 mm) MAX DIAMETER, NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03. [A]	10.0 INCHES (250 mm) MAX DIAMETER, NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED. [C]	5.0 INCHES (125 mm) MAX DIAMETER, NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED. [C]	NO SIZE LIMIT
DELAMI-NATION	CUT OUT AND REPAIR AS A HOLE.			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03. IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			
DENTS	UP TO 2.0 INCHES (50 mm) DIAMETER WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PARAGRAPH 5.L. OVER 2.0 INCHES (50 mm) DIAMETER OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			

**REPAIR DATA FOR ZONE 2 350°F (177°C) CURE GRAPHITE HONEYCOMB PANELS
DETAIL I**

NOTES

- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- REFER TO SRM 51-20-01 FOR THE REPAIR OF FINISH CRACKS ON GRAPHITE COMPOSITE PARTS.
- REFER TO SRM 51-60-03 FOR SPECIAL REPAIR LIMITATIONS.
- REFER TO SRM 51-70-14 TO REPAIR THE ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING.
- REFER TO AMM 51-20 TO APPLY THE FINISH TO THE REWORKED AREA.

[A] LIMITED TO REPAIR OF DAMAGE TO ONE FACESHEET SKIN AND HONEYCOMB CORE. ONE REPAIR PER SQUARE FOOT OF AREA AND MINIMUM OF 6.0 INCHES (150 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL.

[B] INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EVERY AIRPLANE "A" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.

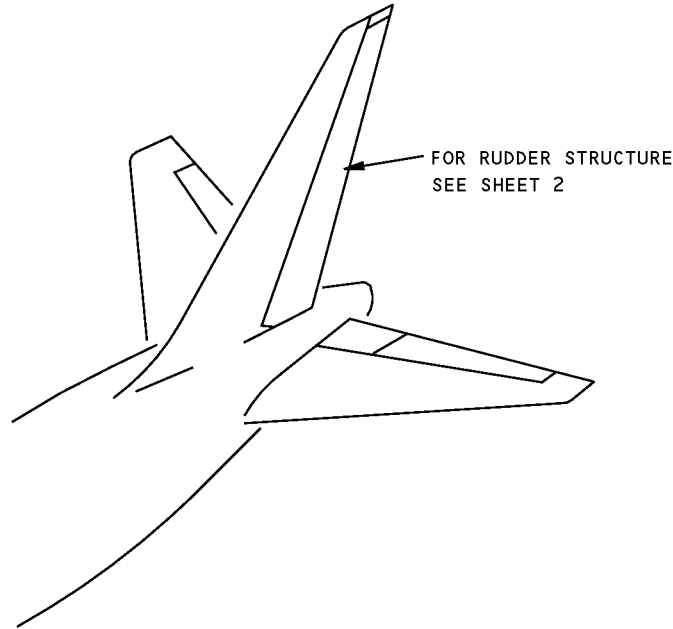
[C] ONE REPAIR PER SQUARE FOOT OF AREA AND A MINIMUM OF 6.0 INCHES (150 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL.

[D] FOR 250°F (121°C) REPAIR OF 350°F (177°C) GRAPHITE STRUCTURE, USE BMS 8-168, TYPE II TAPE OR FABRIC. THE CLASS, GRADE AND STYLE SHALL BE THE SAME AS THE INITIAL PLIES.

**Rudder Skin Repairs
Figure 201 (Sheet 2 of 2)**

767-300
STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - RUDDER STRUCTURE

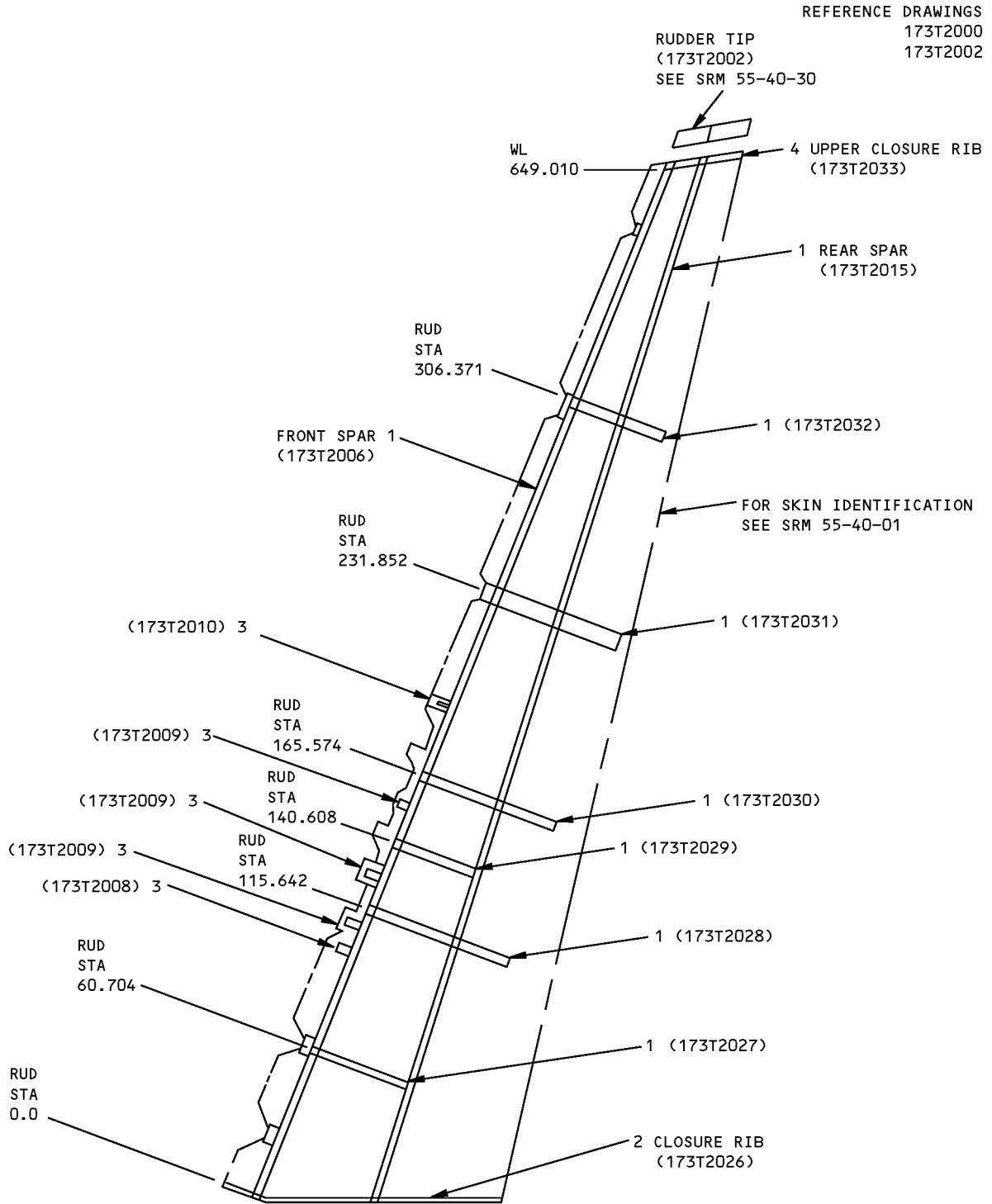


NOTES

- A** PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION
- B** MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS
- C** GRAPHITE/EPOXY PREPREG FABRIC PER BMS 8-212, TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE
- D** OPTIONAL -45°. ALL 45° PLYS MUST HAVE SAME ORIENTATION

Rudder Structure Identification
Figure 1 (Sheet 1 of 5)

**767-300
STRUCTURAL REPAIR MANUAL**



LIST OF
MATERIAL

**Rudder Structure Identification
Figure 1 (Sheet 2 of 5)**



767-300
STRUCTURAL REPAIR MANUAL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SPAR SKIN CORE		GRAPHITE/EPOXY HONEYCOMB SANDWICH, SEE DETAIL I NONMETALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3	
2	RIB		EPOXY IMPREGNATED GRAPHITE FABRIC, SEE DETAIL II	
3	RIB		EPOXY IMPREGNATED GRAPHITE FABRIC PER BMS 8-212, TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE EPOXY IMPREGNATED FIBERGLASS FABRIC PER BMS 8-139, TYPE 12D, 350°F (177°C) CURE	
4	RIB		EPOXY IMPREGNATED GRAPHITE FABRIC PER BMS 8-212, TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE SEE DETAIL III	

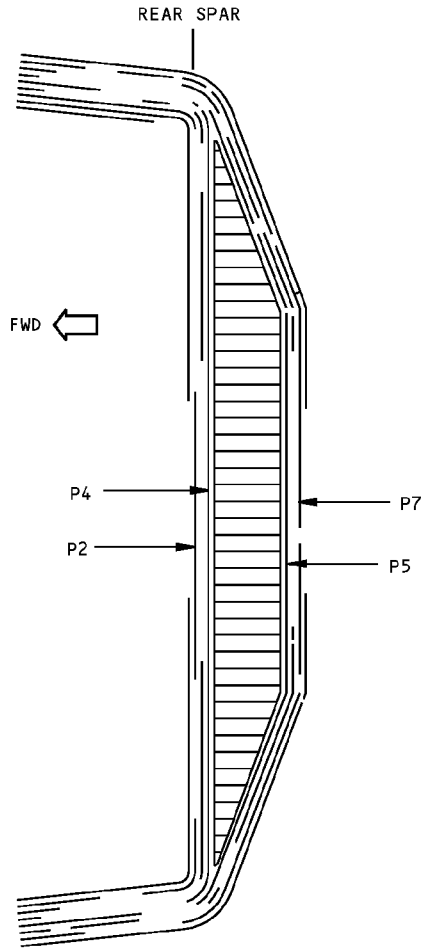
Rudder Structure Identification
Figure 1 (Sheet 3 of 5)

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55-40-02

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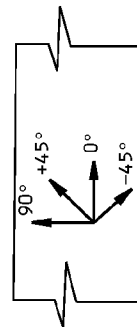
**767-300
STRUCTURAL REPAIR MANUAL**



SECTION THRU PLIES

ITEM	PLY NO.	MATERIAL	PLY ORIENTATION ^A
1	P2	C	+45° ^D
	P4		
	P5		
	P7		

TABLE I ^B



PLY ORIENTATION

DETAIL I

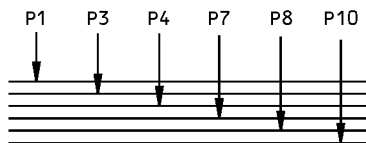
**Rudder Structure Identification
Figure 1 (Sheet 4 of 5)**

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55-40-02

IDENTIFICATION 1
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**767-300
STRUCTURAL REPAIR MANUAL**

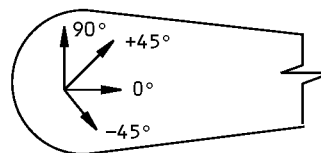


SECTION THRU PLIES

ITEM	PLY NO.	MATERIAL	PLY ORIENTATION ^A
2	P1 P3 P4 P7 P8 P10	C	+45° ^D

TABLE II ^B

DETAIL II

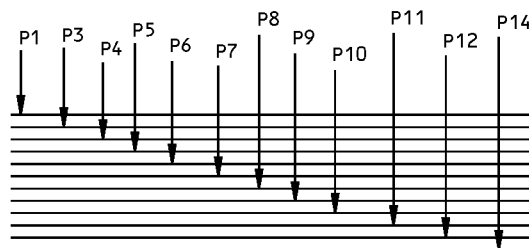


PLY ORIENTATION

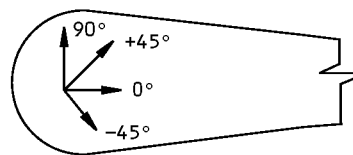
ITEM	PLY NO.	MATERIAL	PLY ORIENTATION ^A
4	P5 P10	C	0°
	P1 P3 P4 P6 P7 P8 P9 P11 P12 P14	C	+45° ^D

TABLE III ^B

DETAIL III



SECTION THRU PLIES

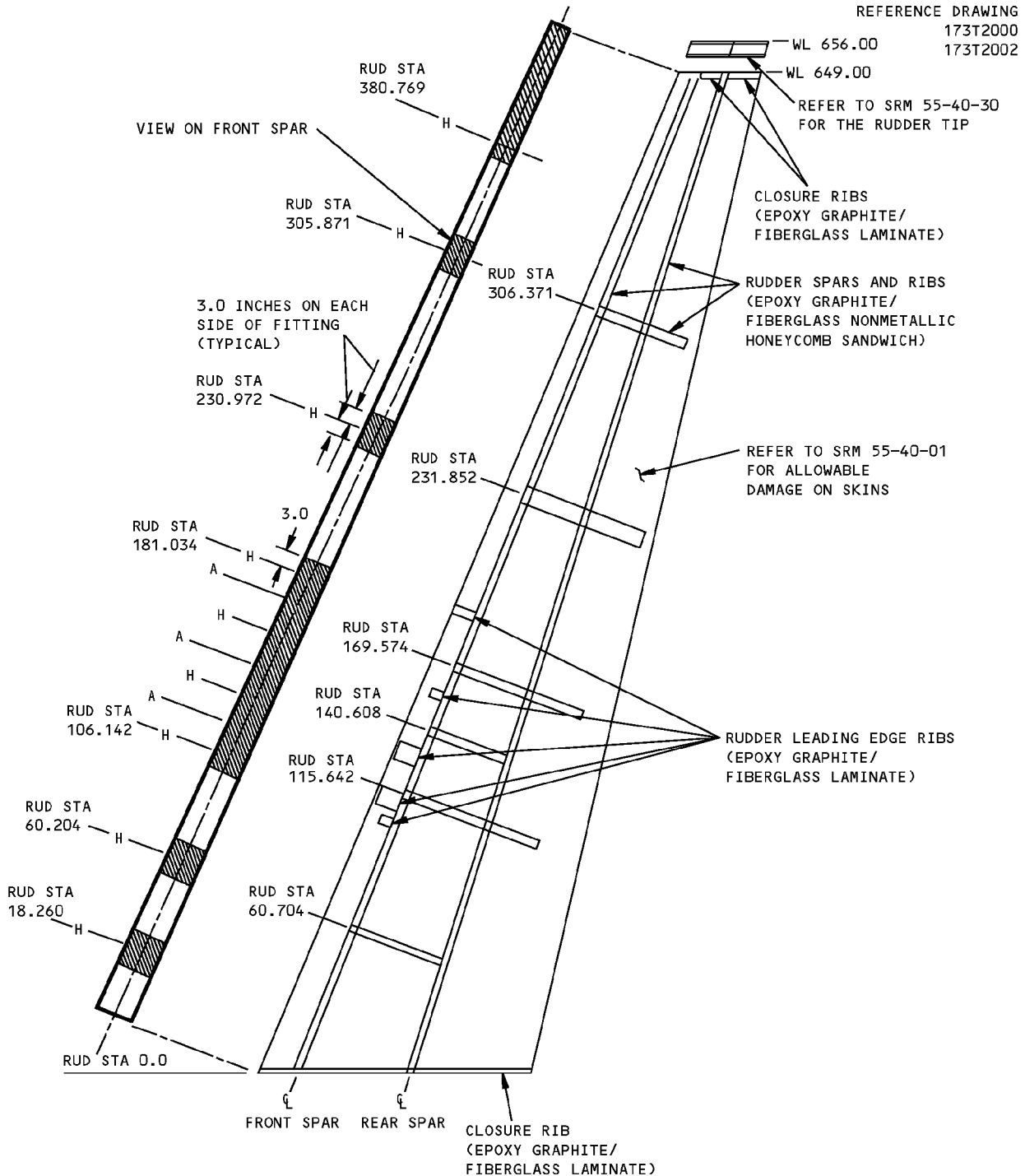


PLY ORIENTATION

**Rudder Structure Identification
Figure 1 (Sheet 5 of 5)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - RUDDER STRUCTURE



CRITICAL AREA SHOWN SHADED CALL THE BOEING COMPANY FOR ALLOWABLE DAMAGE
 A = ACTUATOR FITTINGS
 H = HINGE FITTINGS

**Allowable Damage - Rudder Structure
Figure 101 (Sheet 1 of 3)**

REFERENCE DRAWING
 WL 656.00 173T2000
 WL 649.00 173T2002
 REFER TO SRM 55-40-30 FOR THE RUDDER TIP

CLOSURE RIBS
 (EPOXY GRAPHITE/
 FIBERGLASS LAMINATE)

RUDDER SPARS AND RIBS
 (EPOXY GRAPHITE/
 FIBERGLASS NONMETALLIC
 HONEYCOMB SANDWICH)

REFER TO SRM 55-40-01 FOR ALLOWABLE DAMAGE ON SKINS

RUDDER LEADING EDGE RIBS
 (EPOXY GRAPHITE/
 FIBERGLASS LAMINATE)

CLOSURE RIB
 (EPOXY GRAPHITE/
 FIBERGLASS LAMINATE)

STRUCTURAL REPAIR MANUAL

DESCRIPTION	CRACKS	NICKS AND GOUGES	DENTS	HOLES AND PUNCTURES	DELAMINATION
RUDDER SPARS AND RIBS (EPOXY GRAPHITE/ FIBERGLASS/NONMETALLIC HONEYCOMB SANDWICH)	[B]	[C]	[D]	[E]	[F]
RUDDER LEADING EDGE AND CLOSURE RIBS (EPOXY GRAPHITE/ FIBERGLASS LAMINATE)	[H]	[C]	[D]	[E]	[G]

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR MAY TAKE A FORM WHICH RESULTS IN DAMAGE TO FIBERS AND A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. REMOVE THIS TYPE OF DAMAGE AND USE THE CONDITIONS GIVEN FOR CRACKS.
- FOR DAMAGED SOLID LAMINATE AREAS, THE BOEING COMPANY RECOMMENDS THE USE OF AN INSTRUMENTED NONDESTRUCTIVE INSPECTION (NDI) PROCEDURE. REFER TO NDT, PART 4, 51-00-02 FOR THE INSPECTION PROCEDURE.

[A] REMOVE MOISTURE FROM THE DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM THE HONEYCOMB CELLS IS RECOMMENDED. PROTECT THE DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATIONS AND REPAIR AS GIVEN IN SRM 51-70 WITHIN 18 MONTHS OR 3000 FLIGHT CYCLES, WHICHEVER COMES FIRST.

[B] EDGE CRACKS MUST BE REMOVED AS GIVEN IN DETAIL I. 0.50 INCH (12.7 mm) MAXIMUM LENGTH IN HONEYCOMB AREA IS PERMITTED PER SQUARE FOOT OF AREA. IT MUST BE A MINIMUM OF 6.0 INCHES (150 mm) FROM ANY OTHER DAMAGE. [A]

[C] DAMAGE IS PERMITTED ON SURFACE RESIN ONLY. DAMAGE TO FIBERS IS NOT PERMITTED. [A]

[D] DENTS GENERALLY RESULT IN FIBER DAMAGE OR DELAMINATION. HOWEVER, IF THERE IS NO FIBER DAMAGE OR DELAMINATION, DENTS UP TO 1.0 INCH (25 mm) MAXIMUM DIAMETER ARE PERMITTED. ONE DENT PER SQUARE FOOT OF AREA IS PERMITTED. IT MUST BE A MINIMUM OF 6.0 INCHES (150 mm) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR PANEL EDGE. IF THERE IS FIBER DAMAGE OR DELAMINATION, REFER TO THE APPLICABLE DAMAGE DATA IN THE TABLE.

[E] 0.50 INCH (12.7 mm) MAXIMUM DIAMETER IS PERMITTED IF THE DAMAGE IS A MINIMUM OF 3.0 D FROM OTHER DAMAGE, NEAREST HOLE, OR MATERIAL EDGE. DO NOT CLEAN UP DAMAGE EXCEPT TO REMOVE RESIN BURRS THAT EXTEND INTO THE SURFACE CONTOUR. [A]

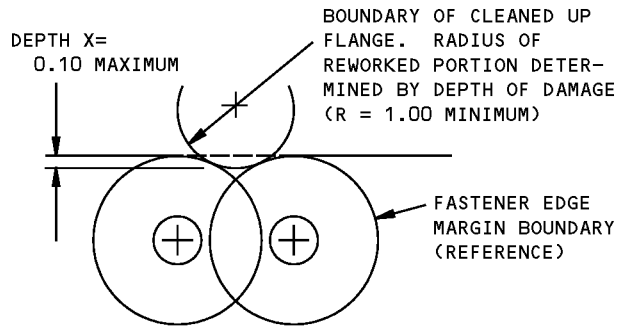
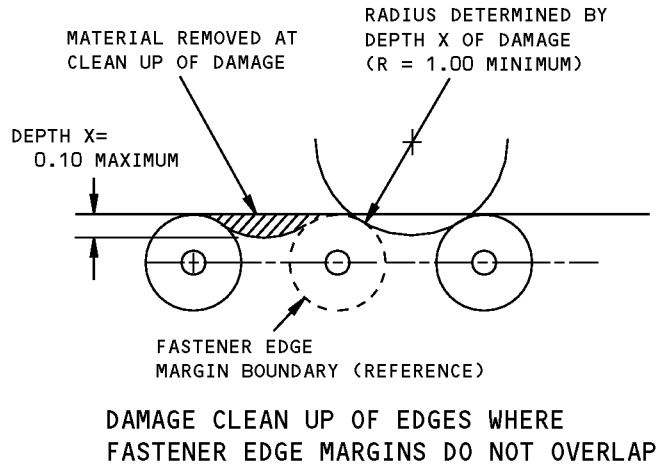
[F] 0.50 INCH (12.7 mm) MAXIMUM DIAMETER IS PERMITTED IN THE HONEYCOMB AREA. A MAXIMUM OF 0.03 INCH (0.76 mm) DELAMINATION FROM THE EDGE IS PERMITTED. REPAIR DELAMINATION IN HONEYCOMB AREA AS GIVEN IN SRM 51-70 WITHIN 18 MONTHS OR 3000 FLIGHT CYCLES, WHICHEVER COMES FIRST. PROTECT EDGE DAMAGE AS GIVEN IN [A].

[G] 0.50 INCH (12.7 mm) MAXIMUM DIAMETER IS PERMITTED IF THE DAMAGE IS A MINIMUM OF 0.50 INCH (12.7 mm) AWAY FROM OTHER DAMAGE, NEAREST HOLE, OR MATERIAL EDGE. RECORD THE LOCATIONS AND REPAIR AS GIVEN IN SRM 51-70 WITHIN 18 MONTHS OR 3000 FLIGHT CYCLES, WHICHEVER COMES FIRST.

[H] EDGE CRACKS MUST BE REMOVED AS GIVEN IN DETAIL I.

Allowable Damage - Rudder Structure
Figure 101 (Sheet 2 of 3)

**767-300
STRUCTURAL REPAIR MANUAL**

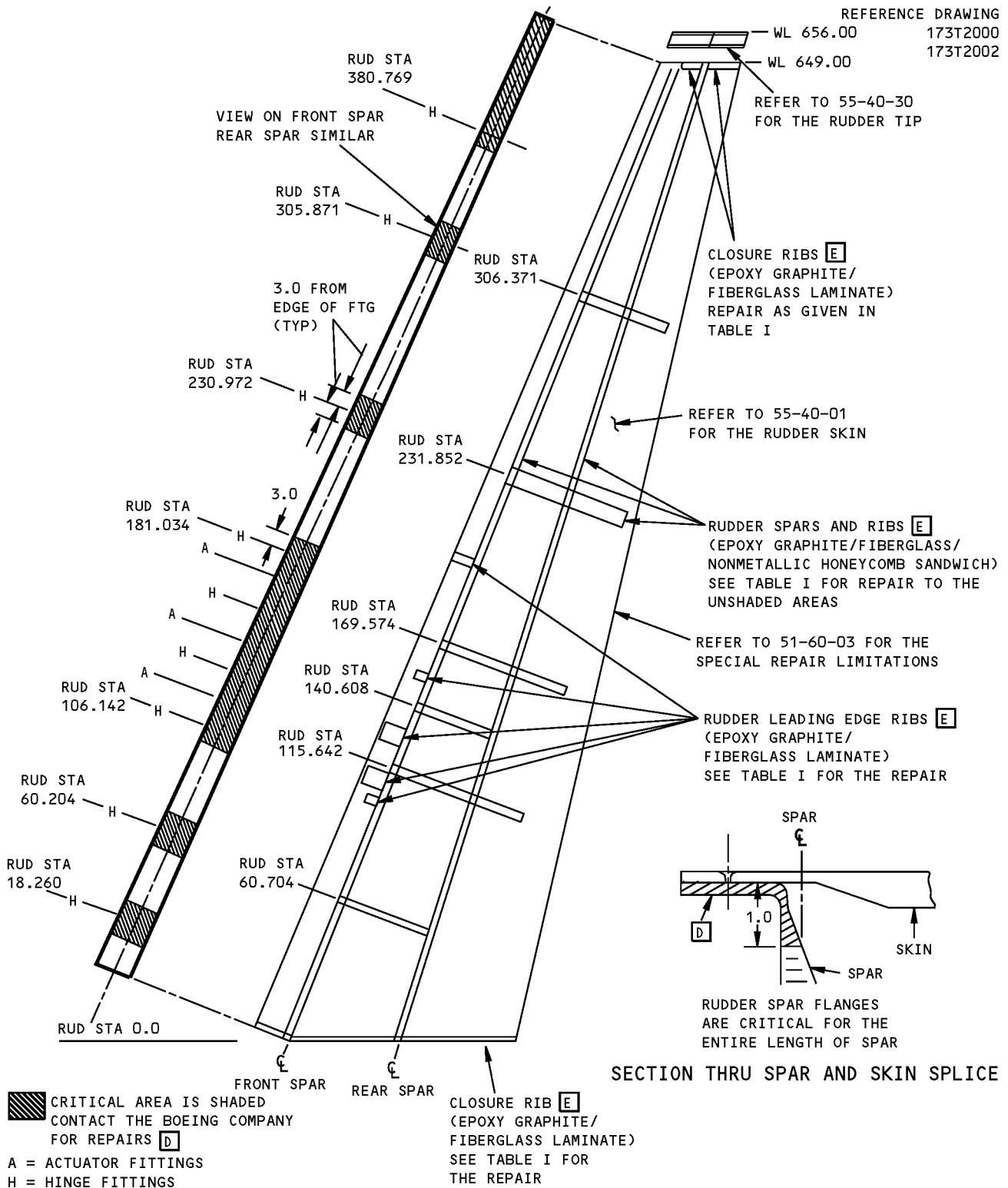


DETAIL I

**Allowable Damage - Rudder Structure
Figure 101 (Sheet 3 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 1 - RUDDER SPAR AND RIBS



**Rudder Spar and Rib Repairs
Figure 201 (Sheet 1 of 3)**

STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS B G	PERMANENT REPAIRS		
	WET LAYUP 150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200°-230°F (93°-110°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)	350°F (177°C) CURE (SRM 51-70-04)
CRACKS	UP TO 2.0 INCHES (50 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. A	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.
HOLES	2.0 INCHES (50 mm) MAXIMUM DIAMETER, NOT TO EXCEED 30% OF SMALLEST DIMENSION ACROSS HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. A	5.0 INCHES (125 mm) MAXIMUM DIAMETER, NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLYS FOR EACH FACESHEET REPAIRED. C	5.0 INCHES (125 mm) MAXIMUM DIAMETER, NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLYS FOR EACH FACESHEET REPAIRED. C	NO SIZE LIMIT
DELAMI-NATION	CUT OUT AND REPAIR AS A HOLE.			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03. IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			
DENTS	UP TO 2.0 INCHES (50 mm) DIAMETER WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.L. C OVER 2.0 INCHES (50 mm) DIAMETER OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			

REPAIR DATA FOR 350°F (177°C) CURE HONEYCOMB OR SOLID LAMINATE PANELS
TABLE I

NOTES

- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE REPAIR EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE.
- REFER TO SRM 51-20-01 FOR THE REPAIR OF FINISH CRACKS ON GRAPHITE COMPOSITE PARTS.
- REFER TO SRM 51-60-03 FOR SPECIAL REPAIR LIMITATIONS.
- REFER TO AMM 51-20 TO APPLY THE FINISH TO THE REWORKED AREA.
- FOR DAMAGED SOLID LAMINATE AREAS, THE BOEING COMPANY RECOMMENDS THE USE OF AN INSTRUMENTED NONDESTRUCTIVE INSPECTION (NDI) PROCEDURE. REFER TO NDT, PART 4, 51-00-02 FOR THE INSPECTION PROCEDURE.

A LIMITED TO REPAIR OF DAMAGE TO ONE FACESHEET SKIN AND HONEYCOMB CORE. ONE REPAIR PER 12.0 INCHES (300 mm) OF SPAN AND MINIMUM OF 3.0 INCHES (75 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL.

B INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EVERY AIRPLANE "2A" CHECK. FOR "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. **F**

C ONE REPAIR PER 12.0 INCHES (300 mm) OF SPAN AND A MINIMUM OF 3.0 INCHES (75 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL.

D CONTACT THE BOEING COMPANY FOR REPAIRS TO DAMAGE IN CRITICAL AREAS.

E GAIN ACCESS TO RIBS OR SPAR BY REMOVING SKIN PANELS AS REQUIRED. TREAT FASTENER HOLES AND LOOSE FASTENERS AS GIVEN IN SRM 51-40-02.

Rudder Spar and Rib Repairs
Figure 201 (Sheet 2 of 3)

STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS [B]	PERMANENT REPAIRS		
	WET LAYUP 150°F (66°C) CURE (SRM 51-70-03)	WET LAYUP 200°-230°F (93°-110°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05)	350°F (177°C) CURE (SRM 51-70-04)
CRACKS	UP TO 2.0 INCHES (50 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03, [C] PAR. 5.N.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.
HOLES	2.0 INCHES (50 mm) MAX DIA, NOT TO EXCEED 30% OF SMALLEST DIMENSION ACROSS LAMINATE PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N. [C]	5.0 INCHES (125 mm) MAX DIA, NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS LAMINATE PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED. [C]	5.0 INCHES (125 mm) MAX DIA, NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS LAMINATE PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED. [C]	NO SIZE LIMIT
DELAMI-NATION	CUT OUT AND REPAIR AS A HOLE.			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03. IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			
DENTS	UP TO 2.0 INCHES (50 mm) DIAMETER WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.L.[C] OVER 2.0 INCHES (50 mm) DIAMETER OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			

REPAIR DATA FOR 350°F (177°C) CURE HONEYCOMB PANELS
TABLE II

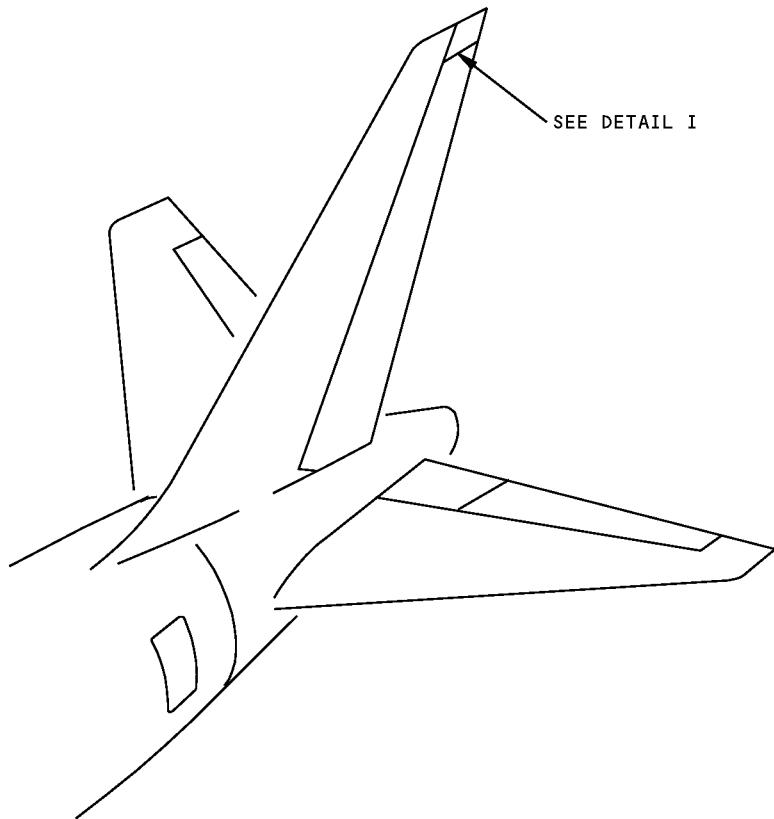
NOTES (CONTINUED)

- [F] THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
- [G] THE INTERIM REPAIRS APPLY ONLY ON HONEYCOMB PANELS

Rudder Spar and Rib Repairs
Figure 201 (Sheet 3 of 3)

767-300
STRUCTURAL REPAIR MANUAL

IDENTIFICATION 1 - RUDDER TIP

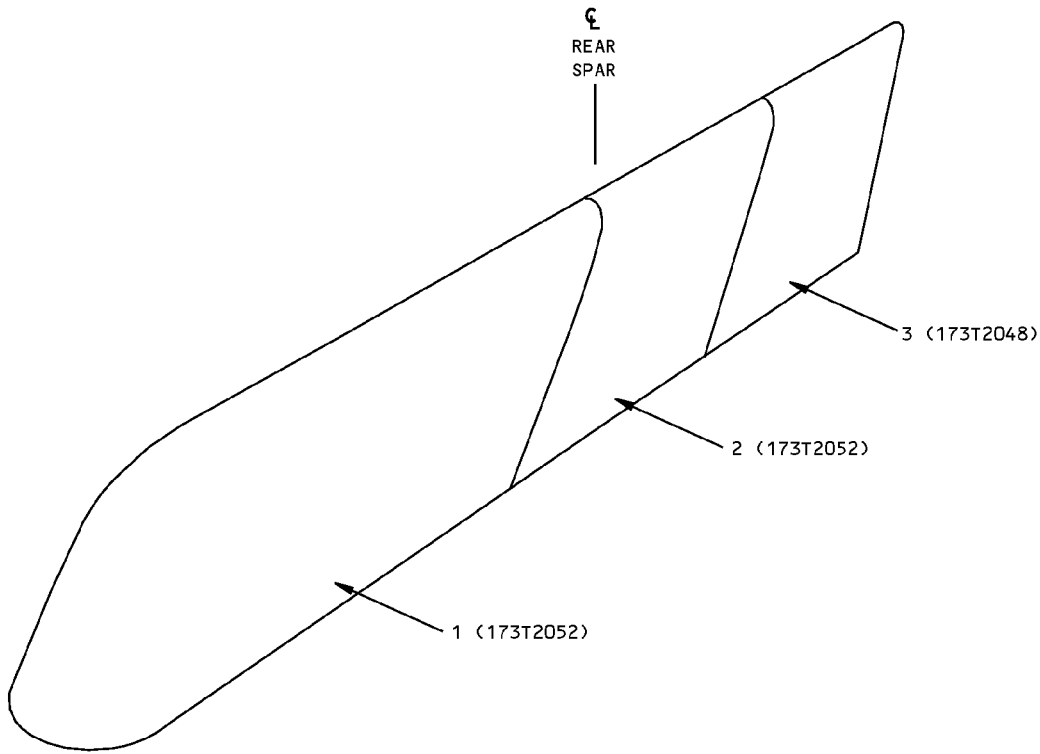


NOTES

- A** PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION
- B** MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS
- C** FIBERGLASS/EPOXY FABRIC PER BMS 8-139, TYPE 120, 350°F (177°C) CURE
- D** GRAPHITE/EPOXY FABRIC PER BMS 8-212, TYPE IV, CLASS 2, STYLE 3K-70-PW, 350°F (177°C) CURE
- E** GRAPHITE/EPOXY TAPE PER BMS 8-212, TYPE III, CLASS 1, GRADE 190, 350°F (177°C) CURE
- F** OPTIONAL -45°. ALL 45° PLIES MUST HAVE SAME ORIENTATION

**Rudder Tip Identification
Figure 1 (Sheet 1 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**



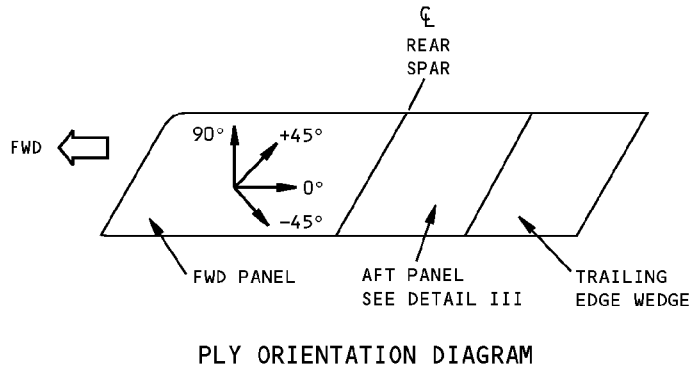
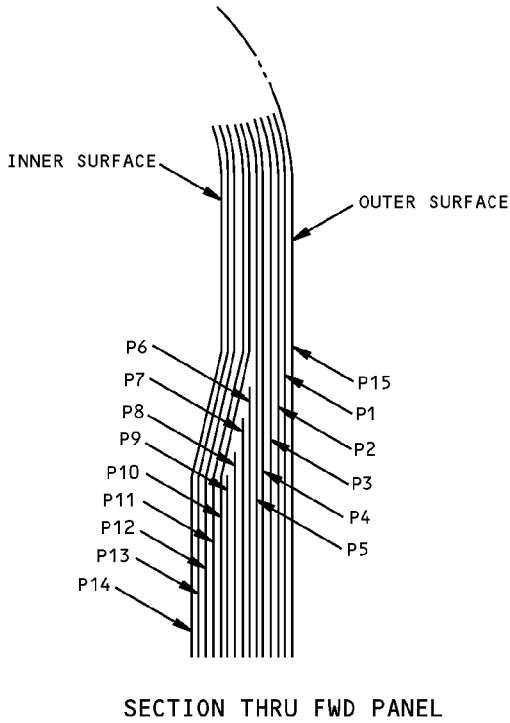
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FWD TIP ASSY		GRAPHITE/FIBERGLASS EPOXY LAMINATE SEE DETAIL II	
2	AFT TIP ASSY		GRAPHITE/FIBERGLASS EPOXY LAMINATE SEE DETAIL III	
3	TRAILING EDGE WEDGE		SAND CASTING 356-T51	

LIST OF MATERIALS FOR DETAIL I

**Rudder Tip Identification
Figure 1 (Sheet 2 of 3)**

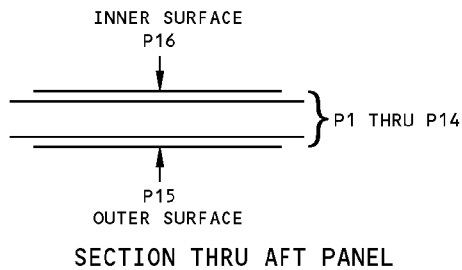
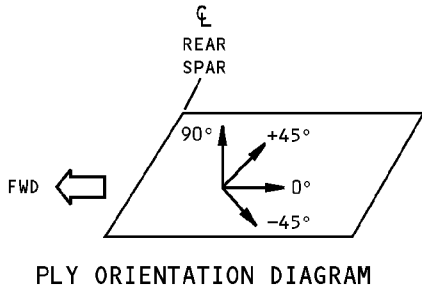
**767-300
STRUCTURAL REPAIR MANUAL**



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION ^[A]
1	P15	[C]	0° OR 90°
	P1, P3, P5, P7, P8, P10, P12, P14	[D]	+45°
	P2, P4, P11, P13	[D]	0°
	P6, P9	[E]	0°

PLY TABLE ^[B]

DETAIL II



ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION ^[A]
2	P15, P16	[C]	0° OR 90°
	P1, P3, P5, P7, P8, P10, P12, P14	[D]	+45° ^[F]
	P2, P4, P6, P9, P11, P13	[D]	0° OR 90°

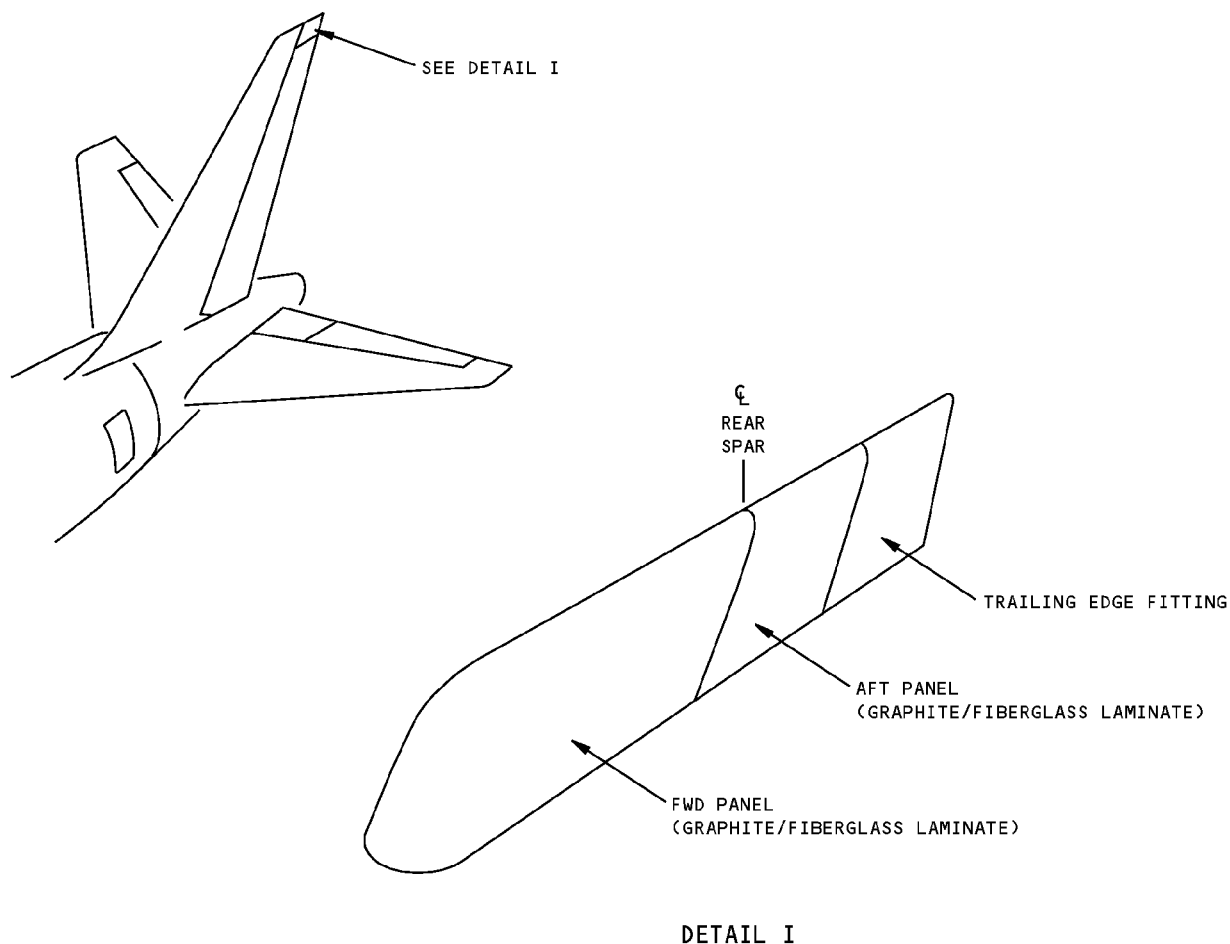
PLY TABLE ^[E]

DETAIL III

**Rudder Tip Identification
Figure 1 (Sheet 3 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - RUDDER TIP



LOCATION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	PUNCTURES AND HOLES	DELAMINATION
FAIRING	F	G	E	F	F
TRAILING EDGE	A	B	C	D	—

TABLE I

**Allowable Damage - Rudder Tip
Figure 101 (Sheet 1 of 5)**

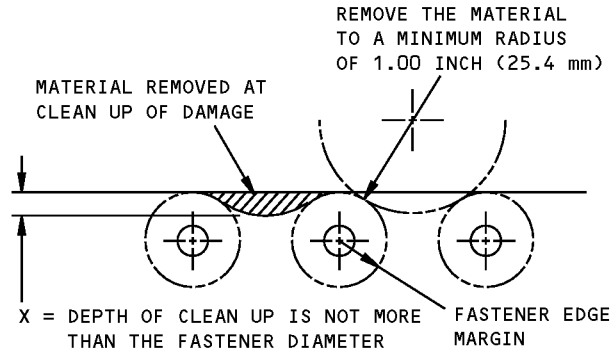
STRUCTURAL REPAIR MANUAL

NOTES

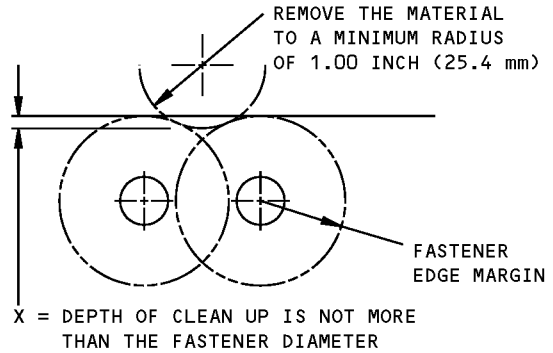
- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
 - SEE SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED
 - REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
 - RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING AS GIVEN IN SRM 51-70-14
 - REFINISH REWORKED AREAS AS GIVEN IN AMM 51-20
- A** REMOVE EDGE CRACKS AS GIVEN IN DETAILS II AND V. REPAIR CRACKS UP TO 1.00 INCH (25 mm) LENGTH NO LATER THAN NEXT "C" CHECK
- B** REMOVE EDGE DAMAGE AS GIVEN IN DETAIL II AND V. ELSEWHERE REMOVE DAMAGE AS GIVEN IN DETAIL III AND VI. FOR DAMAGE AT THE AFT TOP PORTION OF THE TRAILING EDGE FITTING, SEE **I**
- C** DENTS UP TO 0.125 INCH (3.2 mm) DEEP ARE ALLOWED PROVIDED THAT A/Y IS NOT LESS THAN 30 (SEE DETAIL IV), AND THERE ARE NO PULLED OR LOOSE RIVETS OR OTHER DAMAGE
- D** HOLES UP TO 0.50 INCH (12.7 mm) MAXIMUM DIAMETER ARE ALLOWED. REPAIR NO LATER THAN NEXT AIRPLANE "C" CHECK
- E** DENTS RESULT IN DELAMINATION AND FIBER DAMAGE AND MUST BE TREATED AS A HOLE OR PUNCTURE DAMAGE
- F** DAMAGE TO SKIN PANEL EDGES MAY BE A COMBINATION OF EDGE DELAMINATION AND/OR CRACKS, GOUGES, ETC., WHICH CAN RESULT IN FIBER DAMAGE AND A LOSS OF CROSS-SECTIONAL AREA. REMOVE EDGE DAMAGE PER DETAILS II AND V. 1.00 INCH (25 mm) MAXIMUM DIAMETER ALLOWED FOR SINGLE DAMAGE SITE IN HONEYCOMB AREA. MULTIPLE DAMAGE SITES MUST NOT BE CLOSER THAN A MINIMUM OF $a/D = 2.00$. SEE DETAIL VII FOR DAMAGE CRITERIA. DAMAGE ALLOWED TO ONE SURFACE AND HONEYCOMB CORE ONLY. PROTECT DAMAGE NOT REWORKED AS GIVEN IN **H**
- G** DAMAGE ALLOWED ON SURFACE RESIN ONLY WITH NO FIBER DAMAGE. CLEAN UP EDGE DAMAGE AS SHOWN IN DETAILS II AND V. REFER TO **F** FOR FIBER DAMAGE
- H** REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F (52°C)) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH AIRPLANE "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE IF ANY PEELING OR DETERIORATION IS EVIDENT. REPAIR NO LATER THAN NEXT AIRPLANE "C" CHECK
- I** REMOVE EDGE DAMAGE AT THE TOP PORTION OF THE TRAILING EDGE FITTING AS GIVEN IN DETAIL IX. BLEND OUT THE DAMAGE SO THAT THERE ARE NO SHARP CORNERS. DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION OF THE REPAIR AREA TO MAKE SURE ALL OF THE DAMAGE HAS BEEN REMOVED. REFER TO NDT PART 6, SRM 51-00-01. APPLY ONE LAYER OF BMS 10-79, TYPE I PRIMER TO THE REPAIR AREA. REFER TO SOPM 20-44-04.

Allowable Damage - Rudder Tip
Figure 101 (Sheet 2 of 5)

STRUCTURAL REPAIR MANUAL

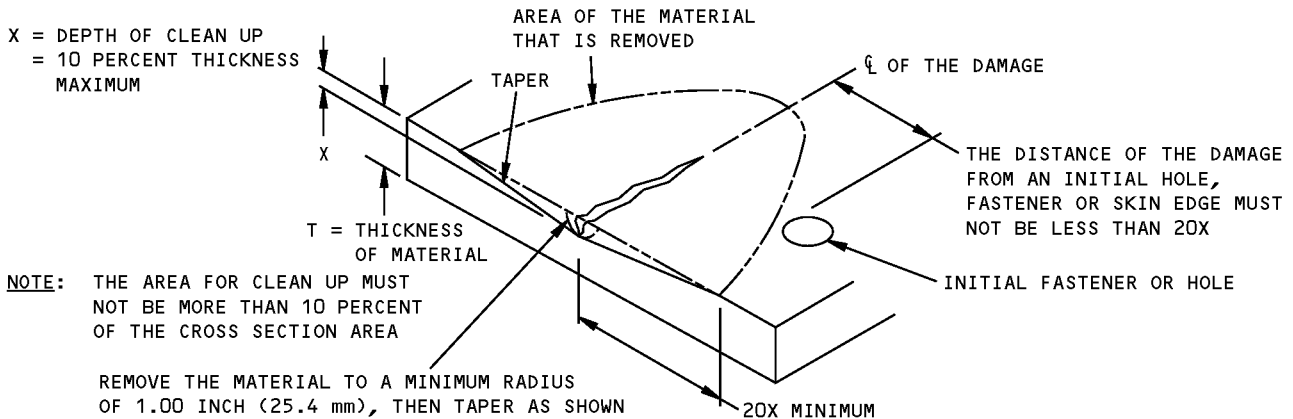


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

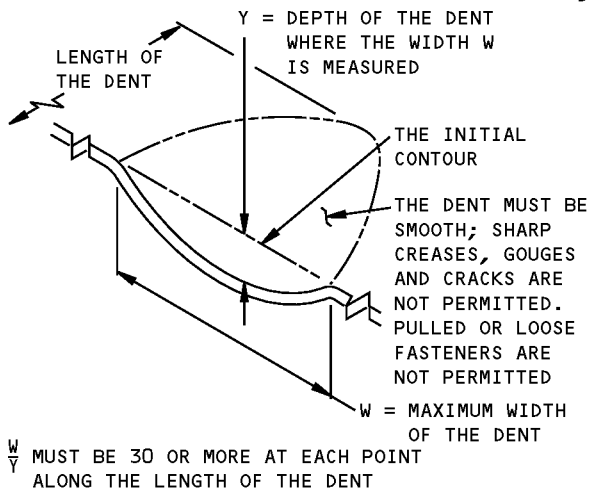


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

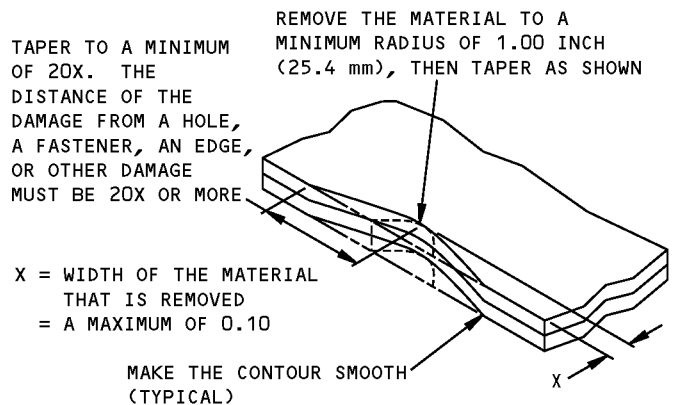
**REMOVAL OF DAMAGED MATERIAL ON AN EDGE
DETAIL II**



**REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL III**



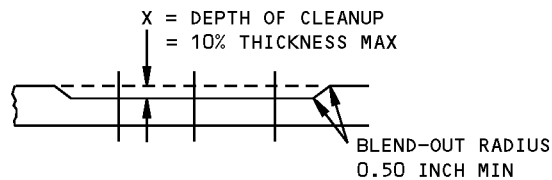
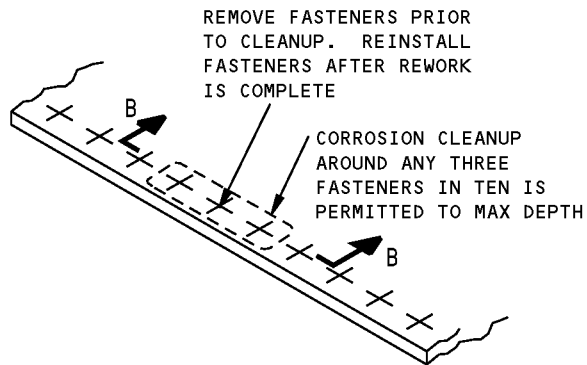
DETAIL IV



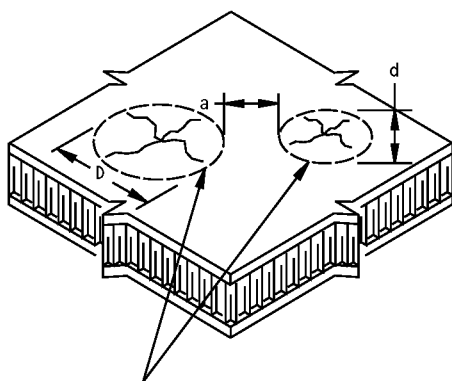
**REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE
DETAIL V**

**Allowable Damage - Rudder Tip
Figure 101 (Sheet 3 of 5)**

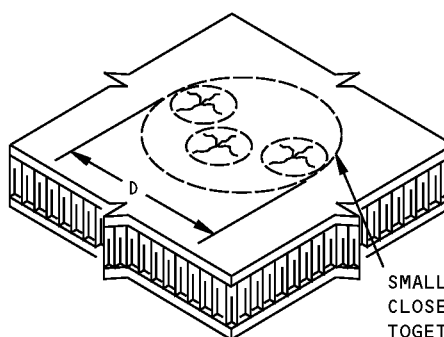
STRUCTURAL REPAIR MANUAL



CORROSION CLEANUP
DETAIL VI



ADJACENT DAMAGE SITES ON
SURFACE OF COMPOSITE PANEL



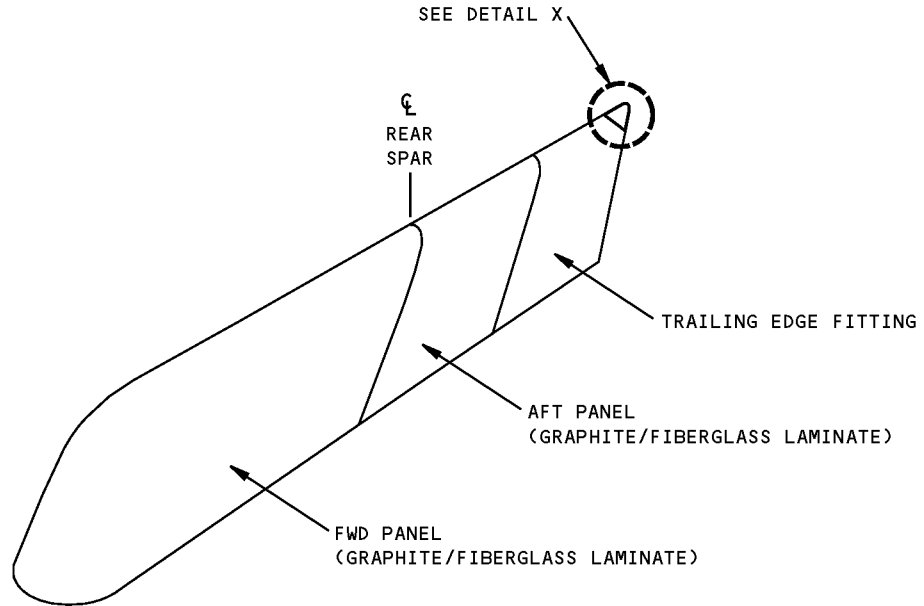
SMALL DAMAGE SITES THAT ARE
CLOSELY SPACED MAY BE GROUPED
TOGETHER AND CONSIDERED AS
ONE DAMAGE SITE

- DAMAGE SITE IS ANY SINGLE AREA OF A PANEL WHERE A DENT, CRACK, DELAMINATION, PUNCTURE OR ANY COMBINATION OF THESE EXIST. SMALL DAMAGE SITES THAT ARE CLOSELY SPACED MAY BE GROUPED TOGETHER AND CONSIDERED AS ONE DAMAGE SITE
- "d" IS THE DIAMETER OF THE SMALLER OF TWO ADJACENT DAMAGE SITES
- CALCULATE a/D BY DIVIDING DISTANCE "a" BY DIAMETER "D"
- "D" IS DETERMINED BY MEASURING THE DIAMETER OF A CIRCLE DRAWN AROUND DENT, CRACK, OR OTHER DAMAGE, WHICHEVER IS GREATER
- DAMAGE IS ALLOWED WHEN "D" IS EQUAL TO OR LESS THAN THE MAXIMUM ALLOWABLE "D" FROM TABLE I AND WHEN a/D IS EQUAL TO OR GREATER THAN THE MINIMUM a/D GIVEN IN TABLE I
- "a" IS THE DISTANCE BETWEEN TWO ADJACENT DAMAGE SITES

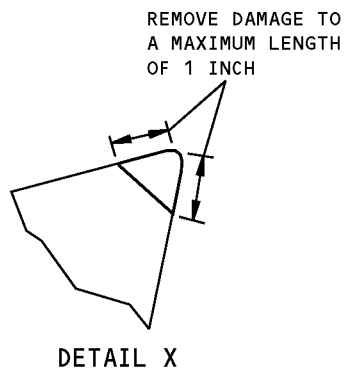
DAMAGE SIZING AND SPACING DATA
FOR COMPOSITE PANELS
DETAIL VII

Allowable Damage - Rudder Tip
Figure 101 (Sheet 4 of 5)

**767-300
STRUCTURAL REPAIR MANUAL**



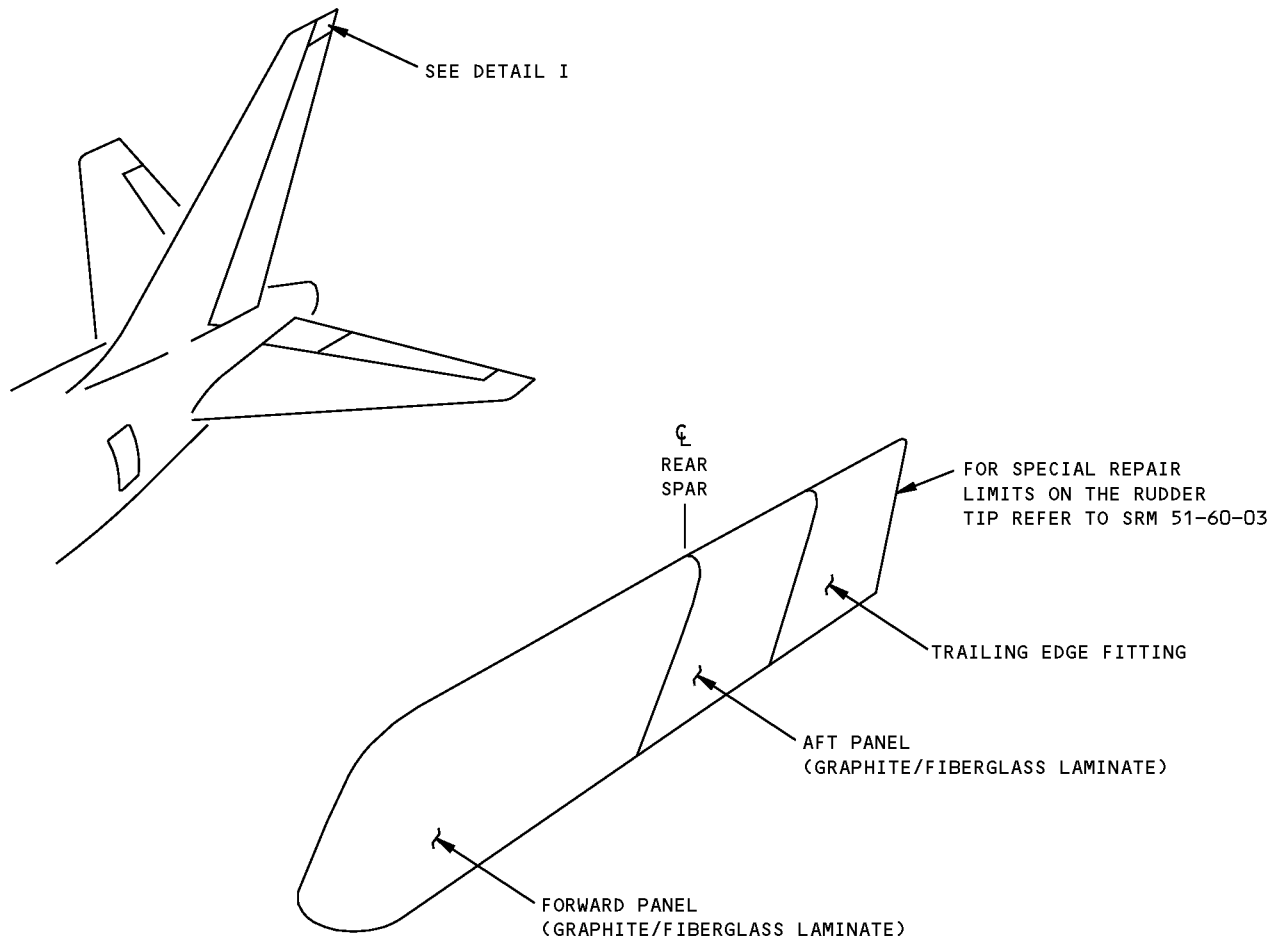
**ALLOWABLE DAMAGE AT TOP CORNER OF TRAILING EDGE FITTING
DETAIL IX**



**Allowable Damage - Rudder Tip
Figure 101 (Sheet 5 of 5)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR 1 - RUDDER TIP



DETAIL I

NOTES

- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE REPAIR EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFER TO SRM 51-60-03 FOR SPECIAL REPAIR LIMITATIONS.
- REFER TO SRM 51-70-14 TO REPAIR THE ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING.
- REFER TO AMM 51-20 TO APPLY THE FINISH TO THE REWORKED AREA.

A THE MINIMUM SPACING (EDGE TO EDGE) BETWEEN REPAIRS IS 6 INCHES (150 mm).

B INSPECT THE INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR A "TAP" TEST EVERY AIRPLANE "A" CHECK. FOR A "TAP" TEST, USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. A PERMANENT REPAIR IS REQUIRED IF THERE IS DETERIORATION. REFER TO SRM 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.

C FOR 250°F (121°C) CURE GRAPHITE STRUCTURE REPAIR, USE BMS 8-168, TYPE II TAPE OR FABRIC. THE CLASS, GRADE AND STYLE SHALL BE THE SAME AS THE INITIAL PLIES.

**Rudder Tip Repairs
Figure 201 (Sheet 1 of 2)**



767-300

STRUCTURAL REPAIR MANUAL

DAMAGE	INTERIM REPAIRS A	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/ 150°F (66°C) CURE (SRM 51-70-03) B	WET LAYUP 200-230°F (93-110°C) CURE (SRM 51-70-17)	250°F (121°C) CURE (SRM 51-70-05) C	350°F (177°C) CURE (SRM 51-70-04)
CRACKS	UP TO 6.0 INCHES (150 mm) LONG, REPAIR WITH PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.	CLEAN UP DAMAGE AND REPAIR AS A HOLE.
HOLES	6.0 INCHES (150 mm) MAX DIA, NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH AS GIVEN IN SRM 51-70-03, PAR. 5.N.	12.0 INCHES (300 mm) MAX DIA, NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES FOR EACH FACESHEET REPAIRED. A	NO SIZE LIMIT A	NO SIZE LIMIT
DELAMI- NATION	CUT OUT AND REPAIR AS A HOLE.			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES AS GIVEN IN SRM 51-70-03, PAR. 5.L. IF THERE IS FIBER DAMAGE OR DELAMINATION, REPAIR AS A HOLE.			
DENTS	CUT OUT AND REPAIR AS A HOLE.			

REPAIR DATA FOR 350°F (177° C) CURE GRAPHITE/FIBERGLASS HONEYCOMB PANELS

Rudder Tip Repairs
Figure 201 (Sheet 2 of 2)

D634T210

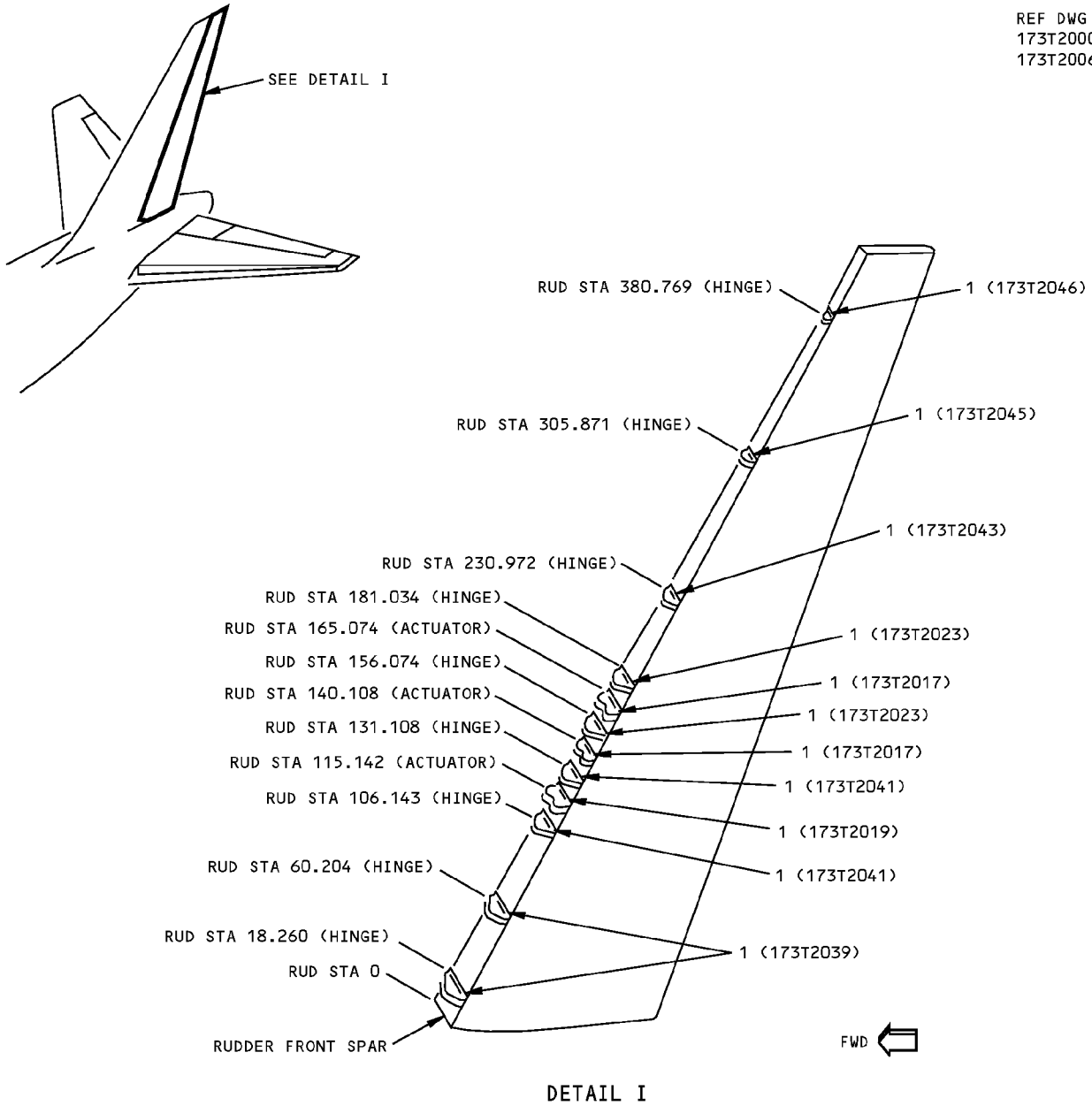
55-40-30

REPAIR 1
Page 202
Apr 01/2005

**767-300
STRUCTURAL REPAIR MANUAL**

IDENTIFICATION 1 - RUDDER ATTACHMENT FITTINGS

REF DWG
173T2000
173T2006



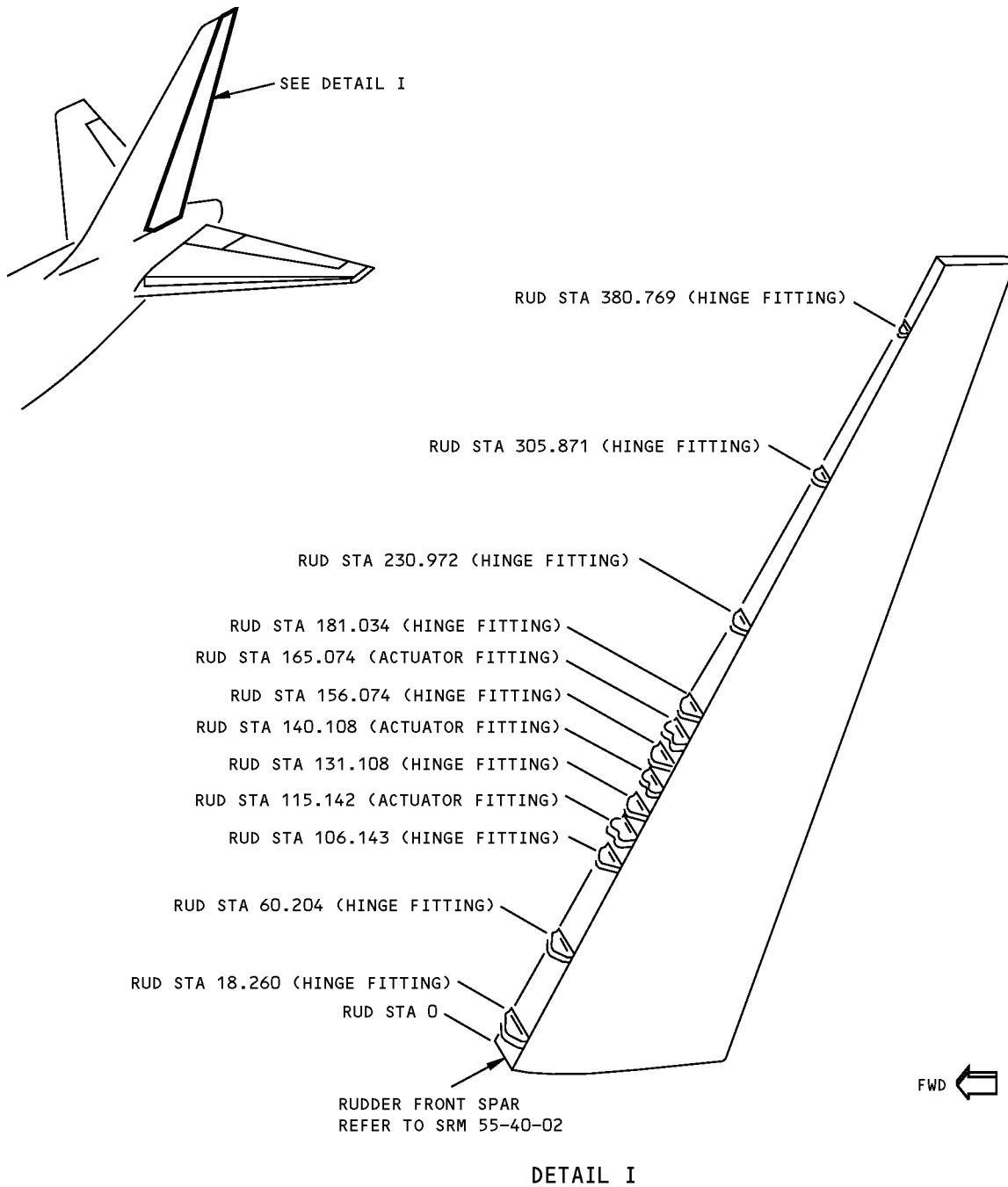
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FITTING		FORGING 7075-T73	

LIST OF MATERIAL FOR DETAIL I

**Rudder Attachment Fittings Identification
Figure 1**

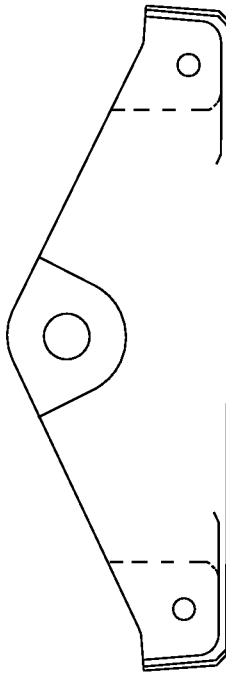
**767-300
STRUCTURAL REPAIR MANUAL**

ALLOWABLE DAMAGE 1 - RUDDER ATTACHMENT FITTINGS

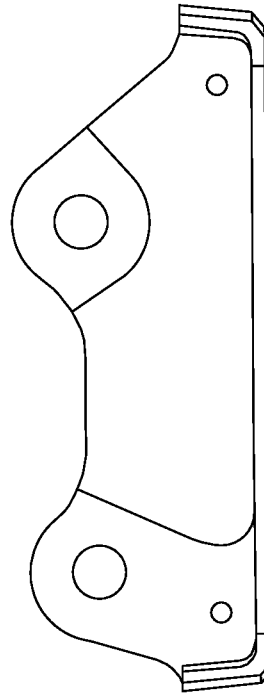


**Allowable Damage - Rudder Attachment Fittings
Figure 101 (Sheet 1 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**



HINGE FITTING



ACTUATOR FITTING

FITTING	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES
HINGE FITTINGS	A	FOR EDGE DAMAGE, SEE DETAILS I & IV FOR OTHER DAMAGE, SEE DETAIL II	NOT PERMITTED	NOT PERMITTED
ACTUATOR FITTINGS		FOR LUG DAMAGE, SEE DETAIL III		

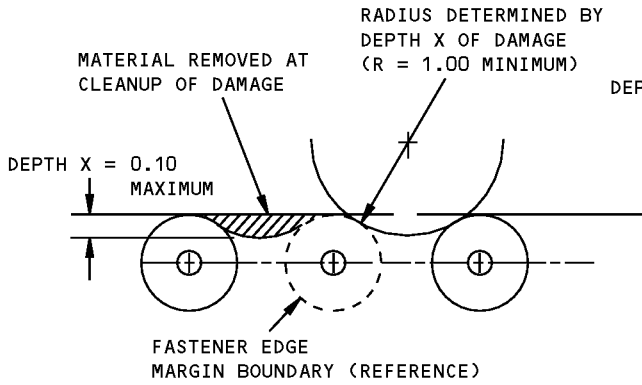
NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-21.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- REFER TO SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL PARTS.
- SHOT PEEN REWORKED AREAS AS GIVEN IN SRM 51-20-06. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT OVER AFTER REWORK.

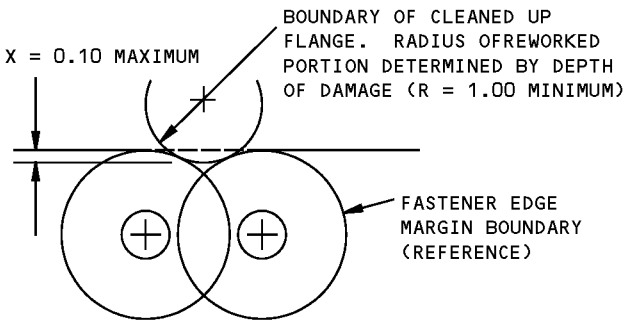
- A** CLEAN UP EDGE CRACKS AS GIVEN IN DETAILS I AND IV. OTHER CRACKS ARE NOT PERMITTED.
- B** DAMAGE OR REWORK IS NOT PERMITTED INSIDE THE LIMITS OF THIS CIRCLE.

**Allowable Damage - Rudder Attachment Fittings
Figure 101 (Sheet 2 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

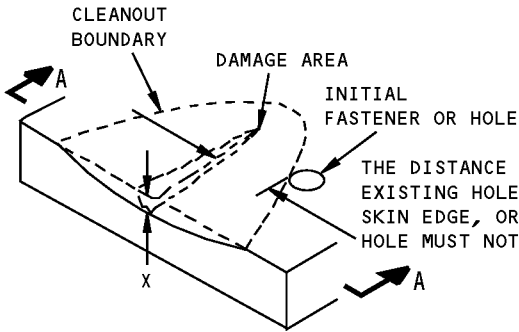


**DAMAGE CLEANUP OF EDGES WITH FASTENERS
WHERE EDGE MARGINS DO NOT OVERLAP**

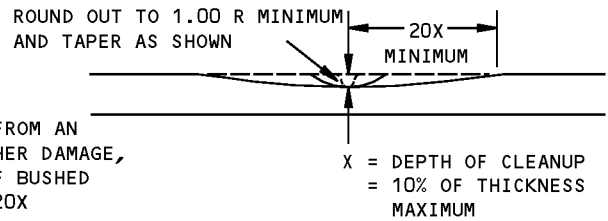


**DAMAGE CLEANUP OF EDGES WITH FASTENERS
WHERE EDGE MARGINS OVERLAP**

DETAIL I

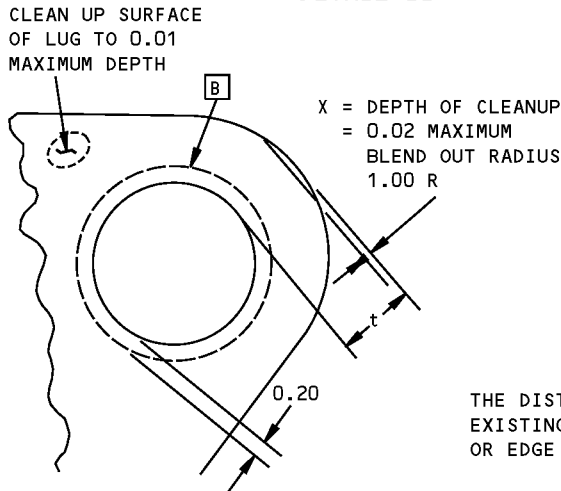


**REMOVAL OF NICK, GOUGE AND
SCRATCH DAMAGE ON A SURFACE
DETAIL II**

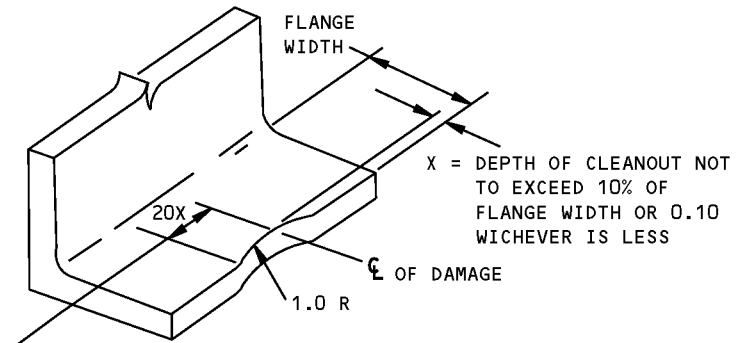


THE AREA REMOVED FOR CLEANUP
MUST NOT EXCEED 4% OF THE CROSS
SECTIONAL AREA

SECTION A-A



**DAMAGE CLEANUP FOR EDGES OF LUG
DETAIL III**

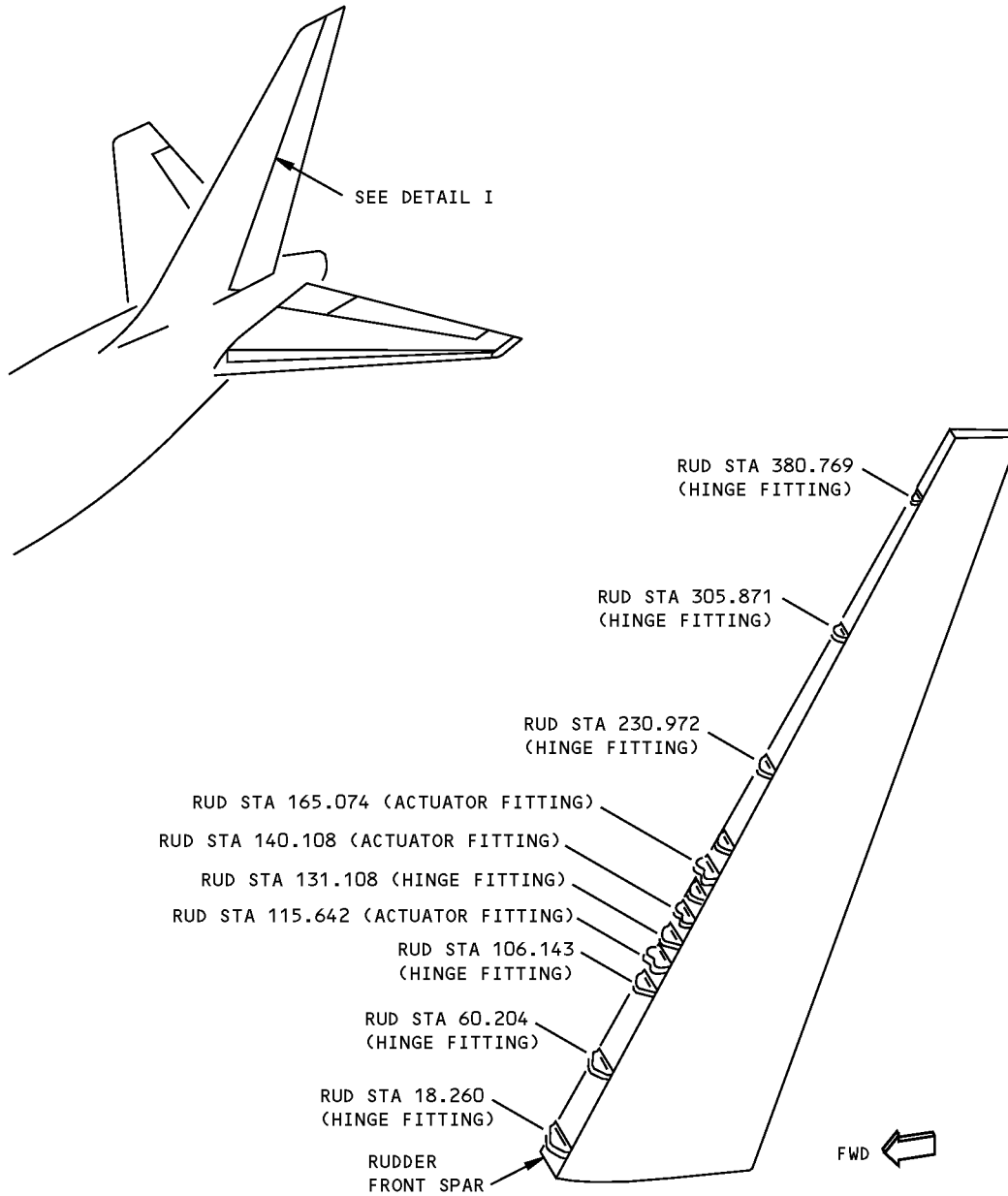


**REMOVAL OF EDGE DAMAGE FROM
FREE FLANGE WITHOUT FASTENERS
DETAIL IV**

**Allowable Damage - Rudder Attachment Fittings
Figure 101 (Sheet 3 of 3)**

**767-300
STRUCTURAL REPAIR MANUAL**

REPAIR GENERAL - RUDDER ATTACHMENT FITTINGS



DETAIL I

NOTES

- THERE ARE NO TYPICAL REPAIRS TO FITTINGS AVAILABLE. SPECIFIC REPAIRS TO FITTINGS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 55-40-02 FOR STRUCTURE IDENTIFICATION

**Rudder Attachment Fitting Repair
Figure 201**

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55-40-90

REPAIR GENERAL
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