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NONDESTRUCTIVE TEST MANUAL

PART 6 - EDDY CURRENT

OUTBOARD AILERON BRACKET ASSEMBLIES AND RELATED FITTINGS

1. Purpose

- A. To find cracks in the bracket assemblies and the fittings of the balance arm assembly installations on the outboard ailerons. Use a high frequency bolt hole inspection procedure.
- B. Service Bulletin reference: 767-27-0103

2. Equipment

NOTE: Refer to Part 1, 51-01-00 for information on the manufacturers of the equipment.

- A. Instrument - Use eddy current instruments that can operate in the range of 200 kHz and 500 kHz and can do the instructions specified in this procedure. The instruments specified below were used to help write this procedure.
 - (1) MIZ-10B, Zetec, Inc.
 - (2) Nortec-19, Staveley, Inc.
- B. Probe - Use a probe of equivalent dimension to the probe shown in Figure 2. The probe must operate between 200 kHz and 500 kHz and satisfactorily do the instructions specified in this procedure. The probe specified below was used to help write this procedure.
 - (1) BPFXS-16/767ABA, NDT Engineering, Inc.
 - (a) This high frequency probe can do bolt hole inspections and has a flexible-shaft internal to the rigid shaft (Figure 2).

NOTE: When you order this probe you must specify the type of instrument and the frequency to be used also.

- C. Reference Standard - Refer to Part 6, 51-00-04 (meter display) or Part 6, 51-00-11 (CRT impedance plane display) for reference standard information.

3. Prepare for the Inspection

- A. Clean the surfaces of the aileron bracket assemblies around the bolts (Figure 1).

WARNING: DO NOT REMOVE MORE THAN THREE BOLTS AT A TIME FROM A BRACKET ASSEMBLY TO DO THE EDDY CURRENT INSPECTIONS. IF YOU REMOVE SEVEN BOLTS FROM A BRACKET ASSEMBLY, YOU WILL NEED TO BALANCE THE AILERON.

- B. Remove three bolts from a bracket assembly (Figure 1).

4. Instrument Calibration

CAUTION: DO NOT TURN THE PROBE SHAFT TO EXTEND OR RETRACT THE PROBE OR YOU CAN DAMAGE THE PROBE.

- A. Refer to Part 6, 51-00-04 or Part 6, 51-00-11, as applicable, for the instrument calibration procedure. Extend and retract the probe as follows (Figure 2):
 - (1) Hold the probe shaft stable and turn only the indexing knob at the end of the shaft. Make intermittent turns of approximately 1/4 turn.
 - (2) Do not use force to make the indexing knob go by the stops when you extend or retract the probe.
 - (3) Turn the indexing knob in the opposite direction to retract the probe before you remove it from the hole.

EFFECTIVITY
2-119, 121-134, 136, 137, 139-292, 294-297, 299, 300, 302, 305

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5. Inspection Procedure

CAUTION: DO NOT TURN THE PROBE SHAFT TO EXTEND OR RETRACT THE PROBE OR YOU CAN DAMAGE THE PROBE.

- A. Do an inspection of the aileron bracket assemblies and related fittings in the area of the three bolt holes that were prepared in Paragraph 3.B. Refer to Part 6, 51-00-04 or Part 6, 51-00-11, as applicable, for the bolt hole inspection procedure. Refer to Paragraph 4.A. for the probe extension and retraction instructions.
- B. Replace the bolts.

WARNING: DO NOT REMOVE MORE THAN THREE BOLTS AT A TIME FROM A BRACKET ASSEMBLY TO DO THE EDDY CURRENT INSPECTIONS. IF YOU REMOVE SEVEN BOLTS FROM A BRACKET ASSEMBLY YOU WILL NEED TO BALANCE THE AILERON.

- C. Remove three (maximum) bolts and continue to do Paragraph 5.A. and Paragraph 5.B. until all bracket assemblies and related fittings have been examined from the 21 bolt locations.

6. Inspection Results

- A. Refer to Part 6, 51-00-04 or Part 6, 51-00-11, as applicable, for information about the inspection results.

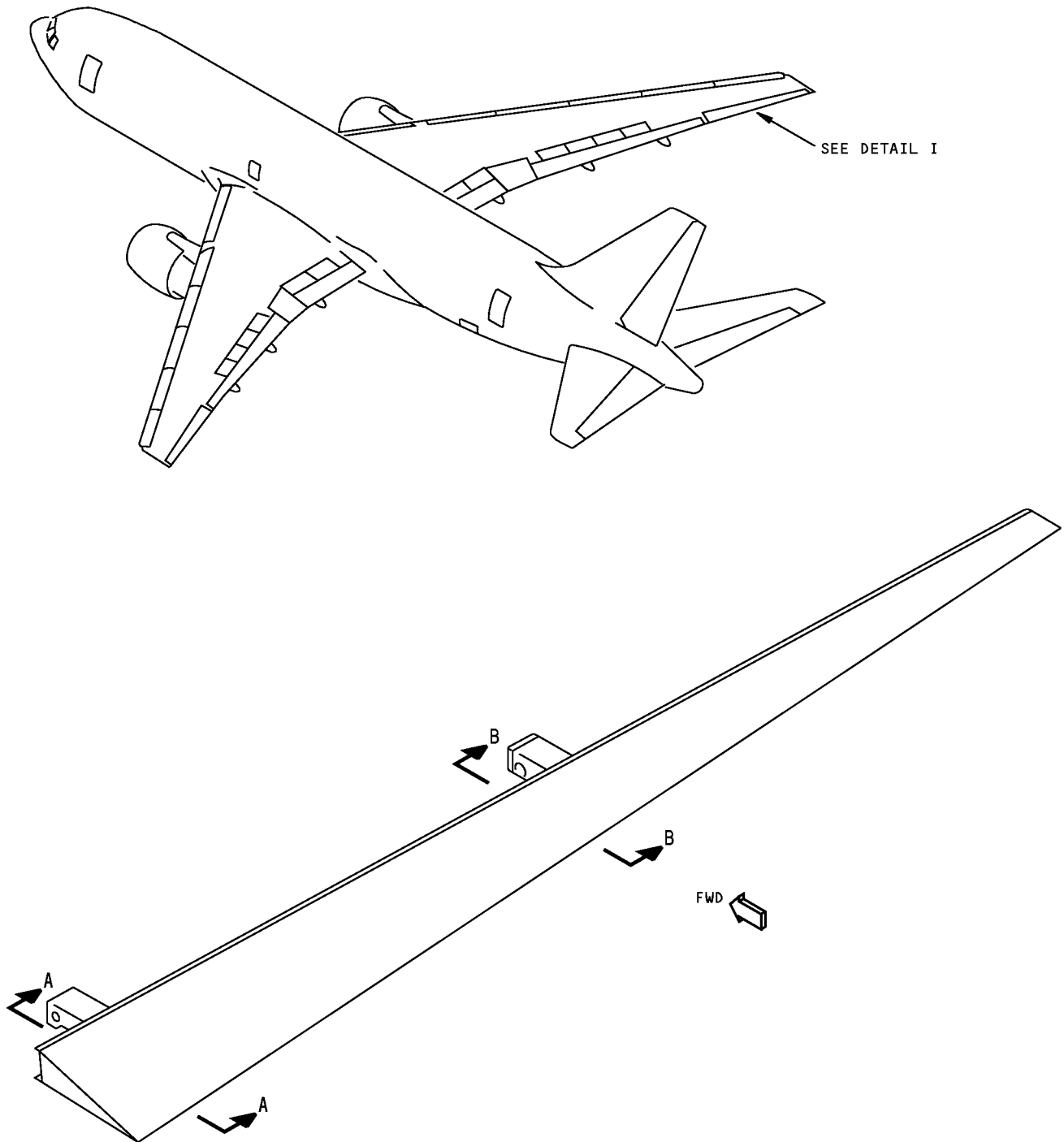
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RIGHT OUTBOARD AILERON SHOWN
LEFT OUTBOARD AILERON OPPOSITE
DETAIL I

**Outboard Aileron Bracket Assembly and Fitting Inspection
Figure 1 (Sheet 1 of 3)**

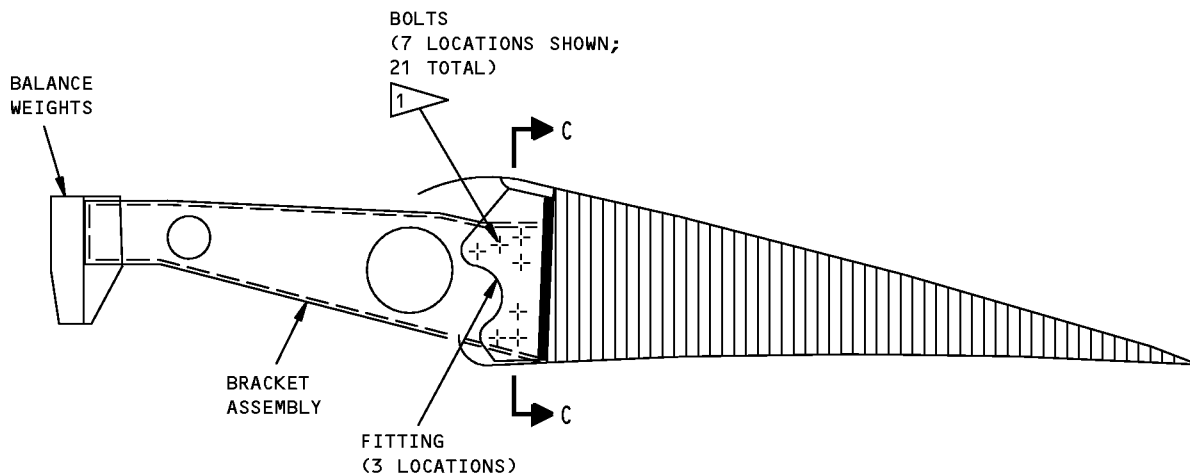
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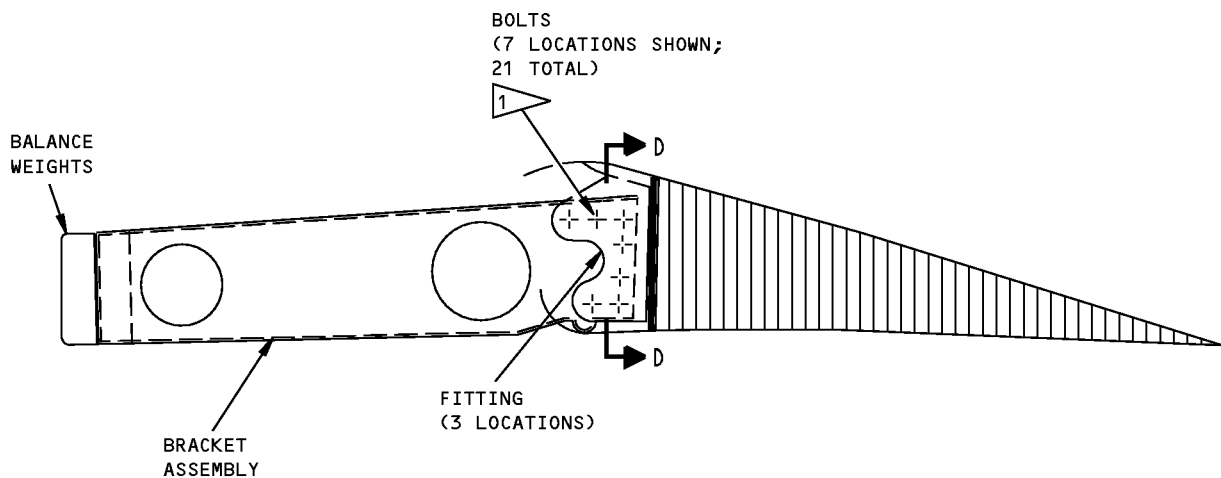
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SECTION A-A



SECTION B-B

1 DO NOT REMOVE MORE THAN THREE BOLTS AT ONE TIME FROM A BRACKET ASSEMBLY.

Outboard Aileron Bracket Assembly and Fitting Inspection
Figure 1 (Sheet 2 of 3)

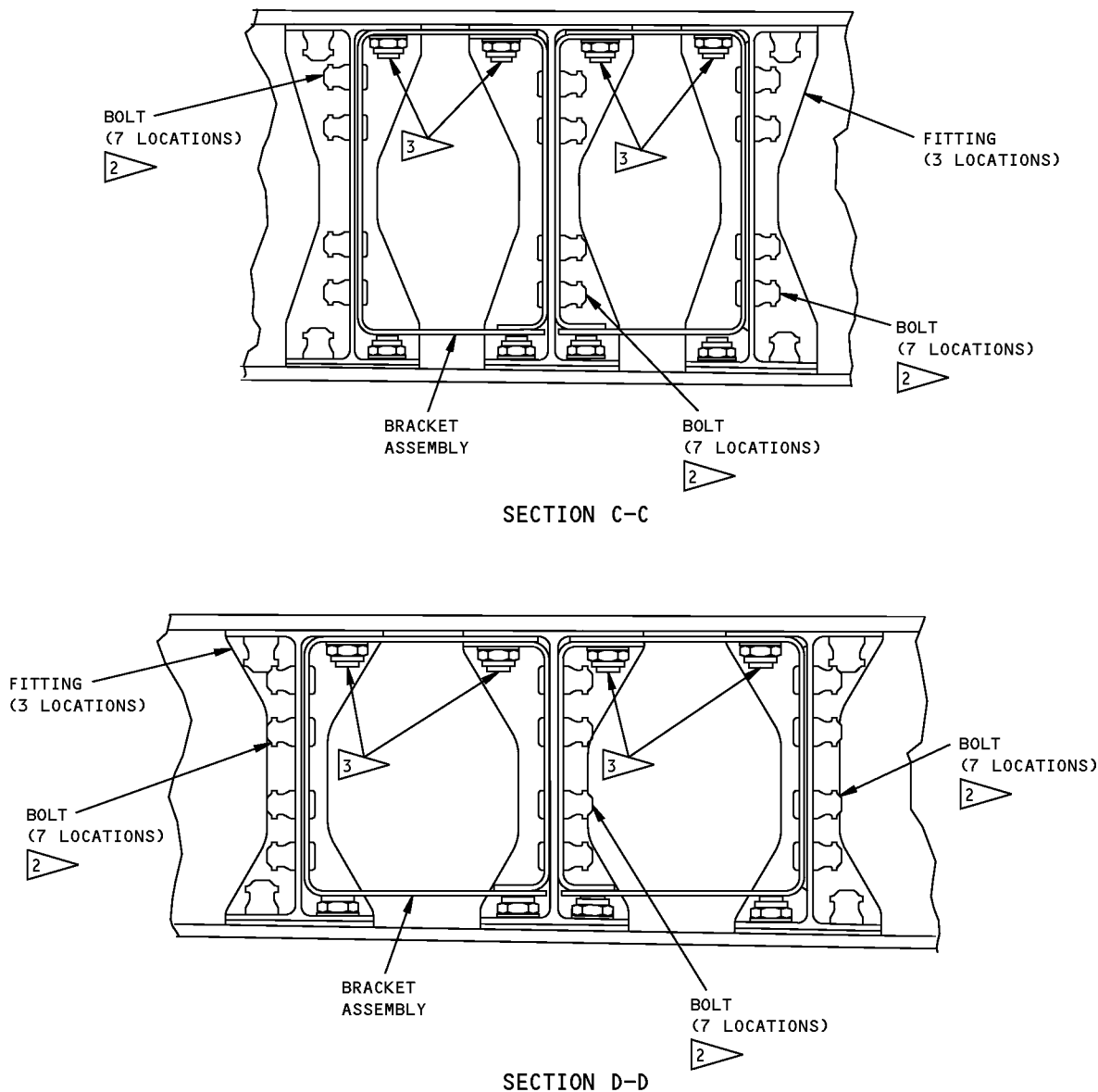
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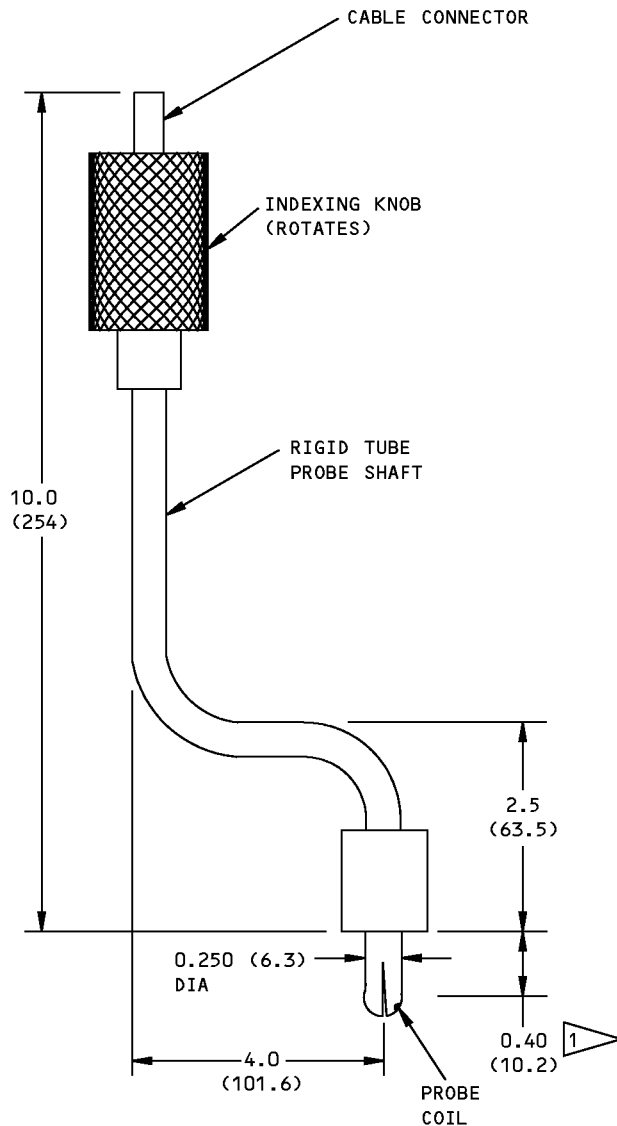
- 2 THIS INSPECTION IS DONE AT SEVEN BOLT HOLES IN THIS PLANE. FOUR OF THE SEVEN BOLT HOLES ARE SHOWN IN THIS VIEW. THE OTHER THREE BOLT LOCATIONS ARE ADJACENT TO THE FOUR BOLTS SHOWN.
- 3 REMOVE THESE BOLTS AS NECESSARY TO GIVE PROBE CLEARANCE FOR THE INSPECTION OF FLAG NOTE 2 BOLT HOLES.

**Outboard Aileron Bracket Assembly and Fitting Inspection
Figure 1 (Sheet 3 of 3)**

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NOTES

- DIMENSIONS ARE IN INCHES (MILLIMETERS IN PARENTHESES)
- CAUTION: REFER TO PARAGRAPH 4 BEFORE YOU USE THIS PROBE.

1 ROTATE THE INDEXING KNOB TO EXTEND OR RETRACT THE PROBE COIL 0.40 INCHES (10.2 MM).

Bolt Hole Probe for Inspection of Outboard Aileron Bracket Assemblies and Related Fittings
Figure 2

EFFECTIVITY
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