



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

SURFACE INSPECTION OF THE STOP STRAPS AT STRINGERS S-7 THRU S-16 AT THE FORWARD EDGE FRAME OF THE FORWARD ENTRY DOOR (HFEC)

1. Purpose

- A. Use this procedure to help find surface cracks in the stop straps at stringers S-7 thru S-16 at the forward edge frame of the forward entry door. See Figure 1 for the inspection area.
- B. 737 Maintenance Planning Document (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-10-14-8 for S-7 thru S-14
 - (2) Item: 53-10-14-9 for S-15 and S-16

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00 for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency range of 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Nortec 1000; Staveley (Olympus)
 - (b) Locator 2d; Hocking (General Electric)
- C. Probes
 - (1) A shielded, right-angle probe is necessary to use to do this inspection.
 - (2) Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C, for data about probe selection.
 - (3) The probe that follows was used to help prepare this procedure.
 - (a) MTF905-50; NDT Engineering Corp (Olympus)
- D. Reference Standards
 - (1) Use reference standard 188A, or an equivalent, as given in Part 6, 51-00-00, Procedure 23, paragraph 3.D.

3. Prepare for the Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Lightly sand rough surfaces and sharp edges of chipped paint to make the inspection surfaces smooth.
- C. Fully clean the inspection area.

4. Instrument Calibration

- A. Calibrate the equipment as specified in Part 6, 51-00-00, Procedure 23, paragraph 5. Use reference standard 188A, or an equivalent, for the calibration.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-01



737
NON-DESTRUCTIVE TEST MANUAL

5. Inspection Procedure

- A. Examine the stop straps for cracks at the fastener locations shown in Figure 1.
 - (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 6, for the inspection procedure.
 - (2) Use the fastener heads as probe guides to move the probes around the fasteners.
 - (3) For MPD Item 53-10-14-8, examine around the fastener heads shown in Figure 1 from stringers S-7 thru S-14 at the forward edge frame of the forward entry door.
 - (4) For MPD Item 53-10-14-9, examine around the fastener heads shown in Figure 1 at stringers S-15 and S-16 at the forward edge frame of the forward entry door.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of indications that occur during the inspection.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-01

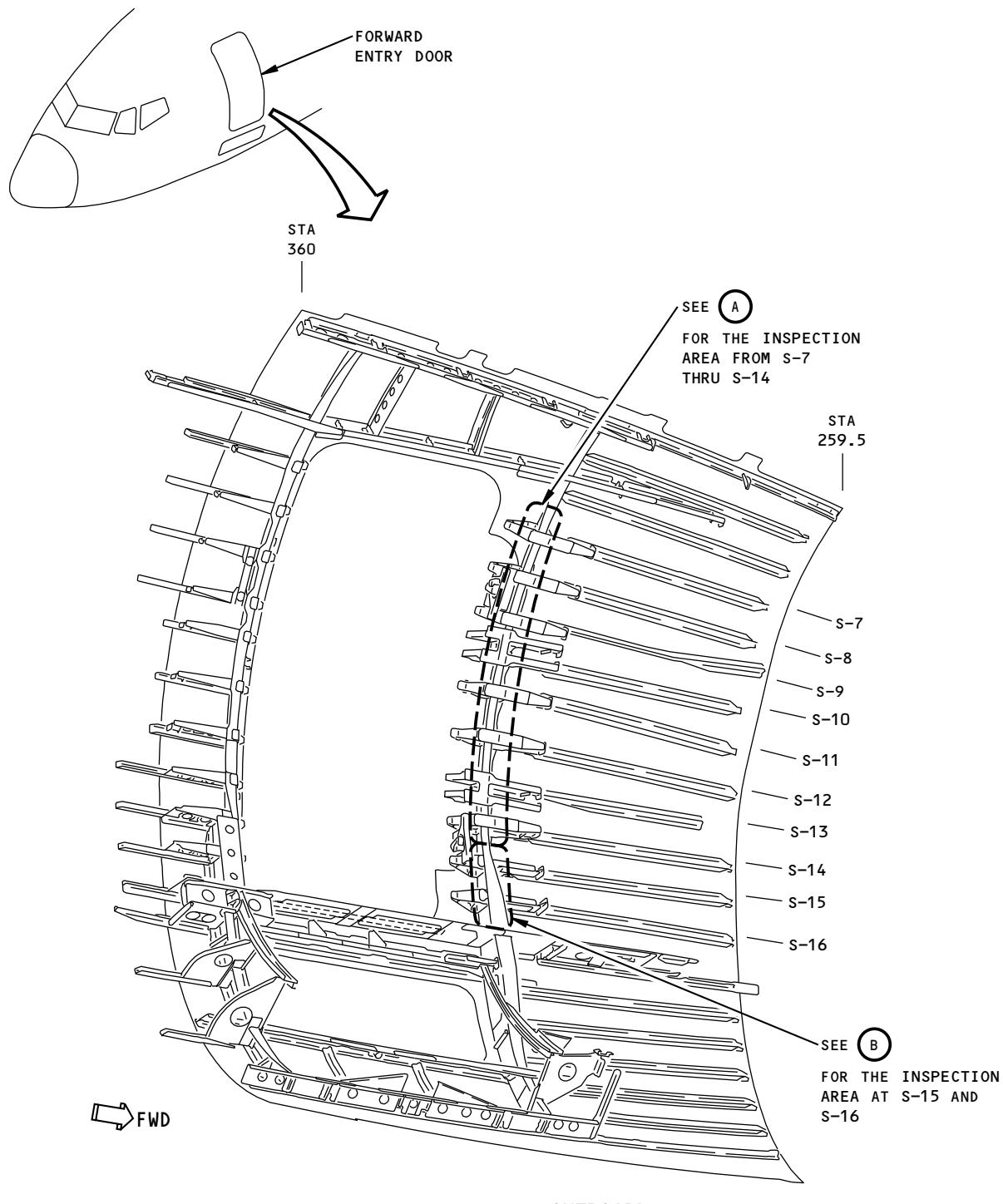
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



2216689 S0000494712_V1

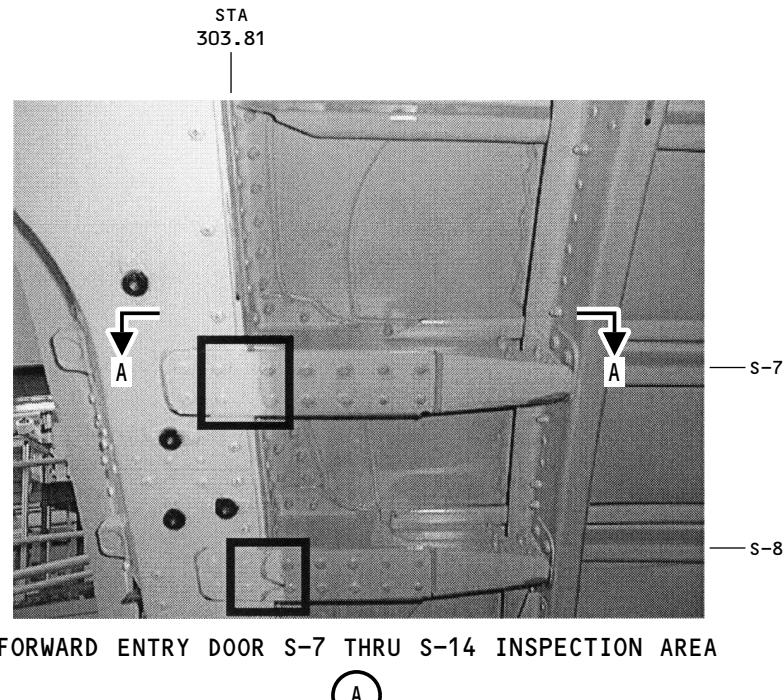
Inspection Area
Figure 1 (Sheet 1 of 3)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-01

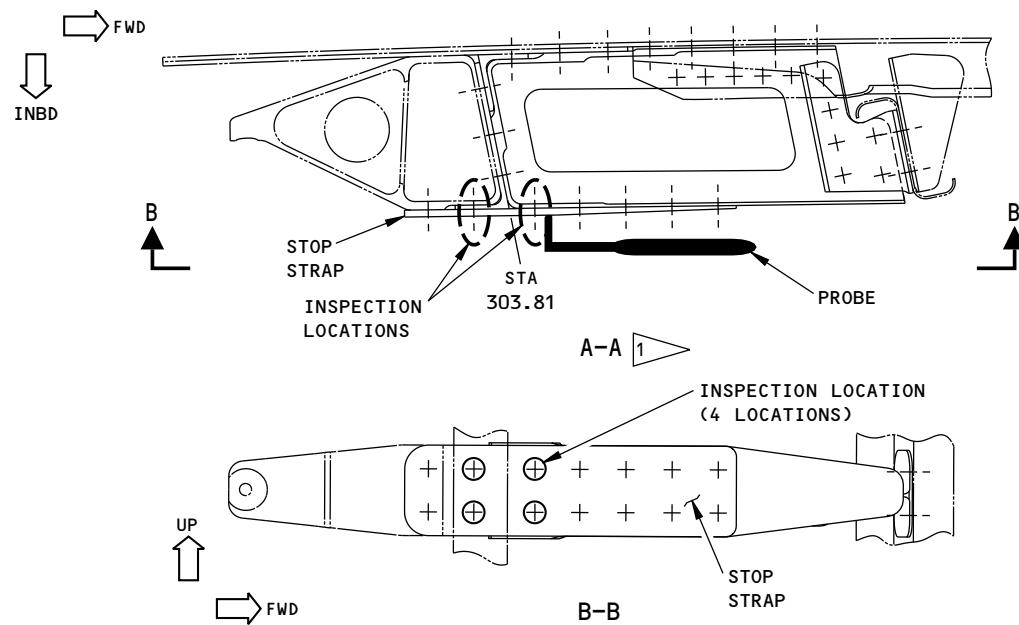


737
NON-DESTRUCTIVE TEST MANUAL



FORWARD ENTRY DOOR S-7 THRU S-14 INSPECTION AREA

(A)



NOTES

- ⊕ FASTENER LOCATIONS TO BE EXAMINED
- 1 STRINGER 7 IS SHOWN; STRINGERS 8 THRU 14 ARE ALMOST THE SAME (FOR MPD ITEM 53-10-14-8)

2216718 S0000494713_V1

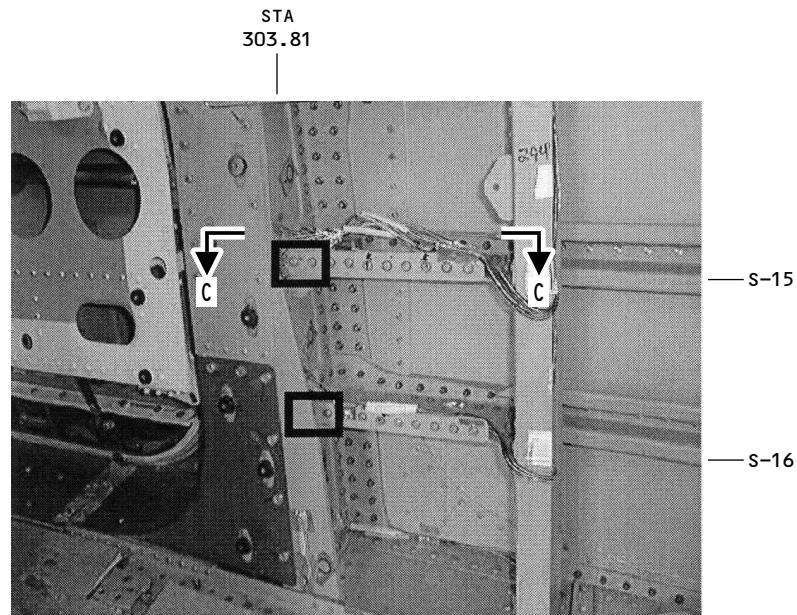
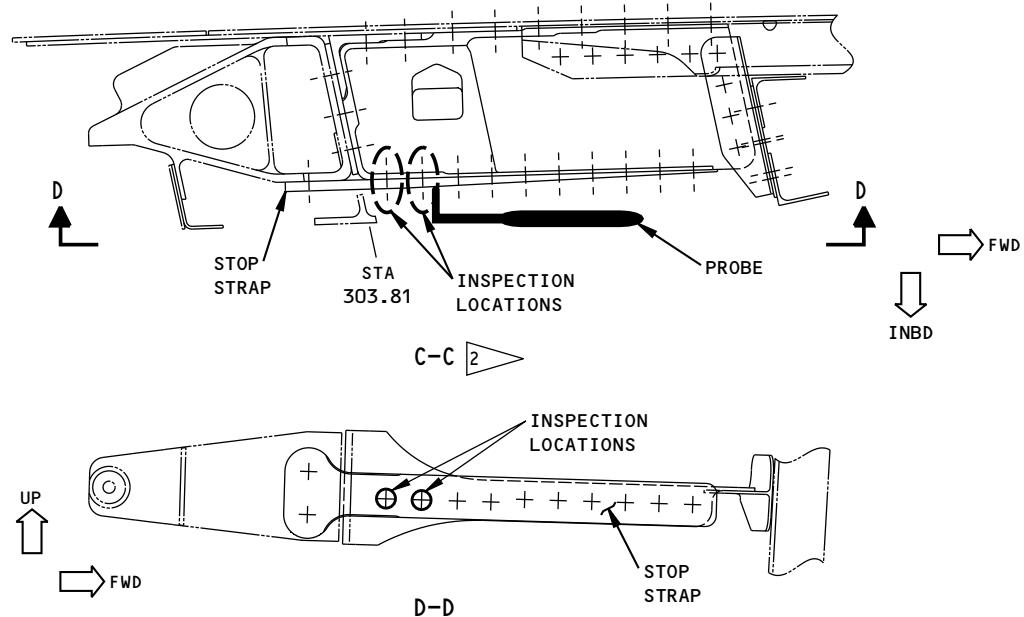
Inspection Area
Figure 1 (Sheet 2 of 3)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-01

D6-37239

Page 4
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

FORWARD ENTRY DOOR S-15 AND S-16 INSPECTION AREAS
B

NOTES

2 STRINGER 15 IS SHOWN; STRINGER 16 IS ALMOST
THE SAME (FOR MPD ITEM 53-10-14-9)

2216734 S0000494714_V1

Inspection Area
Figure 1 (Sheet 3 of 3)
EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-01

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

INTERCOSTAL WEBS AT THE AFT AND FORWARD FRAMES OF THE FORWARD CARGO DOOR OPENING (HFEC)

1. Purpose

- A. Use this procedure to examine the intercostal webs at the aft and forward frames of the forward cargo door opening. The forward frame is at BS 440.06 and the aft frame is at BS 492.40. There are five intercostal webs to examine at each frame. Each intercostal web is adjacent to a door stop. See Figure 1 for the inspection areas.
- B. The intercostal webs are aluminum.
- C. Use a surface probe to make a scan around two fastener heads at each intercostal web. There are a total of 20 fastener locations to be examined for this inspection.
- D. Use an impedance plane display instrument and an angled pencil probe to do this procedure.
- E. 737 Maintenance Planning Document (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-30-09-3

2. Equipment

- A. General
 - (1) Refer to Part 1, 51-01-00 for data about the equipment manufacturers.
- B. Instruments
 - (1) Refer to Part 6, 51-00-00, Procedure 23, for instrument data and instruments that were used to help prepare this procedure.
- C. Probes
 - (1) Refer to Part 6, 51-00-00, Procedure 23, for probe data.
 - (2) Use a pencil probe that:
 - (a) Can be calibrated as specified in Paragraph 4.
 - (b) Is angled with a probe drop between 0.45 inch (11.4 mm) and 0.50 inch (12.7 mm) and has a bend in the shaft.
 - (c) Has a maximum diameter of 0.08 inch (2.0 mm) at the probe coil.
 - (d) Has a total maximum length (end to end) of 4.0 inches (102 mm).
 - (e) Is shielded.
 - (3) The angled surface probes that follow were used to help prepare this procedure. Only one probe is necessary for this inspection:
 - (a) PABM90B445/.072, EC-NDT
 - (b) PABM90B445FX/.072, EC-NDT

NOTE: This probe has a copper shaft that you can bend to get easier access to the fasteners.

 - (c) TSPEN945-4B, Techna NDT

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-02

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Nov 15/2015



737 NON-DESTRUCTIVE TEST MANUAL

- (d) TSPENFX945-4B, Techna NDT

NOTE: This probe has a copper shaft that you can bend to get easier access to the fasteners.

D. Reference Standard

- (1) For the surface inspection, use reference standard 188A. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

E. Special Tools

- (1) Use a mirror to help see the fastener locations on the intercostal webs.

3. Prepare for the Inspection

- A. Remove the internal panels and insulation from the inspection areas immediately aft of the aft frame and forward of the forward frame at the forward cargo door opening. See Figure 1.
- B. Get access to the inspection areas on the intercostal webs. The intercostal webs are adjacent to the five door stops on the forward and aft frames of the forward cargo door opening. See Figure 1 for the inspection areas.
- C. Remove loose paint, dirt, corrosion inhibiting compound (CIC) or sealant from the scan areas on the intercostal webs shown in Figure 1.

4. Instrument Calibration

- A. Calibrate the instrument to do a surface inspection as specified in Part 6, 51-00-00, Procedure 23.
 - (1) Use reference standard 188A for the calibration. Do the calibration around the protruding head rivet on reference standard 188A.

5. Inspection Procedure

- A. Examine the intercostal webs that are adjacent to the five door stops on the forward and aft frames of the forward cargo door opening for cracks as follows:
 - (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 6, for general data on surface eddy current inspection procedures.
 - (2) Use a mirror as shown in Figure 1 to see the inspection locations at each of the intercostal webs.
 - (3) Get access to the intercostal webs at door stops 1, 4, and 5 from the top surface. Get access to the intercostal webs at door stops 2 and 3 from the bottom surface. See Figure 1.
 - (4) Do circular probe scans, 360 degrees around the fastener heads to examine the intercostal webs for cracks. See Figure 1 for the fastener locations. At each intercostal web there are two fastener locations to be examined. Examine all 20 fastener locations on the forward and aft frames to complete this inspection.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of possible crack indications.

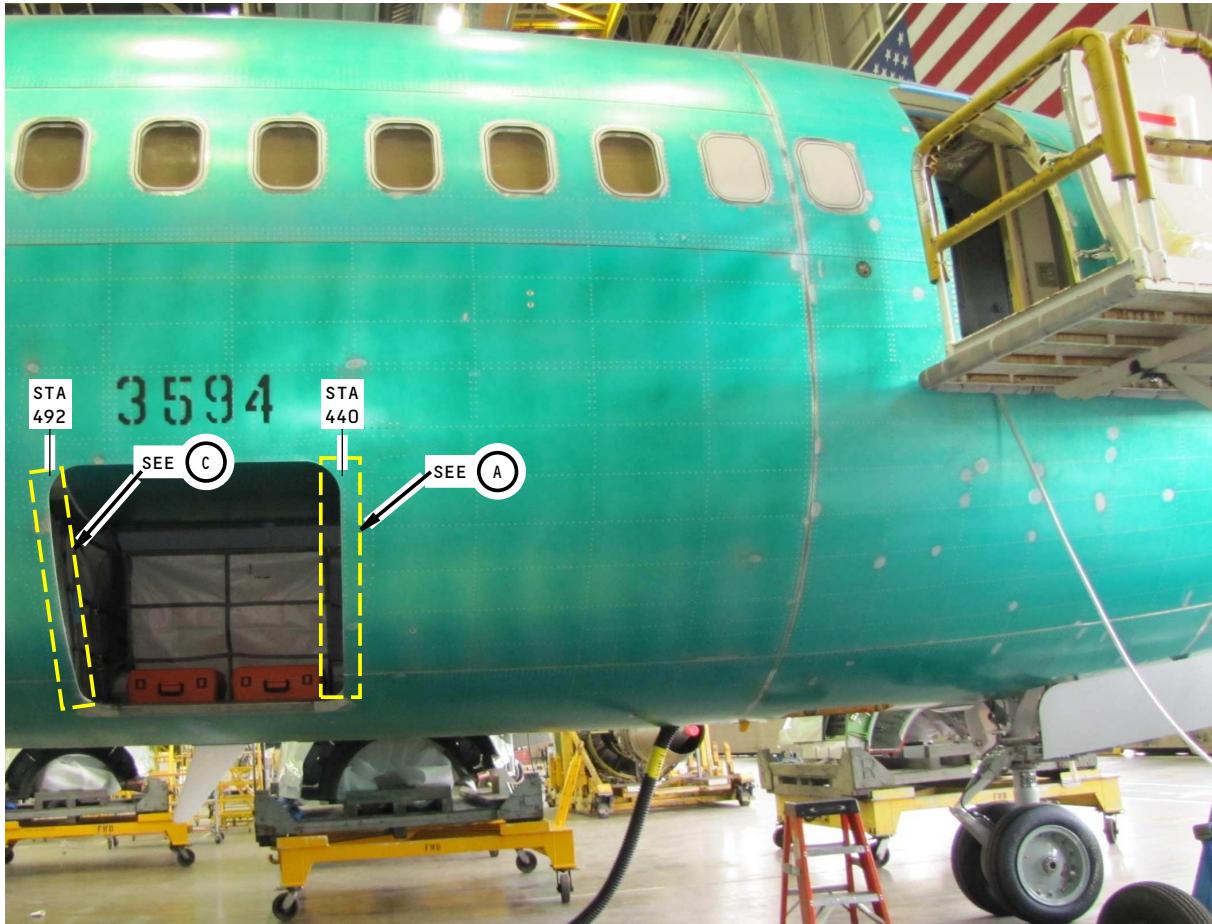
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-02

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

**NOTES**

THIS VIEW SHOWS THE INSPECTION AREAS AT THE AFT AND FORWARD FRAMES
OF THE FORWARD CARGO DOOR OPENING

SEE  AND  TO SEE THE INSPECTION AREAS ON THE INTERCOSTAL WEBS

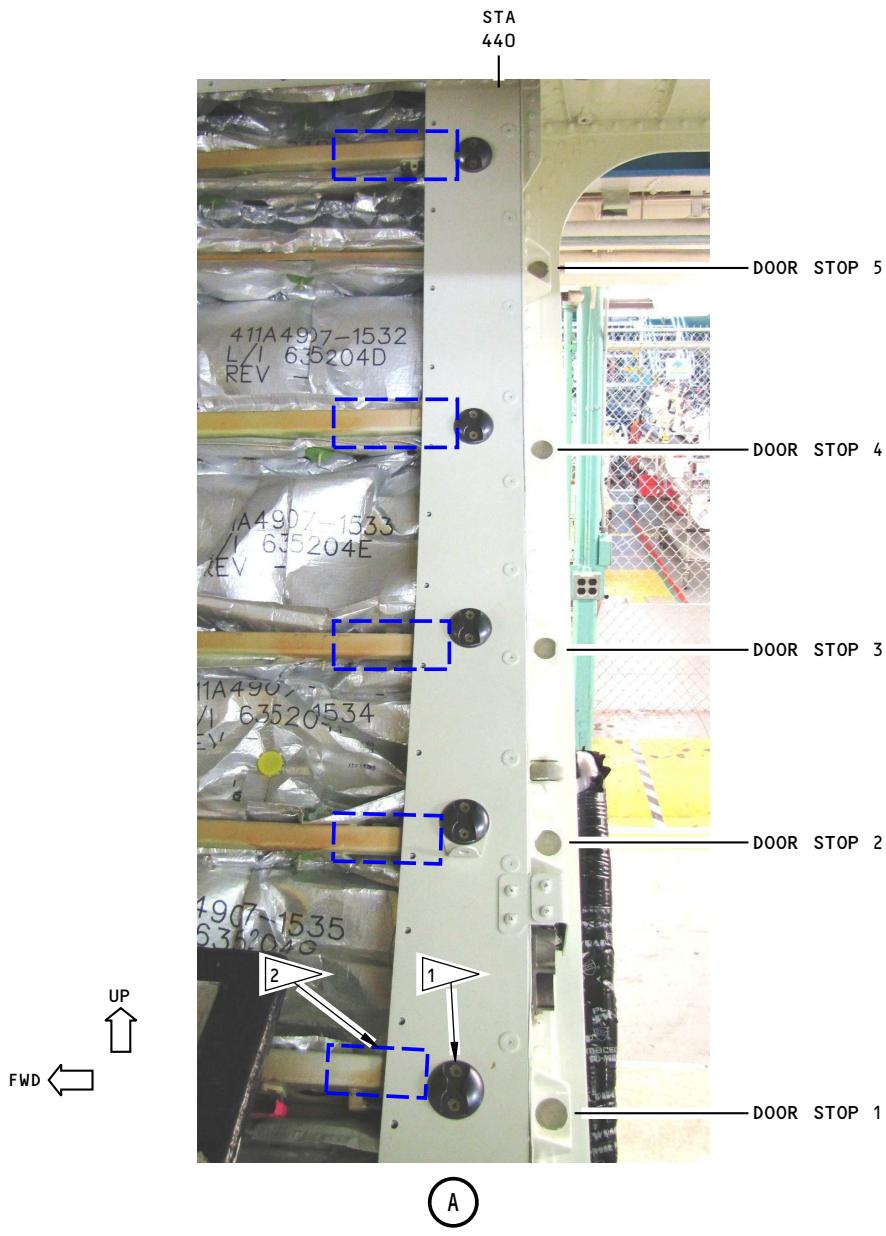
2216814 S0000494775_V1

Inspection Areas
Figure 1 (Sheet 1 of 5)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-02

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

[] INSPECTION AREAS (5 LOCATIONS)

VIEW A SHOWS THE INSPECTION AREAS ON THE FORWARD FRAME OF THE FORWARD CARGO DOOR. THERE ARE 5 INTERCOSTAL WEBS TO EXAMINE, EACH ONE IS IMMEDIATELY FORWARD OF THE ANCHOR PLATES.

- 1 ▶ ANCHOR PLATE. THERE ARE 5 ANCHOR PLATES ADJACENT TO EACH DOOR STOP ON THIS FRAME.
 - 2 ▶ SEE B TO SEE THE INSPECTION AREA WITH A MIRROR.
- THE INSPECTION LOCATIONS AT DOOR STOPS 2 THRU 5 ARE EQUIVALENT

2216873 S0000494776_V1

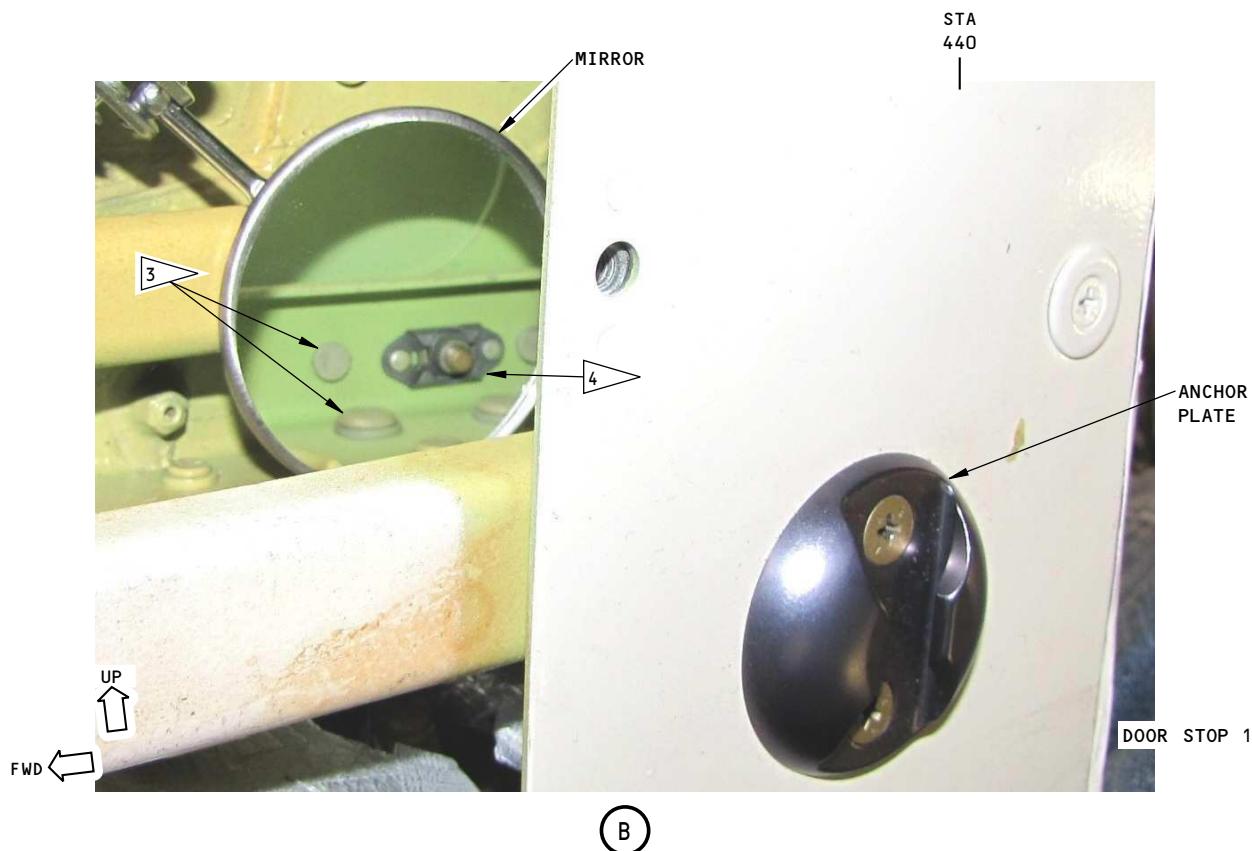
Inspection Areas
Figure 1 (Sheet 2 of 5)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-02

D6-37239

Page 4
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- VIEW B SHOWS THE INSPECTION AREA ON THE INTERCOSTAL AT DOOR STOP 1 AT THE FORWARD FRAME OF THE FORWARD CARGO DOOR.
- 3 DO CIRCULAR PROBE SCANS AROUND THE TWO FASTENERS SHOWN IN THE MIRROR TO EXAMINE THE INTERCOSTAL WEB FOR CRACKS. GET ACCESS FROM THE TOP OF THE INTERCOSTAL FOR THIS INSPECTION LOCATION AT DOOR STOP 1. THE ACCESS FOR THE DOOR STOP 2 THRU 5 INSPECTION LOCATIONS ON THE FORWARD FRAME ARE AS FOLLOWS:
 - FOR DOOR STOPS 2 AND 3, GET ACCESS TO THE INSPECTION LOCATIONS FROM THE BOTTOM OF THE INTERCOSTAL.
 - FOR DOOR STOPS 4 AND 5, GET ACCESS TO THE INSPECTION LOCATIONS FROM THE TOP OF THE INTERCOSTAL.

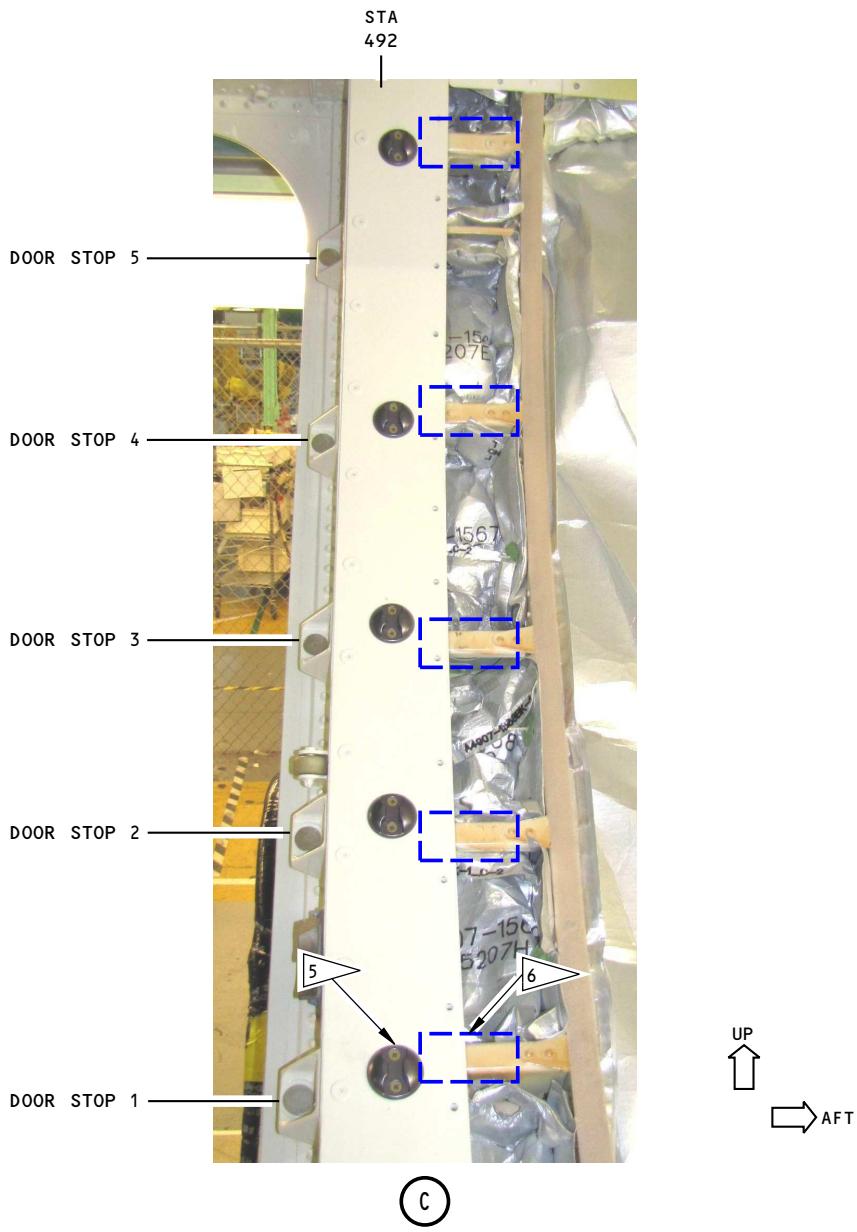
- 4 THIS NUT PLATE IS FOR THE ANCHOR PLATE. THE INTERCOSTAL WEB IS EXAMINED FOR CRACKS AT THE TWO FASTENERS THAT ARE IMMEDIATELY FORWARD OF THIS NUT PLATE. THIS ALSO APPLIES TO THE INSPECTION LOCATIONS AT DOOR STOPS 1 THRU 5 (ON THE FORWARD FRAME OF THE FORWARD CARGO DOOR OPENING).

2216974 S0000494777_V1

Inspection Areas
Figure 1 (Sheet 3 of 5)

EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-02

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

[] INSPECTION AREAS (5 LOCATIONS)

- VIEW C SHOWS THE INSPECTION AREAS ON THE AFT FRAME OF THE FORWARD CARGO DOOR. THERE ARE 5 INTERCOSTAL WEBS TO EXAMINE, EACH ONE IS IMMEDIATELY AFT OF THE ANCHOR PLATES.

[5] ANCHOR PLATE. THERE ARE 5 ANCHOR PLATES ADJACENT TO EACH DOOR STOP ON THIS FRAME.

[6] SEE [D] TO SEE THE INSPECTION AREA WITH A MIRROR. THE INSPECTION LOCATIONS AT DOOR STOPS 2 THRU 5 ARE EQUIVALENT.

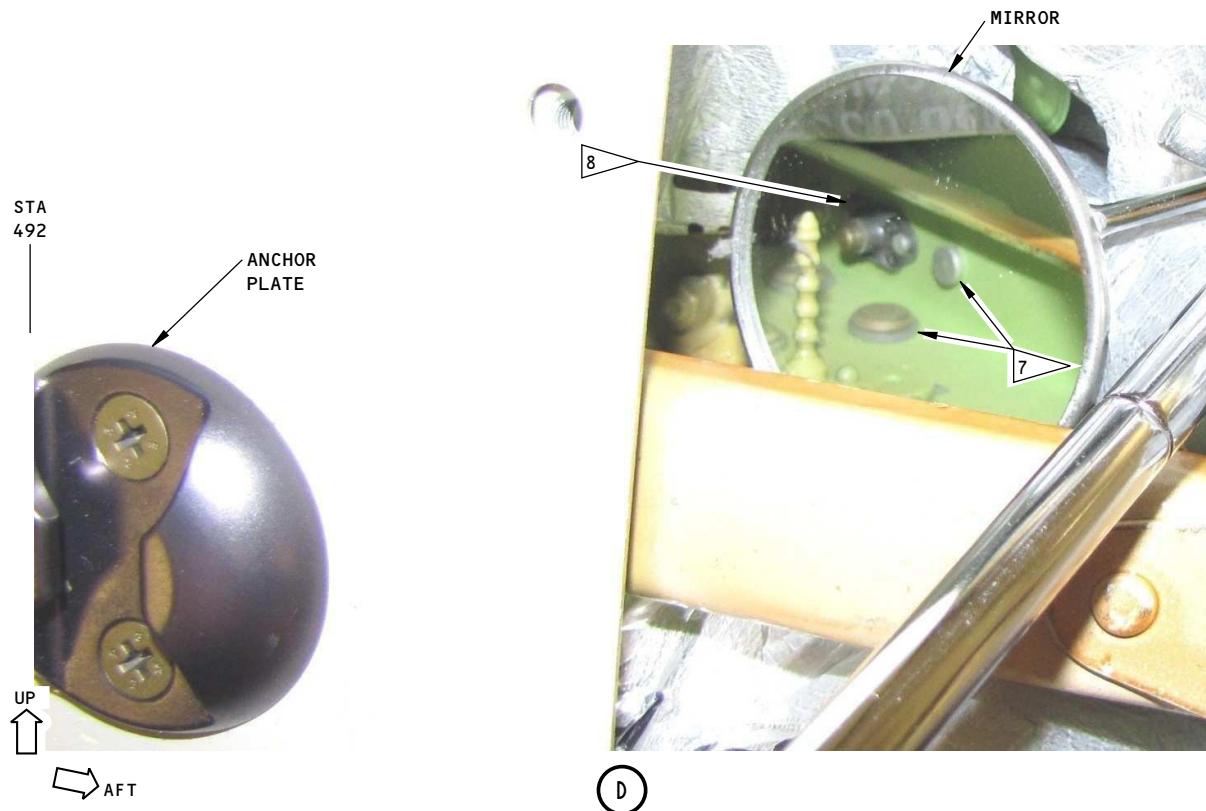
2216993 S0000494778_V1

Inspection Areas
Figure 1 (Sheet 4 of 5)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-02

D6-37239



NOTES

- VIEW D SHOWS THE INSPECTION AREA ON THE INTERCOSTAL AT DOOR STOP 1 AT THE AFT FRAME OF THE FORWARD CARGO DOOR.
- 7 ▶ DO CIRCULAR PROBE SCANS AROUND THE TWO FASTENERS SHOWN IN THE MIRROR TO EXAMINE THE INTERCOSTAL WEB FOR CRACKS. GET ACCESS FROM THE TOP OF THE INTERCOSTAL FOR THIS INSPECTION LOCATION AT DOOR STOP 1. THE ACCESS FOR THE DOOR STOP 2 THRU 5 INSPECTION LOCATIONS ON THE AFT FRAME ARE AS FOLLOWS:
 - FOR DOOR STOPS 2 AND 3, GET ACCESS TO THE INSPECTION LOCATIONS FROM THE BOTTOM OF THE INTERCOSTAL.
 - FOR DOOR STOPS 4 AND 5, GET ACCESS TO THE INSPECTION LOCATIONS FROM THE TOP OF THE INTERCOSTAL.
- 8 ▶ THIS NUT PLATE IS FOR THE ANCHOR PLATE. THE INTERCOSTAL WEB IS EXAMINED FOR CRACKS AT THE TWO FASTENERS THAT ARE IMMEDIATELY AFT OF THIS NUT PLATE. THIS ALSO APPLIES TO THE INSPECTION LOCATIONS AT DOOR STOPS 1 THRU 5 (ON THE AFT FRAME OF THE FORWARD CARGO DOOR OPENING).

2217009 S0000494779_V1

Inspection Areas

Figure 1 (Sheet 5 of 5)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-02

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

OVERWING EMERGENCY EXIT CUTOUT

1. Purpose

- A. Use this procedure to examine the doublers of the overwing emergency exit cutout at BS 616 and BS 639 for cracks that can occur between stringer 10 and stringer 15. The inspection area is the forward and aft edges of the doubler, the inner doubler and the inboard side of the inner doubler. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The doublers are aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-22-1
 - (2) Item: 53-40-22-2
 - (3) Item: 53-40-22-5
 - (4) Item: 53-40-22-8
 - (5) Item: 53-40-22-8a
 - (6) Item: 53-40-22-10

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00 for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an instrument that:
 - (a) Operates at frequencies between 50 and 500 kHz.
 - (b) Has an impedance plane display.
 - (2) Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.B, for the instrument data.
- C. Probe
 - (1) Use a probe that:
 - (a) Operates at frequencies between 50 and 500 kHz.
 - (b) Has a diameter of 0.125 inch (3.18 mm).
 - (c) Is shielded.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN925-5; Techna NDT
- D. Reference Standard
 - (1) Use reference standards 126 and 189 that are specified in Part 6, 51-00-00, Procedure 23, paragraph 3.D.

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-03

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL

3. Prepare for the Inspection

- A. Identify and get access to the inspection area. See Figure 1.
 - (1) Remove or move the seal to get access to the inspection area.
- B. Clean the inspection surfaces.
 - (1) Remove dirt or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.
 - (3) Remove sealant from the areas that the probe will touch.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standards 126 and 189, or equivalents, as specified in Part 6, 51-00-00, Procedure 23, Paragraph 5.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Get access to the inspection areas shown in Figure 1.
- C. Examine the doubler and the inner doubler for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) Examine the edges of the doubler and the inner doubler of the overwing emergency exit cutout at BS 616 and BS 639, between S-11 and the start point of the lower cutout radius (see Figure 1, flagnote 1).
 - (2) Examine the edges of the doubler, the inner doubler and the edge of the seal retainer of the overwing emergency exit cutout at the upper sill between BS 616 and BS 639 (see Figure 1, flagnote 2).
 - (3) Examine the edges of the doubler and the inner doubler of the overwing emergency exit cutout at BS 616 and BS 639 (see Figure 1, flagnote 3).
- D. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).
- E. Do Paragraph 5.B. thru Paragraph 5.D. again to examine the doublers for cracks at the cutout for the overwing emergency exit on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-03

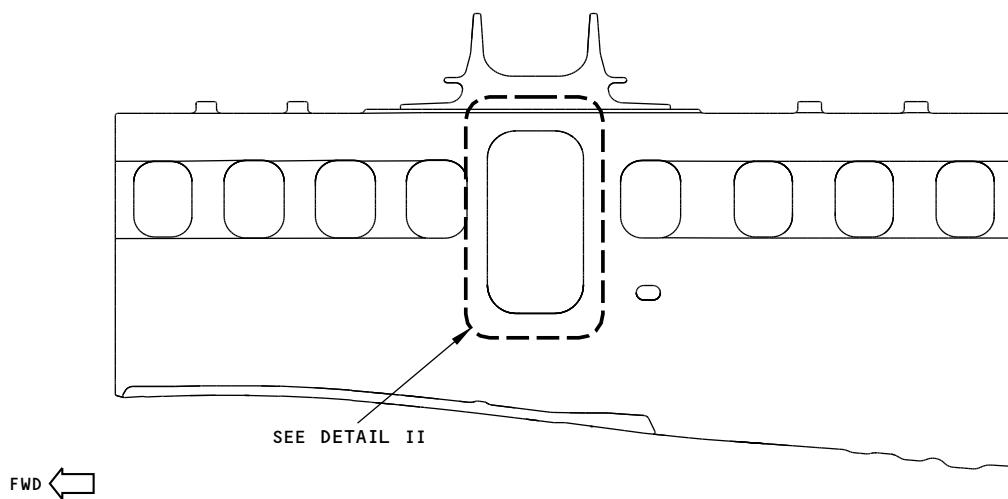
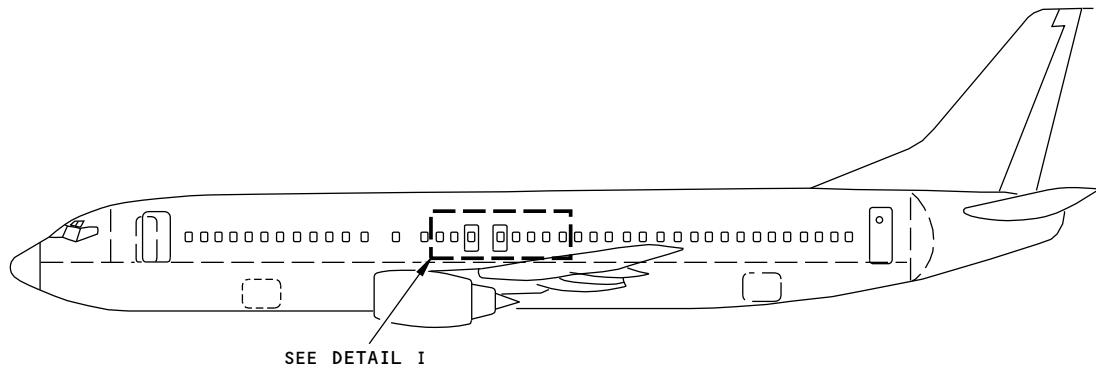
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUT
DETAIL I

NOTES

- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE

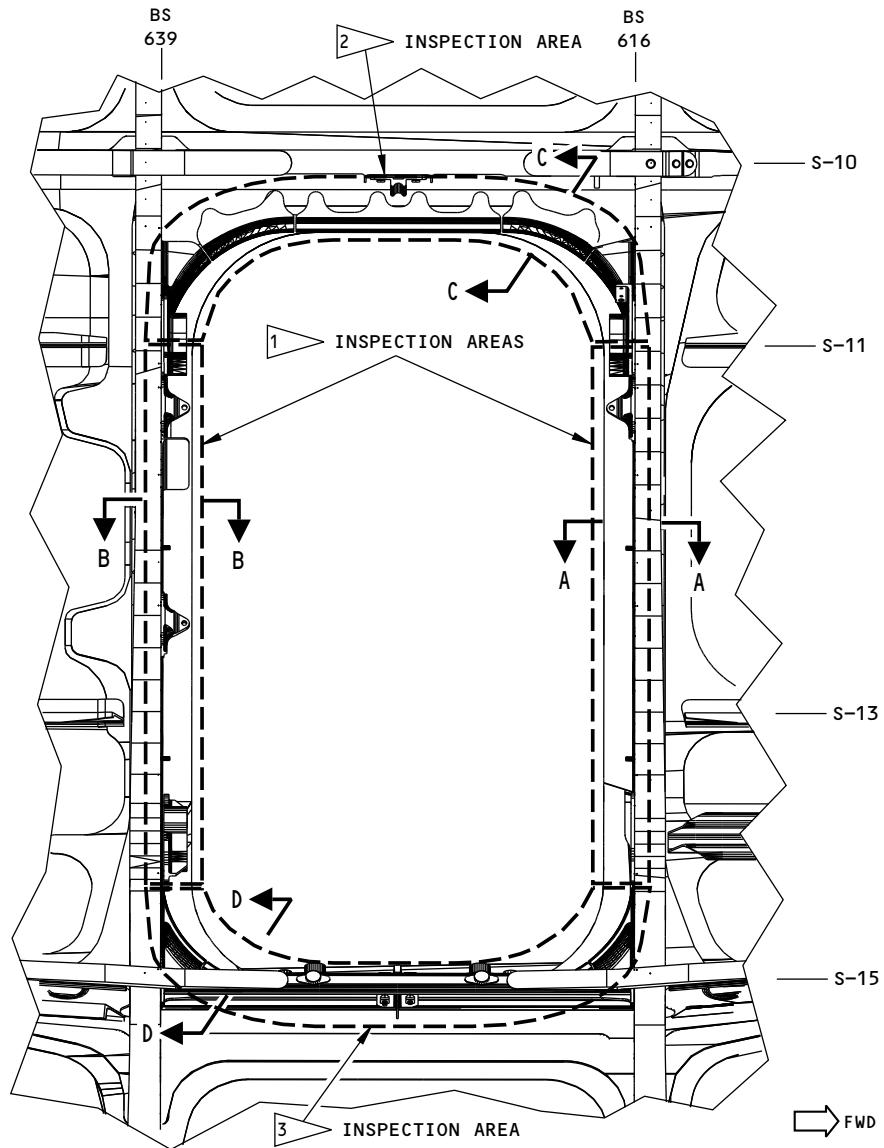
2219227 S0000495944_V1

Inspection Area
Figure 1 (Sheet 1 of 4)

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

D6-37239

PART 6 53-11-03

737
NON-DESTRUCTIVE TEST MANUAL


OVERWING EMERGENCY EXIT CUTOUT
 (VIEW FROM INSIDE THE AIRPLANE AS YOU LOOK OUT)
DETAIL II

NOTES

- 1 EXAMINE THE EDGE OF THE DOUBLER AND THE INNER DOUBLER OF THE OVERWING EMERGENCY EXIT CUTOUT AT BS 616 AND BS 639 BETWEEN S-11 AND THE START POINT OF THE LOWER CUTOUT RADIUS (AS SHOWN).
- 2 EXAMINE THE EDGE OF THE DOUBLER, THE INNER DOUBLER AND THE EDGE OF THE SEAL RETAINER OF THE OVERWING EMERGENCY EXIT CUTOUT AT THE UPPER SILL BETWEEN BS 616 AND BS 639.
- 3 EXAMINE THE EDGE OF THE DOUBLER AND THE INNER DOUBLER OF THE OVERWING EMERGENCY EXIT CUTOUT AT THE LOWER SILL BETWEEN BS 616 AND BS 639.

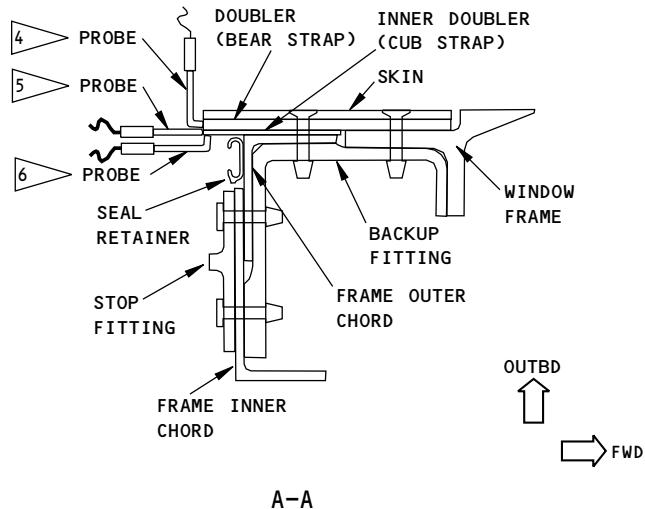
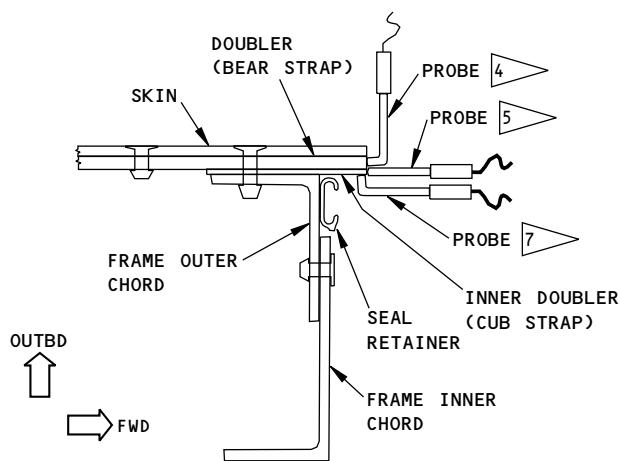
2219239 S0000495945_V1

Inspection Area
Figure 1 (Sheet 2 of 4)

EFFECTIVITY
 ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-03

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

A-A

B-B
NOTES

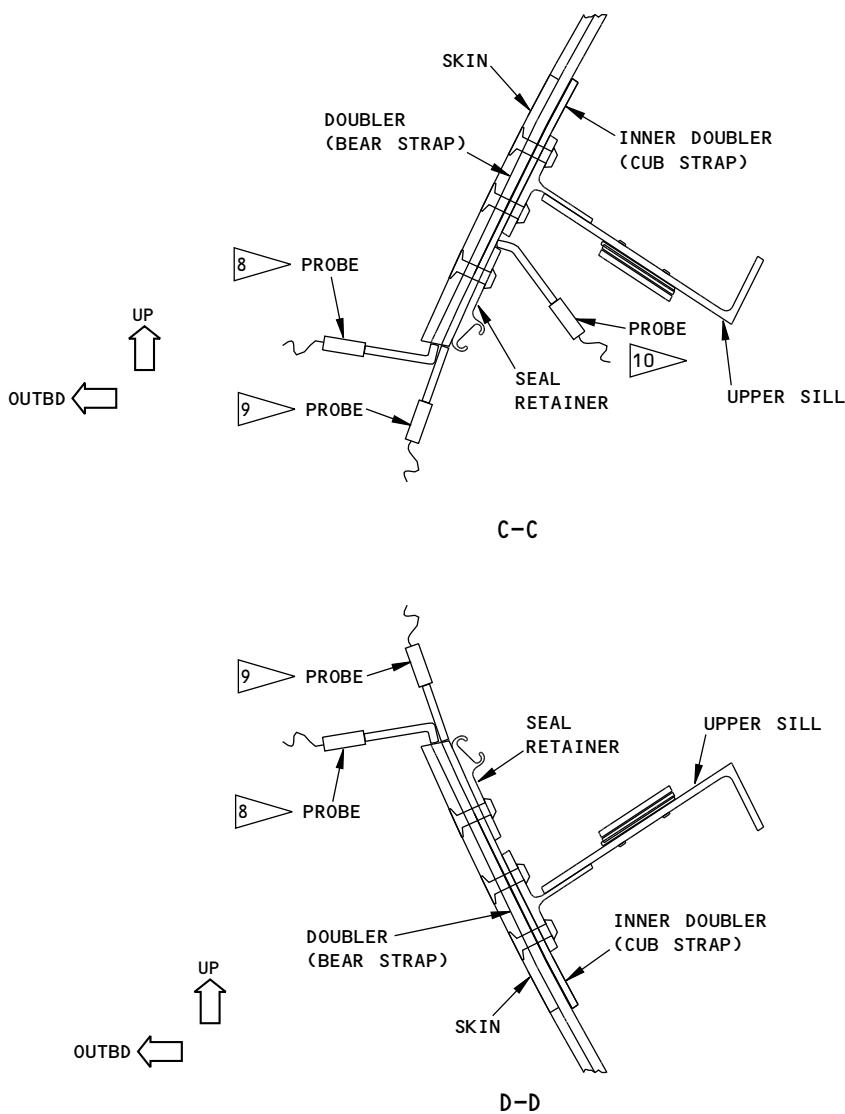
- 4 EXAMINE THE EDGE OF THE DOUBLER (BEAR STRAP) AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL AT A CONSTANT DISTANCE FROM THE INBOARD EDGE AND OUTBOARD EDGE OF THE DOUBLER.
- 5 EXAMINE THE EDGE OF THE INNER DOUBLER (CUB STRAP) AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL AT A CONSTANT DISTANCE FROM THE INBOARD EDGE OF THE INNER DOUBLER.
- 6 EXAMINE THE INBOARD SIDE OF THE INNER DOUBLER (CUB STRAP) AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL AT A CONSTANT DISTANCE FROM THE AFT EDGE OF THE INNER DOUBLER.
- 7 EXAMINE THE INBOARD SIDE OF THE INNER DOUBLER (CUB STRAP) AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL AT A CONSTANT DISTANCE FROM THE FORWARD EDGE OF THE INNER DOUBLER.

2219251 S0000495946_V1

Inspection Area
Figure 1 (Sheet 3 of 4)
EFFECTIVITY
 ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-03

D6-37239



NOTES

- 8 EXAMINE THE EDGE OF THE DOUBLER (BEAR STRAP) AS SHOWN. IF NECESSARY, USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL AT A CONSTANT DISTANCE FROM THE INBOARD EDGE AND OUTBOARD EDGE OF THE DOUBLER.
- 9 EXAMINE THE EDGE OF THE INNER DOUBLER (CUB STRAP) AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL AT A CONSTANT DISTANCE FROM THE INBOARD EDGE AND OUTBOARD EDGE OF THE INNER DOUBLER.
- 10 EXAMINE THE INBOARD SIDE OF THE INNER DOUBLER (CUB STRAP) AT THE EDGE OF THE SEAL RETAINERS. USE THE SEAL RETAINER AS A PROBE GUIDE. MAKE SURE TO EXAMINE THE INNER DOUBLER ALONG THE SEAL RETAINERS FROM BS 616 TO BS 639.

2219266 S0000495947_V1

Inspection Area
Figure 1 (Sheet 4 of 4)

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-03

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

DRAG BRACE FITTINGS FOR THE NOSE LANDING GEAR

1. Purpose

- A. Use this procedure to help find surface cracks in the fittings that support the drag brace of the nose landing gear. The drag brace fittings are at BS 262 and WL 189.3, at LBL 16 and RBL 16. The drag brace fittings are examined for cracks around the perimeter of the bushing. See Figure 1 for the inspection area.
- B. 737 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-10-20-2

2. Equipment

A. General

- (1) All eddy current instruments that have an impedance-plane display are permitted for use if they can be calibrated on the reference standard as specified in Paragraph 4.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency range of 50 to 500 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Nortec 500; Olympus NDT

C. Probe

- (1) Use a straight or right-angle shielded probe with a maximum diameter of 0.2 inch (5 mm). Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C, for data about probe selection.
- (2) The probe that follows was used to help prepare this procedure.
 - (a) MP-50; NDT Engineering Corp. (Olympus)

D. Reference Standards

- (1) Use reference standard 126, or an equivalent, as given in Part 6, 51-00-00, Procedure 23, paragraph 3.D.

3. Prepare for the Inspection

- A. Get access to the inspection areas shown in Figure 1.
- B. Remove loose paint, dirt and sealant from the inspection areas as necessary.

4. Instrument Calibration

- A. Calibrate the equipment as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, during calibration.

5. Inspection Procedure

- A. Find the inspection areas shown in Figure 1.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-04



737
NON-DESTRUCTIVE TEST MANUAL

- B. Calibrate the instrument as specified in Paragraph 4.
- C. Examine the drag brace fittings for cracks as shown in Figure 1 and as follows.
 - (1) Examine the inboard side of the drag brace fitting as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.
 - (a) Use the bushing as a probe guide and move the probe fully around the bushing.
- D. Do Paragraph 5.C. again to examine the outboard side of the same drag brace fitting.
- E. Do Paragraph 5.C. and Paragraph 5.D. again to examine the drag brace fitting on the opposite side of the nose wheel well.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

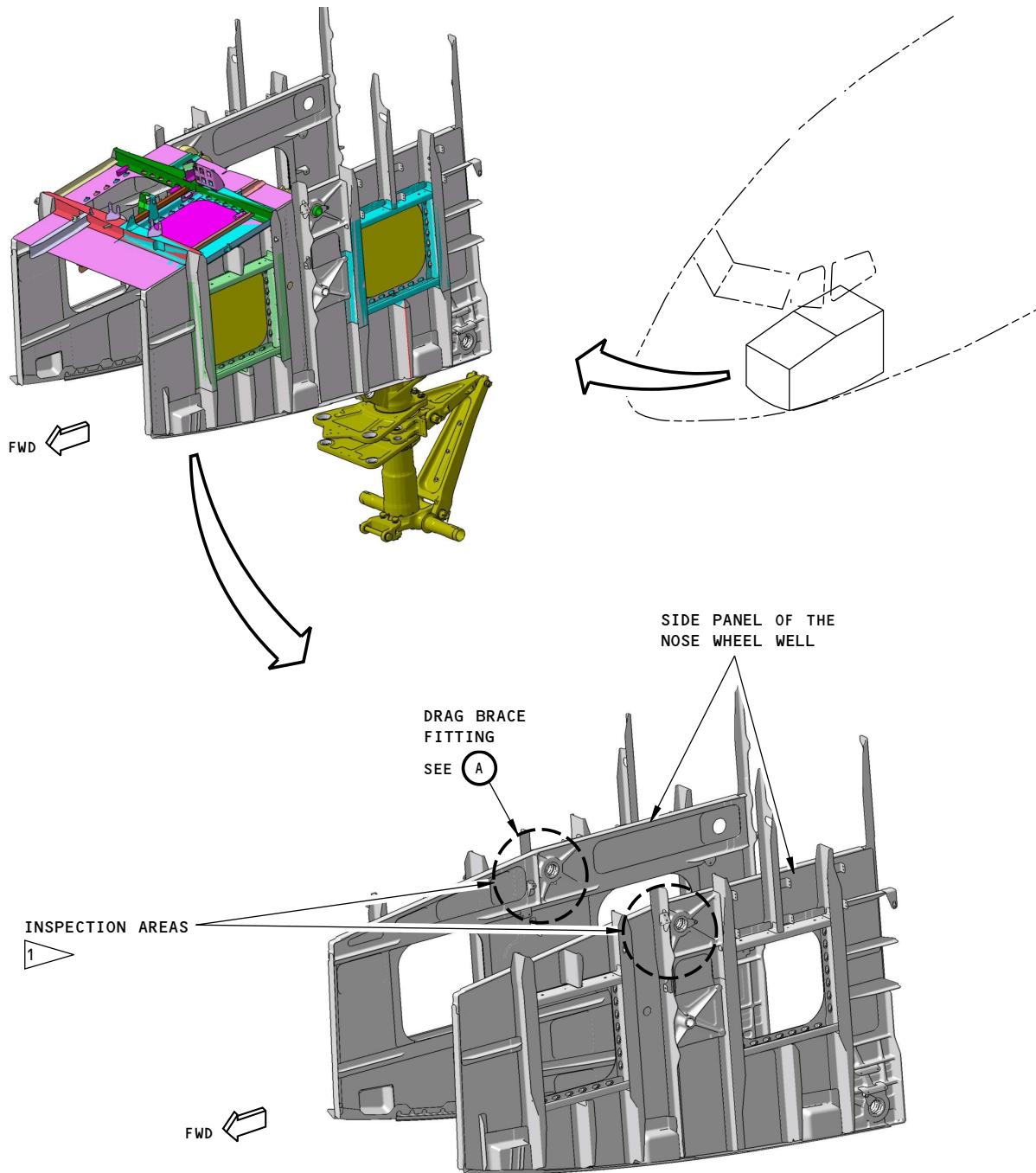
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-04

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



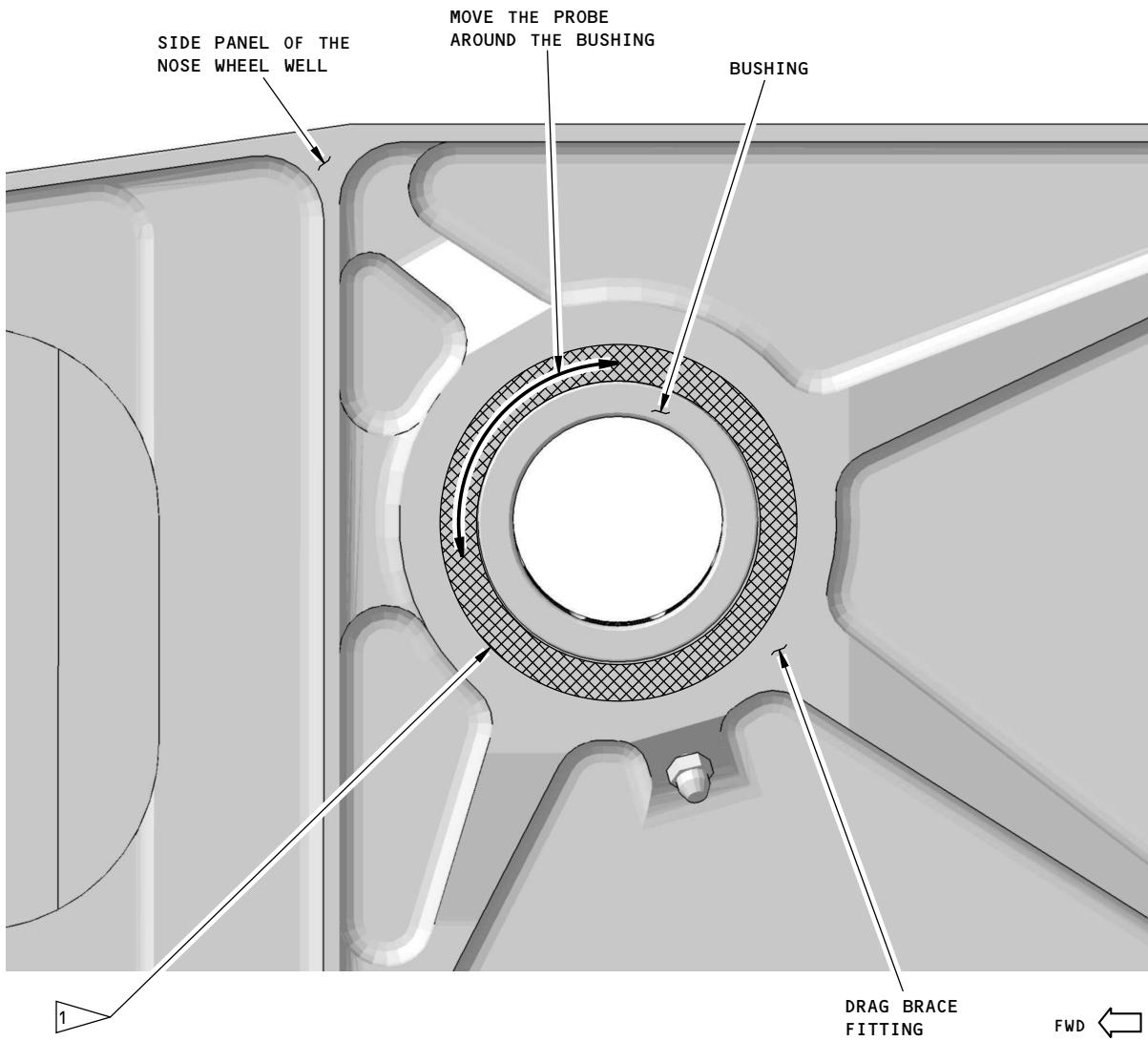
2230879 S0000497192_V1

Inspection Areas
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-04

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

THE RIGHT DRAG BRACE FITTING IS SHOWN AS YOU LOOK OUTBOARD;
THE LEFT DRAG BRACE FITTING IS THE SAME BUT OPPOSITE

(A)

NOTES:



INSPECTION AREA

- EXAMINE THE FITTINGS THAT SUPPORT THE DRAG BRACE OF THE NOSE LANDING GEAR FOR CRACKS. MOVE THE PROBE AROUND THE PERIMETER OF THE BUSHING. USE THE BUSHING AS A PROBE GUIDE.
- EXAMINE THE INBOARD AND OUTBOARD SURFACES OF EACH DRAG BRACE FITTING.

1 DTR CHECK FORM ITEM 53-10-20-2 INSPECTION AREA

2230913 S0000497193_V1

Inspection Areas
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-04

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

STIFFENER AT THE MID/AFT PANEL INTERFACE OF THE APU INLET ENCLOSURE

1. Purpose

- A. Use this procedure to help find surface cracks in the stiffener at the mid/aft panel interface of the APU inlet enclosure. See Figure 1 for the inspection area.
- B. 737 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-80-17-8

2. Equipment

A. General

- (1) All eddy current instruments that have an impedance plane display are permitted for use if they can be calibrated on the reference standard as specified in Paragraph 4.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency range of 50 to 500 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Nortec 500; Olympus NDT

C. Probe

- (1) Use a right-angle shielded probe with a maximum diameter of 0.15 inch (3.8 mm) and a 0.2 inch (5 mm) minimum drop. A straight shielded probe can be used to scan the corner of the stiffener. Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C, for data about probe selection.
- (2) The probe that follows was used to help prepare this procedure.
 - (a) MP905-50B; NDT Engineering Corp (Olympus)

D. Reference Standards

- (1) Use reference standard 188A, or an equivalent, as given in Part 6, 51-00-00, Procedure 23, paragraph 3.D.

3. Prepare for the Inspection

- A. Get access to the inspection area shown in Figure 1.
- B. Remove loose paint, dirt and sealant from the inspection surfaces as necessary.

4. Instrument Calibration

- A. Calibrate the equipment as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, during calibration.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Examine the stiffener at the mid/aft panel interface of the APU inlet enclosure for cracks as follows:

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-05



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 6, for the inspection procedure.
- (2) Make a scan on the stiffener around each of the 16 fasteners shown in Figure 1. Move the probe in a full circle around the fastener where possible.
- (3) Make a scan along the radius of the stiffener as shown in Figure 1.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of signals that occur during the inspection.

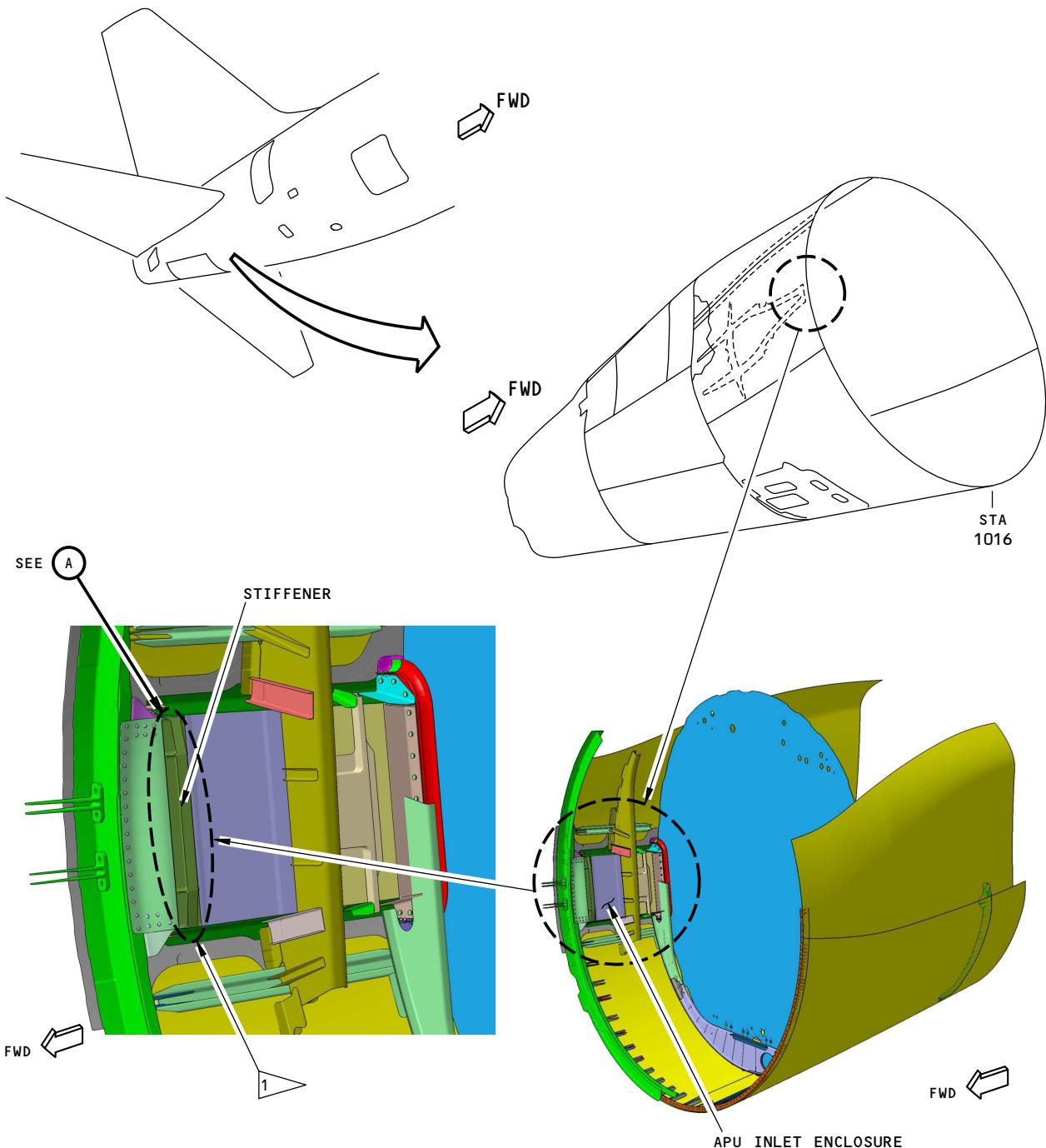
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-05

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015


NOTES

- EXAMINE THE STIFFENER AT THE APU INLET ENCLOSURE FOR CRACKS.

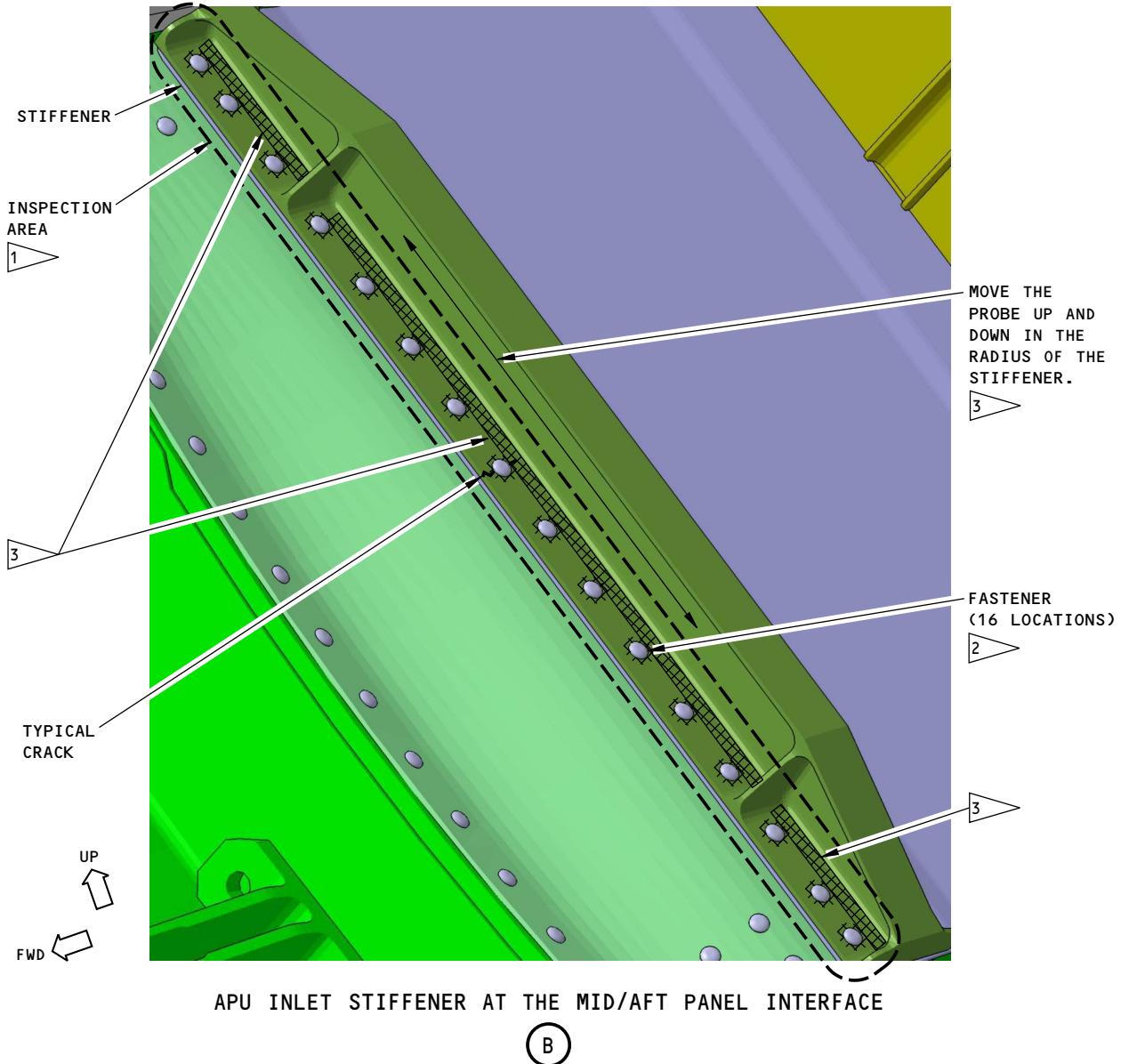
 DTR CHECK FORM ITEM 53-80-17-8 INSPECTION AREA

2230838 S0000497296_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

D6-37239


NOTES
 **INSPECTION AREA**
 **MOVE THE PROBE FULLY AROUND (IF POSSIBLE) EACH OF THE 16 FASTENERS TO EXAMINE THE STIFFENER FOR CRACKS**
 **EXAMINE THE RADIUS OF THE STIFFENER FOR CRACKS. MOVE THE PROBE IN AN UP AND DOWN DIRECTION AS SHOWN.**

2230882 S0000497297_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-05

D6-37239

Page 4
 Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

WHEEL WELL FRAME AT BS 685 - UPPER CHORD OF THE STUB BEAM (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the upper chord of the stub beam for cracks at the wheel well frame at BS 685. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The stub beam is aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-21-4

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
- (2) Refer to Part 1, 51-01-00 for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; made by GE Inspection Technologies

NOTE: Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.B, for examples of other instruments that can be used.

C. Probes

- (1) Use a probe that operates from 50 to 500 kHz.

NOTE: Shielded probes are recommended.

- (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN92-5B; made by Techna NDT

D. Reference Standard

- (1) To examine the four fastener locations at the stub beam web, use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.
- (2) To examine the upper chord flange of the stub beam, use reference standard 126, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.
- (3) To examine the inner radius of the upper flange of the stub beam, use reference standard 126, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.

E. Special Tools

- (1) Use a nonconductive straightedge to help make the scans along the upper chord of the stub beam.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-06

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument to examine the stub beam web at the four fastener locations shown by flagnote 1 in Figure 1 as specified in Part 6, 51-00-00, Procedure 23.
 - (1) Use reference standard 188A to help calibrate the instrument.
- B. Calibrate the instrument to examine the stub beam at the upper chord flange shown by flagnote 2 in Figure 1 as specified in Part 6, 51-00-00, Procedure 23.
 - (1) Use reference standard 126 to help calibrate the instrument.
- C. Calibrate the instrument to examine the stub beam at the inner radius of the upper flange shown by flagnote 3 in Figure 1 as specified in Part 6, 51-00-00, Procedure 23.
 - (1) Use reference standard 126 to help calibrate the instrument.

5. Inspection Procedure

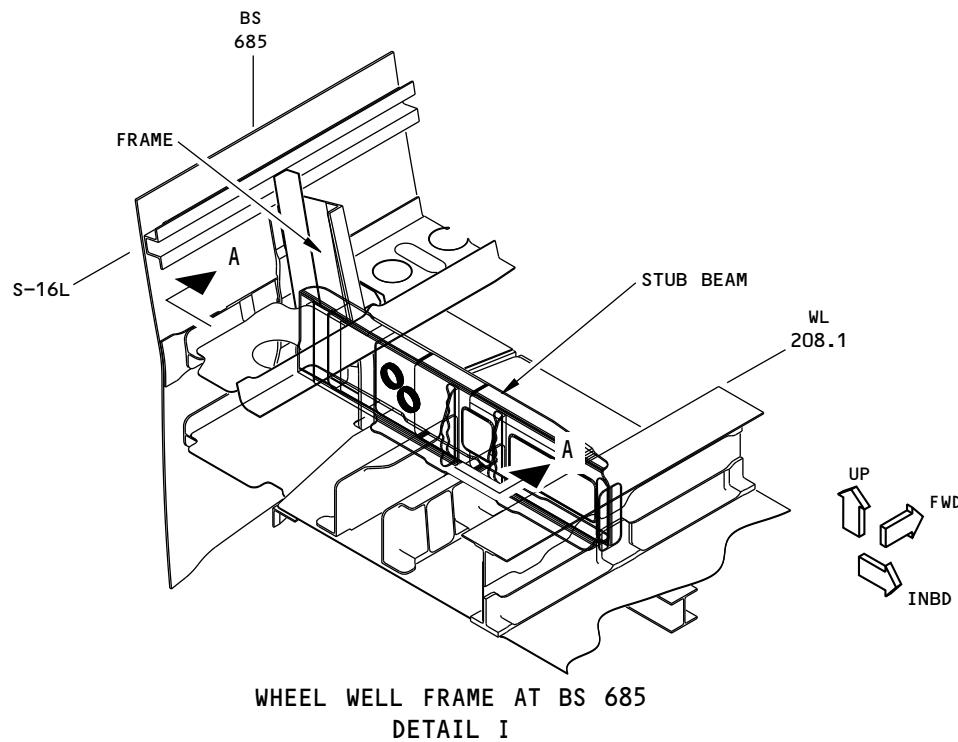
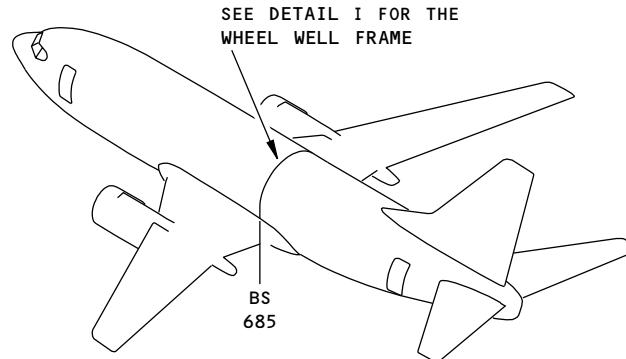
- A. Get access to the inspection area shown in Figure 1.
- B. Examine the stub beam for cracks as specified in Part 6, 51-00-00, Procedure 23 at the locations that follow:
 - (1) Examine the stub beam web at the four fastener locations shown by flagnote 1 in Figure 1.
 - (2) Examine the stub beam at the upper edge of the upper flange. Start the inspection two inches from the fuselage and continue inboard for a distance of 12 inches, as shown by flagnote 2 in Figure 1.
 - (3) Examine the stub beam at the inner radius of the upper chord flange. Start the inspection two inches from the fuselage and continue inboard for a distance of 12 inches, as shown by flagnote 3 in Figure 1.
- C. During the inspections, frequently do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).
- D. Do Paragraph 5.A. thru Paragraph 5.C. again to examine the stub beam for cracks on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.



737
NON-DESTRUCTIVE TEST MANUAL



NOTES

- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE

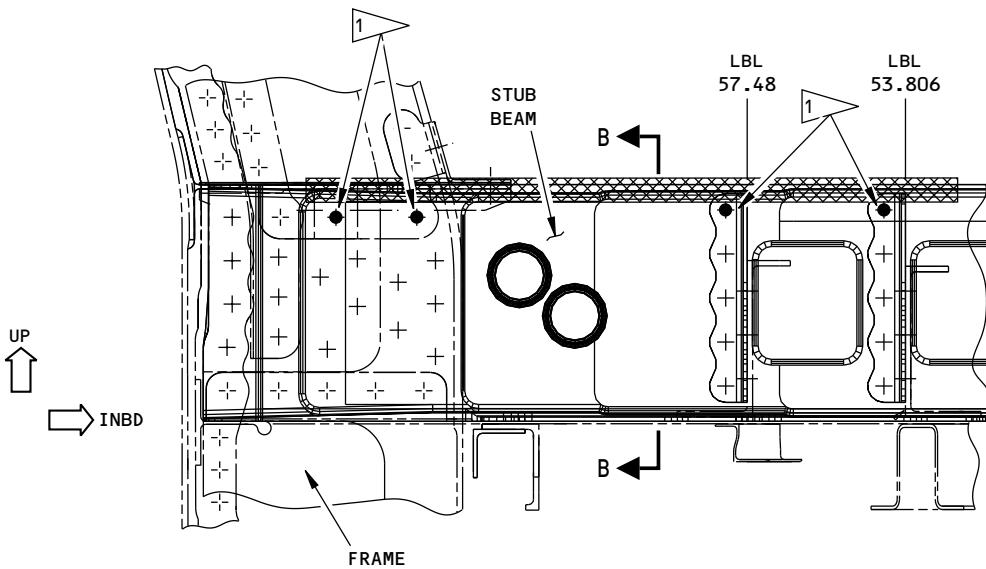
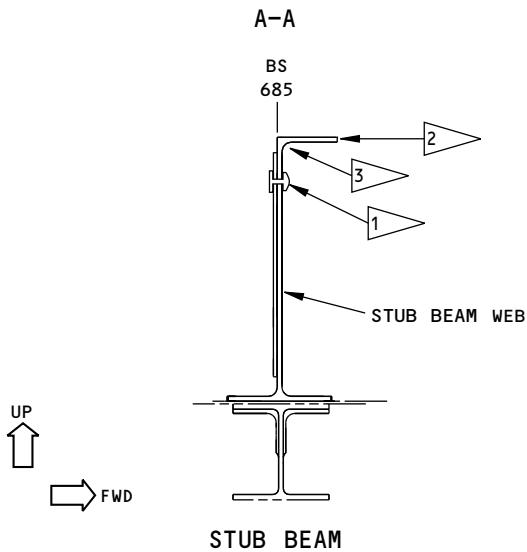
2230900 S0000497168_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-06

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

**WHEEL WELL FRAME AT BS 685
(VIEW LOOKS FORWARD)**

NOTES
 **INSPECTION AREA**

-  EXAMINE THE STUB BEAM WEB AT THE 4 FASTENER LOCATIONS SHOWN. USE THE HEAD OF THE FASTENER AS A PROBE GUIDE.
-  EXAMINE THE UPPER EDGE OF THE UPPER FLANGE OF THE STUB BEAM. START THE INSPECTION 2 INCHES FROM THE FUSELAGE AND CONTINUE INBOARD FOR A DISTANCE OF 12 INCHES. KEEP THE PROBE COIL AT A CONSTANT DISTANCE FROM THE EDGE OF THE FLANGE.
-  EXAMINE THE INNER RADIUS OF THE UPPER FLANGE OF THE STUB BEAM. START THE INSPECTION 2 INCHES FROM THE FUSELAGE AND CONTINUE INBOARD FOR A DISTANCE OF 12 INCHES. KEEP THE PROBE PERPENDICULAR TO THE INSPECTION SURFACE DURING THE SCAN.

2230989 S0000497169_V1

Inspection Area
Figure 1 (Sheet 2 of 2)
EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-06

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

BULKHEAD BS 1016 - PRESSURE DOME WEB AT THE INTERSECTIONS OF THE LAP SPLICES AND TEAR STRAPS (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the forward side of the pressure dome at the BS 1016 bulkhead for cracks. The inspection area is the pressure dome webs at the intersections of the radial stiffeners and the tear straps at the lap splices. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The pressure dome web is aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-80-01-11

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that operates in a frequency range from 50 to 500 kHz.
NOTE: Shielded probes are recommended.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN92-5B; Techna NDT
- D. Reference Standard
 - (1) To examine the webs for cracks at the intersections of the radial stiffeners and the tear straps at the lap splices, use reference standard 126, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt, grease, or sealant from the inspection surfaces.
 - (2) Remove paint only if it is loose.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-07

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

4. Instrument Calibration

- A. Calibrate the instrument to examine the webs for cracks at the intersections of the radial stiffeners and the tear straps at the lap splices (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to calibrate the instrument.

5. Inspection Procedure

- A. Get access to the inspection areas shown in Figure 1.
- B. Examine the webs for cracks at the intersections of the radial stiffeners and the tear straps at the lap splices as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.
 - (1) Examine the webs for cracks at the intersections of the radial stiffeners and the tear straps at the S-1, S-7, S-15 and S-23 lap splices. Use the edge of the radial stiffeners and the edge of the webs as probe guides.
 - (2) Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

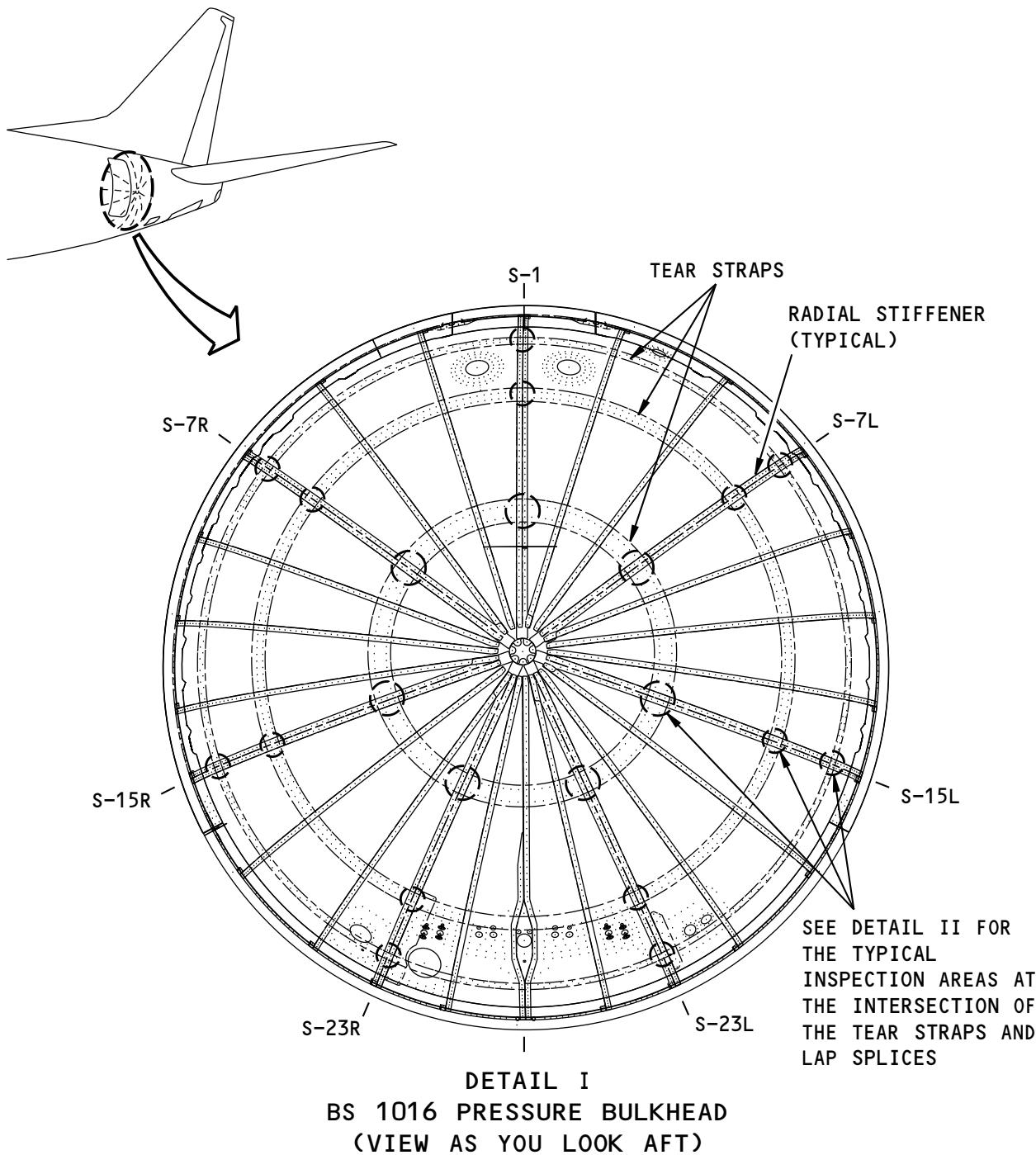
EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-07

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

○ INSPECTION AREAS

2256992 S0000505485_V1

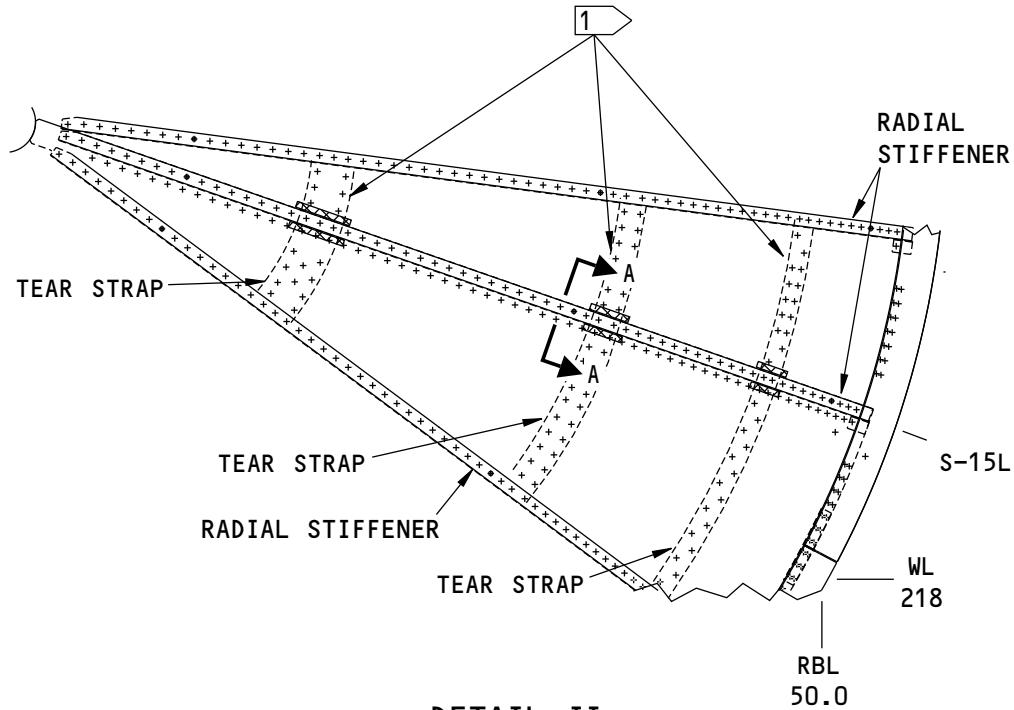
Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

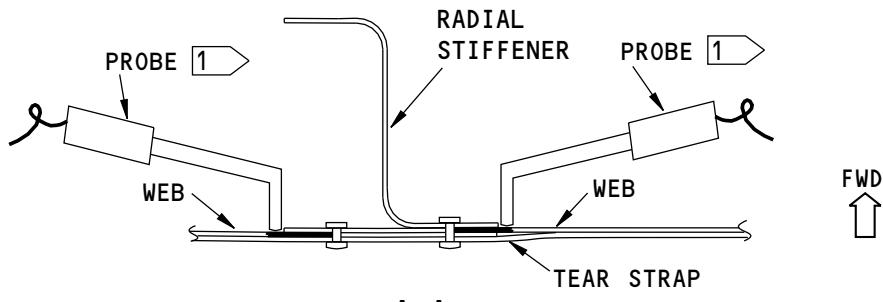
PART 6 53-11-07

Page 3
Nov 15/2015

D6-37239



DETAIL II
TYPICAL INSPECTION AREA
**(VIEW AS YOU LOOK AFT) (STRINGER 15L IS SHOWN;
 OTHER INSPECTION AREAS ARE ALMOST THE SAME)**



**LAP SPLICE AT THE PRESSURE BULKHEAD
 (TYPICAL INSPECTION LOCATIONS)**

NOTES

 **TYPICAL WEB LOCATIONS TO EXAMINE.**

 **EXAMINE THE WEB LOCATIONS SHOWN. THE WEB LOCATIONS TO EXAMINE ARE ALONG THE EDGE OF THE RADIAL STIFFENER WHERE THE RADIAL STIFFENER INTERSECTS THE TEAR STRAP AT THE LAP SPLICE. USE THE EDGE OF THE RADIAL STIFFENER OR THE EDGE OF THE WEB AS PROBE GUIDES.**

2257135 S0000505486_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
 ALL; 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-07

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL
PART 6 - EDDY CURRENT

**BULKHEAD BS 1016 - PRESSURE DOME WEB AT THE INTERSECTIONS OF THE LAP SPLICES
AND TEAR STRAPS (LFEC)**

1. Purpose

- A. Use this low frequency eddy current (LFEC) procedure to examine the aft side of the pressure dome web at the BS 1016 bulkhead for cracks. The inspection area is the pressure dome webs at the intersections of the lap splices and tear straps. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The pressure dome web is aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-80-01-9 (LFEC)

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 2 to 4 kHz.
 - (c) Can be calibrated as specified in the calibration instructions of this procedure.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) NDT 19e; Olympus NDT
 - (b) Phasel 2S/2D/2200; GE Inspection Technologies
- C. Probes
 - (1) Use a reflection type ring probe that:
 - (a) Operates in a frequency range from 2 to 4 kHz.
 - (b) Has a minimum inner diameter of 0.30 inch (7.6 mm).
 - (c) Has a maximum outer diameter of 0.80 inch (20.3 mm).
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) RDP.75-500H; Techna NDT
- D. Reference Standard
 - (1) To examine the pressure dome web at the lap splice and tear strap intersections, use reference standard NDT3142 as shown in Figure 2.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-08

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Remove dirt, grease, or sealant from the inspection surfaces.
- (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Connect the probe, energize the instrument and set the frequency between 2 and 4 kHz.
- B. Put the ring probe on the reference standard at probe position 1 as shown in Figure 3, Detail II. Adjust the center of the probe to be above the center of the fastener hole.
- C. Balance the instrument.
- D. Move the probe above the fastener hole as necessary until the height of the signal is at its minimum and balance the instrument.
- E. Set the balance point at approximately 20% of full screen height (FSH) and 60% of full screen width (FSW) as shown in Figure 3, Detail I.
- F. Set the lift-off (phase) so that the signal moves horizontally from right to left when the probe is lifted off the reference standard as shown in Figure 3, Detail I.
- G. Put the ring probe at probe position 2 as shown in Figure 3, Detail II. Make sure the center of the probe is above the center of the fastener hole.
- H. Move the probe above the fastener hole as necessary until the height of the notch signal is at its minimum.
- I. Adjust the instrument gain to put the notch signal at approximately 60% of FSH as shown in Figure 3, Detail II.
- J. Make sure the instrument is calibrated correctly:
 - (1) Put the probe on the reference standard at probe position 1. See Figure 3, Detail II.
 - (2) Move the probe above the fastener hole as necessary until the height of the fastener hole signal is at its minimum.
 - (3) Balance the instrument.
 - (4) Put the probe on the reference standard at probe position 2. See Figure 3, Detail II.
 - (5) Move the probe above the fastener hole as necessary until the height of the signal is at its minimum.
- K. If the minimum signal from the notch is not 60% of FSH then do the calibration again.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Set the airplane baseline signal for a satisfactory fastener signal as follows:
 - (1) Put the probe above the center of one of the fasteners in the area to be examined. Move the probe above the fastener to get the minimum signal from the instrument.
 - (2) Balance the instrument.
 - (3) Compare the signal from three or more additional fasteners in this group with the signal from the first fastener.

NOTE: Do not change the instrument gain when you set the airplane baseline signal.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-08

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737 NON-DESTRUCTIVE TEST MANUAL

- (4) Use the fastener from this group which has the smallest signal, as the baseline signal for the airplane.
- NOTE:** Examine this fastener frequently during the inspection to make sure the instrument baseline has not changed.
- (5) Balance the instrument on the fastener which has the smallest signal. Refer to Paragraph 5.B.(4).
- (6) Move the probe above the fastener as necessary until the height of the signal is at its minimum and balance the instrument.
- (7) Put the ring probe above each fastener in the inspection area and monitor the instrument for crack signals. See Figure 1 for the inspection area. During the inspection:
 - (a) Make a mark at all fastener locations where signals occur that are 40 percent (or more) of FSH.
 - (b) Do a calibration check as follows if the equipment is changed or when the inspection is completed.

NOTE: Do not adjust the instrument gain.

- 1) Put the probe on the reference standard at probe position 1. See Figure 3, Detail II.
- 2) Move the probe above the fastener hole as necessary until the height of the signal is at its minimum.
- 3) Balance the instrument.
- 4) Put the probe on the reference standard at probe position 2 and make sure that the fastener is in the center of the probe. Compare the signal you got from the notch during calibration with the signal that you get now.
- 5) If the signal you get from the notch has decreased in FSH by 10 percent or more, do the calibration and the inspection again on the fastener locations you have examined since the last successful calibration check.

6. Inspection Results

- A. A signal that is more than 40 percent of FSH is a sign of a crack. Areas that cause crack signals to occur must be rejected and more analysis is necessary.
- B. Compare the signal that occurs during the inspection to the signal you got from the notch in the reference standard during calibration.
- C. If crack indications are found, do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.

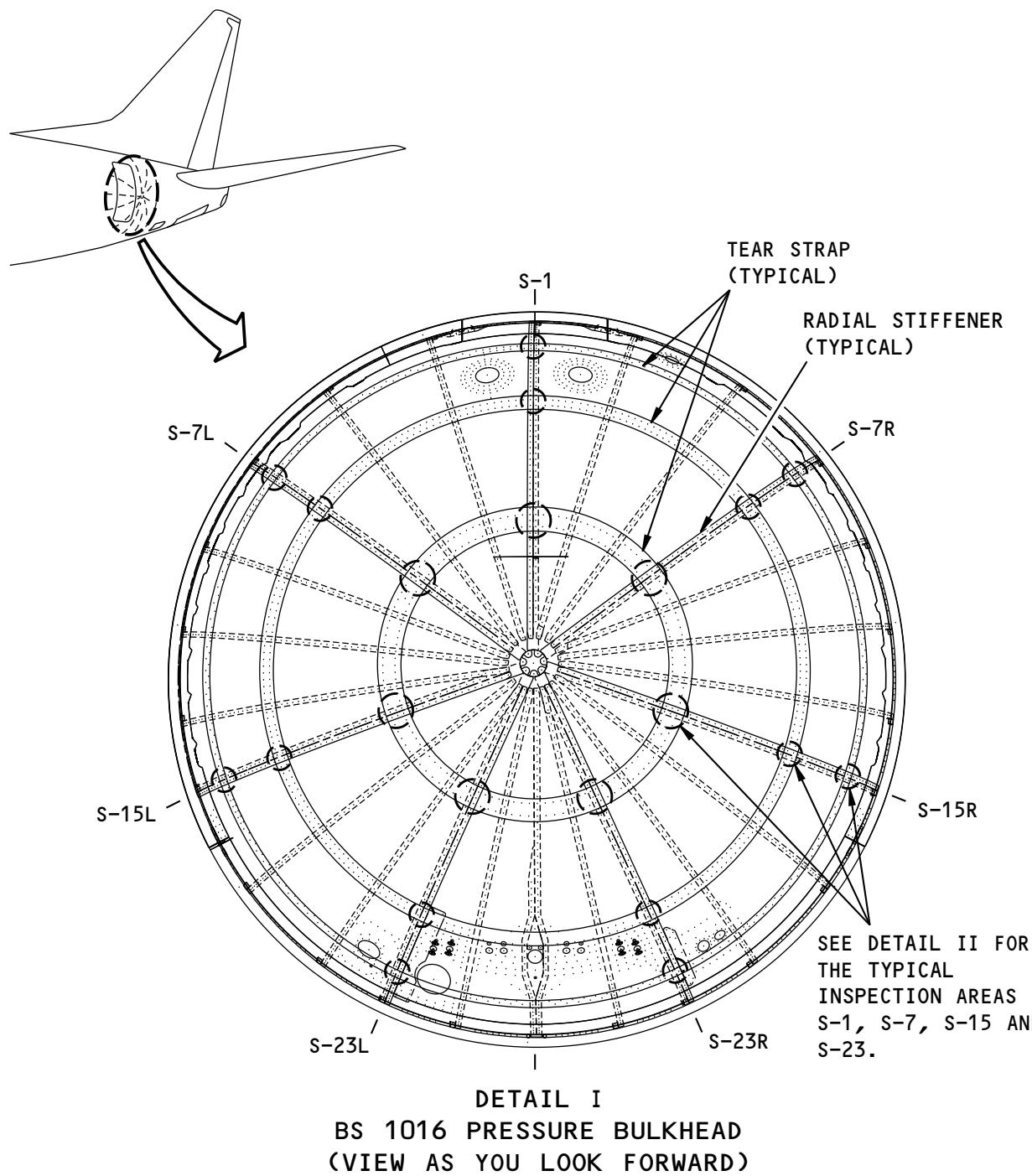
EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-08

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



NOTES



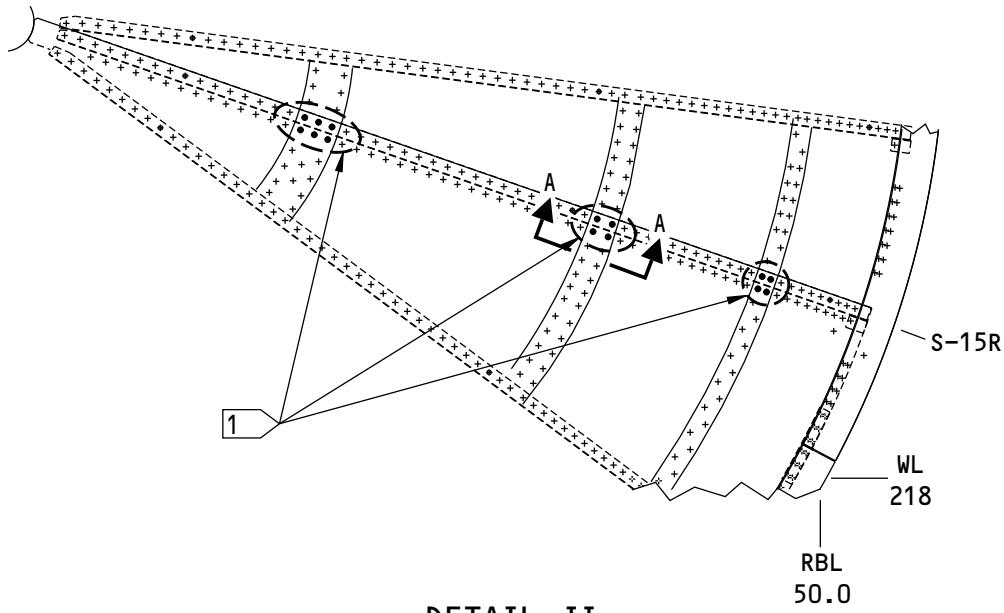
2257143 S0000505536_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

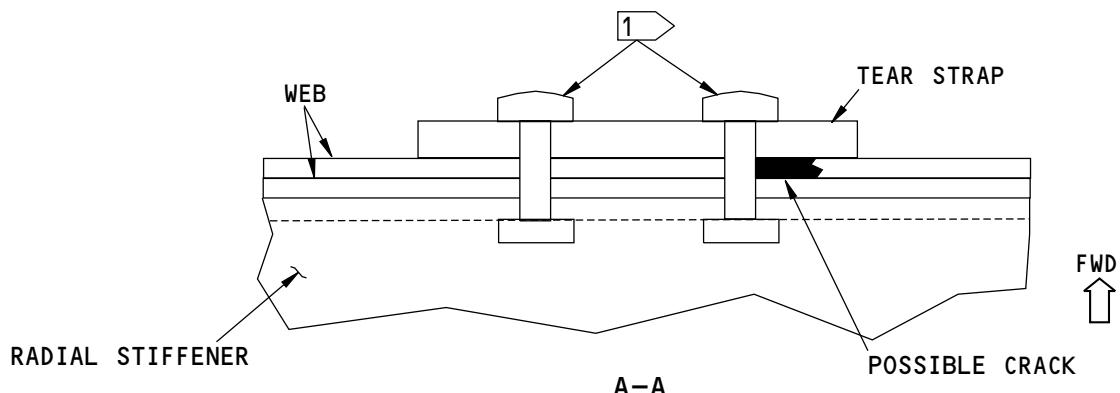
EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-08

D6-37239



DETAIL II
TYPICAL INSPECTION AREA
(VIEW AS YOU LOOK FORWARD)
(STRINGER 15R IS SHOWN; OTHER INSPECTION AREAS ARE
ALMOST THE SAME)



TEAR STRAP AT THE PRESSURE BULKHEAD
(TYPICAL FASTENER LOCATIONS TO EXAMINE)

NOTES

• **TYPICAL FASTENER LOCATIONS TO EXAMINE**

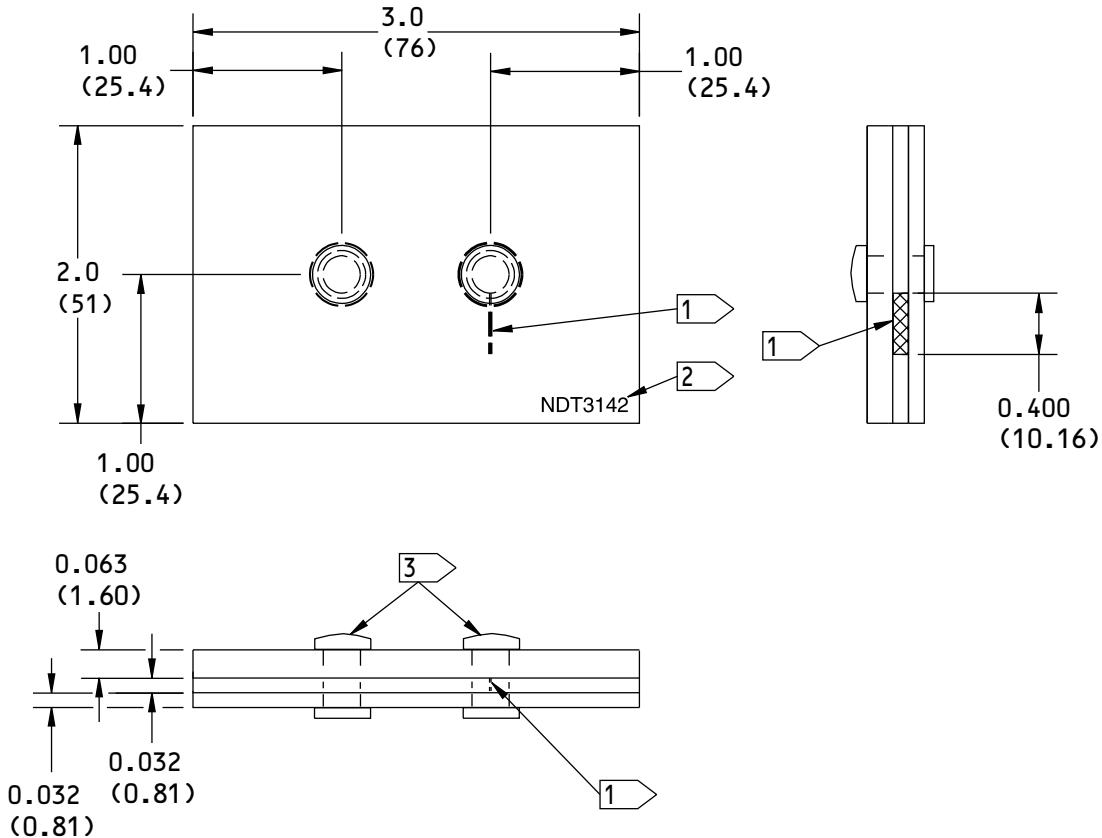
- 1) EXAMINE THE FASTENER LOCATIONS SHOWN. THE FASTENER LOCATIONS TO BE EXAMINED ARE AT THE INTERSECTIONS OF THE LAP SPLICES AND THE TEAR STRAPS ON THE AFT SIDE OF THE PRESSURE DOME WEB.

2257158 S0000505537_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-08


NOTES

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS ARE IN PARENTHESES)
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

<u>INCHES</u>	<u>MILLIMETERS</u>
$X.XXX = \pm 0.005$	$X.XX = \pm 0.10$
$X.XX = \pm 0.025$	$X.X = \pm 0.5$
$X.X = \pm 0.050$	$X = \pm 1$
- MATERIAL: ALL 2024-T3 AIRCRAFT ALUMINUM
- SURFACE ROUGHNESS: 63 Ra OR BETTER

- 1 ➤ EDM NOTCH:
LENGTH - 0.400 (10.16)
DEPTH - 0.032 (0.81) (THROUGH THE THICKNESS)
WIDTH - 0.010 (0.25) MAXIMUM
- 2 ➤ ETCH OR STAMP THE REFERENCE STANDARD NUMBER, NDT3142, AT THE APPROXIMATE LOCATION SHOWN
- 3 ➤ USE BACR15FT6D FASTENERS

2257185 S0000505539_V1

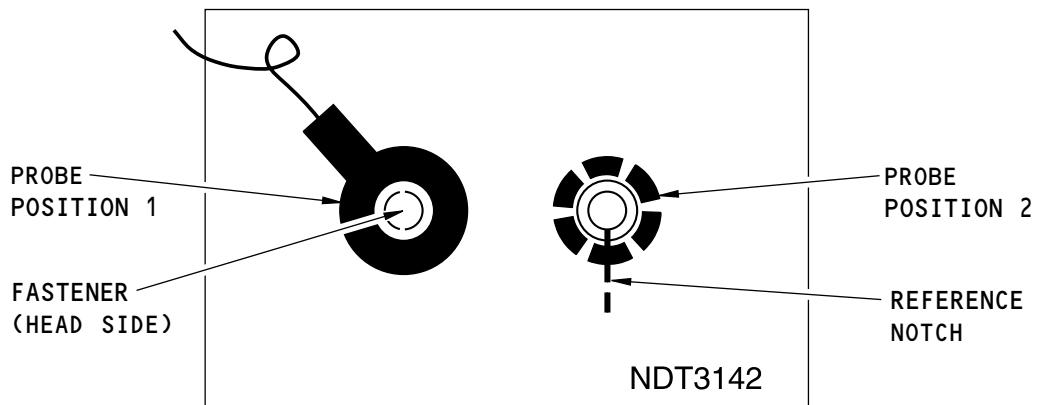
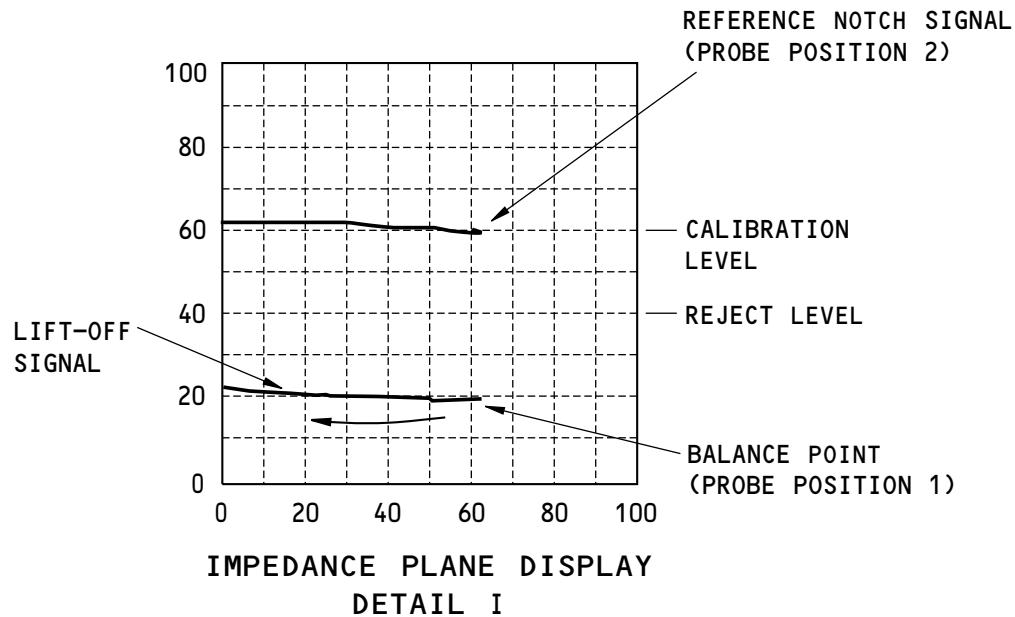
Reference Standard NDT3142
Figure 2

 EFFECTIVITY
 ALL 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



PROBE POSITIONS FOR CALIBRATION ON
REFERENCE STANDARD NDT3142
DETAIL II

2257225 S0000505541_V1

Calibration Probe Positions
Figure 3

EFFECTIVITY
ALL 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-08

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

MAIN LANDING GEAR SUPPORT FRAME AT BS 716 - STUB BEAM (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the stub beam for cracks at the main landing gear support frame. The stub beam at BS 716 is examined for cracks at the upper flange from BL 45.5 to BL 64.6 and also at five fastener locations where a floor clip attaches to the web of the stub beam. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The stub beam is aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-19-3
 - (2) Item: 53-40-19-3a

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies

C. Probes

- (1) Use a probe that operates in a frequency range from 50 to 500 kHz.

NOTE: Shielded probes are recommended.

- (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN92-5B; Techna NDT

D. Reference Standard

- (1) To examine the web of the stub beam at the five fasteners that attach the floor clip to web of the stub beam, use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.
- (2) To examine the inner radius and the upper flange of the stub beam between BL 45.5 and BL 64.6, use reference standard 126, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-09



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Remove dirt, grease, or sealant from the inspection surfaces.
- (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument to examine the stub beam web for cracks at the five fasteners that attach the floor clip to the stub beam web at BS 716 (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, to calibrate the instrument.
- B. Calibrate the instrument to examine the inner radius and the upper flange of the stub beam at BS 716 (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to calibrate the instrument.

5. Inspection Procedure

- A. Get access to the inspection areas shown in Figure 1.
- B. Examine the stub beam for cracks at BS 716 as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, in the areas that follow:
 - (1) Examine the stub beam web for cracks at the five fasteners that attach the floor clip to the web of the stub beam. Use the head of the fasteners as probe guides.
 - (2) Examine the forward and aft sides of the upper flange of the stub beam for cracks from BL 45.5 to BL 64.6.
 - (3) Examine the forward and aft sides of the inner radius of the stub beam for cracks from BL 45.5 to BL 64.6.
- C. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).
- D. Do Paragraph 5.A. thru Paragraph 5.C. again to examine the stub beam for cracks on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-09

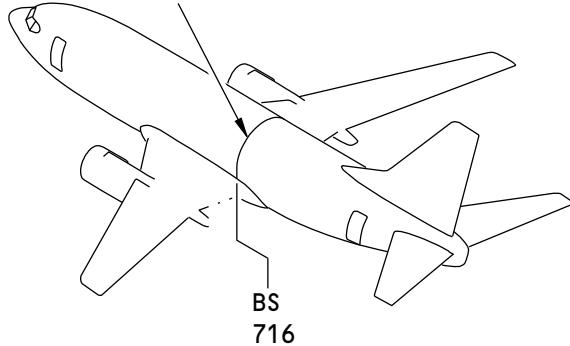
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

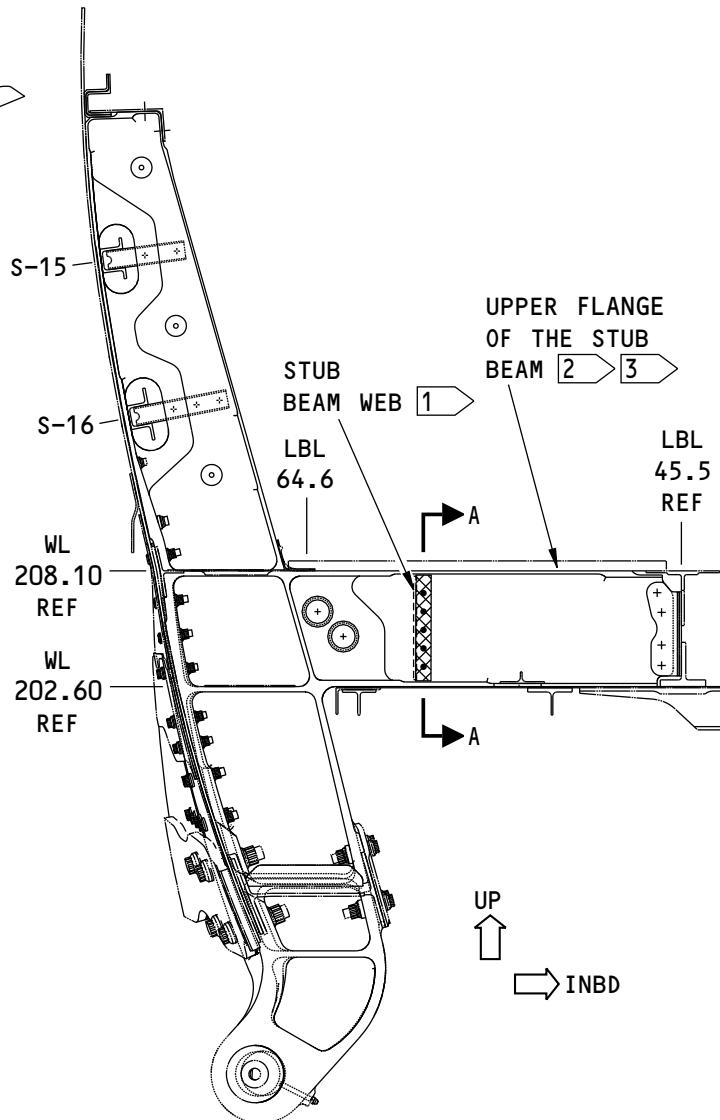
Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

SEE DETAIL I FOR THE
MAIN LANDING GEAR SUPPORT FRAME


NOTES
☒ INSPECTION AREA

- 1 EXAMINE THE STUB BEAM WEB FOR CRACKS AT THE FIVE FASTENERS THAT GO THROUGH THE STUB BEAM WEB AND THE FLOOR CLIP. USE THE HEAD OF EACH FASTENER AS A PROBE GUIDE.
- 2 EXAMINE THE FORWARD AND AFT SIDES OF THE STUB BEAM FOR CRACKS FROM THE UPPER SIDE OF THE UPPER FLANGE, FROM BL 45.5 TO BL 64.6. KEEP THE PROBE COIL A CONSTANT DISTANCE FROM EACH EDGE OF THE FLANGE.
- 3 EXAMINE THE FORWARD AND AFT SIDES OF THE STUB BEAM FOR CRACKS FROM THE INNER RADIUS OF THE UPPER FLANGE, FROM BL 45.5 TO BL 64.6. KEEP THE PROBE PERPENDICULAR TO THE INSPECTION SURFACE DURING EACH SCAN.



DETAIL I
MAIN LANDING GEAR SUPPORT
FRAME AT BS 716

2256743 S0000505552_V1

Inspection Area

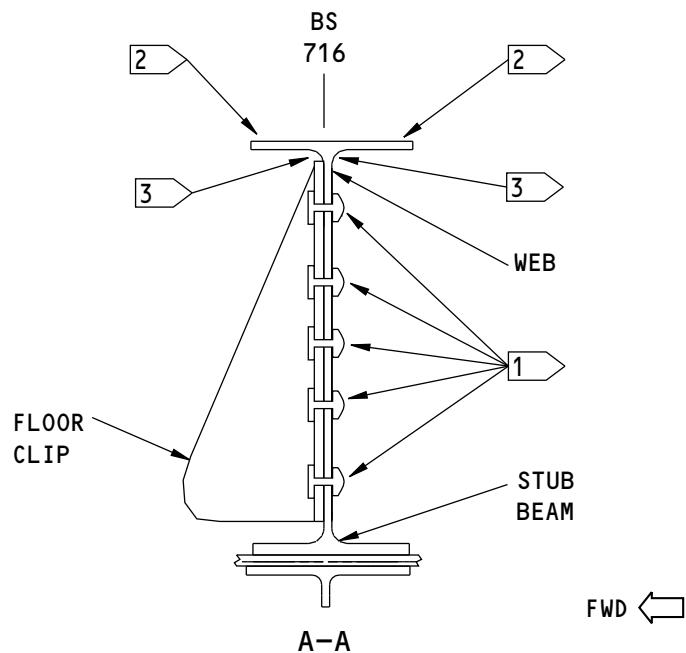
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-09



737
NON-DESTRUCTIVE TEST MANUAL



2256834 S0000505553_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-09

D6-37239

Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

EXTERNAL DOUBLER AT THE CUTOUT FOR THE OVERWING EMERGENCY EXIT (LFEC)

1. Purpose

- A. Use this procedure to examine the external (boomerang) doubler for cracks at the cutout for the overwing emergency exit. The external doubler is examined for cracks at the fasteners that attach the external doubler to the outer chord of the BS 616 door frame, between stringer 10 and stringer 12. See Figure 1 for the inspection areas.
- B. The external doubler is aluminum.
- C. This procedure uses low frequency eddy current (LFEC) to examine the external doubler from outside the airplane.
- D. This procedure uses an eddy current instrument with an impedance plane display.
- E. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-22-20

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument - Use an eddy current instrument with an impedance plane display. Use an instrument that:
 - (1) Can operate at a frequency between 300 and 500 Hz.
 - (2) Can be calibrated as specified in the calibration instructions of this procedure. The instruments that follow were used to help prepare this procedure.
 - (a) NDT 19e; Olympus NDT
 - (b) Phasec 2S/2D/2200; GE Inspection Technologies
- C. Probes
 - (1) Use a reflection type ring probe with a minimum inner diameter of 0.40 inch (10.2 mm) and a maximum outer diameter of 0.80 inch (20.3 mm) that can operate at a frequency between 300 and 500 Hz. The probe that follows was used to help prepare this procedure.
 - (a) RDP.75-500H-5; Techna NDT
- D. Reference Standard
 - (1) Use reference standard NDT3131 as shown in Figure 2.

3. Prepare for the Inspection

- A. Identify the inspection area shown in Figure 1.
- B. Get access to the inspection area.
- C. Clean the inspection surface if necessary. Remove paint only if it is loose.

4. Instrument Calibration

- A. Set the instrument frequency between 300 and 500 Hz.

EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

PART 6 53-11-10

Page 1
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL

- B. Put the probe on the reference standard at probe position 1 as shown in Figure 3, Detail II.
 - C. Balance the instrument.
 - D. Move the probe above the fastener as necessary until the height of the signal is at its minimum and balance the instrument again.
 - E. Set the balance point at approximately 20 percent of full screen height (FSH) and approximately 60 percent of full screen width (FSW) as shown in Figure 3, Detail I.
 - F. Adjust the phase control so that the signal moves horizontally from right to left when the probe is lifted off the reference standard. See Figure 3, Detail I.
 - G. Put the probe on the reference standard at probe position 2 as shown in Figure 3, Detail II.
- NOTE:** Make sure the fastener is in the center of the probe.
- H. Move the probe above the fastener as necessary until the height of the signal is at its minimum.
 - I. Adjust the instrument gain so the maximum signal from the reference notch is 60 percent of FSH as shown in Figure 3, Detail I.
 - J. Do Paragraph 4.B., Paragraph 4.C., Paragraph 4.D., Paragraph 4.G. and Paragraph 4.H. again, as necessary, to make sure that the notch signal is 60 percent of FSH.
 - (1) Do Paragraph 4.B. thru Paragraph 4.J. again if the signal from the fastener hole with a notch is not approximately 60 percent of FSH.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Set the airplane baseline signal for a satisfactory fastener location as follows:
 - (1) Put the probe above the center of one of the fasteners in the area to be examined. Move the probe above the fastener to get the minimum signal from the instrument.
 - (2) Balance the instrument.
 - (3) Compare the signal of three or more fasteners in this group with the signal from the first fastener.
NOTE: Do not change the instrument sensitivity when you set the airplane baseline signal.
 - (4) Use the fastener from this group which has the smallest signal as the baseline signal for the airplane.
NOTE: Examine this fastener frequently during the inspection to make sure the instrument baseline has not changed.
- C. Put the probe on the fastener which has the smallest signal. Refer to Paragraph 5.B.(4).
- D. Move the probe above the fastener as necessary until the height of the signal is at its minimum and balance the instrument.
- E. Put the ring probe above each fastener in the inspection area and monitor the instrument for crack signals. See Figure 1 for the inspection area. During the inspection:
 - (1) Make a mark at all the locations where signals occur that are 40 percent (or more) of FSH.
 - (2) Do a calibration check when the inspection is completed as follows:
NOTE: Do not adjust the instrument gain.
 - (a) Put the probe on the reference standard at probe position 1.



737
NON-DESTRUCTIVE TEST MANUAL

- (b) Move the probe above the fastener as necessary until the height of the signal is at its minimum.
 - (c) Balance the instrument.
 - (d) Put the probe on the reference standard at probe position 2 and make sure the fastener is in the center of the probe. Compare the signal you got from the notch during calibration with the signal you get now.
 - (e) If the signal you now get from the notch has decreased in FSH by 10 percent or more, do the calibration and inspection again on the fastener locations you have examined since the last satisfactory calibration check.
- F. Do Paragraph 5.A. thru Paragraph 5.E. again to examine the external (boomerang) doubler for cracks at the cutout for the overwing emergency exit on the other side of the airplane.

6. Inspection Results

- A. A signal that is more than 40% of FSH is a sign of a crack. Areas that cause these signals to occur must be rejected and more analysis is necessary.
- B. Compare the signal that occurs during the inspection to the signal you got from the notch in the reference standard during calibration.
- C. If crack indications are found, do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.

EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

PART 6 53-11-10

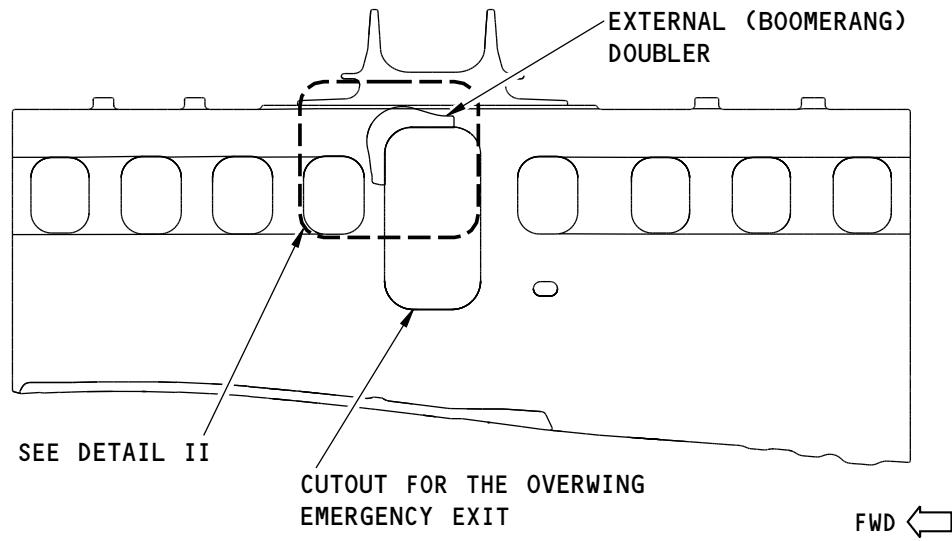
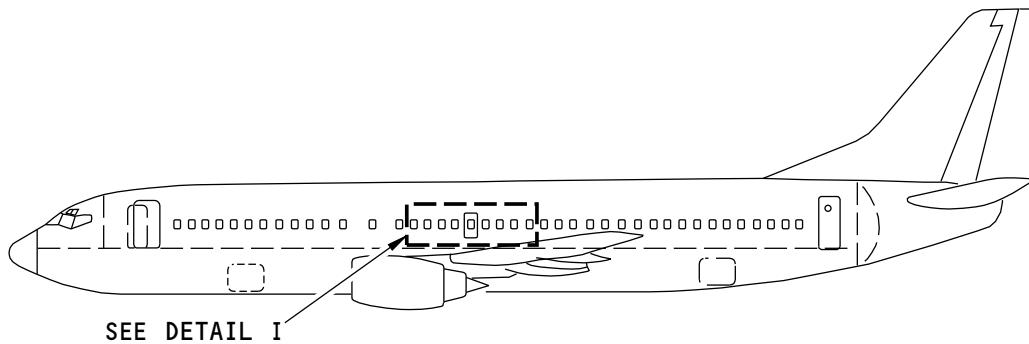
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 3
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL



DETAIL I
OVERWING EMERGENCY EXIT CUTOUT

NOTES

- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE

2257663 S0000505615_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

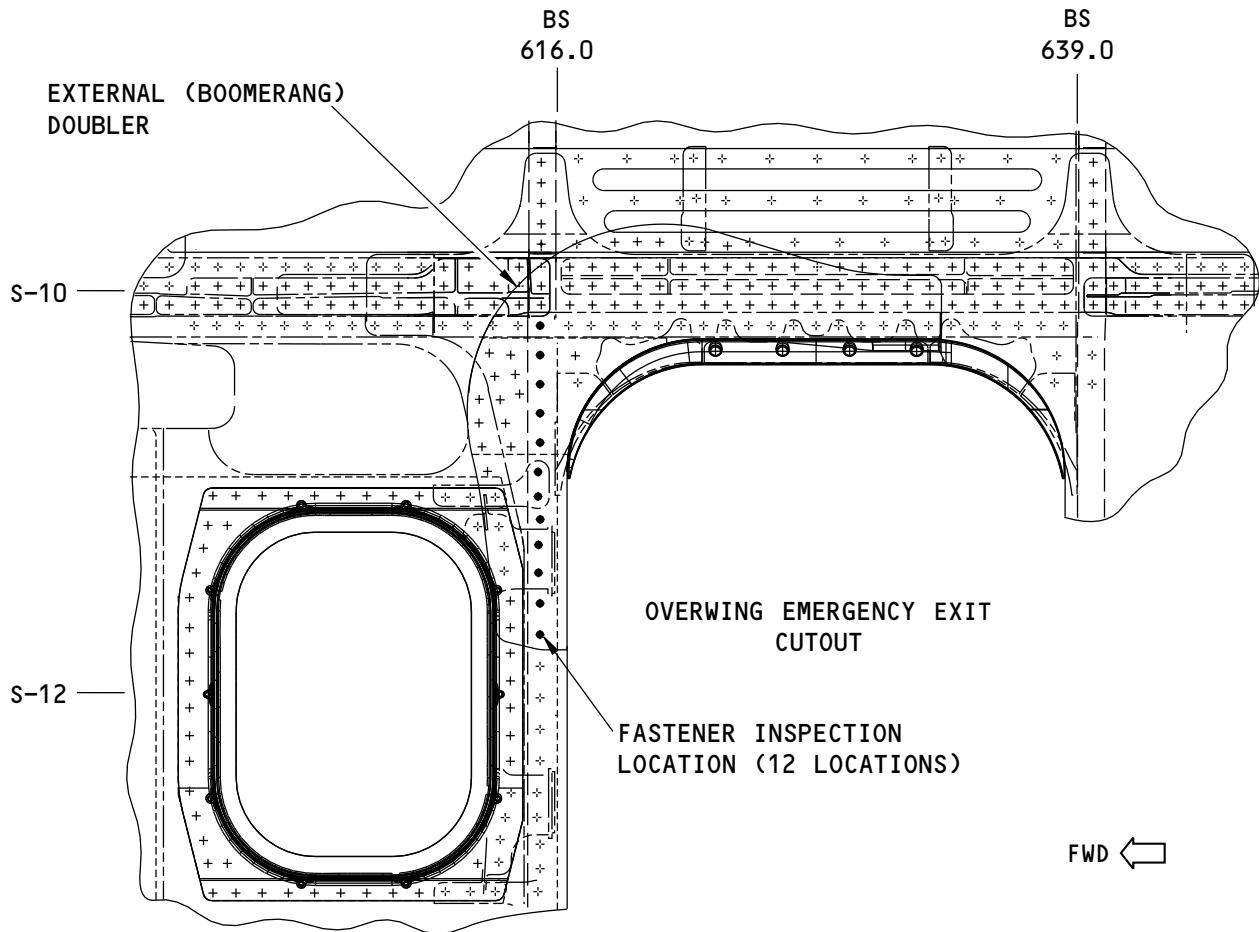
EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

PART 6 53-11-10

Page 4
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

DETAIL II
FASTENER LOCATIONS TO EXAMINE THE EXTERNAL (BOOMERANG)
DOUBLER OF THE OVERWING EMERGENCY EXIT CUTOUT FOR CRACKS

NOTES

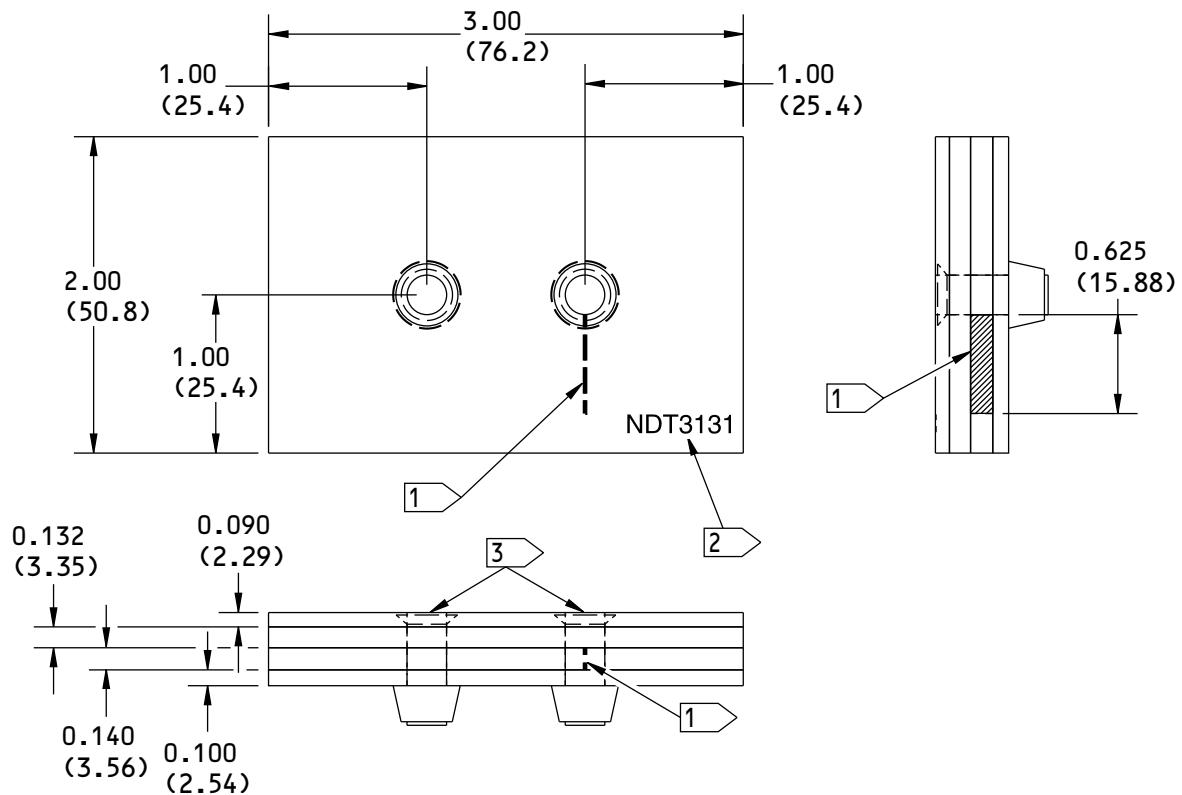
- FASTENER LOCATIONS TO BE EXAMINED

2257673 S0000505616_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
 ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

PART 6 53-11-10

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS ARE IN PARENTHESES)
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

<u>INCHES</u>	<u>MILLIMETERS</u>
X.XXX = ± 0.005	X.XX = ± 0.10
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1
- MATERIAL: ALL 2024-T3 AIRCRAFT ALUMINUM
- SURFACE ROUGHNESS: 63 Ra OR BETTER

- 1 ➤ EDM NOTCH:
LENGTH - 0.625 (15.88)
DEPTH - 0.140 (3.56) (THROUGH THE THICKNESS)
WIDTH - 0.010 (0.25) MAXIMUM
- 2 ➤ ETCH OR STAMP THE REFERENCE STANDARD NUMBER, NDT3131, AT THE APPROXIMATE LOCATION SHOWN
- 3 ➤ BACB30VU8 FASTENERS (2 LOCATIONS)

2258148 S0000505618_V1

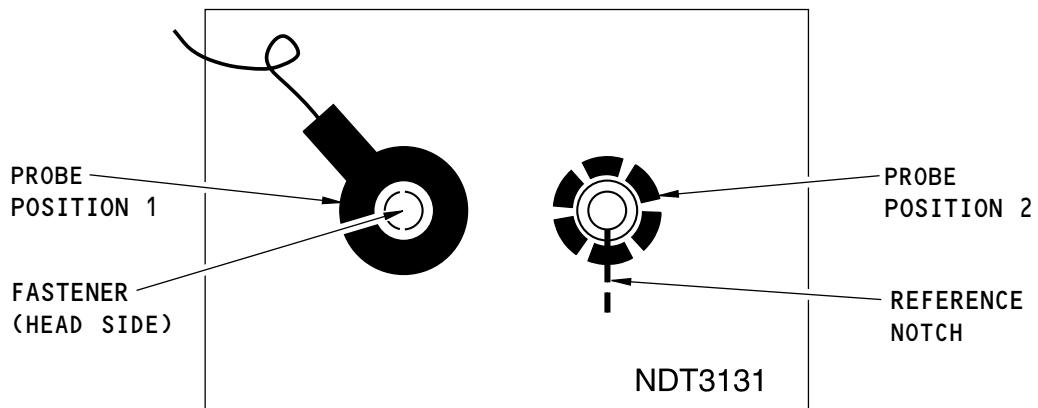
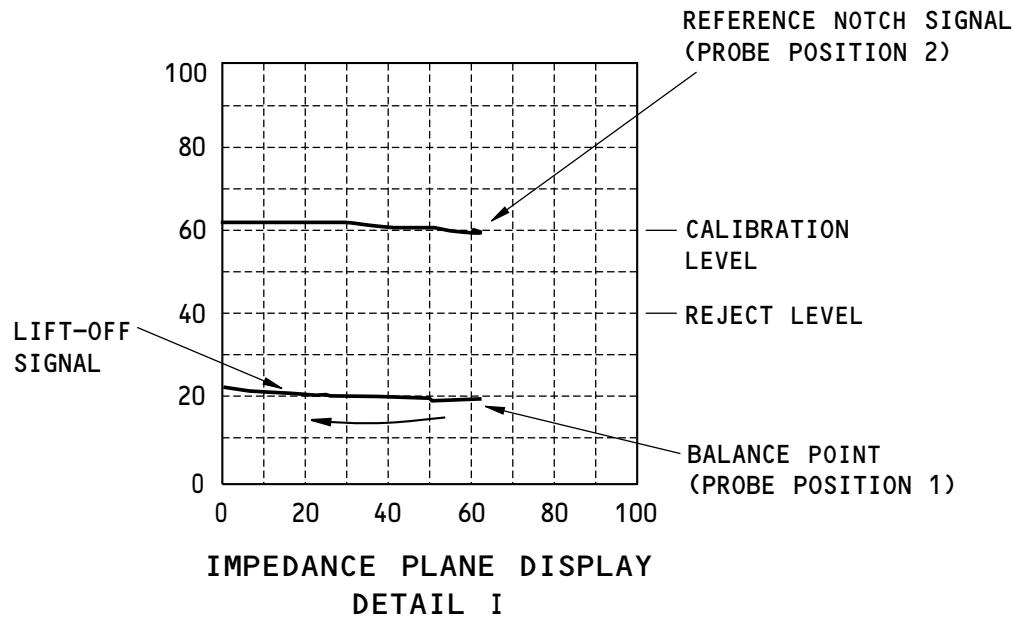
Reference Standard NDT3131
Figure 2

 EFFECTIVITY
 ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



PROBE POSITIONS FOR CALIBRATION ON
REFERENCE STANDARD NDT3131
DETAIL II

2258149 S0000505620_V1

Calibration Probe Positions
Figure 3

EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

PART 6 53-11-10

Page 7
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

BULKHEAD BS 1016 - PRESSURE DOME WEB AT THE PRESSURE CHORD (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the pressure dome web for cracks. The pressure dome web is examined for cracks where it attaches to the pressure chord, at the aft row of fasteners, and adjacent to the edges of the clips and the radial stiffeners. Also, only for 737 airplane line numbers 721 and on, the pressure dome web is examined for cracks all along the edges of the S-1, S-3, S-5, and S-7 radial stiffeners. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The pressure dome web is aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-80-01-4

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that operates in a frequency range from 50 to 500 kHz.
NOTE: Shielded probes are recommended.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN92-5B; Techna NDT
- D. Reference Standard
 - (1) To examine the pressure dome web where the pressure dome web attaches to the pressure chord with fasteners, use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.
 - (2) To examine the pressure dome web in areas that are adjacent to the radial stiffeners and clips, use reference standard 126, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-11

Page 1
Nov 15/2015



737 NON-DESTRUCTIVE TEST MANUAL

- (1) Remove dirt, grease, or sealant from the inspection surfaces.
- (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument to examine the pressure dome web for cracks at the fasteners that attach the pressure dome web to the pressure chord (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.
- B. Calibrate the instrument to examine the pressure dome web for cracks in areas that are adjacent to the radial stiffeners and clips (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Get access to the inspection areas shown in Figure 1.
- B. Calibrate the instrument for the area to be examined.
- C. Examine the pressure dome web for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, at the locations that follow:
 - (1) For all 737 airplanes:
 - (a) Examine the pressure dome web for cracks at all fastener locations in the aft row where the pressure dome web is attached to the pressure chord. Use the head or the tail of each fastener as a probe guide. See Figure 1, flagnote 1.
 - (b) Examine the pressure dome web for cracks at the forward two fasteners that are adjacent to the edges of the radial stiffeners and clips. Use the head or the tail of each fastener as a probe guide. See Figure 1, flagnote 2.
 - (c) Examine the pressure dome web for cracks that are adjacent to the edges of the radial stiffeners and clips at all locations where the radial stiffener attaches to the pressure chord. See Figure 1, flagnote 3.
 - (2) For 737 airplane line numbers 721 and on:
 - (a) Examine the pressure dome web for cracks along the edges of the S-1 thru S-7 radial stiffeners on each side of the airplane. Use the edges of the radial stiffeners as a probe guide. See Figure 1, flagnote 4.
- D. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

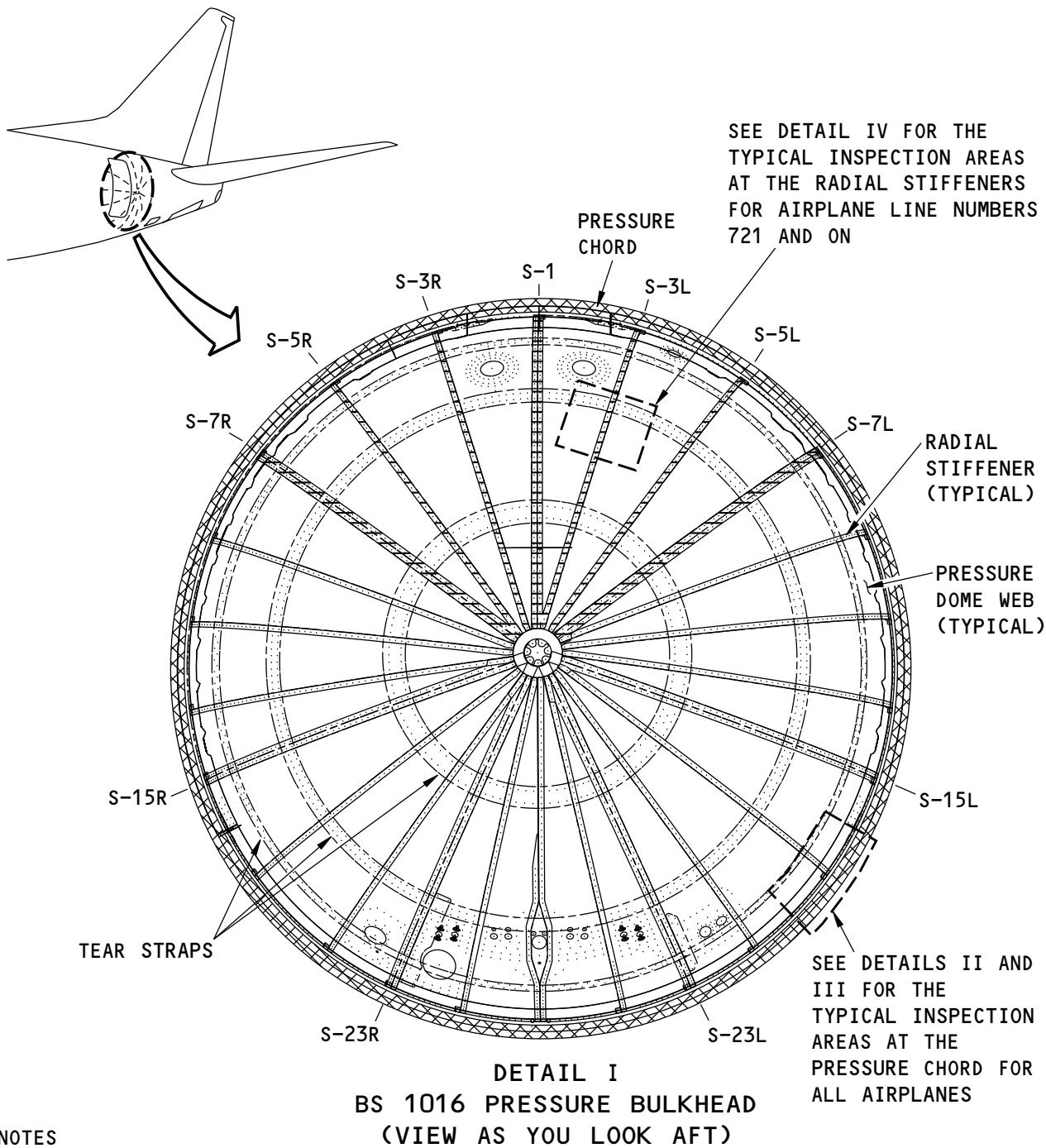
EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-11

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


DETAIL I
BS 1016 PRESSURE BULKHEAD
(VIEW AS YOU LOOK AFT)

NOTES

 INSPECTION AREAS FOR ALL AIRPLANES

 INSPECTION AREAS FOR AIRPLANE LINE NUMBERS 721 AND ON

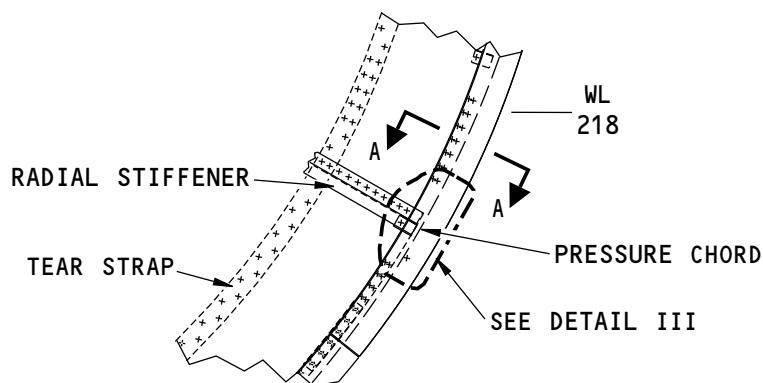
2257479 S0000505676_V1

Inspection Area
Figure 1 (Sheet 1 of 3)

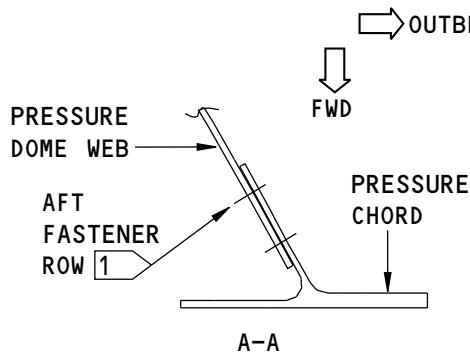
EFFECTIVITY
 ALL; 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-11

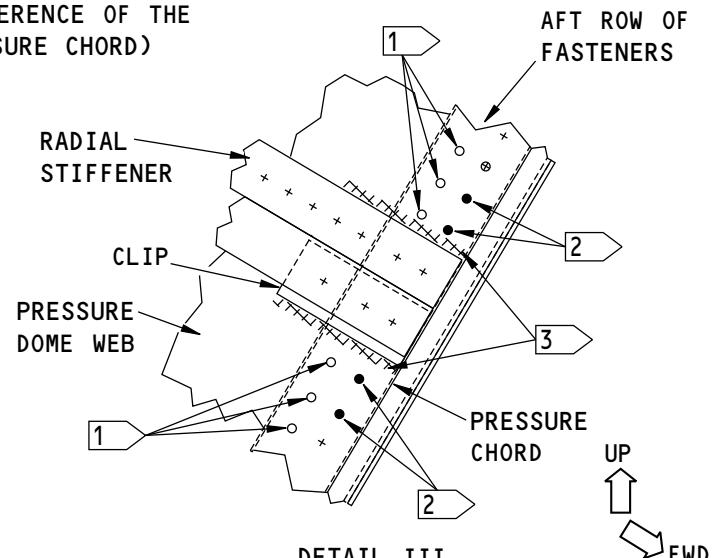
D6-37239



DETAIL II
TYPICAL INSPECTION AREA
(VIEW AS YOU LOOK AFT)
(THE INSPECTION AREA IS THE FULL
CIRCUMFERENCE OF THE
PRESSURE CHORD)



TYPICAL FASTENER LOCATIONS TO BE EXAMINED BETWEEN THE RADIAL STIFFENERS



DETAIL III
TYPICAL FASTENER LOCATIONS TO BE EXAMINED AT THE RADIAL STIFFENERS
(VIEW AS YOU LOOK OUTBOARD)

NOTES

- ● TYPICAL FASTENER LOCATIONS TO BE EXAMINED
- ☒ TYPICAL PRESSURE DOME WEB LOCATIONS TO BE EXAMINED AT THE RADIAL STIFFENER LOCATIONS
- 1 Do a scan to examine the pressure dome web for cracks at all fastener locations in the aft row where the pressure dome web is attached to the pressure chord. Use the head or tail of each fastener as a probe guide. The typical inspection locations are shown.
- 2 Do a scan to examine the pressure dome web for cracks at the forward two fasteners that are adjacent to the edges of the radial stiffener and clip. Use the head or tail of each fastener as a probe guide. The typical inspection locations are shown.
- 3 Do a scan to examine the pressure dome web for cracks that are adjacent to the edges of the radial stiffener and clip. The typical inspection locations are shown.

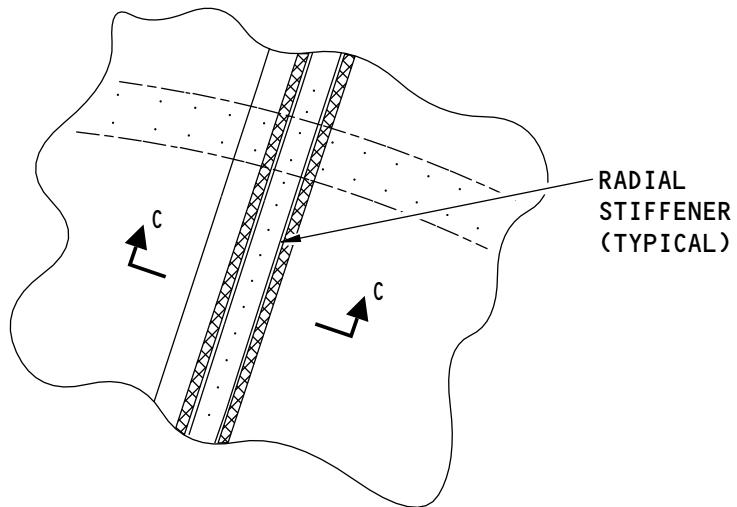
2257518S0000505677_V1

Inspection Area
Figure 1 (Sheet 2 of 3)

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

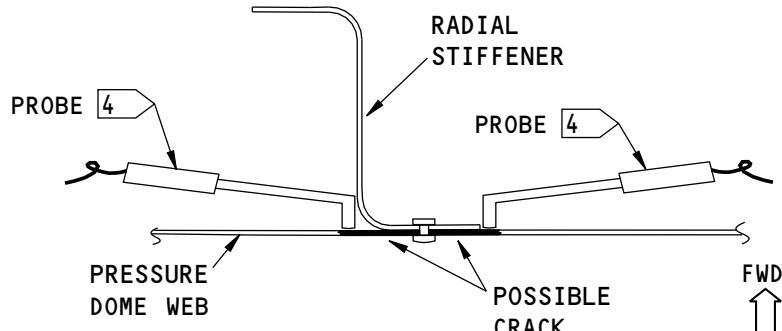
PART 6 53-11-11

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL


DETAIL IV
 TYPICAL INSPECTION AREA
 (VIEW AS YOU LOOK AFT)

(THE RADIAL STIFFENER AT THE S-3 LOCATION IS SHOWN;
 OTHER RADIAL STIFFENER LOCATIONS ARE ALMOST THE SAME)



C-C
 TYPICAL INSPECTION AREA AT THE RADIAL
 STIFFENER LOCATIONS

NOTES

- EXAMINE THE PRESSURE DOME WEB FROM THE FORWARD SIDE OF THE PRESSURE DOME
- ☒ TYPICAL PRESSURE DOME WEB LOCATIONS TO BE EXAMINED. IT IS NECESSARY TO EXAMINE THE PRESSURE DOME WEB FOR CRACKS ALONG THE FULL LENGTH OF THE S-1, S-3, S-5 AND S-7 RADIAL STIFFENERS.
- 4 EXAMINE THE PRESSURE DOME WEB FOR CRACKS AT THE LOCATIONS SHOWN. THE PRESSURE DOME WEB LOCATIONS TO BE EXAMINED ARE ALONG THE EDGES OF THE RADIAL STIFFENERS. USE THE EDGES OF THE RADIAL STIFFENERS AS PROBE GUIDES.

2257545 S0000505678_V1

Inspection Area
 Figure 1 (Sheet 3 of 3)

EFFECTIVITY
 ALL: 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-11

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

SKIN AND DOUBLERS AT THE CUTOUT FOR THE OVERWING EMERGENCY EXIT (HFEC)

1. Purpose

- A. Use this procedure to examine the skin and doublers at the cutout of the overwing emergency exit for cracks. The inspection areas are the edges of the skin, the bear strap (inner doubler) and the cub strap (inner doubler) that are at the BS 616 external (boomerang) doubler and between stringers 10 and 12. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The skin and doublers are aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-22-20

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an instrument that:
 - (a) Operates at frequencies between 50 and 500 kHz.
 - (b) Has an impedance plane display.
 - (2) Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.B, for more instrument data.
- C. Probe
 - (1) Use a probe that:
 - (a) Operates at frequencies between 50 and 500 kHz.
 - (b) Has a diameter of 0.125 inch (3.18 mm).
 - (c) Is shielded.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN925-5; Techna NDT
- D. Reference Standard
 - (1) Use reference standard 189, or an equivalent, as specified in Part 6, 51-00-00, Procedure 23, paragraph 3.D.

3. Prepare for the Inspection

- A. Identify and get access to the inspection area. See Figure 1.
 - (1) Remove the phenolic filler to get access to the inspection area.
- B. Clean the inspection surfaces.
 - (1) Remove dirt or grease from the inspection surfaces.

EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

PART 6 53-11-12

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Jul 01/2016



737 NON-DESTRUCTIVE TEST MANUAL

- (2) Remove paint only if it is loose.
- (3) Remove sealant from the areas that the probe will touch.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 189, or an equivalent, as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Get access to the inspection areas that are shown in Figure 1.
- C. Examine the skin and inner doublers adjacent to the external (boomerang) doubler as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) Examine the edge of the skin. See Figure 1, flagnote 1.
 - (2) Examine the edge of the bear strap (inner doubler). See Figure 1, flagnote 2.
 - (3) Examine the edge of the cub strap (inner doubler). See Figure 1, flagnote 3.
- D. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).
- E. Do Paragraph 5.B. thru Paragraph 5.D. again to examine the skin and inner doublers for cracks on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

PART 6 53-11-12

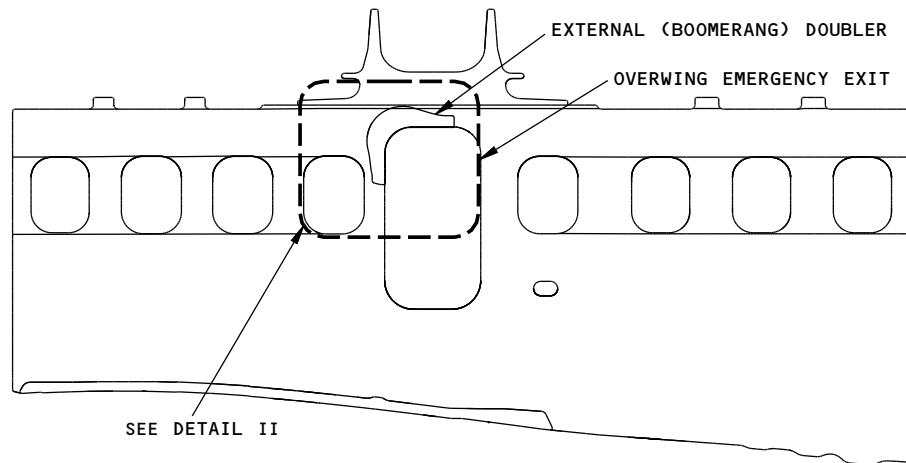
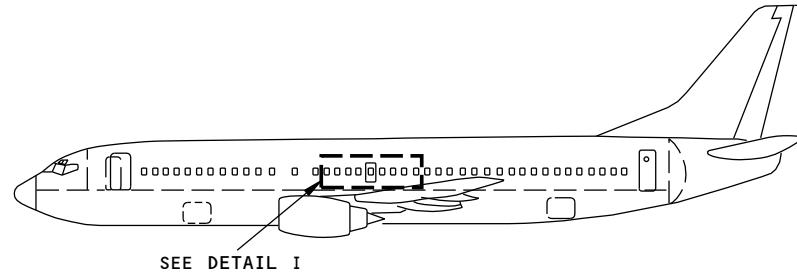
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUT
DETAIL I

NOTES

- THE LEFT SIDE IS SHOWN;
THE RIGHT SIDE IS OPPOSITE

2258012 S0000505772_V1

Inspection Area
Figure 1 (Sheet 1 of 3)

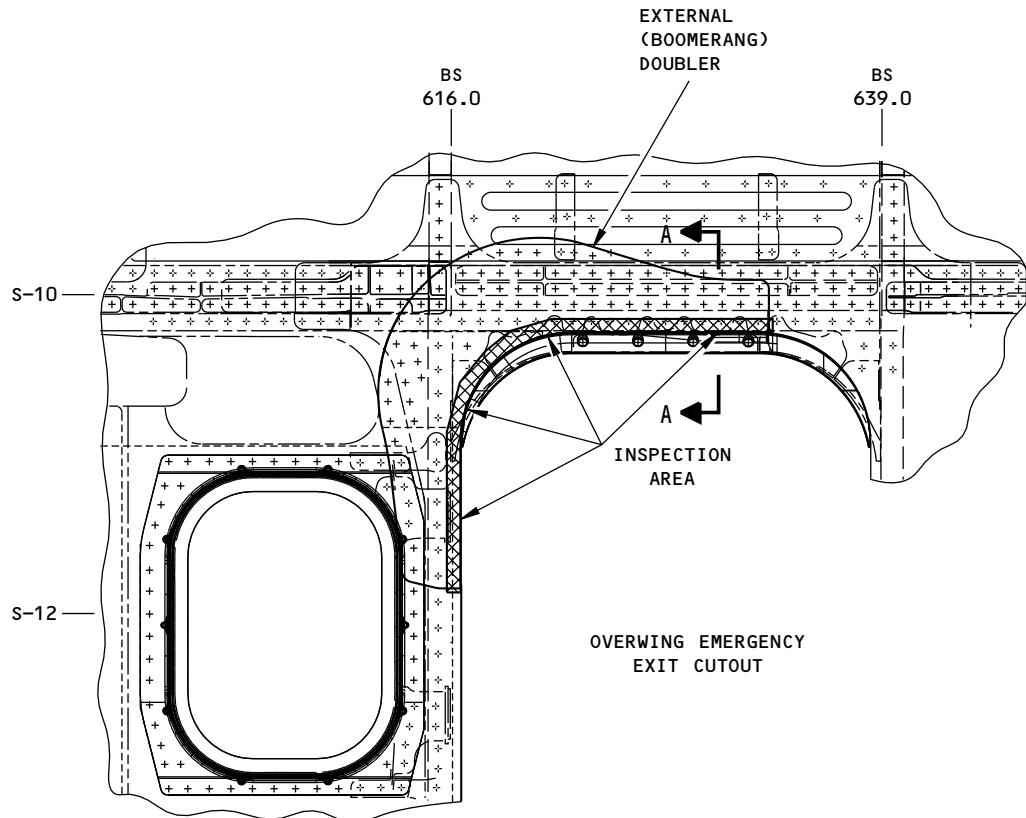
EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

PART 6 53-11-12

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



FASTENERS TO EXAMINE AT THE OVERWING
EMERGENCY EXIT CUTOUT
DETAIL II

NOTES

- INSPECTION AREA. USE A
HIGH FREQUENCY EDDY
CURRENT PENCIL PROBE

2258023 S0000505774_V1

Inspection Area
Figure 1 (Sheet 2 of 3)

EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

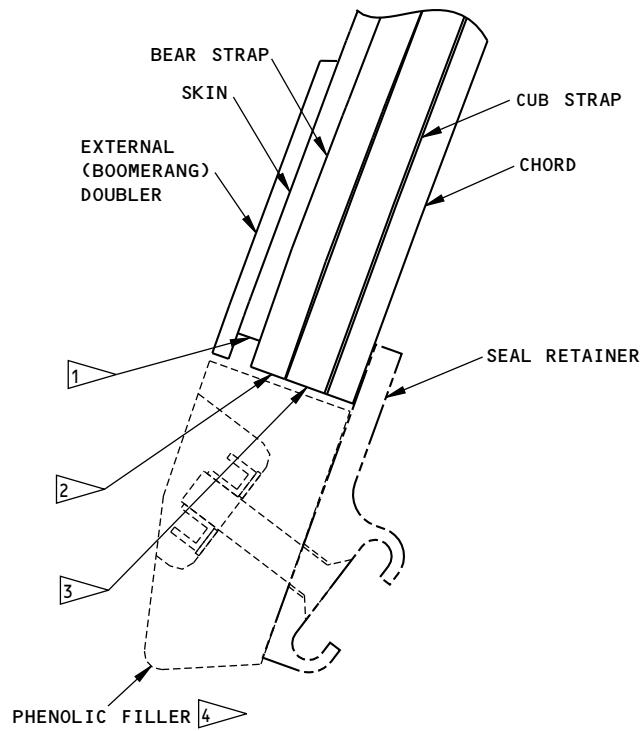
PART 6 53-11-12

D6-37239

Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



A-A

NOTES

- 1 ▶ EXAMINE THE EDGE OF THE SKIN FOR CRACKS. IF NECESSARY, USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE CENTER OF THE PROBE IN THE CENTER OF THE SKIN
- 2 ▶ EXAMINE THE EDGE OF THE BEAR STRAP FOR CRACKS. IF NECESSARY, USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE CENTER OF THE PROBE IN THE CENTER OF THE BEAR STRAP
- 3 ▶ EXAMINE THE EDGE OF THE CUB STRAP FOR CRACKS. IF NECESSARY, USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE CENTER OF THE PROBE IN THE CENTER OF THE CUB STRAP
- 4 ▶ THE PHENOLIC FILLER MUST BE REMOVED TO DO THE INSPECTIONS

2258036 S0000505775_V1

Inspection Area
Figure 1 (Sheet 3 of 3)

EFFECTIVITY
ALL; 737-700 AIRPLANE LINE NUMBERS 1 THRU 6

PART 6 53-11-12

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

**SKIN AND DOUBLERS AT THE CUTOUT FOR THE OVERWING EMERGENCY EXIT - OPEN HOLE
INSPECTION (HFEC)**

1. Purpose

- A. Use this procedure to examine the skin and doublers for cracks at the cutouts for the overwing emergency exits. The skin and doublers are examined at the fasteners that attach the external (boomerang) doubler to the outer chord of the door frames at BS 578, BS 616, and BS 639, between stringers 10 and 15. The fasteners are removed and the skin, bear strap (inner doubler), cub strap (inner doubler) and teddy bear strap (inner doubler) are all examined from the open holes. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The skin and doublers are aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-22-22

2. Equipment

- A. General
 - (1) Use an eddy current instrument that can operate in the dynamic mode (time related display) with a rotary scanner. Refer to Part 6, 51-00-00, Procedure 16, Paragraph 3 for data about the equipment.
 - (2) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 16, paragraph 5.
 - (3) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an instrument that:
 - (a) Operates at frequencies between 50 and 500 kHz.
 - (b) Has an impedance plane display.
- C. Probe
 - (1) Use a probe that:
 - (a) Operates at frequencies between 300 and 500 kHz.
 - (b) Has a diameter of 0.250 inch (6.36 mm).
 - (c) Is shielded.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) BYU-16/20; NDT Engineering Corp., Olympus NDT.
- D. Reference Standard
 - (1) Use reference standard NDT1017, or an equivalent, as specified in Part 6, 51-00-00, Procedure 16, Figure 3.

3. Prepare for the Inspection

- A. Identify and get access to the inspection area. See Figure 1.

EFFECTIVITY
ALL; 737-800 AIRPLANE LINE NUMBERS 7 AND 8

PART 6 53-11-13



737
NON-DESTRUCTIVE TEST MANUAL

- B. Clean the inspection surfaces.
 - (1) Remove dirt, grease, and sealant from inside the fastener holes.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 16, paragraph 5.
 - (1) Use reference standard NDT1017, or an equivalent, as specified in Part 6, 51-00-00, Procedure 16, Paragraph 3.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Get access to the inspection areas shown in Figure 1.
- C. Examine the skin and inner doublers for cracks in the areas shown in Figure 1 as specified in Part 6, 51-00-00, Procedure 16, paragraph 6.
- D. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 16, paragraph 6.C.
- E. Do Paragraph 5.A. thru Paragraph 5.D. again to examine the skin and inner doublers for cracks on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 16, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-800 AIRPLANE LINE NUMBERS 7 AND 8

PART 6 53-11-13

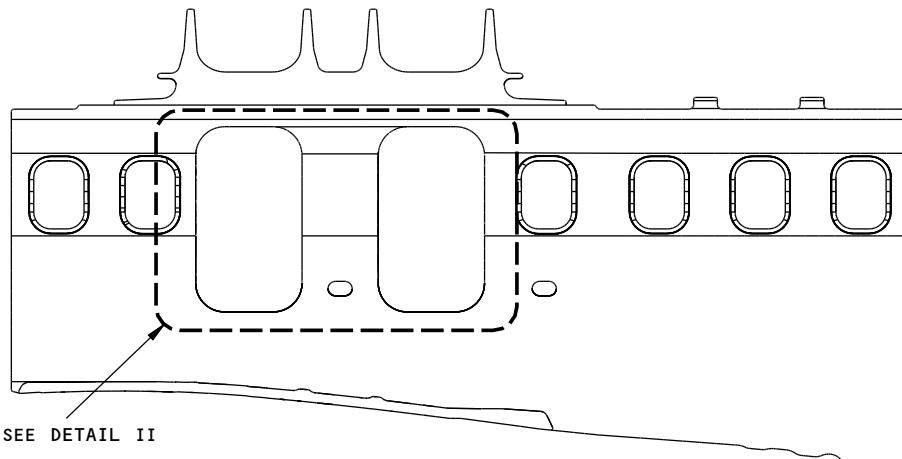
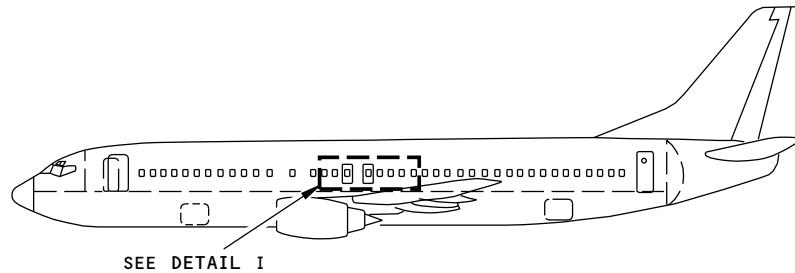
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUTS
DETAIL I

NOTES

- THE LEFT SIDE IS SHOWN;
THE RIGHT SIDE IS OPPOSITE

2257718 S0000505811_V1

Inspection Area
Figure 1 (Sheet 1 of 4)

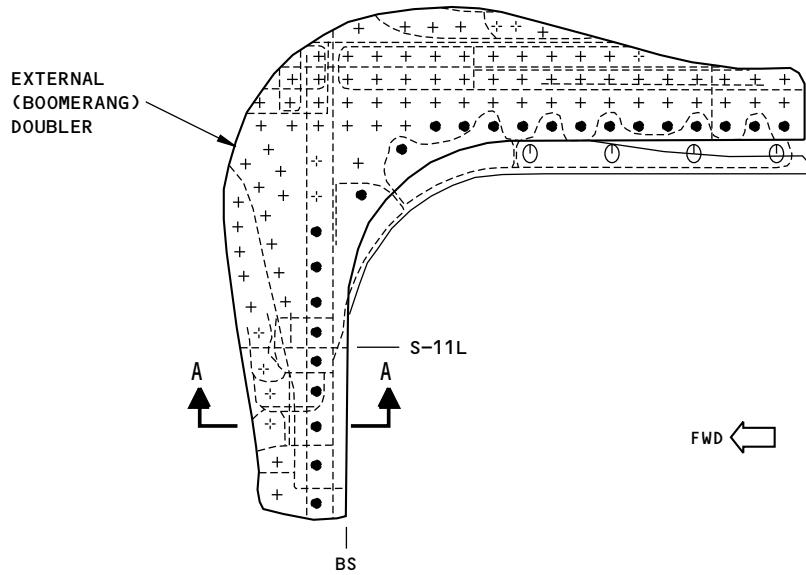
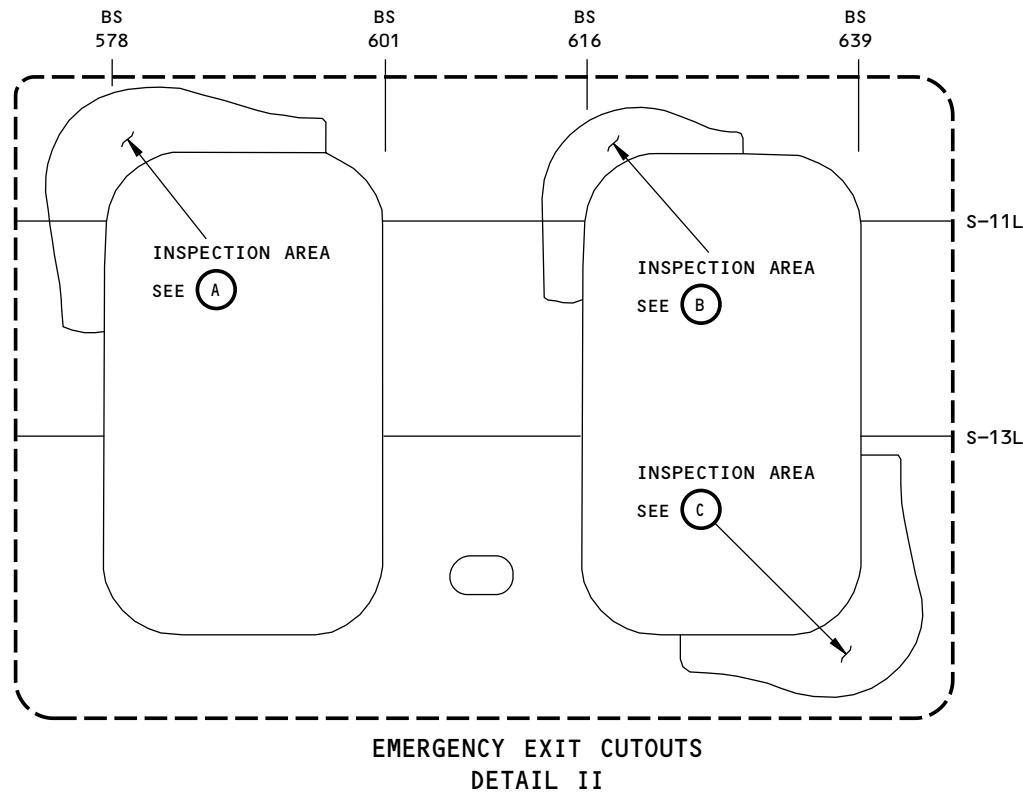
EFFECTIVITY
ALL; 737-800 AIRPLANE LINE NUMBERS 7 AND 8

D6-37239

PART 6 53-11-13



737
NON-DESTRUCTIVE TEST MANUAL



NOTES

- INSPECTION FASTENER LOCATIONS
TO BE EXAMINED

(A)

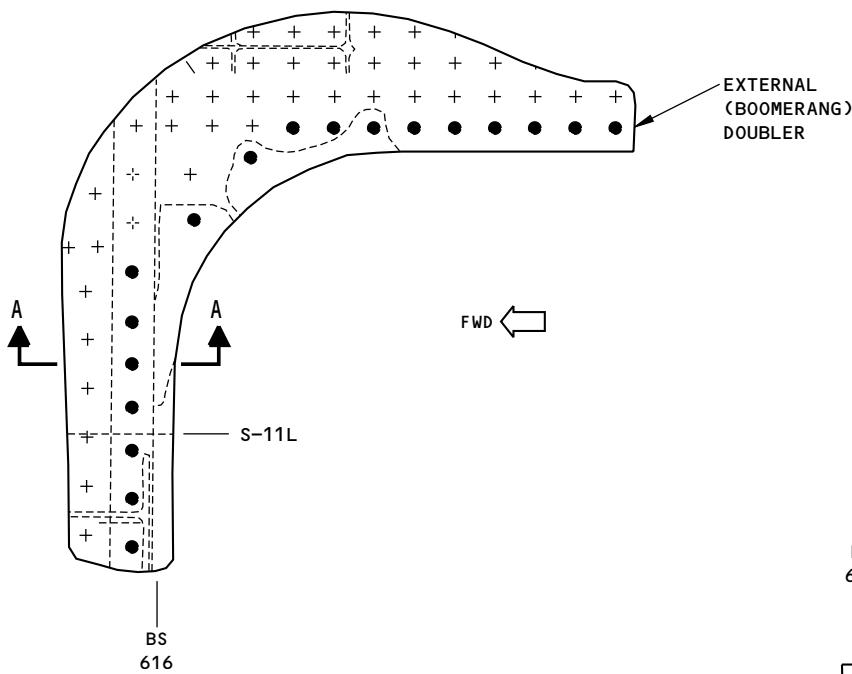
2257722 S0000505812_V1

Inspection Area
Figure 1 (Sheet 2 of 4)

EFFECTIVITY
ALL; 737-800 AIRPLANE LINE NUMBERS 7 AND 8

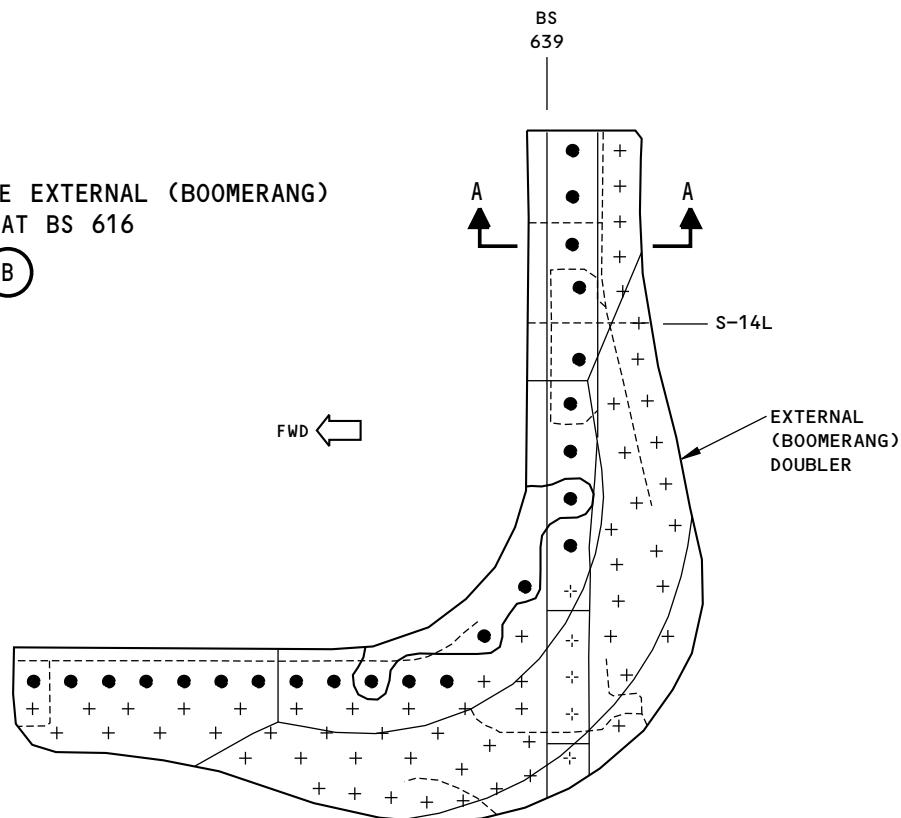
PART 6 53-11-13

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL


INSPECTION AREA AT THE EXTERNAL (BOOMERANG)
DOUBLER AT BS 616

(B)



INSPECTION AREA AT THE EXTERNAL (BOOMERANG)
DOUBLER AT BS 639

(C)

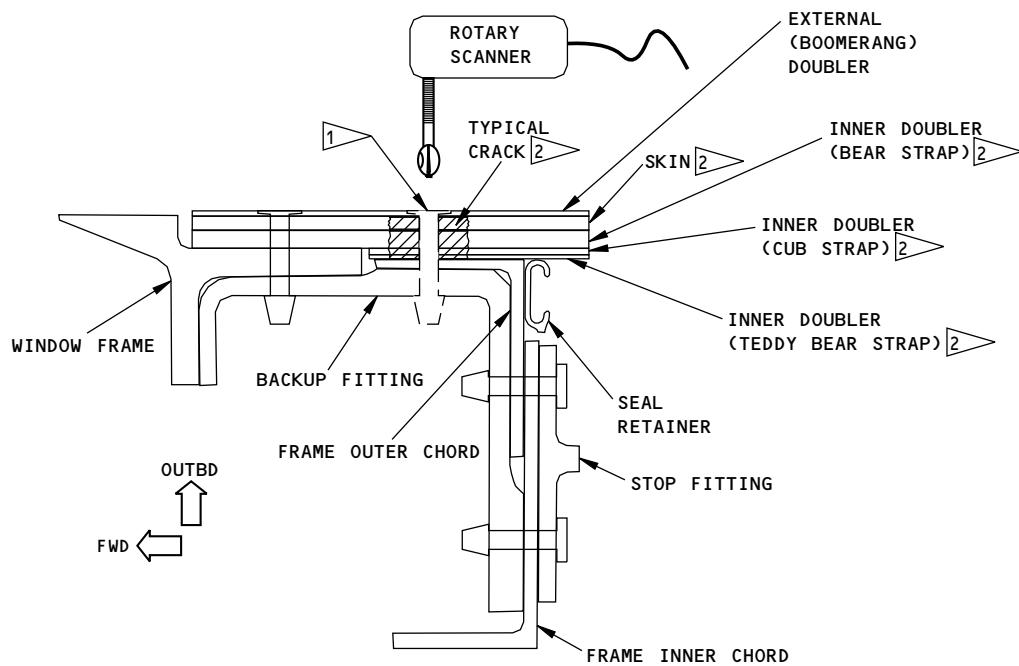
2257958 S0000505814_V1

Inspection Area
Figure 1 (Sheet 3 of 4)

EFFECTIVITY
ALL; 737-800 AIRPLANE LINE NUMBERS 7 AND 8

PART 6 53-11-13

D6-37239

A-A
(TYPICAL)

NOTES

- [1] REMOVE THE FASTENER AND EXAMINE THE FASTENER HOLE AT THE INSPECTION FASTENER LOCATIONS
- [2] DO A SCAN IN THE OPEN FASTENER HOLE TO EXAMINE THE SKIN AND INNER DOUBLERS FOR CRACKS

2257802 S0000505816_V1

Inspection Area
Figure 1 (Sheet 4 of 4)EFFECTIVITY
ALL; 737-800 AIRPLANE LINE NUMBERS 7 AND 8

PART 6 53-11-13

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

MAIN LANDING GEAR SUPPORT FRAME AT BS 716 - STUB BEAM (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the upper chord of the stub beam for cracks at the main landing gear support frame at BS 716. The stub beam is examined for cracks at two fastener locations where the upper chord of the stub beam is attached to the inner chord of the crease beam. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The stub beam is aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-19-2

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 100 to 500 kHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that operates in a frequency range from 100 to 500 kHz.
NOTE: Shielded probes are recommended.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN92-5B; Techna NDT
- D. Reference Standard
 - (1) To examine the upper chord of the stub beam, use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt, grease, or sealant from the inspection surfaces.
 - (2) Remove paint only if it is loose.

EFFECTIVITY
ALL; 737-700IGW, -800 AND -900ER AIRPLANES

PART 6 53-11-14

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

4. Instrument Calibration

- A. Calibrate the instrument to examine the upper chord of the stub beam (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Get access to the inspection area shown in Figure 1
- B. Examine the upper chord of the stub beam for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6. Examine the stub beam at the locations that follow:
 - (1) Examine the upper chord of the stub beam at the two fasteners that attach the stub beam to the inner chord of the crease beam. Use the fastener as a probe guide. See Figure 1.
- C. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).
- D. Do Paragraph 5.A. thru Paragraph 5.C. again to examine the upper chord of the stub beam for cracks on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

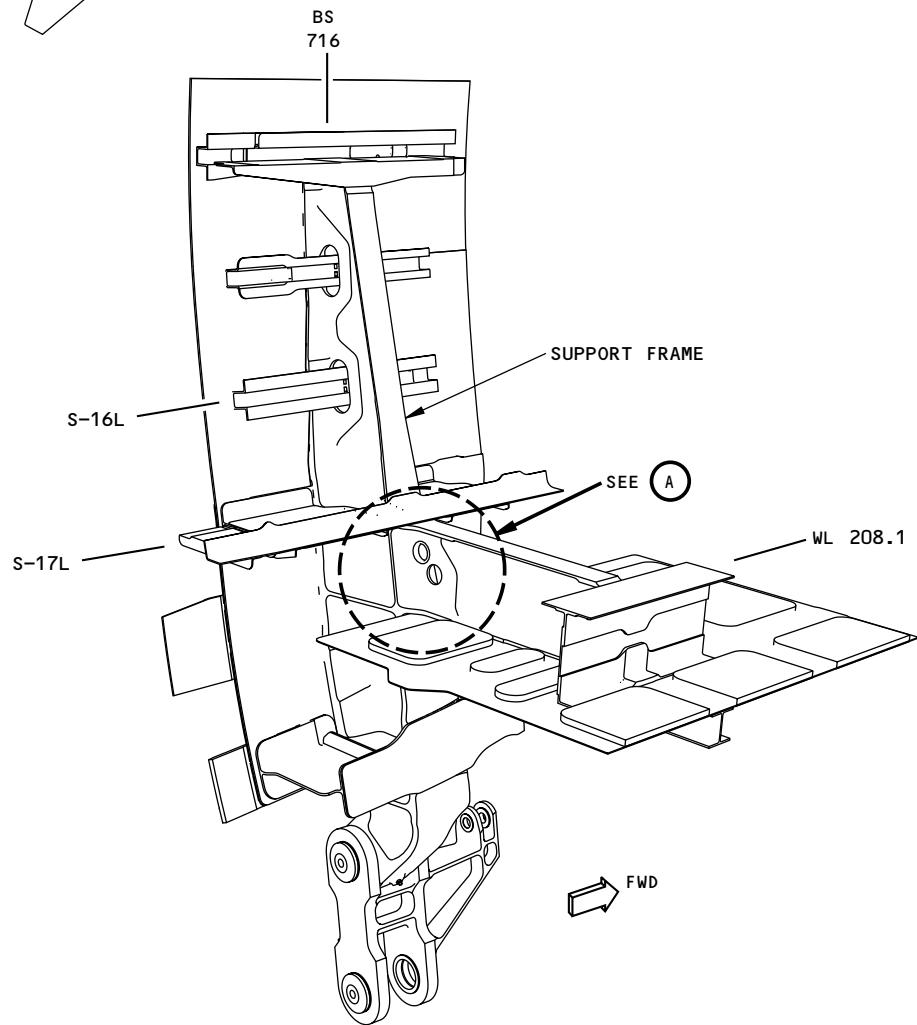
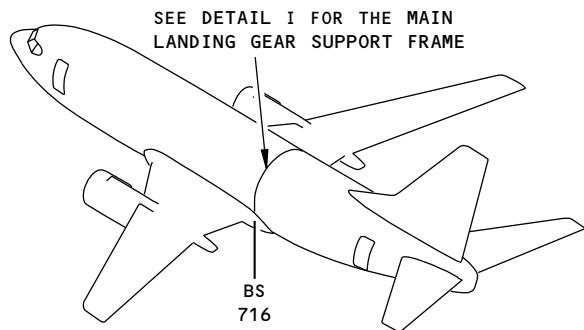
EFFECTIVITY
ALL; 737-700IGW, -800 AND -900ER AIRPLANES

PART 6 53-11-14

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


DETAIL I
MAIN LANDING GEAR SUPPORT FRAME AT BS 716
(THIS VIEW IS FROM INSIDE THE AIRPLANE AS YOU LOOK OUT)

NOTES:

- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE

2257596 S0000505830_V1

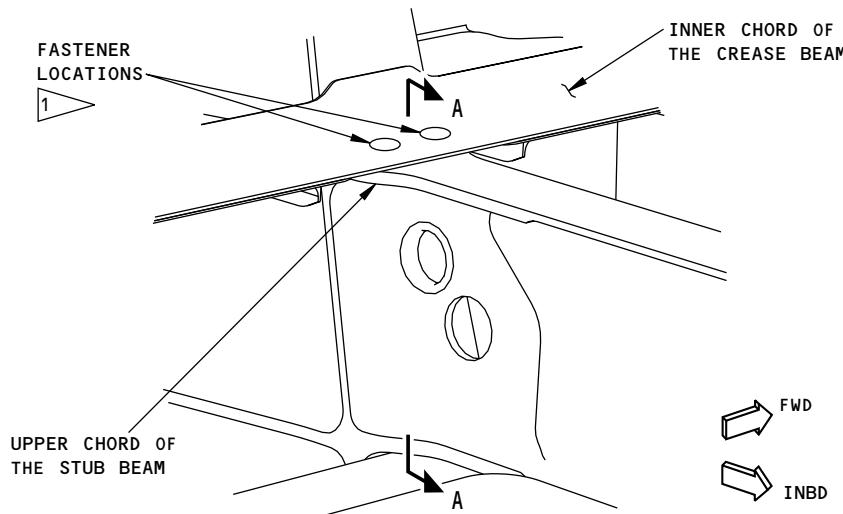
Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
 ALL; 737-700IGW, -800 AND -900ER AIRPLANES

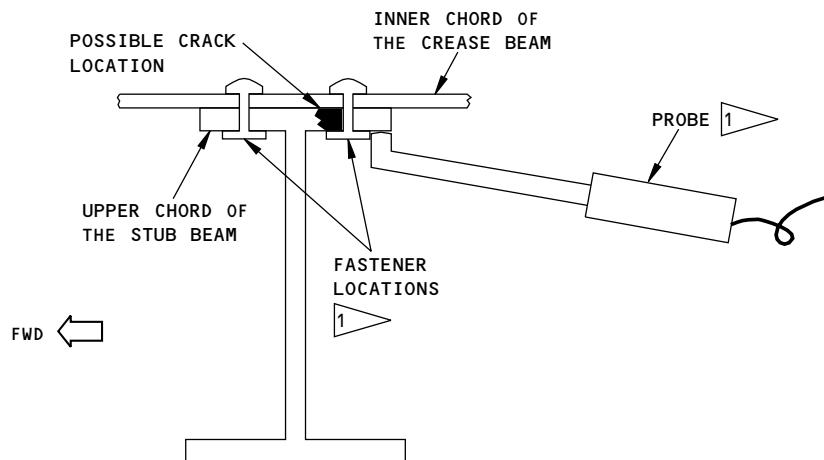
D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



A



A-A
FASTENER LOCATIONS TO EXAMINE AT BS 716

NOTES:

- 1 EXAMINE THE UPPER CHORD OF THE STUB BEAM FOR CRACKS AT THE TWO FASTENER LOCATIONS THAT ATTACH THE STUB BEAM TO THE INNER CHORD OF THE CREASE BEAM. USE THE FASTENERS AS A PROBE GUIDE.

2257665 S0000505831_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-700IGW, -800 AND -900ER AIRPLANES

PART 6 53-11-14

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

DOUBLERS AT THE CUTOUTS FOR THE OVERWING EMERGENCY EXITS (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the inner doublers for cracks all around the cutouts for the overwing emergency exits. The edges of the inner doublers are examined from BS 578 to BS 601 and from BS 616 to BS 639 for cracks that can occur between stringers 10 and 15. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The inner doublers are aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-22-3
 - (2) Item: 53-40-22-6
 - (3) Item: 53-40-22-9
 - (4) Item: 53-40-22-11

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 KHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that operates in a frequency range from 50 to 500 KHz.
NOTE: Shielded probes are recommended.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN92-5B; Techna NDT
- D. Reference Standard
 - (1) To examine the edges and inboard sides of the inner doublers, use reference standard 126, or an equivalent, as specified in Part 6, 51-00-00, Procedure 23, paragraph 3.D.
- E. Special Tools
 - (1) Use a nonconductive straightedge to help make a scan along the edges of the doublers.

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-15

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
 - (1) Remove or move the door seal if necessary. See Figure 1, flagnote 3.
- B. Clean the inspection surfaces.
 - (1) Remove dirt, grease, or sealant from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument to examine the edges and inboard sides of the inner doublers (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.

5. Inspection Procedure

- A. Examine the inner doublers at the cutouts for the overwing emergency exits for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, at the locations that follow:
 - (1) Examine the edge of the inner doubler (bear strap) at all edges of the emergency exit cutout. Use a nonconductive straightedge to keep the probe coil a constant distance from the inboard and outboard edges. See Figure 1, flagnote 1.
 - (2) Examine the edge of the inner doubler (cub strap) at all edges of the emergency exit cutout. Use a nonconductive straightedge to keep the probe coil a constant distance from the inboard edge. See Figure 1, flagnote 2.
 - (3) Examine the inboard side of the inner doubler (cub strap) between S-10 and S-15, where the inner doubler is not blocked by the seal retainer. Use a nonconductive straightedge to keep the probe coil a constant distance from the edges. See Figure 1, flagnote 3.
 - (4) Examine the inboard side of the inner doubler (cub strap) at the upper sill of the emergency exit cutout. Use the edge of the seal retainer as a probe guide. Make sure to examine the inner doubler (cub strap) from BS 578 to BS 601 and from BS 616 to BS 639. See Figure 1, flagnote 4.
- B. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).
- C. Do Paragraph 5.A. and Paragraph 5.B. again to examine the inner doublers for cracks on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-15

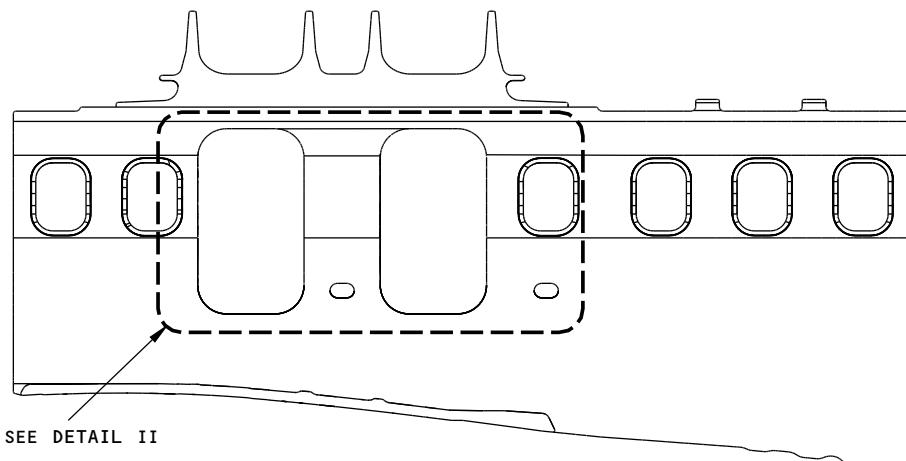
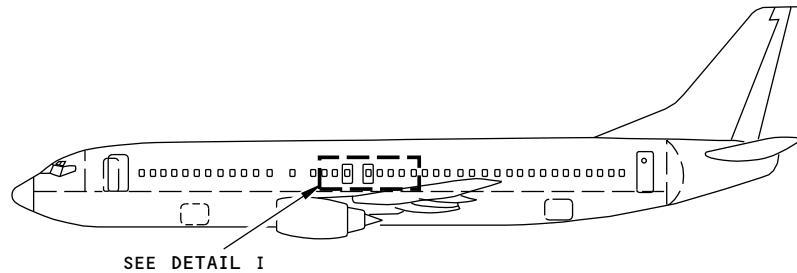
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUTS
DETAIL I

NOTES

- THE LEFT SIDE IS SHOWN;
THE RIGHT SIDE IS OPPOSITE

2258468 S0000505987_V1

Inspection Area
Figure 1 (Sheet 1 of 4)

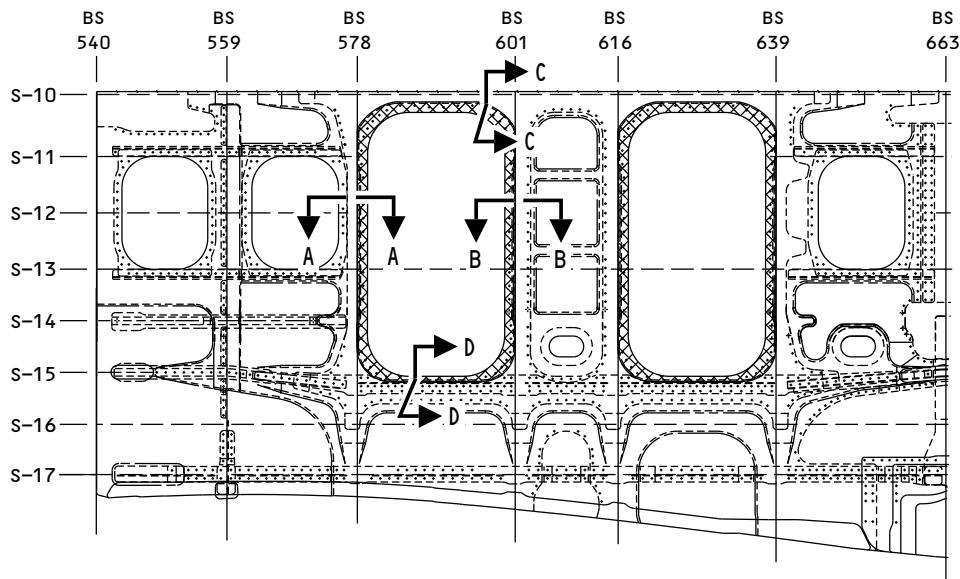
EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-15

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUTS
(VIEW FROM INSIDE THE AIRPLANE AS YOU LOOK OUT)
DETAIL II

NOTES



INSPECTION AREA

- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE
- SECTION VIEWS A-A THRU D-D ARE AT THE FORWARD DOOR BUT THEY ALSO APPLY TO THE AFT DOOR

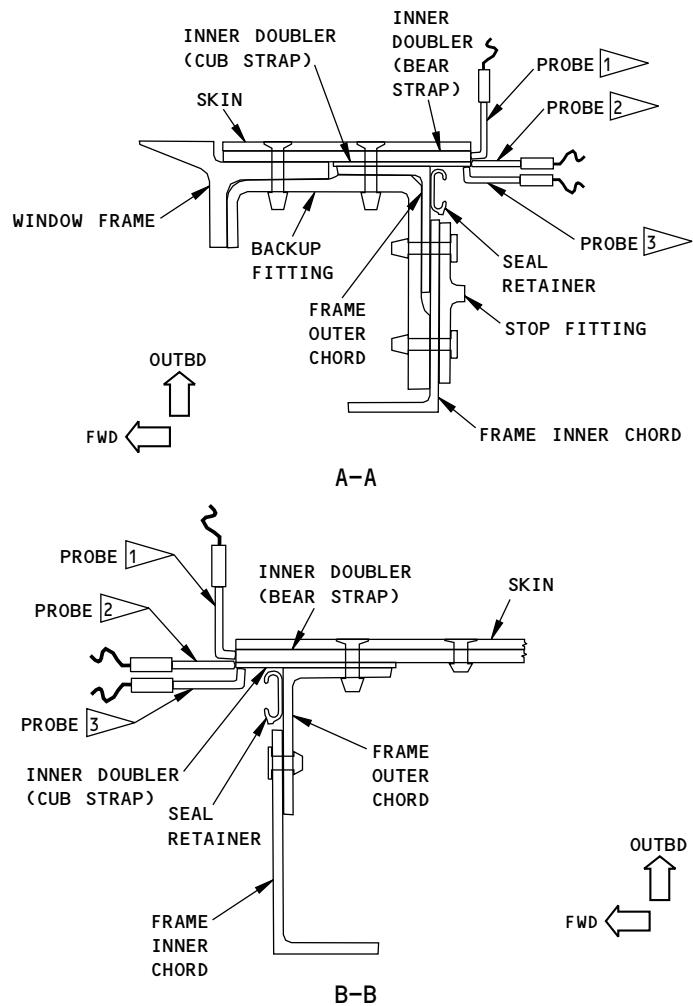
2258488 S0000505988_V1

Inspection Area
Figure 1 (Sheet 2 of 4)

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-15

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

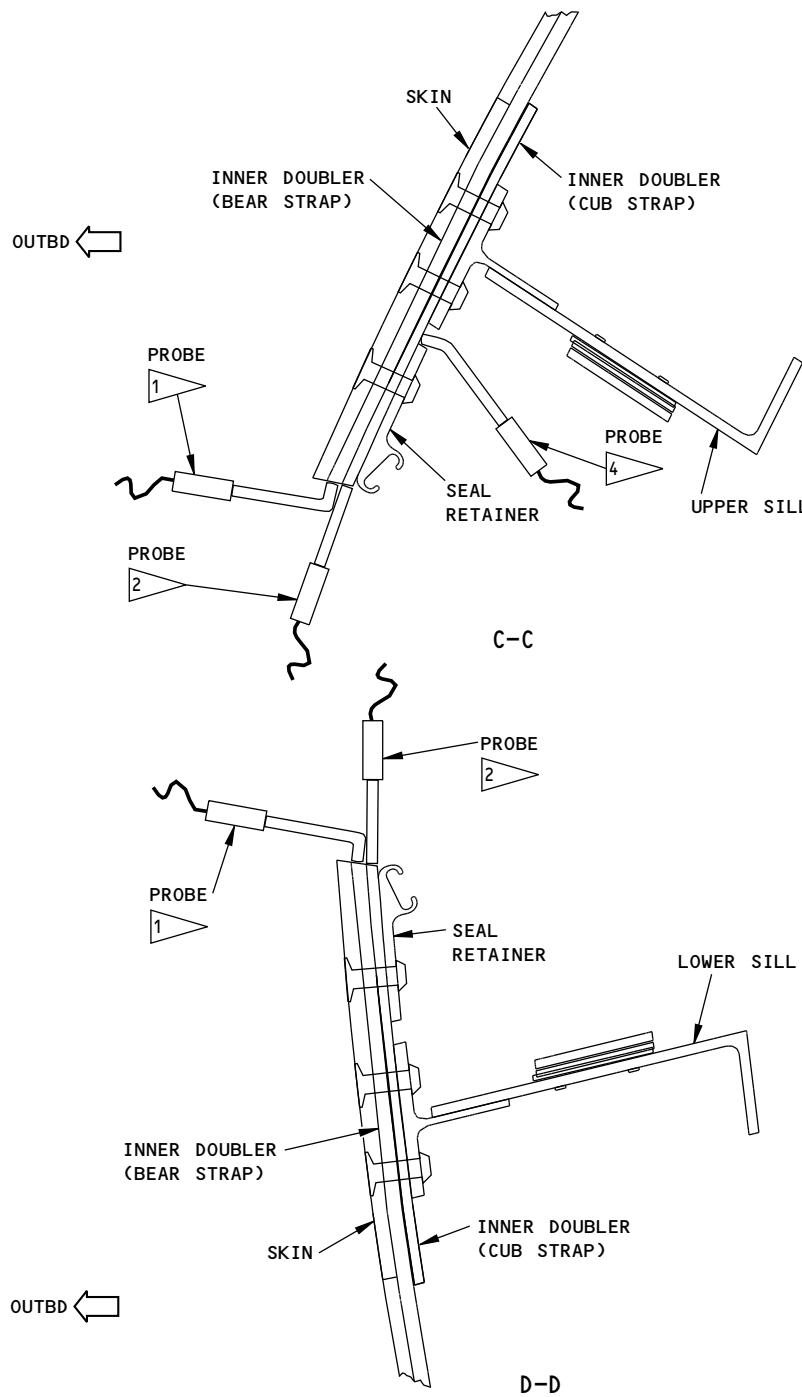
- THE CUTOUT AT THE FORWARD DOOR IS SHOWN;
THE CUTOUT AT THE AFT DOOR IS THE SAME
- 1) EXAMINE THE EDGE OF THE INNER DOUBLER (BEAR STRAP) AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL A CONSTANT DISTANCE FROM THE INBOARD AND OUTBOARD EDGES OF THE INNER DOUBLER.
- 2) EXAMINE THE EDGE OF THE INNER DOUBLER (CUB STRAP) AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL A CONSTANT DISTANCE FROM THE INBOARD EDGE OF THE INNER DOUBLER.
- 3) EXAMINE THE INBOARD SIDE OF THE INNER DOUBLER (CUB STRAP), BETWEEN S-10 AND S-15, WHERE THE INNER DOUBLER IS NOT BLOCKED BY THE SEAL RETAINER AS SHOWN. USE A NONCONDUCTIVE STRAIGHTEDGE TO KEEP THE PROBE COIL A CONSTANT DISTANCE FROM THE EDGE OF THE INNER DOUBLER. REMOVE OR MOVE THE DOOR SEAL TO GET ACCESS TO THE INSPECTION AREA.

2258522 S0000505989_V1

Inspection Area
Figure 1 (Sheet 3 of 4)

 EFFECTIVITY
 ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-15

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- 4 EXAMINE THE INBOARD SIDE OF THE INNER DOUBLER (CUB STRAP) AT THE UPPER SILL OF THE EMERGENCY EXIT DOOR CUTOUT. USE THE EDGE OF THE SEAL RETAINER AS A PROBE GUIDE. MAKE SURE TO EXAMINE THE INNER DOUBLER (CUB STRAP) FROM BS 578 TO BS 601 AND FROM BS 616 TO BS 639.

2258507 S0000505990_V1

Inspection Area
Figure 1 (Sheet 4 of 4)

EFFECTIVITY
 ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-15

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

INNER DOUBLER (BEAR STRAP) AT THE CUTOUTS FOR THE OVERWING EMERGENCY EXITS (LFEC)

1. Purpose

- A. Use this procedure to examine the inner doubler (bear strap) for cracks at the cutouts for the overwing emergency exits. The inner doublers are examined at the fasteners that are the nearest to the edge of the cutout, from BS 578 to BS 601 and from BS 616 to BS 639, and between stringers 10 and 15. See Figure 1 for the inspection areas.
- B. This procedure uses low frequency eddy current (LFEC) to examine the inner doublers from outside the airplane.
- C. This procedure uses an impedance plane display instrument.
- D. The inner doubler (bear strap) is aluminum.
- E. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-22-3
 - (2) Item: 53-40-22-6
 - (3) Item: 53-40-22-9
 - (4) Item: 53-40-22-11

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 0.8 to 1 kHz.
 - (c) Can be calibrated as specified in the calibration instructions of this procedure.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a reflection type ring probe that:
 - (a) Operates in a frequency range from 0.8 to 1 kHz.
 - (b) Has a minimum inner diameter of 0.40 inch (10.2 mm).
 - (c) Has a maximum outer diameter of 0.80 inch (20.3 mm).
 - (2) The probe that follows was used to help prepare this procedure:
 - (a) RDP.8-500H-1; Techna NDT
- D. Reference Standard

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-16



737 NON-DESTRUCTIVE TEST MANUAL

- (1) To examine around the fasteners that are nearest to the edge of the doublers, use reference standard NDT3133 as shown in Figure 2.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt, grease, or sealant from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Connect the probe, energize the instrument and set the frequency between 0.8 and 1 kHz.
- B. Put the ring probe on the reference standard at probe position 1 as shown in Figure 3, Detail II. Put the center of the probe above the center of the fastener hole.
- C. Balance the instrument.
- D. Move the probe above the fastener hole as necessary until the height of the signal is at its minimum and balance the instrument again.
- E. Set the balance point at approximately 20% of full screen height (FSH) and 60% of full screen width (FSW) as shown in Figure 3, Detail I.
- F. Set the lift-off (phase) so that the signal moves horizontally from right to left when the probe is lifted off the reference standard as shown in Figure 3, Detail I.
- G. Put the ring probe at probe position 2 as shown in Figure 3, Detail II. Make sure the center of the probe is above the center of the fastener hole.
- H. Move the probe above the fastener hole as necessary until the height of the notch signal is at its minimum.
- I. Adjust the instrument gain to get a notch signal that is approximately 60% of FSH as shown in Figure 3, Detail I.
- J. Make sure the instrument is calibrated correctly:
 - (1) Put the probe on the reference standard at probe position 1. See Figure 3, Detail II.
 - (2) Move the probe above the fastener hole as necessary until the height of the fastener hole signal is at its minimum.
 - (3) Balance the instrument.
 - (4) Put the probe on the reference standard at probe position 2. See Figure 3, Detail II.
 - (5) Move the probe above the fastener hole as necessary until the height of the signal is at its minimum.
- K. If the minimum signal from the notch is not 60% of FSH then do the calibration again.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Set the airplane baseline signal for a satisfactory fastener signal as follows:
 - (1) Put the probe above the center of one of the fasteners in the area to be examined. Move the probe above the fastener to get the minimum signal from the instrument.

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-16



737
NON-DESTRUCTIVE TEST MANUAL

- (2) Balance the instrument.
- (3) Compare the signal from three or more fasteners in this group with the signal from the first fastener.

NOTE: Do not change the instrument gain when you set the airplane baseline signal.

- (4) Use the fastener from this group which has the smallest signal as the baseline signal for the airplane.

NOTE: Examine this fastener frequently during the inspection to make sure the instrument baseline has not changed.

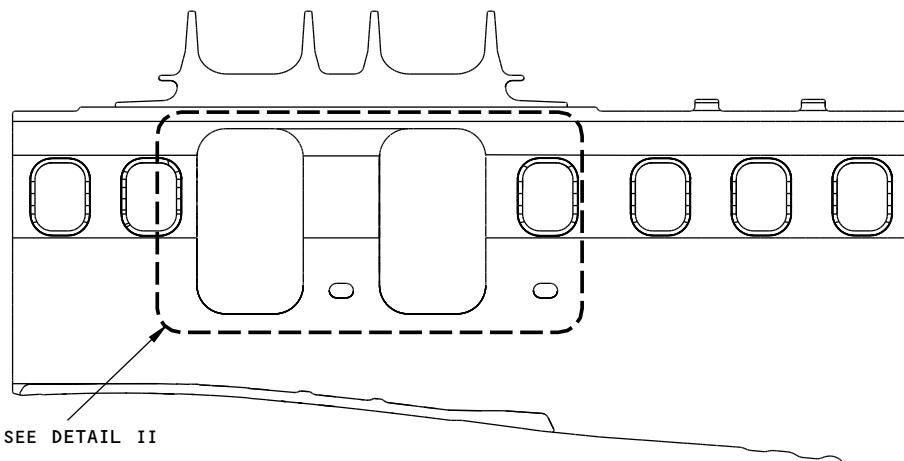
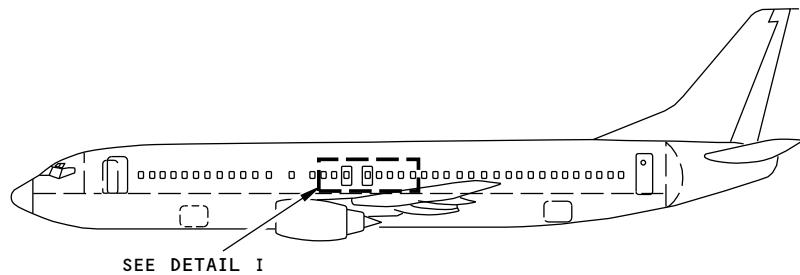
- C. Put the probe on the fastener which has the smallest signal. (See Paragraph 5.B.(4).)
- D. Move the probe above the fastener as necessary until the height of the signal is at its minimum and balance the instrument.
- E. Put the ring probe above each fastener in the inspection area and monitor the instrument for crack signals. See Figure 1 for the inspection area. During the inspection:
 - (1) Make a mark at all fastener locations where signals occur that are 40 percent (or more) of FSH.
 - (2) Do a calibration check as follows if the equipment is changed or when the inspection is completed.
- NOTE:** Do not adjust the instrument gain.
 - (a) Put the probe on the reference standard at probe position 1. See Figure 3, Detail II.
 - (b) Move the probe above the fastener hole as necessary until the height of the signal is at its minimum.
 - (c) Balance the instrument.
 - (d) Put the probe on the reference standard at probe position 2 and make sure that the fastener is in the center of the probe. Compare the signal you got from the notch during calibration with the signal that you get now.
 - (e) If the signal you get from the notch has decreased in FSH by 10 percent or more, do the calibration and the inspection again on the fastener locations you have examined since the last successful calibration check.
- F. Do Paragraph 5.B. thru Paragraph 5.E. again to examine the inner doublers (bear straps) for cracks on the other side of the airplane.

6. Inspection Results

- A. A signal that is more than 40 percent of FSH is a sign of a crack. Areas that cause these signals to occur must be rejected and more analysis is necessary.
- B. Compare the signal that occurs during the inspection with the signal you got during calibration from the notch in the reference standard.
- C. If crack indications occur, do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUTS
DETAIL I

NOTES

- THE LEFT SIDE IS SHOWN;
THE RIGHT SIDE IS OPPOSITE

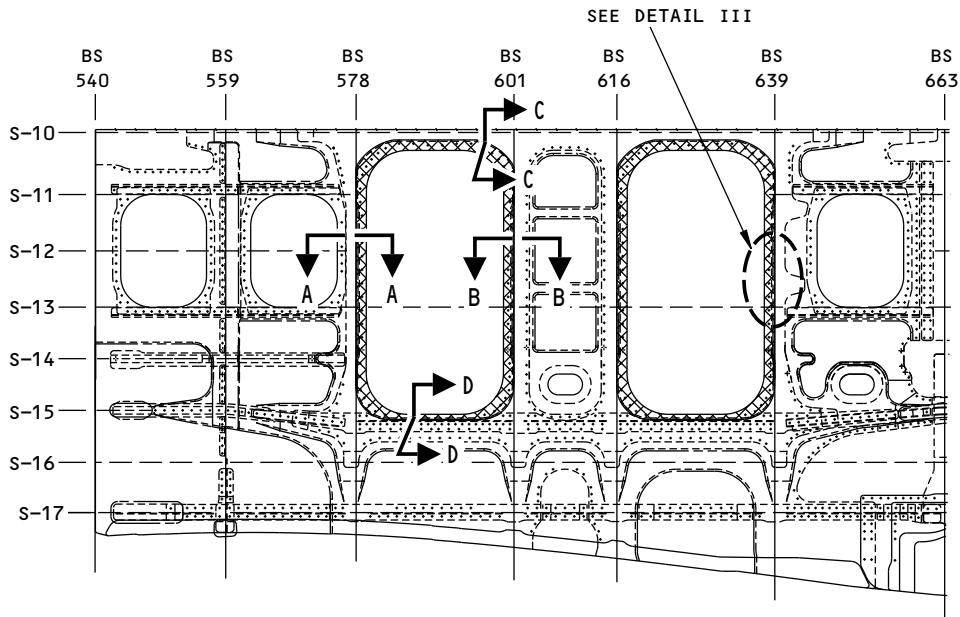
2258259 S0000506086_V1

Inspection Area
Figure 1 (Sheet 1 of 4)

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

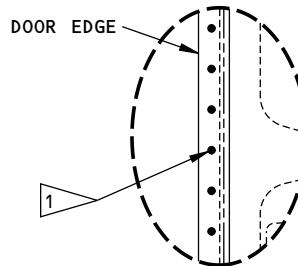
PART 6 53-11-16

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL


FWD ←

OVERWING EMERGENCY EXIT CUTOUTS
 (VIEW FROM INSIDE THE AIRPLANE AS YOU LOOK OUT)
 DETAIL II



TYPICAL INSPECTION AREA OF THE OVERWING EMERGENCY EXIT CUTOUT
 DETAIL III

NOTES

INSPECTION AREA

- TYPICAL FASTENER LOCATIONS TO BE EXAMINED. EXAMINE THE FASTENER ROW THAT IS NEAREST TO THE EDGE OF THE CUTOUT
- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE
- SECTION VIEWS A-A THRU D-D ARE AT THE FORWARD DOOR BUT THEY ALSO APPLY TO THE AFT DOOR

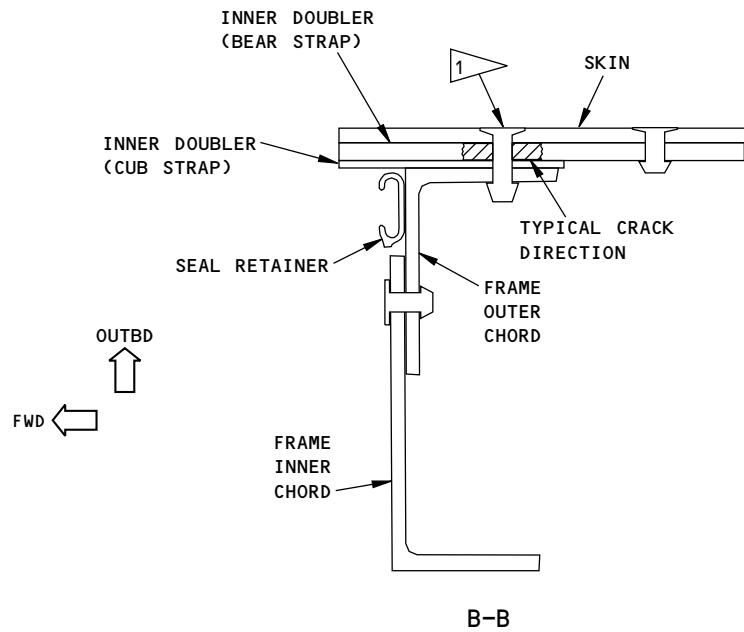
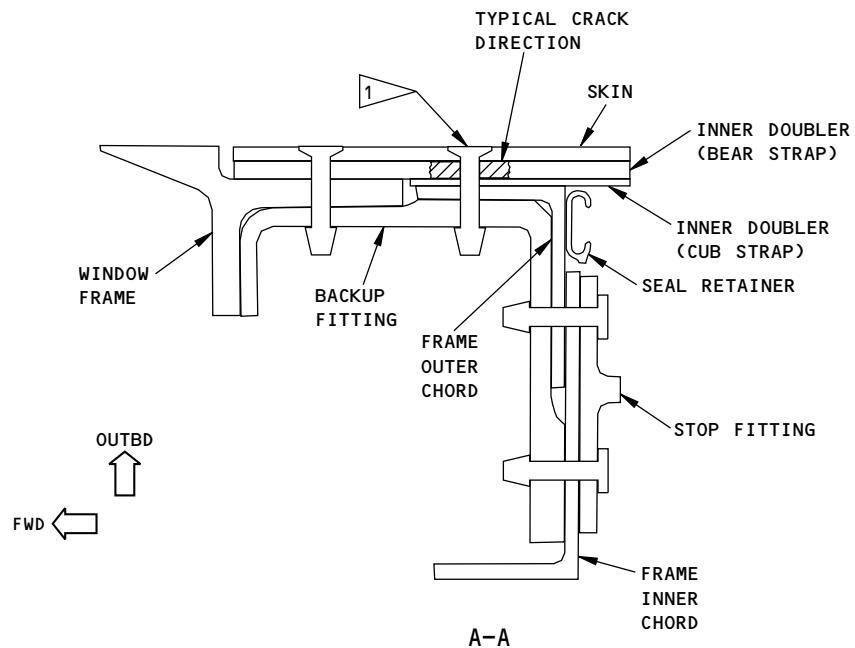
2258301 S0000506089_V1

Inspection Area
Figure 1 (Sheet 2 of 4)

EFFECTIVITY
 ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-16

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- 1 EXAMINE THE INNER DOUBLER (BEAR STRAP) FOR
CRACKS AT THE FASTENER LOCATIONS SHOWN

2258339 S0000506091_V1

Inspection Area
Figure 1 (Sheet 3 of 4)

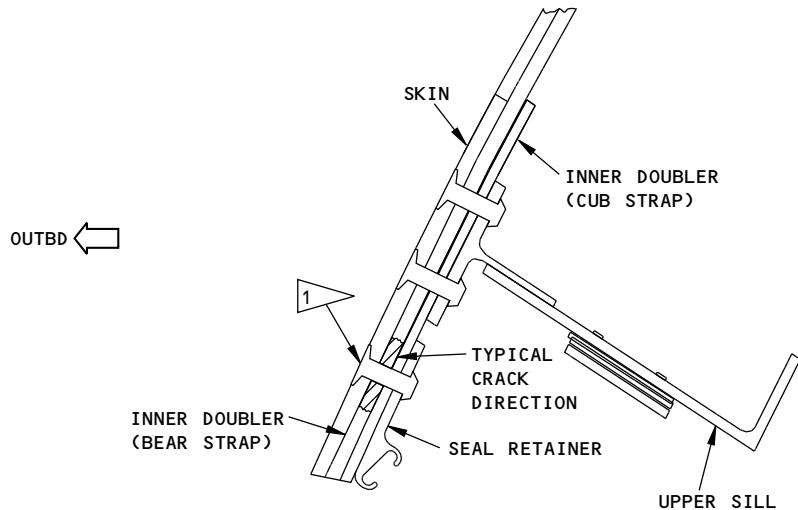
EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-16

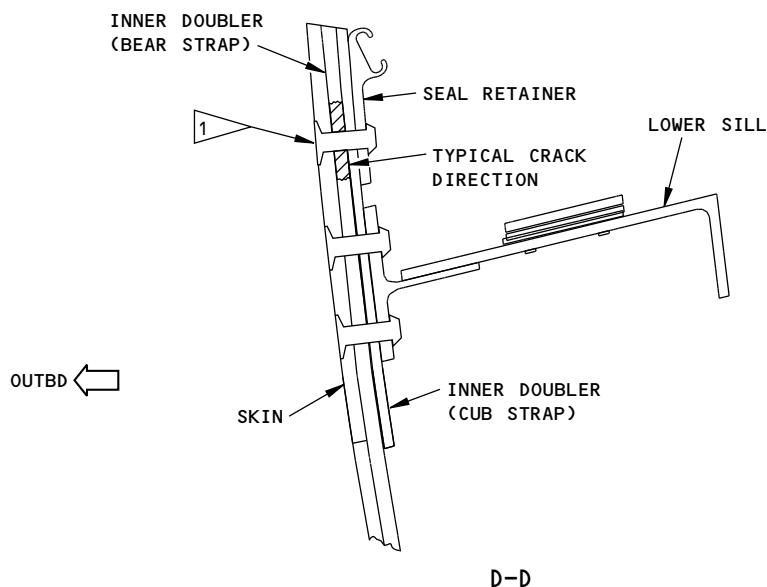
D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



C-C



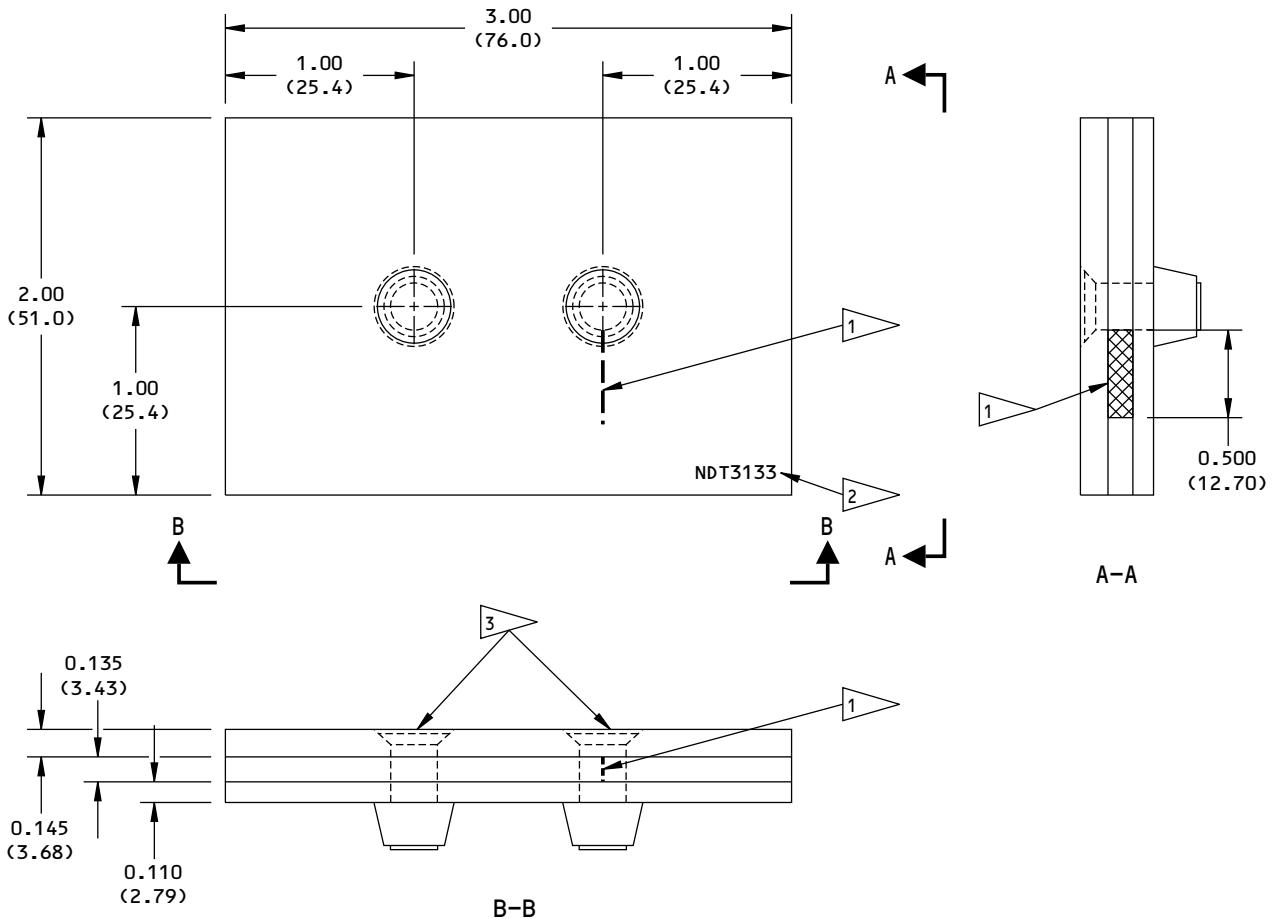
D-D

2258382 S0000506093_V1

Inspection Area
Figure 1 (Sheet 4 of 4)

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-16

737
NON-DESTRUCTIVE TEST MANUAL

NOTES:

- DIMENSIONS ARE IN INCHES
(MILLIMETERS ARE IN PARENTHESES)
- MATERIAL: ALUMINUM (2024-T3)
- SURFACE ROUGHNESS: 63 Ra OR BETTER
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

INCHES	MILLIMETERS
X.XXX = ± 0.005	X.XX = ± 0.10
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1

- 1 EDM NOTCH:
LENGTH: 0.500 (12.70)
DEPTH: 0.135 (3.43) (THROUGH THE THICKNESS)
WIDTH: 0.010 (0.25) MAXIMUM
- 2 ETCH OR STAMP THE REFERENCE STANDARD NUMBER,
NDT3133, AT THE APPROXIMATE LOCATION SHOWN
- 3 USE BACB30VU8 FASTENERS

2258423 S0000506096_V1

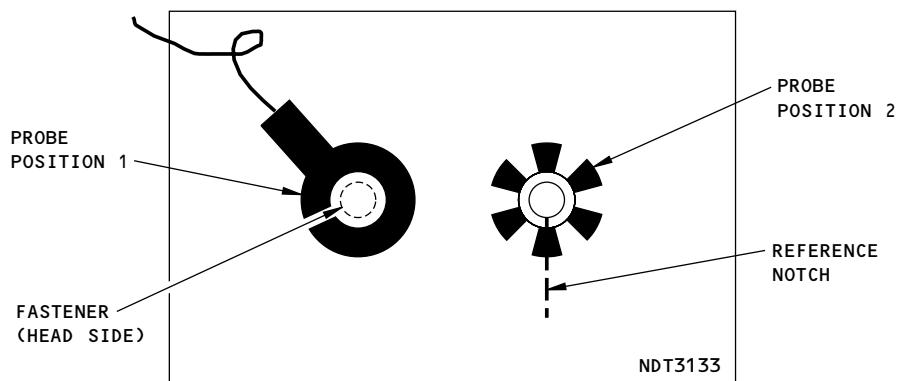
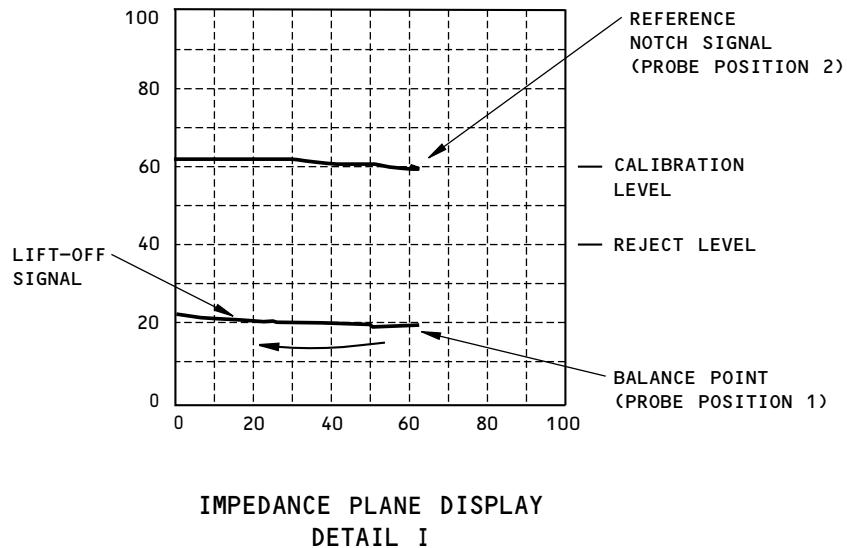
Reference Standard NDT3133
Figure 2EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-16

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



2258598 S0000506098_V1

Calibration Probe Positions
Figure 3

EFFECTIVITY
ALL; 737-800 AND -900ER AIRPLANES

PART 6 53-11-16



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

WHEEL WELL FRAME AT BS 685 - INNER CHORD AND WEB (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the web and inner chord of the frame at BS 685 for cracks. The web is examined at fastener locations for the stringer clips and the inner chord is examined from S-14 to S-17. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The web and inner chord are aluminum.
- D. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-21-3

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies

NOTE: Shielded probes are recommended.

C. Probes

- (1) Use a probe that operates in a frequency range from 50 to 500 kHz.
- (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN92-5B; Techna NDT

D. Reference Standard

- (1) To examine the frame web at fastener locations, use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.
- (2) To examine the inner chord of the frame, use reference standard 126, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23.

E. Special Tools

- (1) Use a nonconductive straightedge to help make scans along the inner chord of the frame.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas. See Figure 1.
- B. Clean the inspection surfaces.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-17



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Remove dirt, grease, or sealant from the inspection surfaces.
- (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument to examine the frame web at fastener locations (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23.
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.
- B. Calibrate the instrument to examine the inner chord of the frame (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23.
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the frame web for cracks as specified in Part 6, 51-00-00, Procedure 23, at the locations that follow:
 - (1) Examine the fastener location at S-14 from the forward side of the frame web. Use the head or tail of the fastener as a probe guide. See Figure 1, flagnote 1.
 - (2) Examine the fastener locations at S-15 and S-16 from the aft side of the frame web. Use the head or tail of the fastener as a probe guide. See Figure 1, flagnote 2.
- B. Examine the inner chord of the frame for cracks as specified in Part 6, 51-00-00, Procedure 23, at the locations that follow:
 - (1) Examine the inner chord flange from S-17 to S-14 along the forward and aft edges. Keep the probe coil a constant distance from the flange edges.
- C. Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).
- D. Do Paragraph 5.A. thru Paragraph 5.C. again to examine the web and inner chord for cracks at the BS 685 wheel well frame on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

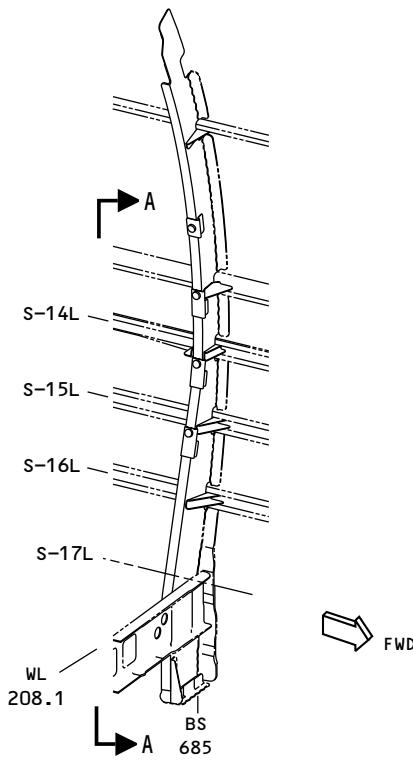
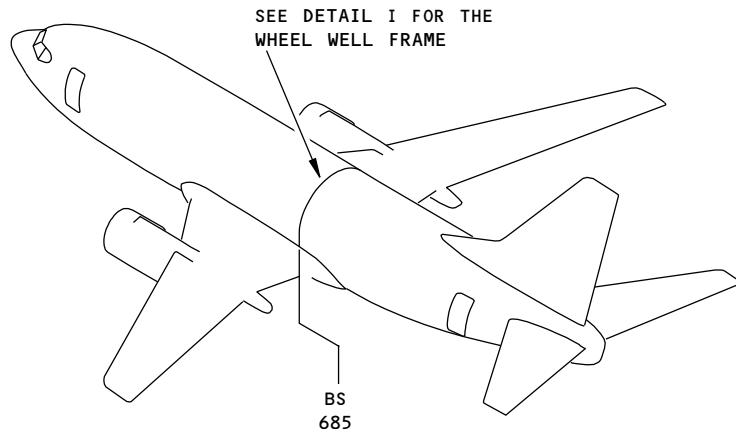
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-17

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

DETAIL I
WHEEL WELL FRAME AT BS 685

NOTES:

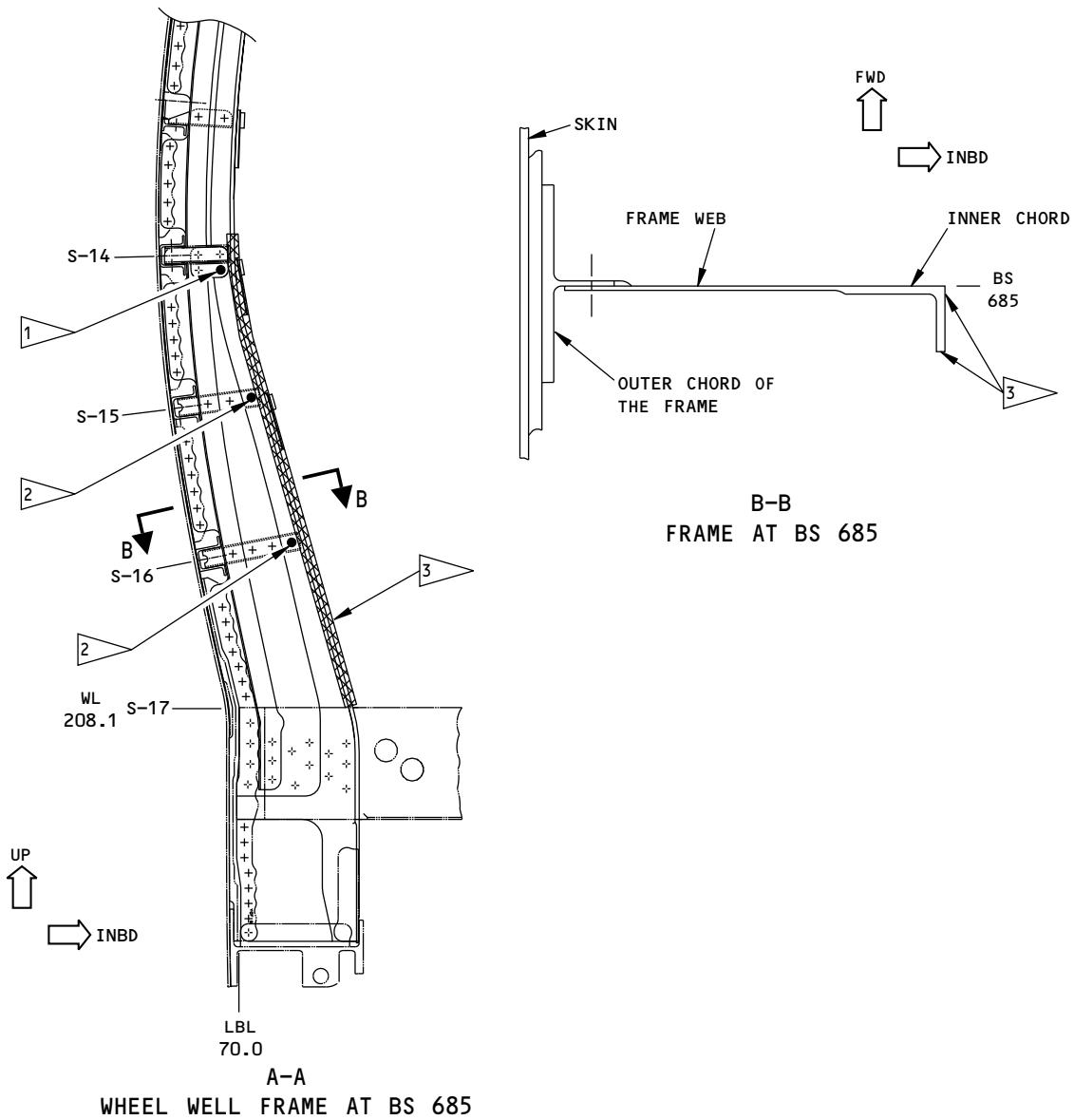
- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE

2259570 S0000506709_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-17



NOTES

- ☒ INSPECTION AREA AT THE INNER CHORD OF THE FRAME
- FASTENER LOCATIONS TO BE EXAMINED IN THE FRAME WEB
- 1 EXAMINE THE FRAME WEB FOR CRACKS AT THE FASTENER LOCATION SHOWN. MAKE THE SCAN FROM THE FORWARD SIDE OF THE FRAME WEB. USE THE HEAD OR TAIL OF THE FASTENER AS A PROBE GUIDE.
- 2 EXAMINE THE FRAME WEB FOR CRACKS AT THE FASTENER LOCATION SHOWN. MAKE THE SCAN FROM THE AFT SIDE OF THE FRAME WEB. USE THE HEAD OR TAIL OF THE FASTENER AS A PROBE GUIDE.
- 3 EXAMINE THE INNER CHORD OF THE FRAME FOR CRACKS FROM WL 208.1 TO S-14 ON THE FORWARD AND AFT EDGES. KEEP THE PROBE COIL A CONSTANT DISTANCE FROM THE EDGES OF THE FLANGE.

2259673 S0000506710_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-17



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

SKIN AND DOUBLERS AT THE CUTOUTS FOR THE OVERWING EMERGENCY EXITS (LFEC)

1. Purpose

- A. Use this procedure to examine the skin and external (boomerang) doublers for cracks at the emergency exit cutouts. The skin and external (boomerang) doublers are examined at the fastener locations that attach the external (boomerang) doublers to outer chords at the BS 578, BS 616 and BS 639 door frames, between stringers 10 and 15. See Figure 1 for the inspection locations.
- B. The skin and doublers are aluminum.
- C. This procedure uses low frequency eddy current (LFEC) to examine the skin and doublers from outside the airplane.
- D. This procedure uses an eddy current instrument with an impedance plane display.
- E. 737-600/700/800/900 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-40-22-22

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument with an impedance plane display. Use an instrument that:
 - (a) Can operate at a frequency between 200 and 500 Hz.
 - (b) Can be calibrated as specified in the calibration instructions of this procedure. The instruments that follow were used to help prepare this procedure.
 - 1) Nortec 500D; Olympus NDT
 - 2) Phasec 2S/2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a reflection type ring probe with a minimum inner diameter of 0.40 inch (10.2 mm) and a maximum outer diameter of 0.80 inch (20.3 mm) that can operate at a frequency between 200 and 500 Hz. The probe that follows was used to help prepare this procedure.
 - (a) RDP.75-500H-5; Techna NDT
- D. Reference Standard
 - (1) Use reference standards NDT3132 and NDT3132B as shown in Figure 2 and Figure 3.

3. Prepare for the Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Get access to the inspection area.
- C. Clean the inspection surface if necessary. Remove paint only if it is loose.

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

PART 6 53-11-18



737
NON-DESTRUCTIVE TEST MANUAL

4. Instrument Calibration

- A. Get the reference standard that is applicable for the fastener code to be examined.
 - (1) For fastener code "A" locations, use reference standard NDT3132.
 - (2) For fastener code "B" locations, use reference standard NDT3132B.
- B. Set the instrument frequency between 200 and 500 Hz.
- C. Put the probe on the applicable reference standard at probe position 1 as shown in Figure 4, Detail II. Make sure the reference standard is for the fastener code to be examined.
- D. Balance the instrument.
- E. Move the probe above the fastener as necessary until the height of the signal is at its minimum and balance the instrument again.
- F. Set the balance point at approximately 20 percent of full screen height (FSH) and 60 percent of full screen width (FSW) as shown in Figure 4, Detail I.
- G. Set the lift-off (phase) so that the signal moves horizontally from right to left when the probe is lifted off the reference standard. See Figure 4, Detail I.
- H. Put the probe on the reference standard at probe position 2 as shown in Figure 4, Detail II.
NOTE: Make sure the fastener is in the center of the probe.
- I. Move the probe above the fastener as necessary until the height of the notch signal is at its minimum.
- J. Adjust the instrument gain to get a notch signal that is approximately 60 percent of FSH as shown in Figure 4, Detail I.
- K. Do Paragraph 4.B., Paragraph 4.C., Paragraph 4.D., Paragraph 4.G. and Paragraph 4.H. again, as necessary, to make sure that the notch signal is approximately 60 percent of FSH.
 - (1) Do Paragraph 4.B. thru Paragraph 4.K. again if the signal from the fastener hole with a notch is not approximately 60 percent of FSH.

5. Inspection Procedure

- A. Calibrate the instrument to examine the fastener code "A" locations as specified in Paragraph 4. Use reference standard NDT3132 for the fastener code "A" locations.
NOTE: There are four fastener code "B" locations at the lower retainer on each side of the airplane. See Figure 1. All other fastener locations to be examined are fastener code "A".
- B. Set the airplane baseline signal for a satisfactory fastener location as follows:
 - (1) Put the probe above the center of one of the fasteners in the area to be examined. Move the probe above the fastener to get the minimum signal from the instrument.
 - (2) Balance the instrument.
 - (3) Compare the signal of three or more fasteners in this group with the signal from the first fastener.
NOTE: Do not change the instrument sensitivity when you set the airplane baseline signal.
 - (4) Use the fastener from this group which has the smallest signal as the baseline signal for the airplane.
NOTE: Examine this fastener frequently during the inspection to make sure the instrument baseline has not changed.
- C. Put the ring probe on the fastener which has the smallest signal. See Paragraph 5.B.(4).

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

PART 6 53-11-18

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- D. Move the probe above the fastener as necessary until the height of the signal is at its minimum and balance the instrument.
- E. Put the ring probe above each fastener in the inspection area and monitor the instrument for crack signals. See Figure 1 for the inspection area. During the inspection:
 - (1) Make a mark at all the fastener locations where signals occur that are 40 percent (or more) of FSH.
 - (2) Do a calibration check when the inspection is completed as follows:

NOTE: Do not adjust the instrument gain.

 - (a) Put the probe on the reference standard at probe position 1. See Figure 4, Detail II.
 - (b) Move the probe above the fastener as necessary until the height of the signal is at its minimum.
 - (c) Balance the instrument.
 - (d) Put the probe on the reference standard at probe position 2 and make sure the fastener is in the center of the probe. Compare the signal you got from the notch during calibration with the signal that you get now.
 - (e) If the signal you now get from the notch has decreased in FSH by 10 percent or more, do the calibration and inspection again on the fastener locations you have examined since the last satisfactory calibration check.
- F. Do Paragraph 5.A. thru Paragraph 5.E. to examine the skin and doublers for cracks on the other side of the airplane.
- G. Calibrate the instrument as specified in Paragraph 4. for the fastener code "B" locations. Use reference standard NDT3132B for the fastener code "B" locations.
- H. Put the ring probe above the center of fastener location "B1" in the area to be examined. Move the probe above the fastener to get the minimum signal from the instrument. See Figure 1 to identify the fastener code locations.
- I. Balance the instrument.
- J. Put the ring probe above the fastener at location "B4" and monitor the instrument for crack signals.

NOTE: If the instrument is balanced on fastener location "B1" and fastener location "B1" has a crack, then the indication from fastener location "B4" can be downscale and off the screen display. If this occurs, balance the instrument at fastener location "B4" and do the inspection at fastener location "B1" again.
- K. Put the ring probe above the center of fastener location "B2" in the area to be examined. Move the probe above the fastener to get the minimum signal from the instrument.
- L. Balance the instrument.
- M. Put the ring probe above the fastener at location "B3" and monitor the instrument for crack signals.

NOTE: If the instrument is balanced on fastener location "B2" and fastener location "B2" has a crack, then the indication from fastener location "B3" can be downscale and off the screen display. If this occurs, balance the instrument at fastener location "B3" and do the inspection at fastener location "B2" again.
- N. Do Paragraph 5.G. thru Paragraph 5.M. again to examine the skin and doublers for cracks on the other side of the airplane.



737
NON-DESTRUCTIVE TEST MANUAL

6. Inspection Results

- A. A signal that is more than 40% of FSH is a sign of a crack. Areas that cause these signals to occur must be rejected and more analysis is necessary.
- B. Compare the signal that occurs during the inspection to the signal you got during calibration from the notch in the reference standard.
- C. If crack indications occur, do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

PART 6 53-11-18

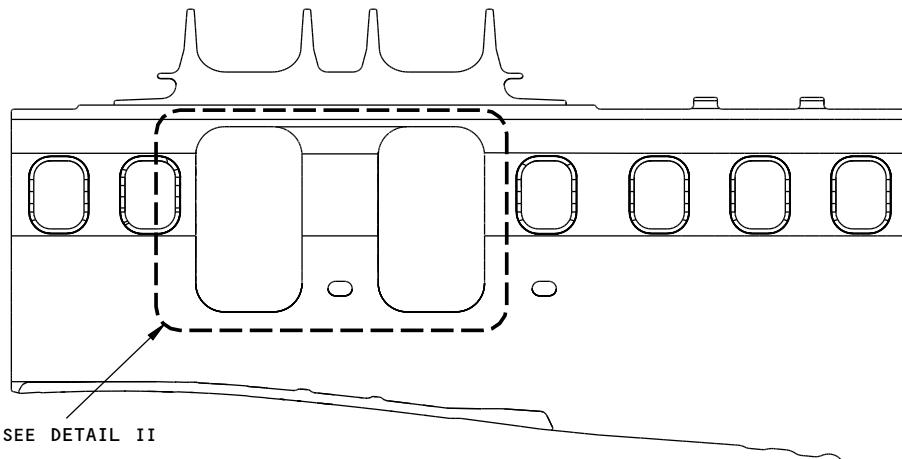
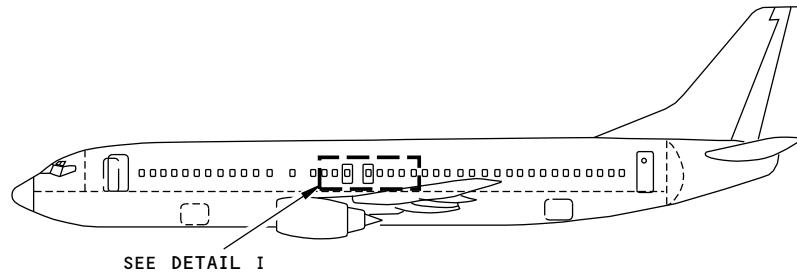
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUTS
DETAIL I

NOTES

- THE LEFT SIDE IS SHOWN;
THE RIGHT SIDE IS OPPOSITE

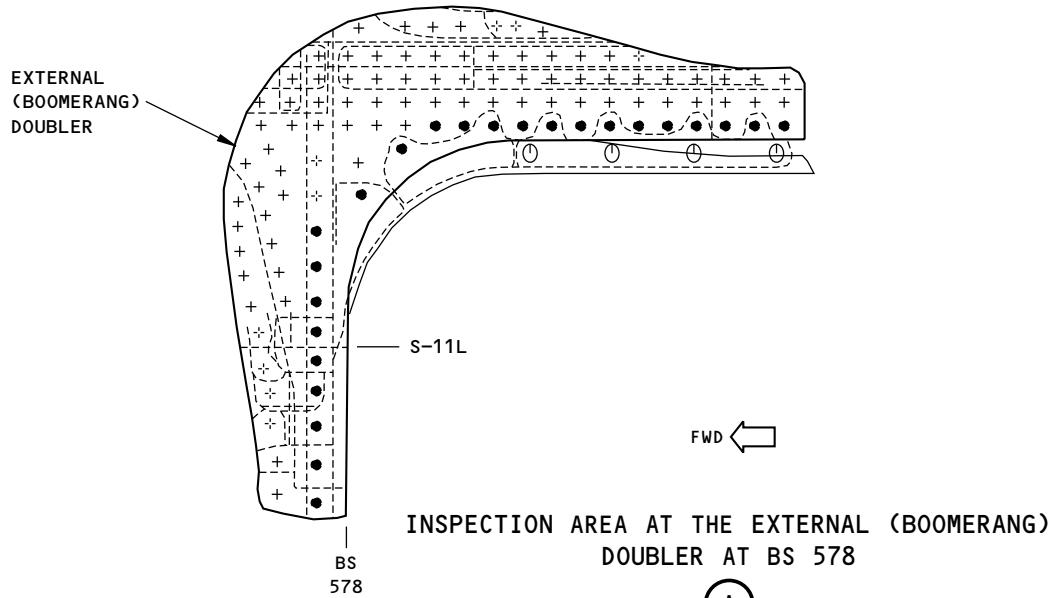
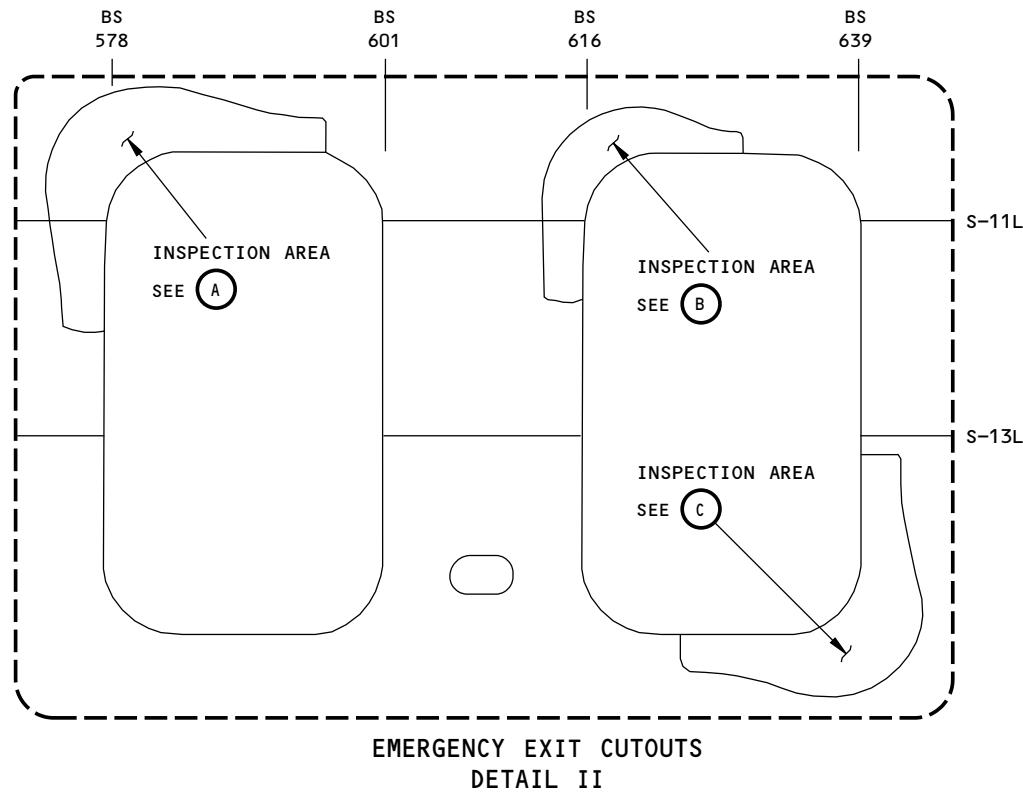
2264553 S0000508061_V1

Inspection Area
Figure 1 (Sheet 1 of 3)

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

PART 6 53-11-18

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- CODE "A" FASTENER LOCATIONS TO BE EXAMINED (USE REFERENCE STANDARD NDT3132)
- ★ CODE "B" FASTENER LOCATIONS TO BE EXAMINED (USE REFERENCE STANDARD NDT3132B)

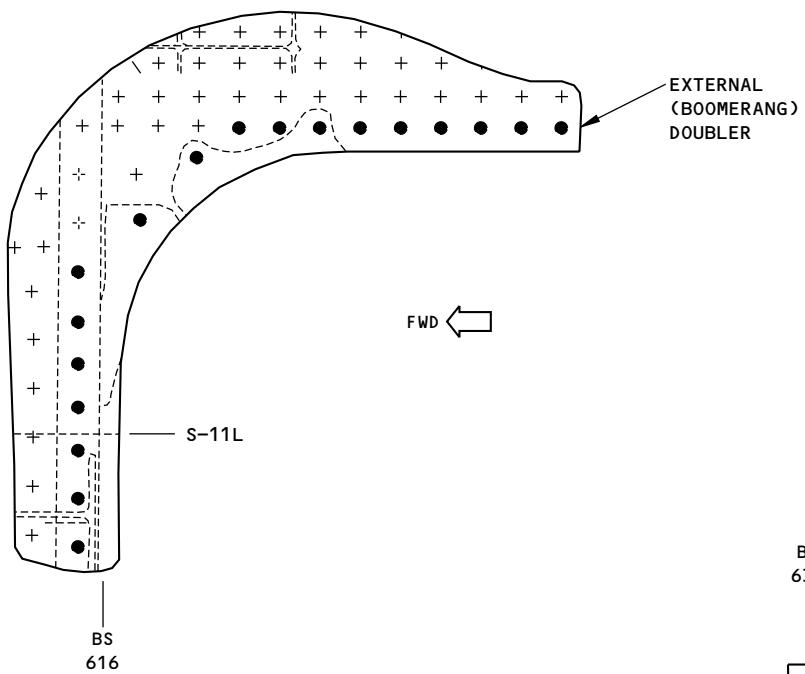
2264619 S0000508062_V1

Inspection Area
Figure 1 (Sheet 2 of 3)

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

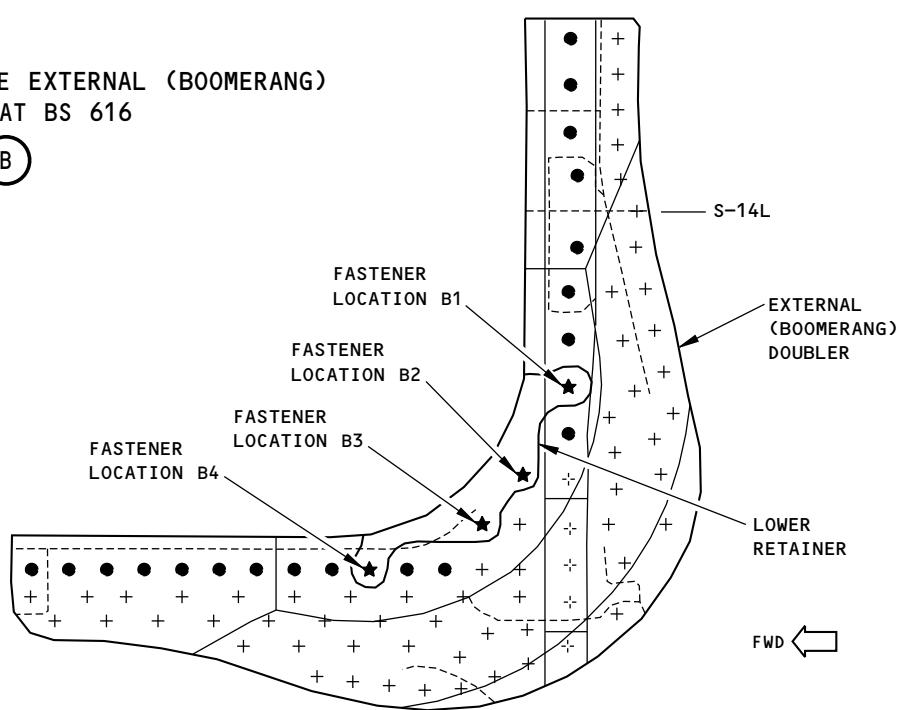
PART 6 53-11-18

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL


INSPECTION AREA AT THE EXTERNAL (BOOMERANG)
DOUBLER AT BS 616

(B)



INSPECTION AREA AT THE EXTERNAL (BOOMERANG)
DOUBLER AT BS 639

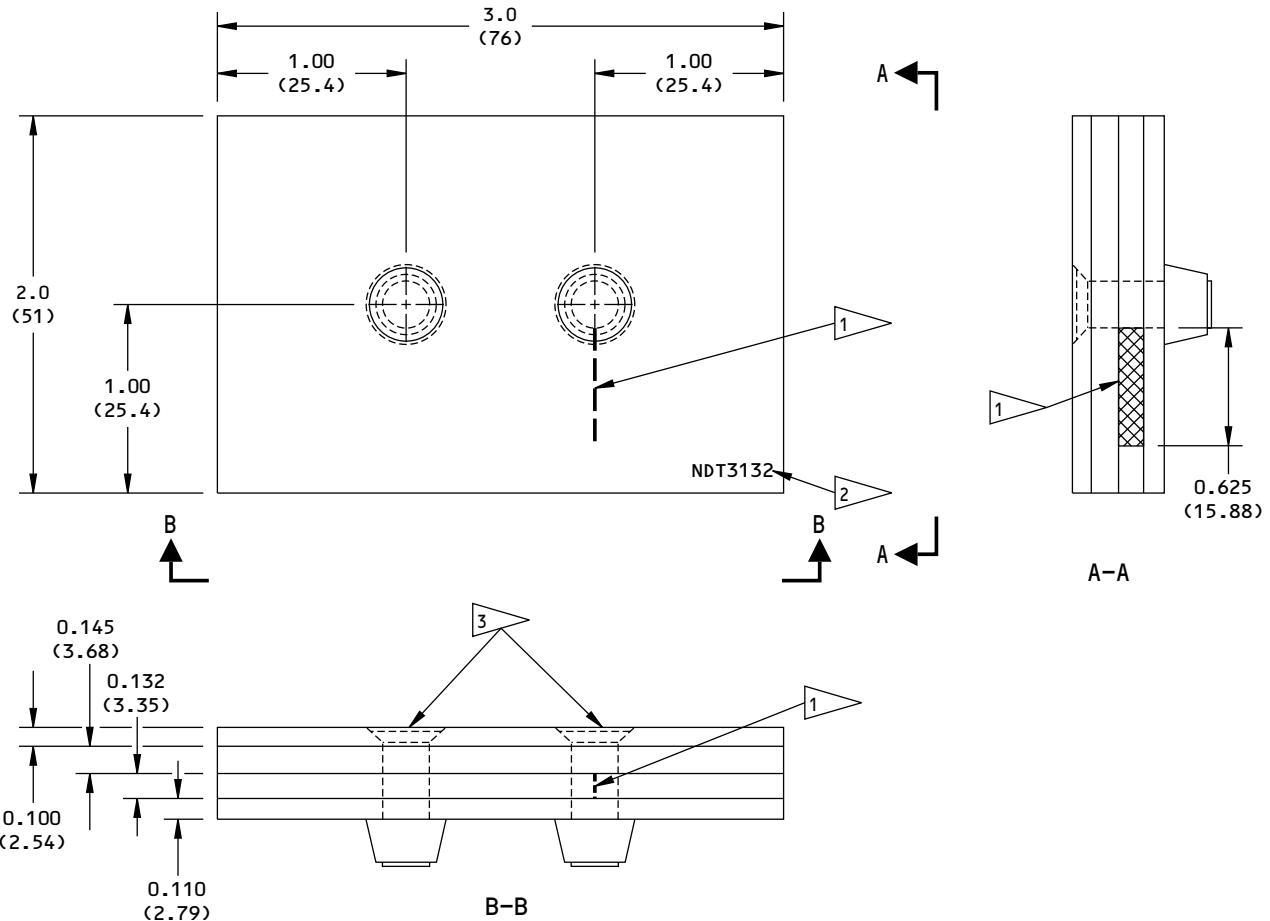
(C)

2264832 S0000508063_V1

Inspection Area
Figure 1 (Sheet 3 of 3)

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

D6-37239



NOTES:

- DIMENSIONS ARE IN INCHES
(MILLIMETERS ARE IN PARENTHESES)
- MATERIAL: ALL 2024-T3 AIRCRAFT ALUMINUM
- SURFACE ROUGHNESS: 63 Ra OR BETTER
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

INCHES	MILLIMETERS
X.XXX = ± 0.005	X.XX = ± 0.10
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1

- 1 ▶ EDM NOTCH:
LENGTH: 0.625 (15.88)
DEPTH: 0.132 (3.35) (THROUGH THE THICKNESS)
WIDTH: 0.010 (0.25) MAXIMUM
- 2 ▶ ETCH OR STAMP THE REFERENCE STANDARD NUMBER,
NDT3132, AT THE APPROXIMATE LOCATION SHOWN
- 3 ▶ USE BACB30VU8 FASTENERS

2264577 S0000508066_V1

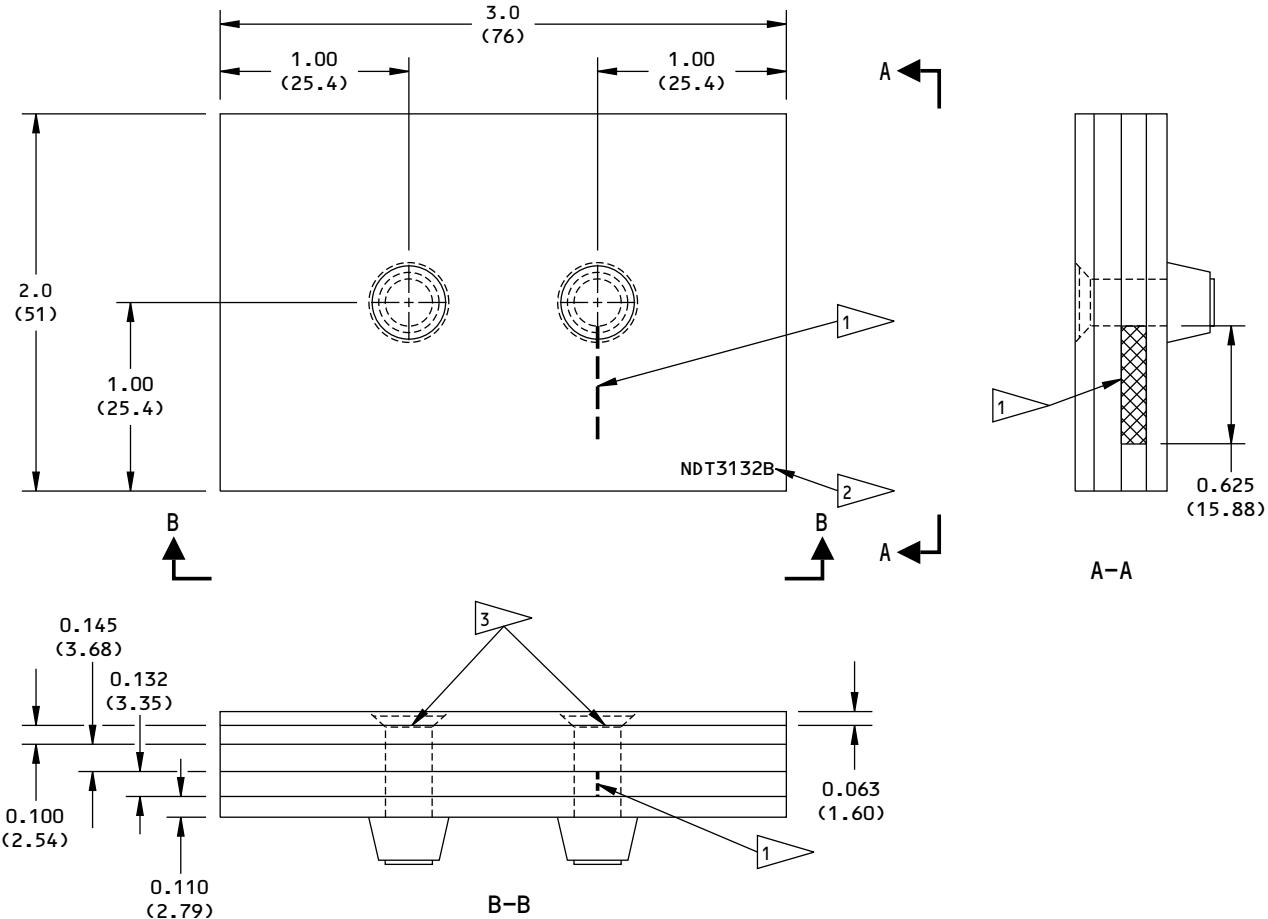
Reference Standard NDT3132
Figure 2

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

PART 6 53-11-18

D6-37239

Page 8
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES:

- DIMENSIONS ARE IN INCHES
(MILLIMETERS ARE IN PARENTHESES)
- MATERIAL: ALL 2024-T3 AIRCRAFT ALUMINUM
- SURFACE ROUGHNESS: 63 Ra OR BETTER
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

INCHES	MILLIMETERS
X.XXX = ± 0.005	X.XX = ± 0.10
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1

1  EDM NOTCH:
 LENGTH: 0.625 (15.88)
 DEPTH: 0.132 (3.35) (THROUGH THE THICKNESS)
 WIDTH: 0.010 (0.25) MAXIMUM

2  ETCH OR STAMP THE REFERENCE STANDARD NUMBER,
 NDT3132B, AT THE APPROXIMATE LOCATION SHOWN

3  USE BACB30VU8 FASTENERS

2264601 S0000508067_V1

Reference Standard NDT3132B
Figure 3

EFFECTIVITY
 ALL; 737-800 AIRPLANE VARIABLE NUMBERS
 YC001 AND YC002

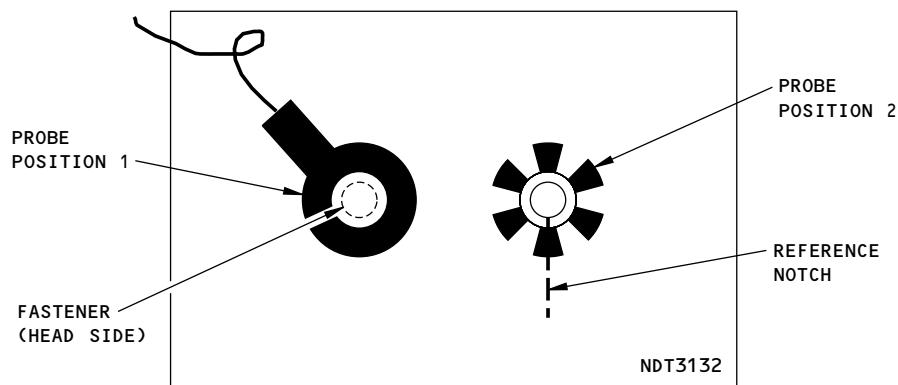
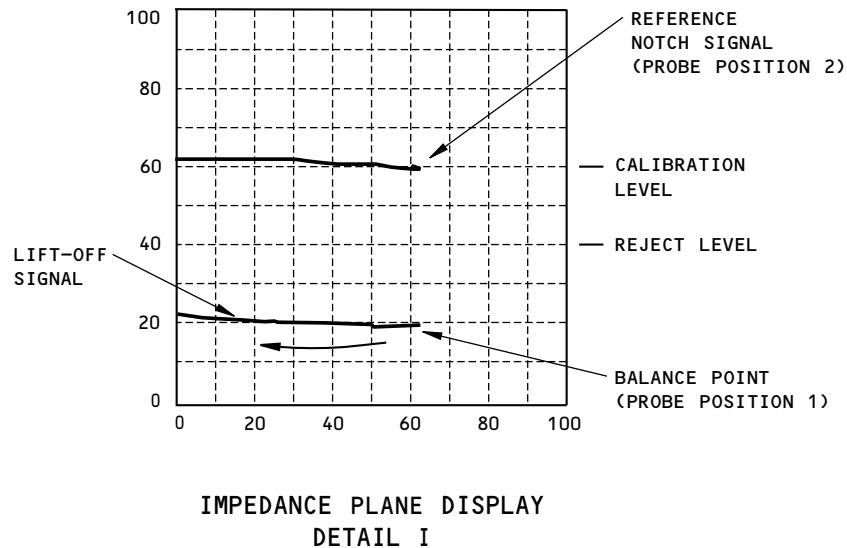
PART 6 53-11-18

Page 9
 Nov 15/2015

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



PROBE POSITIONS FOR CALIBRATION
ON REFERENCE STANDARDS NDT3132 AND NDT3132B
DETAIL II

2264564 S0000508068_V1

Calibration Probe Positions
Figure 4

EFFECTIVITY
ALL; 737-800 AIRPLANE VARIABLE NUMBERS
YC001 AND YC002

PART 6 53-11-18

D6-37239

Page 10
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

SIDE STRUT SUPPORT FRAME AT BS 706 (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the side strut support frame for cracks at the frame inner and outer chords and fail-safe angle from S-10 to S-13. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The frame is aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-40-17-1

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that operates from 50 to 500 kHz.
 - (2) The probe that follows was used to help prepare this procedure.
NOTE: Shielded probes are recommended.
 - (a) TPEN92-5B; Techna NDT
- D. Reference Standards
 - (1) Use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23, to help calibrate the instrument.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas shown in Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt, grease or sealant from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-19



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the side strut support frame for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, at the locations that follow (see Figure 1):
 - (1) Examine the outer chord for cracks around all of the fasteners that attach the outer chord to the skin, between S-10 and S-13.
 - (2) Examine the fail-safe angle for cracks around all of the fasteners that attach the fail-safe angle to the frame web, between S-10 and S-13.
 - (3) Examine the inner chord for cracks around all of the fasteners that attach the fail-safe angle to the inner chord, between S-11 and S-13.
 - (4) Examine the forward side of the frame web for cracks around the 4 fasteners that attach the fail-safe angle to the frame web, between S-11 and S-13.
- B. Do Paragraph 5.A. again to examine the side strut support frame for cracks on the opposite side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

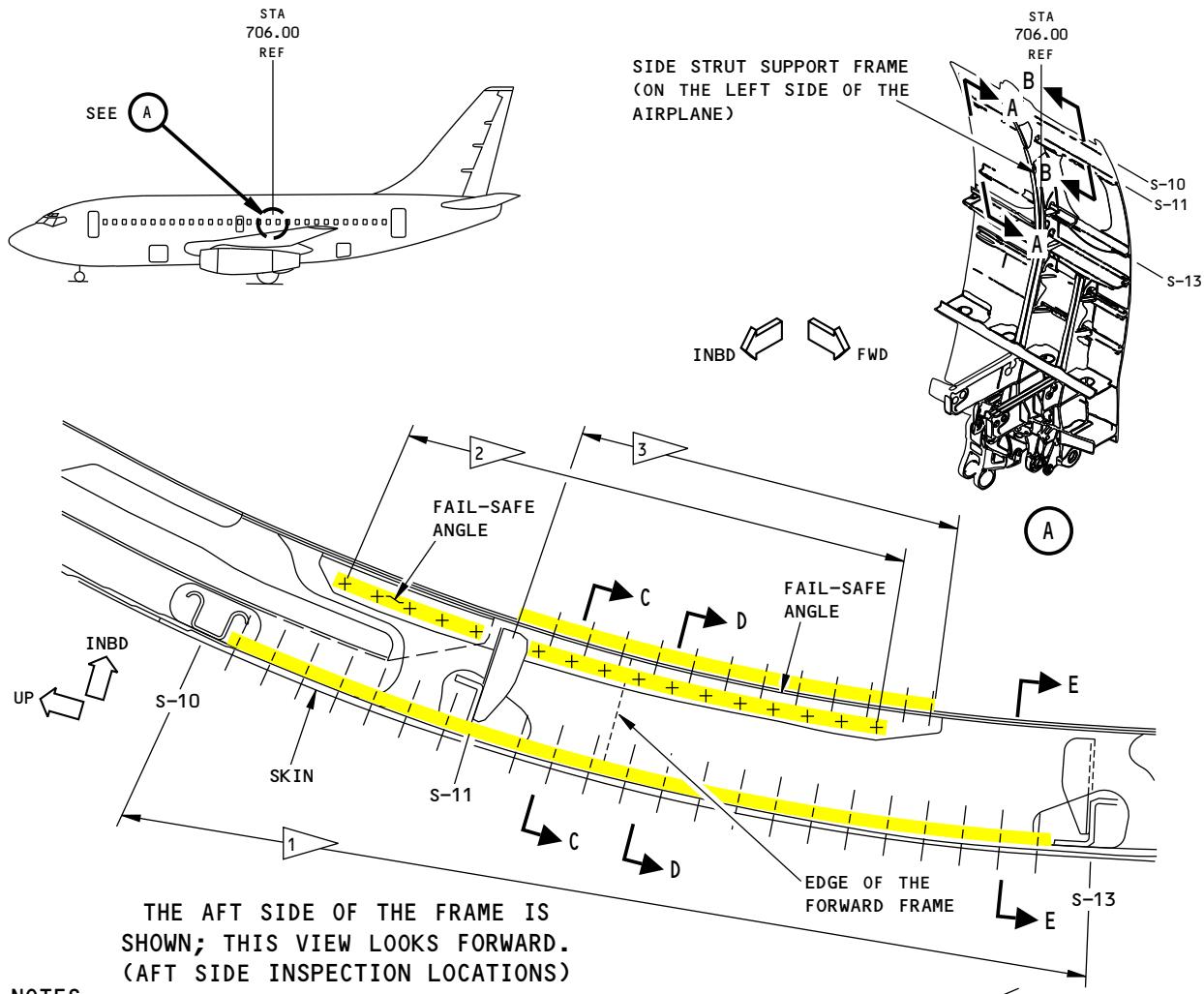
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-19

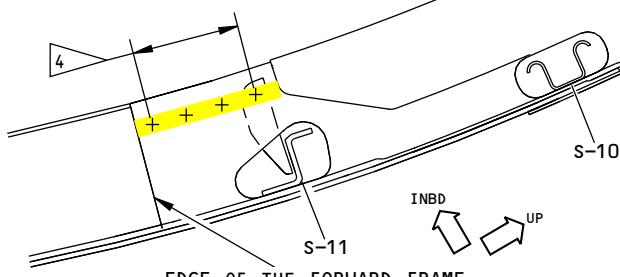
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES
A-A
INSPECTION AREA

- 1** EXAMINE THE OUTER CHORD OF THE FRAME FOR CRACKS AROUND ALL OF THE FASTENERS THAT ATTACH THE OUTER CHORD TO THE SKIN, BETWEEN S-10 AND S-13.
- 2** EXAMINE THE FAIL-SAFE ANGLE FOR CRACKS AROUND ALL OF THE FASTENERS THAT ATTACH THE FAIL-SAFE ANGLE TO THE FRAME WEB, BETWEEN S-10 AND S-13.
- 3** EXAMINE THE INNER CHORD OF THE FRAME FOR CRACKS AROUND ALL OF THE FASTENERS THAT ATTACH THE FAIL-SAFE ANGLE TO THE INNER CHORD, BETWEEN S-11 AND S-13.
- 4** EXAMINE THE FORWARD SIDE OF THE FRAME WEB FOR CRACKS AROUND THE 4 FASTENERS THAT ATTACH THE FAIL-SAFE ANGLE TO THE FRAME WEB, BETWEEN S-11 AND S-13.



THE FORWARD SIDE OF THE FRAME IS SHOWN;
THIS VIEW LOOKS AFT.

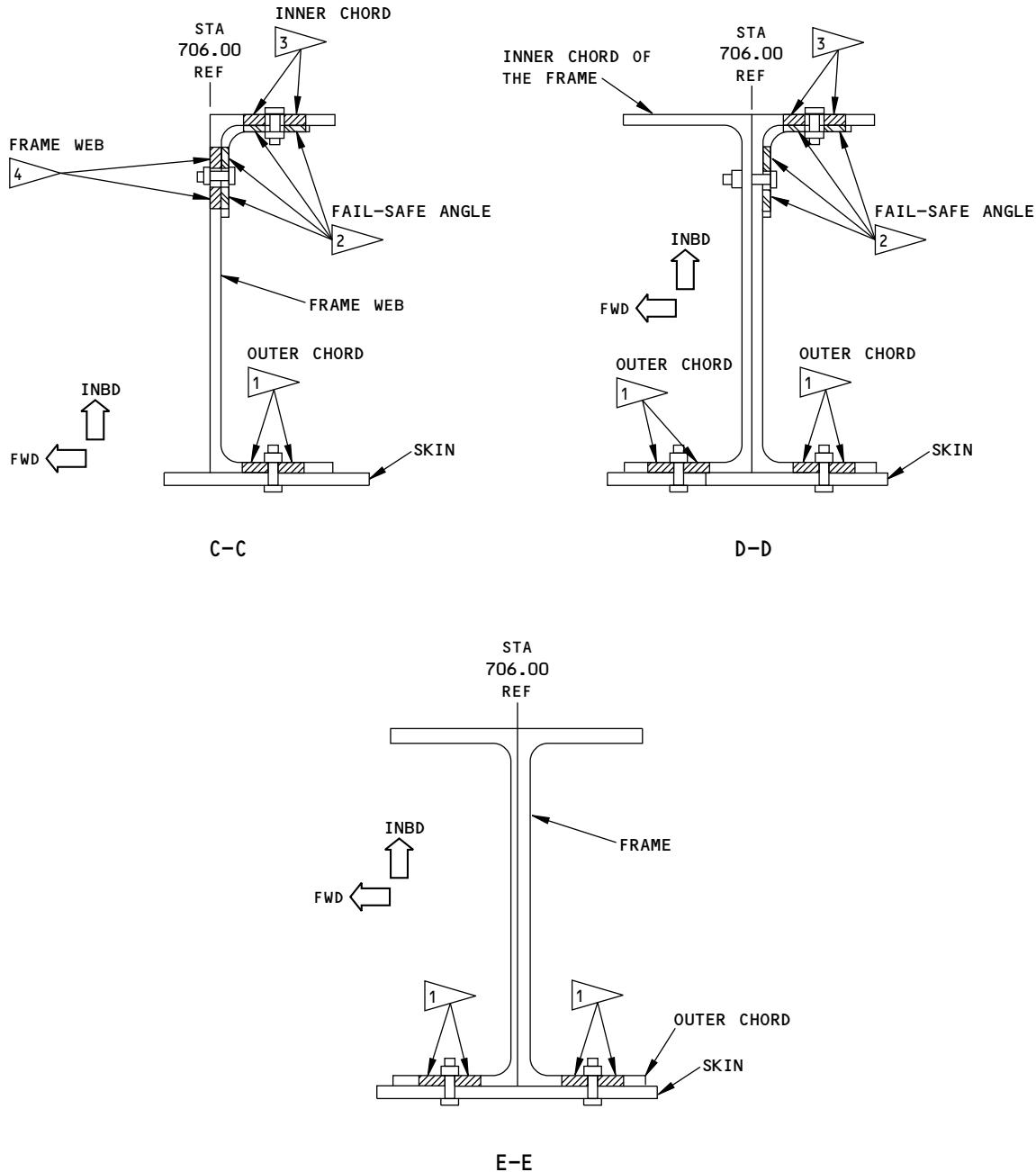
(FORWARD SIDE INSPECTION LOCATIONS)
B-B

2260443 S0000506755_V1

Inspection Areas
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-19

737
NON-DESTRUCTIVE TEST MANUAL


2260567 S0000506756_V1

Inspection Areas
Figure 1 (Sheet 2 of 2)

 EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-19

D6-37239

 Page 4
 Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

**AFT ENTRY AND GALLEY DOOR SURROUND STRUCTURE - OUTER CHORD AT THE LOWER
MAIN SILL (HFEC)**

1. Purpose

- A. Use this procedure to find cracks in the upper flange of the outer chord at the lower main sill of the surround structure for the aft entry and galley doors. The upper flange of the outer chord is examined for cracks at the five fastener locations that are immediately aft of the forward edge frame. See Figure 1 for the inspection area.
- B. Use an impedance plane display instrument to do this procedure.
- C. The outer chord is 2024-T42 aluminum.
- D. 737 Maintenance Planning Document (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-70-07-12 (Aft Entry Door Surround)
 - (2) Item: 53-70-08-12 (Aft Galley Door Surround)

2. Equipment

- A. General
 - (1) Use an eddy current instrument that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that has an impedance plane display and can operate in the frequency range of 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Nortec 500; Olympus NDT
 - (b) Phasec 3D; GE Inspection Technology
- C. Probes
 - (1) Use a probe that operates in the frequency range of 50 to 500 kHz.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) MTF-40/50-500 kHz; Olympus NDT
- NOTE:** Shielded probes are recommended.
- D. Reference Standards
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, paragraph 3, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Get access to the inspection area.

NOTE: Removal of the scuff plates can be necessary.

ALL	EFFECTIVITY
-----	-------------

PART 6 53-11-20

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

C. Clean the inspection area.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the outer chord for cracks at the lower main sill of the surround structure for the aft entry and galley doors as follows:
 - (1) Examine the upper flange of the outer chord for cracks at the five fastener locations shown in Figure 1 that are immediately aft of the forward edge frame as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

ALL

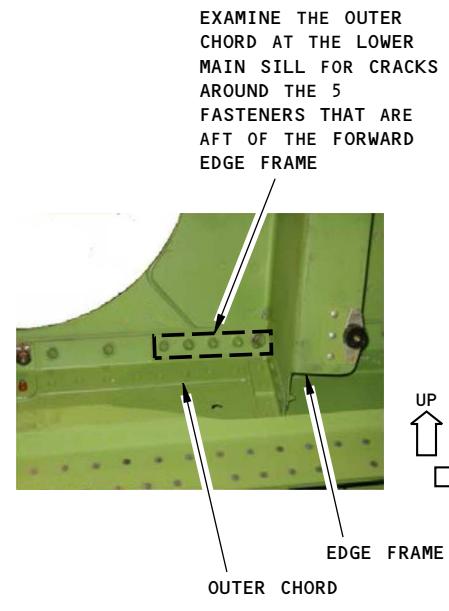
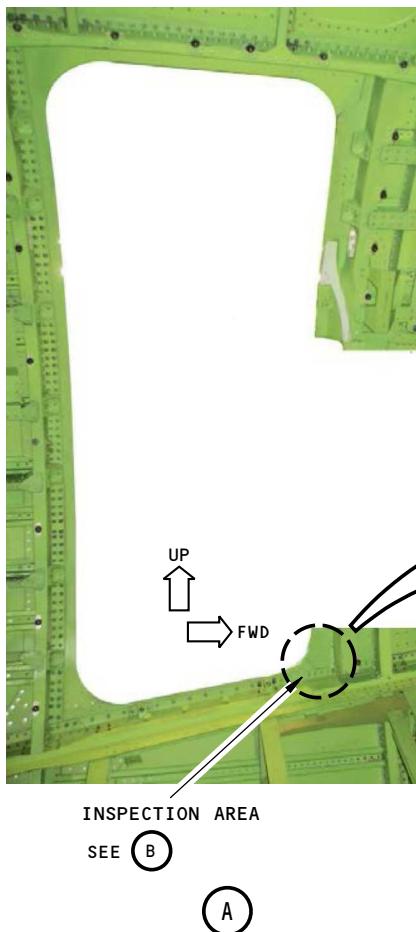
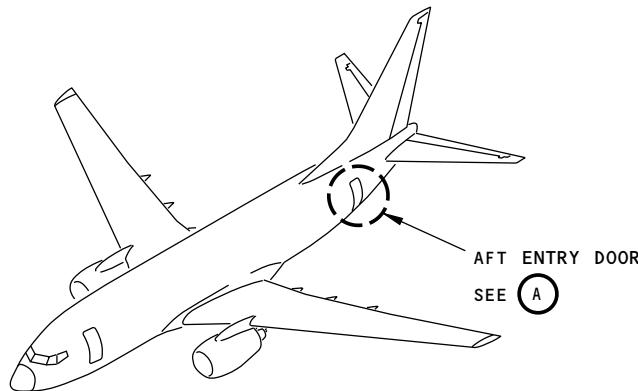
EFFECTIVITY

PART 6 53-11-20

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES:

- THE SURROUND STRUCTURE OF THE AFT ENTRY DOOR IS SHOWN; THE SURROUND STRUCTURE OF THE AFT GALLEY DOOR IS ALMOST THE SAME

2283793 S0000516199_V1

Inspection Area
Figure 1

PART 6 53-11-20



737
NON-DESTRUCTIVE TEST MANUAL
PART 6 - EDDY CURRENT

BEAR STRAP INSPECTION AT THE EDGE FRAMES OF THE SURROUND STRUCTURE FOR THE FORWARD AND AFT CARGO DOORS (HFEC)

1. Purpose

- A. Use this procedure to examine the bear straps that are part of the surround structure for the forward and aft cargo doors. The bear straps at the forward cargo door are examined for cracks along the forward and aft edge frames at BS 440 and BS 492.4, from S-18R to S-25R. The bear straps at the aft cargo door are examined for cracks along the forward and aft edge frames at BS 794.4 and BS 847, from S-18R to S-25R. See Figure 1 for the inspection area.
- B. This procedure uses an impedance plane display instrument.
- C. 737 Maintenance Planning Data (MPD) Primary Structural Element (PSE) Reference:
 - (1) Item: 53-30-08 (surround for the forward cargo door)
- D. 737 Maintenance Planning Document (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-60-08-8 (surround for the aft cargo door)

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D; GE Inspection Technologies
 - (b) Phasec 3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a maximum diameter of 0.13 inch (3.3 mm).
 - (2) The probes that follow were used to help prepare this procedure.
NOTE: Shielded probes are recommended.
 - (a) MP907-60; NDT Engineering
 - (b) TSPEN95-6; Techna NDT
- D. Reference Standards
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, for data about reference standard 126.





737
NON-DESTRUCTIVE TEST MANUAL

3. Prepare for the Inspection

- A. Remove all dirt, loose paint, and sealant from the inspection area, if necessary

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.

- (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.

- B. Examine the bear strap for cracks along the forward and aft edge frames of the surround structure for the aft cargo door as follows:

- (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 6, for general data on surface eddy current inspection procedures.

- (2) Put the probe on the bear strap and against the edge frame. See Figure 1.

- (3) Balance the instrument.

- (4) Make a scan along the edge of the edge frame to examine the bear strap for cracks from S-18R to S-25R. Use the edge frame as a probe guide. See Figure 1.

- (5) Do Paragraph 5.B.(1) thru Paragraph 5.B.(4) again to examine the bear strap for cracks at the edge frame on the other side of the door surround structure.

- C. Examine the bear strap for cracks along the forward and aft edge frames of the surround structure for the forward cargo door as specified in Paragraph 5.B.

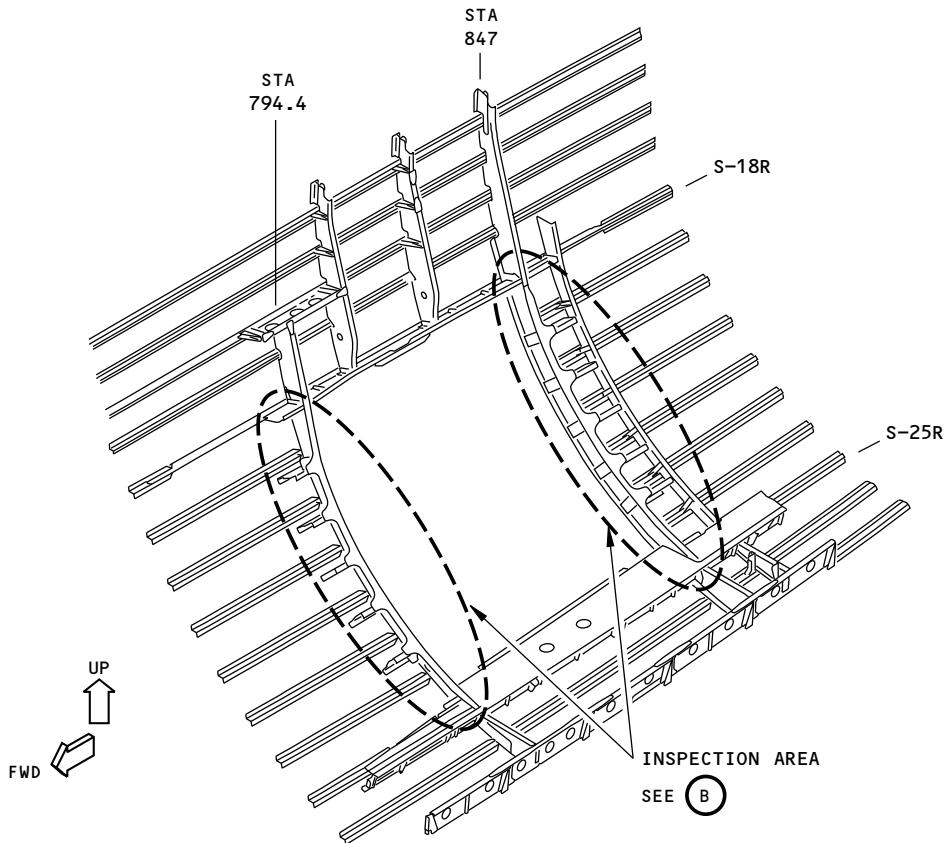
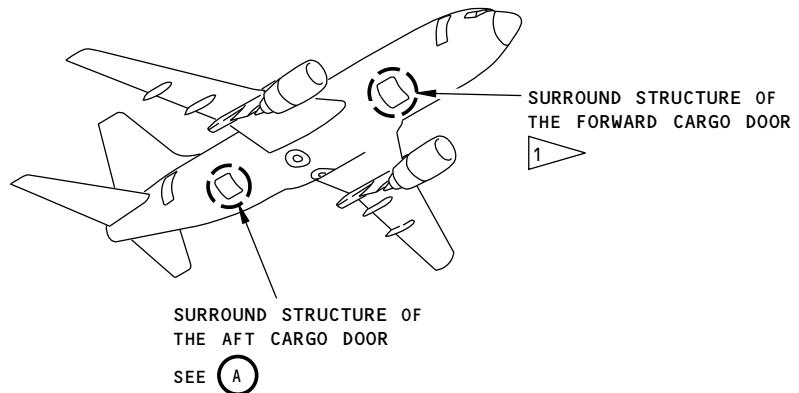
6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

ALL	EFFECTIVITY
	D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



SURROUND STRUCTURE OF THE AFT CARGO DOOR
(VIEW AS YOU LOOK OUTBOARD)

(A)

2283767 S0000516202_V2

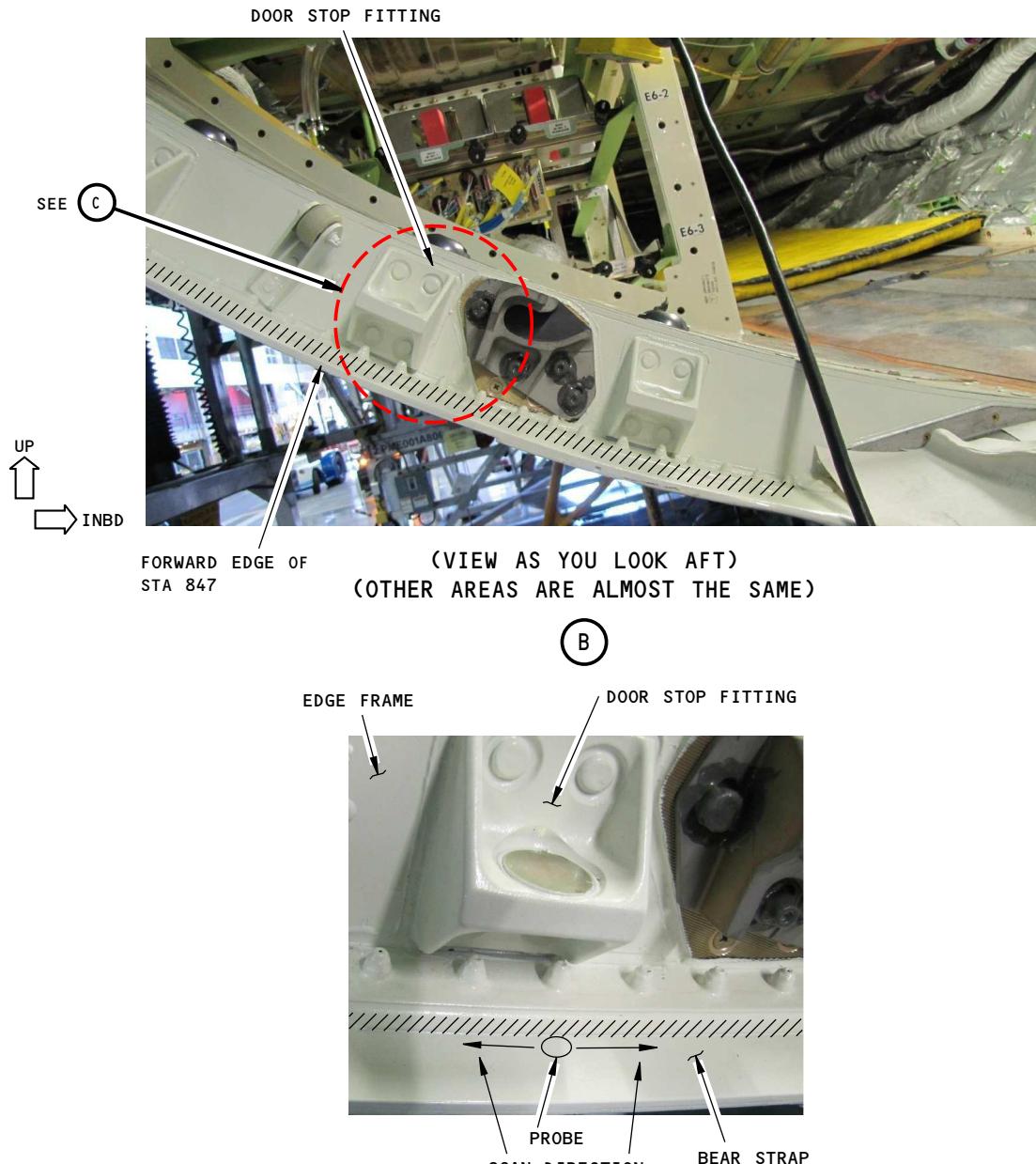
Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL

PART 6 53-11-21

D6-37239

Page 3
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES:

||||| INSPECTION AREA

- REMOVE SEALANT FROM THE INSPECTION AREA AS NECESSARY
 - MAKE A SCAN ALONG THE BEAR STRAP IN THE INSPECTION AREA SHOWN TO FIND CRACKS IN THE BEAR STRAP. USE THE EDGE OF THE EDGE FRAME AS A PROBE GUIDE.
- 1 ▶ EXAMINE THE BEAR STRAP AT THE SURROUND STRUCTURE FOR THE FORWARD CARGO DOOR FOR CRACKS AT BS 440 AND BS 492.4, FROM S-18R TO S-25R. DO THE INSPECTION THE SAME AS SPECIFIED IN THIS PROCEDURE FOR THE AFT CARGO DOOR

2283838 S0000516817_V2

Inspection Area
Figure 1 (Sheet 2 of 2)

— EFFECTIVITY —

ALL

D6-37239

PART 6 53-11-21



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

**WEB INSPECTION AT THE BS 847 EDGE FRAME OF THE SURROUND STRUCTURE FOR THE
AFT CARGO DOOR (HFEC)**

1. Purpose

- A. Use this procedure to examine the web that is part of the surround structure for the aft cargo door. The web is examined for cracks along the aft edge frame at BS 847, from S-16R to S-26R. The door stops and sill locations are not examined by this inspection. See Figure 1 for the inspection area.
- B. This procedure uses an impedance plane display instrument.
- C. 737 Maintenance Planning Document (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-60-08-4

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D; GE Inspection Technologies
 - (b) Phasec 3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a maximum diameter of 0.13 inch (3.3 mm).
 - (2) The probes that follow were used to help prepare this procedure.
NOTE: Shielded probes are recommended.
 - (a) MP907-60; NDT Engineering
 - (b) TSPEN95-6; Techna NDT
- D. Reference Standards
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, for data about reference standard 126.

3. Prepare for the Inspection

- A. Remove all dirt, loose paint, and sealant from the inspection area, if necessary

EFFECTIVITY

ALL

PART 6 53-11-22

Page 1
Nov 15/2015

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Examine the web for cracks along the aft edge frame of the surround structure for the aft cargo door as follows:
 - (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 6, for general instructions about surface eddy current inspections.
 - (2) Put the probe on the outboard side of the web. See Figure 1.
 - (3) Balance the instrument.
 - (4) Make a scan along the fail-safe strap at BS 847 to examine the web for cracks from S-16R to S-26R. Use the fail-safe strap as a probe guide as shown in Figure 1 to find cracks that can occur in the inboard to outboard direction.

NOTE: Web areas that are blocked by door stops and sill locations are not examined by this procedure.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

ALL

EFFECTIVITY

PART 6 53-11-22

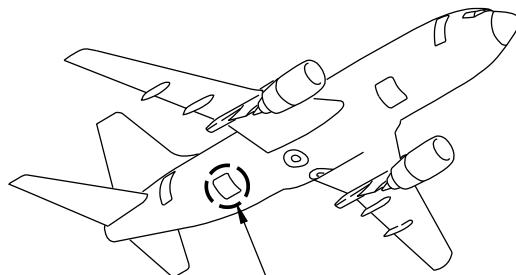
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

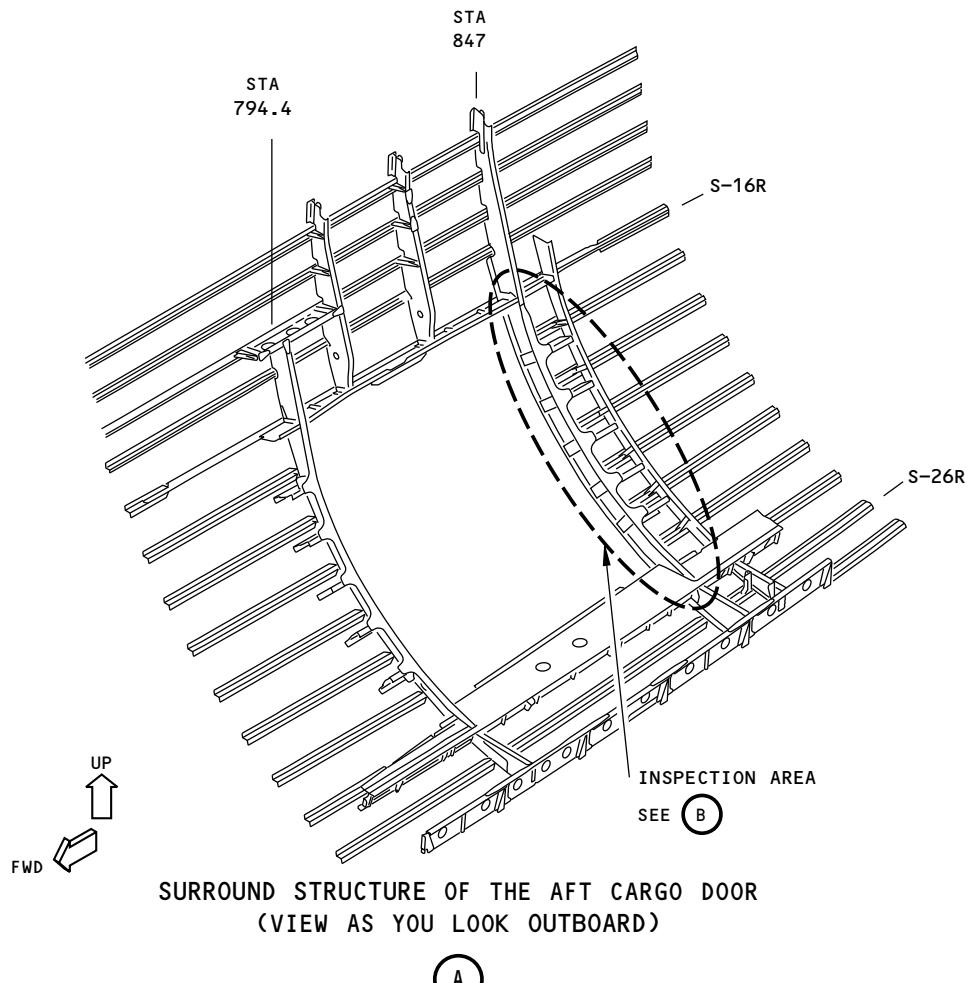


737
NON-DESTRUCTIVE TEST MANUAL



SURROUND STRUCTURE OF
THE AFT CARGO DOOR

SEE



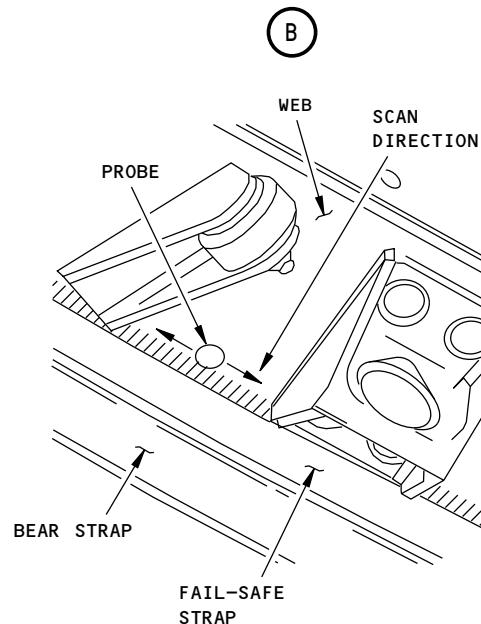
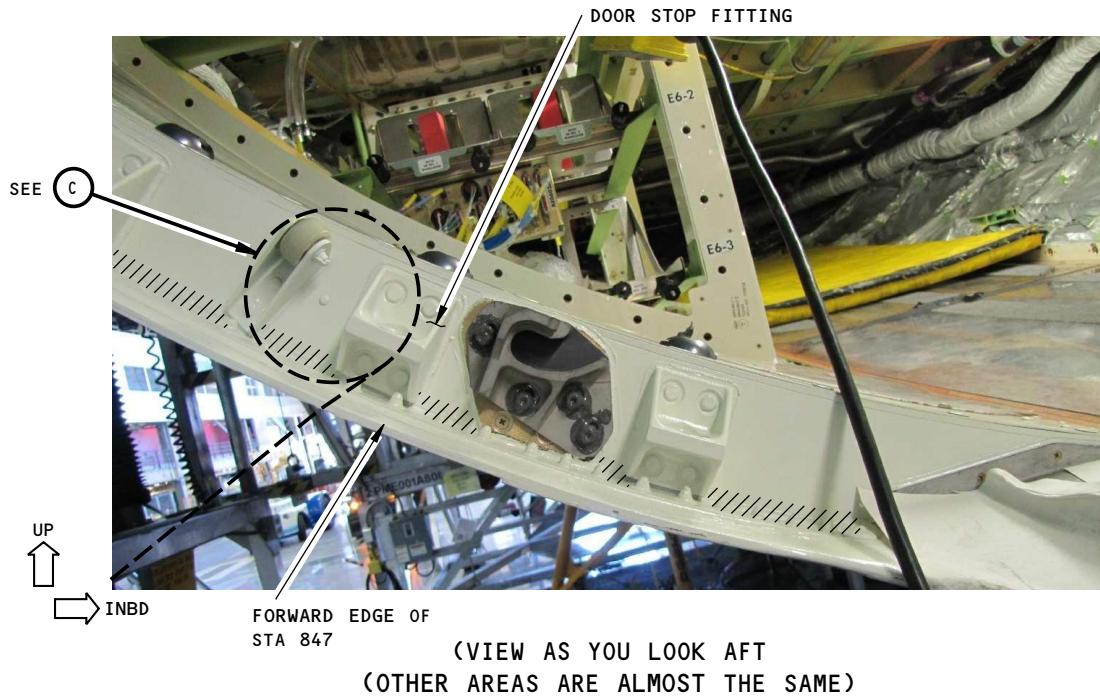
2283819 S0000516209_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL

PART 6 53-11-22

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES:

//// INSPECTION AREA

- REMOVE SEALANT AS NECESSARY
- MAKE A SCAN ALONG THE WEB IN THE INSPECTION AREA SHOWN TO FIND CRACKS IN THE WEB. USE THE FAIL-SAFE STRAP AS A PROBE GUIDE.

2283843 S0000516818_V1

C

Inspection Area
Figure 1 (Sheet 2 of 2)

— EFFECTIVITY —

ALL

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

INNER CHORD AT THE UPPER SILL OF THE SURROUND STRUCTURE FOR THE AFT AND FORWARD CARGO DOORS (HFEC)

1. Purpose

- A. Use this procedure to examine the inner chord for cracks at the upper sill of the surround structure for the aft and forward cargo doors. See Figure 1 for the inspection area.
- B. The inner chord is aluminum.
- C. This procedure uses an impedance plane display instrument.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-60-08-11 (Aft Cargo Door Surround)
 - (2) Item: 53-30-08-11 (Forward Cargo Door Surround)

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that has an impedance plane display and can operate in the frequency range of 50 to 500 kHz.
- (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D; GE Inspection Technologies
 - (b) Phasec 3D; GE Inspection Technologies

C. Probes

- (1) Use a right-angle pencil probe that operates in the frequency range of 50 to 500 kHz and has a maximum diameter of 0.13 inch (3.3 mm).
- (2) The probe that follows was used to help prepare this procedure.
 - (a) MTFD905-60B; NDT Engineering

NOTE: Shielded probes are recommended.

D. Reference Standards

- (1) Use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23, to help calibrate the instrument.

3. Prepare for the Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Remove all dirt, loose paint, and sealant if necessary.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.

EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-23

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Use the aluminum rivet on reference standard 188A (or an equivalent) to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the inner chord for cracks at the upper sill of the surround structure for the aft and forward cargo doors as follows:
- (1) Examine the inner chord for cracks in the areas around all the fasteners shown in Figure 1 as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-23

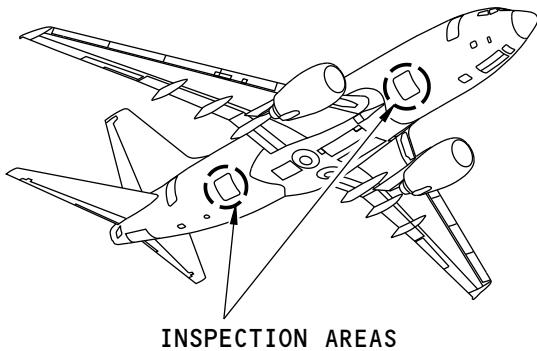
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

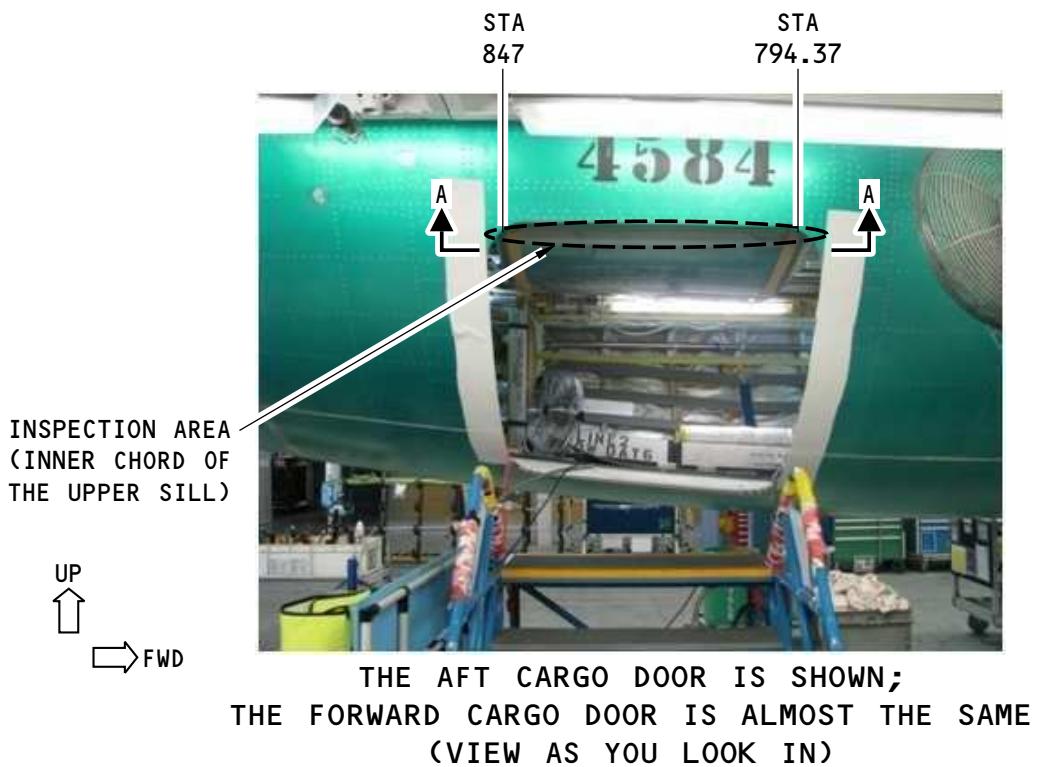
Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



INSPECTION AREAS



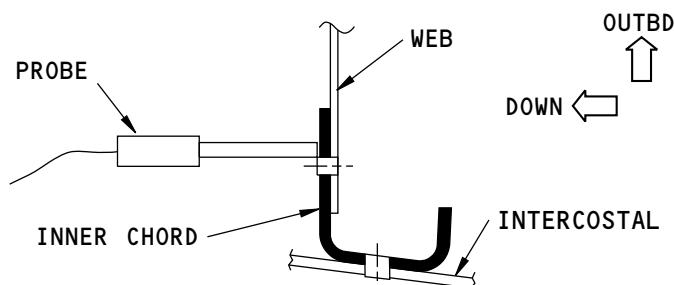
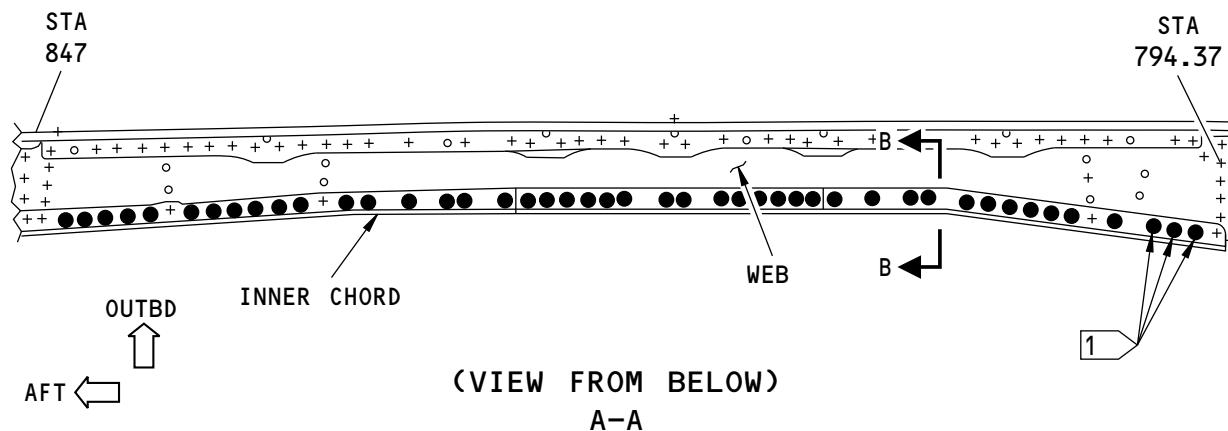
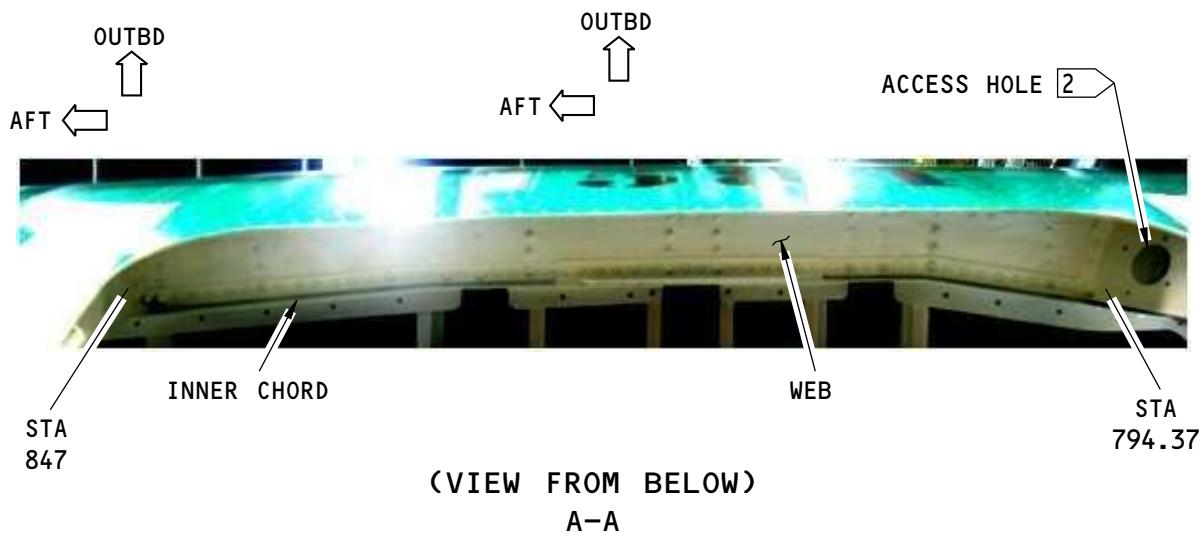
2313845 S0000526291_V1

Upper Sill Inspection Areas
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-23

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES
● INSPECTION FASTENER LOCATIONS

- 1 THESE THREE FASTENERS ARE NOT EASY TO ACCESS. GET ACCESS TO THESE FASTENERS THROUGH THE ACCESS HOLE IDENTIFIED BY FLAGNOTE 2.

2313875 S0000526292_V1

Upper Sill Inspection Areas
Figure 1 (Sheet 2 of 2)

 EFFECTIVITY
 ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER AIRPLANES

D6-37239

PART 6 53-11-23

 Page 4
 Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

WINDOW FRAME AT STA 616 (737-600/-700) OR STA 578 (737-800/-900) (HFEC)

1. Purpose

- A. Use this procedure to help find surface cracks in the window frames at STA 616 (737-600/-700) or STA 578 (737-800/-900). The window frames are examined for cracks in the areas that are inboard of the fasteners that attach the window frame to the backup fittings for the door stops of the overwing exit doors. See Figure 1 for the inspection areas.
- B. Use an impedance plane display instrument to do this procedure.
- C. The window frame is aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-40-23-3

2. Equipment

- A. General
 - (1) All eddy current instruments that have an impedance plane display can be used if they can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that has an impedance plane display and can operate from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Nortec 500; Olympus NDT
 - (b) Phasel 3D; GE Inspection Technology
- C. Probes
 - (1) Use a probe that operates from 50 to 500 kHz.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) MTF-40/50-500 kHz; NDT Engineering/Olympus
- NOTE:** Shielded probes are recommended.
- D. Reference Standard
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, for data about this reference standard.

3. Prepare for the Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Get access to the inspection area.
- C. Clean the inspection area if necessary.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.

EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-24

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the edge of the window frame for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, in the areas that follow:
- (1) For 737-600/-700 airplanes only, the window frames are examined at STA 616.
 - (2) For 737-800/-900 airplanes only, the window frames are examined at STA 578.
 - (3) For all airplanes, examine along the edge of the window frames in the areas that are adjacent to the backup fittings. See Figure 1 for the inspection area.
 - (4) For all airplanes, do this inspection on each side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-24

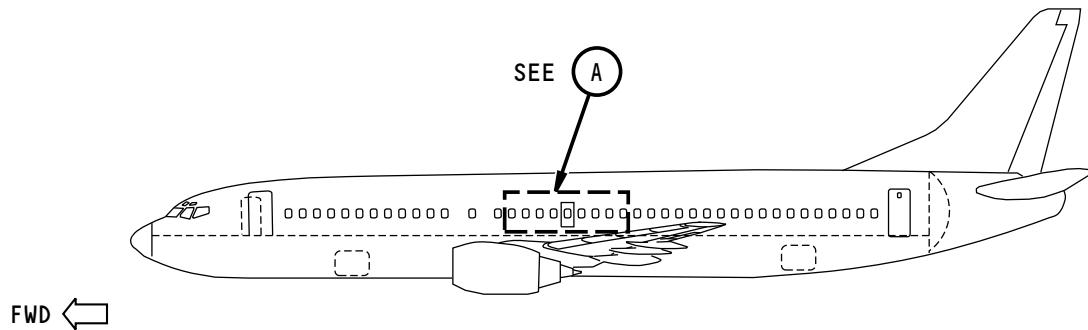
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

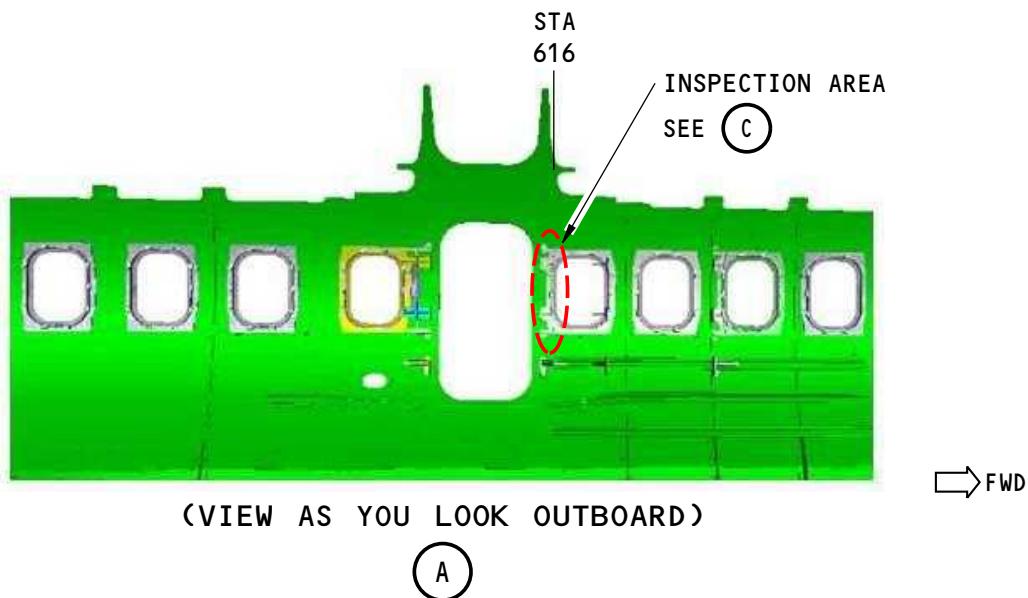
Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



737-600/-700 AIRPLANES



2315315 S0000526567_V1

Inspection Area
Figure 1 (Sheet 1 of 3)

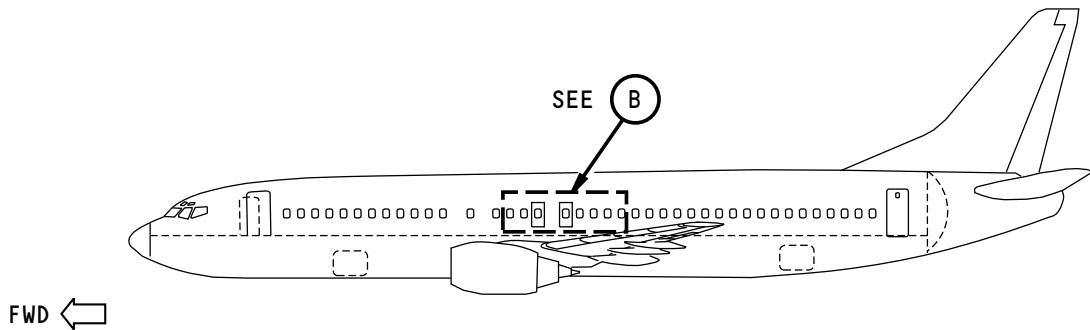
EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-24

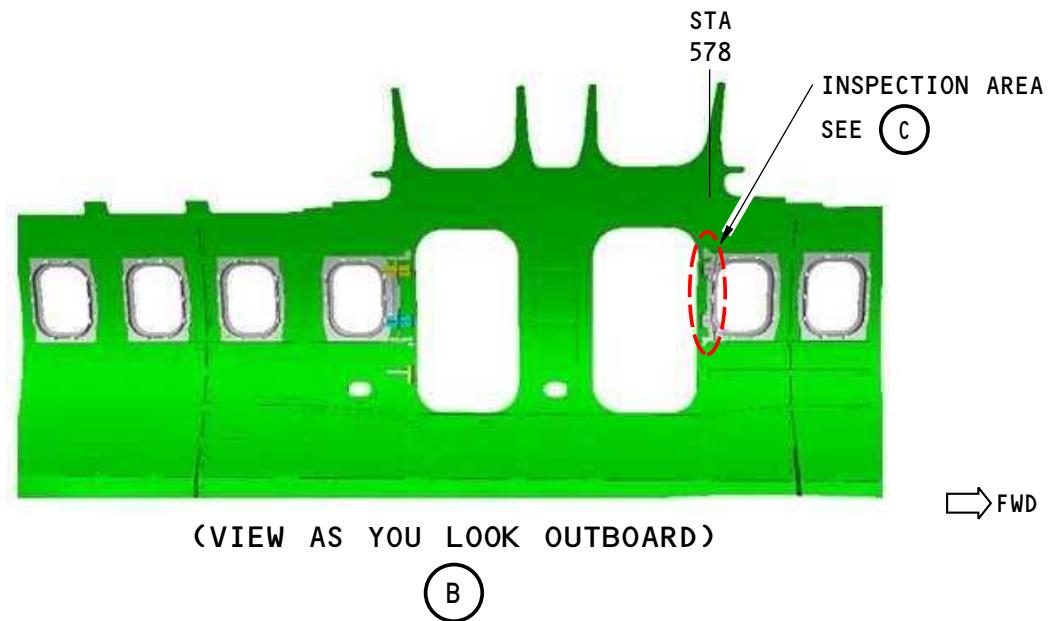
D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



737-800/-900 AIRPLANES



2315422 S0000526568_V1

Inspection Area
Figure 1 (Sheet 2 of 3)

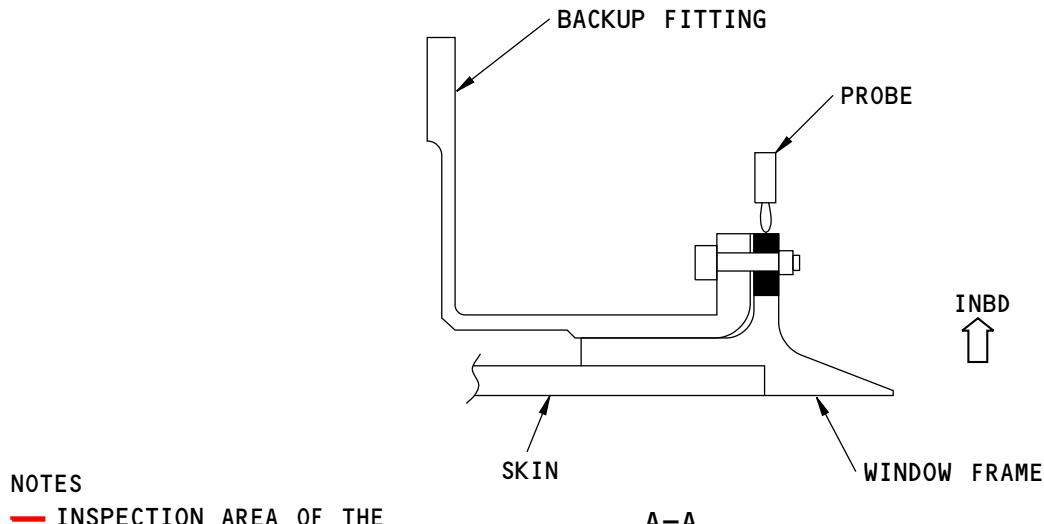
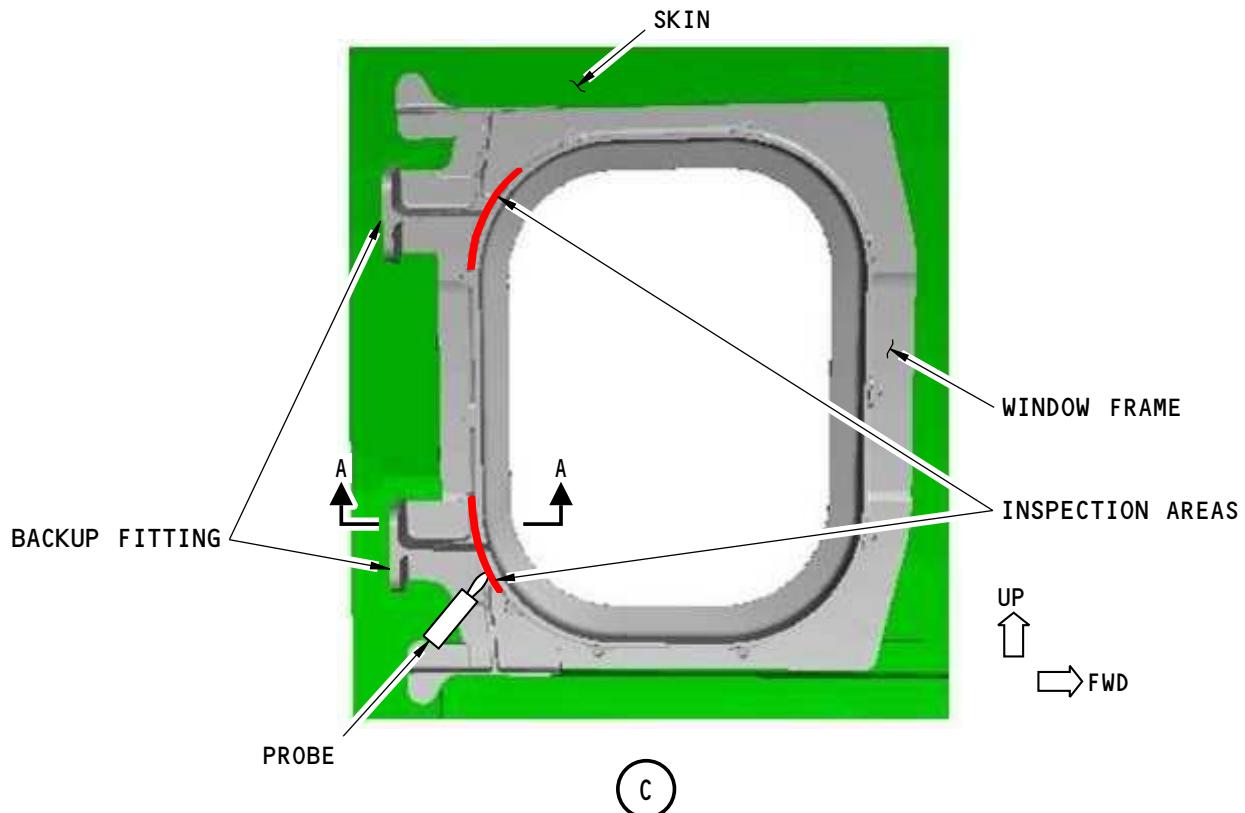
EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

PART 6 53-11-24

Page 4
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


2315433 S0000526569_V1

Inspection Area
Figure 1 (Sheet 3 of 3)

EFFECTIVITY
 ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
 AIRPLANES

PART 6 53-11-24

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL
PART 6 - EDDY CURRENT

**SPLICE ANGLE AND INNER CHORD INSPECTION AT THE BS 727 AFT WHEEL WELL
BULKHEAD AND PRESSURE WEB (HFEC)**

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the splice angle and inner chord of the lower frame at BS 727 for cracks that can start at the fastener locations. See Figure 1 for the inspection area.
- B. This procedure uses an impedance plane display instrument.
- C. The splice angle and inner chord are aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-40-16-3

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
- C. The instruments that follow were used to help prepare this procedure.
 - (1) 500D; Olympus NDT
 - (2) Phasec 2D/3D; GE Inspection Technologies
- D. Probes
 - (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a 90 or a 45 degree angle with a minimum drop of 0.5 inch (13 mm) and a maximum drop of 0.7 inch (18 mm).
 - (2) The probes that follow were used to help prepare this procedure.
NOTE: Shielded probes are recommended.
 - (a) MTF901-50FX (50kHz-300kHz); NDT Engineering
 - (b) TPEN95-6B (50kHz-500kHz); Techna NDT
- E. Reference Standards
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Identify the lower frame at BS 727. See Figure 1.

EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-25

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- B. Identify the inspection area shown in Figure 1.
- C. Remove insulation when necessary to get access to the inspection area.
- D. Remove paint from the inspection area only if it is loose.
- E. Remove sealant that extends more than 0.40 inch (10.2 mm) from around the fasteners.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the splice angle at the BS 727 frame shown in Figure 1 for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.

NOTE: The splice angle becomes the inner chord of the BS 727 lower frame at stringer 18.

- (1) Make a full scan on the splice angle around each fastener shown in the inspection area in Figure 1.

- B. Do Paragraph 5.A. again to examine the splice angle on the opposite side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

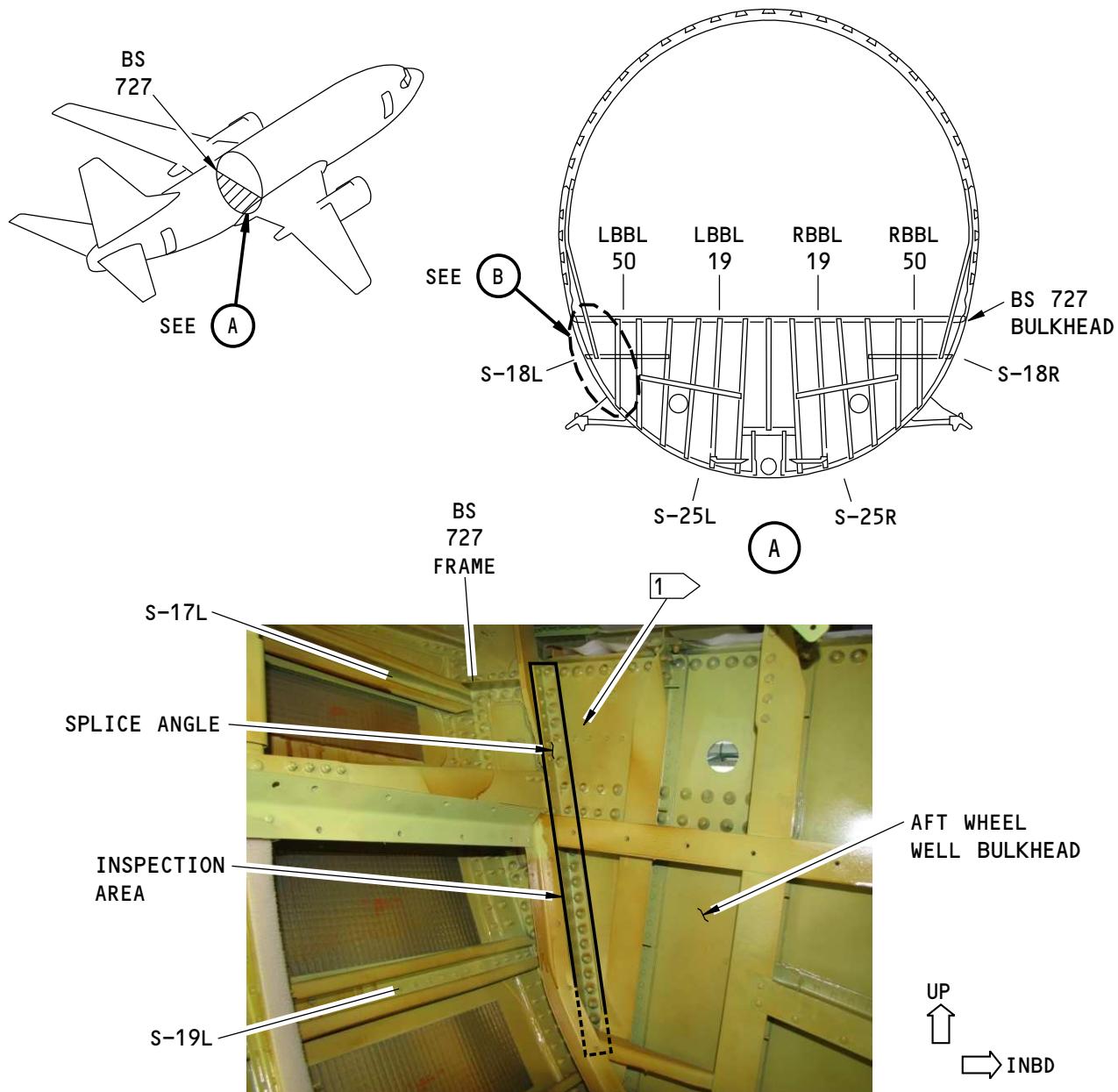
EFFECTIVITY
ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
AIRPLANES

PART 6 53-11-25

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


(VIEW AS YOU LOOK FORWARD IN THE AFT CARGO BAY)
 THE LEFT SIDE IS SHOWN;
 THE RIGHT SIDE IS THE SAME

NOTES

- 1) THE AIR DUCT AND THE INSULATION ARE
 NOT SHOWN IN THE INSPECTION AREA

2313923 S0000526294_V1

Inspection Area
Figure 1

EFFECTIVITY
 ALL; 737-600, -700, -700IGW, -800, -900 AND -900ER
 AIRPLANES

PART 6 53-11-25

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

MAIN LANDING GEAR - STUB BEAM AT THE BS 695 SUPPORT FRAME (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the stub beam at the BS 695 support frame for the main landing gear for cracks. The upper flange of the stub beam is examined at two fastener locations, on each side of the airplane, where the stub beam attaches to the crease beam. See Figure 1 for the inspection areas.
- B. It is necessary to get access to the bottom side of the stub beam from inside the airplane to do this inspection.
- C. This procedure uses an impedance plane display instrument.
- D. The stub beam is aluminum.
- E. 737 Maintenance Planning Data (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-40-18-2 (HFEC)

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
 - (b) Nortec 500D; Olympus NDT
- C. Probes
 - (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a diameter of 0.125 inch (3.18 mm).
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN95-6B; Techna NDT
- D. Reference Standards
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Identify and get access to the inspection areas shown in Figure 1.
- B. Clean the inspection surfaces.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-26



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Remove dirt or grease from the inspection surfaces.
- (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument to examine the stub beam for cracks at the fastener locations that attach the crease beam to the stub beam at BS 695 as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the stub beam for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) Do scans at the two fastener locations that attach the crease beam to the stub beam at BS 695 (see Figure 1) on each side of the airplane.
 - (2) Examine the upper flange of the stub beam for cracks from the lower side of the upper chord. Use the fastener as a probe guide.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

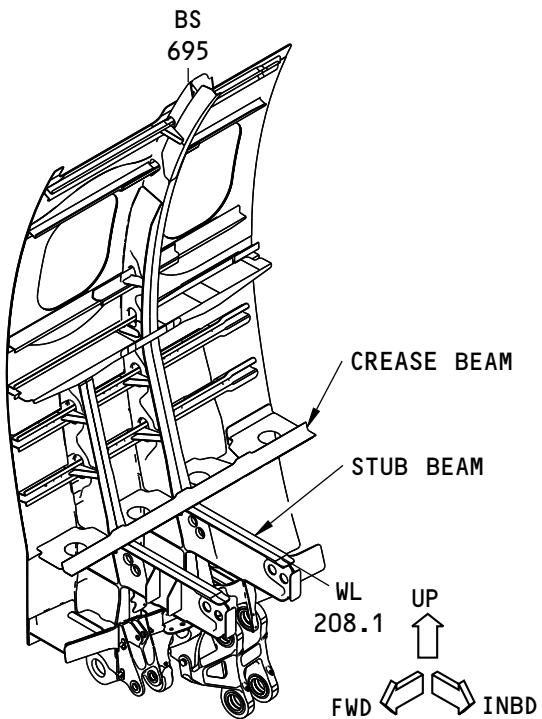
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-26

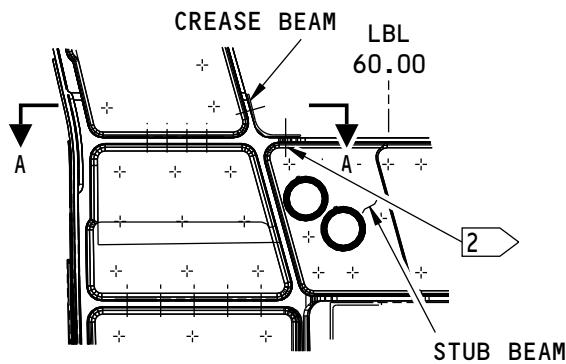
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

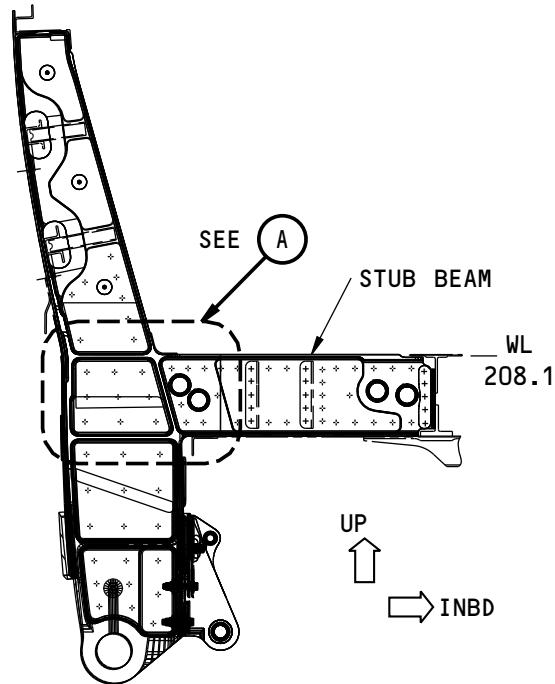


MAIN LANDING GEAR
SUPPORT FRAME

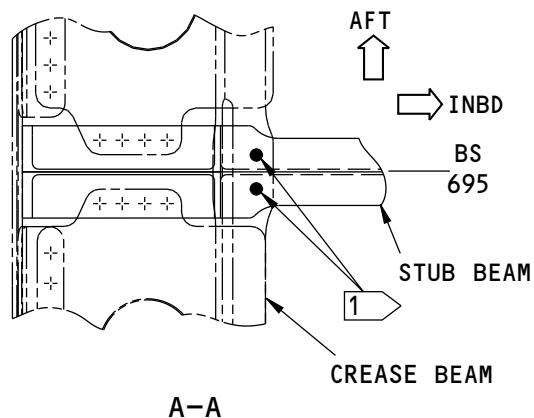


NOTES

- THE RIGHT SIDE OF THE AIRPLANE IS SHOWN; THE LEFT SIDE IS OPPOSITE
- 1) FASTENER LOCATIONS TO BE EXAMINED
- 2) EXAMINE THE STUB BEAM FOR CRACKS AROUND THE FASTENER LOCATIONS FROM THE LOWER SIDE OF THE UPPER FLANGE. USE THE FASTENER AS A PROBE GUIDE.



STUB BEAM TO MAIN LANDING
GEAR SUPPORT ATTACHMENT
AT BS 695



A-A

2313958 S0000526296_V1

Inspection Area
Figure 1

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

AIRSTAIR DOOR CUTOUT - FORWARD AND AFT EDGE FRAMES - STA 303.9 AND 351.2 AT THE LOWER CORNERS (LFEC)

1. Purpose

- A. Use this procedure to help find cracks in the forward and aft edge frames of the airstair door cutout at STA 303.9 and STA 351.2. The lower corners of the edge frames are examined for cracks around the fasteners that attach the corner clips to the edge frames. See Figure 1 for the inspection areas.
- B. 737 Maintenance Planning Data (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-10-21-4

2. Equipment

A. General

- (1) All eddy current instruments that have an impedance plane display are permitted for use if they can be calibrated on the reference standard as specified in Paragraph 4.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency range of 1.0 to 2.0 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Nortec 1000S; Olympus NDT

C. Probe

- (1) Use a spot probe with a maximum diameter of 0.375 inch (9.5 mm) and a maximum height of 0.5 inch (13 mm). See Figure 1, View B and Part 6, 53-30-00, Procedure 5, paragraph 3.B, for data about probe selection.
- (2) The probes that follow were used to help prepare this procedure.
 - (a) NEC-4088-1; NDT Engineering Corp (Olympus)
 - (b) LS904-40/TF/1K; NDT Engineering Corp (Olympus)
 - (c) NEC2061-1; NDT Engineering Corp (Olympus)

D. Reference Standards

- (1) Use reference standard ANDT1053, or an equivalent, as given in Part 6, 53-30-00, Procedure 5, Figure 7.

3. Prepare for the Inspection

- A. Get access to the inspection areas shown in Figure 1.
- B. Remove loose paint, dirt and sealant from the surface of the inspection areas as necessary.

4. Instrument Calibration

- A. Calibrate the equipment as specified in Part 6, 53-30-00, Procedure 5, paragraph 5, and as follows:
 - (1) Use reference standard ANDT1053, or an equivalent.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-27



737
NON-DESTRUCTIVE TEST MANUAL

- (2) Use the protruding head fasteners to do the calibration.

5. Inspection Procedure

- A. Examine the forward and aft edge frames of the airstair door cutout for cracks around the fasteners that go through the corner clips at STA 303.9 and STA 351.2 as follows:
- (1) Find the inspection areas shown in Figure 1.
 - (2) Calibrate the instrument as specified in Paragraph 4.
 - (3) Make a scan of the aft edge frame in the area of the lower corner clip. Move the probe between all of the fasteners that go through the corner clip and the edge frame as shown in Figure 1 and as specified in Part 6, 53-30-00, Procedure 5, paragraph 6.
 - (4) Do Paragraph 5.A.(1) thru Paragraph 5.A.(3) again to examine the forward edge frame for cracks. The forward edge frame is almost the same as the aft edge frame but opposite.

6. Inspection Results

- A. See Part 6, 53-30-00, Procedure 5, paragraph 7, for instructions to help make an analysis of the signals that occur during the inspection.

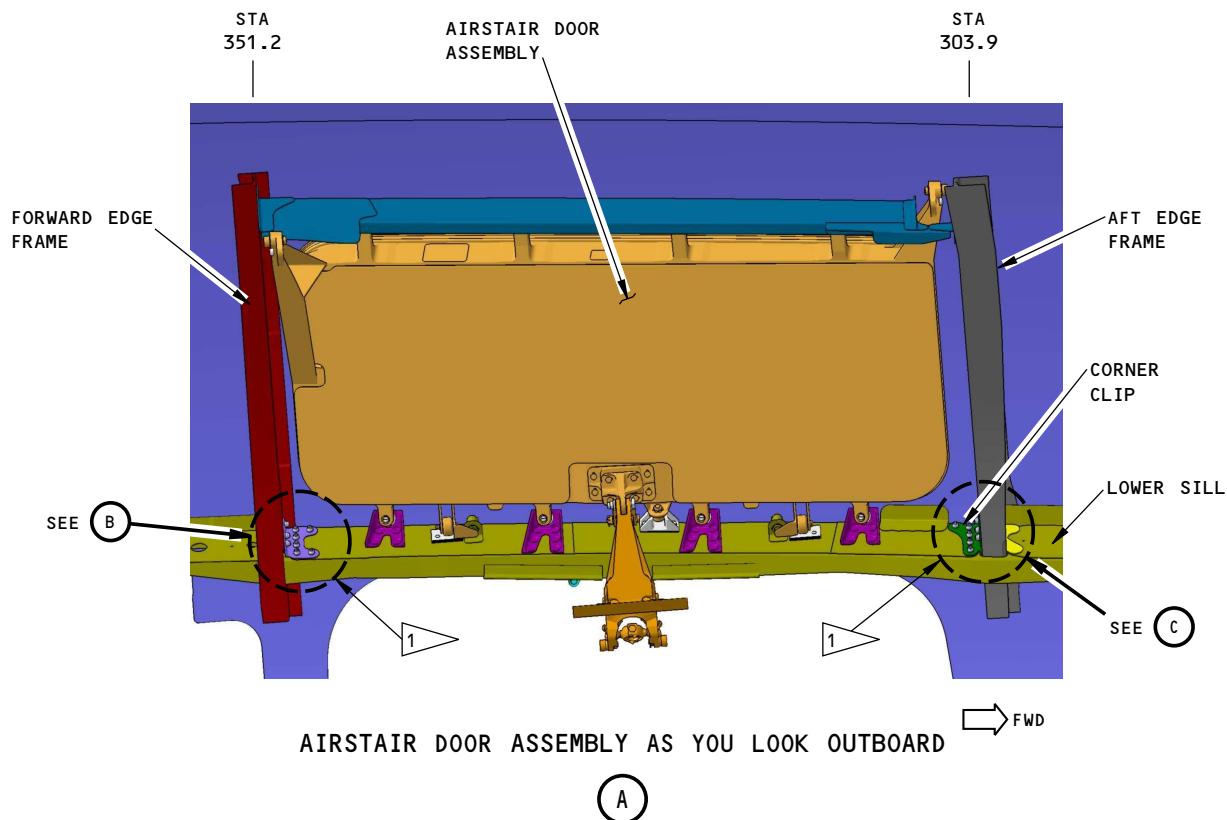
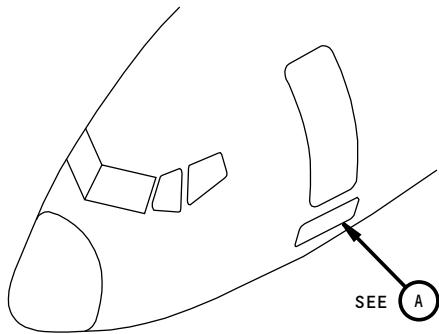
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-27

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



NOTES

- EXAMINE THE FORWARD AND AFT EDGE FRAMES OF THE AIRSTAIR DOOR CUTOUT FOR CRACKS.

1 DTR CHECK FORM ITEM 53-10-21-4 INSPECTION AREA

2348630 S0000535847_V1

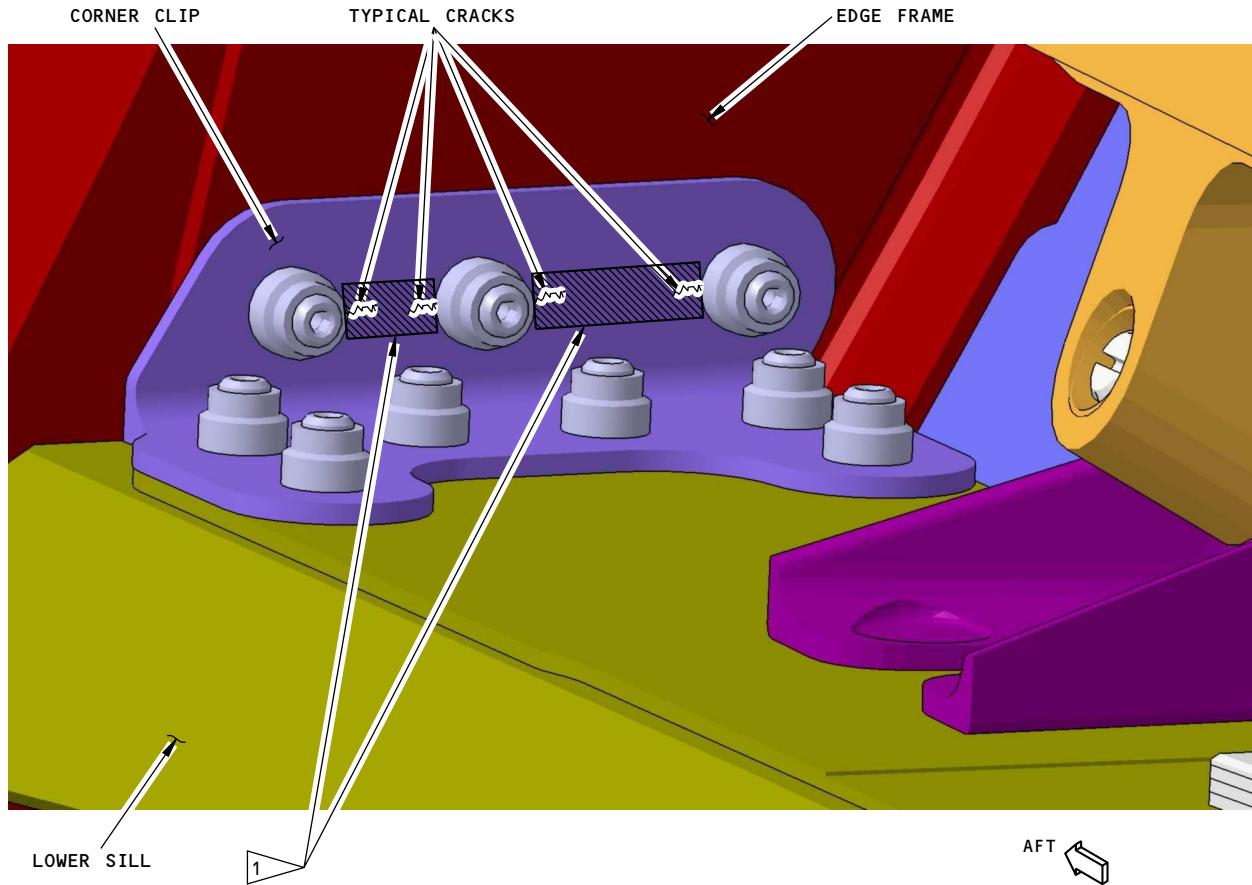
Inspection Areas
Figure 1 (Sheet 1 of 3)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

D6-37239

PART 6 53-11-27

Page 3
Nov 15/2015



THE AFT EDGE FRAME LOCATION IS SHOWN AS YOU LOOK AFT.
THE FORWARD EDGE FRAME IS ALMOST THE SAME, BUT OPPOSITE

B

NOTES

INSPECTION AREA

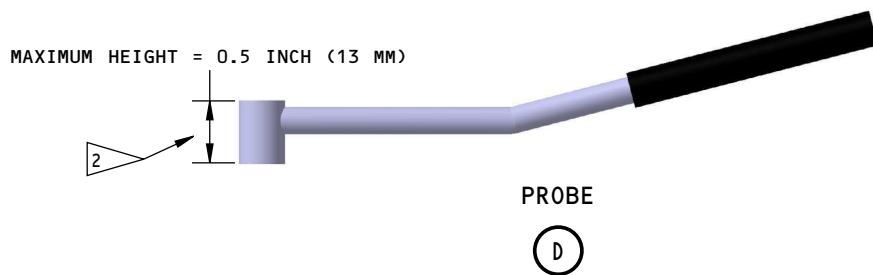
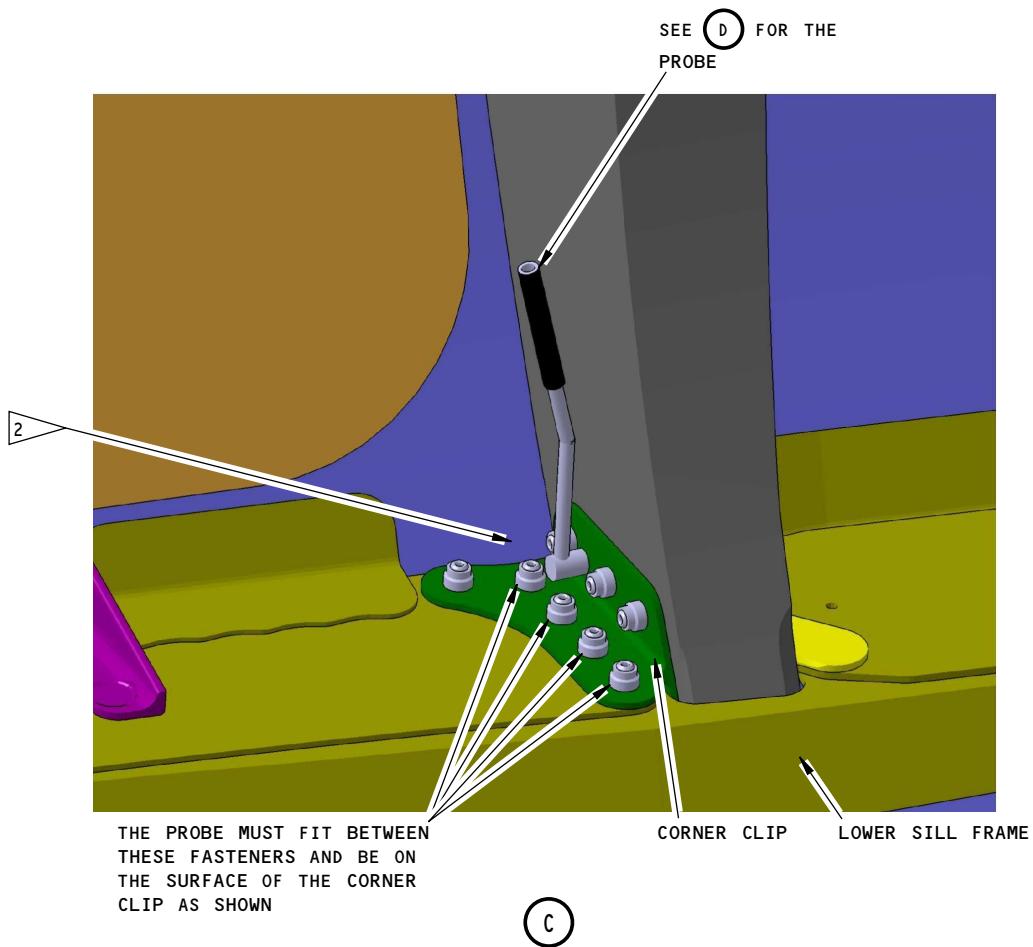
2348658 S0000535848_V1

Inspection Areas
Figure 1 (Sheet 2 of 3)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-27

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- 2** MAKE SURE THE HEIGHT OF THE PROBE IS NOT MORE THAN 0.5 INCH (13 MM) AS SHOWN. THE PROBE MUST FIT BETWEEN THE FASTENERS THAT HOLD THE CORNER CLIP TO THE LOWER SILL FRAME.

2348669 S0000535849_V1

Inspection Areas
Figure 1 (Sheet 3 of 3)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-27

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

INSPECTION OF THE FRAME WEBS AT THE FLOOR BEAM TO FRAME JOINTS FROM BS 360 TO BS 500 (HFEC)

1. Purpose

- A. Use this procedure to examine the frame webs from STA 360 to STA 500 for cracks at the floor beam to frame joints between stringers S-17R and S-18R. The inboard side of each frame web is examined for possible surface cracks around the rivets in the frame web. See Figure 1 for the inspection areas.

NOTE: This inspection is done on the right side of the airplane only.

- B. Use Part 6, 51-00-00, Procedure 23, to help do this inspection.
- C. 737 Maintenance Planning Data (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-30-12-7

2. Equipment

- A. General
 - (1) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instruments
 - (1) Refer to Part 6, 51-00-00, Procedure 23, for instruments that were used to help prepare this procedure. Other impedance plane display instruments can be used if they can be calibrated as specified in Paragraph 4.
- C. Probes
 - (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C and Figure 1 for probe data. Use an angled probe that has:
 - (a) A diameter of 0.130 inch (3.30 mm) or less at the probe coil.
 - (b) A probe drop that is between 0.20 and 0.50 inch (5.1 and 13.0 mm).
- D. Reference Standard
 - (1) Use reference standard 188A to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, Figure 6, for data about this reference standard.

3. Prepare for the Inspection

- A. Remove the floor boards that are above the inspection area on the right side of the airplane along the floor beam to frame joint. The inspection area is on the inboard side of the frame webs that are between STA 360 and STA 500. See Figure 1 for the inspection areas and scan locations.
- B. Refer to Part 6, 51-00-00, Procedure 23, paragraph 4, for instructions to help prepare for this inspection.

4. Instrument Calibration

- A. Calibrate the instrument with reference standard 188A as specified in Part 6, 51-00-00, Procedure 23, paragraph 5 and the steps that follow:
 - (1) Do the calibration around the rivet head on reference standard 188A.
 - (2) Set the instrument frequency from 100 to 300 kHz for this inspection.

EFFECTIVITY
ALL; 737-700C AIRPLANES

PART 6 53-11-28



737
NON-DESTRUCTIVE TEST MANUAL

5. Inspection Procedure

- A. Examine the frame webs on the right side of the airplane from STA 360 to STA 500 for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the step that follows:
 - (1) Do circular scans around the rivet heads on the inboard surface of the frame webs. See Figure 1 for the rivet locations.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of possible crack indications.

EFFECTIVITY
ALL; 737-700C AIRPLANES

PART 6 53-11-28

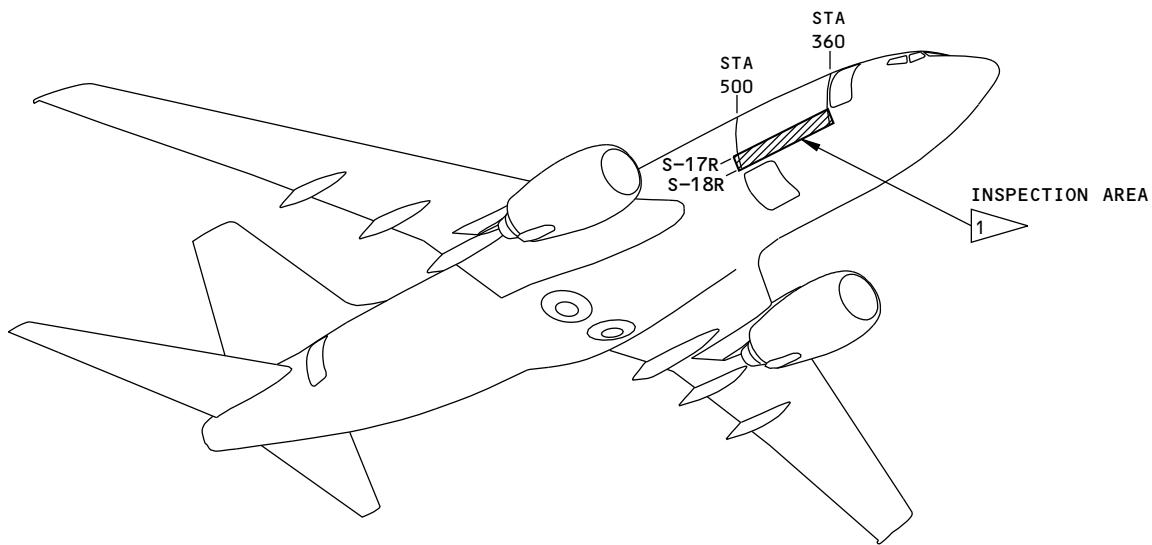
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



NOTES

INSPECTION AREA

- THE INSPECTION AREA IS ON THE RIGHT SIDE OF THE AIRPLANE ONLY.

EXAMINE THE INBOARD SURFACES OF THE FRAME WEBS BETWEEN STA 360 AND STA 500 FOR CRACKS AROUND THE RIVET HEADS BETWEEN STRINGERS S-17R AND S-18R. SEE VIEW ① FOR A TYPICAL INSPECTION AREA.

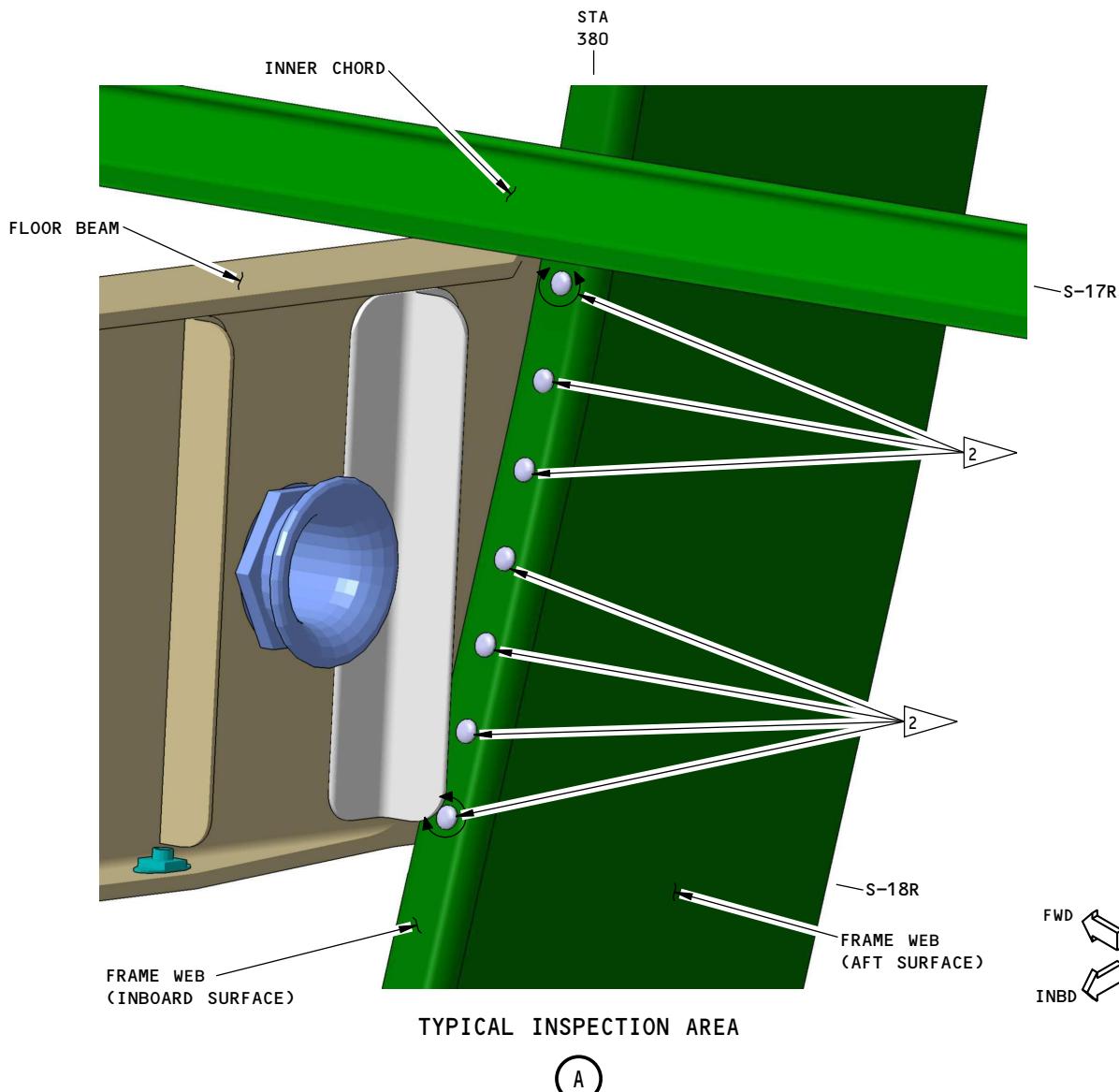
2349352 S0000535851_V1

Inspection Areas
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-700C AIRPLANES

PART 6 53-11-28

D6-37239



NOTES

- VIEW (A) SHOWS THE INSPECTION AREA AT STATION 380 AFTER THE FLOOR BOARD IS REMOVED AND YOU LOOK DOWN AND OUTBOARD. THE INSPECTION AREAS AT THE OTHER FRAME WEBS BETWEEN STATIONS 360 AND STA 500 ARE EQUIVALENT.

- 2 PUT THE PROBE ON THE INBOARD SURFACE OF EACH FRAME WEB AND DO CIRCULAR SCANS AROUND THE RIVET HEADS FROM S-17R TO S-18R. THE RIVET LOCATIONS TO BE EXAMINED ARE FROM THE TOP OF THE FLOOR BEAM TO THE BOTTOM OF THE FLOOR BEAM.

2349357 S0000535852_V1

Inspection Areas
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-700C AIRPLANES

PART 6 53-11-28

D6-37239

Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

**FUSELAGE - STIFFENER ATTACHMENT FITTING TO THE FLOOR BEAM AT THE BS 727
PRESSURE BULKHEAD (HFEC)**

1. Purpose

- A. Use this procedure to do a surface inspection to find cracks in the stiffener attachment fittings at RBL 45.5 and LBL 45.5 of the BS 727 pressure bulkhead. See Figure 1 for the inspection areas.
- B. This inspection procedure examines the stiffener attachment fittings at five fastener locations, for each fitting, where the stiffener attachment fitting attaches to the vertical stiffener of the BS 727 pressure bulkhead and the floor beam. See Figure 1.
- C. This inspection procedure examines around the fastener heads and collars from the outboard side of the stiffener attachment fittings.
- D. This procedure uses two shielded pencil probes to examine all of the inspection areas shown in Figure 1, as follows:
 - (1) Use a right-angle probe with a drop of 0.030 inch (0.8 mm) to examine the area between the collars of the fasteners that go through the forward and aft flanges and the heads of the fasteners that go through the web. See flagnote 1.
 - (2) Use a straight or a right-angle probe to examine the areas around all the fastener heads and collars, but not the area identified in Paragraph 1.D.(1).
 - (3) Use a probe with a flexible shaft and a length of 4 to 6 inches (102 to 152 mm).
- E. 737 Damage Tolerance Rating DTR (D626A001-DTR):
 - (1) Item: 53-40-10-1

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at frequencies between 50 and 500 kHz.
- (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
 - (b) Nortec 600D; Olympus NDT

C. Probes

- (1) Use two shielded pencil probes that have a maximum diameter of 0.13 inch (3.2 mm). Refer to Paragraph 1.D. for the correct probe to use for the inspection area to be examined. Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C, for data about probe selection.
 - (a) The right-angle probes with 0.03 inch (0.8 mm) drops that follow were used to help prepare this procedure.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-29

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Nov 15/2015



737 NON-DESTRUCTIVE TEST MANUAL

- 1) TPENFLX903-5/200K-1M; Techna NDT
 - 2) MTF9003-50FX-200K-1M; Olympus NDT
- (b) The straight or right-angle probes with drops of 0.30 inch (7.6 mm) that follow were used to help prepare this procedure.
- 1) TPENFLX925-5/200K-1M; Techna NDT (right angle)
 - 2) MTF903-50FX-200K-1M; Olympus NDT (right angle)
 - 3) TPENFLX-5/200K-1M; Techna NDT (straight)
 - 4) MTF-50FX-200K-1M; Olympus NDT (straight)

D. Reference Standard

- (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.D, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Clean the inspection areas.
 - (1) Remove sealant from the inspection surface as necessary to put the probe adjacent to the fastener collar.
 - (2) It is not necessary to remove paint.

4. Instrument Calibration

- A. Calibrate the equipment as follows:
 - (1) Calibrate the equipment as specified in Part 6, 51-00-00, Procedure 23, paragraph 5. Use the aluminum rivet of reference standard 188A (or an equivalent).
 - (2) Use a probe with a 0.03 inch (0.8 mm) drop to examine the area identified in Paragraph 1.D.(1).
 - (3) Use a straight or a right-angle probe with a 0.30 inch (7.6 mm) drop to examine around all the fastener heads and collars, but not in the area identified in Paragraph 1.D.(1).

5. Inspection Procedure

- A. Do a surface inspection to examine the stiffener attachment fittings for cracks at the five fastener locations shown in Figure 1 as follows:
 - (1) Calibrate the instrument as specified in Paragraph 4.
 - (2) Make a complete scan around each fastener head and collar as specified in Part 6, 51-00-00, Procedure 23, paragraph 6 and Figure 1. Refer to paragraph 6.E.(3)(c) of Part 6, 51-00-00, Procedure 23, for instructions to examine around a fastener head or collar.
 - (a) Use a right-angle probe with a drop of 0.030 inch (0.8 mm) to examine the area between the collars of the fasteners that go through the forward and aft flanges and the heads of the fasteners that go through the web. See flagnote 1 in Figure 1.
 - (b) Use a straight or a right-angle probe to examine around all the other fastener head and collar areas.
 - (3) Examine the stiffener attachment fitting on each side of the airplane.



737
NON-DESTRUCTIVE TEST MANUAL

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

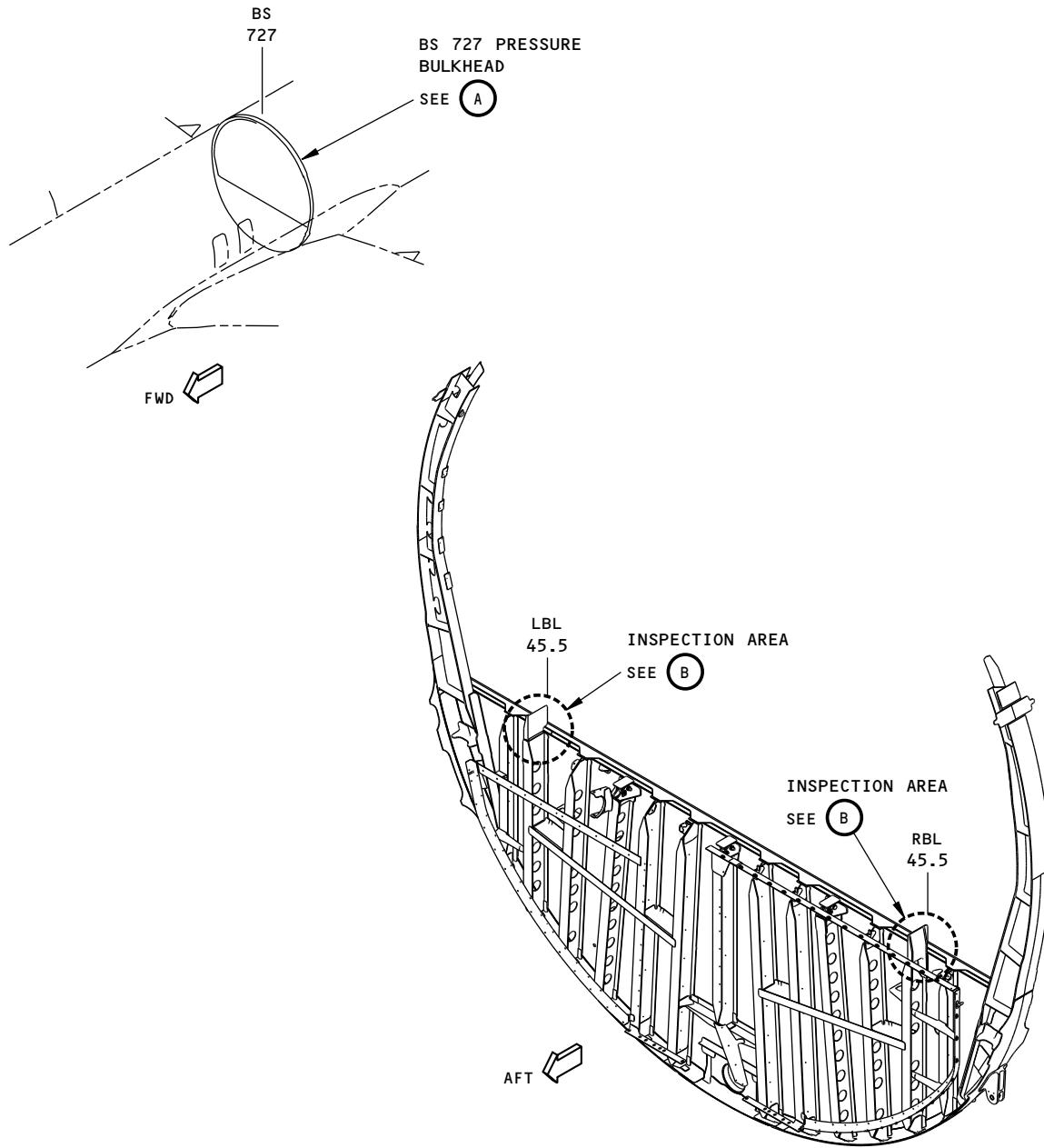
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-29

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



BS 727 PRESSURE BULKHEAD

Ⓐ

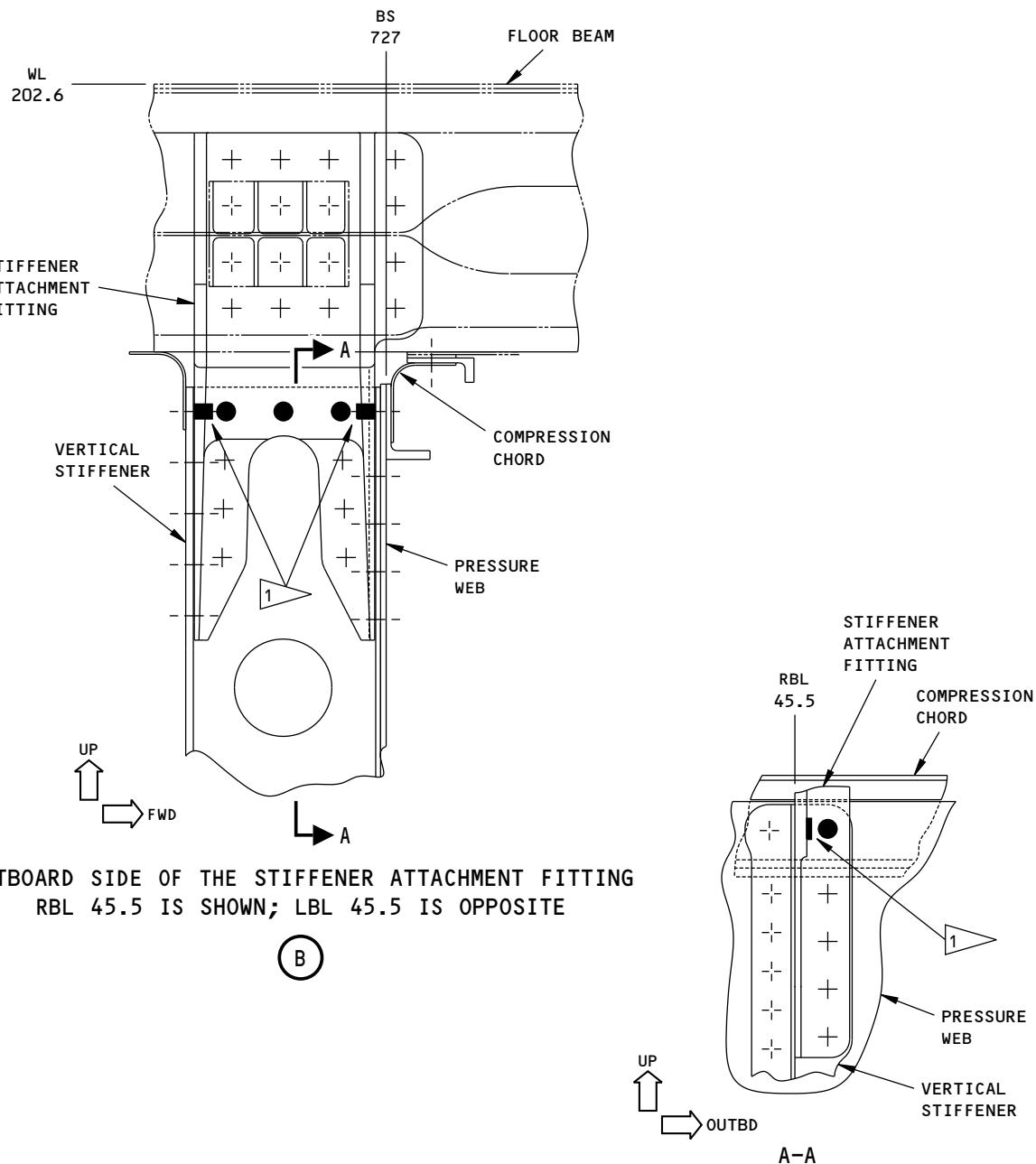
2436470 S0000565557_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-29

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- FASTENER LOCATIONS TO BE EXAMINED. MAKE A COMPLETE SCAN AROUND THE FASTENER HEAD AND COLLAR ON THE OUTBOARD SIDE OF THE STIFFENER ATTACHMENT FITTING.
- 1 ▶ USE THE RIGHT-ANGLE PROBE WITH THE 0.030 INCH (0.08 MM) DROP TO EXAMINE THE AREAS BETWEEN THE FASTENER HEADS AND COLLARS.

2436472 S0000565558_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-29



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

FORWARD AND AFT LINK ASSEMBLIES AT BS 663 AND S-18A (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the forward and aft link assemblies at BS 663 and stringer 18A for cracks. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The link assemblies are aluminum.
- D. The link assemblies are removed from the airplane to do this inspection.
- E. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-40-12-1

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) 500D; Olympus NDT
 - (b) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a 90 degree angle with a minimum drop of 0.2 inch (5 mm).
 - (2) The probes that follow were used to help prepare this procedure.
NOTE: Shielded probes are recommended.
 - (a) MTF902-60B (50kHz-300kHz); NDT Engineering
 - (b) PA90402 (50kHz-500kHz); EC NDT
- D. Reference Standards
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 126.

3. Prepare for the Inspection

- A. Identify the locations of the forward and aft link assemblies shown in Figure 1.
- B. Remove the link assemblies from the airplane.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-30



737
NON-DESTRUCTIVE TEST MANUAL

- C. Clean the inspection surfaces shown in Figure 1.
 - (1) Remove dirt or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Examine the forward and aft link assemblies as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) Use the bushing as a probe guide to examine each side of each lug face. See Figure 1.
 - (a) Balance the instrument as near as possible to each bushing before you examine each lug face.
 - (2) Examine each link assembly at the 6 locations shown in Figure 1.
 - (3) Examine the forward and aft link assemblies on each side of the airplane. There are 4 link assemblies to be examined on each airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

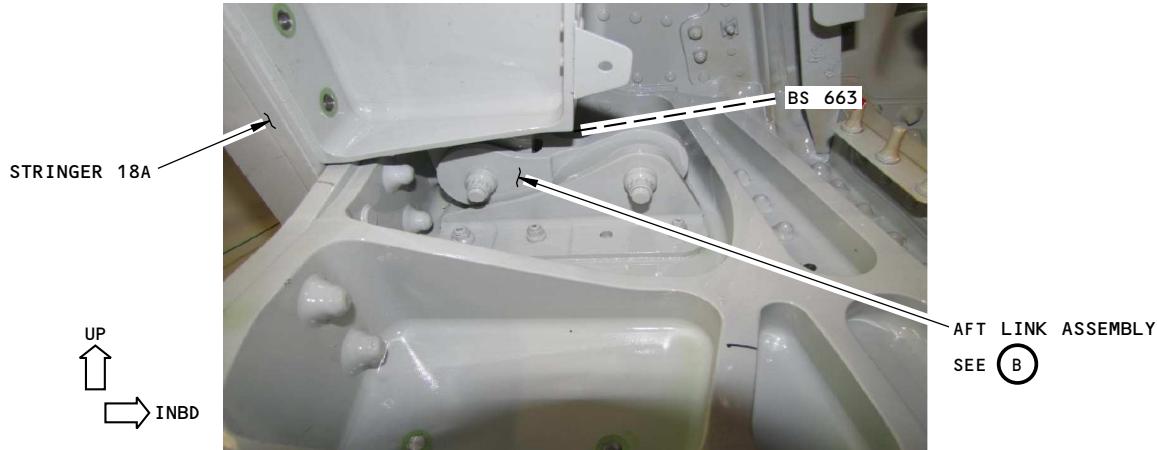
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-30

D6-37239

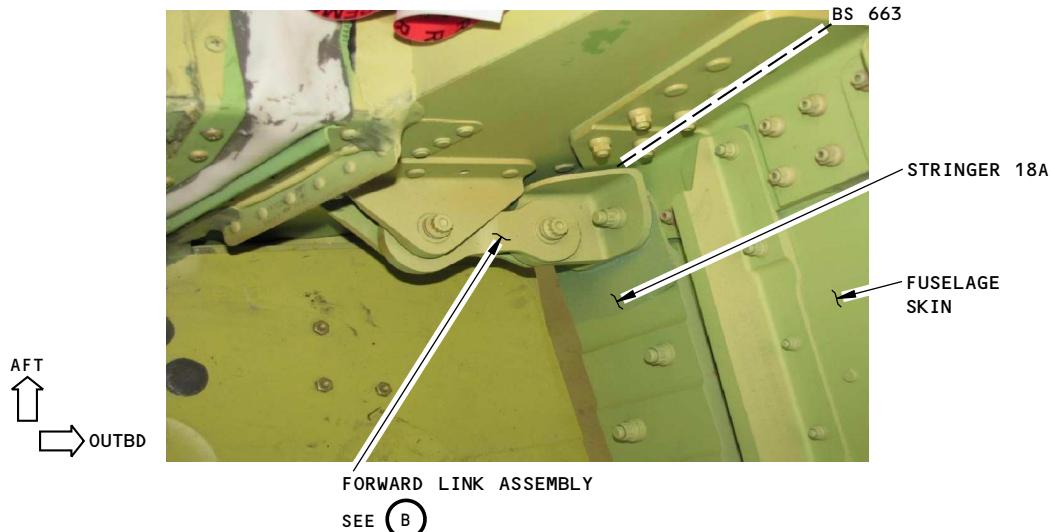
BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


THE AFT LINK ASSEMBLY ON THE LEFT SIDE OF THE MAIN LANDING GEAR WHEEL WELL IS SHOWN; THE RIGHT SIDE IS THE SAME (VIEW AS YOU LOOK UP AND FORWARD)

A



THE FORWARD LINK ASSEMBLY ON THE LEFT SIDE OF THE PASSENGER COMPARTMENT IS SHOWN; THE RIGHT SIDE IS THE SAME (VIEW AS YOU LOOK DOWN AND OUTBOARD)

A

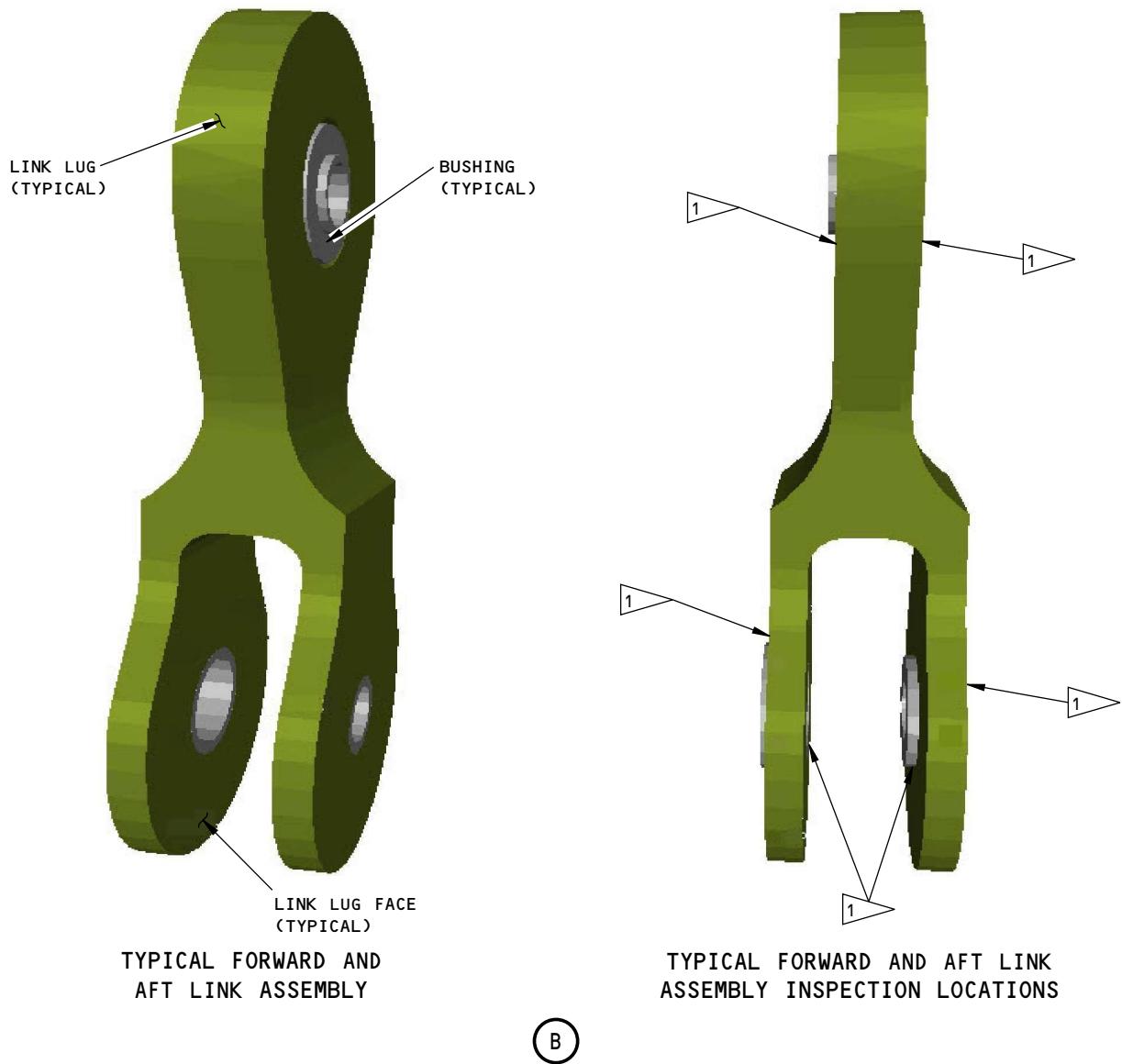
2349380 S0000535867_V1

Inspection Areas
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-30

D6-37239



NOTES

- 1 MAKE A SCAN AROUND EACH BUSHING AT THESE LOCATIONS
TO EXAMINE THE LINK LUG FACES FOR CRACKS

2349393 S0000535868_V1

Inspection Areas
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

PART 6 53-11-30Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL
PART 6 - EDDY CURRENT

**SPLICE STRAPS AT THE FORWARD AND AFT LOWER CORNERS OF THE CUTOUTS FOR THE
OVERWING EMERGENCY EXIT DOORS (HFEC)**

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the splice straps at the forward and aft lower corners of the cutouts for the overwing emergency exit doors for cracks. The splice straps are at BS 616 and BS 639, along the inner chord of the lower sill of the cutouts for the overwing emergency exit doors. Each splice strap is examined for cracks at five fastener locations. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The splice straps are aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-40-22-4

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instruments
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Phasec 2D/3D; made by GE Inspection Technologies
- C. Probes
 - (1) Use a probe that operates from 50 to 500 kHz.
 - (2) The probe that follows was used to help prepare this procedure.
NOTE: Shielded probes are recommended.
 - (a) TPEN92-5B; made by Techna NDT
- D. Reference Standard
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Identify and get access to the inspection areas shown in Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt, sealant or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-31



737
NON-DESTRUCTIVE TEST MANUAL

4. Instrument Calibration

- A. Calibrate the instrument to examine the splice straps at BS 616 and BS 639 (see Figure 1) as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the splice straps at BS 616 and BS 639 for cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) See Figure 1 for the inspection areas.
 - (2) Use the head of each inspection fastener as a probe guide.
 - (3) Do a check of the instrument calibration as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.E.(5).

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-31

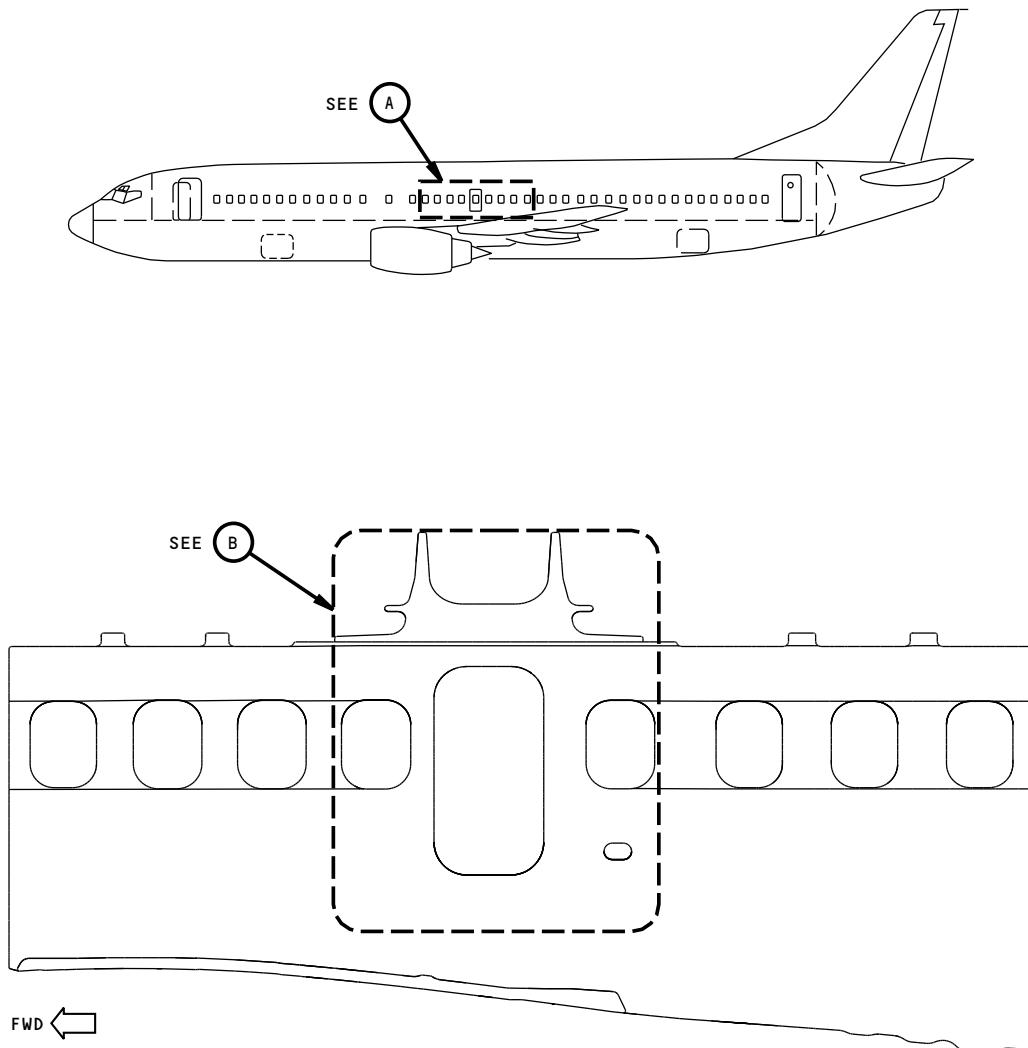
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUT

(A)

NOTES

- THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS OPPOSITE

2349416 S0000535875_V1

Inspection Areas
Figure 1 (Sheet 1 of 3)

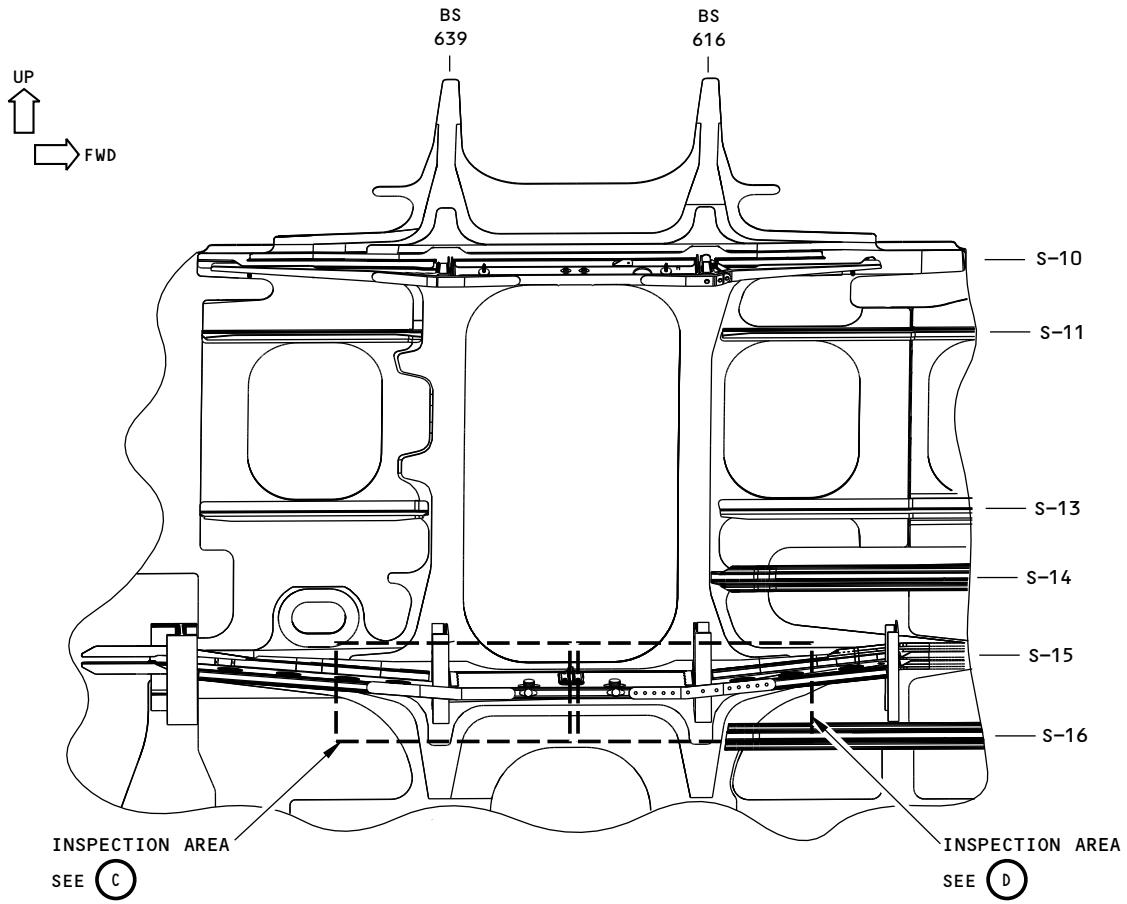
EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-31

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



OVERWING EMERGENCY EXIT CUTOUT
(VIEW IS FROM INSIDE THE AIRPLANE AS YOU LOOK OUT)

B

2349445 S0000535876_V1

Inspection Areas
Figure 1 (Sheet 2 of 3)

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-31

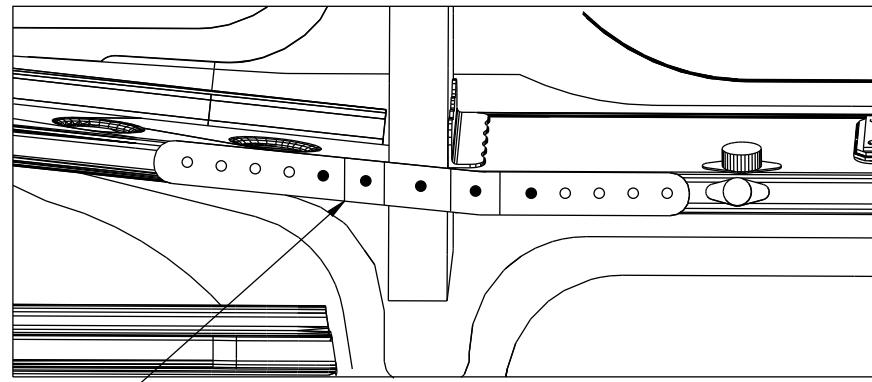
D6-37239

Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

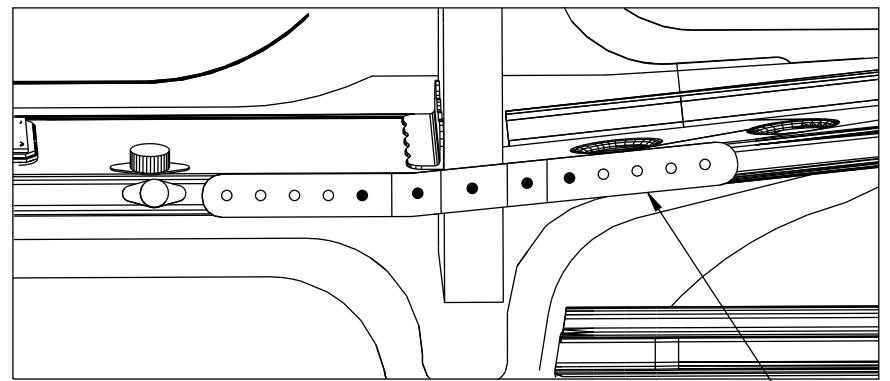
BS
636



LOWER CORNER OF THE CUTOUT AT BS 639

C

BS
616



LOWER CORNER OF THE CUTOUT AT BS 619

D

NOTES

- FASTENER LOCATIONS TO BE EXAMINED

2349463 S0000535877_V1

Inspection Areas
Figure 1 (Sheet 3 of 3)

EFFECTIVITY
ALL; 737-600, -700, -700C AND -700IGW AIRPLANES

PART 6 53-11-31

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

**INTEGRATED BULKHEAD STATION 1156 - WEB INBOARD OF THE FAIL-SAFE STRAP, ABOVE
AND BELOW THE PIVOT FITTING ATTACHMENTS (HFEC)**

1. Purpose

- A. Use this procedure to examine the bulkhead STA 1156 web for surface cracks along the inboard side of the fail-safe strap for 16 inches below the top of the pivot fitting attachments. See Figure 1 for the inspection areas.
- B. Use an impedance plane display instrument to do this procedure.
- C. The web is 7050-T7451 aluminum.
- D. 737 Maintenance Planning Document (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-80-07-2

2. Equipment

- A. General
 - (1) Use an eddy current instrument that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that has an impedance plane display and can operate from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Nortec 500D; Olympus NDT
 - (b) Phasec 3D; GE Inspection Technology
- C. Probes
 - (1) Use a long, right-angle, flexible probe that operates from 50 500 kHz.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) MTF902-60/50-500 kHz; Olympus NDT
- NOTE:** Shielded probes are recommended.
- D. Reference Standards
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, paragraph 3, for data about reference standard 126.

3. Prepare for the Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Get access to the inspection areas.
 - (1) Go into the airplane through the tailcone access panel.
- C. Clean the inspection area.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-33



737
NON-DESTRUCTIVE TEST MANUAL

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the web at bulkhead STA 1156 for cracks from the top of the pivot fitting attachment down 16 inches vertically as specified in Part 6, 51-00-00, Procedure 23, paragraph 6. See Figure 1 for the inspection areas. Use the fail-safe strap as a probe guide.
- B. Do Paragraph 5.A. again to examine the web for cracks on the opposite side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

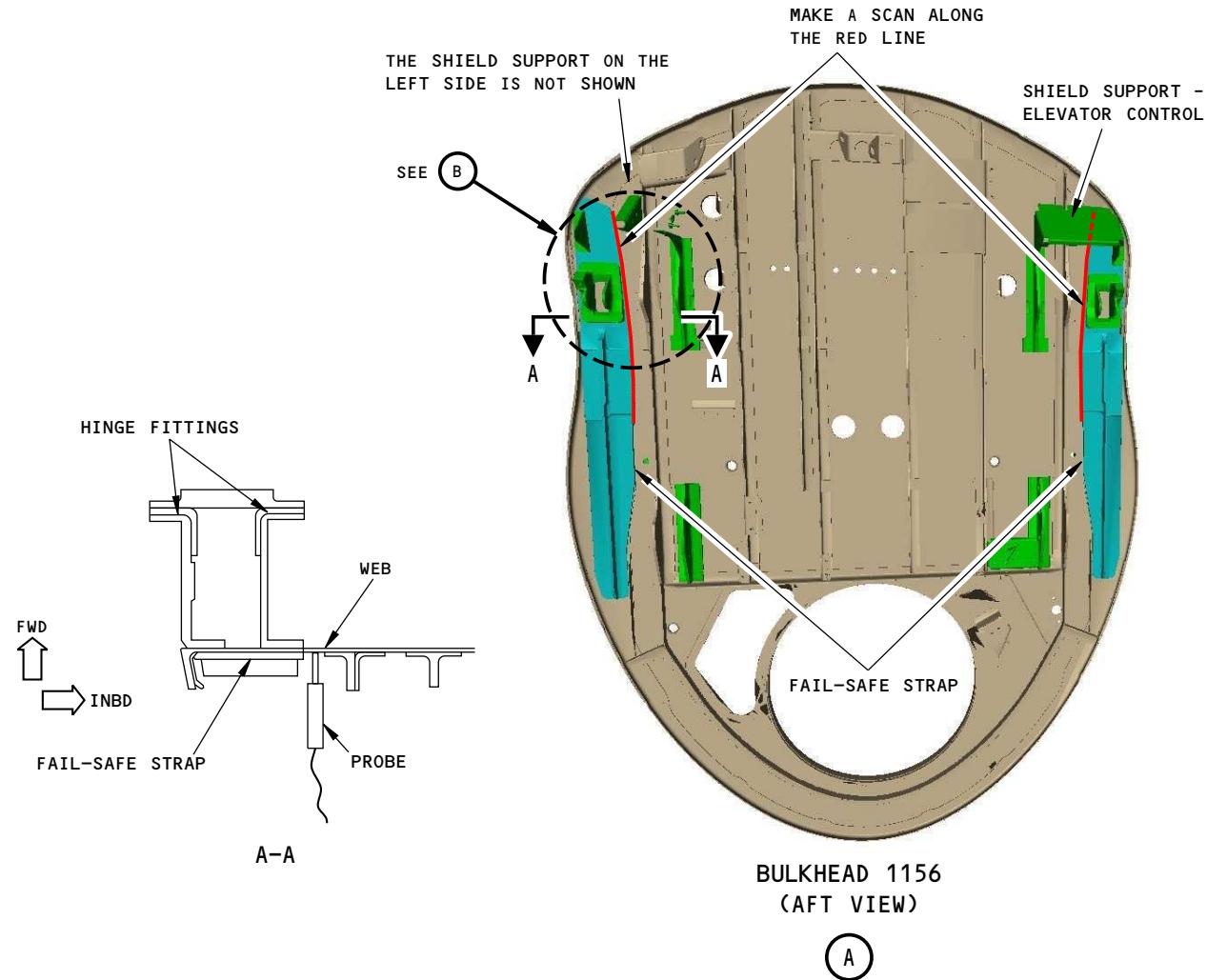
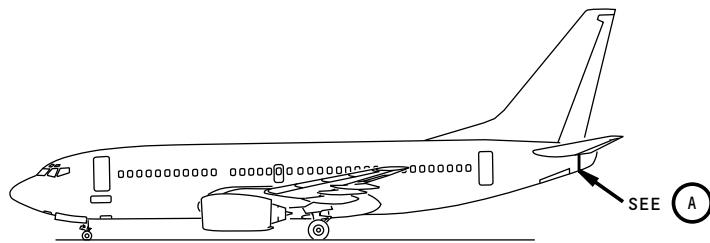
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-33

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

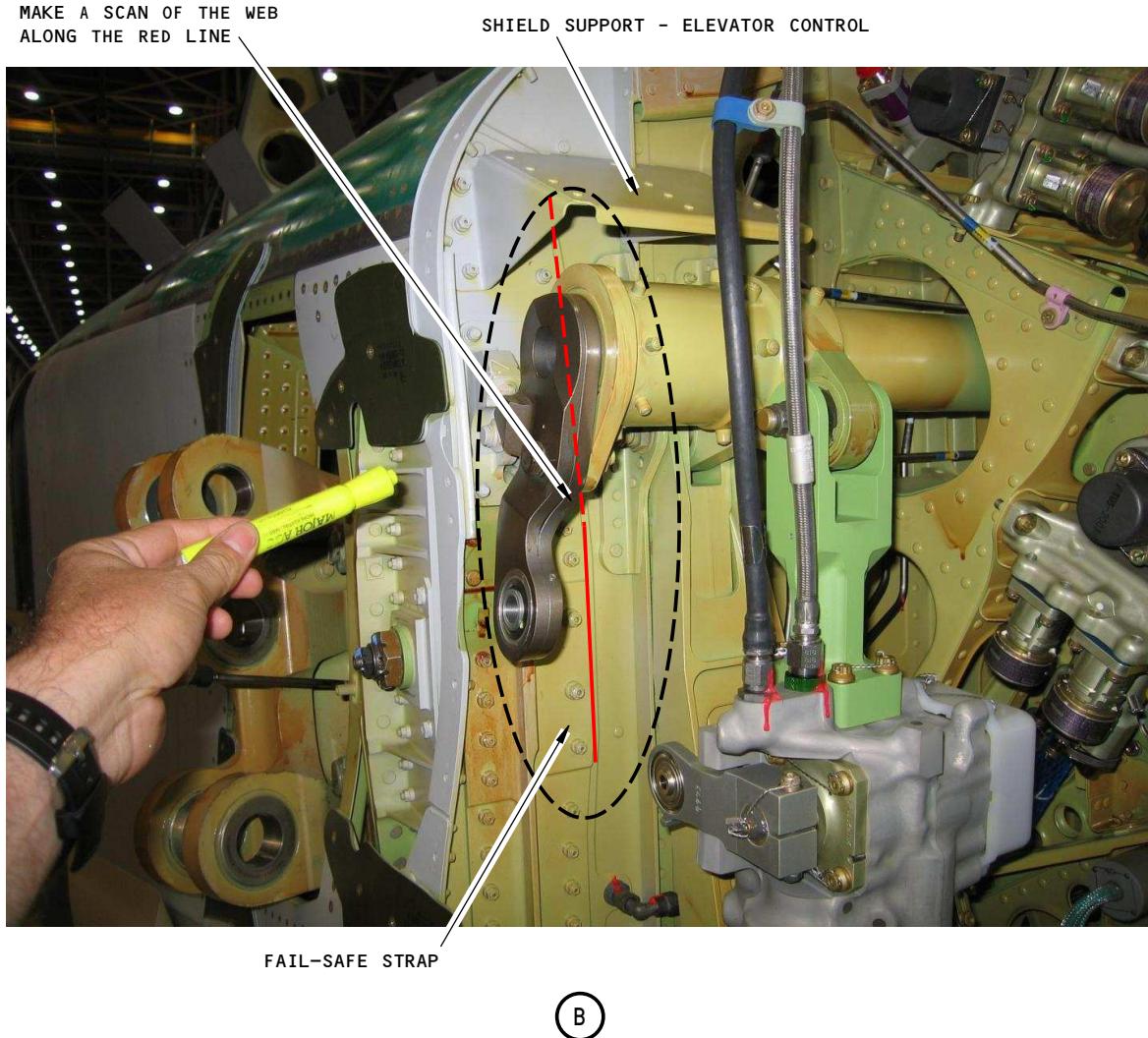
737
NON-DESTRUCTIVE TEST MANUAL

NOTES
— INSPECTION AREA

- EXAMINE THE WEB FOR CRACKS ALONG THE FAIL-SAFE STRAPS

2349672 S0000535985_V1

Inspection Areas
Figure 1 (Sheet 1 of 2)
EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-33

737
NON-DESTRUCTIVE TEST MANUAL

2349493 S0000535986_V1

Inspection Areas
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES**PART 6 53-11-33**

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

EXTERNAL INSPECTION OF THE BEAR STRAP BETWEEN THE CUTOUT FOR THE FORWARD ACCESS DOOR AND THE CUTOUT FOR THE NOSE WHEEL WELL (LFEC)

1. Purpose

- A. Use this low frequency eddy current (LFEC) procedure to examine the bear strap that is between the cutout at STA 225 for the section 41 nose wheel well and the STA 220 cutout for the forward access door for cracks. The bear strap is examined for cracks at the two rows of fasteners that are in the forward and aft chords. See Figure 1 for the inspection areas.
- B. The bear strap is aluminum.
- C. 737 Maintenance Planning Document (MPD) Damage Tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-10-23-1

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 1 to 5 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
 - (b) Nortec 500/2000D; Staveley/Olympus
- C. Probes
 - (1) Use a reflection type ring probe that:
 - (a) Operates from 1 to 5 kHz.
 - (b) Has an inner diameter that is between 0.28 and 0.35 inch (7.11 and 8.89 mm).
 - (c) Has a maximum outer diameter of 1 inch (25.4 mm).
 - (2) The ring probe that follows was used to help prepare this procedure.
 - (a) RDP.65-1K; Techna NDT
- NOTE:** Other probes can be used if they can be calibrated with the reference standard specified in Paragraph 2.D.

NOTE: Shielded probes are recommended.
- D. Reference Standard
 - (1) Use reference standard NDT3223, or an equivalent, to help calibrate the instrument. See Figure 2 for data about reference standard NDT3223.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-34



737
NON-DESTRUCTIVE TEST MANUAL

3. Prepare for the Inspection

- A. Identify and get access to the inspection areas shown in Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Get the reference standard to be used during calibration. See Figure 2 for reference standard NDT3223.
- B. Set the instrument frequency to 3.5 kHz.
- C. Put the ring probe on the reference standard at probe position 1. Adjust the center of the probe so it is above the center of the fastener hole. See Figure 3 for the probe positions for calibration.
- D. Balance the instrument.
- E. Move the center of the probe above the fastener as necessary until the height of the signal is at its minimum.
- F. Set the balance point at approximately 20% of full screen height (FSH) and 60% of full screen width (FSW) as shown in Figure 3, Detail I.
- G. Set the lift-off (phase) so that the lift-off signal moves horizontally from right to left when the probe is lifted off the reference standard as shown in Figure 3, Detail I.
- H. Put the ring probe at probe position 2 as shown in Figure 3, Detail II. Make sure the center of the probe is above the center of the fastener hole.
- I. Move the probe above the fastener hole as necessary until the height of the notch signal is at its minimum.
- J. Adjust the instrument gain to get a notch signal that is approximately 60% of FSH as shown in Figure 3, Detail I.
- K. Make sure the instrument is calibrated correctly:
 - (1) Put the probe on the reference standard at probe position 1 as shown in Figure 3, Detail II.
 - (2) Move the probe above the fastener hole as necessary until the height of the notch signal is at its minimum.
 - (3) Balance the instrument.
 - (4) Put the probe on the reference standard at probe position 2 as shown in Figure 3, Detail II.
 - (5) Move the probe above the fastener hole as necessary until the height of the signal is at its minimum.
- L. If the minimum signal from the notch is not 60% of FSH then do the calibration again.

5. Inspection Procedure

NOTE: There are two fastener codes to be examined in the inspection area. Examine all of the fasteners with the same code before you examine the fasteners with the other code.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-34

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- A. Calibrate the instrument as specified in Paragraph 4. for the fastener code locations to be examined. See Figure 1 for the fastener codes.

NOTE: There are two conditions that make it necessary to balance the instrument during the inspection:

- (1) When the balance point moves up or down by 10% (or more) of FSH because of a change in the material thickness.
- (2) When you start the inspection at the first fastener location after you do a new calibration.

NOTE: Material thickness changes in the inspection area will cause the balance point to gradually increase or decrease during the inspection. Monitor the balance point carefully during the inspection. It is necessary to examine fasteners that are adjacent to each other in sequence to monitor the gradual change to the balance point. If the balance point increases or decreases by 10% (or more) of FSH, it is necessary to balance the instrument again.

- B. Move the ring probe above the center of the first fastener in the inspection area to be examined.
- C. Move the probe above the fastener to get the minimum signal from the instrument.
- D. Balance the instrument.
- E. Put the ring probe above each fastener that has the same fastener code (that the instrument was balanced on) and monitor the instrument for crack signals. See Figure 1 for the inspection area. During the inspection:
- (1) Make a mark at all fastener locations that cause signals to occur that are 40 percent (or more) of FSH.
 - (2) Monitor the screen display for a possible downscale signal. A downscale signal can occur if you balance the instrument on a crack. If you get a downscale signal from a fastener location, balance the instrument on an adjacent fastener with the same fastener code in the same row and examine the fasteners again.
 - (3) Do a calibration check as follows if the equipment is changed (a different reference standard is used, for example) or when the inspection is completed.

NOTE: Do not adjust the instrument gain.

 - (a) Put the probe on the reference standard at probe position 1 as shown in Figure 3, Detail II.
 - (b) Move the probe above the fastener hole as necessary until the height of the signal is at its minimum.
 - (c) Balance the instrument.
 - (d) Put the probe on the reference standard at probe position 2 and make sure that the fastener is in the center of the probe. Compare the signal you got from the notch during calibration with the signal that you get now.
 - (e) If the signal you get from the notch has decreased in FSH by 10 percent or more, do the calibration and the inspection again on the fastener locations you have examined since the last calibration check.
- F. Do Paragraph 5.A. thru Paragraph 5.E. again to examine the bear strap for cracks at the second fastener code locations.

6. Inspection Results

- A. A signal that is more than 40 percent of FSH is a sign of a crack. The location that causes this signal to occur must be rejected and more analysis is necessary.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES



737
NON-DESTRUCTIVE TEST MANUAL

- B. Compare the signal that occurs during the inspection to the signal you got from the notch in the reference standard during calibration.
- C. Do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16, at the locations that cause crack signals to occur.

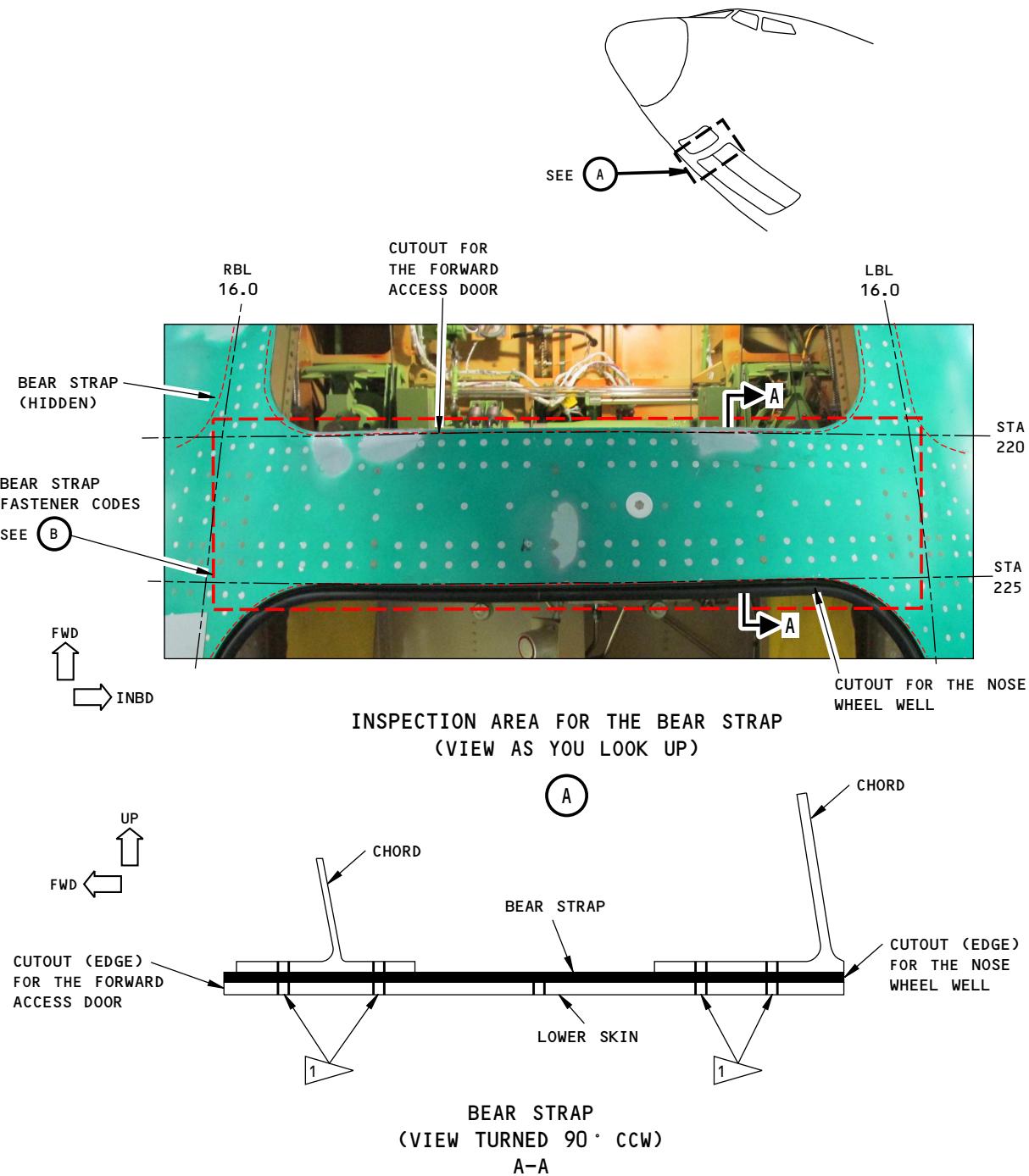
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-34

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 4
Nov 15/2015

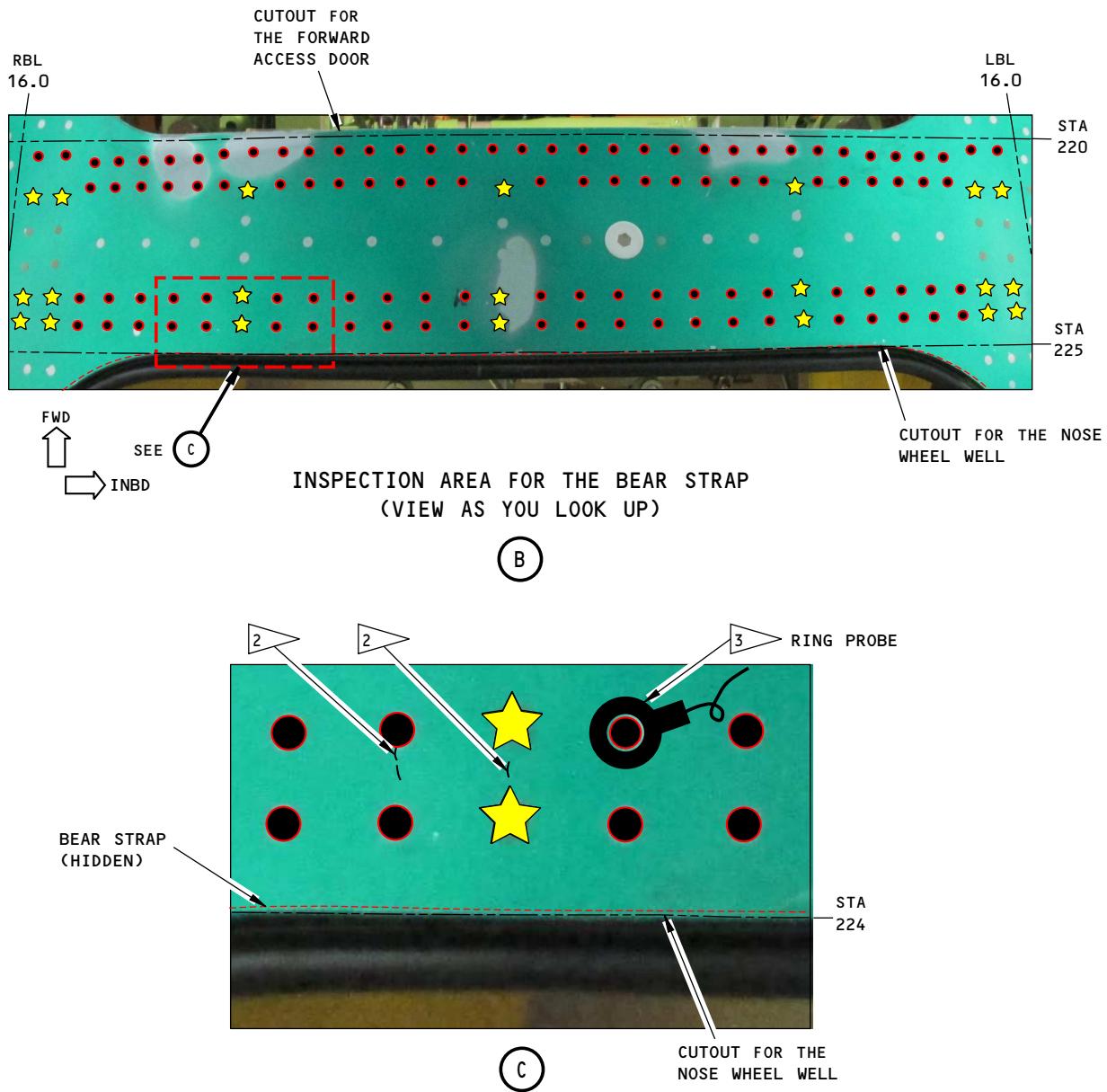
737
NON-DESTRUCTIVE TEST MANUAL


2349691 S0000536076_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-34

**NOTES**

- 2 TYPICAL FORWARD AND AFT CRACK DIRECTION IN THE BEAR STRAP.
- 3 TO EXAMINE THE BEAR STRAP, PUT THE RING PROBE ON THE LOWER SKIN AND THEN CENTER IT ABOVE THE APPLICABLE FASTENER LOCATIONS. EXAMINE THE BEAR STRAP AT EACH IDENTIFIED FASTENER LOCATION.
- FASTENER CODE A
- FASTENER CODE B

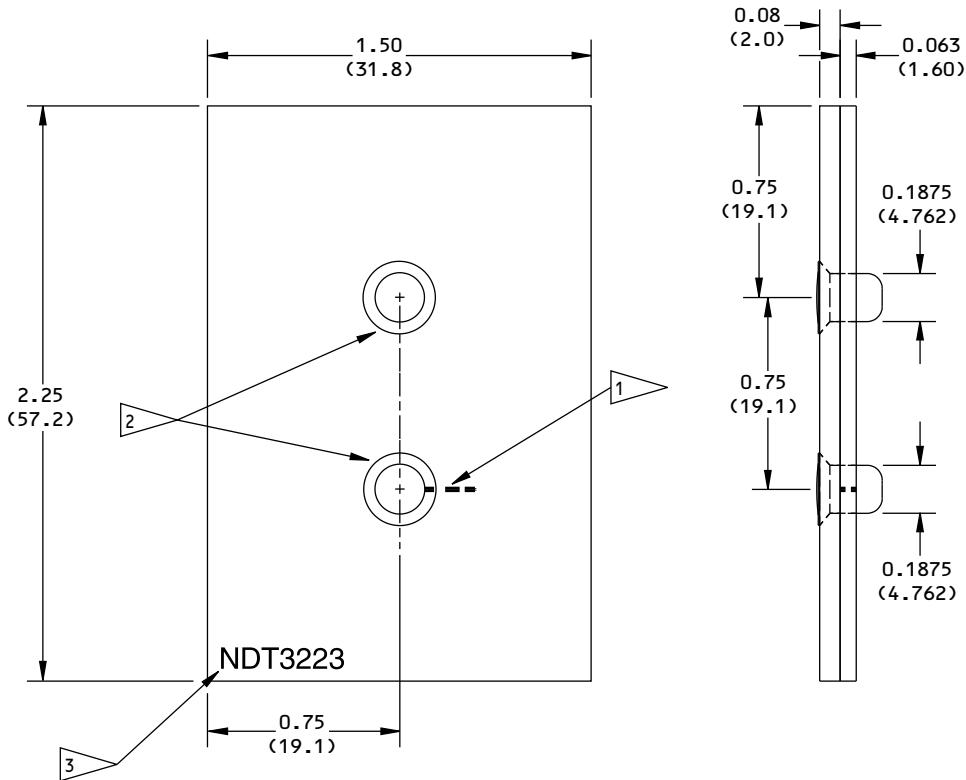
2349735 S0000536077_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

D6-37239

PART 6 53-11-34Page 6
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- ALL DIMENSIONS ARE IN INCHES
(MILLIMETERS ARE IN PARENTHESES)
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

<u>INCHES</u>	<u>MILLIMETERS</u>
X.XXX = ± 0.005	X.XX = ± 0.1
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1
- MATERIAL: 2024-T4 OR 2024-T3 CLAD ALUMINUM
- SURFACE ROUGHNESS: 63 Ra OR BETTER

- EDM NOTCH:
WIDTH: 0.010 (0.25) MAXIMUM
DEPTH: THROUGH THE THICKNESS
LENGTH: 0.20 (5.0)
- BACR15GF6D4 (2 LOCATIONS).
ALTERNATIVE RIVETS CAN BE USED IF THEY
ARE THE SAME CONFIGURATION AS THE
FASTENERS SPECIFIED
- ETCH OR STAMP THE REFERENCE STANDARD
NUMBER, NDT3223, AT APPROXIMATELY THIS
LOCATION

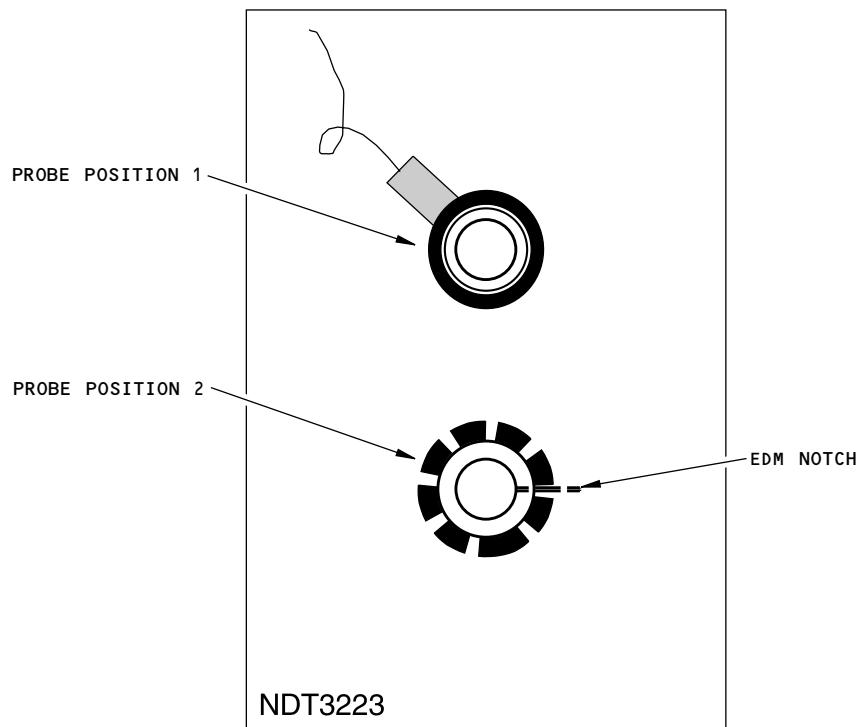
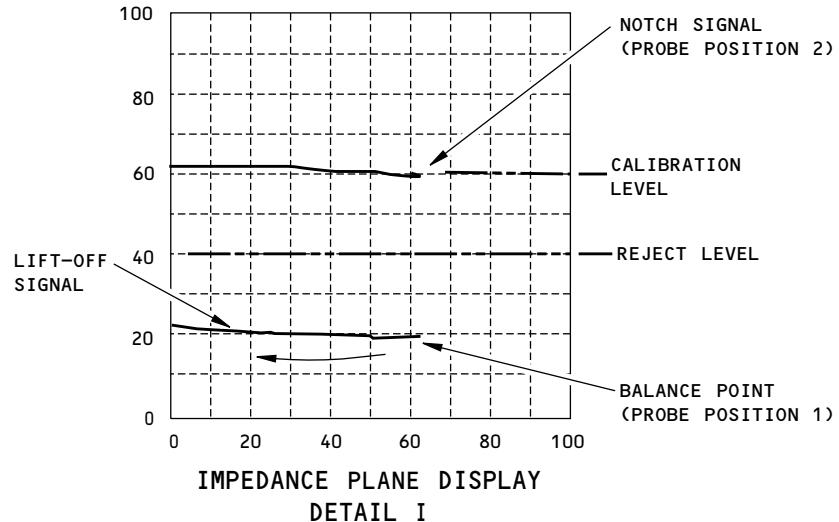
2349790 S0000536078_V1

Reference Standard NDT3223
Figure 2EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-34



737
NON-DESTRUCTIVE TEST MANUAL



2349835 S0000536079_V1

Instrument Calibration
Figure 3

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-34

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

INNER SURFACE INSPECTION OF THE BEAR STRAP BETWEEN THE CUTOUT FOR THE FORWARD ACCESS DOOR AND THE CUTOUT FOR THE NOSE WHEEL WELL (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the inner surface of the bear strap that is between the cutout at STA 225 for the section 41 nose wheel well and the STA 220 cutout for the forward access door for cracks. The bear strap is examined internally for cracks at the areas that can be seen between the forward and aft chords. See Figure 1 for the inspection areas.
- B. The bear strap is aluminum.
- C. 737 Maintenance Planning Document (MPD) Damage tolerance Record (DTR) Check Form Reference:
 - (1) Item: 53-10-23-1

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
 - (b) Nortec 500/2000D; Olympus
- C. Probes
 - (1) Use a probe that operates from 50 to 500 kHz.
 - (2) The probes that follow were used to help prepare this procedure.
NOTE: Shielded probes are recommended.
 - (a) MTF905-60fx 50-500 kHz; NDT Engineering/Olympus
 - (b) TPENFLX-10 50-500 kHz; Techna NDT
- D. Reference Standards
 - (1) Use reference standard 126, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23, to help calibrate the instrument to examine the bear strap along the edges of the lower chords.
 - (2) Use reference standard 188A, or an equivalent, as shown in Part 6, 51-00-00, Procedure 23, to help calibrate the instrument to examine the bear strap at the fastener locations.

3. Prepare for the Inspection

- A. Identify and get access to all of the inspection areas shown in Figure 1.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-35



737 NON-DESTRUCTIVE TEST MANUAL

- (1) Get access to the forward access bay.
- B. Remove insulation as necessary to fully examine the inner surface of the bear strap.
- C. Remove sealant as necessary to fully examine the inner surface of the bear strap.
- D. Clean the inspection surface if necessary.
 - (1) Remove dirt or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument to examine the inner surface of the bear strap along the edges of the forward and aft lower chords as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.
- B. Calibrate the instrument to examine the inner surface of the bear strap at the fastener locations that are between the forward and aft lower chords as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Get access to the inner surface of the bear strap between the cutout at STA 225 for the section 41 nose wheel well and the STA 220 cutout for the forward access door. See Figure 1 for the inspection area.
- B. Examine the inner surface of the bear strap for cracks along the lower chords at STA 220 and STA 225 and between RBL 14.25 and LBL 14.25. See Figure 1 for the inspection area. Do the inspection as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) Use the edge of the lower chord as a probe guide while you make the scans of the bear strap.
 - (2) Make scans in the inboard and outboard directions.
- C. Examine the inner surface of the bear strap for cracks at each fastener location that you can get access to that is between STA 220 and STA 225 and between RBL 14.25 and LBL 14.25. See Figure 1 for the inspection area. Do the inspection as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) Use the fastener head as a probe guide while you make a scan of the bear strap.
 - (2) Do the scans fully around each fastener.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

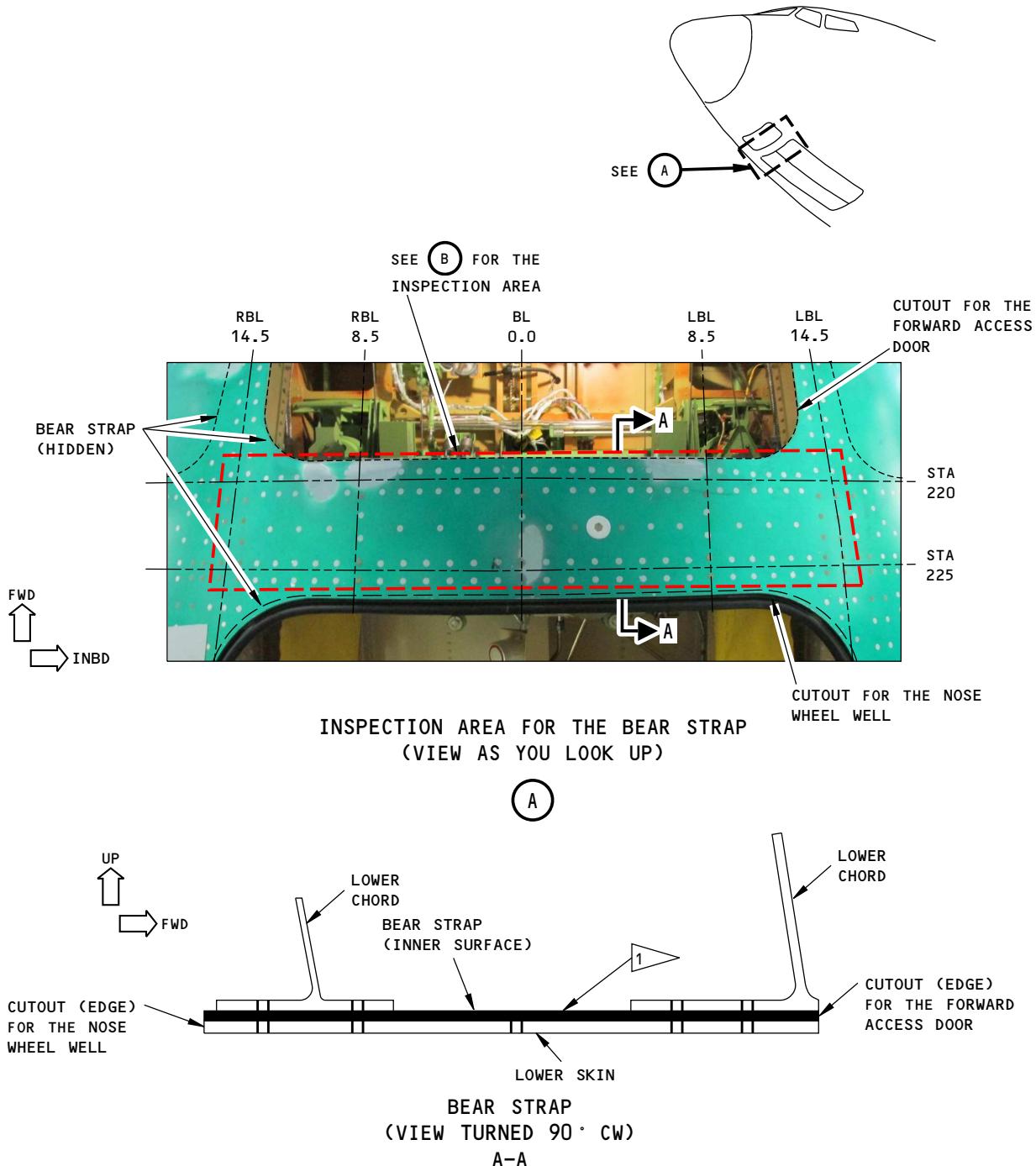
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-35

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

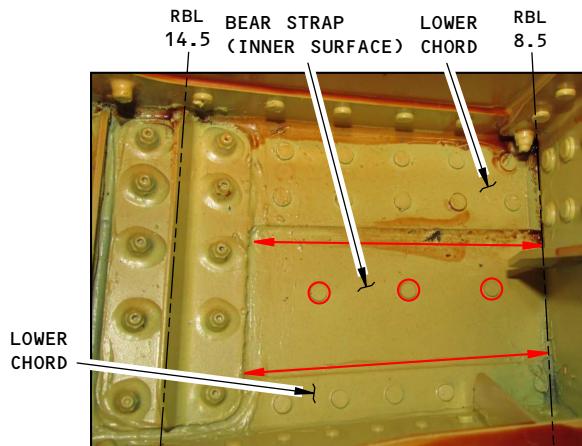
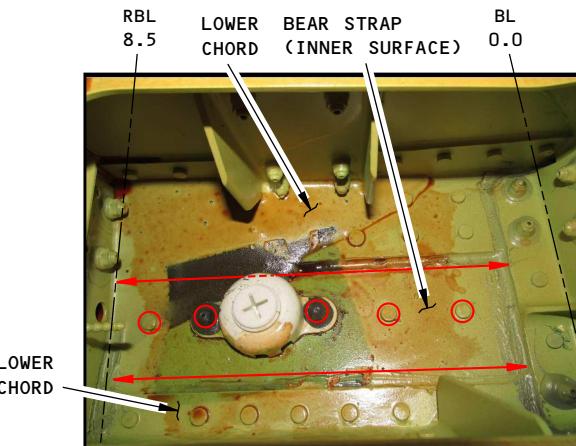
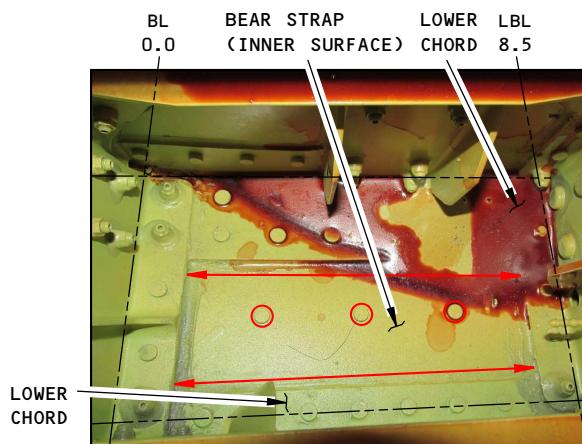
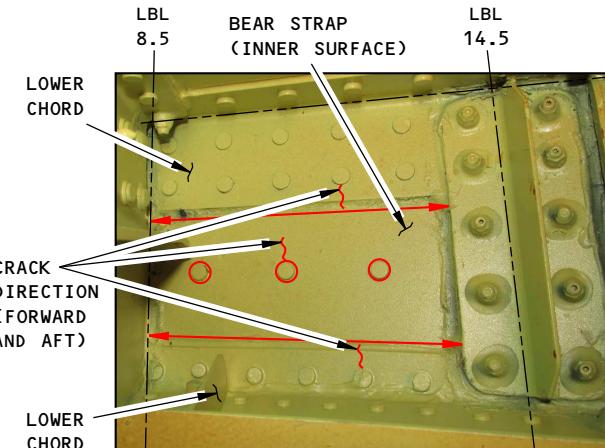
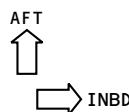
1 EXAMINE THE INNER SURFACE OF THE BEAR STRAP FOR CRACKS.

2349996 S0000536174_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-35

737
NON-DESTRUCTIVE TEST MANUAL

**INSPECTION AREA BETWEEN
RBL 14.5 AND RBL 8.5**

**INSPECTION AREA BETWEEN
RBL 8.5 AND BL 0.0**

**INSPECTION AREA BETWEEN
BL 0.0 AND LBL 8.5**

**INSPECTION AREA BETWEEN
LBL 8.5 AND LBL 14.5**

**INSPECTION AREAS FOR THE BEAR STRAP
(VIEW AS YOU LOOK DOWN)**
B
NOTES

- FASTENER LOCATION TO EXAMINE THE BEAR STRAP FOR CRACKS. MAKE A 360 DEGREE SCAN AROUND THE FASTENER HEAD AS YOU MAKE A SCAN OF THE BEAR STRAP AT EACH IDENTIFIED FASTENER LOCATION.
- SCAN DIRECTION. MAKE SCANS OF THE BEAR STRAP THAT YOU CAN SEE ALONG THE EDGES OF THE LOWER CHORDS.

2350095 S0000536175_V1

**Inspection Area
Figure 1 (Sheet 2 of 2)**
EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

FORWARD PRESSURE PANEL IN THE APU INLET ENCLOSURE

1. Purpose

- A. Use this procedure to help find cracks in the forward pressure panel in the APU inlet enclosure in the area that is behind the stiffener. See Figure 1 for the inspection area.
- B. 737 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-80-17-7

2. Equipment

A. General

- (1) All eddy current instruments that have an impedance plane display are permitted for use if they can be calibrated on the reference standard as specified in Paragraph 4.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency range of 1.0 to 3.0 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Nortec 1000S; Olympus NDT

C. Probe

- (1) Use a spot probe with a diameter between 0.45 and 0.50 inches (11.4 and 12.7 mm) and a maximum height of 1.0 inch (25 mm). See Figure 1 and refer to Part 6, 51-00-26, paragraph 2.C, for data about probe selection.
- (2) The probes that follow were used to help prepare this procedure.
 - (a) SDP.45-1K (500Hz-15kHz); Techna NDT
 - (b) SDP. 5-1K (1-10kHz); Techna NDT

D. Reference Standards

- (1) Use reference standard ANDT1055, or an equivalent, as given in Part 6, 51-00-26, Table 2.

3. Prepare for the Inspection

- A. Get access to the inspection area shown in Figure 1.
- B. Remove loose paint, dirt and sealant from the surface of the inspection area as necessary.

4. Instrument Calibration

- A. Calibrate the equipment as specified in Part 6, 51-00-26, paragraph 4, and as follows:
 - (1) Use reference standard ANDT1055, or an equivalent.
 - (2) Use the button-head fasteners identified as "C" for calibration.

EFFECTIVITY
ALL; 737-800FPB AND -900ER AIRPLANES

PART 6 53-11-36



737
NON-DESTRUCTIVE TEST MANUAL

5. Inspection Procedure

- A. Examine the forward pressure panel for cracks behind the stiffener at the interface of the forward and mid panels in the APU inlet enclosure.
 - (1) Identify the inspection area shown in Figure 1.
 - (2) Calibrate the instrument as specified in Paragraph 4.
 - (3) Make a scan between the fasteners on the forward side of the stiffener at the interface of the forward and mid panels in the APU inlet enclosure as shown in Figure 1 and as specified in Part 6, 51-00-26, paragraph 5. Move the probe in the forward and aft directions to look for cracks between the fasteners in the forward pressure panel.
 - (4) Do Paragraph 5.A.(3) between the fasteners on the aft side of the stiffener.

6. Inspection Results

- A. Refer to Part 6, 51-00-26, paragraph 6, for instructions to help make an analysis of signals that occur during the inspection.

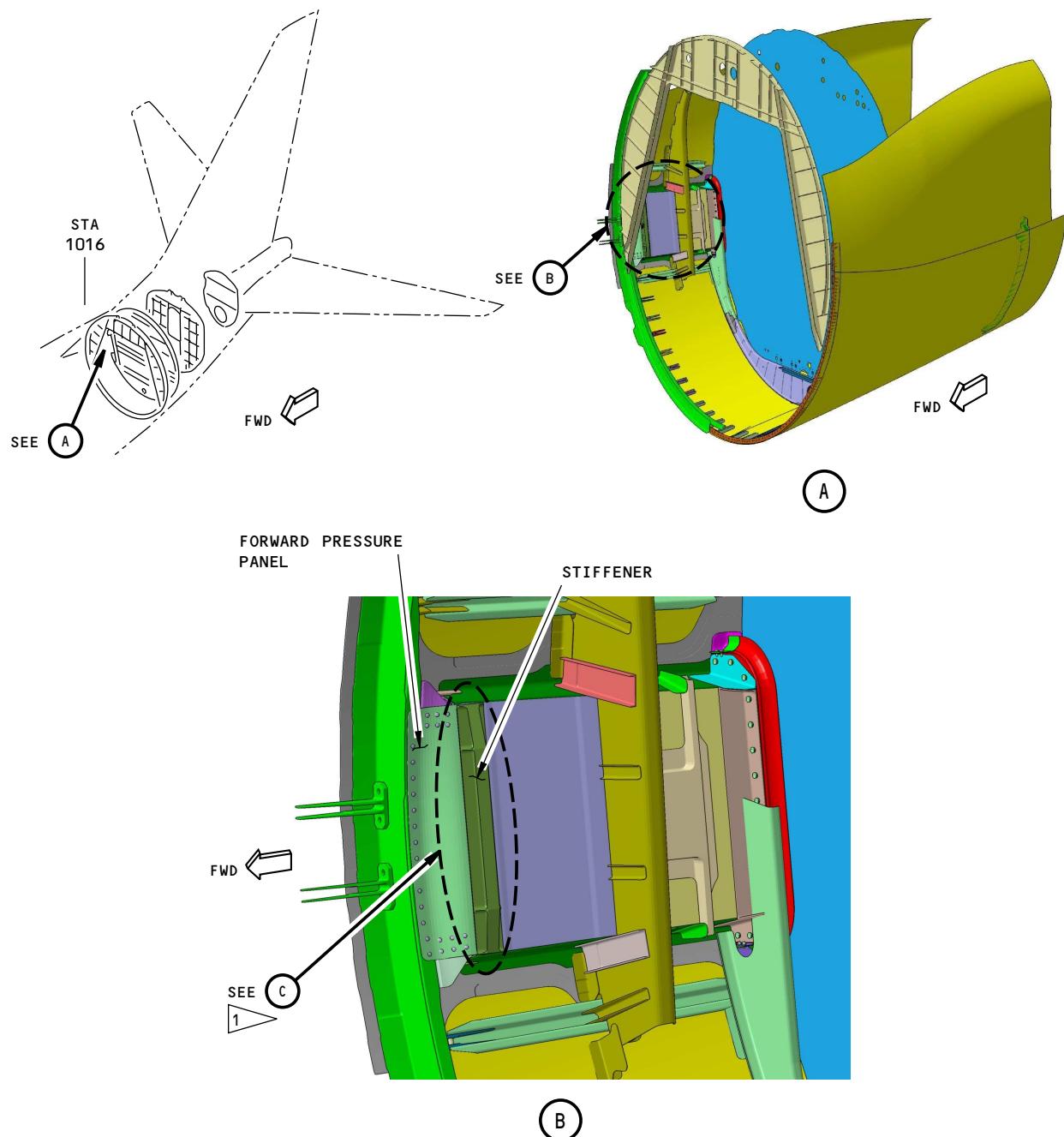
EFFECTIVITY
ALL; 737-800FPB AND -900ER AIRPLANES

PART 6 53-11-36

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- EXAMINE THE FORWARD PRESSURE PANEL IN THE APU INLET ENCLOSURE FOR CRACKS BETWEEN THE FASTENERS ON THE FORWARD AND AFT SIDES OF THE STIFFENER.
MOVE THE PROBE BETWEEN THE FASTENERS IN THE FORWARD AND AFT DIRECTIONS

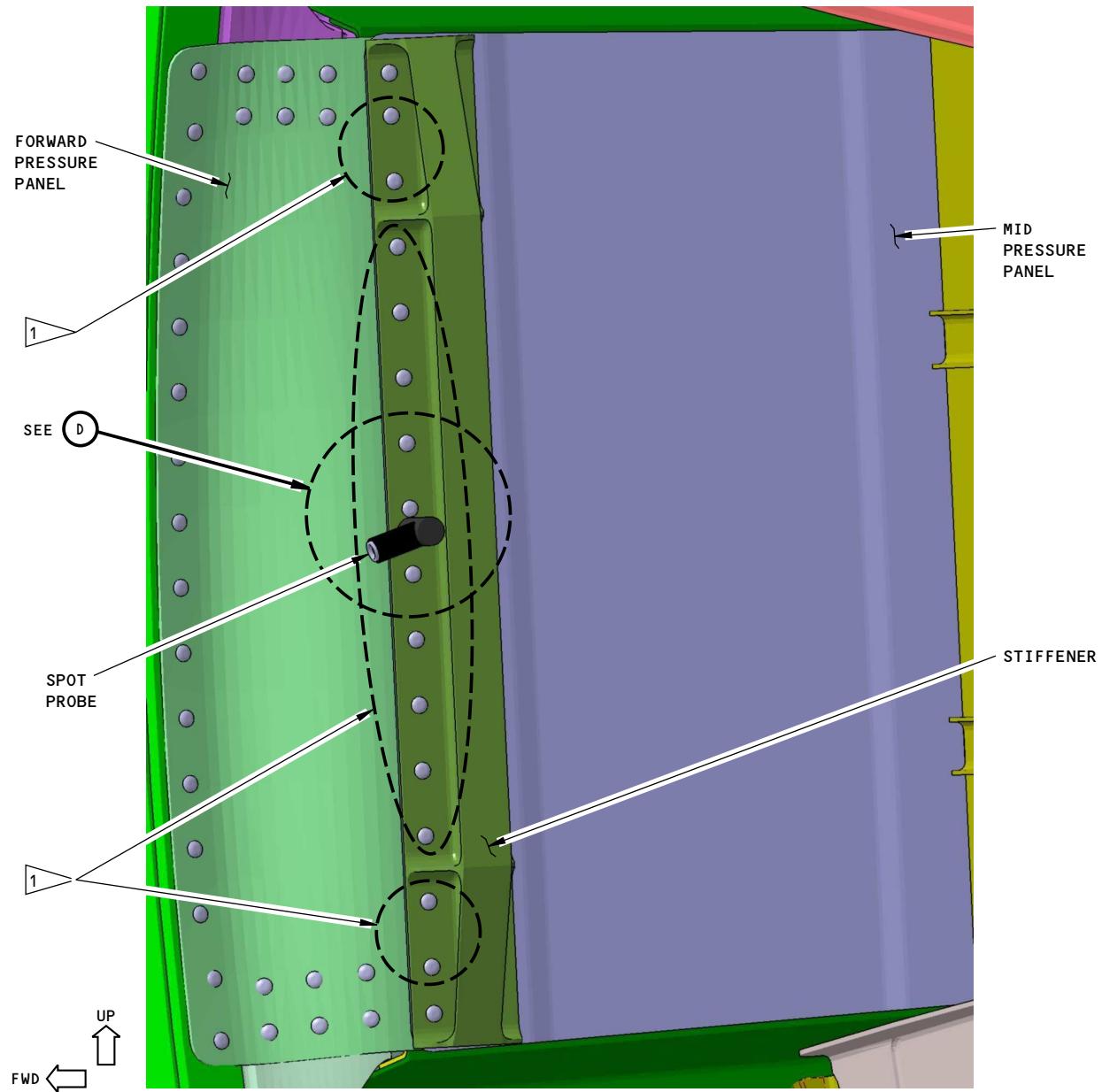
 DTR CHECK FORM ITEM 53-80-17-7 INSPECTION AREA

2402381 S0000555617_V1

Inspection Area
Figure 1 (Sheet 1 of 3)

EFFECTIVITY
 ALL; 737-800FPB AND -900ER AIRPLANES

PART 6 53-11-36



THE FASTENERS ON THE FORWARD SIDE OF THE STIFFENER AT THE INTERFACE OF THE FORWARD AND MID PRESSURE PANELS OF THE APU INLET ENCLOSURE ARE SHOWN.
THE FASTENERS ON THE AFT SIDE OF THE STIFFENER ARE ALMOST THE SAME.

C

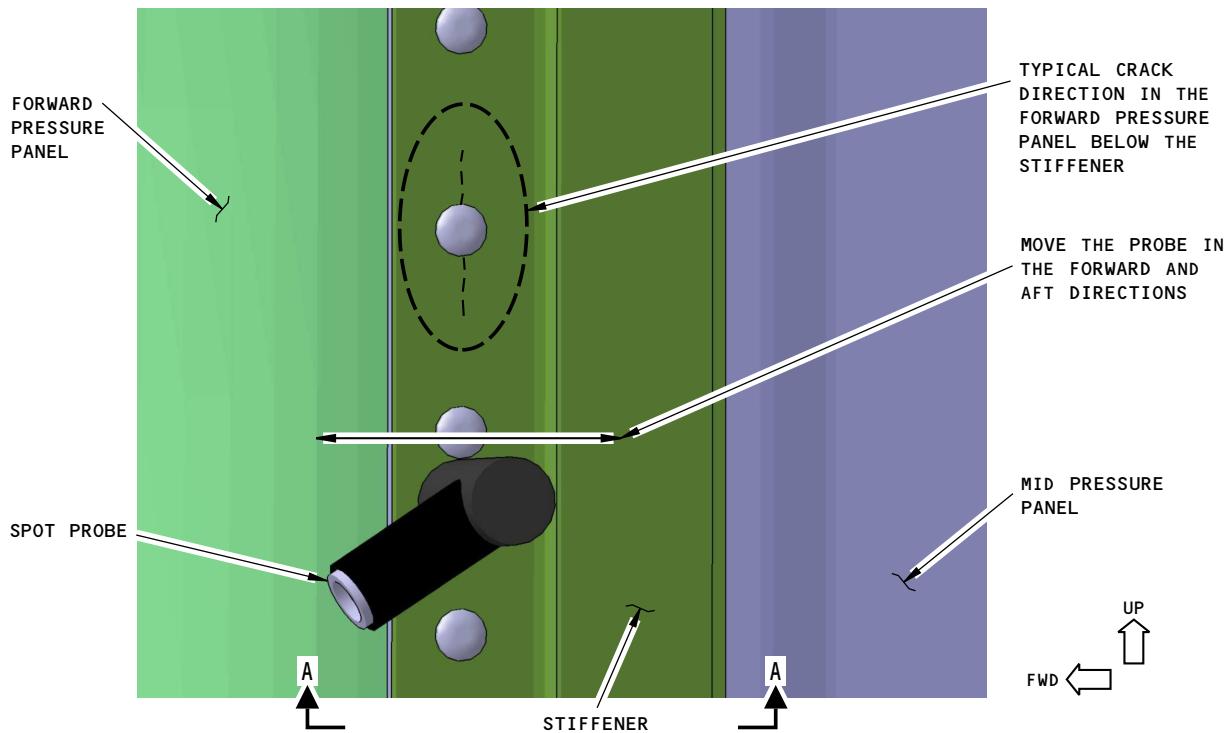
2402386 S0000555618_V1

Inspection Area
Figure 1 (Sheet 2 of 3)

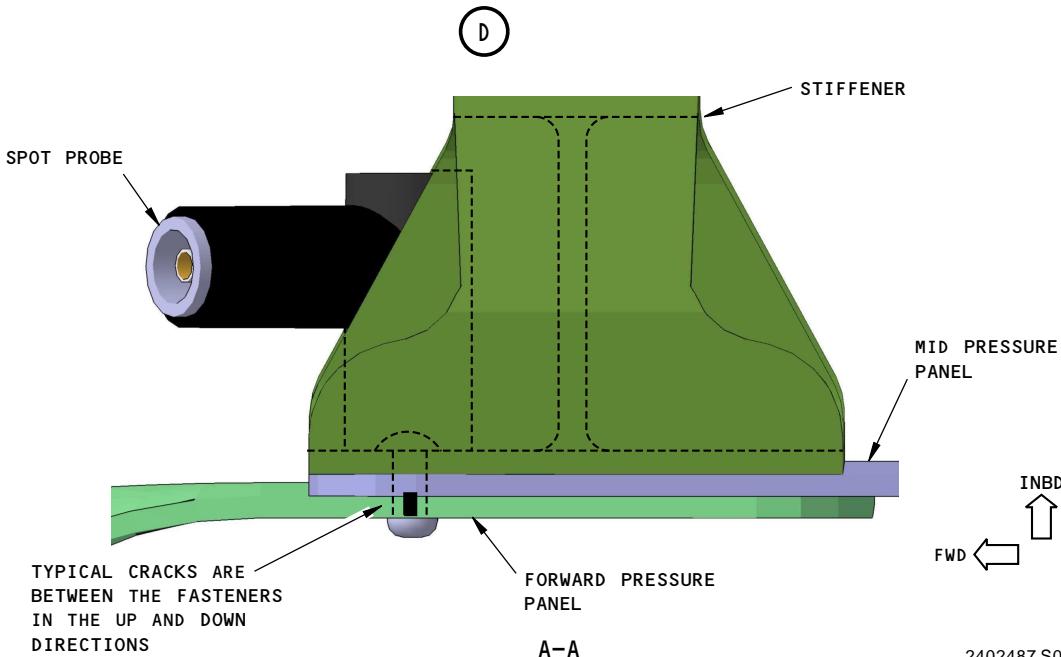
EFFECTIVITY
ALL; 737-800FPB AND -900ER AIRPLANES

PART 6 53-11-36

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

THE FASTENERS ON THE FORWARD SIDE OF THE STIFFENER AT THE INTERFACE OF THE FORWARD AND MID PRESSURE PANELS OF THE APU INLET ENCLOSURE ARE SHOWN.
THE FASTENERS ON THE AFT SIDE OF THE STIFFENER ARE ALMOST THE SAME.



2402487 S0000555620_V1

Inspection Area
Figure 1 (Sheet 3 of 3)

EFFECTIVITY
ALL; 737-800FPB AND -900ER AIRPLANES

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

MID PRESSURE PANEL IN THE APU INLET ENCLOSURE

1. Purpose

- A. Use this procedure to help find cracks in the mid pressure panel in the APU inlet enclosure in the area that is behind the stiffener. See Figure 1 for the inspection area.
- B. 737 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-80-17-4

2. Equipment

A. General

- (1) All eddy current instruments that have an impedance plane display are permitted for use if they can be calibrated on the reference standard as specified in Paragraph 4.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency range of 1.0 to 3.0 kHz.
- (2) The instrument that follows was used to help prepare this procedure.
 - (a) Nortec 1000S; Olympus NDT

C. Probe

- (1) Use a spot probe with a diameter between 0.40 and 0.50 inches (10.1 and 12.7 mm) and a maximum height of 1.0 inch (25 mm). See Figure 1 and refer to Part 6, 51-00-26, paragraph 2.C, for data about probe selection.
- (2) The probes that follow were used to help prepare this procedure.
 - (a) SDP.45-1K (500Hz-15kHz); Techna NDT
 - (b) SDP.4-1K (1-10kHz); Techna NDT

D. Reference Standards

- (1) Use reference standard ANDT1052, or an equivalent, as given in Part 6, 51-00-26, Table 2.

3. Prepare for the Inspection

- A. Get access to the inspection area shown in Figure 1.
- B. Remove loose paint, dirt and sealant from the surface of the inspection areas as necessary.

4. Instrument Calibration

- A. Calibrate the equipment as specified in Part 6, 51-00-26, paragraph 4, and as follows:
 - (1) Use reference standard ANDT1052, or an equivalent.
 - (2) Use the button-head fasteners identified as "C" for calibration.

EFFECTIVITY
ALL; 737-800FPB AND -900ER AIRPLANES

PART 6 53-11-37



737
NON-DESTRUCTIVE TEST MANUAL

5. Inspection Procedure

- A. Examine the mid pressure panel for cracks behind the stiffener at the interface of the forward and mid pressure panels in the APU inlet enclosure.
 - (1) Identify the inspection area shown in Figure 1.
 - (2) Calibrate the instrument as specified in Paragraph 4.
 - (3) Balance the probe adjacent to one of the fasteners on the stiffener. The signal will decrease because of the third layer (the forward pressure panel) that is below the mid pressure panel inspection area.
 - (4) Make a scan between the fasteners on the forward side of the stiffener at the interface of the forward and mid pressure panels as shown in Figure 1 and as specified in Part 6, 51-00-26, paragraph 5. Move the probe in the forward and aft directions to look for cracks between the fasteners in the mid pressure panel.
 - (5) Do Paragraph 5.A.(4) between the fasteners on the aft side of the stiffener.

6. Inspection Results

- A. See Part 6, 51-00-26, paragraph 6, for instructions to help make an analysis of signals that occur during the inspection.

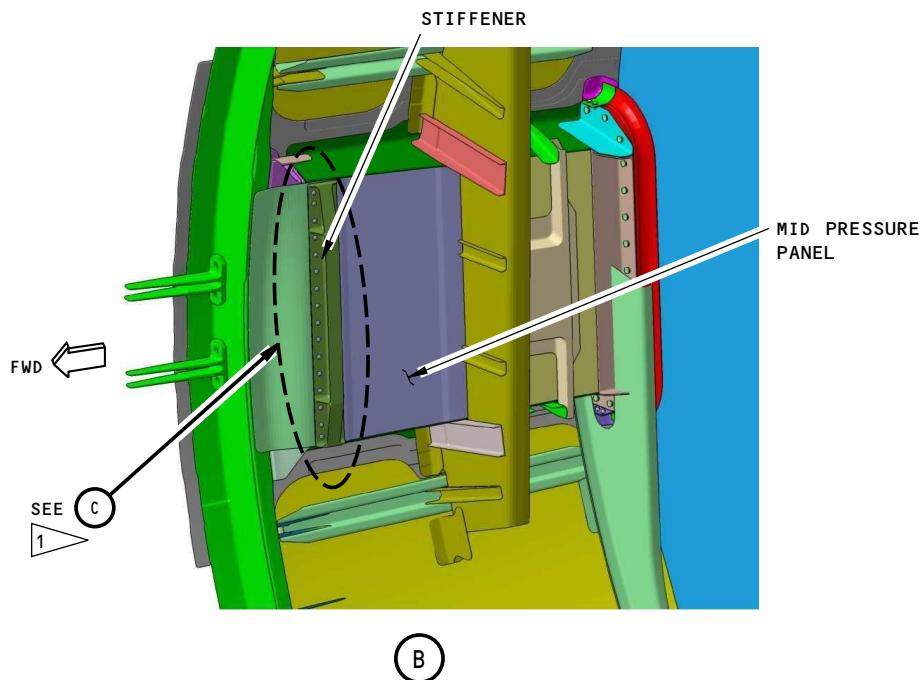
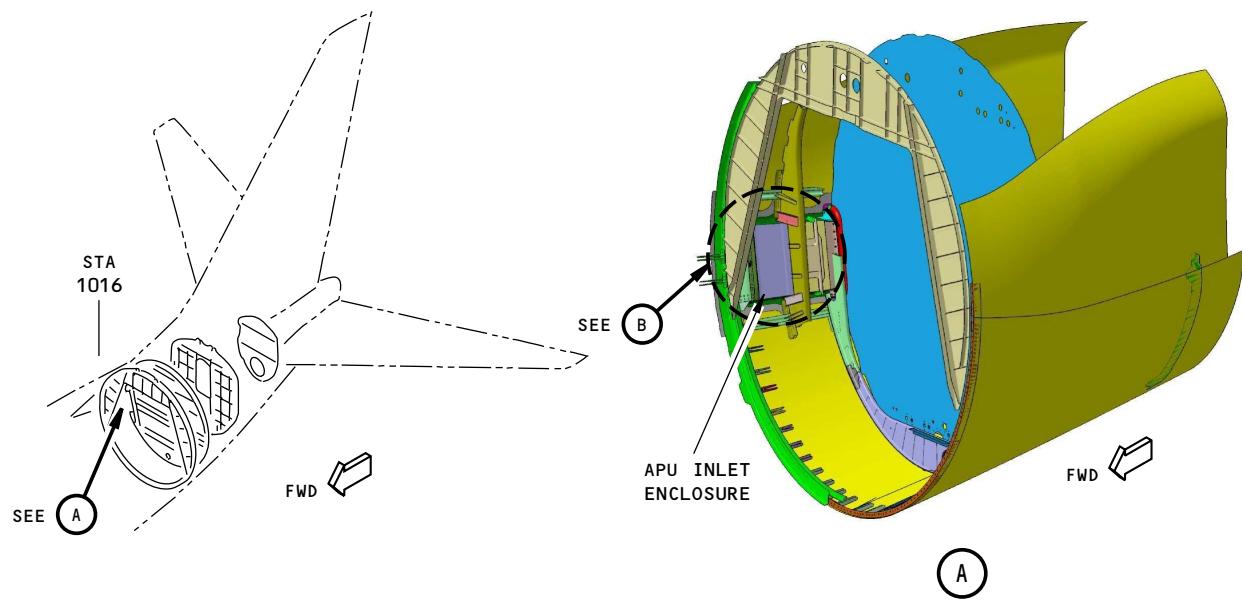
EFFECTIVITY
ALL; 737-800FPB AND -900ER AIRPLANES

PART 6 53-11-37

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- EXAMINE THE MID PRESSURE PANEL IN THE APU INLET ENCLOSURE FOR CRACKS BETWEEN THE FASTENERS ON THE FORWARD AND AFT SIDES OF THE STIFFENER. MOVE THE PROBE BETWEEN THE FASTENERS IN THE FORWARD AND AFT DIRECTIONS

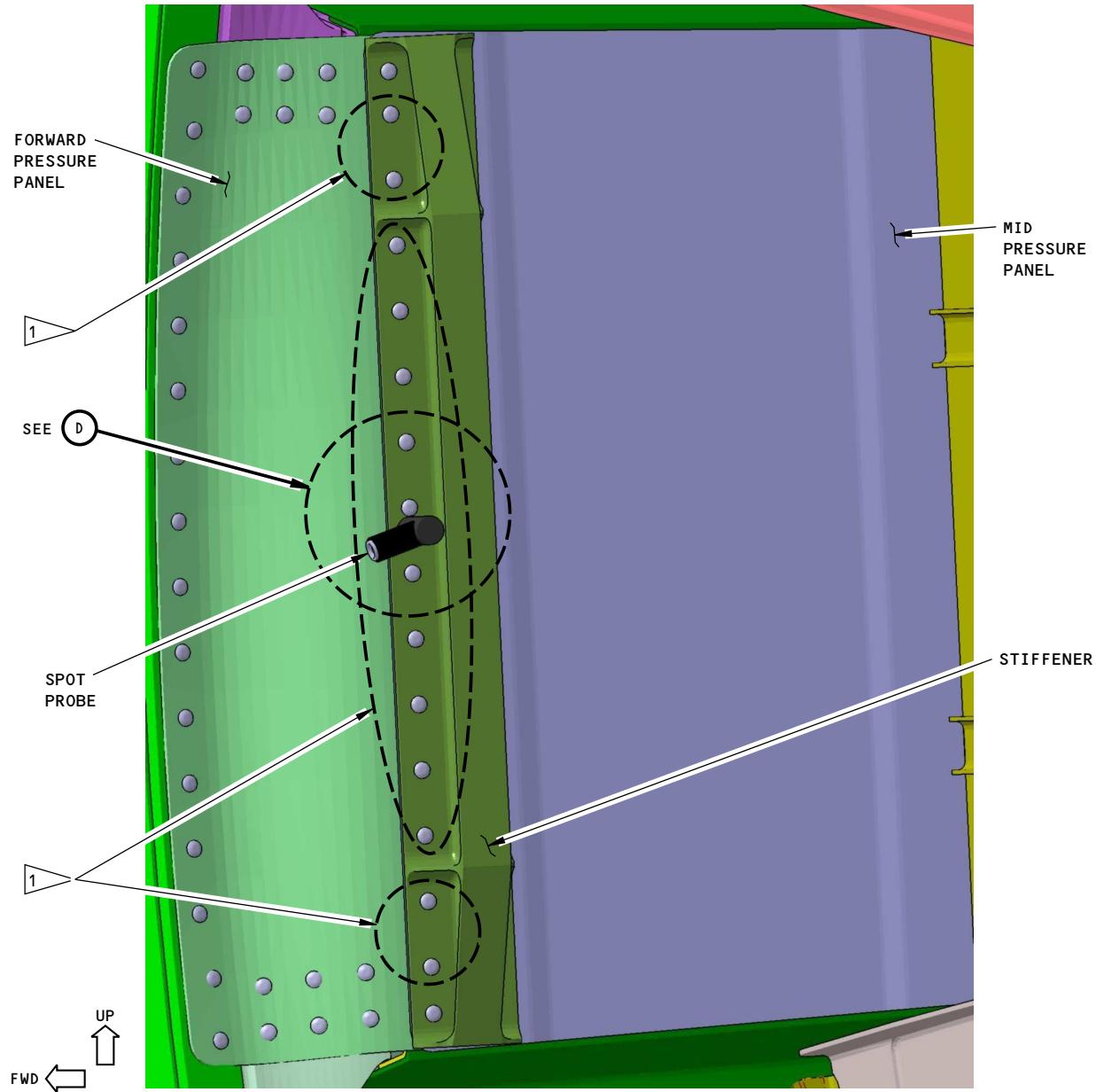
 DTR CHECK FORM ITEM 53-80-17-4 INSPECTION AREA

2402492 S0000555626_V1

Inspection Area
Figure 1 (Sheet 1 of 3)

EFFECTIVITY
 ALL; 737-800FPB AND -900ER AIRPLANES

D6-37239



THE FASTENERS ON THE FORWARD SIDE OF THE STIFFENER AT THE INTERFACE OF THE FORWARD AND MID PRESSURE PANELS OF THE APU ENCLOSURE ARE SHOWN. THE FASTENERS ON THE AFT SIDE OF THE STIFFENER ARE ALMOST THE SAME.

C

2402493 S0000555627_V1

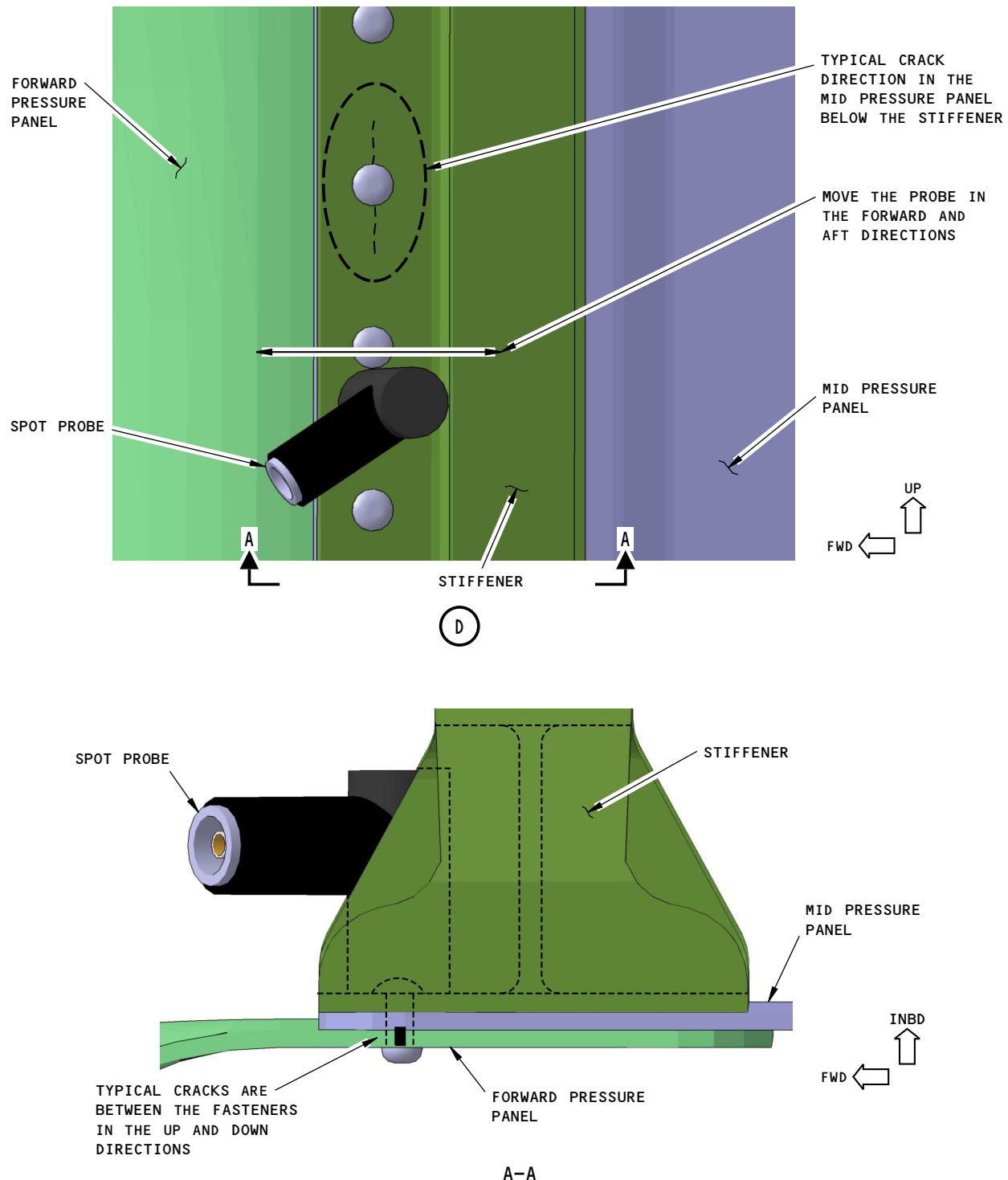
Inspection Area
Figure 1 (Sheet 2 of 3)

EFFECTIVITY
ALL; 737-800FPB AND -900ER AIRPLANES

PART 6 53-11-37

D6-37239

Page 4
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


2402494 S0000555628_V1

Inspection Area
Figure 1 (Sheet 3 of 3)

EFFECTIVITY
 ALL 737-800FPB AND -900ER AIRPLANES

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

WEB AT THE PRESSURE CHORD OF THE AFT PRESSURE BULKHEAD FROM S-5L TO S-7L AND S-5R TO S-9R (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the forward side of the web at the pressure chord of the aft pressure bulkhead for cracks from S-5L to S-7L and S-5R to S-9R. See Figure 1 for the inspection area.
- B. This procedure uses an impedance plane display instrument.
- C. The web is aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-80-01-5A

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) The instruments that follow were used to help prepare this procedure.
 - (a) 500D; Olympus NDT
 - (b) Phasec 2D/3D; GE Inspection Technologies
 - (c) 2000D; Olympus NDT (Nortec)
- C. Probes
 - (1) The probe that follows was used to help prepare this procedure.
 - (a) TPEN95-6B; Techna NDT
- D. Reference Standard
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Identify the inspection area on the forward side of the web. See Figure 1.
- B. Remove sealant from the area around the fasteners, as necessary.
- C. Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5, to examine the web for cracks around the aft fastener locations of the pressure chord.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-38



737
NON-DESTRUCTIVE TEST MANUAL

5. Inspection Procedure

- A. Examine the forward side of the web for cracks at the aft fastener row where the web attaches to the pressure chord of the aft pressure bulkhead. Do the inspection between the stiffener locations from S-5L to S-7L and from S-5R to S-9R as shown in Figure 1 and as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.

- (1) Make a complete scan around each rivet.

6. Inspection Results

- A. A crack signal from the surface inspection will look almost the same as the notch signal from the reference standard.
 - (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.
- B. To make sure a crack indication is from a crack, remove the fastener and do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.

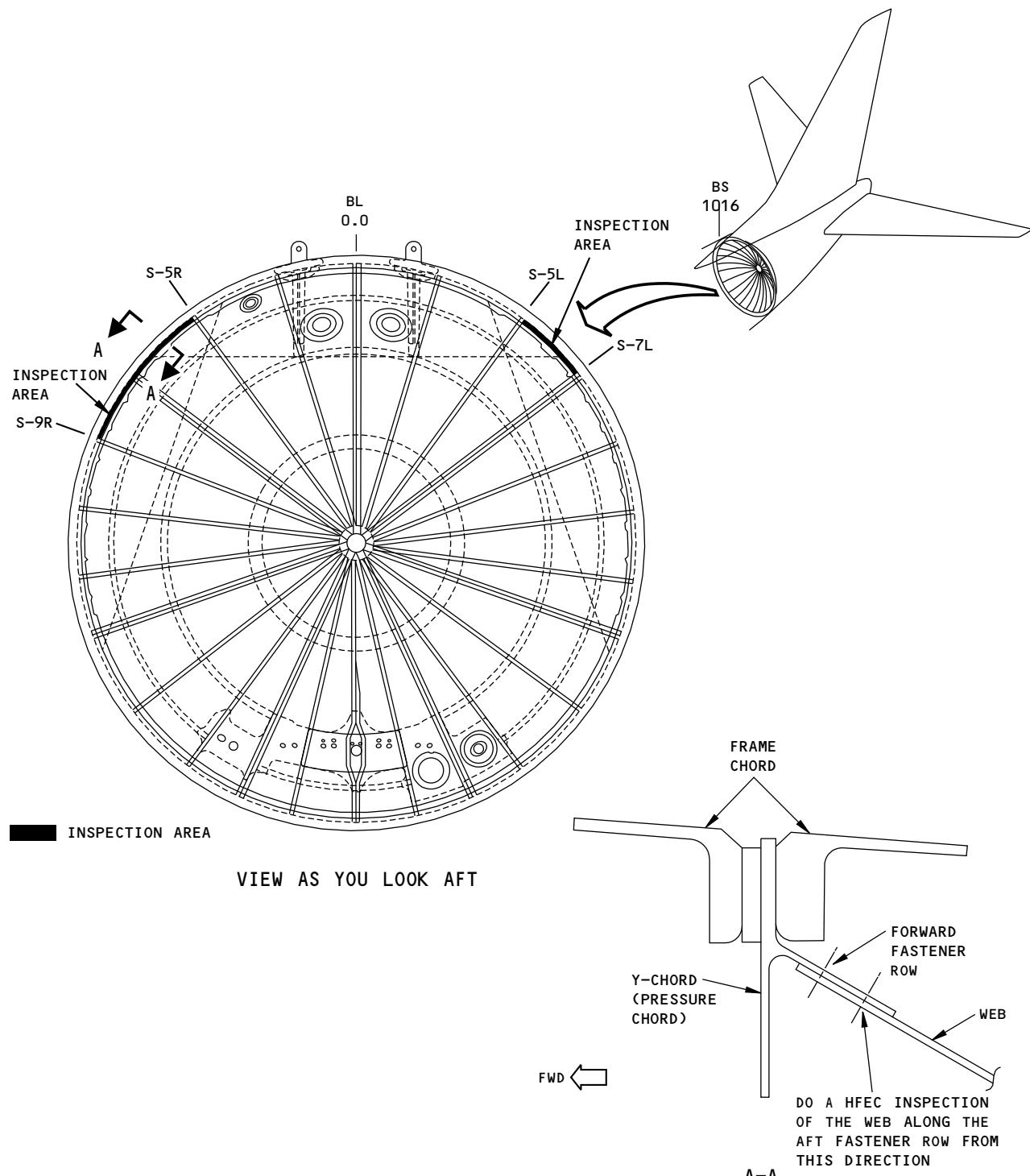
EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-38

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


2403737 S0000556142_V1

Inspection Area
Figure 1

EFFECTIVITY
ALL 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

**PRESSURE DOME WEB AT THE WEB LAP SPLICES THAT ARE BEHIND RADIAL STIFFENERS
(LFEC)**

1. Purpose

- A. Use this low frequency eddy current (LFEC) procedure to examine the forward side of the pressure dome web for subsurface cracks. The web is examined at the web lap splices that are behind radial stiffeners for subsurface cracks that can start at the fastener holes. See Figure 1 for the inspection area.
- B. This procedure uses an impedance plane display instrument.
- C. The pressure web is aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-80-01-7

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that has an impedance plane display.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) 500D; Olympus NDT
 - (b) Phasec 2D/3D; GE Inspection Technologies
- C. Probes
 - (1) Use a reflection ring probe with a minimum inside diameter of 0.25 inch (6.4 mm) and a maximum outside diameter of 0.50 inch (12.7 mm) that can operate between 1 and 10 kHz.
 - (2) The probes that follow were used to help prepare this procedure.
 - (a) AF-4005; AeroFab NDT
 - (b) NEC-4156; NDT Engineering
 - (c) TEK-4066; Techna NDT
- D. Reference Standard
 - (1) Make reference standard NDT3226A. See Figure 2 for data about reference standard NDT3226A

3. Prepare for the Inspection

- A. Get access to the forward side of the aft pressure dome.
- B. Identify the pressure dome web lap splices at S-1, S-7, S-15 and S-23. See Figure 1.
- C. Clean the inspection area.
- D. Remove sealant around the fasteners as necessary.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-39

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 9, paragraph 5, and the steps that follow:
 - (1) Set the instrument frequency between 12 and 16 kHz.
 - (2) Calibrate the instrument on the tail side of the fasteners in fastener group A on reference standard NDT3226A.

5. Inspection Procedure

- A. Examine the pressure dome web for subsurface cracks at the fastener locations of the web splices that are behind radial stiffeners as specified Part 6, 51-00-00, Procedure 9, paragraph 6. See Figure 1 for the inspection areas.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 9, paragraph 7, for instructions to help make an analysis of the signals that occur during the inspection.
- B. Compare the signals that you get during the inspection with the signals that you get from the reference standard.
- C. Compare the signals that you get during the inspection with the signals that you get from the same fastener location at a different lap splice that is behind a radial stiffener.
- D. To make sure a crack indication is from a crack, you can remove the fastener and do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-39

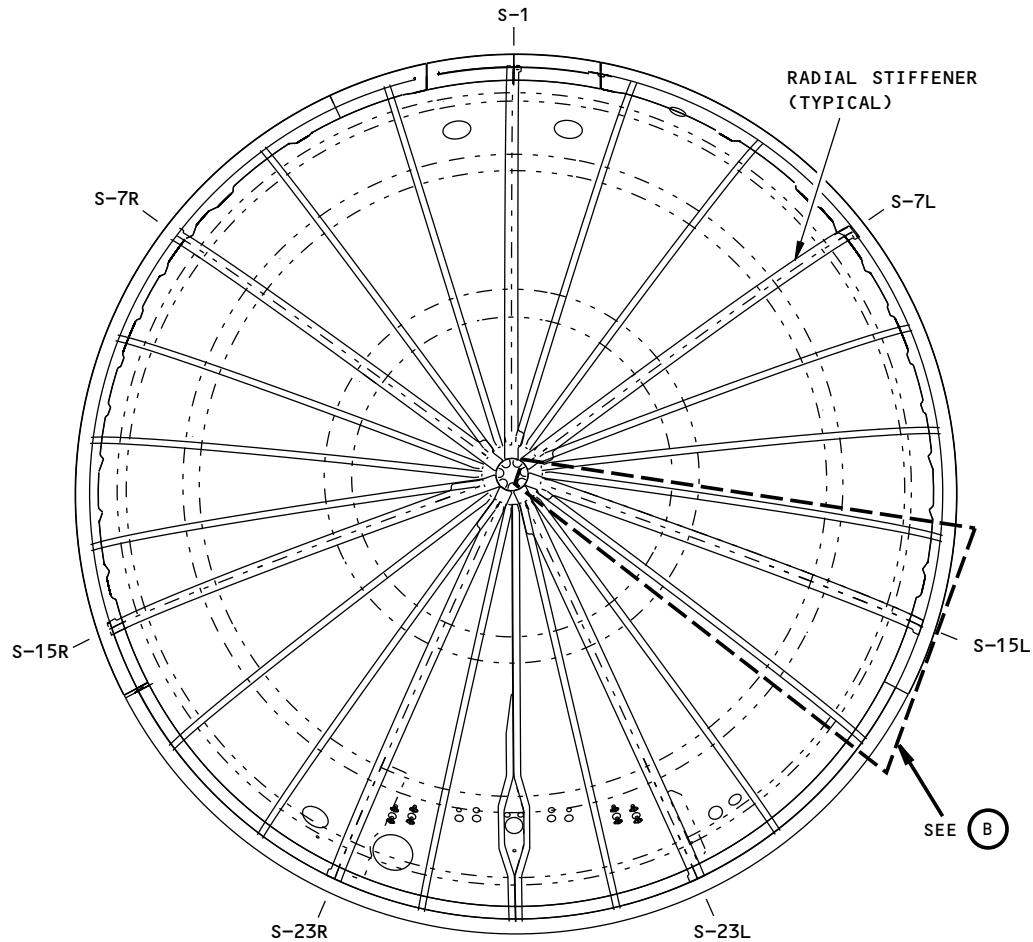
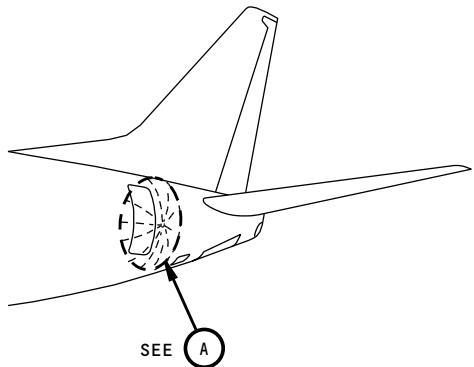
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL



BS 1016 PRESSURE BULKHEAD
(VIEW AS YOU LOOK AFT)

A

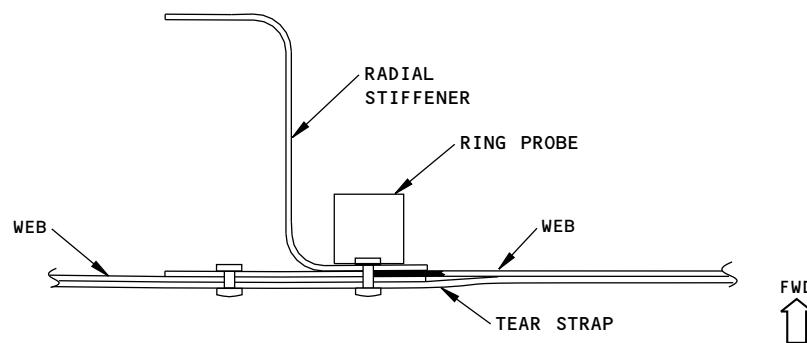
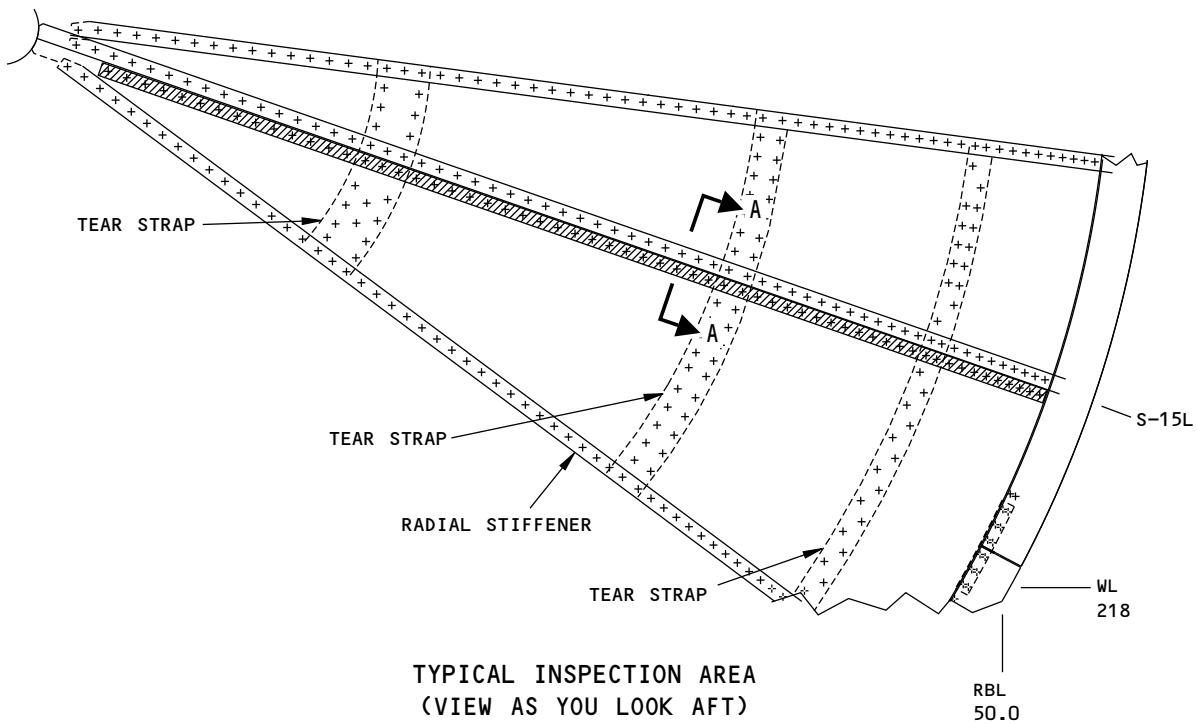
2435815 S0000565124_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-39

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL


WEB LAP SPLICE AT THE PRESSURE BULKHEAD
(TYPICAL INSPECTION LOCATIONS)

A-A

NOTES



FASTENER LOCATIONS TO BE EXAMINED.

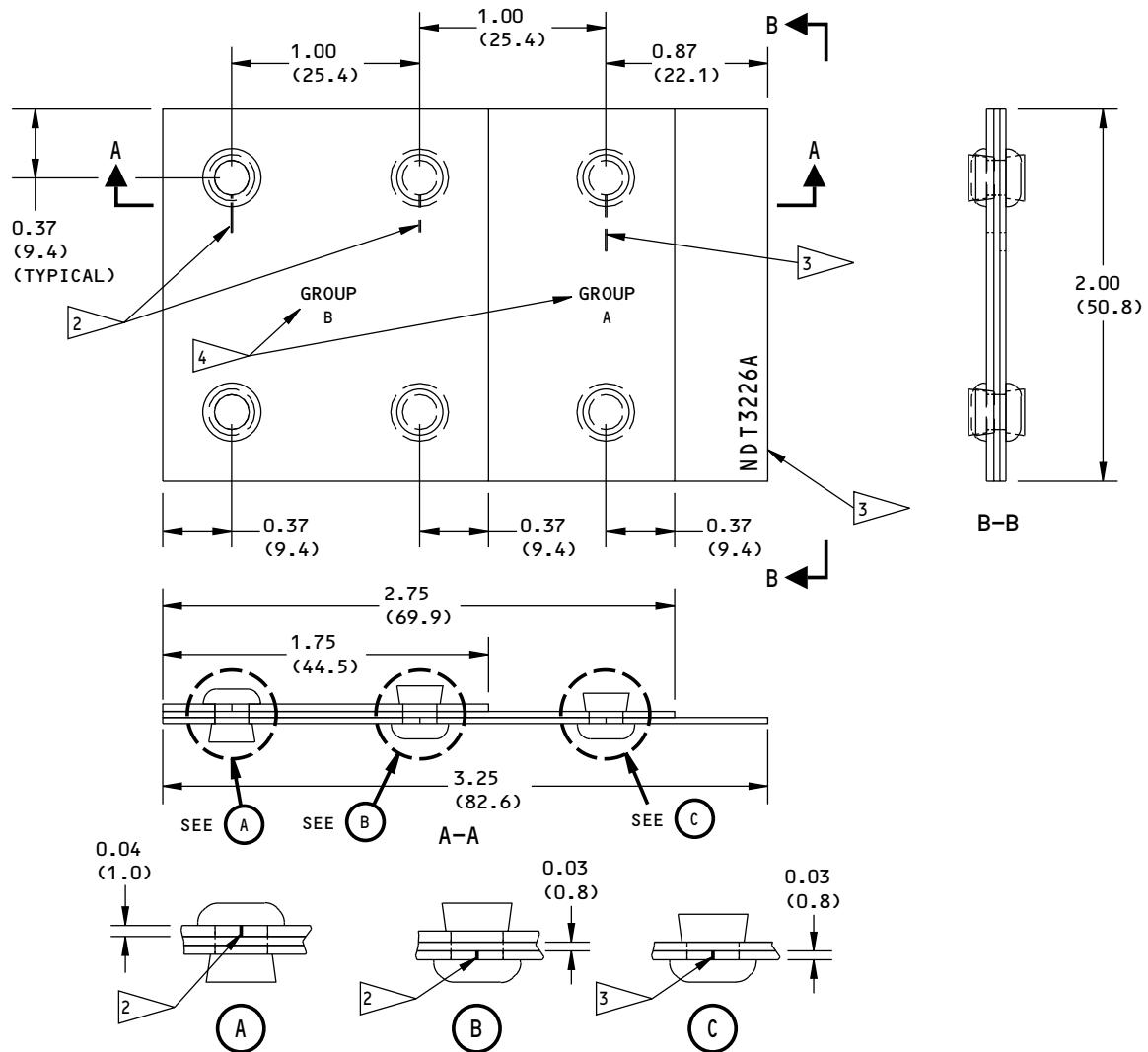
2435816 S0000565125_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-39

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- ALL DIMENSIONS ARE IN INCHES
(MILLIMETERS ARE IN PARENTHESES)
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

<u>INCHES</u>	<u>MILLIMETERS</u>
X.XXX = ± 0.005	X.XX = ± 0.10
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1
- MATERIAL: 2024-T42 (OR EQUIVALENT)
AIRCRAFT GRADE ALUMINUM
- SURFACE ROUGHNESS: 63 Ra OR BETTER
- FASTENERS: BACR15FT6D. ALTERNATIVE
FASTENERS CAN BE USED IF THEY HAVE THE SAME
CONFIGURATIONS AS THE FASTENER SPECIFIED

1 ▲ ETCH OR STAMP THE REFERENCE STANDARD NUMBER, NDT3226A, AT APPROXIMATELY THIS LOCATION

2 ▲ EDM THROUGH NOTCH: 0.20 (5.08) LONG;
0.007 (0.18) WIDE

3 ▲ EDM THROUGH NOTCH: 0.30 (7.62) LONG;
0.007 (0.18) WIDE

4 ▲ ETCH OR SCRIBE GROUP A OR B AS SHOWN

2435817 S0000565128_V1

Reference Standard NDT3226A
Figure 2

EFFECTIVITY
 ALL: 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-39



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

WEB ATTACHED TO THE PRESSURE CHORD OF THE BS 1016 PRESSURE BULKHEAD
(BETWEEN THE STIFFENER AREAS OUTSIDE OF STRINGERS S-5L TO S-7L AND S-5R TO S-9R)
(LFEC)

1. Purpose

- A. Use this low frequency eddy current (LFEC) procedure to examine the web attached to the pressure chord of the BS 1016 pressure bulkhead for cracks. The inspection is done from the aft side of the web, between the stiffener areas outside of stringers S-5L to S-7L and S-5R to S-9R as shown in Figure 1.
- B. This procedure uses an impedance plane display instrument.
- C. The web and pressure chord are aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-80-01-5B

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) 500D; Olympus NDT
 - (b) Phasec 2D/3D; GE Inspection Technologies
 - (c) Nortec 600; Olympus NDT
- C. Probe
 - (1) Use a spot probe with a minimum diameter of 0.25 inch (6.4 mm) and a 0.20 inch (5.1 mm) 90 degree drop that can operate between 1 and 10 kHz
 - (2) The probes that follow were used to help prepare this procedure.
 - (a) RS902-50B/20K/2D; NDT Engineering
 - (b) NEC-4106; NDT Engineering
 - (c) LP905-40B/TF; NDT Engineering
 - (d) NEC-1090; NDT Engineering
 - (e) LFSR-.31/TM; E/C NDT
- D. Reference Standard
 - (1) Make reference standard ANDT3016-B. See Figure 2 for data about reference standard ANDT3016-B.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-40

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

3. Prepare for the Inspection

- A. Get access to the aft side of the pressure dome.
- B. Get access to the inspection area on the pressure chord.

NOTE: It can be necessary to remove some parts to get access to the inspection area.

- C. Identify the inspection area on the pressure chord. See Figure 1.
- D. Identify stringers S-5L, S-7L, S-5R and S-9R. See Figure 1.
- E. Remove sealant from around the fasteners as necessary.
- F. Clean the inspection area.

4. Instrument Calibration

- A. Calibrate the instrument to examine the web at the fastener locations in the inspection area as follows:
 - (1) Set the instrument frequency between 4 and 6 kHz.
 - (2) Put the spot probe adjacent to the fastener at probe position 1 on reference standard ANDT3016-B as shown in Figure 3.
 - (3) Balance the instrument.
 - (4) Adjust the vertical to horizontal gain to put it between 2:1 and 4:1.
 - (5) Adjust the lift-off to make the lift-off signal move horizontally from right to left as shown in Figure 3.
 - (6) Set the balance point in the lower center of the instrument screen display as shown in Figure 3.
 - (7) Put the spot probe adjacent to the fastener at probe position 2 on reference standard ANDT3016-B as shown in Figure 3.
 - (8) Move the probe from probe position 2 to probe position 3 to make a scan of the area around the fastener as shown in Figure 3.
 - (9) Adjust the instrument gain to put the signal from the notch at 60% of full screen height (FSH).

5. Inspection Procedure

- A. Calibrate the instrument as specified in Paragraph 4.
- B. Examine the web attached to the pressure chord at the BS 1016 pressure bulkhead for cracks between stiffeners as follows:
 - (1) Examine the web between the stiffener areas outside of stringers S-5L to S-7L and S-5R to S-9R. See Figure 1 for the inspection areas.
 - (2) Move the probe around each fastener in the inspection areas to examine the web from its aft side as shown in Figure 1.

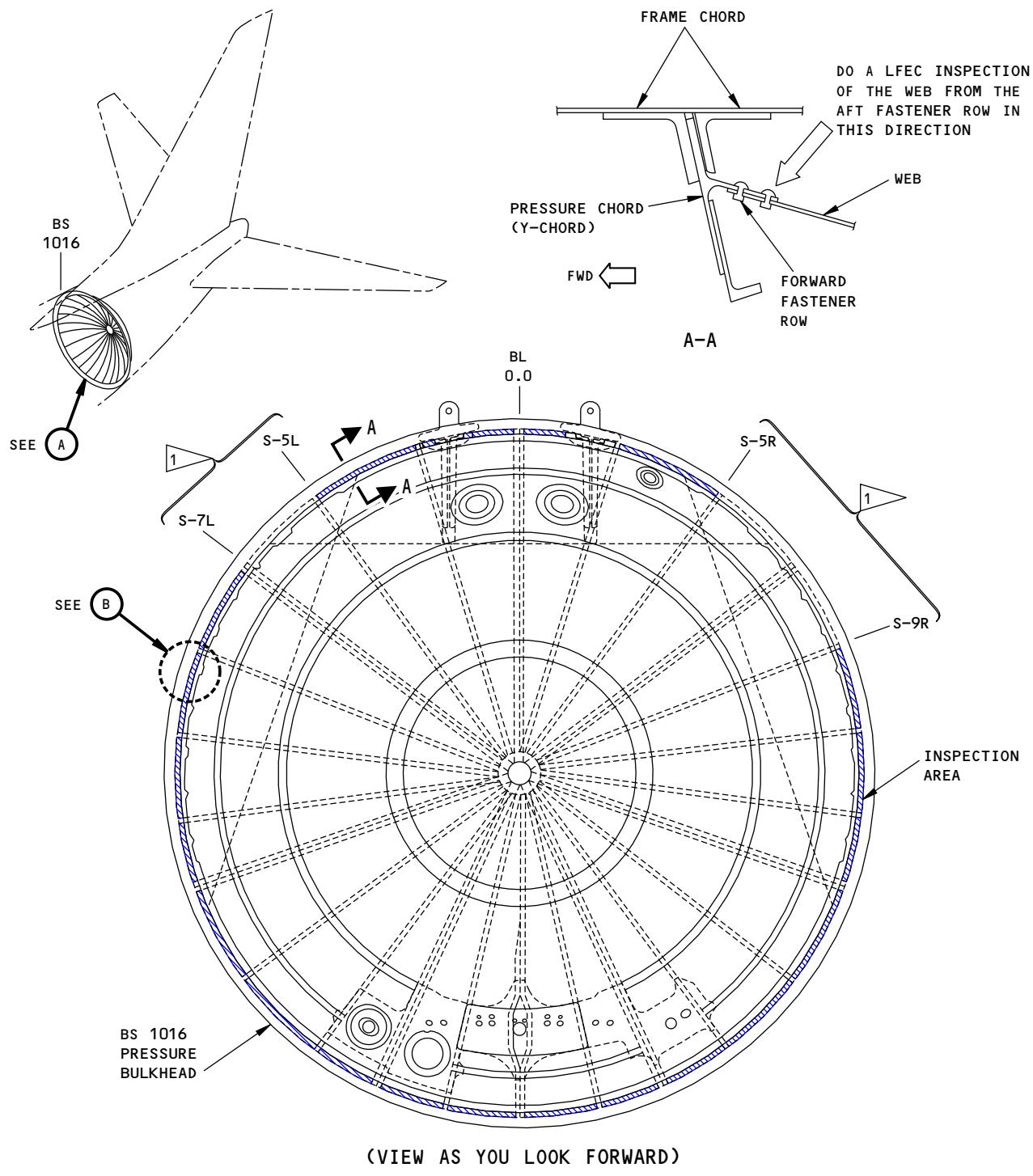
NOTE: It is not necessary to examine the fastener locations at the stiffener ties.

6. Inspection Results

- A. Signals that are 40% (or more) of full screen height (FSH) are indications of possible cracks.
- B. Compare the signals that occur during the inspection with the signals you get from the reference standard.
- C. To make sure a crack signal is from a crack, do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16, at the fastener locations that cause these crack signals to occur.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-40

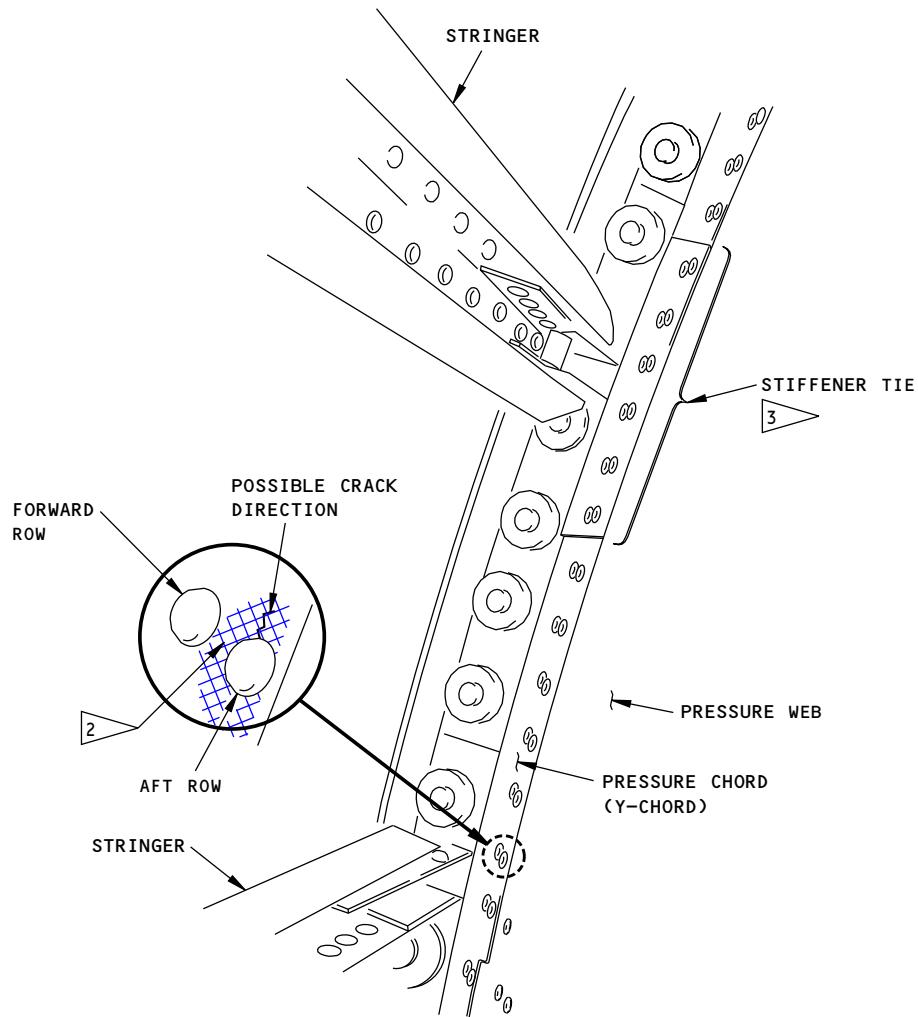
737
NON-DESTRUCTIVE TEST MANUAL


2435564 S0000564894_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
 ALL 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-40



VIEW AS YOU LOOK FORWARD FROM THE AFT SIDE OF THE BS 1016 PRESSURE BULKHEAD
(THE LEFT SIDE IS SHOWN; THE RIGHT SIDE IS ALMOST THE SAME)

B

NOTES:

XXXX INSPECTION AREA

- 2 ▶ MAKE A SCAN IN THIS AREA. IT IS NOT MANDATORY TO EXAMINE THE AREA BETWEEN THE AFT AND THE FORWARD FASTENERS IF THE PROBE DOES NOT FIT BETWEEN THE FASTENERS.
- 3 ▶ DO NOT EXAMINE THE FASTENER LOCATIONS WHERE THERE ARE STIFFENER TIES

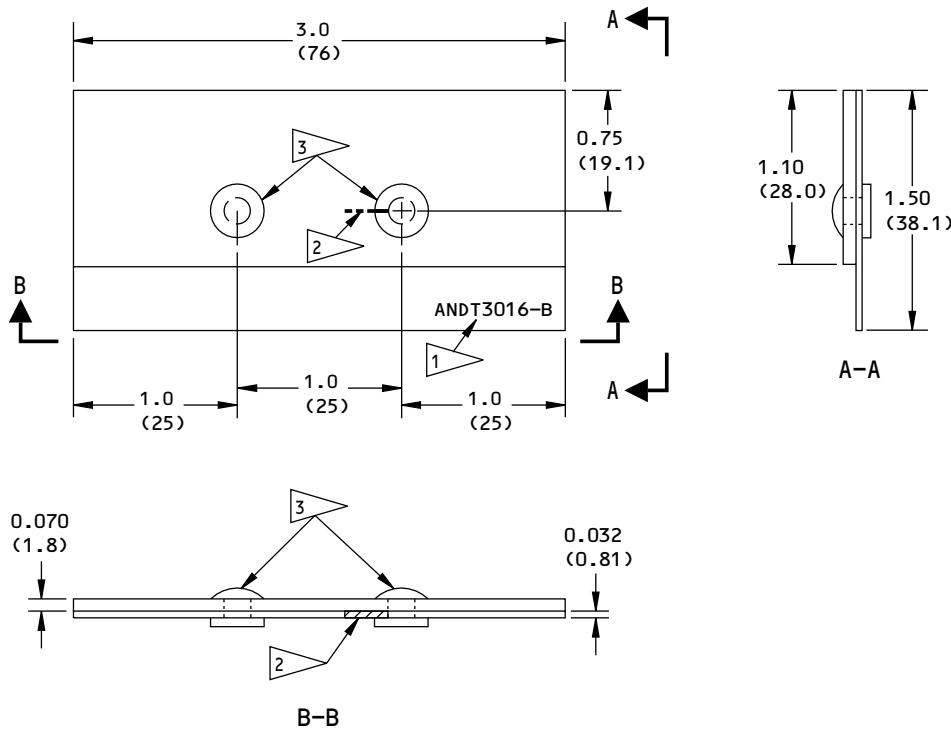
2435565 S0000564895_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-40

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- ALL DIMENSIONS ARE IN INCHES
(MILLIMETERS ARE IN PARENTHESES)
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

<u>INCHES</u>	<u>MILLIMETERS</u>
X.XXX = ± 0.005	X.XX = ± 0.1
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1.0
- MATERIAL: 2024-T3 OR T4 CLAD OR BARE ALUMINUM
- SURFACE ROUGHNESS: 125 Ra OR BETTER

1 ▶ ETCHE OR STEEL STAMP THE REFERENCE STANDARD NUMBER, ANDT3016-B, IN APPROXIMATELY THIS LOCATION. THE LETTER "A" IS PUT IN FRONT OF THE REFERENCE STANDARD NUMBER TO SHOW THAT IT HAS ALODINED RIVETS

2 ▶ EDM NOTCH:
 LENGTH: 0.200 (5.1)
 DEPTH: THROUGH THE THICKNESS
 WIDTH: 0.020 (0.51) MAXIMUM
 THE NOTCH MUST BE WITHIN ± 0.005 (0.10) OF THE CENTERLINE OF THE HOLE.

3 ▶ BACR15BB5D-4 ALUMINUM PROTRUDING HEAD RIVETS (MS20470D5 OPTIONAL). THESE RIVETS MUST HAVE A CONVERSION COATED (ALODINED) FINISH. TO MAKE SURE THE FINISH IS ALODINE, REFER TO PART 1, 51-06-01. INSTALL THE RIVETS AS SPECIFIED IN PART 1, 51-01-04.

2435566 S0000564896_V1

Reference Standard NDT3016-B
Figure 2

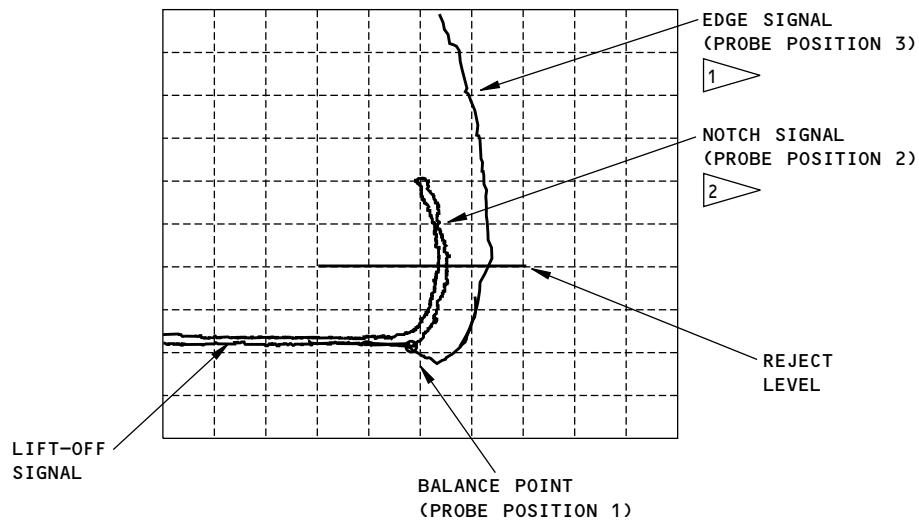
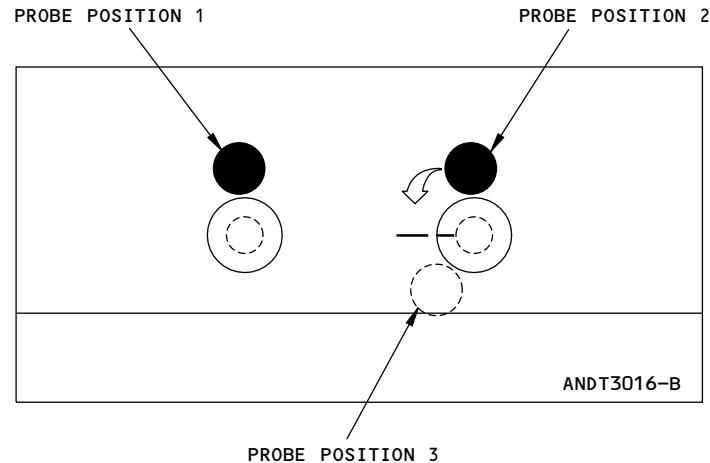
EFFECTIVITY
 ALL 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-40

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



1 EDGE EFFECT SIGNAL THAT OCCURS WHEN YOU MOVE THE PROBE FROM PROBE POSITION 2 TO PROBE POSITION 3

2 NOTCH SIGNAL THAT OCCURS WHEN YOU MOVE THE PROBE ABOVE THE NOTCH

2435567 S0000564897_V1

Instrument Calibration
Figure 3

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

PART 6 53-11-40

Page 6
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

INNER CHORDS FROM STRINGERS 17 TO 19 AT THE FORWARD AND AFT FRAMES OF THE FORWARD CARGO DOOR SURROUND (HFEC)

1. Purpose

- A. Use this procedure to help find surface cracks in the inner chords of the forward and aft frames at the forward cargo door surround. The aft edges of the inner chords are examined from stringer 17 to stringer 19. See Figure 1 for the inspection area.

NOTE: For some 737-600 airplanes, the forward and aft frames are at STA 400 and 452.4. The forward and aft frames for the other 737 airplanes are at STA 440 and 492.4.

- B. An angled pencil probe is used to examine the aft edge of the inner chords for cracks from stringer 17 down to the upper main sill and then from the bottom of the upper main sill to stringer 19 (see Figure 1). There is a small area immediately above the upper main sill where it is necessary to use a special flexible blade probe to examine the edge of the inner chord. See Figure 1, View E, for this area.
- C. 737 Maintenance Planning Document (MPD) Damage Tolerance Rating (DTR) (D626A001-DTR)
Check Form Reference:

- (1) Item: 53-30-08-5

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Paragraph 4.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
- Has an impedance plane display
 - Operates at a frequency range of 50 to 500 kHz.
- (2) The instruments that follow were used to help prepare this procedure
- Nortec 1000; Staveley (Olympus)
 - Phasec 3d; General Electric

C. Probes

- (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C, for data about probe selection.
- (2) It is necessary to use a shielded, right-angle probe that has a maximum width of 0.130 inch (3.30 mm) to do this inspection.
- (3) It is necessary to use a special flexible blade probe to examine the edge of the inner chord edge in the area that is at and immediately above the upper main sill. The maximum thickness of this probe is 0.070 inch (1.78 mm). The maximum width at the probe coil is 0.150 inch (3.80 mm). See Figure 1, View E, for this small inspection area.
- (4) The probes that follow were used to help prepare this procedure.
- MTF902-50B; NDT Engineering (Olympus). (This is the angled pencil probe. An equivalent probe can be used.)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-41

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- (b) AF-5059; Aerofab NDT (This is the flexible blade probe.)

D. Reference Standard

- (1) Use reference standard 126, or an equivalent, to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 126.

E. Special Tools

- (1) Use a mirror to help see the inspection area on the inner chord that is immediately above the web of the upper main sill. See Figure 1, View E, to see the mirror location.

3. Prepare for Inspection

- A. Identify the inspection areas shown in Figure 1.
- B. Remove sealant from the aft edges of the inner chords in the inspection area as shown in Figure 1. Lightly sand the rough surfaces and sharp edges of chipped paint to make the inspection surfaces smooth.
- C. Fully clean the inspection area.

4. Instrument Calibration

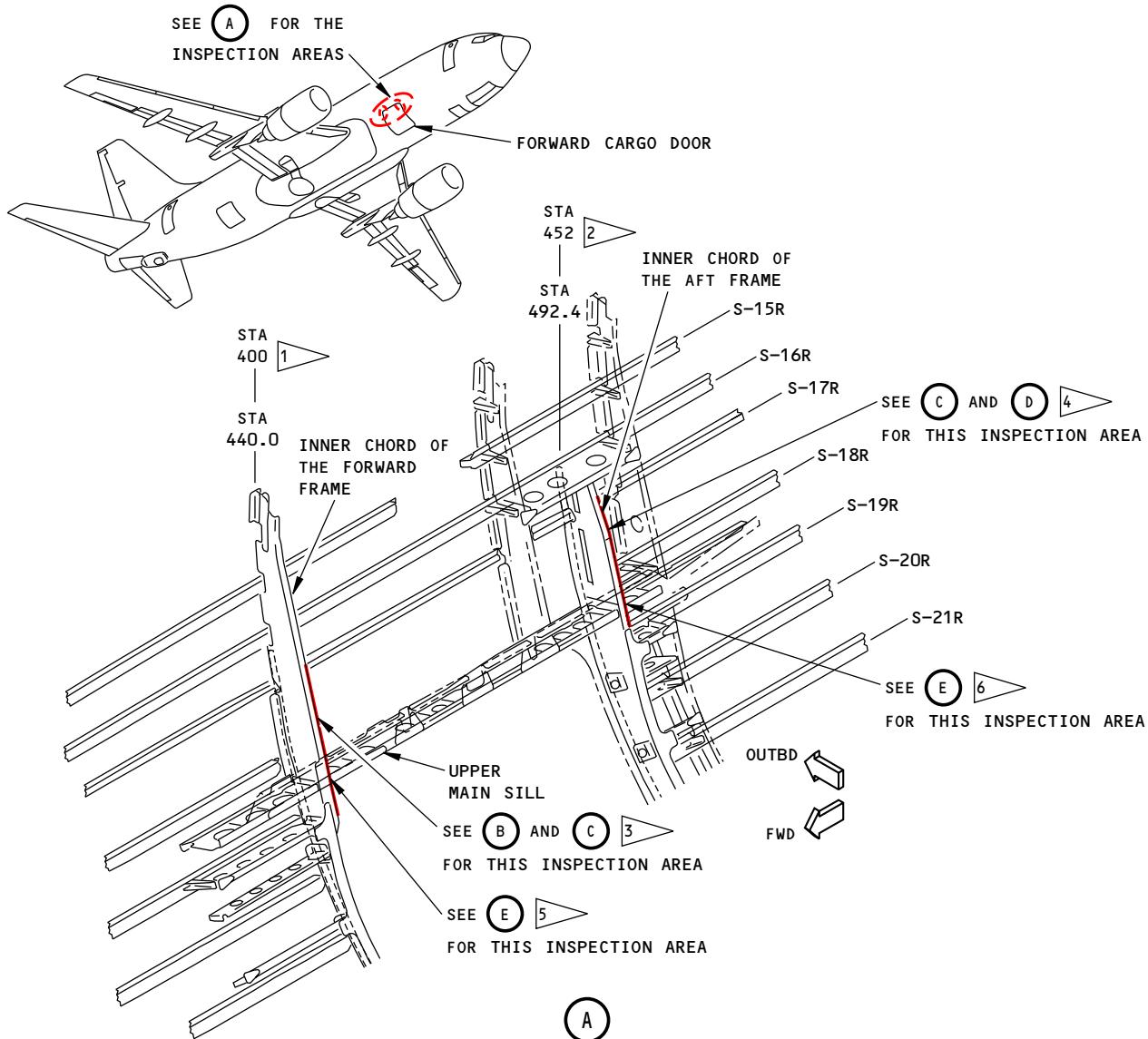
- A. Calibrate the equipment as specified in Part 6, 51-00-00, Procedure 23, paragraph 5. Use reference standard 126, or an equivalent, to help do the calibration. It will be necessary to do the calibration for each probe (the angled pencil probe and the blade probe).

5. Inspection Procedure

- A. Examine the aft edges of the inner chords at the forward and aft frames of the forward cargo door surround for surface cracks. Do the inspection as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow:
 - (1) Use an angled pencil probe for most of the inspection area where there is probe access above and below the main upper sill (from stringer 17 to 19). Do the probe scans in a vertical direction. See Figure 1 for the inspection area.
 - (2) Use a flexible blade probe to examine the edge of the inner chord in the area that is adjacent to the upper main sill as shown in Figure 1, View E. Do the probe scans in a vertical direction.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of indications that occur during the inspection.

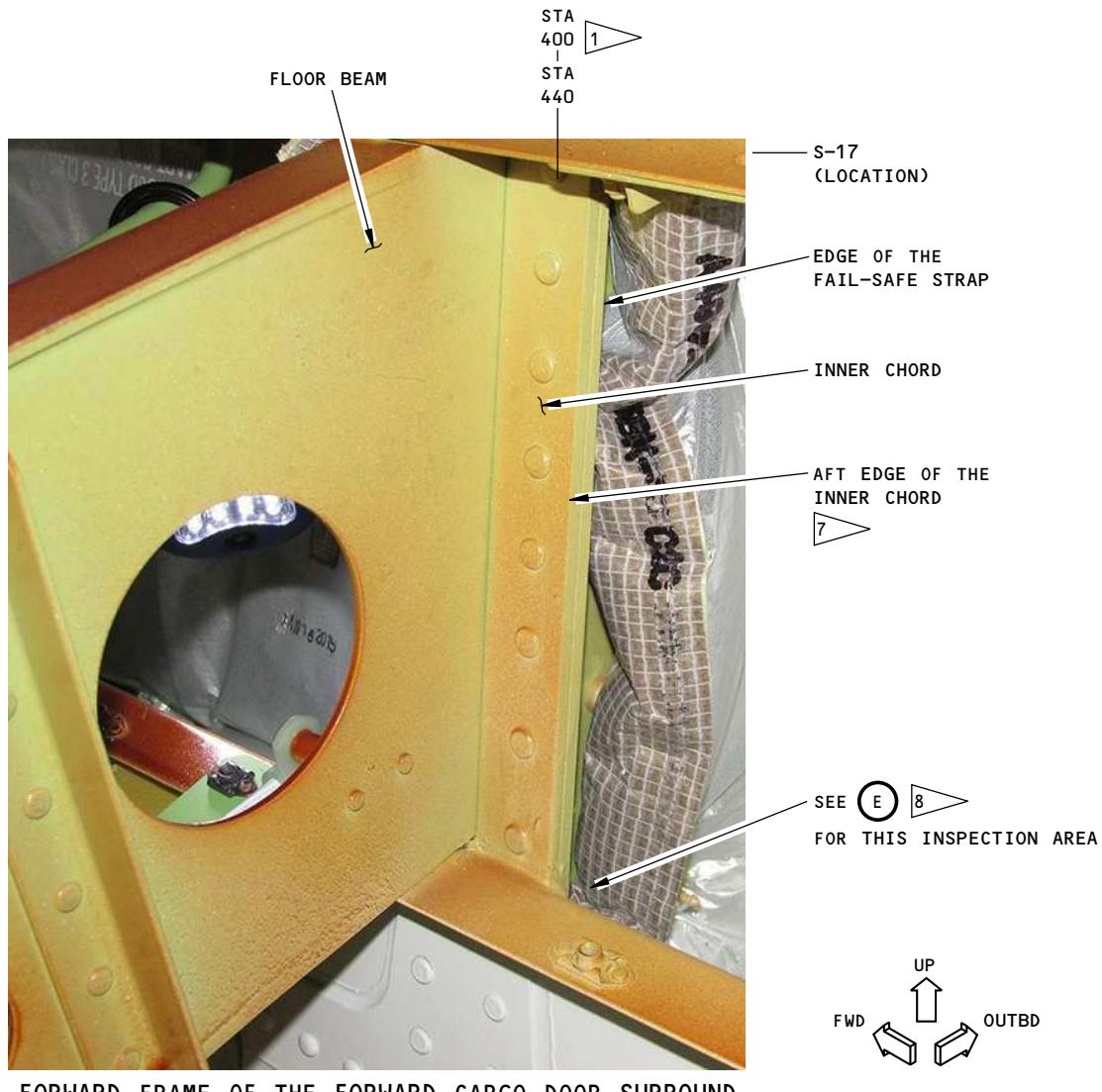
737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- 1 ▶ THE FORWARD FRAME OF THE FORWARD CARGO DOOR SURROUND IS AT STA 400 ON SOME 737-600 AIRPLANES.
- 2 ▶ THE AFT FRAME OF THE FORWARD CARGO DOOR SURROUND IS AT STA 452 ON SOME 737-600 AIRPLANES.
- 3 ▶ DO A VERTICAL PROBE SCAN ALONG THE AFT EDGE OF THE INNER CHORD AT THE FORWARD FRAME FROM S-17 TO S-19. SEE VIEWS (B) AND (C) FOR THIS INSPECTION AREA.
- 4 ▶ DO A VERTICAL PROBE SCAN ALONG THE AFT EDGE OF THE INNER CHORD AT THE AFT FRAME FROM S-17 TO S-19. SEE VIEWS (C) AND (D) FOR THIS INSPECTION AREA.
- 5 ▶ USE THE FLEXIBLE BLADE PROBE TO DO A SCAN ALONG THE AFT EDGE OF THE FORWARD FRAME, IMMEDIATELY ADJACENT TO THE UPPER MAIN SILL. SEE VIEW (E) FOR THIS SMALL INSPECTION AREA.
- 6 ▶ USE THE FLEXIBLE BLADE PROBE TO DO A SCAN ALONG THE AFT EDGE OF THE AFT FRAME, IMMEDIATELY ADJACENT TO THE UPPER MAIN SILL. SEE VIEW (E) FOR THIS SMALL INSPECTION AREA.

2435682 S0000564887_V1

Inspection Areas
Figure 1 (Sheet 1 of 5)
EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-41

737
NON-DESTRUCTIVE TEST MANUAL

FORWARD FRAME OF THE FORWARD CARGO DOOR SURROUND

(B)

NOTES

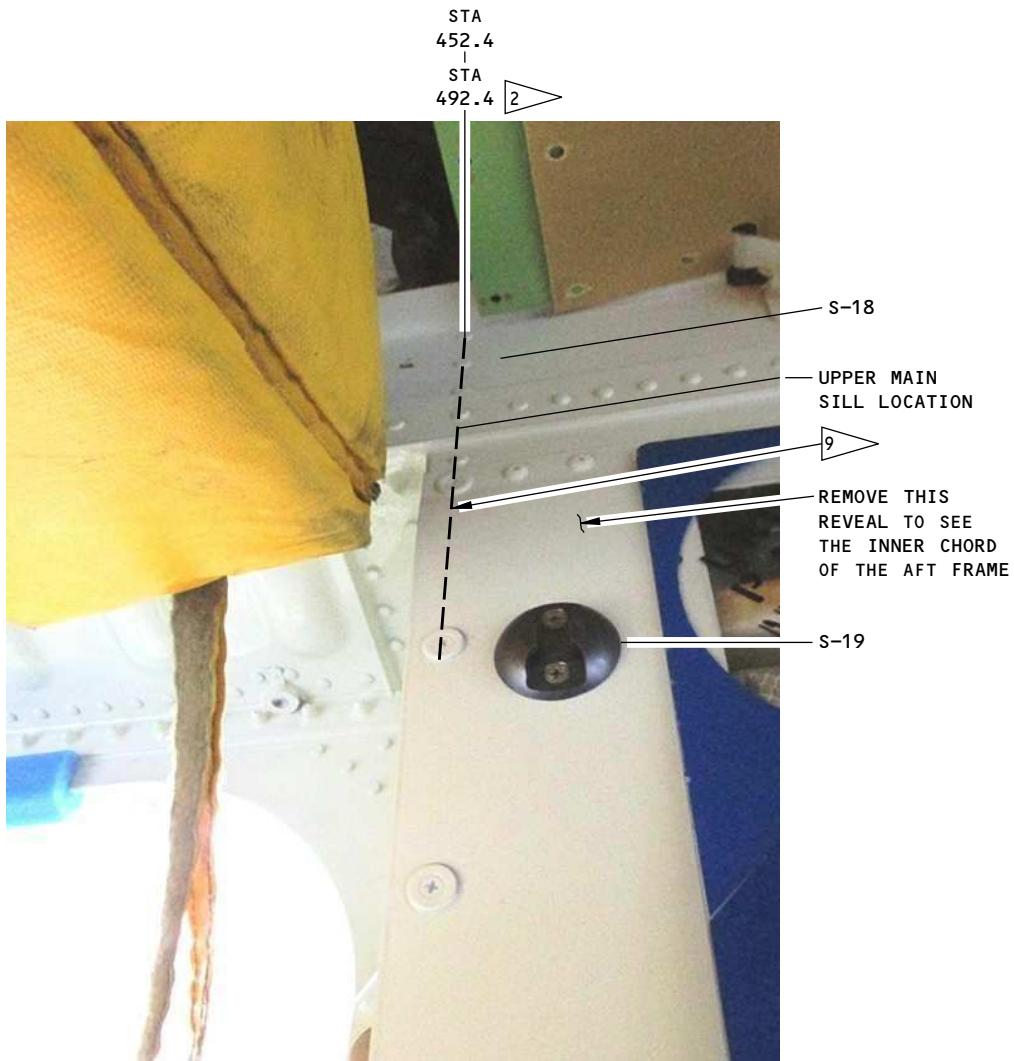
- THE FLOOR BOARD HAS BEEN REMOVED. THIS VIEW LOOKS DOWN AND OUTBOARD.
- 7 USE AN ANGLED PENCIL PROBE TO DO A VERTICAL PROBE SCAN ALONG ON THE AFT EDGE OF THE INNER CHORD FROM S-17 TO THE WEB OF THE UPPER MAIN SILL.
- 8 VIEW (E) SHOWS THE INNER CHORD EDGE WHERE IT IS NECESSARY TO DO A PROBE SCAN WITH THE FLEXIBLE BLADE PROBE. THE SCAN AREA IS THE UPPER MAIN SILL WHERE THERE IS A SMALL OPENING IN THE WEB ADJACENT TO THE INNER CHORD EDGE.

2435694 S0000564889_V1

Inspection Areas
Figure 1 (Sheet 2 of 5)EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-41

D6-37239

737
NON-DESTRUCTIVE TEST MANUALAFT FRAME OF THE FORWARD CARGO DOOR SURROUND
(VIEW AS YOU LOOK OUTBOARD)

(C)

NOTES

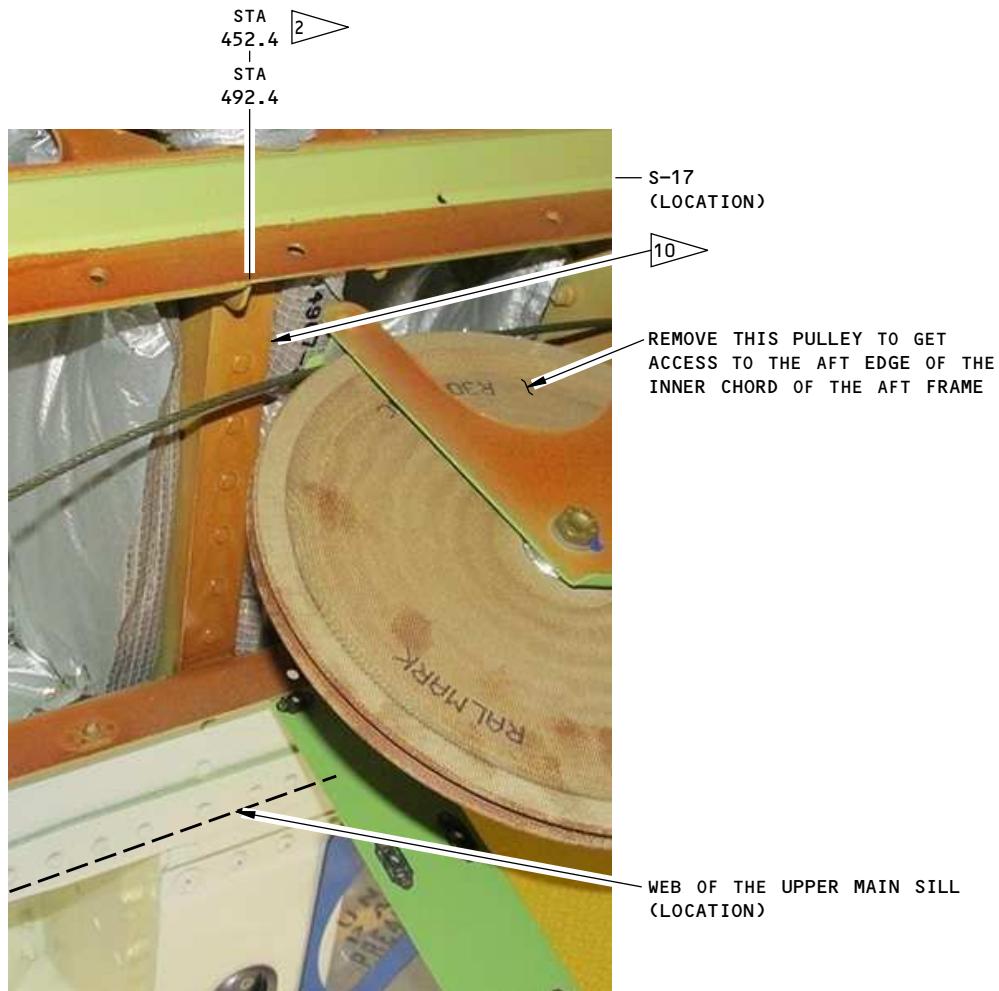
- REMOVE THE REVEAL TO SEE THE INNER CHORD OF THE AFT FRAME AT STA 492.4
 - REMOVE THE REVEAL FROM THE FORWARD FRAME OF THE FORWARD CARGO DOOR (NOT SHOWN ABOVE) AND DO A VERTICAL PROBE SCAN ALONG THE AFT EDGE OF THE INNER CHORD FROM THE UPPER MAIN SILL TO STRINGER 19.
- 9 ▶ THE DASHED LINE SHOWS THE LOCATION OF THE INNER CHORD OF THE AFT FRAME. REMOVE THE REVEAL TO GET ACCESS TO THE INNER CHORD AND DO A VERTICAL PROBE SCAN ALONG THE AFT EDGE OF THE INNER CHORD FROM THE UPPER MAIN SILL TO STRINGER 19.

2435709 S0000564890_V1

Inspection Areas
Figure 1 (Sheet 3 of 5)EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-41

D6-37239



AFT FRAME OF THE FORWARD CARGO DOOR SURROUND WITH
THE FLOOR BOARD REMOVED
(VIEW AS YOU LOOK DOWN AND OUTBOARD)

(D)

NOTES

- SEE VIEW (E) FOR THE INSPECTION AREA ON THE INNER CHORD ABOVE THE WEB OF THE UPPER MAIN SILL THAT CAN BE SEEN WITH A MIRROR. USE A FLEXIBLE BLADE PROBE TO EXAMINE THE INNER CHORD ABOVE THE WEB OF THE UPPER MAIN SILL.

(10) REMOVE THE PULLEY AND USE AN ANGLED PENCIL PROBE TO DO A VERTICAL PROBE SCAN ALONG THE AFT EDGE OF THE INNER CHORD OF THE AFT FRAME. DO THE PROBE SCAN IN A VERTICAL DIRECTION FROM STINGER 17 TO THE WEB OF THE UPPER MAIN SILL.

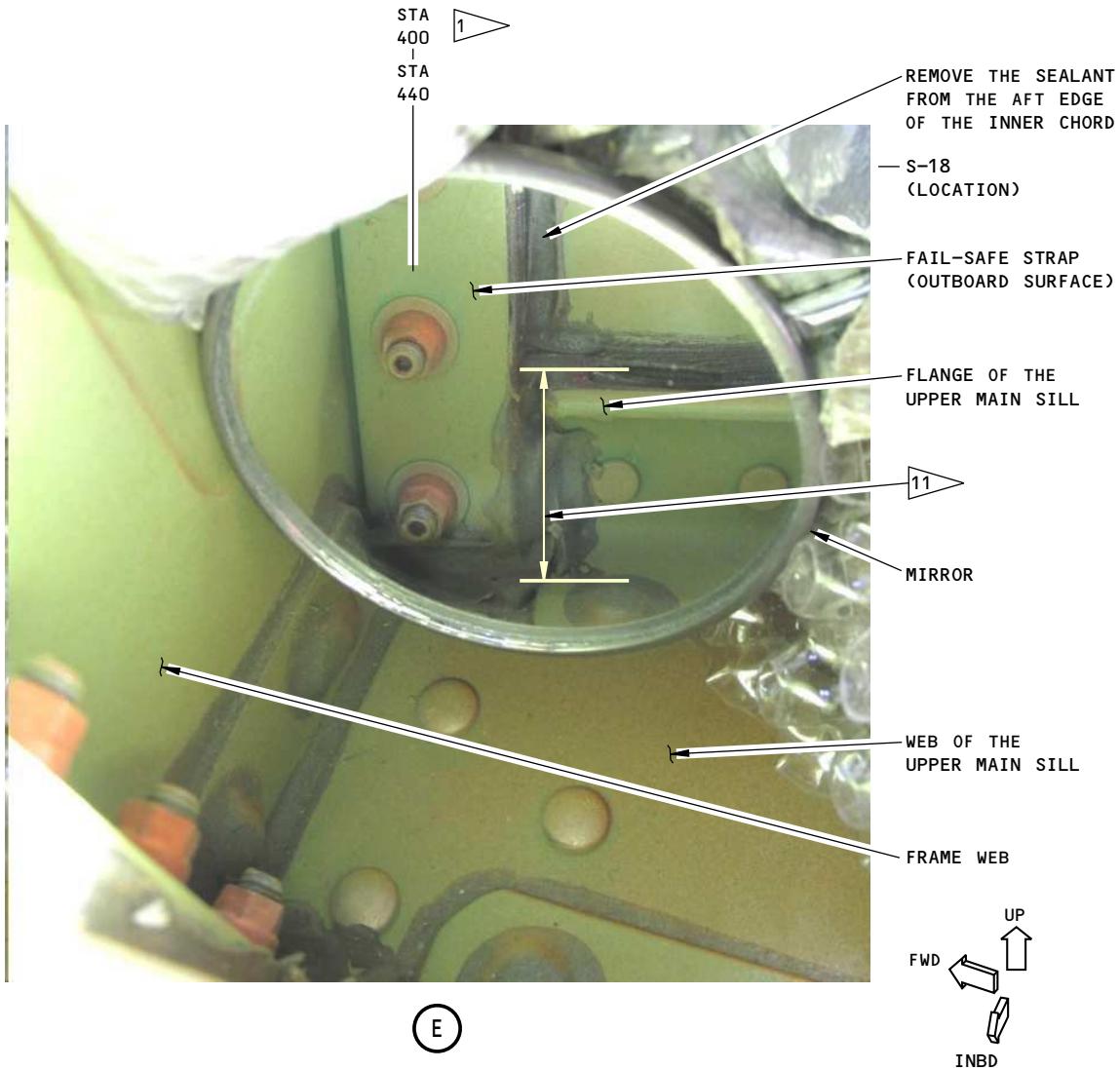
2435768 S0000564891_V1

Inspection Areas
Figure 1 (Sheet 4 of 5)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-41

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- THIS MIRROR VIEW SHOWS THE INSPECTION AREA ON THE AFT EDGE OF THE INNER CHORD ABOVE THE UPPER MAIN SILL OF THE FORWARD CARGO DOOR SURROUND. THIS VIEW SHOWS THE INNER CHORD OF THE FORWARD FRAME AT STA 400 OR 440. THE INSPECTION AREA ON THE AFT FRAME AT STA 452 OR 492 IS EQUIVALENT

- USE AN ANGLED PENCIL PROBE AND DO A VERTICAL SCAN OF THE INNER CHORD EDGE FROM STRINGER 17 (NOT SHOWN ABOVE) DOWN TO THE FLANGE OF THE UPPER MAIN SILL (SHOWN ABOVE).

- 11 ▶ USE A FLEXIBLE BLADE PROBE TO EXAMINE THE INNER CHORD FOR CRACKS DOWN TO THE WEB OF THE UPPER MAIN SILL.

2435783 S0000564892_V1

Inspection Areas
Figure 1 (Sheet 5 of 5)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-41



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

AFT PRESSURE BULKHEAD - WEB INSPECTION AT THE PRESSURE CHORD SPLICE AND DOUBLER BETWEEN S-1 AND S-3 AND AT THE CHORD SPLICE BETWEEN S-15 AND S-18 (LFEC)

1. Purpose

- A. Use this low frequency eddy current (LFEC) procedure to examine the web of the aft pressure bulkhead for subsurface cracks. The web is examined for cracks that can start at the fastener holes in the areas that follow:
 - (1) For 737NG airplane line numbers 1 thru 1056 (but not the 737-800FPB (Flat Pressure Bulkhead) and the 737-900ER airplanes), examine the web at the pressure chord splice between S-1 and S-3. See Figure 1, View B, for this inspection area.
 - (2) For 737NG airplane line numbers 1056 and higher (but not the 737-800FPB and the 737-900ER airplanes), examine the web at the doubler of the pressure chord splice between S-1 and S-3. See Figure 1, View C, for this inspection area
 - (3) For all 737NG airplane line numbers (but not the 737-800FPB and the 737-900ER airplanes), examine the web at the pressure chord splice between S-15 and S-18. See Figure 1 for this inspection area.
- B. This procedure uses an impedance plane display instrument.
- C. The web is aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-80-01-6
 - (2) Item: 53-80-01-13

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that has an impedance plane display.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) 500D; Olympus NDT
 - (b) Phasec 2D/3D; GE Inspection Technologies
 - (c) Nortec 600; Olympus NDT
- C. Probes
 - (1) Use a spot probe with a minimum diameter of 0.20 inch (6.35 mm) and a maximum diameter of 0.30 inch (7.62 mm) that can operate between 1 and 5 kHz.
 - (2) The probes that follow were used to help prepare this procedure.
 - (a) SDP.3-1K; Techna NDT
 - (b) NEC-1095; NDT Engineering

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-42

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

- (c) SPC-299/REFL; E/C NDT
- (d) LPQ905-50B/TF/1-50K; NDT Engineering

D. Reference Standard

- (1) Make reference standard NDT3244. See Figure 2 for data about reference standard NDT3244.

3. Prepare for the Inspection

- A. Identify the airplane line number.
- B. Get access to the forward side of the aft pressure bulkhead.
- C. Identify the inspection areas shown in Figure 1.
- D. Identify stiffeners 1, 3, 15 and 18. See Figure 1.
- E. Remove sealant from the surfaces of the web that the probe will touch during the inspection. These surfaces are the areas around the fasteners.
- F. Clean the inspection area.

4. Instrument Calibration

- A. Calibrate the instrument to examine the different fastener groups in the inspection areas as follows:
 - (1) Set the instrument frequency in the range specified in Table 1 for the fastener group to be examined. See Figure 1 for the fastener group locations.

Table 1: Calibration Frequencies

Fastener Group (see Figure 1)	Calibration Frequency
A	5 to 7 kHz
B	1 to 3 kHz
C	2 to 4 kHz
D	6 to 9 kHz

- (2) Put the spot probe on reference standard NDT3244 at probe position 1 for the fastener group to be examined. See Figure 3.
- (3) Balance the instrument.
- (4) Adjust the vertical to horizontal gain to put it between 2:1 and 4:1.
- (5) Adjust the lift-off to make the lift-off signal move horizontally from right to left as shown in Figure 3.
- (6) Set the balance point in the lower center of the instrument screen display as shown in Figure 3.
- (7) Move the probe from probe position 1 to probe position 2 to make a scan around the fastener. See Figure 3.
- (8) Adjust the instrument gain to put the signal from the notch at 60% of FSH.

5. Inspection Procedure

- A. Examine the web of the aft pressure bulkhead for subsurface cracks as specified in Part 6, 51-00-26, paragraph 5, and the steps that follow:
 - (1) For 737NG airplane line numbers 1 thru 1056 (but not the 737-800FPB and the 737-900ER airplanes):

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-42

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015



737 NON-DESTRUCTIVE TEST MANUAL

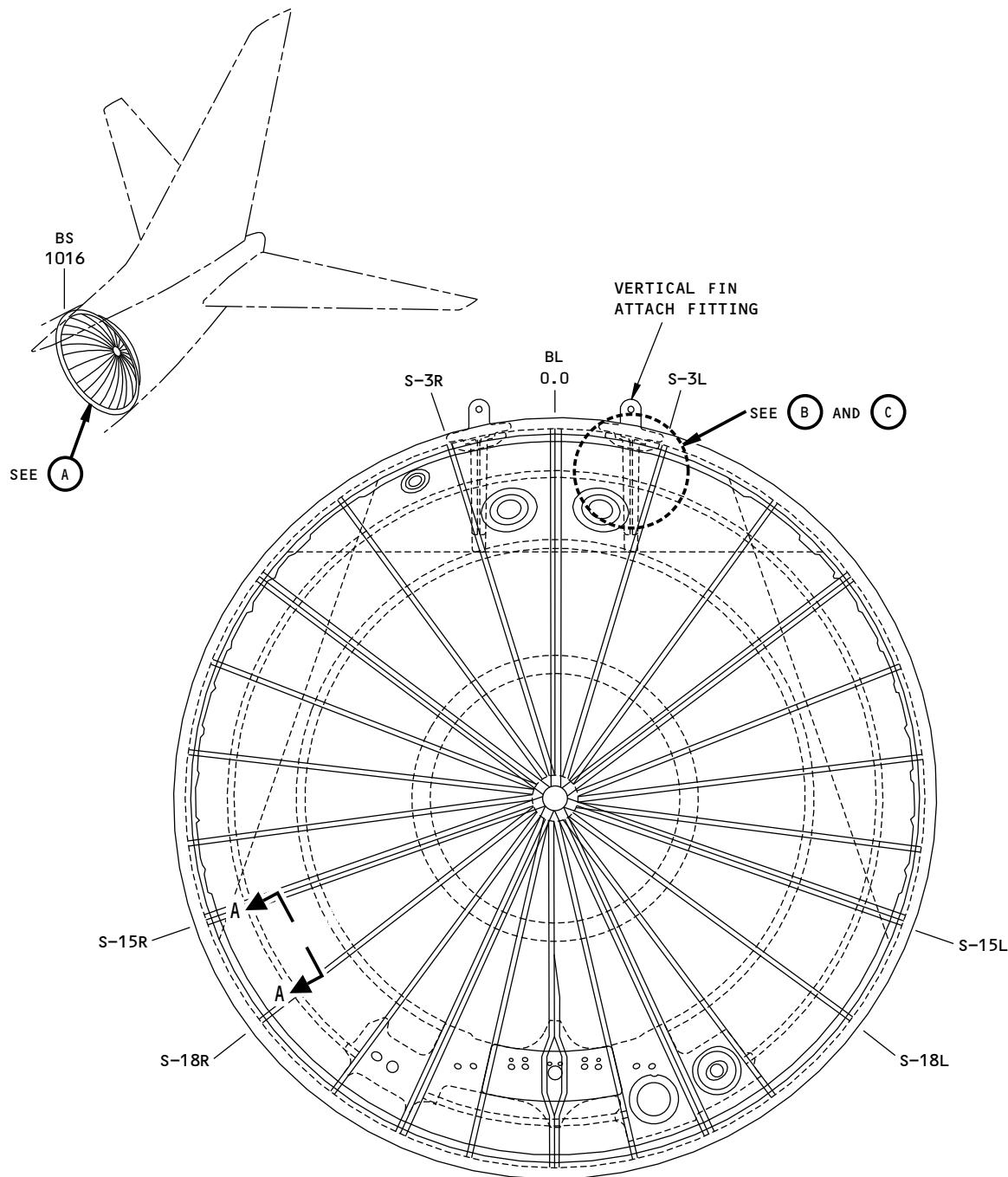
- (a) Calibrate the instrument as specified in Paragraph 4. to examine the web for cracks in the Group A inspection areas shown in Figure 1.
- (b) Examine the web at the doubler between S-1 and S-3. See Figure 1, View B, flagnote 1.
 - 1) Move the probe to make scans in the inspection area around and between the fasteners as much as possible.
- (c) Calibrate the instrument as specified in Paragraph 4. to examine the web for cracks in the Group C inspection areas shown in Figure 1.
- (d) Examine the web at the pressure chord splice between S-15 and S-18. See Figure 1, Section View B-B.
 - 1) Move the probe to make scans in the inspection area around and between the fasteners as much as possible.
- (2) For 737NG airplane line numbers 1057 and higher (but not the 737-800FPB and the 737-900ER airplanes):
 - (a) Calibrate the instrument as specified in Paragraph 4. to examine the web for cracks in the Group B inspection areas shown in Figure 1.
 - (b) Examine the web at the doubler between S-2 and S-3 that is shown in Figure 1, View C, flagnote 2.
 - 1) Move the probe to make scans in the inspection area around and between the fasteners as much as possible.
 - (c) Calibrate the instrument as specified in Paragraph 4. to examine the web for cracks in the Group C inspection areas shown in Figure 1.
 - (d) Examine the web at the pressure chord splice between S-15 and S-18 as shown in Figure 1, View C and Section View A-A.
 - 1) Move the probe to make scans in the inspection area around and between the fasteners as much as possible.
 - (e) Calibrate the instrument as specified in Paragraph 4. to examine the web for cracks in the Group D inspection areas shown in Figure 1.
 - (f) Examine the web at the doubler between S-2 and S-3 that is shown in Figure 1, View C, flagnote 2.
 - 1) Move the probe to make scans in the inspection area around and between the fasteners as much as possible.

6. Inspection Results

- A. Refer to Part 6, 51-00-26, paragraph 6, for instructions to help make an analysis of the indications that occur during the inspection.
- B. Compare the signals that you get during the inspection with the signals that you get from the reference standard.
- C. Compare a crack type signal that you get during the inspection with the signal that you get from the same fastener location on the opposite side of the airplane.
- D. To make sure a crack signal is from a crack you can remove the fastener and do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-42

AFT PRESSURE BULKHEAD
(VIEW AS YOU LOOK AFT)

A

2435755 S0000565131_V1

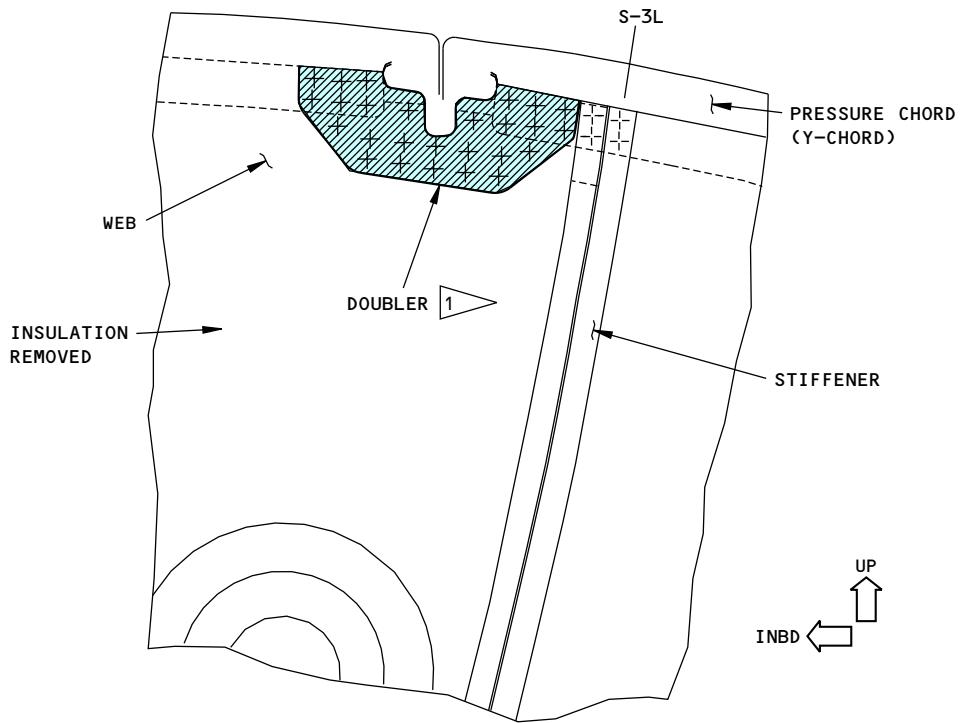
Inspection Area
Figure 1 (Sheet 1 of 4)

EFFECTIVITY
 ALL; 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-42

D6-37239

Page 4
 Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

(S-3L IS SHOWN; S-3R IS ALMOST THE SAME)
 INSPECTION AREA FOR 737NG AIRPLANE LINE NUMBERS 1 THRU 1056
 (BUT NOT FOR THE 737-800FPB OR 737-900ER AIRPLANES)
 (VIEW AS YOU LOOK AFT)

(B)

NOTES

GROUP A

REMOVE THE SEALANT AROUND THE FASTENERS THAT THE PROBE WILL TOUCH.
 IF THE PROBE DOES NOT FIT BETWEEN THE FASTENERS, MAKE A SCAN AROUND
 THE FASTENERS AS MUCH AS POSSIBLE.

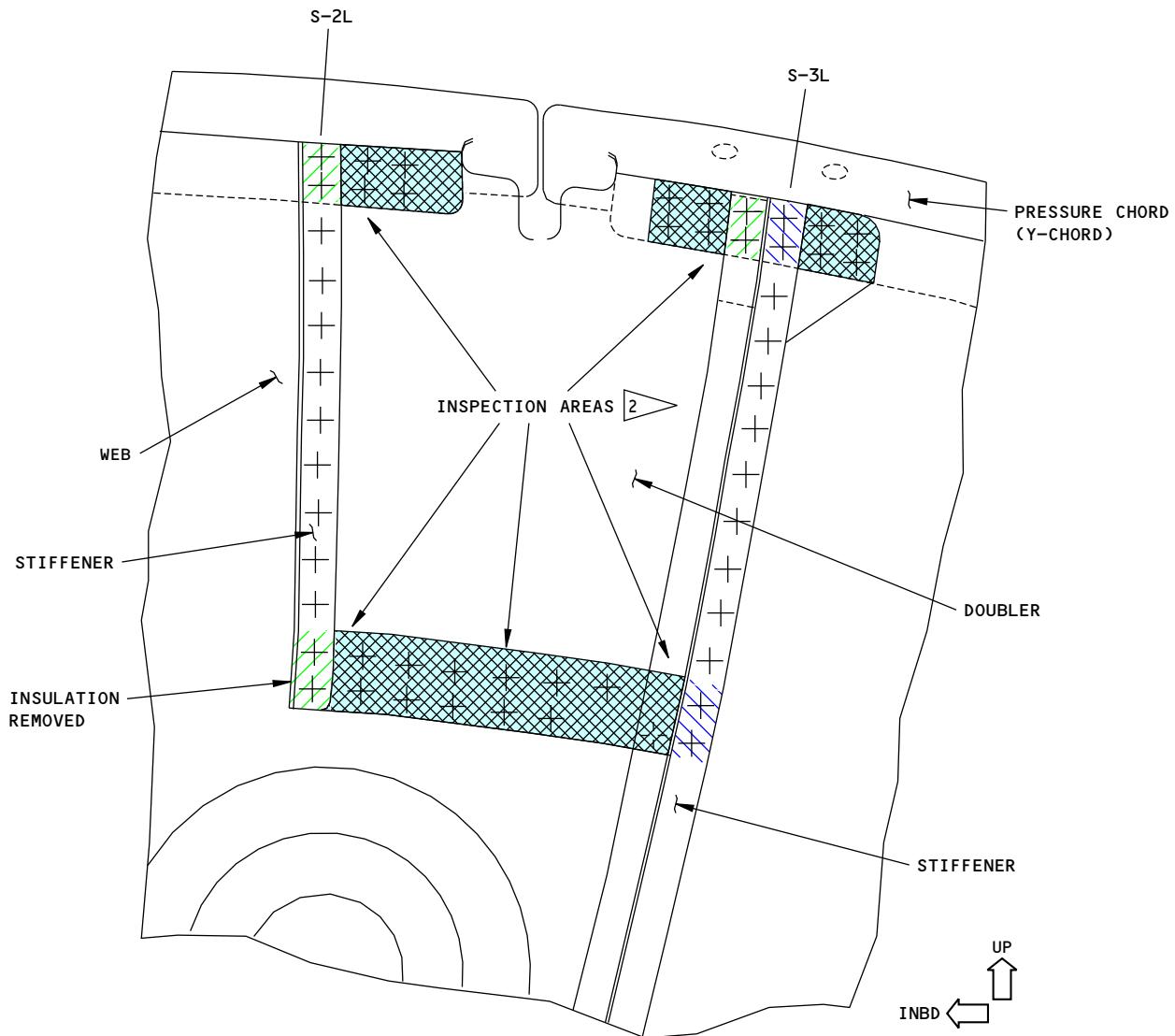
2435769 S0000565132_V1

Inspection Area
Figure 1 (Sheet 2 of 4)

EFFECTIVITY
 ALL; 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-42

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL


(THE DOUBLER AT S-2L AND S-3L IS SHOWN;
 THE DOUBLER AT S-2R AND S-3R IS ALMOST THE SAME)
 INSPECTION AREA FOR ALL 737NG LINE NUMBERS 1057 AND HIGHER
 (BUT NOT FOR THE 737-800FPB AND -900ER AIRPLANES)
 (VIEW AS YOU LOOK AFT)

NOTES

C

-  GROUP B
-  GROUP C
-  GROUP D

-  EXAMINE THE WEB FOR CRACKS AT THE FASTENERS IN THIS AREA OF THE DOUBLER. REMOVE THE SEALANT FROM THE WEB SURFACES AROUND THE FASTENERS THAT THE PROBE WILL TOUCH. IF THE PROBE DOES NOT FIT BETWEEN THE FASTENERS, MAKE A SCAN AROUND THE FASTENERS AS MUCH AS POSSIBLE.

2435770S0000565133_V1

Inspection Area
Figure 1 (Sheet 3 of 4)

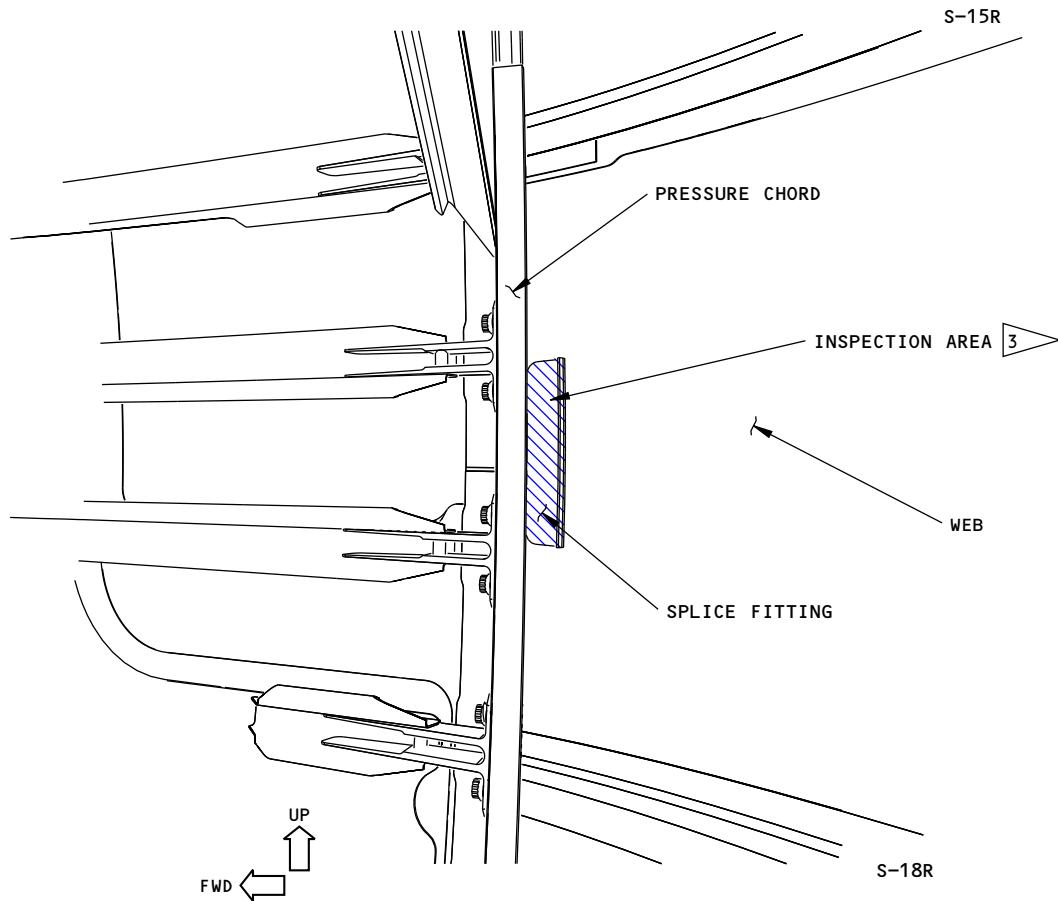
EFFECTIVITY
 ALL; 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-42

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL



(THE SPLICE FITTING BETWEEN S-15R AND S-18R IS SHOWN;
THE SPLICE FITTING BETWEEN S-15L AND S-15R IS THE SAME)
INSPECTION AREA FOR ALL 737NG LINE NUMBERS (BUT NOT FOR THE
737-800FPB AND -900ER AIRPLANES)

A-A

NOTES

GROUP C

MAKE A SCAN BETWEEN THE FASTENERS ON THE SPLICE FITTING

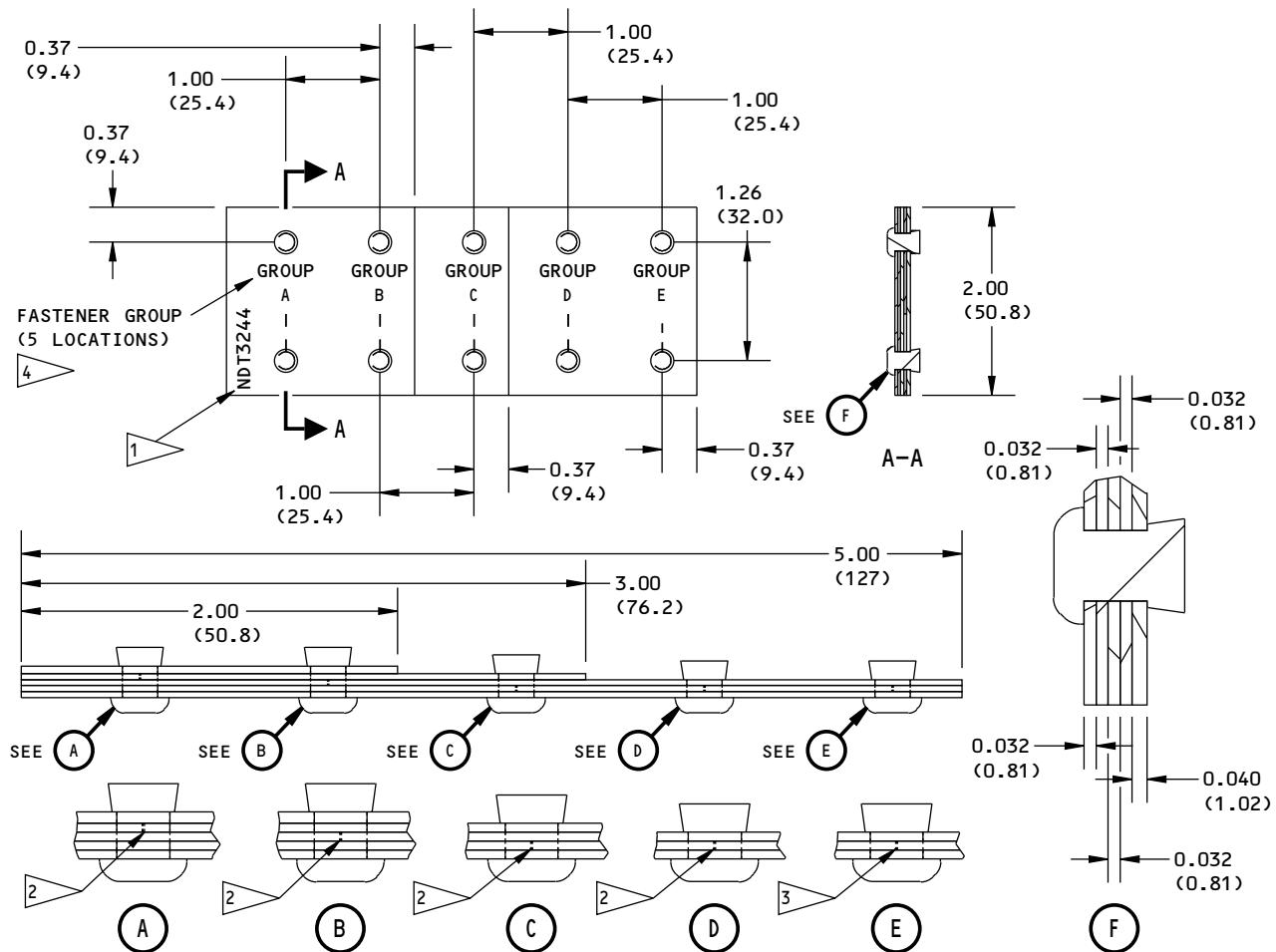
2435771 S0000565134_V1

Inspection Area
Figure 1 (Sheet 4 of 4)

EFFECTIVITY
ALL; 737-600 THRU -900 AIRPLANES EXCEPT
737-800FPB AND 737-900ER

PART 6 53-11-42

D6-37239

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS ARE IN PARENTHESES)
- TOLERANCE (UNLESS SPECIFIED DIFFERENTLY):

<u>INCHES</u>	<u>MILLIMETERS</u>
X.XXX = ± 0.005	X.XX = ± 0.10
X.XX = ± 0.025	X.X = ± 0.5
X.X = ± 0.050	X = ± 1
- MATERIAL: 2024-T42 (OR EQUIVALENT) AIRCRAFT GRADE ALUMINUM
- FASTENERS: BACR15FT6D; ALTERNATIVE FASTENERS CAN BE USED IF THEY HAVE THE SAME CONFIGURATION AS THE FASTENER SPECIFIED
- SURFACE ROUGHNESS: 63 Ra OR BETTER

1 ETCH OR STAMP THE REFERENCE STANDARD NUMBER, NDT3244, AT APPROXIMATELY THIS LOCATION

2 EDM THROUGH NOTCH: 0.400 (5.08) LONG x 0.007 (0.18) WIDE AT 4 LOCATIONS

3 EDM THROUGH NOTCH: 0.300 (7.62) LONG x 0.007 (0.18) WIDE

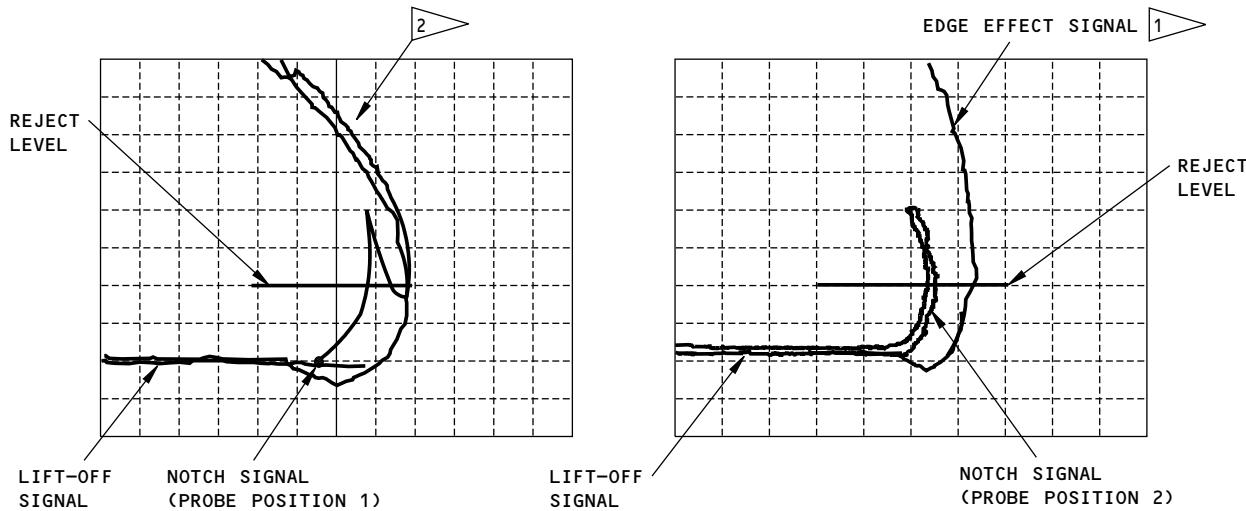
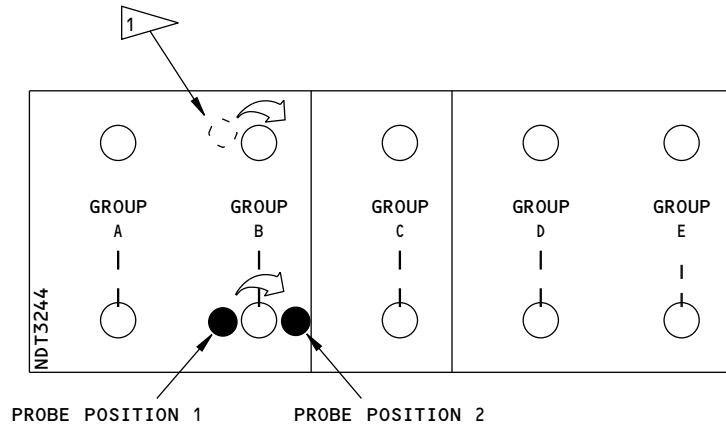
4 ETCH OR SCRIBE GROUP A THRU E AS SHOWN

2435776 S0000565135_V1

Reference Standard NDT3244
Figure 2

EFFECTIVITY
 ALL; 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-42

737
NON-DESTRUCTIVE TEST MANUAL


1) EDGE EFFECT SIGNAL AS YOU MOVE THE PROBE AROUND THE FASTENER NEAR THE EDGE

2) EDGE EFFECT SIGNAL AS YOU MOVE THE PROBE ACROSS THE NOTCH NEAR THE EDGE

2435780 S0000565136_V1

Instrument Calibration
Figure 3

EFFECTIVITY
 ALL 737-600 THRU -900 AIRPLANES EXCEPT
 737-800FPB AND 737-900ER

PART 6 53-11-42

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

MID PRESSURE PANEL BEHIND THE BS 1030 FRAME IN THE APU INLET ENCLOSURE (HFEC)

1. Purpose

- A. Use this procedure to help find surface cracks in the mid pressure panel in the APU inlet enclosure. The area of the mid pressure panel that is examined is behind the BS 1030 frame. See Figure 1 for the inspection area.
- B. 737 Damage Tolerance Rating (D626A001-DTR):
 - (1) Item: 53-80-17-5

2. Equipment

- A. General
 - (1) All eddy current instruments that have an impedance plane display are permitted for use if they can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency range of 50 to 500 kHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Nortec 1000; Olympus NDT
- C. Probe
 - (1) Use an angled blade probe with a maximum blade thickness of 0.05 inch (1.3 mm). Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C, for data about probe selection.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) SPC-105BL; EC/NDT LLC
- D. Reference Standards
 - (1) Use reference standard NDT1048, or an equivalent, to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.D, for data about reference standard NDT1048.

3. Prepare for the Inspection

- A. Get access to the inspection area shown in Figure 1.
- B. Remove loose paint, dirt and sealant from the surface of the inspection areas as necessary.

4. Instrument Calibration

- A. Calibrate the equipment as specified in Part 6, 51-00-00, Procedure 23, paragraph 5, and as follows:
 - (1) Use reference standard 1048A, or an equivalent. Calibrate on the aluminum rivet.

5. Inspection Procedure

- A. Examine the mid pressure panel for cracks behind the BS 1030 frame in the APU enclosure.
 - (1) Identify the inspection area shown in Figure 1.

EFFECTIVITY
ALL; 737-900ER AIRPLANES

PART 6 53-11-43



737
NON-DESTRUCTIVE TEST MANUAL

- (2) Calibrate the instrument as specified in Paragraph 4.
- (3) Make a scan between the 17 fasteners behind the BS 1030 frame to examine the mid pressure panel for cracks as shown in Figure 1 and as specified in Part 6, 51-00-00, Procedure 23, paragraph 6. Move the probe in the forward and aft directions to look for cracks between the fasteners.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of signals that occur during the inspection.

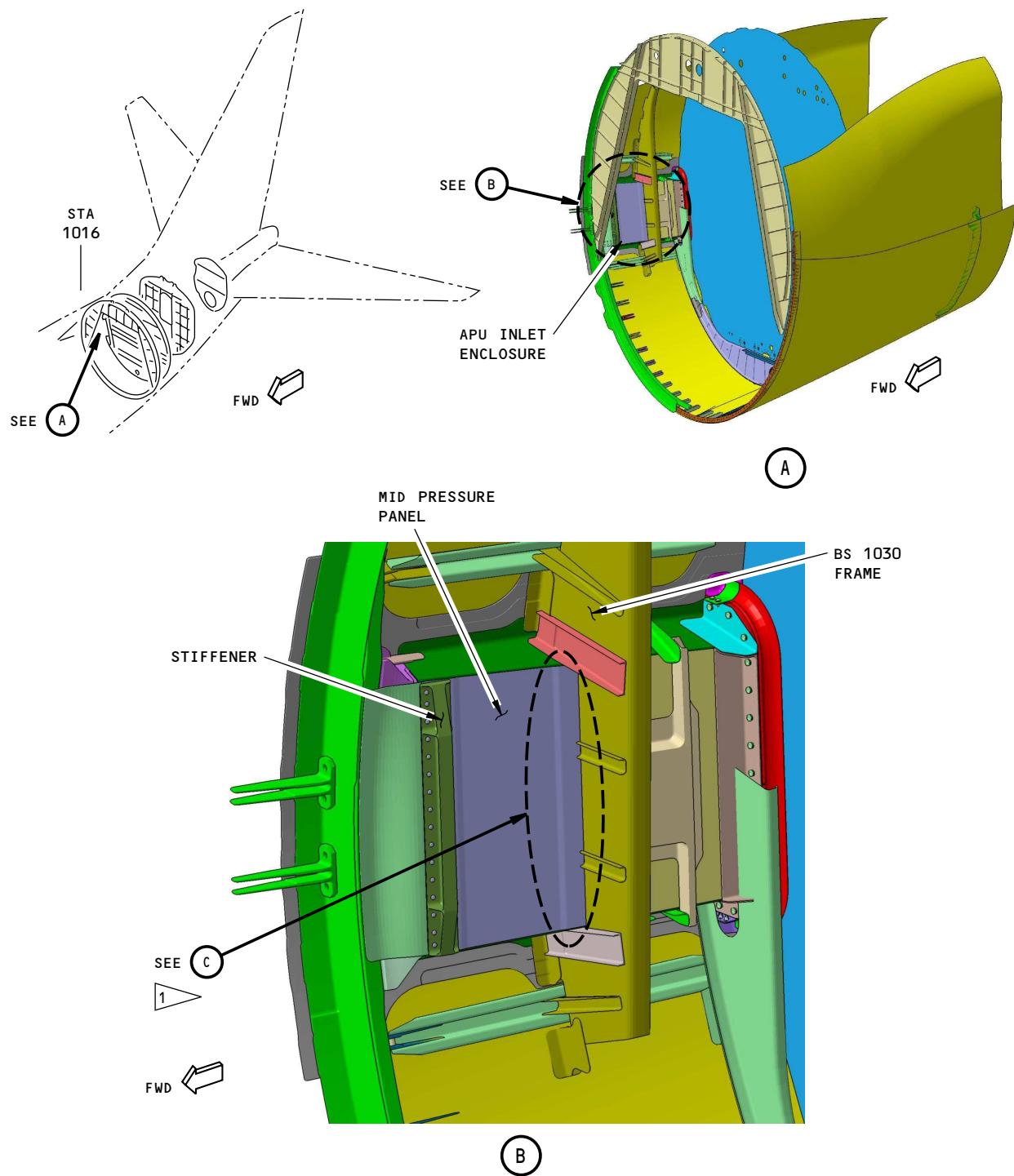
EFFECTIVITY
ALL; 737-900ER AIRPLANES

PART 6 53-11-43

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


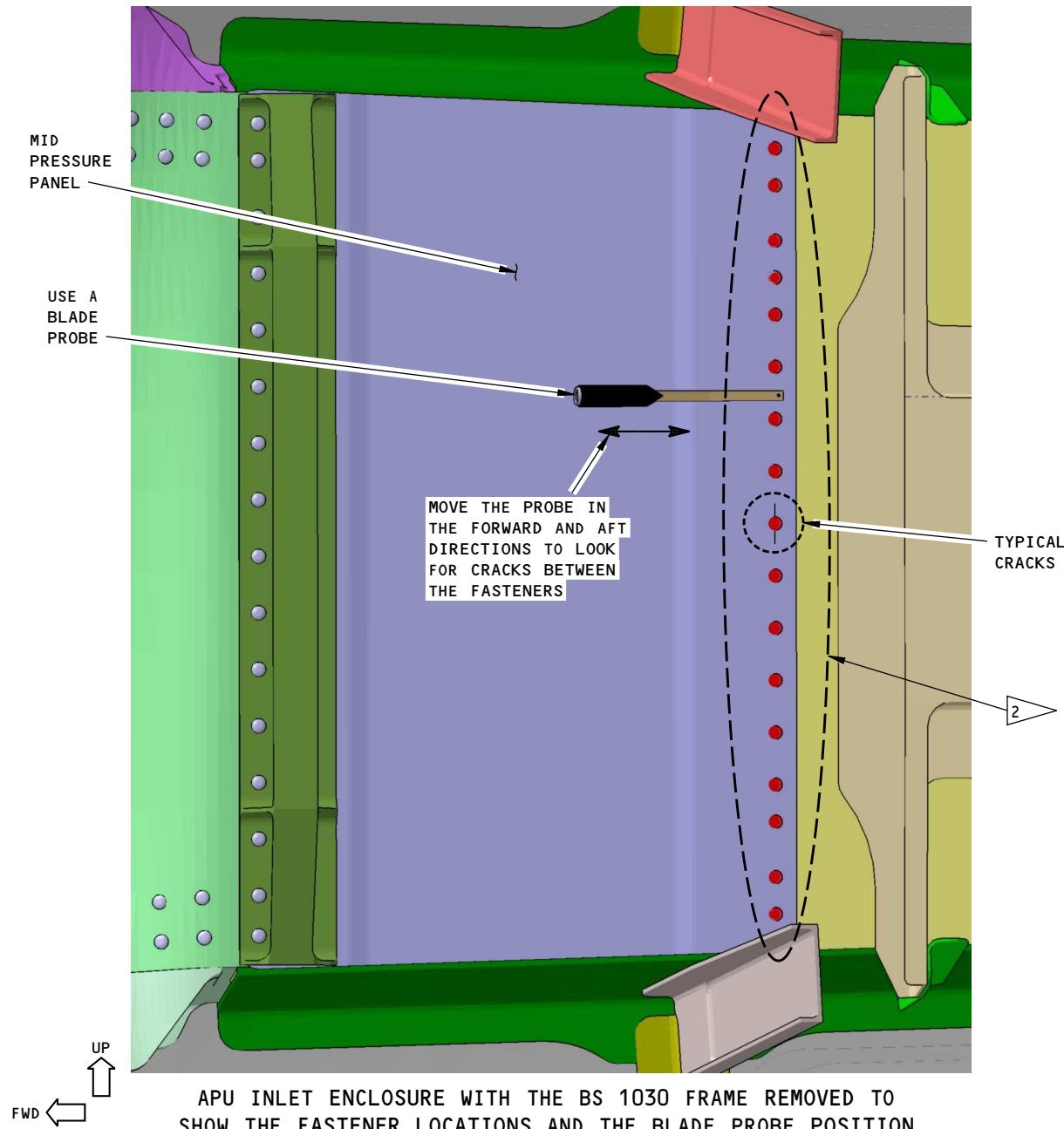
1 DTR CHECK FORM ITEM 53-80-17-5 INSPECTION AREA

2435573 S0000564996_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
 ALL; 737-900ER AIRPLANES

PART 6 53-11-43



NOTES:

- 2 EXAMINE THE MID PRESSURE PANEL IN THE APU INLET ENCLOSURE FOR CRACKS BETWEEN THE FASTENERS BEHIND THE BS 1030 FRAME. MOVE THE PROBE BETWEEN THE FASTENERS IN THE FORWARD AND AFT DIRECTIONS. USE A BLADE PROBE TO GET ACCESS BETWEEN THE FASTENERS AS SHOWN

2435574 S0000564997_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-900ER AIRPLANES

PART 6 53-11-43

D6-37239

Page 4
Nov 15/2015



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

BEARSTRAP AND OUTER CHORD INSPECTIONS AT THE UPPER SILL OF THE FORWARD AND AFT CARGO DOOR SURROUNDS (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the bearstrap and the outer chord for cracks at the upper sill of the forward and aft cargo door surrounds. The inspection areas are from STA 430 to STA 520 for the forward cargo door surround and from STA 785 to STA 870 for the aft cargo door surround. The outer chord is examined for cracks at the fasteners that go through the outer chord and the bearstrap. The bearstrap is examined for cracks along the lower edge of the outer chord. See Figure 1 for the inspection areas.
- B. It is necessary to internally access the cargo doors to do this inspection.
- C. This procedure uses an impedance plane display instrument.
- D. The outer chord and the bearstrap are aluminum.
- E. 737 Maintenance Planning Document (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-30-08-10 (HFEC)

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
 - (b) Nortec 500D; Olympus NDT
- C. Probes
 - (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a diameter of 0.125 inch (3.18 mm).
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN95-6B; Techna NDT
- D. Reference Standards
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument to examine the outer chord for cracks. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-48



737
NON-DESTRUCTIVE TEST MANUAL

- (2) Use reference standard 126, or an equivalent, to help calibrate the instrument to examine the bearstrap for cracks. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 126.

3. Prepare for the Inspection

- A. Identify and get access to the inspection areas shown in Figure 1.
- B. Clean the inspection surfaces.
 - (1) Remove dirt or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A to help calibrate the instrument to examine the outer chord for cracks around the fasteners.
 - (2) Use reference standard 126 to help calibrate the instrument to examine the bearstrap for cracks along the lower edge of the outer chord.

5. Inspection Procedure

- A. Examine the bearstrap and the outer chord for cracks at the upper sill of the forward and aft cargo door surrounds as specified in Part 6, 51-00-00, Procedure 23, paragraph 6 and the steps that follow:
 - (1) Do the inspection from STA 430 to STA 520 for the forward cargo door surround and from STA 785 to STA 870 for the aft cargo door surround. See Figure 1 for the inspection areas.
 - (2) Do a 360 degree scan around each fastener that goes through the outer chord and the bearstrap to examine the outer chord for cracks. Use the fastener collar as a probe guide. See Figure 1.
 - (3) Examine the bearstrap for cracks along the lower edge of the outer chord. Use the flange of the outer chord as a probe guide. See Figure 1.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

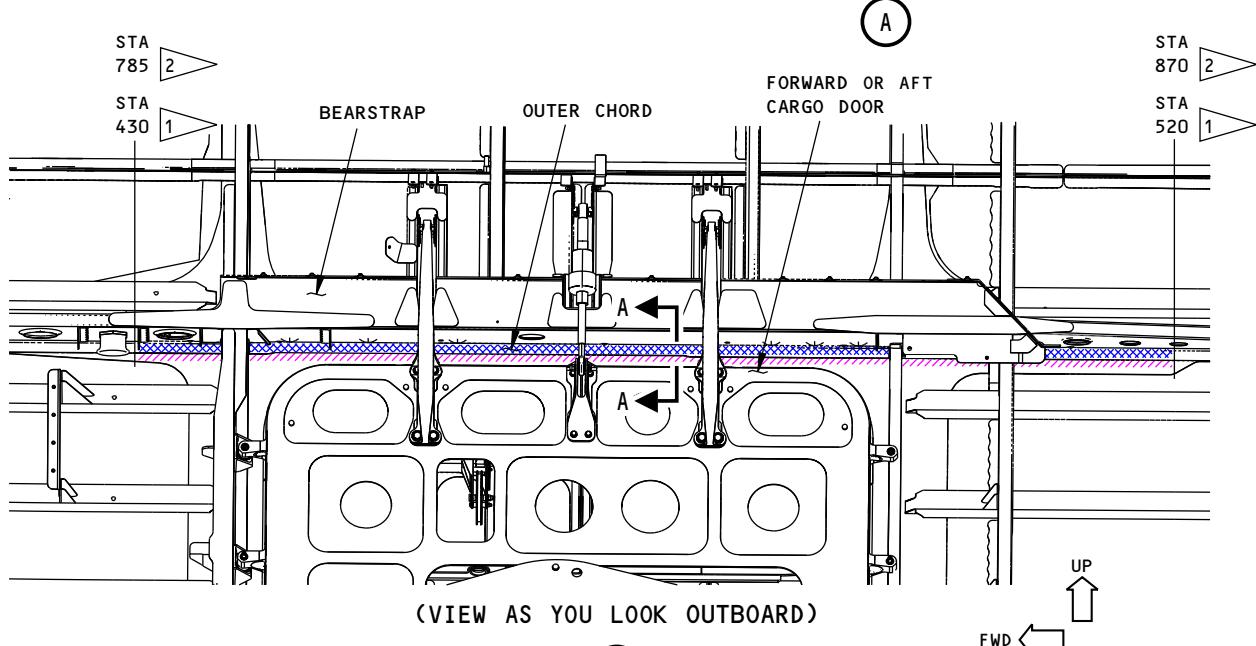
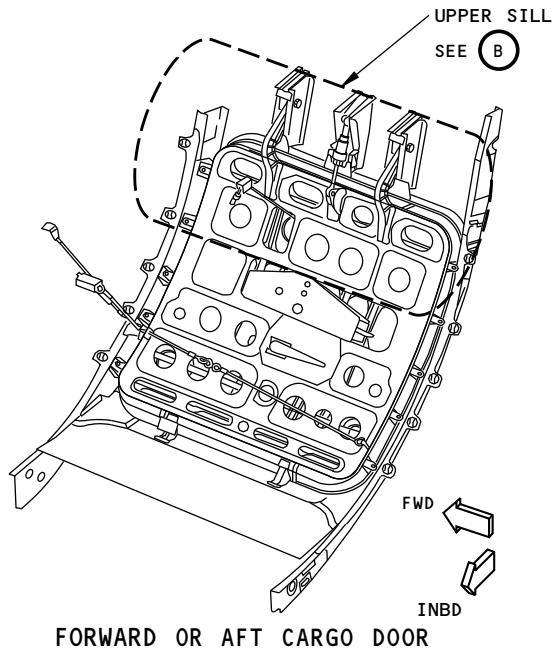
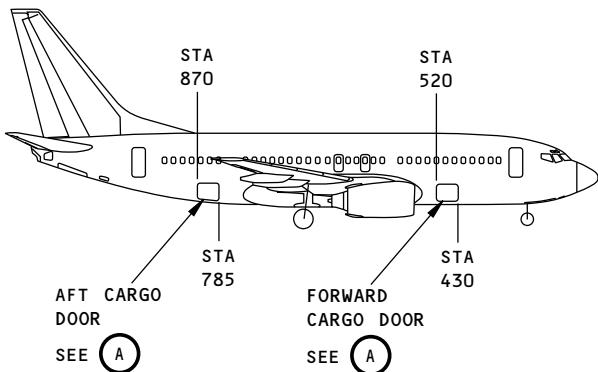
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-48

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES

 INSPECTION AREA OF THE OUTER CHORD

 INSPECTION AREA OF THE BEARSTRAP

- OTHER THAN THE STATION NUMBERS, THE FORWARD AND AFT CARGO DOOR INSPECTION AREAS ARE THE SAME

B

 1 STATIONS FOR THE FORWARD CARGO DOOR

 2 STATIONS FOR THE AFT CARGO DOOR

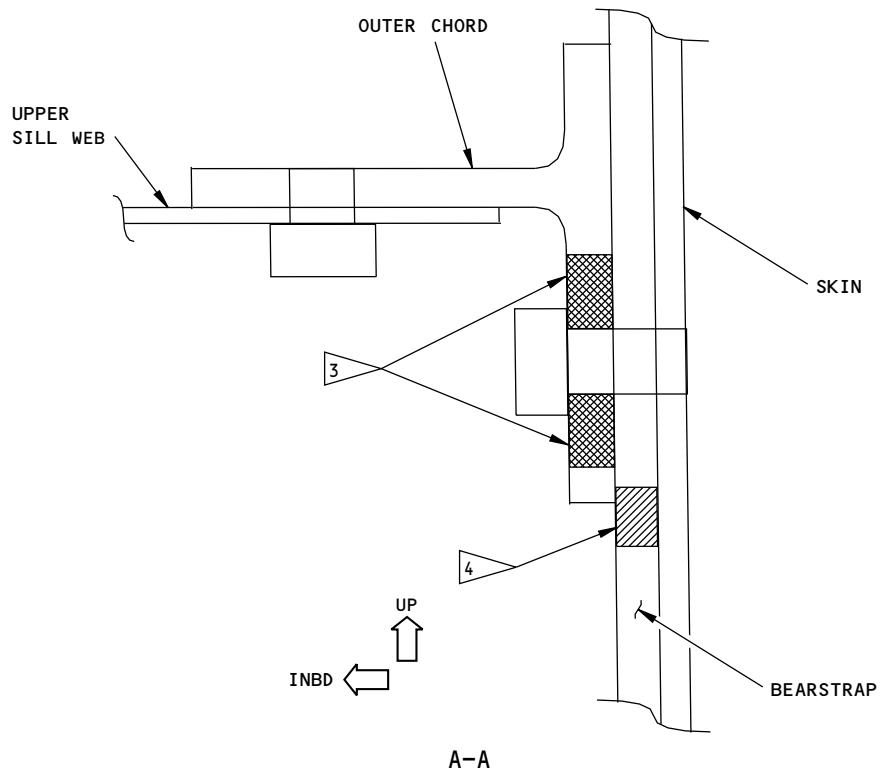
2435802 S0000565138_V1

Inspection Area
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-48

D6-37239



-  EXAMINE THE OUTER CHORD FOR CRACKS AROUND THE FASTENERS THAT GO THROUGH THE OUTER CHORD AND THE BEARSTRAP. USE THE FASTENER COLLAR AS A PROBE GUIDE.
-  EXAMINE THE BEARSTRAP FOR CRACKS AT THE EDGE OF THE OUTER CHORD. USE THE FLANGE OF THE OUTER CHORD AS A PROBE GUIDE.

2435811 S0000565139_V1

Inspection Area
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-48

D6-37239



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

**INNER CHORD AT THE S-9 AND S-10 SPLICE STRAPS OF THE STA 540 BULKHEAD FRAME
(HFEC)**

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the inner chord at the STA 540 bulkhead frame for cracks in the area of the S-9 and S-10 splice straps. The inner chord is examined for cracks around the 28 fasteners that go through the inner chord and the splice straps on each side of the airplane. See Figure 1 for the inspection areas.
- B. It is necessary to get access to the inner chord from the internal side of the airplane to do this inspection.
- C. This procedure uses an impedance plane display instrument.
- D. The inner chord is aluminum.
- E. 737 Maintenance Planning Document (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-40-14-1 (HFEC)

2. Equipment

- A. General
 - (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
 - (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
 - (b) Nortec 500D; Olympus NDT
- C. Probes
 - (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a diameter of 0.125 inch (3.18 mm).
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN95-6B; Techna NDT
- D. Reference Standards
 - (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Identify and get access to the inspection areas shown in Figure 1.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-49



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Remove the internal components (sidewalls, insulation blankets, for examples) in the airplane as necessary to get access to the inner chord.
 - B. Clean the inspection surfaces.
 - (1) Remove dirt or grease from the inspection surfaces.
 - (2) Remove paint only if it is loose.
- 4. Instrument Calibration**
- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 188A to help calibrate the instrument.
- 5. Inspection Procedure**
- A. Examine the inner chord at the STA 540 bulkhead frame for cracks in the area of the S-9 and S-10 splice straps as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the step that follows.
 - (1) Examine the inner chord for cracks around the 28 fasteners that go through the inner chord and the splice straps. Use the fastener collars as a probe guide. See Figure 1 for the inspection areas.
 - B. Do Paragraph 5.A. again to examine the inner chord for cracks on the other side of the airplane.
- 6. Inspection Results**
- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

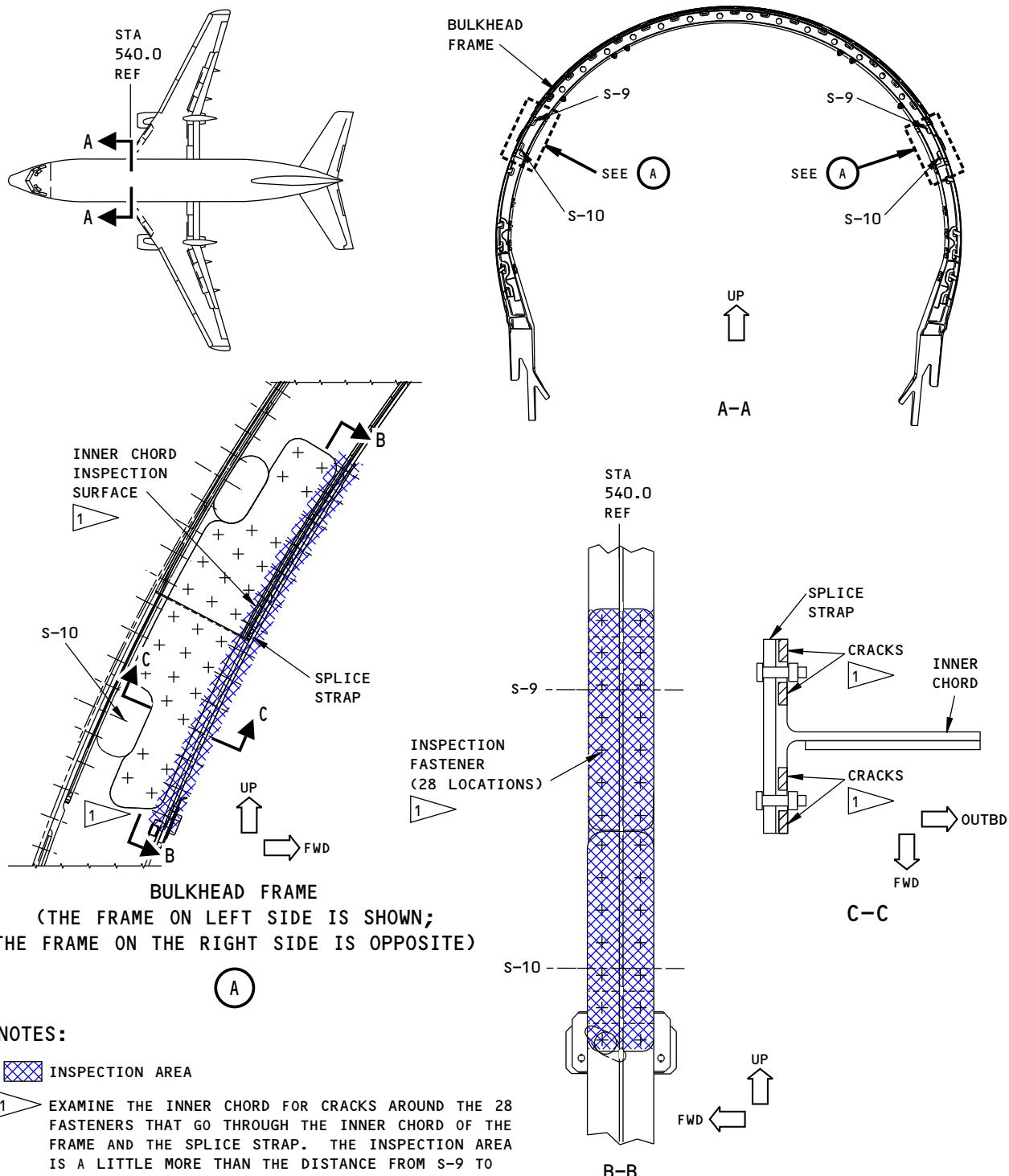
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-49

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL


Inspection Area
Figure 1

EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-49



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

INNER CHORD OF THE FRAME AT THE BS 663 BULKHEAD (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the inner chord of the frame at the BS 663 bulkhead for cracks. The inner chord is examined between (approximately) S-10 and S-17 on each side of the airplane. See Figure 1 for the inspection areas.
- B. It is necessary to get internal access to the inner chord to do this inspection.
- C. This procedure uses an impedance plane display instrument.
- D. The inner chord is aluminum.
- E. 737 Maintenance Planning Document (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-40-15-3 (HFEC)

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates from 50 to 500 kHz.
- (2) The instruments that follow were used to help prepare this procedure.
 - (a) Phasec 2D/3D; GE Inspection Technologies
 - (b) Nortec 500D; Olympus NDT

C. Probes

- (1) Use a probe that:
 - (a) Operates from 50 to 500 kHz.
 - (b) Has a diameter of 0.125 inch (3.18 mm).
- (2) The probe that follows was used to help prepare this procedure.
 - (a) TPEN95-6B; Techna NDT

D. Reference Standards

- (1) 1) Use reference standard 126, or an equivalent, to help calibrate the instrument. Refer to Part 6, 51-00-00, Procedure 23, for data about reference standard 126.

3. Prepare for the Inspection

- A. Identify and get access to the inspection areas shown in Figure 1.
 - (1) Remove the insulation blankets as necessary to get access to the inspection area.
- B. Clean the inspection surfaces.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-50



737
NON-DESTRUCTIVE TEST MANUAL

- (1) Remove dirt or grease from the inspection surfaces.
- (2) Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument.

5. Inspection Procedure

- A. Examine the inner chord of the frame at the BS 663 bulkhead for surface cracks as specified in Part 6, 51-00-00, Procedure 23, paragraph 6, and the steps that follow.
 - (1) Examine the inboard and outboard edges of the inner chord for surface cracks between (approximately) S-10 and S-17. Do a scan along the four corners of the inner chord shown in Figure 1.
 - (2) Use a nonconductive straightedge to help keep the probe the same distance from the edge of the inner chord during each inspection.

- B. Do Paragraph 5.A. again to examine the inner chord for cracks on the other side of the airplane.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.

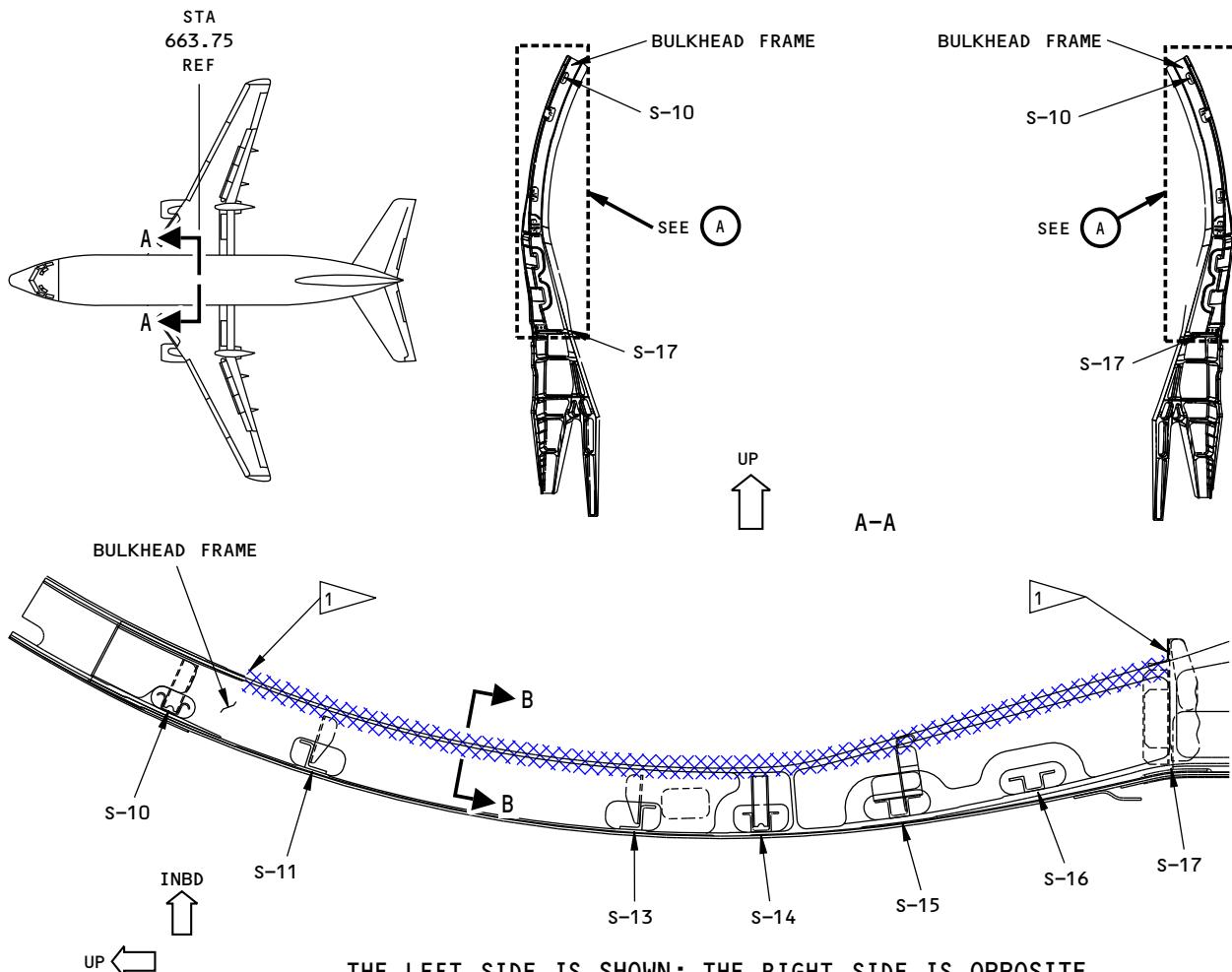
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-50

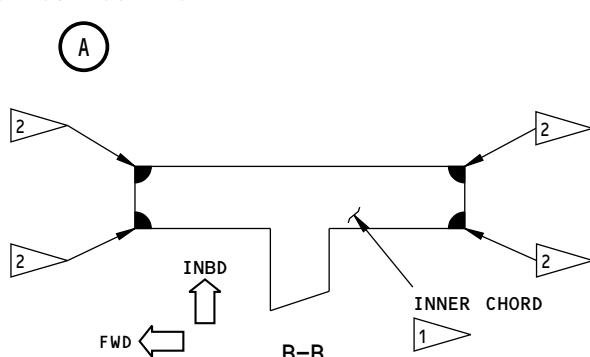
D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Nov 15/2015

737
NON-DESTRUCTIVE TEST MANUAL

NOTES
 **INSPECTION AREA**

-  EXAMINE THE INNER CHORD OF THE BULKHEAD FRAME FOR CRACKS FROM APPROXIMATELY S-10 TO S-17.
-  EXAMINE ALONG THE FOUR CORNERS OF THE INNER CHORD FOR CRACKS. USE A NONCONDUCTIVE STRAIGHTEDGE TO HELP KEEP THE PROBE THE SAME DISTANCE FROM THE EDGE OF THE INNER CHORD.



2436465 S0000565468_V1

Inspection Area
Figure 1
EFFECTIVITY
 ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-50



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

OUTER CHORD OF THE FORWARD (STA 440) AND AFT (STA 492.4) EDGE FRAMES AT THE FORWARD CARGO DOOR SURROUND FROM S-17R TO S-26R (HFEC)

1. Purpose

- A. Use this procedure to help find surface cracks in the outer chord of the forward and aft edge frames of the forward cargo door surround. See Figure 1 for the inspection areas.
- B. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-30-08-1

2. Equipment

- A. General
 - (1) All eddy current instruments that have an impedance plane display are permitted for use if they can be calibrated on the reference standard as specified in Paragraph 4.
 - (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.
- B. Instrument
 - (1) Use an eddy current instrument that:
 - (a) Has an impedance plane display.
 - (b) Operates at a frequency of 50 to 500 kHz.
 - (2) The instrument that follows was used to help prepare this procedure.
 - (a) Nortec 500; Olympus NDT
- C. Probes
 - (1) Use a straight or a right-angle shielded probe with a maximum diameter of 0.2 inch (5 mm). Refer to Part 6, 51-00-00, Procedure 23, paragraph 3.C, for data about probe selection.
 - (2) The probe that follows was used to help prepare this procedure.
 - (a) MP-50; NDT Engineering Corp (Olympus)
- D. Reference Standard
 - (1) Use reference standard 126, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, paragraph 3.D, for data about reference standard 126.

3. Prepare for the Inspection

- A. Get access to the inspection area shown in Figure 1.
- B. Remove loose paint, dirt and sealant from the surface of the inspection areas, as necessary.

4. Instrument Calibration

- A. Calibrate the equipment on reference standard 126, or an equivalent, as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.

5. Inspection Procedure

- A. Examine the outer chord of the forward and aft edge frames at the forward cargo door surround for cracks between S-17R and S-26R as follows:
 - (1) Identify the inspection areas shown in Figure 1.

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-51



737
NON-DESTRUCTIVE TEST MANUAL

- (2) Calibrate the instrument as specified in Paragraph 4.
- (3) Make a scan of the outer chord of the aft edge frame in the inspection area shown in Figure 1 as specified in Part 6, 51-00-00, Procedure 23, paragraph 6. Move the probe in an up and down direction to find cracks that are in the inboard to outboard direction. Use the edge of the fail-safe strap as a probe guide where possible.
- (4) Do Paragraph 5.A.(3) again to examine the outer chord of the forward edge frame for cracks. The inspection area of the forward edge frame is the same as the inspection area for the aft edge frame.

6. Inspection Results

- A. Refer to Part 6, 51-00-00, Procedure 23, paragraph 6, for instructions to help make an analysis of signals that occur during the inspection.

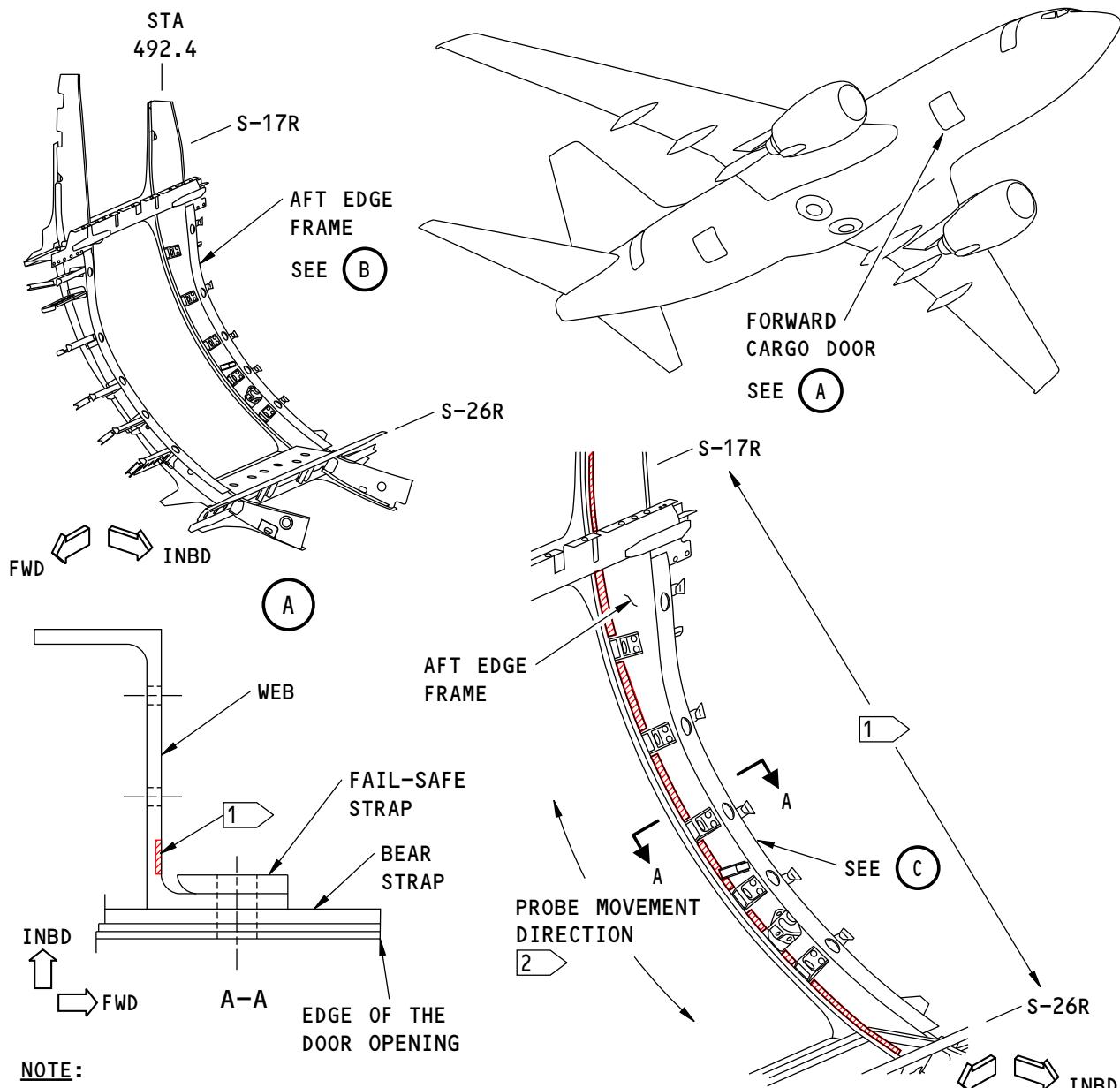
EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

PART 6 53-11-51

Page 2
Jul 01/2016

737
NON-DESTRUCTIVE TEST MANUAL

NOTE:
 INSPECTION AREA

- EXAMINE THE OUTER CHORD OF THE FORWARD CARGO DOOR SURROUND FOR CRACKS BETWEEN S-17R AND S-26R

 PUT THE PROBE TIP ON THE OUTER CHORD AND USE THE FAIL-SAFE STRAP AS A PROBE GUIDE

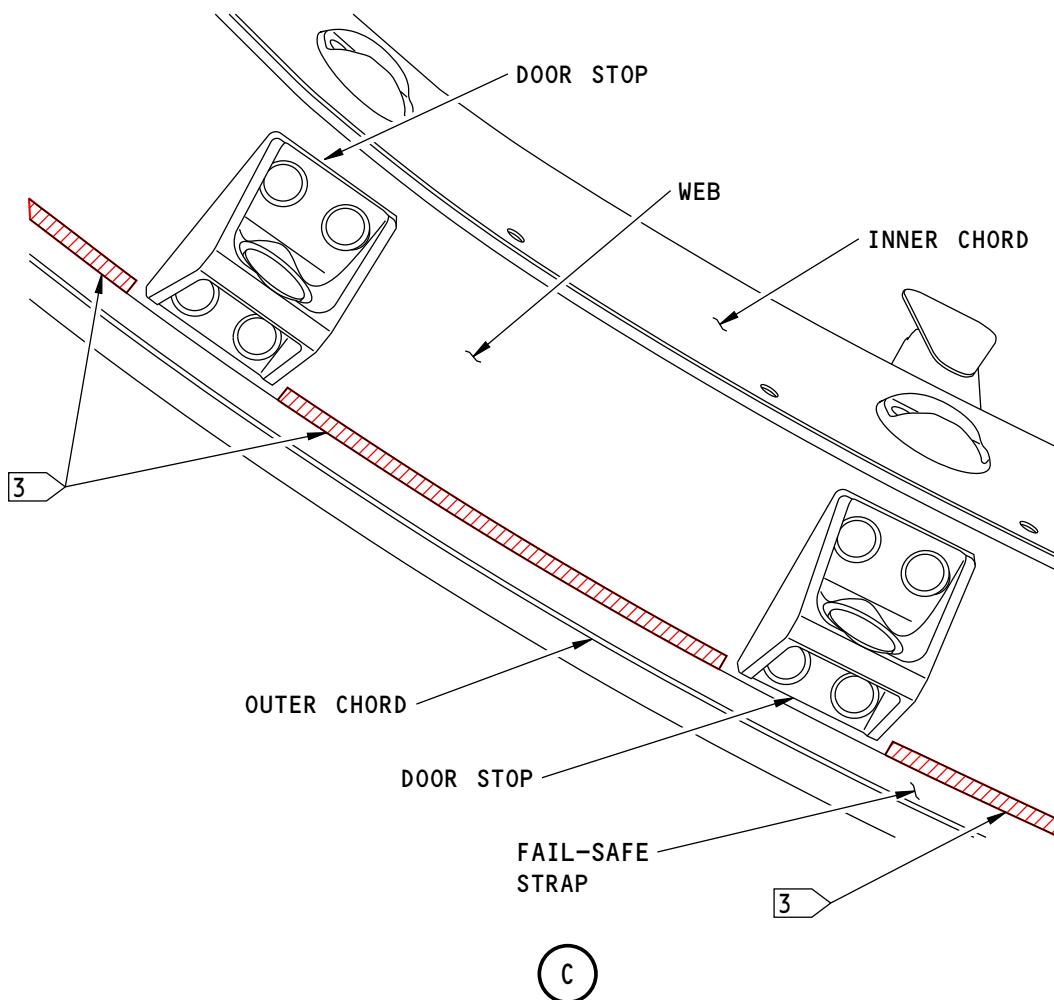
 MOVE THE PROBE IN AN UP AND DOWN DIRECTION TO FIND CRACKS IN THE INBOARD TO OUTBOARD DIRECTION

2506232 S0000589963_V1

Inspection Areas
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-51



- 3 DTR CHECK FORM ITEM 53-30-08-1 INSPECTION AREA.
EXAMINE THE OUTER CHORD FOR CRACKS ALONG THE EDGE OF
THE FAIL-SAFE STRAP AS SHOWN. DO NOT EXAMINE THE
OUTER CHORD AT THE DOOR STOPS OR SILLS.

2506300 S0000589964_V1

Inspection Areas
Figure 1 (Sheet 2 of 2)

EFFECTIVITY
ALL; 737-600/700/800/900 AIRPLANES

PART 6 53-11-51

D6-37239

Page 4
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

PRESSURE DOME WEB AT THE WEB LAP SPLICES BETWEEN TEAR STRAPS (HFEC)

1. Purpose

- A. Use this high frequency eddy current (HFEC) procedure to examine the aft side of the pressure dome web for cracks at the web lap splices between the tear straps. See Figure 1 for the inspection areas.
- B. This procedure uses an impedance plane display instrument.
- C. The pressure dome web is aluminum.
- D. 737 Maintenance Planning Data (MPD) Damage Tolerance Rating (DTR) Check Form Reference:
 - (1) Item: 53-80-01-3

2. Equipment

A. General

- (1) Use inspection equipment that can be calibrated on the reference standard as specified in Part 6, 51-00-00, Procedure 23, paragraph 5.
- (2) Refer to Part 1, 51-01-00, for data about the equipment manufacturers.

B. Instrument

- (1) The instruments that follow were used to help prepare this procedure.
 - (a) 500D; Olympus NDT
 - (b) Phasec 2D/3D; GE Inspection Technologies
 - (c) 2000D; Olympus NDT (Nortec)
 - (d) 600D; Olympus NDT

C. Probes

- (1) The probe that follows was used to help prepare this procedure.
 - (a) TPEN95-6B; Techna NDT

D. Reference Standard

- (1) Use reference standard 188A, or an equivalent, to help calibrate the instrument. See Part 6, 51-00-00, Procedure 23, for data about reference standard 188A.

3. Prepare for the Inspection

- A. Get access to the aft side of the pressure dome (aft pressure bulkhead) at STA 1016.
- B. Identify the inspection areas on the aft side of the pressure dome web at the web lap splices. See Figure 1.
- C. Clean the area around the fasteners, as necessary.
- D. Remove paint only if it is loose.

4. Instrument Calibration

- A. Calibrate the instrument as specified in Part 6, 51-00-00, Procedure 23, paragraph 5, to examine the fastener locations on the pressure dome web at the lap splices between the circumferential tear straps.

EFFECTIVITY
ALL; 737-100 THRU -900 AIRPLANES EXCEPT
737-800FPB AND -900ER

PART 6 53-11-53

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 1
Jul 01/2016



737
NON-DESTRUCTIVE TEST MANUAL

5. Inspection Procedure

- A. Examine the fastener locations on the pressure dome web at the web lap splices between the circumferential tear straps as shown in Figure 1 and as specified in Part 6, 51-00-00, Procedure 23, paragraph 6.

NOTE: It is not necessary to examine the fastener locations that are at the web lap splices where a doubler is installed. See Figure 1 for the typical doubler location.

- (1) Make a complete scan around each fastener location.

6. Inspection Results

- A. A crack signal will look almost the same as the notch signal that you got from the reference standard during calibration.
- (1) Refer to Part 6, 51-00-00, Procedure 23, paragraph 7, for instructions to help make an analysis of the indications that occur during the inspection.
- B. To make sure a crack indication is from a crack, you can remove the fastener and do an open hole eddy current inspection as specified in Part 6, 51-00-00, Procedure 16.

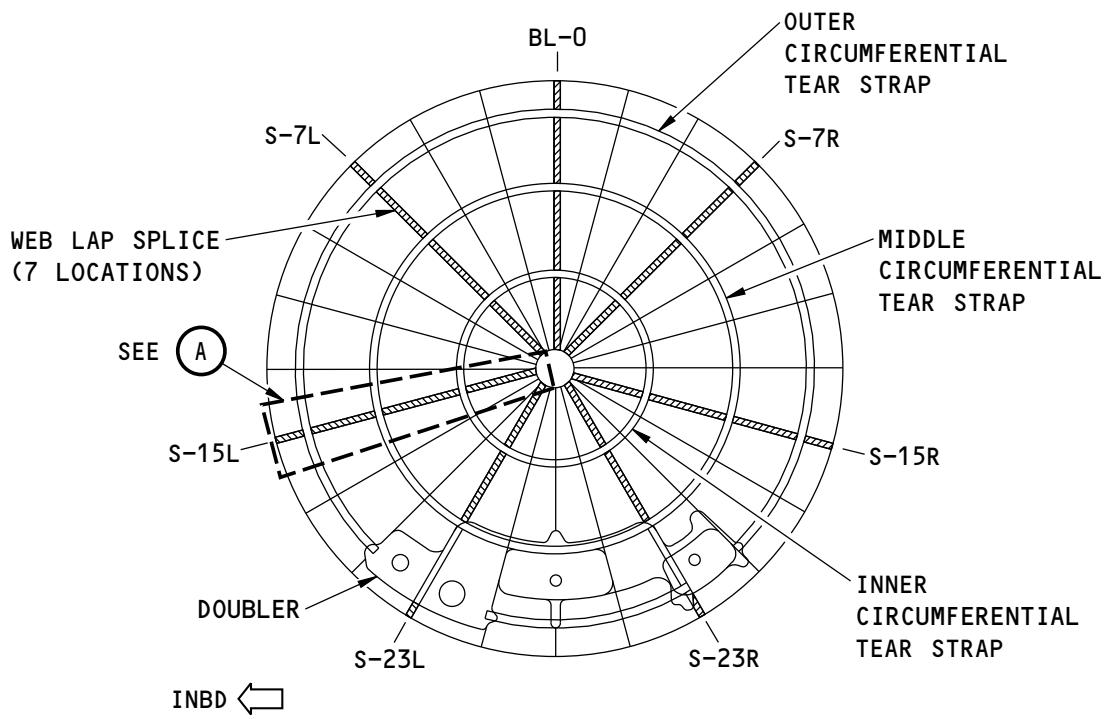
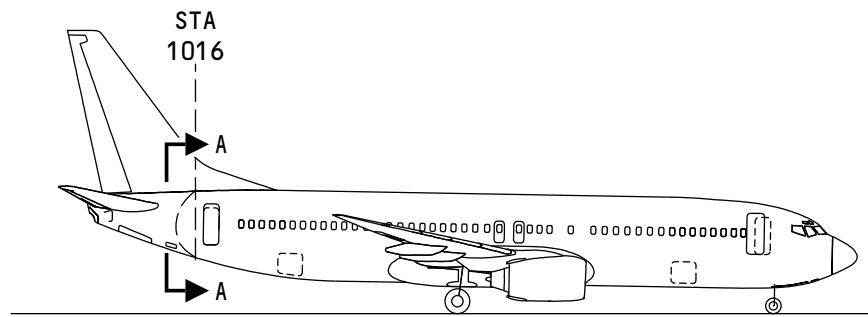
EFFECTIVITY
ALL; 737-100 THRU -900 AIRPLANES EXCEPT
737-800FPB AND -900ER

PART 6 53-11-53

D6-37239

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 2
Jul 01/2016

737
NON-DESTRUCTIVE TEST MANUAL


THE AFT SIDE OF THE
BULKHEAD IS SHOWN
A-A

NOTES:

 WEB LAP SPLICING INSPECTION AREAS

- SEE VIEW "A" FOR THE TYPICAL WEB LAP SPLICING CONFIGURATION (7 LOCATIONS)

2505987 S0000590273_V1

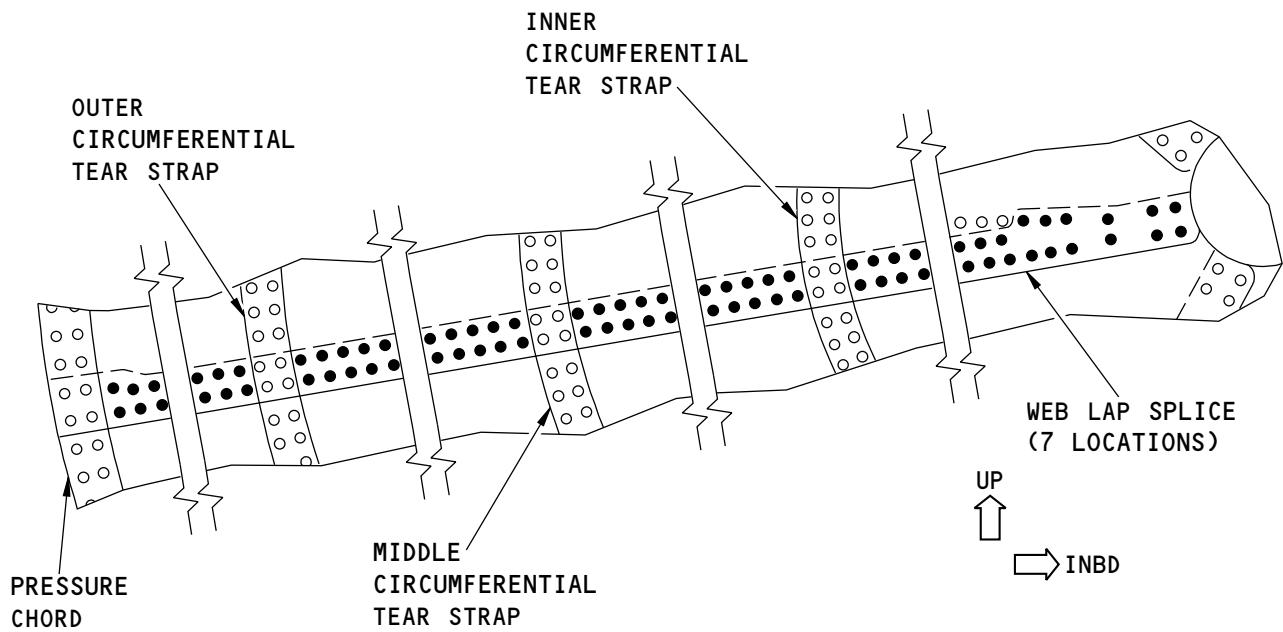
Inspection Areas
Figure 1 (Sheet 1 of 2)

EFFECTIVITY
ALL 737-100 THRU -900 AIRPLANES EXCEPT
737-800FPB AND -900ER

PART 6 53-11-53

Page 3
Jul 01/2016

D6-37239



NOTES:

- TYPICAL FASTENER LOCATIONS TO BE EXAMINED
- THIS FIGURE IS NOT TO SCALE
- THIS FIGURE DOES NOT SHOW ALL OF THE FASTENER LOCATIONS TO BE EXAMINED. IT IS POSSIBLE THAT THE WEB LAP SPLICES ON THE AIRPLANE HAVE FASTENER CONFIGURATIONS THAT ARE DIFFERENT THAN THAT SHOWN IN THIS FIGURE.

2506017 S0000590274_V1

Inspection Areas
Figure 1 (Sheet 2 of 2)EFFECTIVITY
ALL; 737-100 THRU -900 AIRPLANES EXCEPT
737-800FPB AND -900ER

PART 6 53-11-53

D6-37239