



A Textron Company

## **TECHNICAL BULLETIN**

**505-20-26**

15 January 2021

**MODEL AFFECTED:** 505

**SUBJECT:** GROUNDING BRACKET IMPROVED  
INSTALLATION, INTRODUCTION OF

**HELICOPTERS AFFECTED:** Serial numbers 65010 through 65157, 65160 through 65244, 65246 and 65247.

Serial number 65158, 65159, 65245, 65248 and subsequent will have the intent of this bulletin accomplished prior to delivery.

**COMPLIANCE:** At customer's option.

### **DESCRIPTION:**

Bell has received reports of degraded connections at the battery ground bracket. To improve the ground connection, Hi-Lok fasteners are now used, for better clamp-up, instead of solid rivets to attach the battery grounding bracket to the welded truss at the RHS avionics tray attachment.

**PART I** of this Technical Bulletin provides instructions to modify the installation of the battery grounding bracket using Hi-Lok fasteners instead of solid rivets.

**PART II** of this Technical Bulletin provides instructions to repair surface damage that may be found on the RHS avionics tray attachment after removal of the battery grounding bracket removal.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

### **APPROVAL:**

TB 505-20-26

Page 1 of 11

Approved for public release.

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

## **CONTACT INFO:**

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering  
Tel: 1-450-437-2862 / 1-800-363-8023 / productsupport@bellflight.com

## **MANPOWER:**

Approximately 3 man-hours are required to complete **PART I** and approximately 5 man-hours are required to complete **PART II** this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

## **WARRANTY:**

There is no warranty credit applicable for parts or labor associated with this bulletin.

## **MATERIAL:**

### **Required Material:**

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center.

| <u>Part Number</u> | <u>Nomenclature</u>  | <u>Qty (Note)</u> |
|--------------------|----------------------|-------------------|
| SLS-030-500-153    | Grounding Bracket    | 1 (1)             |
| 100-159-5          | Pins, length to suit | 3                 |
| 30-296-5W          | Collars              | 3                 |

**NOTE 1:** required only if found damaged at removal.

### **Consumable Material:**

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Supply Center.

| <u>Part Number</u> | <u>Nomenclature</u>                 | <u>Qty (Note)</u> | <u>Reference *</u> |
|--------------------|-------------------------------------|-------------------|--------------------|
| Commercial         | Cadmium Chromate Conversion Coating | A/R               | C-112              |
| 2230-00451-00      | Epoxy polyamide primer              | 1OZ (1)           | C-204              |
| Commercial         | Polyurethane topcoat                | A/R (2)           | C-245              |
| 2010-00070-00      | High corrosion inhibitor            | 3.5OZ (1)         | C-251              |
| Commercial         | Methyl-Ethyl-Ketone (MEK)           | A/R               | C-309              |

|               |                         |                   |       |
|---------------|-------------------------|-------------------|-------|
| Commercial    | Ethyl Alcohol           | A/R               | C-339 |
| Commercial    | Acetone                 | A/R               | C-316 |
| 2100-06673-00 | Isopropyl Alcohol       | 1GAL (1)          | C-385 |
| 2110-00010-00 | Aliphatic Naphtha       | 1GAL (1)          | C-305 |
| 2110-06227-00 | Toluene                 | 1GAL (1)          | C-306 |
| Commercial    | Abrasive Cloth or paper | A/R               | C-406 |
| 5040-60115-00 | Nylon web abrasive pad  | Roll (4"x30') (1) | C-407 |
| Commercial    | Nitric Acid (A-A-59105) | A/R               | C-432 |
| 2230-05688-00 | Paint Remover           | 1 PT (1)          | C-436 |
| Commercial    | Cheesecloth             | A/R               | C-486 |

\* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

## NOTES:

1. Quantity indicated is the format that the product is delivered in. Actual quantity required to accomplish the instructions in this bulletin may be less and may not require ordering, depending on the operator's consumable material stock levels.
2. Per MIL-PRF-85285, color No. 16492 per FED STD No. 595.

## SPECIAL TOOLS:

Selective Brush Cadmium plating equipment  
High quality Ohmmeter AN/USM-21A or equivalent.

## WEIGHT AND BALANCE:

Not affected

## ELECTRICAL LOAD DATA:

Not affected.

## REFERENCES:

BHT-505-MM, Maintenance Manual  
BHT-ALL-SPM, Standard Practice Manual  
BHT-ALL-SRM, Structural Repair Manual  
BHT-ELEC-SPM, Electrical Standard Practices Manual  
TB 505-19-18 AIRFRAME TRUSS CORROSION PREVENTIVE MAINTENANCE PROGRAM, INTRODUCTION OF.

## PUBLICATIONS AFFECTED:

None affected.

## ACCOMPLISHMENT INSTRUCTIONS:

### PART I. Grounding Bracket Replacement instructions

1. Prepare the helicopter for maintenance.
  - a. Remove Right aft-fuselage panel ([DMC-505-A-53-30-02-00A-520A-A](#)).
  - b. Disconnect the Battery ([DMC-505-A-24-30-04-00A-510A-A](#))
  - c. Remove the grounding cables (5, Figure 1) from the grounding bracket (3).

|                |
|----------------|
| <b>CAUTION</b> |
|----------------|

Exercise care not to drill into bracket or welded Truss RHS avionics tray attachment during removal.

2. Remove rivets (4) (BHT-ALL-SRM) and remove grounding bracket (3) from RHS avionics tray attachment (2).

|               |
|---------------|
| <b>-NOTE-</b> |
|---------------|

Do not soak part with cleaner, use a moistened rag.

3. Remove dirt or sealant from surface (6) of RHS avionics tray attachment (2) and grounding bracket (3) contact faces.
4. Inspect area for damage.
  - a. Visually inspect exposed areas of tubes, welds, fittings, attachments and surrounding structures for corrosion or damage.
    - (1) If any such damage exists that cannot be repaired per TB 505-19-18, contact Product Support Engineering with detailed information describing extent of damage.
  - b. Inspect surface of grounding bracket (3) and RHS avionics tray attachment contact surface (6) for damage or burn marks. If damage, fused aluminum or burn marks are found go to **PART II**.
  - c. Inspect condition of cadmium plating on RHS avionics tray attachment contact surface (6). If any primer is present on RHS Avionics Tray Attachment contact surface (6), strip primer (C-436) (BHT-ALL-SPM, Chapter 4).

-NOTE-

For electrical bonding bare electroplated cadmium surface should not show gold-colored conversion coating.

- (1) If cadmium plating coating appears damaged, carry out selective brush cadmium plating (BHT-ALL-SRM, Chapter 3).

-NOTE-

Assembly must be completed within 2 hours following surface preparation.

5. Prepare surface of grounding bracket (3) (BHT-ELEC-SPM, Chapter 8).
6. Prepare cadmium plated surface of RHS avionics tray attachment mating surface (6) (BHT-ELEC-SPM, Chapter 8).
7. Locate grounding bracket (3) on RHS avionics tray attachment (6).
  - a. Make sure the grounding bracket (3) sits flat on RHS avionics tray attachment mating surface (6). See **Figure 2** for example of possible interference.
  - b. If RHS avionics tray attachment weld interferes, blend corner of grounding bracket (3). Do not sand the tray support weld.
  - c. Enlarge holes for Hi-Loks (4) (BHT-ALL-SRM, Chapter 3).

-NOTE-

Deburring not to exceed 0.005 inch depth

8. Remove grounding bracket (3); deburr all holes; remove debris and loose material.
9. Install grounding bracket (3) with pins/collars (4) wet with sealant (BHT-ALL-SRM, Chapter 3 and BHT-ELEC-SPM, Chapter 8).
  - a. Remove excess sealant squeeze-out.
10. Overcoat fastener heads and tails/collars (4) with sealant (C-251).

-NOTE-

Tare torque of grounding bolt is 6.5 to 60 in-lbs.

11. Install cable assemblies (5) to grounding bracket (3) using previously removed hardware (8), torque 120 to 160 in-lbs plus tare torque.
12. Perform electrical bonding of grounding bracket (3) to RHS avionics tray attachment (2) (BHT-ELEC-SPM, Section 8 for Class C at 0.37 milliohms). Electrical resistance test to be performed from grounding bolt (8) of cable assemblies (5) to RHS avionics tray attachment (2).
13. Prime all bare metal or cadmium plated surfaces (BHT-ALL-SPM, Chapter 4).
14. Apply topcoat to all primed and sealed areas (BHT-ALL-SPM, Chapter 4).
15. Re-finish as required (BHT-ALL-SPM, Chapter 4).
16. Reconnect battery ([DMC-505-A-24-30-04-00A-730A-A](#)).
17. Install right hand aft fuselage panel ([DMC-505-A-53-30-02-00A-720A-A](#)).
18. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.

## **PART II. RHS avionics tray attachment surface repair**

-NOTE-

Repairable damage to RHS avionics tray attachment are burn marks, arcing damage and fused aluminum from bracket that can be removed by hand sanding only.

**CAUTION**

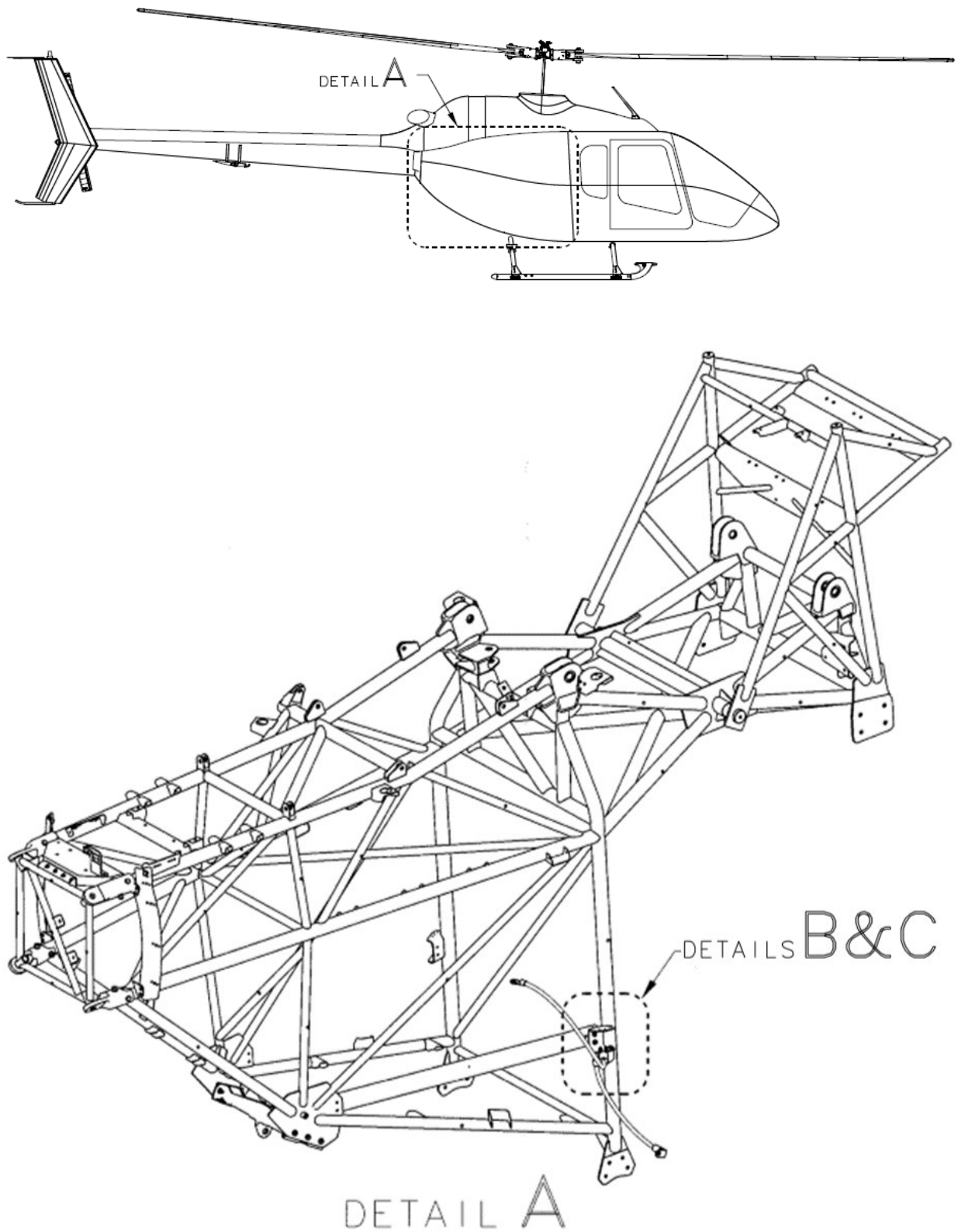
Do not blend into welds. Blends to be performed by hand sanding with abrasive pad in direction indicated in detail C.

1. Sand off damage in the blending direction (detail C) using Nylon web abrasive pad (C-407). Minimum remaining flange thickness of RHS avionics tray attachment (2) to be 0.080 inch.
  - a. If fused aluminum was removed from grounding bracket (3), then a new grounding bracket (3) shall be installed.

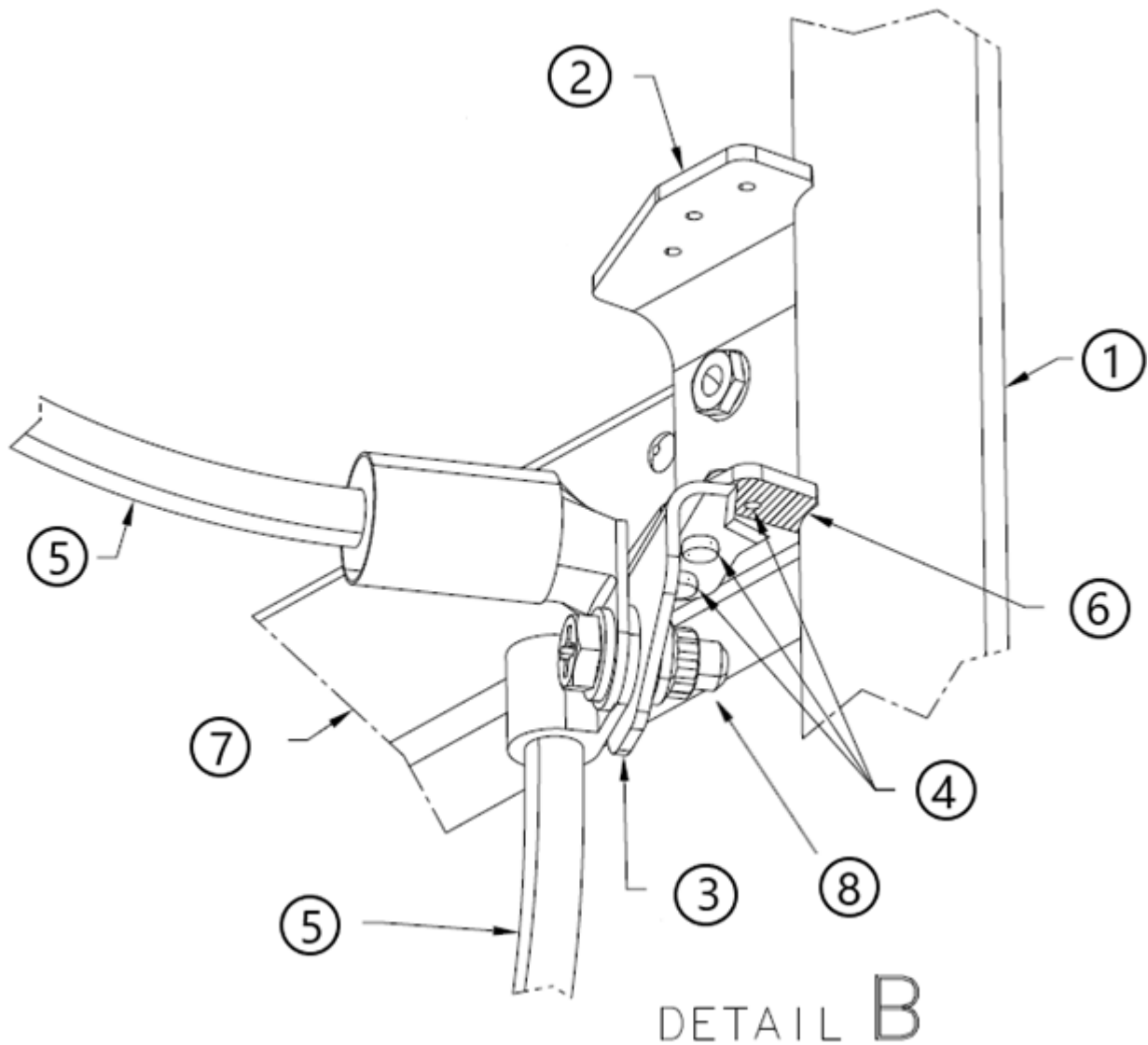
-NOTE-

Do not soak part with cleaner, use a moistened rag.

- b. Remove sanding residue from blended areas and clean for inspection using a rag moistened with cleaner.
  - c. Visually inspect blended areas to ensure surfaces are free of sanding residue and burn damage. Surface roughness to be 63 Ra or better.
  - d. If minimum thickness value of 0.080 inch is not met or all damage cannot be removed by hand sanding, contact PSE with information describing extent of damage.
- 2. Inspect RHS avionics tray attachment contact surface (6) for flatness to ensure good mating surface with grounding bracket (3).
  - 3. Fluorescent penetrant inspect reworked areas of RHS avionics tray attachment (2) and connecting welds (BHT-ALL-SPM, Chapter 6). Ensure no surface defects remain.
  - 4. Apply brush cadmium plating on flange of RHS avionics tray attachment contacting surface (6) (BHT-ALL-SPM, Chapter 3).
  - 5. Install bracket in accordance with **PART I** instructions.

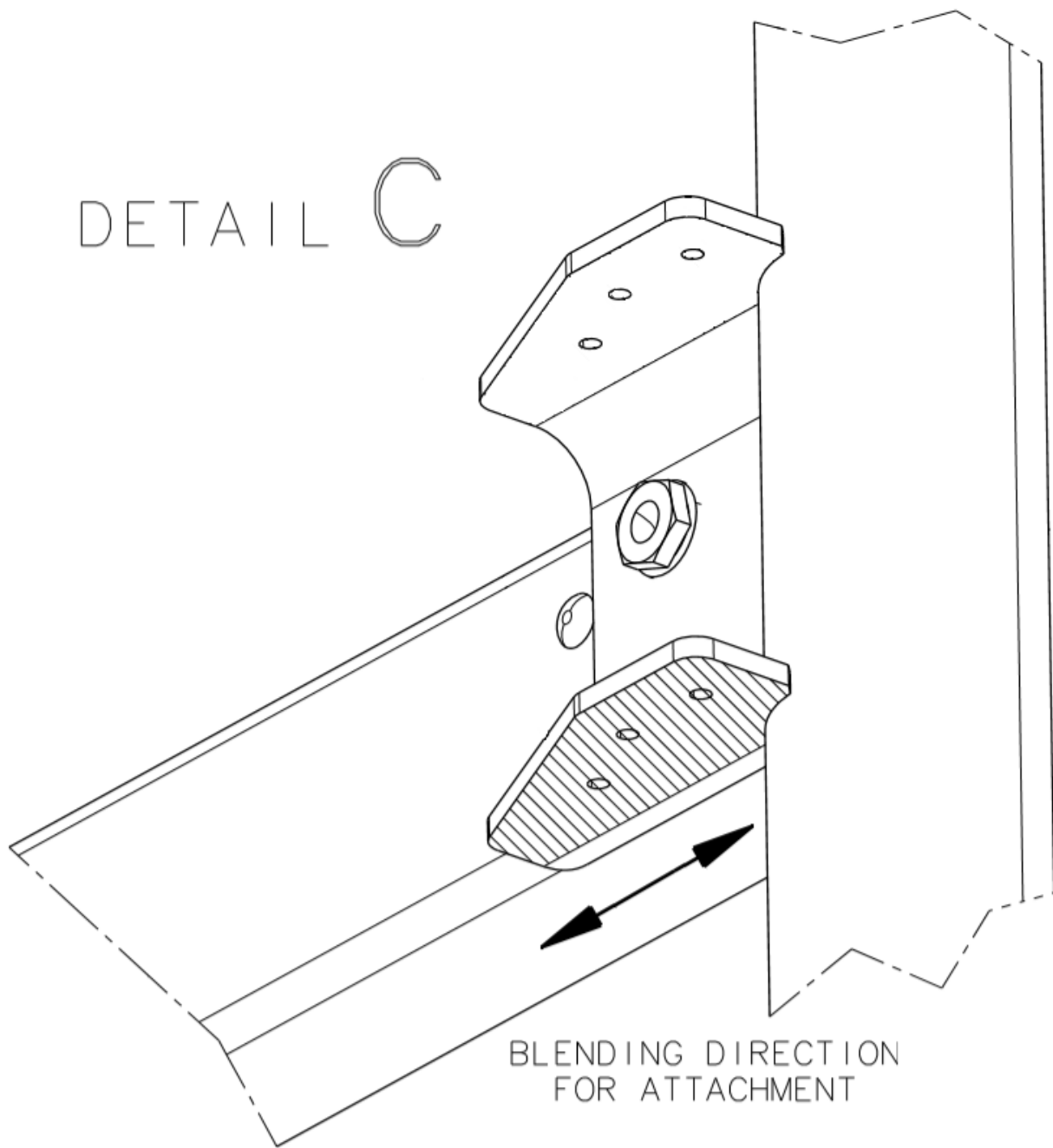


**Figure 1 – Welded Truss Assembly (Sheet 1 of 3)**



- 1 - RHS Pylon to Keel Tube (REF)
- 2 - RHS Avionics Tray Attachment
- 3 - Grounding Bracket
- 4 - Rivets, remove MS20470AD4, install 100-159-5 pin & 30-296-5W collar
- 5 - Ground Cables (REF)
- 6 - RHS Avionics Tray Attachment contact surface (hatched)
- 7 - RHS Avionics Tray Support (REF)
- 8 - Attaching hardware (REF)
  - NAS1801-5-13, Screw
  - NAS1149D0563J, Washer (Qty 2)
  - NAS9926-5L, Nut

**Figure 1 – Welded Truss Assembly (Sheet 2 of 3)**



**Figure 1 – Welded Truss Assembly (Sheet 3 of 3)**



**Figure 2 – Example of possible interference with RHS Avionics Tray Support weld.**