CHAPTER

56

WINDOWS



CHAPTER 56 WINDOWS

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A = Added, R = Revised, D = Deleted, O = Overflow

56-EFFECTIVE PAGES



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A = Added, R = Revised, D = Deleted, O = Overflow

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ALLOWABLE DAMAGE GENERAL - Flight Compartment Window Frames	
ALLOWABLE DAMAGE 1 - Flight Compartment Window Frame Number 1	
ALLOWABLE DAMAGE 2 - Flight Compartment Window Frame Number 2	
ALLOWABLE DAMAGE 3 - Flight Compartment Window Frame Number 3	
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REPAIR 1 - Door Window Structure

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GENERAL - WINDOWS

1. General

- A. Chapter 56 gives the identification, allowable damage, and repair information for the structural components of:
 - (1) The flight compartment windows
 - (2) The cabin windows
 - (3) The passenger entry door windows

2. References

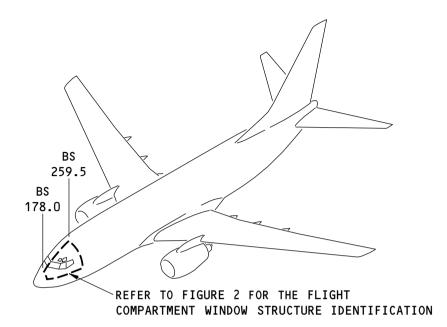
Reference	Title
AMM 56-00-00	Windows - General

3. Window Data

A. Refer to AMM 56-00-00 for the information that is applicable to the window panes.



IDENTIFICATION 1 - FLIGHT COMPARTMENT WINDOW STRUCTURE



NOTE: REFER TO TABLE 1 FOR THE REFERENCE DRAWINGS.

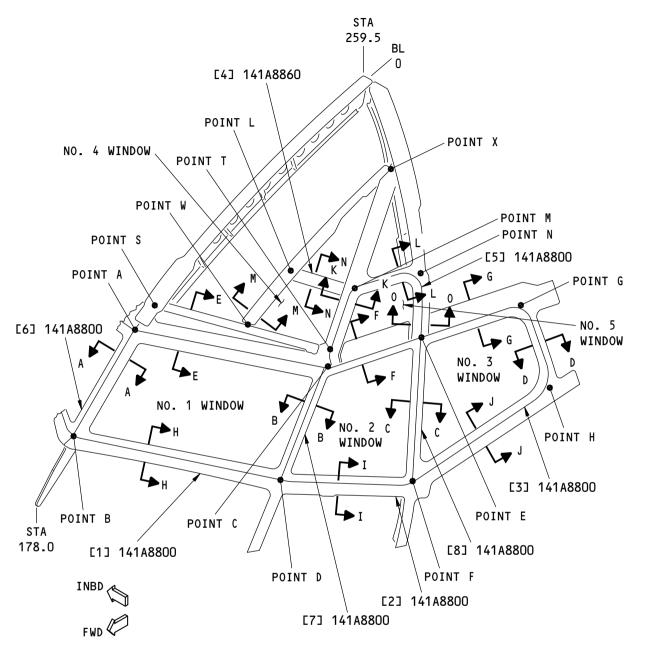
F79943 S0006593844_V1

Flight Compartment Windows Structure Location Figure 1

Table 1:

	REFERENCE DRAWINGS			
DRAWING NUMBER TITLE				
141A8800	Frame Installation - Cab Windows			
141A8840	Q-R Sill Installation - Cab			
141A8850	Sill Installation - WL 234.00, Cab			
141A8860	Frame Installation - Cab Crown			
141A8880	Fitting Installation - BL 0.00 and BL 5.7 Cab Nose			





NOTE: REFER TO TABLE 2 FOR THE LIST OF MATERIALS.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

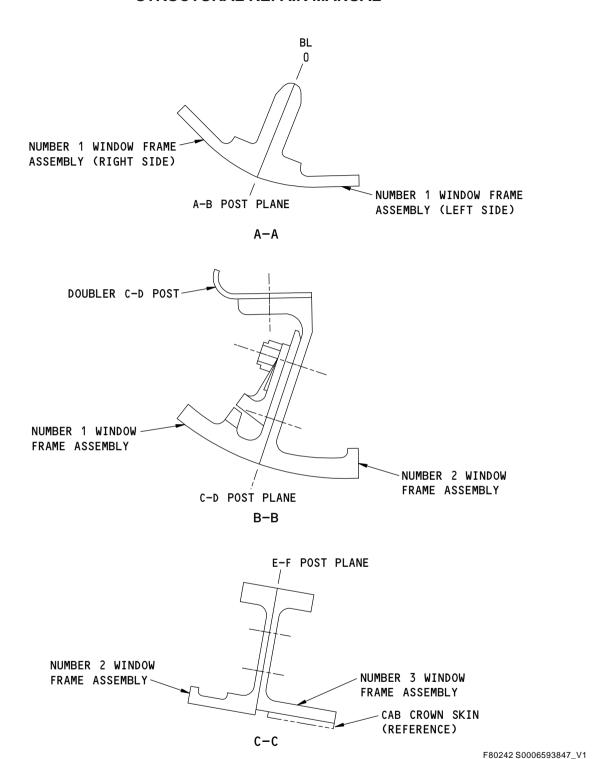


Flight Compartment Windows Structure Identification Figure 2 (Sheet 1 of 6)

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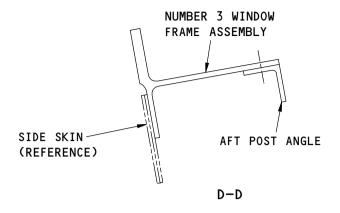


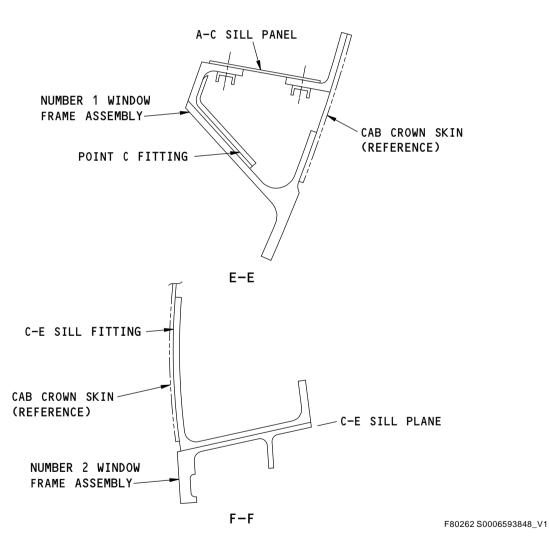
Flight Compartment Windows Structure Identification Figure 2 (Sheet 2 of 6)

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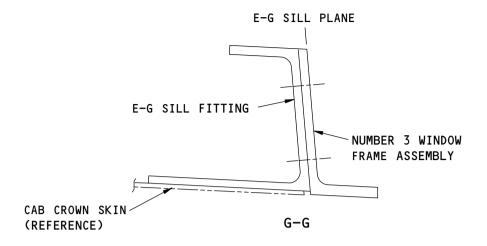


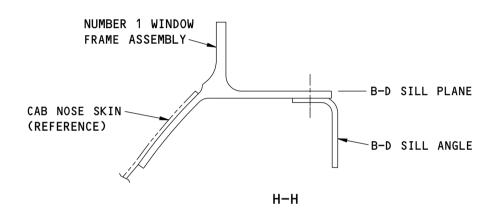
Flight Compartment Windows Structure Identification Figure 2 (Sheet 3 of 6)

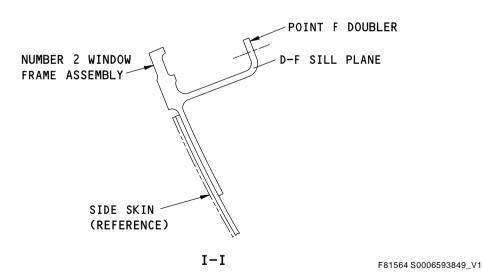
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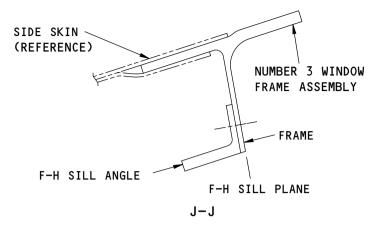


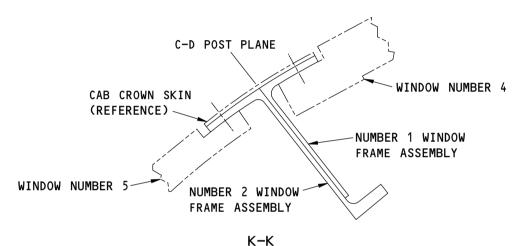
Flight Compartment Windows Structure Identification Figure 2 (Sheet 4 of 6)

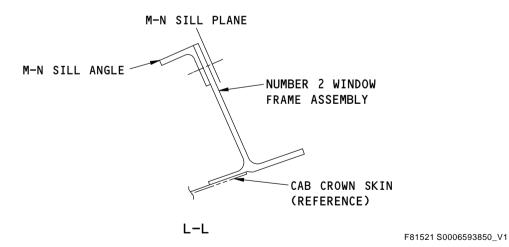
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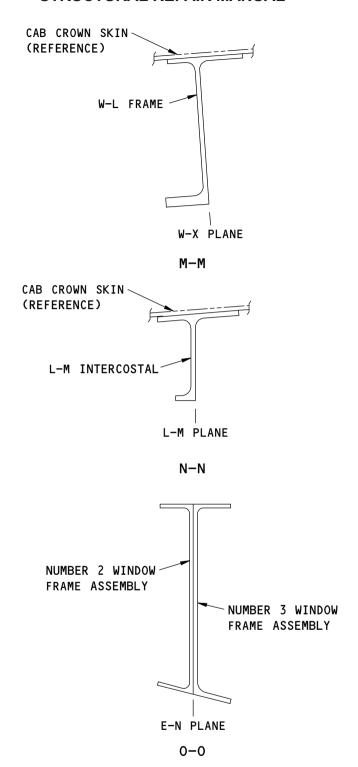


Flight Compartment Windows Structure Identification Figure 2 (Sheet 5 of 6)

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Flight Compartment Windows Structure Identification Figure 2 (Sheet 6 of 6)

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Table 2:

	Table 2: LIST OF MATERIALS FOR FIGURE 2				
ITEM	DESCRIPTION	T*[1]	MATERIAL	EFFECTIVITY	
[1]	Window Frame Assembly				
	Frame		7075-01 die forging as given in BMS 7-186		
	A-C Sill Fitting		7050-T7451 plate as given in BMS 7-323		
	A-C Sill Panel (2)		7075-T6 clad sheet as given in QQ-A-150/13		
	B-D Sill Angle	0.112 (2.84)	Nickel alloy 625 sheet as given in AMS 5542. Heat treated to condition II as given in BAC 5616		
	Point A Fitting		7050-T7451 plate as given in AMS 4050		
	Point B Fitting		15-5PH bar as given in AMS 5659, solution treated. Heat treat to 180-200 KSI as given in BAC 5619		
	Point C Fitting		15-5PH bar as given in AMS 5659, solution treated. Heat treat to 180-200 KSI as given in BAC 5619		
	Attach Fitting (STA 178, BL 0.0 to B-D Sill)		7050-T7451 plate as given in AMS 4050		
	Attach Fitting (Window Frame, B-D Sill at C-D Post)		7050-T7451 plate as given in AMS 4050	For airplane line numbers 1 thru 563	
			15-5PH bar as given in AMS 5659, solution treated. Heat treat to 180-200 KSI as given in BAC 5619	For airplane line numbers 564 and on	
[2]	Window Frame Assembly				
	Frame		Ti-6Al-4V die forged titanium as given in BMS 7-247		
	C-E Sill Fitting		7050-T7451 plate as given in BMS 7-323		
	M-N Sill Angle		BAC1503-100746 7075-T73511 extrusion as given in QQ-A-200/11		
[3]	Window Frame Assembly				
	Frame		7075-01 die forging as given in BMS 7-186		
	F-H Sill Angle		BAC1514-2704 7075-T73511 extrusion as given in QQ-A-200/11		
	E-G Sill Fitting		7050-T7451 plate as given in BMS 7-323		
	Aft Post Angle		BAC1503-100071 7075-T73511 extrusion as given in QQ-A-200/11		
[4]	Window Frame Assembly				
	S-T Sill Fitting		7050-T7451 plate as given in BMS 7-323		
	L-M Intercostal		7050-T7451 plate as given in BMS 7-323		
	W-X Frame		7050-T7451 plate as given in AMS 4050		
	M-X Frame		7050-T7451 plate as given in AMS 4050		
	Point X Fitting		7050-T7451 plate as given in BMS 7-323		
[5]	Window Frame Assembly				



Table 2: (Continued)

		LIST OF M	ATERIALS FOR FIGURE 2	
ITEM	DESCRIPTION	T*[1]	MATERIAL	EFFECTIVITY
	Frame		Ti-6Al-4V die forged titanium as given in BMS 7-247	
	M-N Sill Angle		BAC1503-100746 7075-T73511 extrusion as given in QQ-A-200/11	
	C-E Sill Fitting		7050-T7451 plate as given in BMS 7-323	
[6]	A-B Post Assembly			
	Frame		7075-01 die forging as given in BMS 7-186	For airplane line numbers 1 thru 1388
			7050-T7452 forging as given in BMS 7-214	For airplane line numbers 1389 and on
	Point A Fitting (2)		7050-T7451 plate as given in AMS 4050	
	Point B Fitting		15-5PH bar as given in AMS 5659 solution treated to 180-200 KSI	
	Fitting, BL 0.00 (Station 178.0)		7050-T7451 plate as given in AMS 4050	
[7]	C-D Post Assembly			
	Frame		7075-01 die forging as given in BMS 7-186	
	Frame		Ti-6Al-4V die forged titanium as given in BMS 7-247	
	Point M Splice Fitting		BAC1503-100962 7075-T73511 extrusion as given in QQ-A-200/11	
	Point M Splice Strap		7075-T7351 plate as given in QQ-A-250/12	
	C-D Post Doubler	0.056 (1.42)	15-5PH sheet as given in BMS 7-240, Type I. Heat treated to 150-170 KSI as given in BAC 5619	
[8]	E-F Post Assembly			
	Frame		Ti-6Al-4V die forged titanium as given in BMS 7-247	
	Frame		7075-01 die forging as given in BMS 7-186	
	Point F Doubler	0.040 (1.02)	15-5PH sheet as given in BMS 7-240, Type I. Heat treated to 150-170 KSI as given in BAC 5619	
	Forward Clip at Water Line 227.0		BAC1489-359 7075-T62 clad sheet as given in QQ-A-250/13	
	Aft Clip at Water Line 227.0		BAC1492-221 7075-T62 clad sheet as given in QQ-A-250/13	

^{*[1]} Note: T = Pre-manufactured thickness in inches (millimeters).

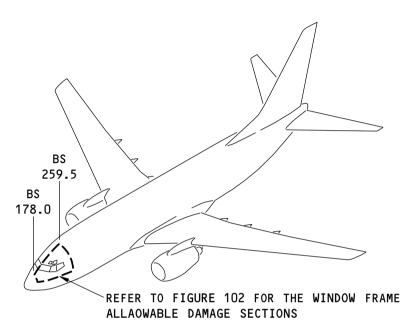
Mar 10/2014



ALLOWABLE DAMAGE GENERAL - FLIGHT COMPARTMENT WINDOW FRAMES

1. Applicability

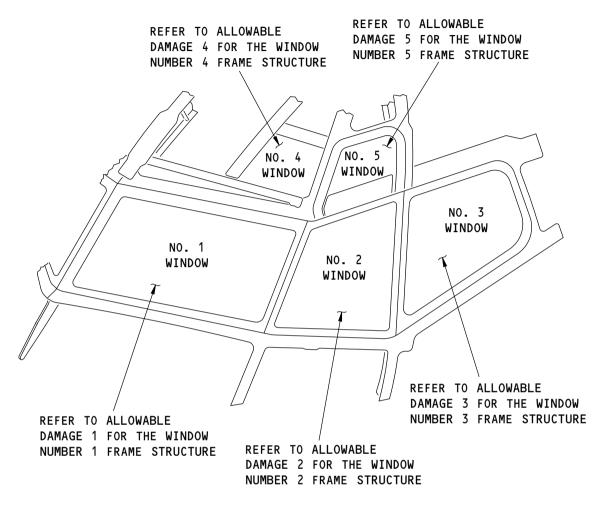
A. Allowable Damage General is applicable to damage on the flight compartment window frames shown in Flight Compartment Windows Structure Location, Figure 101/ALLOWABLE DAMAGE GENERAL



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Flight Compartment Windows Structure Location Figure 101





INBD FWD

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

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Window Frames Allowable Damage Sections Figure 102

56-10-02

ALLOWABLE DAMAGE GENERAL

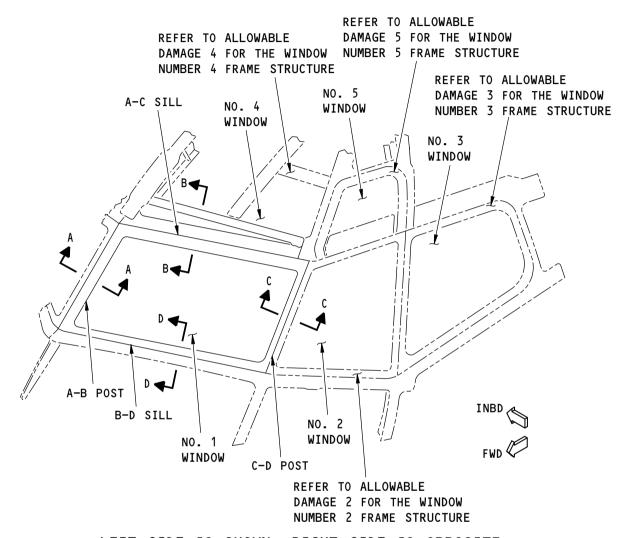
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ALLOWABLE DAMAGE 1 - FLIGHT COMPARTMENT WINDOW FRAME NUMBER 1

1. Applicability

A. Allowable Damage 1 is applicable to damage on the flight compartment window frame number 1 shown in Number 1 Window Frame Sections, Figure 101/ALLOWABLE DAMAGE 1.



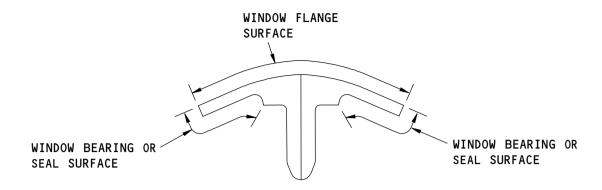
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

Number 1 Window Frame Sections Figure 101 (Sheet 1 of 3)

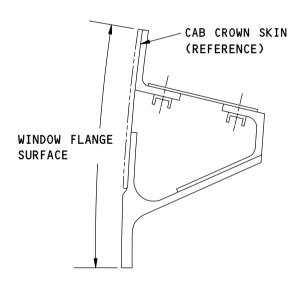
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A-B POST A-A



A-C SILL B-B

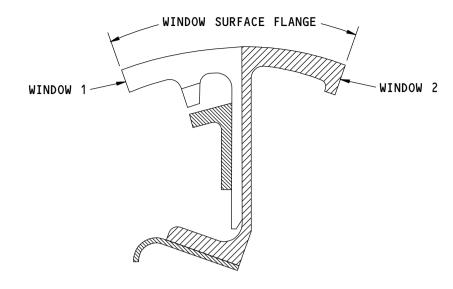
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Number 1 Window Frame Sections Figure 101 (Sheet 2 of 3)

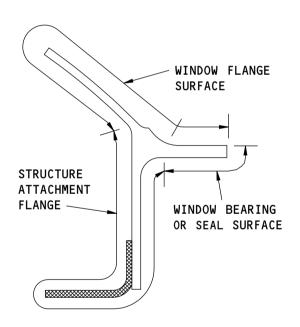
56-10-02

ALLOWABLE DAMAGE 1
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C-D POST C-C



NICKEL ALLOY 750
ALUMINUM
TITANIUM
CRES

(ROTATED 90° CLOCKWISE)

B-D SILL

D-D

G78130 S0006593860_V2

Number 1 Window Frame Sections Figure 101 (Sheet 3 of 3)



2. General

- A. Refer to Table 101/ALLOWABLE DAMAGE 1 for a list of the references for the allowable damage data.
- B. Refer to Paragraph 4./ALLOWABLE DAMAGE 1 for the allowable damage limits.

WARNING: SMALL PARTICLES OF TITANIUM ARE FLAMMABLE. IN A SUFFICIENT CONCENTRATION, AN EXPLOSION CAN OCCUR. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, HALON, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. WATER THAT TOUCHES MOLTEN TITANIUM CAN CAUSE A STEAM EXPLOSION.

- C. Refer to SOPM 20-10-07 for the machining procedures you can use when you work with titanium.
- Remove the damage as necessary from the sills and posts.
 - (1) Refer to 51-10-02 for inspection and removal of the damage.
 - (2) Refer to 51-30-03 for the possible sources of the abrasive and other materials you can use to remove the damage.
 - (3) Refer to 51-30-05 for the possible sources of the equipment and tools you can use to remove the damage.

Table 101:

PARAGRAPH REFERENCES FOR THE ALLOWABLE DAMAGE LIMITS				
WINDOW NUMBER 1 FRAME SECTIONS PARAGRAPH				
A-B POST	4.A			
A-C SILL	4.B			
C-D POST	4.C			
B-D SILL	4.D			

- E. After you remove the damage on the parts made from nickel and titanium, do the steps that follow:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area to find the dimensions of the damage. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 14 for inspection procedures.

NOTE: The dye penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the dye penetrant inspection procedure.

- (2) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.
 - (a) Do a conductive test and heat evaluation as given in 51-20-02, GENERAL and 51-20-03, GENERAL.
- F. After you remove the damage on the parts not made of nickel or titanium, make an inspection as follows:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area at all locations to make sure that there are no surface cracks. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 4 for inspection procedures.

NOTE: The dye penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the dye penetrant inspection procedure.

(2) Do a conductivity inspection of the damaged areas at all lightning strike damage areas as given in 737 NDT Part 6, 51-00-00, Procedure 3.



- (a) Do a conductive test and heat evaluation as given in 51-20-02, GENERAL and 51-20-03, GENERAL.
- (b) Make sure there is a minimum surface smoothness of 63 microinches Ra to all locations.
- G. After you make an inspection and there is no damage, do as follows for the aluminum parts:

WARNING: MAKE SURE THAT YOU WEAR EYE PROTECTION WHEN YOU USE THE FLAP PEEN WHEEL. IF YOU DO NOT OBEY, AN INJURY CAN OCCUR.

- (1) Flap peen or shot peen the reworked areas.
 - (a) Refer to 51-20-06 for shot peen intensity and shot number.
 - (b) Refer to SOPM 20-10-03 for flap peen and shot peen procedures.
- (2) Apply a chemical conversion coating to the bare surfaces of the reworked areas. Refer to 51-20-01.
- (3) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.

NOTE: Do not apply primer to the external surface of the window frame that is not below the skin.

- H. After you remove the damage on parts made from Corrosion Resistant Steel (CRES), do the steps that follow:
 - (1) Do a Magnetic Particle inspection of the damaged area to find the dimensions of the damage. Refer to SOPM 20-20-01 for inspection procedures.

NOTE: The dye penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the dye penetrant inspection procedure.

- (2) Apply cadmium plating to the bare surfaces of the (CRES) parts. Refer to SOPM 20-42-05.
- (3) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.

3. References

Reference	Title	
51-10-02	INSPECTION AND REMOVAL OF DAMAGE	
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND COMPOSITE MATERIALS	
51-20-02, GENERAL	Heat Treat Verification - Hardness and Conductivity Testing	
51-20-03, GENERAL	Heat Damage Analysis	
51-20-06	SHOT PEENING	
51-30-03	NON-METALLIC MATERIALS	
51-30-05	EQUIPMENT AND TOOLS FOR REPAIRS	
AMM 56-11-00	FLIGHT COMPARTMENT WINDOWS	
SOPM 20-10-03	SHOT PEENING	
SOPM 20-10-07	Machining of Titanium	
SOPM 20-20-01	Magnetic Particle Inspection	
SOPM 20-20-02	Penetrant Methods of Inspection	
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes	
SOPM 20-42-05	Bright Cadmium Plating	
737 NDT Part 6, 51-00-00, Procedure 14	Surface Inspection of Titanium and other Low Conductivity Materials(Impedance Plane or Meter Display	
737 NDT Part 6, 51-00-00, Procedure 3	Investigation of Fire Damage on Aircraft Structure	
737 NDT Part 6, 51-00-00, Procedure 4	Surface Inspection of Aluminum Parts (Meter Display)	



4. Allowable Damage Limits

- A. No. 1 Window, A-B Post
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.

- B. No. 1 Window, A-C Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.

- C. No. 1 Window, C-D Post
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A, B, and D.
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

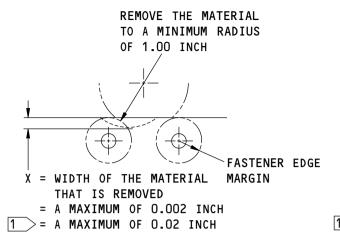
NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.



- D. No. 1 Window, B-D Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A, B, and D.
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 1, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

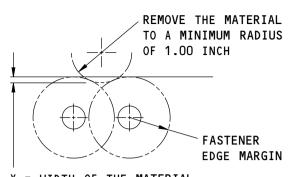
NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.





REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS DO NOT HAVE AN OVERLAP





X = WIDTH OF THE MATERIAL
 THAT IS REMOVED
= A MAXIMUM OF 0.002 INCH

= A MAXIMUM OF 0.002 INCH

REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP



REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH, THEN TAPER AS SHOWN AREA OF THE MATERIAL MAKE THE THAT IS REMOVED T = THICKNESS OF THE MATERIAL TAPER TO ¢ OF THE DAMAGE A MINIMUM 0F 20X **FASTENER** OR HOLE THE DISTANCE OF THE X = DEPTH OF THE MATERIAL DAMAGE FROM A HOLE, THAT IS REMOVED A FASTENER, AN EDGE, = A MAXIMUM OF OR OTHER DAMAGE MUST 0.002 INCH BE 20X OR MORE = A MAXIMUM OF 0.02 INCH REMOVAL OF DAMAGED MATERIAL A-AON A SURFACE

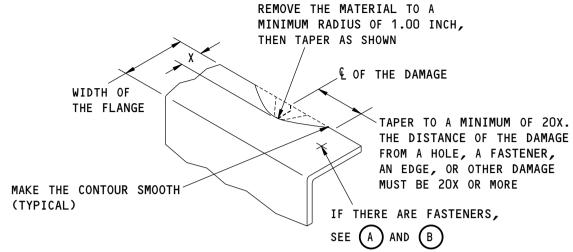
NOTES

THESE LIMITS ARE ONLY APPLICABLE TO THE WINDOW FRAME NUMBER 1, A-C SILL

G78160 S0006593862 V2

Allowable Damage Limits Figure 102 (Sheet 1 of 2)



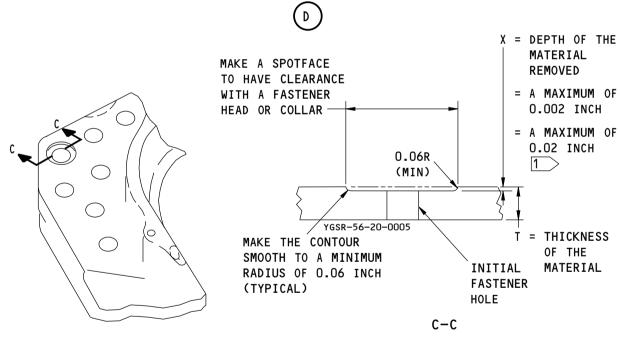


X = WIDTH OF THE MATERIAL THAT IS REMOVED

= A MAXIMUM OF 0.002 INCH

 $1 \rightarrow = A$ MAXIMUM OF 0.02 INCH

REMOVAL OF DAMAGED MATERIAL ON AN EDGE



REMOVAL OF DAMAGED MATERIAL AT A FASTENER HOLE



G78165 S0006593863 V2

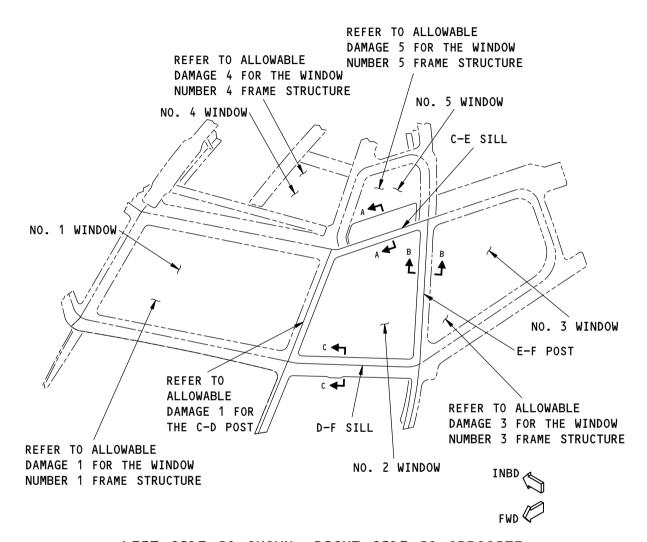
Allowable Damage Limits Figure 102 (Sheet 2 of 2)



ALLOWABLE DAMAGE 2 - FLIGHT COMPARTMENT WINDOW FRAME NUMBER 2

1. Applicability

A. Allowable Damage 2 is applicable to damage on the flight compartment window frame number 2 as shown in Number 2 Window Frame Sections, Figure 101/ALLOWABLE DAMAGE 2.

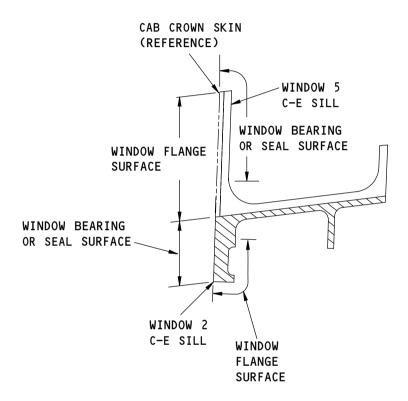


LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

G78205 S0006593865_V1

Number 2 Window Frame Sections Figure 101 (Sheet 1 of 3)





ALUMINUM TITANIUM

C-E SILLS A-A

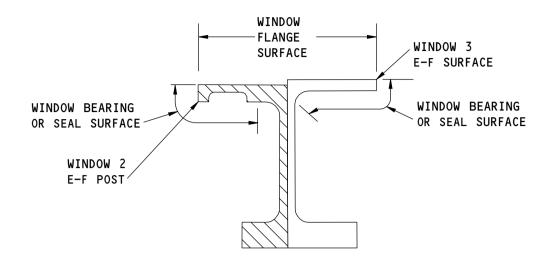
G78227 S0006593866_V1

Number 2 Window Frame Sections Figure 101 (Sheet 2 of 3)

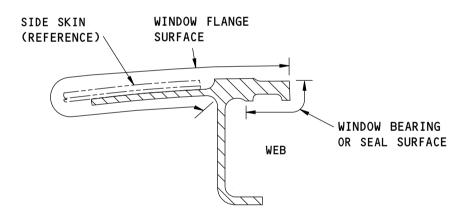
56-10-02

ALLOWABLE DAMAGE 2 Page 102 Nov 10/2012





E-F POSTS B-B



D-F SILL (ROTATED 90 CLOCKWISE) C-C

ALUMINUM
TITANIUM

G78304 S0006593867_V1

Number 2 Window Frame Sections Figure 101 (Sheet 3 of 3)



2. General

- Refer to Table 101/ALLOWABLE DAMAGE 2 for a list of the references for the allowable damage data.
- B. Refer to Paragraph 4./ALLOWABLE DAMAGE 2 for the allowable damage limits.

WARNING: SMALL PARTICLES OF TITANIUM ARE FLAMMABLE. IN A SUFFICIENT CONCENTRATION, AN EXPLOSION CAN OCCUR. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, HALON, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. WATER THAT TOUCHES MOLTEN TITANIUM CAN CAUSE A STEAM EXPLOSION.

- C. Refer to SOPM 20-10-07 for the machining procedures you can use when you work with titanium.
- D. Remove the damage as necessary from the sills and post.
 - (1) Refer to 51-10-02 for inspection and removal of the damage.
 - (2) Refer to 51-30-03 for the possible sources of the abrasive and other materials you can use to remove the damage.
 - (3) Refer to 51-30-05 for the possible sources of the equipment and tools you can use to remove the damage.

Table 101:

PARAGRAPH REFERENCES FOR THE ALLOWABLE DAMAGE LIMITS			
WINDOW NUMBER 2 FRAME SECTIONS PARAGRAPH			
C-E SILL	4.A		
E-F POST	4.B		
D-F SILL	4.C		

- E. After you remove the damage on the parts made from titanium, do the steps that follow:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area to find the dimensions of the damage. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 14 for inspection procedures.

NOTE: The penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the penetrant inspection procedure.

(2) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.

NOTE: Do not apply primer to the external surface of the window frame that is not below the skin.

- F. After you remove the damage on the parts made from aluminum, make an inspection as follows:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area to find the dimensions of the damage. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 4 for inspection procedures.

NOTE: The penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the penetrant inspection procedure.

- (2) Do a conductivity inspection of the damaged areas at all lightning strike damage areas as given in 737 NDT Part 6, 51-00-00, Procedure 3.
 - (a) Do a conductivity test and heat evaluation as given in 51-20-02, GENERAL and 51-20-03. GENERAL.



- (b) Make sure there is a minimum surface finish of 63 microinches Ra to all locations.
- G. After you make the inspection and there is no damage, do as follows for the aluminum parts:

WARNING: MAKE SURE THAT YOU WEAR EYE PROTECTION WHEN YOU USE THE FLAP PEEN WHEEL. IF YOU DO NOT OBEY, AN INJURY CAN OCCUR.

- (1) Flap peen or shot peen the reworked areas.
 - (a) Refer to 51-20-06 for shot peen intensity and shot number.
 - (b) Refer to SOPM 20-10-03 for flap peen and shot peen procedures.
- (2) Apply a chemical conversion coating to the bare surfaces of the reworked areas. Refer to 51-20-01.
- (3) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.

3. References

Reference	Title
51-10-02	INSPECTION AND REMOVAL OF DAMAGE
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND COMPOSITE MATERIALS
51-20-02, GENERAL	Heat Treat Verification - Hardness and Conductivity Testing
51-20-03, GENERAL	Heat Damage Analysis
51-20-06	SHOT PEENING
51-30-03	NON-METALLIC MATERIALS
51-30-05	EQUIPMENT AND TOOLS FOR REPAIRS
AMM 56-11-00	FLIGHT COMPARTMENT WINDOWS
SOPM 20-10-03	SHOT PEENING
SOPM 20-10-07	Machining of Titanium
SOPM 20-20-02	Penetrant Methods of Inspection
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes
737 NDT Part 6, 51-00-00, Procedure 14	Surface Inspection of Titanium and other Low Conductivity Materials(Impedance Plane or Meter Display
737 NDT Part 6, 51-00-00, Procedure 3	Investigation of Fire Damage on Aircraft Structure
737 NDT Part 6, 51-00-00, Procedure 4	Surface Inspection of Aluminum Parts (Meter Display)

4. Allowable Damage Limits

- A. Number 2 Window, C-E Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 2, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 2, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike:



(a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.

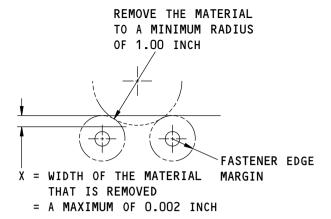
- B. Number 2 Window, E-F Post
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 2, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 2, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike:
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.

- C. Number 2 Window, D-F Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 2, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 2, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike:
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.





REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH **FASTENER EDGE MARGIN**

X = WIDTH OF THE MATERIAL THAT IS REMOVED

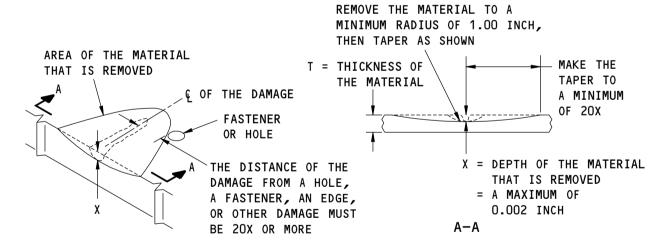
= A MAXIMUM OF 0.002 INCH

REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS DO NOT HAVE AN OVERLAP



REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP





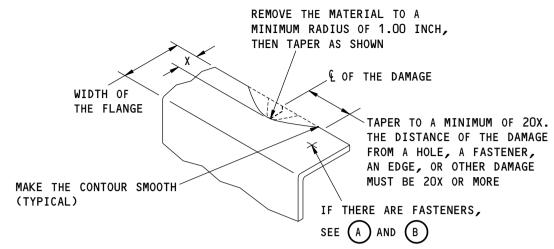
REMOVAL OF DAMAGED MATERIAL ON A SURFACE



F87441 S0006593869 V1

Allowable Damage Limits Figure 102 (Sheet 1 of 2)



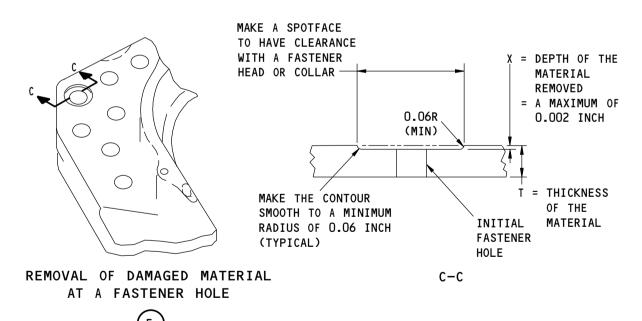


X = WIDTH OF THE MATERIAL THAT IS REMOVED

= A MAXIMUM OF 0.002 INCH

REMOVAL OF DAMAGED MATERIAL ON AN EDGE





G78232 S0006593870_V1

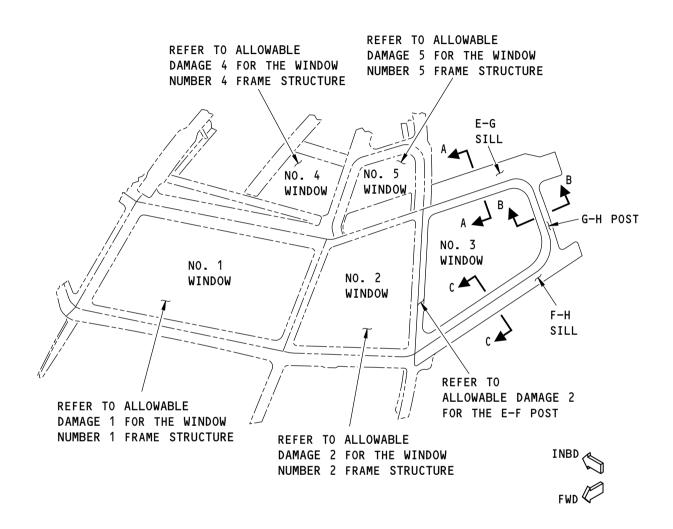
Allowable Damage Limits Figure 102 (Sheet 2 of 2)



ALLOWABLE DAMAGE 3 - FLIGHT COMPARTMENT WINDOW FRAME NUMBER 3

1. Applicability

A. Allowable Damage 3 is applicable to damage on the flight compartment window frame number 3 as shown in Number 3 Window Frame Sections, Figure 101/ALLOWABLE DAMAGE 3.

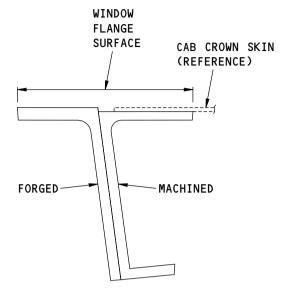


LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

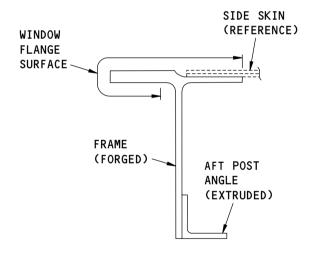
G78327 S0006593872_V2

Number 3 Window Frame Sections Figure 101 (Sheet 1 of 3)





E-G SILL (ROTATED 90 ° CLOCKWISE) A-A



G-H POST B-B

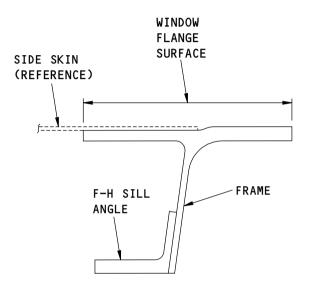
NOTES

• ALL PARTS IDENTIFIED ARE MADE FROM ALUMINUM.

G78360 S0006593873_V1

Number 3 Window Frame Sections Figure 101 (Sheet 2 of 3)





F-H SILL (ROTATED 90 ° CLOCKWISE) C-C

G78345 S0006593874_V1

Number 3 Window Frame Sections Figure 101 (Sheet 3 of 3)

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ALLOWABLE DAMAGE 3



2. General

- Refer to Table 101/ALLOWABLE DAMAGE 3 for a list of the references for the allowable damage data.
- B. Refer to Paragraph 4./ALLOWABLE DAMAGE 3 for the allowable damage limits.
- C. Remove the damage as necessary from the sills and post.
 - (1) Refer to 51-10-02 for inspection and removal of the damage.
 - (2) Refer to 51-30-03 for possible sources of the abrasive and other materials you can use to remove the damage.
 - (3) Refer to 51-30-05 for possible sources of the equipment and tools you can use to remove the damage.

Table 101:

PARAGRAPH REFERENCES FOR THE ALLOWABLE DAMAGE LIMITS		
WINDOW NUMBER 3 FRAME SECTIONS PARAGRAPH		
E-G SILL	4.A	
G-H POST	4.B	
F-H SILL	4.C	

- D. After you remove the damage on parts, do the steps that follow:
 - (1) To all locations make sure that there are no surface cracks. Do a High Frequency Eddy Current (HFEC) inspection of the damaged area. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 4 for inspection procedures.

NOTE: The penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the penetrant inspection procedure.

- (2) To all lightning strike damage areas, do a conductivity inspection of the damaged areas as given in 737 NDT Part 6, 51-00-00, Procedure 3.
 - (a) Do a conductive test and heat evaluation as given in 51-20-02, GENERAL and 51-20-03, GENERAL.
 - (b) Make sure there is a minimum surface finish of 63 microinches Ra to all locations.

WARNING: MAKE SURE THAT YOU WEAR EYE PROTECTION WHEN YOU USE THE FLAP PEEN WHEEL. IF YOU DO NOT OBEY, AN INJURY CAN OCCUR.

- (3) Flap peen or shot peen the reworked areas.
 - (a) Refer to 51-20-06 for shot peen intensity and shot number.
 - (b) Refer to SOPM 20-10-03 for flap peen and shot peen procedures.
- (4) Apply a chemical conversion coating to the bare surfaces of the reworked areas. Refer to 51-20-01.
- (5) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.

NOTE: Do not apply primer to the external surface of the window frame that is not below the skin.

3. References

Reference	Title	
51-10-02	INSPECTION AND REMOVAL OF DAMAGE	
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND COMPOSITE MATERIALS	



(Continued)

Reference	Title
51-20-02, GENERAL	Heat Treat Verification - Hardness and Conductivity Testing
51-20-03, GENERAL	Heat Damage Analysis
51-20-06	SHOT PEENING
51-30-03	NON-METALLIC MATERIALS
51-30-05	EQUIPMENT AND TOOLS FOR REPAIRS
AMM 56-11-00	FLIGHT COMPARTMENT WINDOWS
SOPM 20-10-03	SHOT PEENING
SOPM 20-20-02	Penetrant Methods of Inspection
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes
737 NDT Part 6, 51-00-00, Procedure 3	Investigation of Fire Damage on Aircraft Structure
737 NDT Part 6, 51-00-00, Procedure 4	Surface Inspection of Aluminum Parts (Meter Display)

4. Allowable Damage Limits

- A. Number 3 Window, E-G Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 3, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 3, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.

- B. Number 3 Window, G-H Post
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 3, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 3, Details A , B , C , D , and E .
 - Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.

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ALLOWABLE DAMAGE 3
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- C. Number 3 Window, F-H Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 3, Details A, B, and D.
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 3, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike
 - (a) The damage is permitted as shown in Figure 102, Details A, B, C, and D.

NOTE: For damage at a fastener location, remove and replace the fastener. Countersink and install the new fastener as given in the initial drawing requirements.



REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH FASTENER EDGE X = WIDTH OF THE MATERIAL MARGIN THAT IS REMOVED

= A MAXIMUM OF 0.02 INCH REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE

REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH **FASTENER** EDGE MARGIN X = WIDTH OF THE MATERIAL THAT IS REMOVED

REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP

= A MAXIMUM OF 0.02 INCH

REMOVE THE MATERIAL TO A

MARGINS DO NOT HAVE AN OVERLAP

MINIMUM RADIUS OF 1.00 INCH, AREA OF THE MATERIAL THEN TAPER AS SHOWN THAT IS REMOVED ¢ OF THE DAMAGE **FASTENER** OR HOLE THE DISTANCE OF THE DAMAGE FROM A HOLE, A FASTENER, AN EDGE, χ OR OTHER DAMAGE MUST BE 20X OR MORE

REMOVAL OF DAMAGED MATERIAL ON A SURFACE

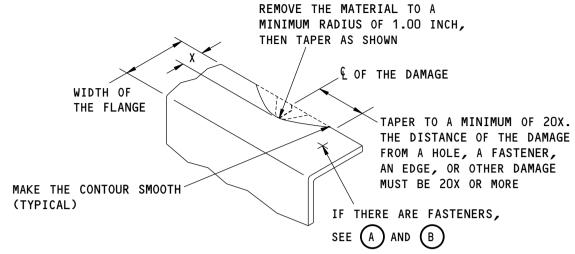
MAKE THE T = THICKNESS OF TAPER TO THE MATERIAL A MINIMUM OF 20X X = DEPTH OF THEMATERIAL THAT IS REMOVED = A MAXIMUM OF 0.02 INCH

A-A

G78329 S0006593876 V2

Allowable Damage Limits Figure 102 (Sheet 1 of 2)

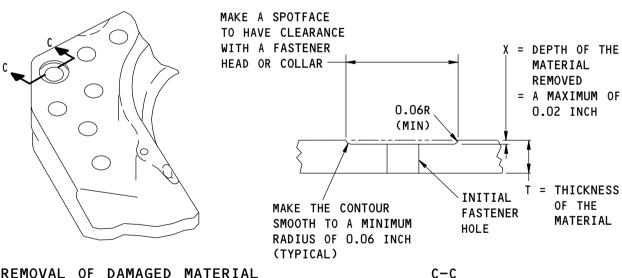




X = WIDTH OF THE MATERIAL THAT IS REMOVED
= A MAXIMUM OF 0.02 INCH

REMOVAL OF DAMAGED MATERIAL ON AN EDGE





REMOVAL OF DAMAGED MATERIAL AT A FASTENER HOLE

E

G78332 S0006593877_V2

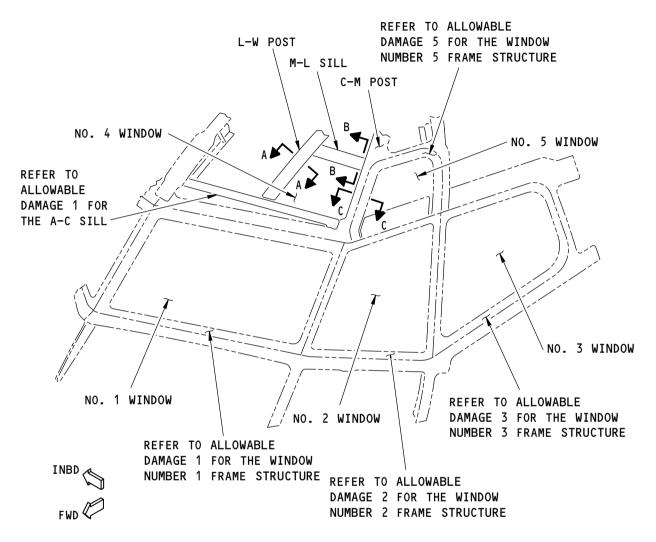
Allowable Damage Limits Figure 102 (Sheet 2 of 2)



ALLOWABLE DAMAGE 4 - FLIGHT COMPARTMENT WINDOW FRAME NUMBER 4

1. Applicability

A. Allowable Damage 4 is applicable to damage on the flight compartment window frame number 4 as shown in Number 4 Window Frame Sections, Figure 101/ALLOWABLE DAMAGE 4.

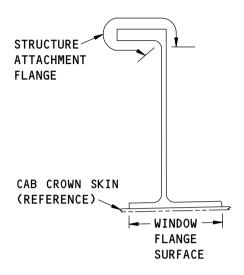


LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

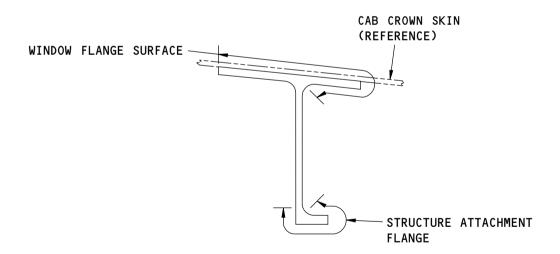
G78365 S0006593879_V2

Number 4 Window Frame Sections Figure 101 (Sheet 1 of 3)





L-W POST A-A



(ROTATED 90 ° CLOCKWISE)

M-L SILL B-B

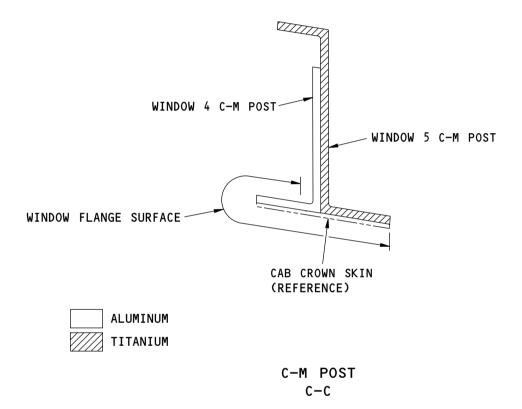
G78387 S0006593880_V2

Number 4 Window Frame Sections Figure 101 (Sheet 2 of 3)

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G78483 S0006593881_V2

Number 4 Window Frame Sections Figure 101 (Sheet 3 of 3)

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2. General

- A. Refer to Table 101/ALLOWABLE DAMAGE 4 for a list of the references for the allowable damage data.
- B. Refer to Paragraph 4./ALLOWABLE DAMAGE 4 for the allowable damage limits.

WARNING: SMALL PARTICLES OF TITANIUM ARE FLAMMABLE. IN A SUFFICIENT CONCENTRATION, AN EXPLOSION CAN OCCUR. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, HALON, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. WATER THAT TOUCHES MOLTEN TITANIUM CAN CAUSE A STEAM EXPLOSION.

- C. Refer to SOPM 20-10-07 for the machining procedures you can use when you work with titanium.
- D. Remove the damage as necessary from the sills and posts.
 - (1) Refer to 51-10-02 for inspection and removal of the damage.
 - (2) Refer to 51-30-03 for the sources of the abrasive and other materials you need to remove the damage.
 - (3) Refer to 51-30-05 for the sources of the equipment and tools you need to remove the damage.

Table 101:

PARAGRAPH REFERENCES FOR THE ALLOWABLE DAMAGE LIMITS		
WINDOW NUMBER 4 FRAME SECTIONS	PARAGRAPH	
T-W SILL	4.A	
L-W POST	4.B	
M-L SILL	4.C	
C-M POST	4.D	

- E. After you remove the damage on the parts made from titanium, do the steps that follow:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area to find the dimensions of the damage. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 14 for inspection procedures.

NOTE: The penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the penetrant inspection procedure.

- (2) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.
- F. After you remove the damage on the parts made from aluminum, make an inspection as follows:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area to find the dimensions of the damage. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 4 for inspection procedures.

NOTE: The penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the penetrant inspection procedure.

G. After you make the inspection and there is no damage, do as follows for the aluminum parts:

WARNING: MAKE SURE THAT YOU WEAR EYE PROTECTION WHEN YOU USE THE FLAP PEEN WHEEL. IF YOU DO NOT OBEY, AN INJURY CAN OCCUR.

- (1) Flap peen or shot peen the reworked areas.
 - (a) Refer to 51-20-06 for shot peen intensity and shot number.



- (b) Refer to SOPM 20-10-03 for flap peen and shot peen procedures.
- (2) Apply a chemical conversion coating to the bare surfaces of the reworked areas. Refer to 51-20-01.
- (3) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.

3. References

Reference	Title	
51-10-02 INSPECTION AND REMOVAL OF DAMAGE		
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND COMPOSITE MATERIALS	
51-20-06	SHOT PEENING	
51-30-03	NON-METALLIC MATERIALS	
51-30-05	EQUIPMENT AND TOOLS FOR REPAIRS	
AMM 56-11-00	FLIGHT COMPARTMENT WINDOWS	
SOPM 20-10-03	SHOT PEENING	
SOPM 20-10-07	Machining of Titanium	
SOPM 20-20-02	Penetrant Methods of Inspection	
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes	
737 NDT Part 6, 51-00-00, Procedure 14	Surface Inspection of Titanium and other Low Conductivity Materials(Impedance Plane or Meter Display	
737 NDT Part 6, 51-00-00, Procedure 4	Surface Inspection of Aluminum Parts (Meter Display)	

4. Allowable Damage Limits

- A. No. 4 Window, T-W Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details A, B, and D.
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
- B. No. 4 Window, L-W Post
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
- C. No. 4 Window, M-L Sill
 - (1) Cracks:

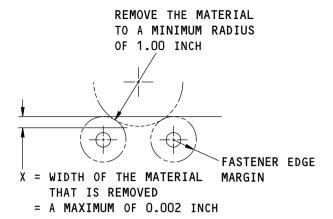
56-10-02ALLOWABLE DAMAGE 4
Page 105

Nov 10/2015



- (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details, A, B, and D.
- (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details A , B , C , D , and E .
- (3) Dents are not permitted.
- (4) Holes and Punctures are not permitted.
- D. No. 4 Window, C-M Post
 - (1) Cracks
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details, A, B, and D.
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 4, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.





REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH **FASTENER EDGE MARGIN**

X = WIDTH OF THE MATERIAL THAT IS REMOVED

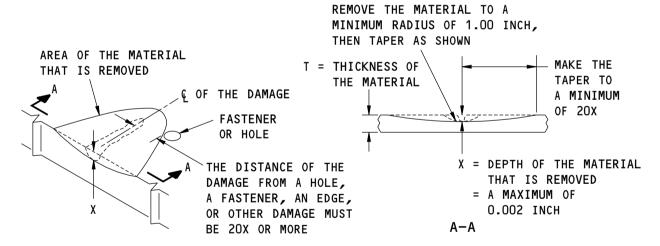
= A MAXIMUM OF 0.002 INCH

REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS DO NOT HAVE AN OVERLAP



REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP





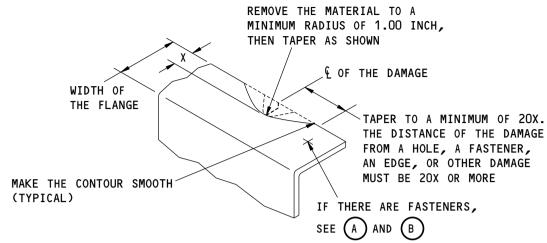
REMOVAL OF DAMAGED MATERIAL ON A SURFACE



G78366 S0006593883 V1

Allowable Damage Limits Figure 102 (Sheet 1 of 2)

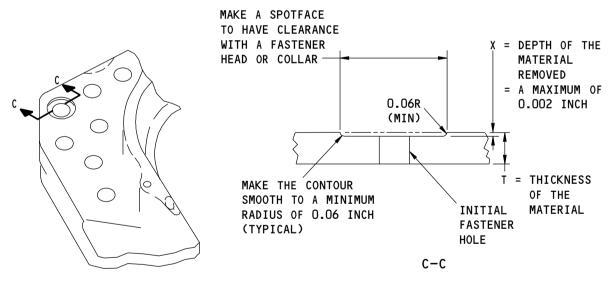




X = WIDTH OF THE MATERIAL THAT IS REMOVED = A MAXIMUM OF 0.002 INCH

REMOVAL OF DAMAGED MATERIAL ON AN EDGE





REMOVAL OF DAMAGED MATERIAL AT A FASTENER HOLE



G78372 S0006593884_V1

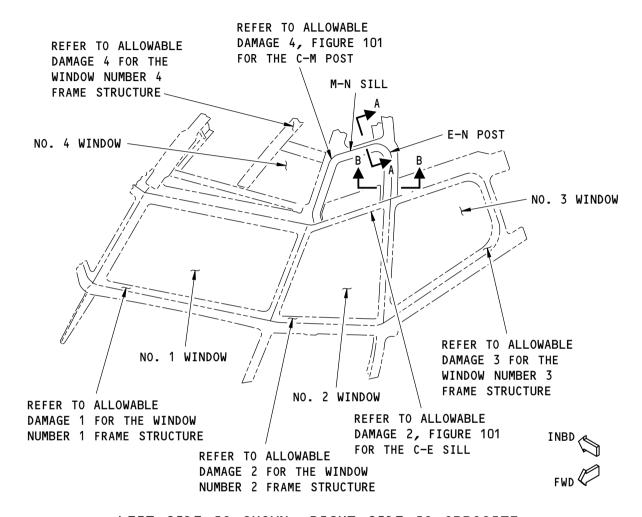
Allowable Damage Limits Figure 102 (Sheet 2 of 2)



ALLOWABLE DAMAGE 5 - FLIGHT COMPARTMENT WINDOW FRAME NUMBER 5

1. Applicability

A. Allowable Damage 5 is applicable to damage on the flight compartment window frame number 5 as shown in Number 5 Window Frame Sections, Figure 101/ALLOWABLE DAMAGE 5.

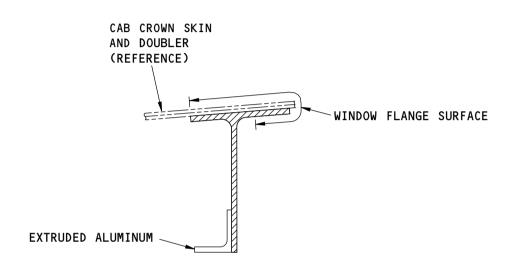


LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

G78496 S0006593886_V2

Number 5 Window Frame Sections Figure 101 (Sheet 1 of 3)





ALUMINUM TITANIUM

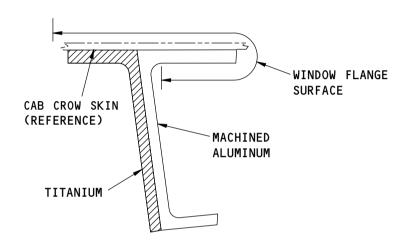
(ROTATED 90 ° COUNTERCLOCKWISE)

M-N SILL
A-A

G78509 S0006593887_V3

Number 5 Window Frame Sections Figure 101 (Sheet 2 of 3)





ALUMINUM TITANIUM

E-N POST B-B

G78529 S0006593888_V2

Number 5 Window Frame Sections Figure 101 (Sheet 3 of 3)



2. General

- A. Refer to Table 101/ALLOWABLE DAMAGE 5 for a list of the references for the allowable damage data.
- B. Refer to Paragraph 4./ALLOWABLE DAMAGE 5 for the allowable damage limits.

WARNING: SMALL PARTICLES OF TITANIUM ARE FLAMMABLE. IN A SUFFICIENT CONCENTRATION, AN EXPLOSION CAN OCCUR. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, HALON, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. WATER THAT TOUCHES MOLTEN TITANIUM CAN CAUSE A STEAM EXPLOSION.

- C. Refer to SOPM 20-10-07 for the machining procedures you can use when you work with titanium.
- D. Remove the damage as necessary for the sill and post.
 - (1) Refer to 51-10-02 for inspection and removal of the damage.
 - (2) Refer to 51-30-03 for the possible sources of the abrasive and other materials you can use to remove the damage.
 - (3) Refer to 51-30-05 for the possible sources of the equipment and tools you can use to remove the damage.

Table 101:

PARAGRAPH REFERENCES FOR THE ALLOWABLE DAMAGE LIMITS		
WINDOW NUMBER 5 FRAME SECTIONS PARAGRAPH		
M-N SILL	4.A	
E-N POST	4.B	

- E. After you remove the damage on the parts made from titanium, do the steps that follow:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area to find the dimensions of the damage. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 14 for inspection procedures.

NOTE: The penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the penetrant inspection procedure.

- (2) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.
- F. After you remove the damage on the parts made from aluminum, make an inspection as follows:
 - (1) Do a High Frequency Eddy Current (HFEC) inspection of the damaged area to find the dimensions of the damage. Refer to 51-10-02 and 737 NDT Part 6, 51-00-00, Procedure 4 for inspection procedures.

NOTE: The penetrant inspection is permitted as an alternative to the HFEC inspection. Refer to SOPM 20-20-02 for the penetrant inspection procedure.

G. After you make the inspection and there is no damage, do as follows for the aluminum parts:

<u>WARNING</u>: MAKE SURE THAT YOU WEAR EYE PROTECTION WHEN YOU USE THE FLAP PEEN WHEEL. IF YOU DO NOT OBEY, AN INJURY CAN OCCUR.

- (1) Flap peen or shot peen the reworked areas.
 - (a) Refer to 51-20-06 for shot peen intensity and shot number.
 - (b) Refer to SOPM 20-10-03 for flap peen and shot peen procedures.



- (2) Apply a chemical conversion coating to the bare surfaces of the reworked areas. Refer to 51-20-01.
- (3) Apply one layer of BMS 10-11, Type I primer to the reworked area. Refer to SOPM 20-41-02.

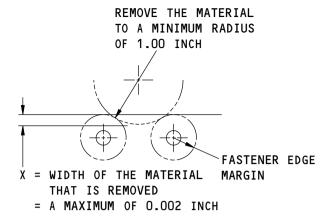
3. References

Reference	Title	
51-10-02	INSPECTION AND REMOVAL OF DAMAGE	
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND COMPOSITE MATERIALS	
51-20-06	SHOT PEENING	
51-30-03	NON-METALLIC MATERIALS	
51-30-05	EQUIPMENT AND TOOLS FOR REPAIRS	
AMM 56-11-00	FLIGHT COMPARTMENT WINDOWS	
SOPM 20-10-03	SHOT PEENING	
SOPM 20-10-07	Machining of Titanium	
SOPM 20-20-02	Penetrant Methods of Inspection	
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes	
737 NDT Part 6, 51-00-00, Procedure 14	Surface Inspection of Titanium and other Low Conductivity Materials(Impedance Plane or Meter Display	
737 NDT Part 6, 51-00-00, Procedure 4	Surface Inspection of Aluminum Parts (Meter Display)	

4. Allowable Damage Limits

- A. No. 5 Window, M-N Sill
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 5, Details A , B , and D .
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 5, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
- B. No. 5 Window, E-N Post
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 5, Details, A, B, and D.
 - (2) Nicks, Scratches, Gouges, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 102/ALLOWABLE DAMAGE 5, Details A , B , C , D , and E .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.





REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH **FASTENER** EDGE MARGIN

X = WIDTH OF THE MATERIAL THAT IS REMOVED

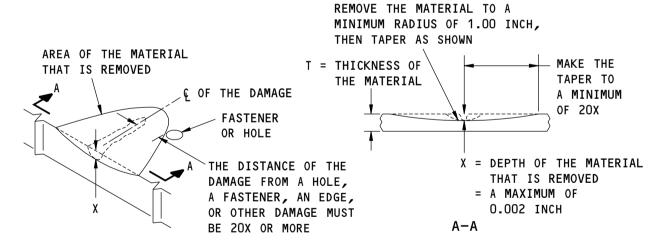
= A MAXIMUM OF 0.002 INCH

REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS DO NOT HAVE AN OVERLAP



REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP





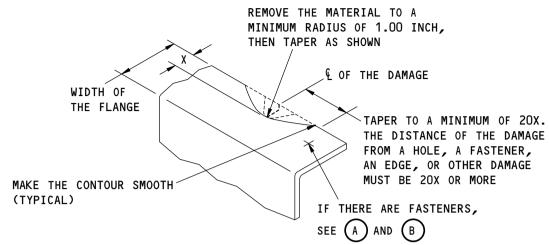
REMOVAL OF DAMAGED MATERIAL ON A SURFACE



G78511 S0006593890 V1

Allowable Damage Limits Figure 102 (Sheet 1 of 2)



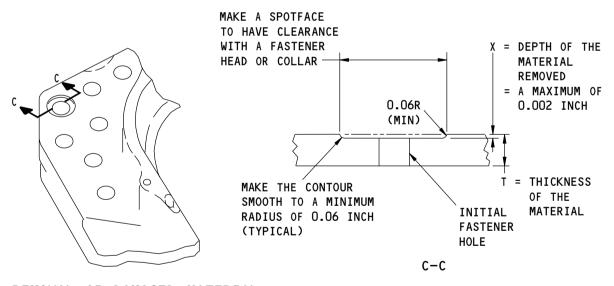


X = WIDTH OF THE MATERIAL THAT IS REMOVED

= A MAXIMUM OF 0.002 INCH

REMOVAL OF DAMAGED MATERIAL ON AN EDGE





REMOVAL OF DAMAGED MATERIAL AT A FASTENER HOLE



G78513 S0006593891_V1

Allowable Damage Limits Figure 102 (Sheet 2 of 2)



REPAIR GENERAL - SERVICE BULLETIN REPAIR CHART

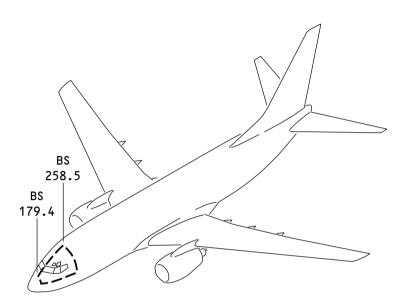
1. Service Bulletin Repair - Flight Compartment Window Structure

A. The following service bulletin contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive change data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	LINE NUMBER EFFECTIVITY	SB NUMBER
FUSELAGE - Structure Around Openings - Number 3 Window Frame - Inspection and Freeze Plug Installation	Refer to the Service Bulletin	737-53-1303
FUSELAGE - Structure Around Openings - Number 1 Window Frame Cracking - Temporary Repair	Refer to the Service Bulletin	737-53-1330
FUSELAGE - Structure Around Openings - Number 1 Window Frame - Permanent Repair	Refer to the Service Bulletin	737-53-1336
FUSELAGE - Structure Around Openings - Number 3 Window Frame - Permanent Repair	Refer to the Service Bulletin	737-53-1345



REPAIR 1 - FLIGHT COMPARTMENT WINDOW FRAMES



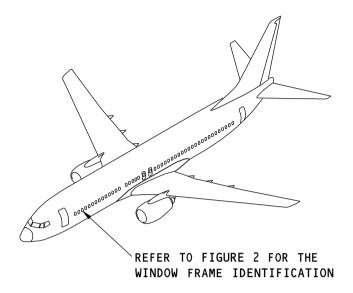
 $\underline{\text{NOTE}}\colon$ THERE ARE NO REPAIRS FOR THIS PART IN THE STRUCTURE REPAIR MANUAL AT THIS TIME.

F85946 S0006593894_V2

Flight Compartment Windows Structure Repair Figure 201



IDENTIFICATION 1 - CABIN WINDOW FRAMES



NOTE: REFER TO TABLE 1 FOR REFERENCE DRAWINGS.

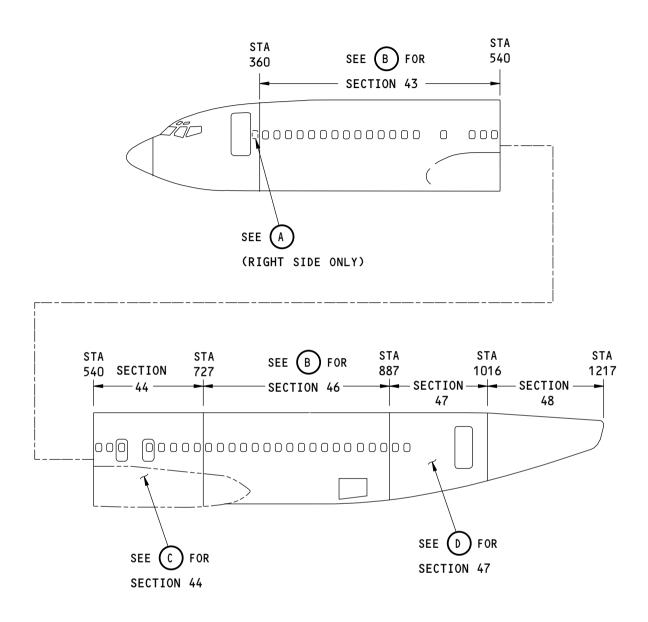
H55122 S0006593902_V1

Cabin Window Locations Figure 1 Table 1:

REFERENCE DRAWINGS		
DRAWING NUMBER TITLE		
140A4001	140A4001 Fuselage Miscellaneous Functional Collector	
149A4000 Window Installation - Passenger Cabin		

Nov 10/2012





LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

NOTES

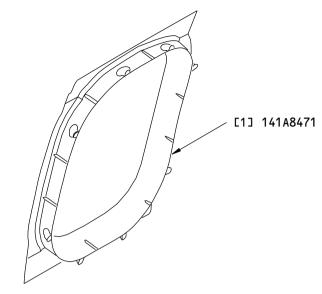
• REFERTO TABLE 2 FOR THE LIST OF MATERIALS.

H55135 S0006593908_V1

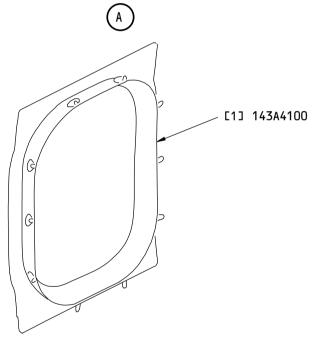
Cabin Window Frame Identification Figure 2 (Sheet 1 of 3)

56-20-02IDENTIFICATION 1





WINDOW FRAME - SECTION 41



TYPICAL WINDOW FRAME SECTIONS 43 AND 46

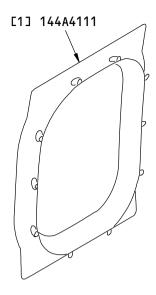


F53541 S0006593910_V1

Cabin Window Frame Identification Figure 2 (Sheet 2 of 3)

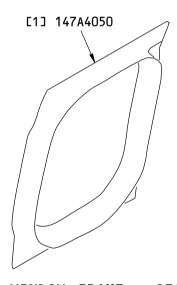
56-20-02





TYPICAL WINDOW FRAME - SECTION 44





TYPICAL WINDOW FRAME - SECTION 47



H55394 S0006593911_V1

Cabin Window Frame Identification Figure 2 (Sheet 3 of 3)

56-20-02

IDENTIFICATION 1 Page 4 Nov 10/2012



Table 2:

	LIST OF MATERIALS FOR FIGURE 2			
ITEM	DESCRIPTION	T*[1]	MATERIAL	EFFECTIVITY
[1]	Window Frame		7075-T73 die forging as given in BMS 7-186	

^{*[1]} Note: T = Pre-manufactured thickness in inches (millimeters).



ALLOWABLE DAMAGE 1 - PASSENGER CABIN WINDOW FRAMES

1. Applicability

A. This subject gives the allowable damage limits for the passenger cabin window frames shown in Cabin Window Locations, Figure 101/ALLOWABLE DAMAGE 1. Refer to Table 101 and Table 102 for the window frame permitted damage locations.

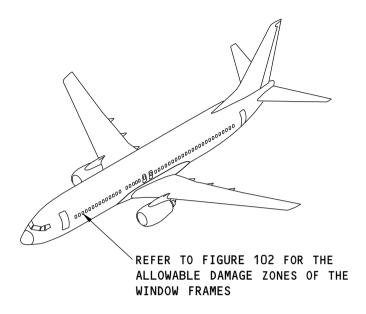
2. General

- A. Refer to Cabin Window Frame Allowable Damage Zones, Figure 102/ALLOWABLE DAMAGE 1 for the definitions of the allowable damage zones.
- B. Remove the damaged material as necessary.
 - (1) Refer to 51-10-02 for the inspection and removal of damage.
 - (2) Refer to 51-30-03 for possible sources of the abrasive and other materials you can use to remove the damage.
 - (3) Refer to 51-30-05 for possible sources of the equipment and tools you can use to remove the damage.
 - (4) For airplanes that have completed Service Bulletin 737-21-1149, no more than 10 percent of the initial area of the cross-section can be removed from the window frame. Use the nominal thickness on the production drawing to calculate the initial area.
 - (5) For airplanes that have not completed Service Bulletin 737-21-1149, no more than 15 percent of the initial area of the cross-section can be removed from the window frame. Use the nominal thickness on the production drawing to calculate the initial area.
- C. After the damage is removed, do the steps that follow:
 - (1) To all lightning strike damage areas, do a conductivity inspection of the damaged areas as given in 737 NDT Part 6, 51-00-00, Procedure 3.
 - (a) Do a conductive test and heat evaluation as given in 51-20-02, GENERAL and 51-20-03, GENERAL.
 - (b) Make sure that there is a minimum surface finish of 63 microinches Ra to all locations.

WARNING: MAKE SURE THAT YOU WEAR EYE PROTECTION WHEN YOU SHOT PEEN. IF YOU DO NOT OBEY. AN INJURY CAN OCCUR.

- (2) Flap peen or shot peen the reworked areas.
 - (a) Refer to 51-20-06 for shot peen intensity and shot number.
 - (b) Refer to SOPM 20-10-03 for flap peen and shot peen procedures.
- (3) Apply a chemical conversion coating to the reworked areas. Refer to 51-20-01.
- (4) Apply two layers of BMS 10-11, Type I primer to the reworked areas. Refer to SOPM 20-41-02.



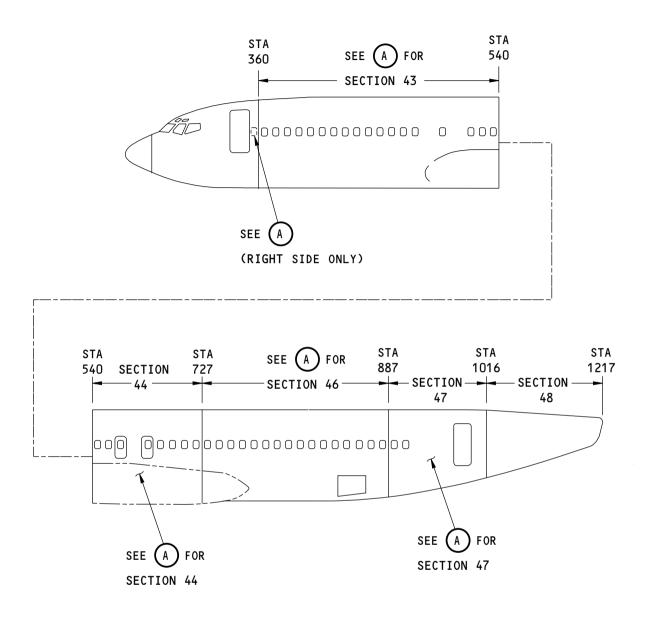


H59738 S0006593916_V1

Cabin Window Locations Figure 101

56-20-02ALLOWABLE DAMAGE 1
Page 102
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NOTE: REFER TO TABLE 101 FOR THE ALLOWABLE DAMAGE LIMITS.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

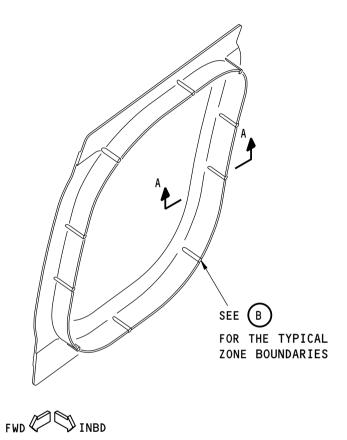
H59742 S0006593923_V1

Cabin Window Frame Allowable Damage Zones Figure 102 (Sheet 1 of 3)

56-20-02 ALLOWABLE DAMAGE 1 Page 103

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TYPICAL WINDOW FRAME



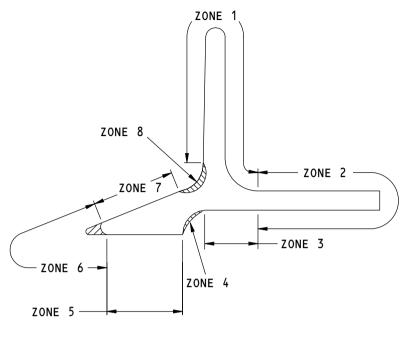
F56604 S0006593924_V1

Cabin Window Frame Allowable Damage Zones Figure 102 (Sheet 2 of 3)

56-20-02

ALLOWABLE DAMAGE 1
Page 104
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PARAGRAPH REFERENCES FOR THE ALLOWABLE DAMAGE LIMITS		
ZONE	PARAGRAPH	
ZONE 1	4 . A	
ZONE 2	4 . A	
ZONE 3	4.B	
ZONE 4	4.C	
ZONE 5	4.B	
ZONE 6	4.D	
ZONE 7	4.B	
ZONE 8	4.E	

TABLE 101

F56748 S0006593926_V1

Cabin Window Frame Allowable Damage Zones Figure 102 (Sheet 3 of 3)

56-20-02

ALLOWABLE DAMAGE 1
Page 105
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3. References

Reference	Title
51-10-01	AERODYNAMIC SMOOTHNESS
51-10-02	INSPECTION AND REMOVAL OF DAMAGE
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND COMPOSITE MATERIALS
51-20-02, GENERAL	Heat Treat Verification - Hardness and Conductivity Testing
51-20-03, GENERAL	Heat Damage Analysis
51-20-06	SHOT PEENING
51-30-03	NON-METALLIC MATERIALS
51-30-05	EQUIPMENT AND TOOLS FOR REPAIRS
AMM 56-21-00 P/B 401	PASSENGER CABIN WINDOWS - REMOVAL/INSTALLATION
SOPM 20-10-03	SHOT PEENING
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes
737 NDT Part 6, 51-00-00, Procedure 3	Investigation of Fire Damage on Aircraft Structure

4. Allowable Damage Limits

- A. Zones 1 and 2:
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details A , B , E , and F .
 - (2) Nicks, Gouges, Scratches, and Corrosion are permitted as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details A , B , C , D , E , and F .
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
- B. Zones 3, 5, and 7:
 - (1) Cracks are not permitted.
 - (2) Nicks, Gouges, Scratches, and Corrosion are permitted as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details C and F.
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
 - (5) Lightning Strike damage is permitted as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details C and F.
- C. Zone 4:
 - (1) Cracks are not permitted.
 - (2) Nicks, Gouges, Scratches, and Corrosion are permitted as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details C and F.
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
- D. Zone 6:
 - (1) Cracks:

56-20-02

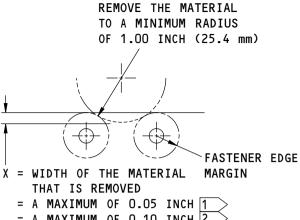


- (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details E and F.
- (2) Nicks, Gouges, Scratches, and Corrosion are permitted as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details C , E , and F .
- (3) Dents are not permitted.
- (4) Holes and Punctures are not permitted.

E. Zone 8:

- (1) Cracks are not permitted.
- (2) Nicks, Gouges, Scratches, and Corrosion are permitted as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details C and F.
- (3) Dents are not permitted.
- (4) Holes and Punctures are not permitted.





REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH (25.4 mm) **FASTENER** EDGE MARGIN X = WIDTH OF THE MATERIAL

THAT IS REMOVED

= A MAXIMUM OF 0.05 INCH 1 = A MAXIMUM OF 0.10 INCH 2

= A MAXIMUM OF 0.10 INCH 2

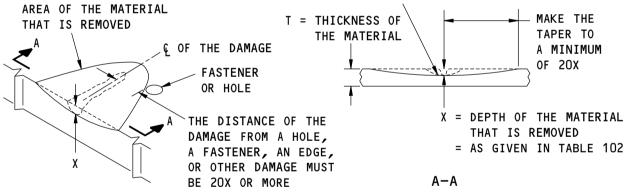
REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS DO NOT HAVE AN OVERLAP



REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP



REMOVE THE MATERIAL TO A MINIMUM RADIUS OF 1.00 INCH, THEN TAPER AS SHOWN



REMOVAL OF DAMAGED MATERIAL ON A SURFACE

NOTES

- 1 > FOR AIRPLANES THAT HAVE COMPLETED SERVICE BULLETIN 737-21-1149.
- FOR AIRPLANES THAT HAVE NOT COMPLETED SERVICE BULLETIN 737-21-1149

400700 S0000136522 V1

MAKE THE

TAPER TO

A MINIMUM OF 20X

Allowable Damage Limits Figure 103 (Sheet 1 of 3)

56-20-02



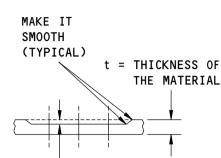
THE REMOVAL OF MATERIAL AROUND THREE FASTENERS IN A GROUP OF TEN IS PERMITTED TO A DEPTH OF X MAXIMUM

REMOVE THE MATERIAL TO
A 0.50 INCH (12.7 mm)
RADIUS MINIMUM
(TYPICAL)

REMOVE THE INITIAL FASTENERS
BEFORE THE DAMAGED MATERIAL
IS REMOVED. INSTALL THE SAME

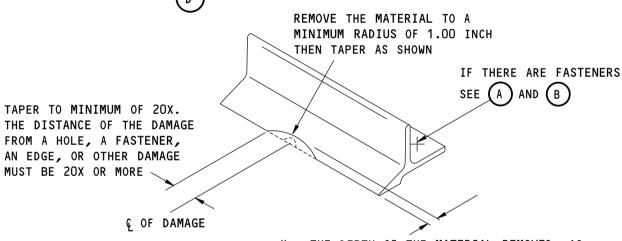
BEFORE THE DAMAGED MATERIAL IS REMOVED. INSTALL THE SAME TYPE AND SIZE (UP TO THE FIRST OVERSIZE) FASTENERS AFTER THE REWORK IS COMPLETED

REMOVAL OF CORROSION AROUND THE FASTENERS



X = THE DEPTH OF THE
 MATERIAL REMOVED
= AS GIVEN IN TABLE 102

В-В



X = THE DEPTH OF THE MATERIAL REMOVED, AS GIVEN IN TABLE 102

SEE F FOR THE LOCATION OF DAMAGE REMOVAL

NOTE: THE REMOVAL OF THE DAMAGE SHOWN IS APPLICABLE TO ALL FLANGES OF THE PART.

REMOVAL OF DAMAGE MATERIAL AT AN EDGE

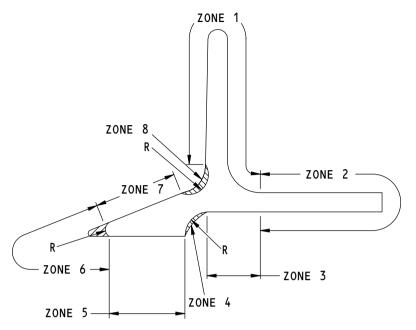
E

409648 S0000136523 V1

Allowable Damage Limits Figure 103 (Sheet 2 of 3)

56-20-02





NOTE: REFER TO TABLE 102.

REMOVAL OF MATERIAL FROM THE FRAME



MAXIMUM	TOTAL DEPTH	OF MATERIA	L REMOVAL (X)
ZONE	(X)2	(X) 1	RADIUS (R)
ZONE 1	0.031	0.015	
ZONE 2	0.031	0.015	
ZONE 3	0.020	0.010	
ZONE 4	0.020	0.010	0.12 MINIMUMUM 0.25 MAXIMUM
ZONE 5	0.015	0.008	
ZONE 6	0.062	0.031	0.06 MINIMUM
ZONE 7	0.015	0.008	
ZONE 8	0.020	0.010	0.25 MINIMUM

TABLE 102

NOTE: ALL DIMENSIONS ARE IN INCHES.

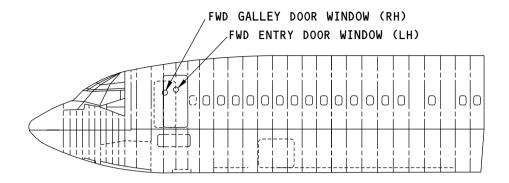
400701 S0000136525_V2

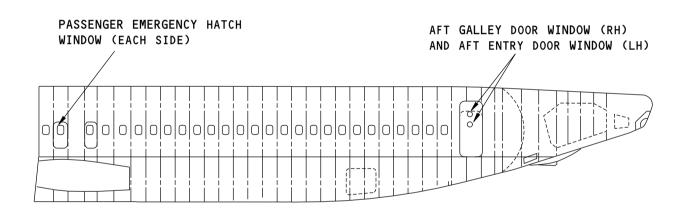
Allowable Damage Limits Figure 103 (Sheet 3 of 3)

56-20-02



IDENTIFICATION GENERAL - DOOR WINDOW LOCATIONS





L13943 S0006593949 V1

Door Window Location Diagram Figure 1

Table 1:

	REFERENCE DRAWINGS				
DRAWING NUMBER TITLE					
001A0101	Final Assembly - Product Collector				
001A4001	Fuselage Product Collector				
141A6100	Forward Entry Door-Assembly, Functional Product Collector				
141A6200	Window Installation - Forward Entry Door				
140A0030	140A0030 Functional Collector - FWD Galley Door				
141A6500	141A6500 Door Installation - FWD Galley				
141A6516	Door Assembly - FWD Galley				

56-30-00

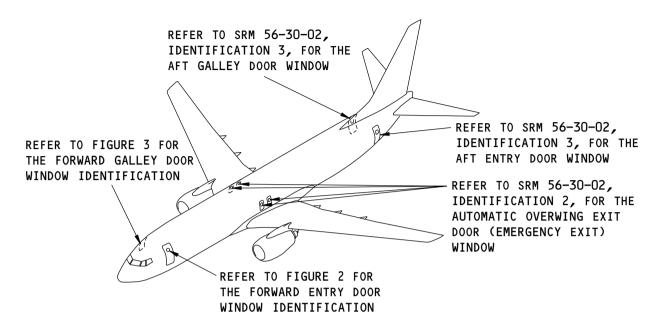


Table 1: (Continued)

REFERENCE DRAWINGS					
DRAWING NUMBER	DRAWING NUMBER TITLE				
140A0070	Functional Collector - Aft Entry Door				
147A6500	Door Installation - Aft Entry				
147A6116	Door Assembly - Aft Entry				
140A0080	Functional Collector - Aft Galley Door				
147A6500	Door Installation - Aft Galley				
147A6502	Door Assembly - Aft Galley				
65-02863	Window Assembly - Observation, 5 Inch Diameter				
144A6300	Emergency Escape Hatch Functional Product Collector				
144A6360	Window Installation - Emergency Escape Hatch				



IDENTIFICATION 1 - FORWARD ENTRY AND FORWARD GALLEY DOORS



NOTE: REFER TO TABLE 1 FOR THE REFERENCE DRAWINGS.

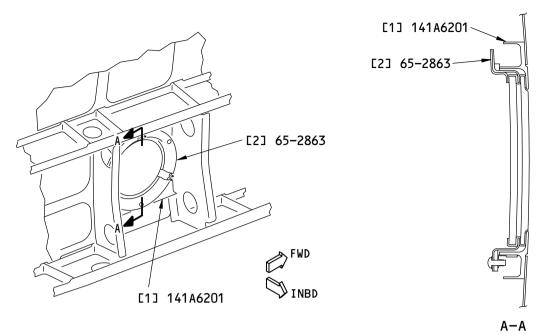
K18745 S0006593956 V1

Forward Door Window Frame Locations Figure 1

_				_
т	`	h		4
- 1	а	u	16	-

REFERENCE DRAWINGS					
DRAWING NUMBER TITLE					
140A0030	Functional Collector - Forward Galley Door				
141A6100 Forward Entry Door-Assembly, Functional Product Collector					
141A6200	Forward Entry Door Window Installation				
141A6500	141A6500 Door Installation - Forward Galley				
141A6516	Forward Galley Door Assembly				





NOTE: REFER TO TABLE 2 FOR THE LIST OF MATERIALS.

F61738 S0006593959_V1

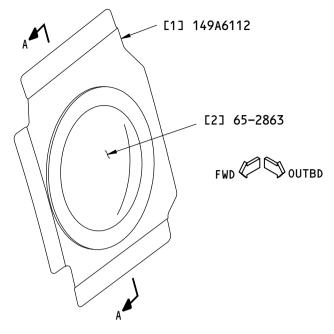
Forward Entry Door Window Frame Identification Figure 2

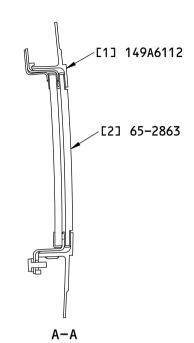
Table 2:

	LIST OF MATERIALS FOR FIGURE 2					
ITEM	ITEM DESCRIPTION T ^{*[1]} MATERIAL EFFECTIVITY					
[1]	Frame		7050-T7451 plate			
[2]	Window Assembly					
	Inner Pane	0.250 (6.35)	Stretched acrylic sheet as given in BMS 8-34 Type II, Class 2, Grade B			
	Outer Pane	0.250 (6.35)	Stretched acrylic sheet as given in MIL-P-25690, Class 2			

^{*[1]} Note: T = Pre-manufactured thickness in inches (millimeters).







NOTE: REFER TO TABLE 3 FOR THE LIST OF MATERIALS.

F61767 S0006593961_V1

Forward Galley Door Window Frame Identification Figure 3

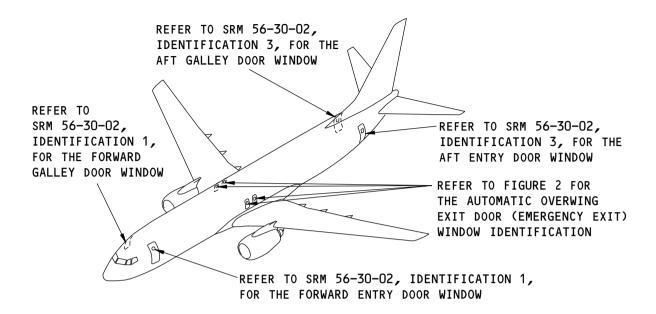
Table 3:

	LIST OF MATERIALS FOR FIGURE 3					
ITEM	ITEM DESCRIPTION T ^{*[1]} MATERIAL EFFECT					
[1]	Window Doubler		7075-T73 die forging as given in BMS 7-186			
[2]	Window Assembly					
	Inner Pane	0.250 (6.35)	Stretched acrylic sheet as given in BMS 8-34 Type II, Class 2, Grade B			
	Outer Pane	0.250 (6.35)	Stretched acrylic sheet as given in MIL-P-25690, Class 2			

^{*[1]} Note: T = Pre-manufactured thickness in inches (millimeters).



IDENTIFICATION 2 - AUTOMATIC OVERWING EXIT DOOR WINDOW FRAMES



NOTE: REFER TO TABLE 1 FOR THE REFERENCE DRAWINGS.

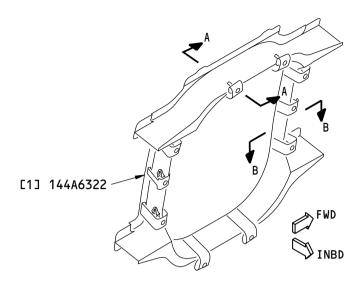
K18748 S0006593965 V1

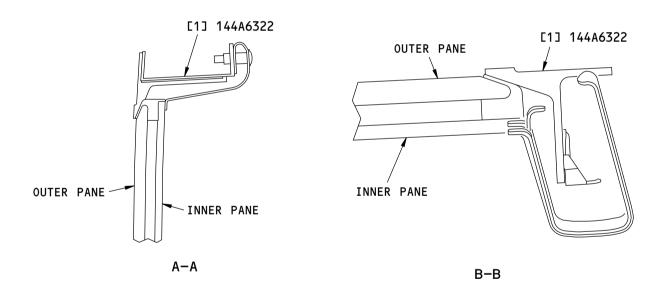
Automatic Overwing Exit Door Window Frame Locations Figure 1

Table 1:

REFERENCE DRAWINGS						
DRAWING NUMBER TITLE						
001A0101	Final Assembly - Product Collector					
144A6300 Emergency Escape Hatch and Automatic Overwing Exit - Functional Product Collector						
144A6320	144A6320 Beam And Stop Installation - Emergency Escape Hatch					







NOTE: REFER TO TABLE 2 FOR THE LIST OF MATERIALS.

F61860 S0006593968_V1

Automatic Overwing Exit Door Window Frame Identification Figure 2

56-30-02



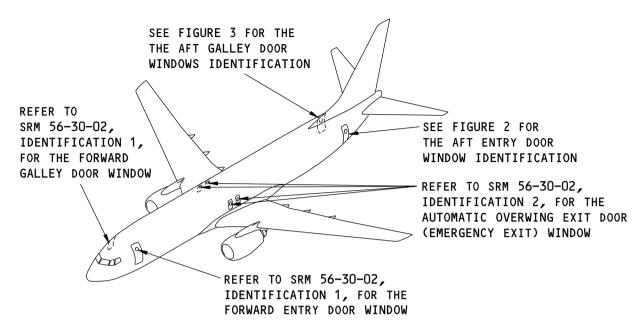
Table 2:

	LIST OF MATERIALS FOR FIGURE 2				
ITEM	ITEM DESCRIPTION T*[1] MATERIAL EFFECTIVITY				
[1]	Frame		7050-T7451 plate as given in AMS 4050 (Grain direction controlled part)		

^{*[1]} Note: T = Pre-manufactured thickness in inches (millimeters).



IDENTIFICATION 3 - AFT DOOR WINDOW FRAMES



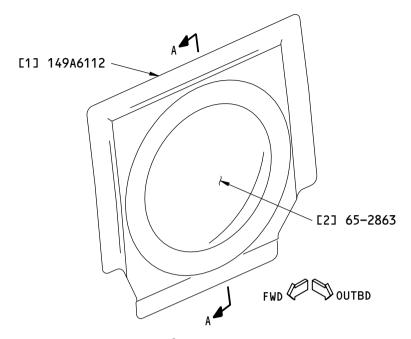
NOTE: REFER TO TABLE 1 FOR THE REFERENCE DRAWINGS.

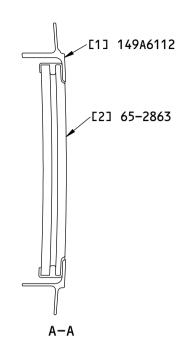
K18751 S0006593972 V1

Aft Door Window Frame Location Figure 1 Table 1:

	REFERENCE DRAWINGS					
DRAWING NUMBER TITLE						
140A0070	Functional Collector - Aft Entry Door					
140A0080	Functional Collector - Aft Galley Door					
147A6100	Door Installation - Aft Entry					
147A6500	Door Installation - Aft Galley					
147A6116	Aft Entry Door Window Assembly					
147A6502	Aft Galley Door Window Assembly					







NOTE: REFER TO TABLE 2 FOR THE LIST OF MATERIALS.

F61771 S0006593975_V1

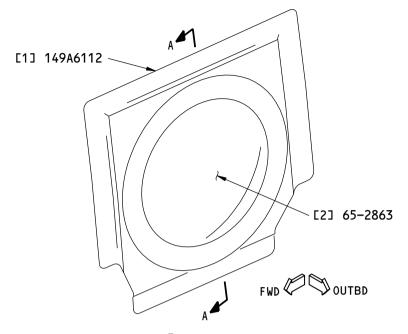
Aft Entry Door Window Frame Identification Figure 2

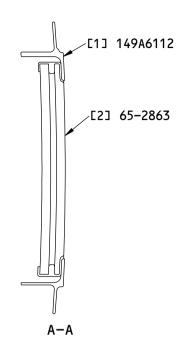
Table 2:

	LIST OF MATERIALS FOR FIGURE 2					
ITEM	ITEM DESCRIPTION T ^{*[1]} MATERIAL E					
[1]	Window Doubler		7075-T73 die forging as given in BMS 7-186			
[2]	Window Assembly					
	Inner Pane	0.250 (6.35)	Stretched acrylic sheet as given in BMS 8-34 Type II, Class 2, Grade B			
	Outer Pane	0.250 (6.35)	Stretched acrylic sheet as given in MIL-P-25690, Class 2			

^{*[1]} Note: T = Pre-manufactured thickness in inches (millimeters).







NOTE: REFER TO TABLE 3 FOR THE LIST OF MATERIALS.

G41345 S0006593977_V1

Aft Galley Door Window Frame Identification Figure 3

Table 3:

	LIST OF MATERIALS FOR FIGURE 3					
ITEM	ITEM DESCRIPTION T*[1] MATERIAL EFFECT					
[1]	Window Doubler		7075-T73 die forging as given in BMS 7-186			
[2]	Window Assembly					
	Inner Pane	0.250 (6.35)	Stretched acrylic sheet as given in BMS 8-34 Type II, Class 2, Grade B			
	Outer Pane	0.250 (6.35)	Stretched acrylic sheet as given in MIL-P-25690, Class 2			

^{*[1]} Note: T = Pre-manufactured thickness in inches (millimeters).



ALLOWABLE DAMAGE 1 - DOOR WINDOW STRUCTURE

1. Applicability

A. This subject gives the allowable damage limits for the door window structure shown in Door Window Frame Structure, Figure 101/ALLOWABLE DAMAGE 1.

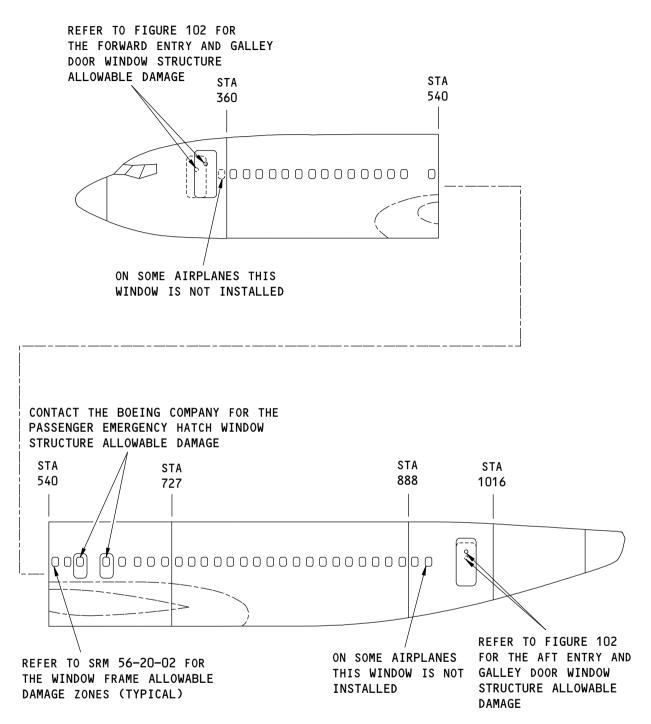
2. General

- A. Refer to Door Window Frame Structure Allowable Damage Area, Figure 102/ALLOWABLE DAMAGE 1 for the definitions of the allowable damage zones.
- B. Refer to Table A. for a list of the paragraph references for the allowable damage data.
- C. Remove the damaged material as necessary.
 - (1) Refer to 51-10-02 for the inspection and removal of damage.
 - (2) Refer to 51-30-03 for the possible sources of the abrasive and other materials you need to remove the damage.
 - (3) Refer to 51-30-05 for possible sources of the equipment and tools you need to remove damage.
 - (4) For airplanes that have completed Service Bulletin 737-21-1149, the total loss in cross sectional area of the window frame must not be more than 10 percent of the initial cross sectional area.
 - (5) For airplanes that have not completed Service Bulletin 737-21-1149, the total loss in cross sectional area of the window frame must not be more than 15 percent of the initial cross sectional area.
- D. After the damage is removed, do the steps that follow:

WARNING: MAKE SURE THAT YOU WEAR EYE PROTECTION WHEN YOU SHOT PEEN. IF YOU DO NOT OBEY, AN INJURY CAN OCCUR.

- (1) Shot peen the reworked areas.
 - (a) Refer to 51-20-06 for shot peen intensity and shot number.
 - (b) Refer to SOPM 20-10-03 for shot peen procedures.
- (2) Apply a chemical conversion coating to the reworked areas. Refer to 51-20-01.
- (3) Apply two layers of BMS 10-11, Type I primer to the reworked areas. Refer to SOPM 20-41-02.





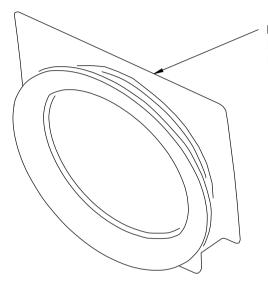
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

H79281 S0006593989_V2

Door Window Frame Structure Figure 101

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REFER TO TABLE A FOR THE CABIN WINDOW FRAME ALLOWABLE DAMAGE

FWD S

TYPICAL WINDOW FRAME



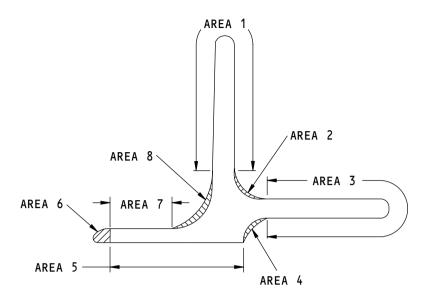
H19640 S0006593991_V1

Door Window Frame Structure Allowable Damage Area Figure 102 (Sheet 1 of 2)

56-30-02

ALLOWABLE DAMAGE 1 Page 103 Nov 10/2012





A-A

PARAGRAPH REF	FERENCES FOR	
	DAMAGE LIMITS	
AREA	PARAGRAPH	
AREA 1	4 . A	
AREA 2	4.B	
AREA 3	4.C	
AREA 4	4.B	
AREA 5	4.D	
AREA 6	4.E	
AREA 7	4.F	
AREA 8	4.B	

TABLE A

H19355 S0006593992_V1

Door Window Frame Structure Allowable Damage Area Figure 102 (Sheet 2 of 2)

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ALLOWABLE DAMAGE 1
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3. References

Reference Title	
51-10-01	AERODYNAMIC SMOOTHNESS
51-10-02	INSPECTION AND REMOVAL OF DAMAGE
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND COMPOSITE MATERIALS
51-20-06	SHOT PEENING
51-30-03	NON-METALLIC MATERIALS
51-30-05	EQUIPMENT AND TOOLS FOR REPAIRS
SOPM 20-10-03	SHOT PEENING
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes

4. Allowable Damage Limits

- A. Area 1:
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details A , B , E , and F .
 - (2) Nicks, Gouges, Scratches, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details A , B , C , E , and F if:
 - 1) The damage is not more than 0.60 inch (15.2 mm) in length.
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
- B. Areas 2, 4, and 8:
 - (1) Cracks are not permitted.
 - (2) Nicks, Gouges, Scratches, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details C and F if:
 - 1) The damage is not more than 0.20 inch (5.1 mm) in length parallel to a window cutout
 - 2) You keep a minimum radius of:
 - a) 0.12 inch (3.05 mm) in Area 2
 - b) 0.12 inch (3.05 mm) in Area 4
 - c) 0.19 inch (4.8 mm) in Area 8.
 - (3) Dents are not permitted.
 - (4) Holes and Punctures are not permitted.
- C. Area 3:
 - (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details A , B , E , and F .
 - (2) Nicks, Gouges, Scratches, and Corrosion:

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- (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details A , B , C , D , E , and F if:
 - 1) The damage is not more than 0.60 inch (15.2 mm) in length.
- (3) Dents are not permitted.
- (4) Holes and Punctures are not permitted.

D. Areas 5:

- (1) Cracks are not permitted.
- (2) Nicks, Gouges, Scratches, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Detail C .

NOTE: If material is removed from both Area 5 and Area 7, the total material removed cannot be more than the value given in Table B.

- (3) Dents are not permitted.
- (4) Holes and Punctures are not permitted.

E. Area 6:

- (1) Cracks:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details E and F.
- (2) Nicks, Gouges, Scratches, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Details C , E , and F if:
 - 1) You keep a 0.060 inch (1.52 mm) radius on all edges.
- (3) Dents are not permitted.
- (4) Holes and Punctures are not permitted.

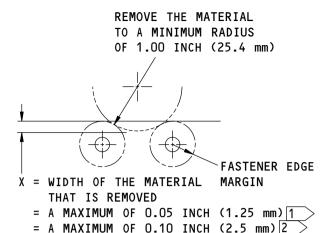
F. Area 7:

- (1) Cracks are not permitted.
- (2) Nicks, Gouges, Scratches, and Corrosion:
 - (a) Remove the damage as shown in Allowable Damage Limits, Figure 103/ALLOWABLE DAMAGE 1, Detail C and F.

NOTE: If material is removed from both Area 5 and Area 7, the total material removed cannot be more than the value given in Table B.

- (3) Dents are not permitted.
- (4) Holes and Punctures are not permitted.





REMOVE THE MATERIAL
TO A MINIMUM RADIUS
OF 1.00 INCH 25.4 mm)

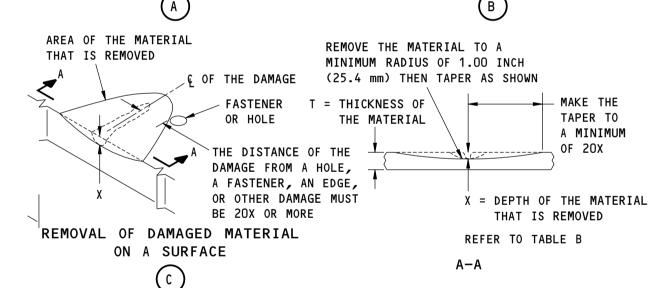
FASTENER
EDGE MARGIN

X = WIDTH OF THE MATERIAL THAT IS REMOVED

= A MAXIMUM OF 0.05 INCH (1.25 mm) 1 = A MAXIMUM OF 0.10 INCH (2.5 mm) 2

REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS DO NOT HAVE AN OVERLAP

REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP



NOTES

- ALL DIMENSIONS ARE IN INCHES (mm).
- FOR AIRPLANES THAT HAVE COMPLETED SERVICE BULLETIN 737-21-1149.

 FOR AIRPLANES THAT HAVE NOT COMPLETED SERVICE BULLETIN 737-21-1149.

 YOU ARE PERMITTED TO REMOVE THE MATERIAL IN THE RADIUS AREA UP TO A MAXIMUM RADIUS OF 0.25 INCH (6.35 mm).

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Allowable Damage Limits Figure 103 (Sheet 1 of 3)

56-30-02



THE REMOVAL OF MATERIAL AROUND THREE FASTENERS IN A GROUP OF TEN IS PERMITTED TO A DEPTH OF X MAXIMUM

REMOVE THE MATERIAL TO
A 0.50 INCH (12.7 mm)
RADIUS MINIMUM
(TYPICAL)

INITIAL FASTENERS

REMOVE THE INITIAL FASTENERS
BEFORE THE DAMAGED MATERIAL
IS REMOVED. INSTALL THE SAME
TYPE AND SIZE (UP TO THE FIRST
OVERSIZE) FASTENERS AFTER THE
REWORK IS COMPLETED

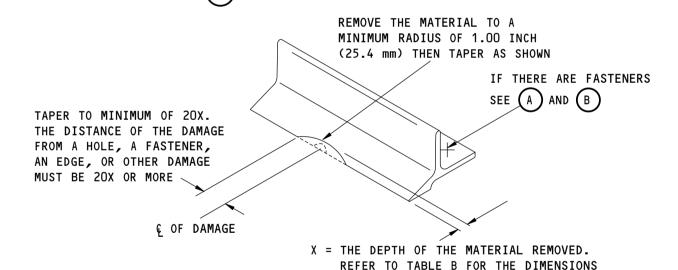
REMOVAL OF CORROSION AROUND THE FASTENERS

MAKE IT
SMOOTH
(TYPICAL)

T = THICKNESS OF
THE MATERIAL

X = THE DEPTH OF THE MATERIAL REMOVED REFER TO TABLE B

B-B



NOTE: THE REMOVAL OF THE DAMAGE SHOWN IS APPLICABLE TO ALL FLANGES OF THE PART.

REMOVAL OF DAMAGE MATERIAL AT AN EDGE

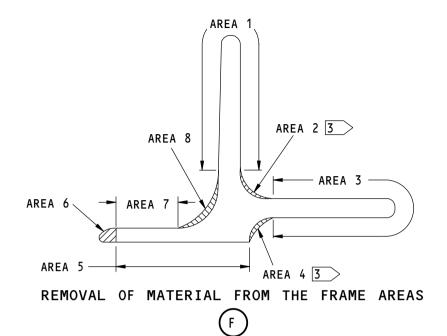


409474 S0000136533 V1

Allowable Damage Limits Figure 103 (Sheet 2 of 3)

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MAXIMUM TOTAL DEPTH OF MATERIAL REMOVAL (X)				
(X) [1>	(χ) 2	MINIMUM PERMITTED THICKNESS 1	MINIMUM PERMITTED THICKNESS 2	
0.005 (0.13)	0.011 (0.28)	0.060 (1.52)	0.060 (1.52)	
0.007 (0.18)	0.015 (0.38)	0.060 (1.52)	0.060 (1.52)	
0.005 (0.13)	0.011 (0.28)	0.060 (1.52)	0.060 (1.52)	
0.007 (0.18)	0.015 (0.38)	0.060 (1.52)	0.060 (1.52)	
0.006 (0.15)	0.013 (0.33)	0.075 (1.91)	0.073 (1.85)	
0.031 (0.79)	0.062 (1.6)	0.075 (1.91)	0.073 (1.85)	
0.006 (0.15)	0.013 (0.33)	0.075 (1.91)	0.073 (1.85)	
0.007 (0.18)	0.015 (0.38)	0.075 (1.91)	0.073 (1.85)	
	(X) 1 0.005 (0.13) 0.007 (0.18) 0.005 (0.13) 0.007 (0.18) 0.006 (0.15) 0.031 (0.79) 0.006 (0.15)	(X) (X) (Z) 0.005 (0.13) 0.011 (0.28) 0.007 (0.18) 0.015 (0.38) 0.005 (0.13) 0.011 (0.28) 0.007 (0.18) 0.015 (0.38) 0.006 (0.15) 0.013 (0.33) 0.031 (0.79) 0.062 (1.6) 0.006 (0.15) 0.013 (0.33)	(X) (

TABLE B

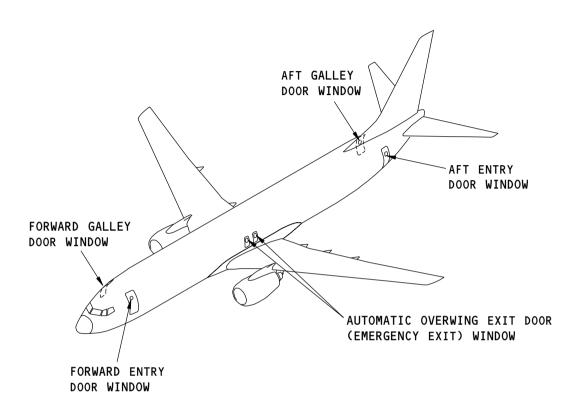
W32835 S0000136534_V1

Allowable Damage Limits Figure 103 (Sheet 3 of 3)

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REPAIR 1 - DOOR WINDOW STRUCTURE



NOTE: THERE ARE NO REPAIRS FOR THE DOOR WINDOW STRUCTURE IN THE STRUCTURAL REPAIR MANUAL AT THIS TIME.

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Door Window Structure Location Figure 201