

TECHNICAL BULLETIN
Bell Helicopter
A Textron Company

No. 407-08-84

Date Oct. 6, 2008

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DATE
REV

MODEL AFFECTED: 407

SUBJECT: AFT CROSSTUBE ROCKER BEAM SUPPORTS
BHT P/N 400-052-006-101, 400-052-006-103 AND
AERONAUTICAL ACCESSORIES INC. (AAI)
SUPPORT P/N 407-729-101, MODIFICATION OF.

HELICOPTERS AFFECTED: Model 407 Helicopters serial number 53000
through serial number 53744.

[Model 407 helicopters serial number 53745 and
subsequent will have the intent of this bulletin
accomplished prior to delivery]

COMPLIANCE: At Customer's Option or when a new rocker
beam P/N 400-052-007-123 is procured from
BHT-approved supply center.

DESCRIPTION:

An improved aft crosstube rocker beam P/N 400-052-007-123 was recently introduced to the Bell 407 model landing gear installations. Subsequently, it was discovered that this improved rocker beam can have some interference fit with subject mating pivot supports. This improved beam assembly 407-052-007-123 is the current Production and Spare configuration now delivered for all landing gear configurations. This bulletin provides instructions to modify the subject rocker beam pivot supports to permit installation and free motion of this new rocker beam assembly. Rocker beam mating pivot support 407-729-103 is the current Production and Spare configuration that was introduced to fit with the new rocker beam 400-052-007-123 and does not require modification.

-NOTE-

As a proactive maintenance action, it is recommended to comply with this TB whenever access is gained to any of the subject rocker beam supports to avoid undesired downtime at later installation of the rocker beam assembly 400-052-007-123.

APPROVAL:

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

MANPOWER:

Approximately 5.0 man-hours are required to complete this bulletin. Man-hours are 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.

MATERIALS:

Consumable Material:

The following material is required to accomplish this bulletin, however this material is considered consumable (bench stock) material and may not require ordering depending on the operators consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
MIL-PRF-23377TI,CLC	Primer	1	C-204
ACETONE GALLON	Acetone(Note1)	1	C-316
P-P-101	Abrasive paper	1	C-423

Note: As an alternative, use Methyl Ethyl Ketone (C-309)

SPECIAL TOOLS:

1 Hand file (rough or medium)

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-407-IPC Illustrated Parts Breakdown
BHT-407-MM Maintenance Manual
BHT-ALL-SPM Standard Practices Manual
Technical Bulletin 407-05-68
Alert Service Bulletin ASB 407-02-50

PUBLICATIONS AFFECTED:

None affected

ACCOMPLISHMENT INSTRUCTIONS:

1. If not already done, support the fuselage and remove the landing gear assembly from the helicopter by referring to paragraph 32-5 in the 407 maintenance manual.
2. Refer to paragraphs 32-26 of the 407 maintenance manual and remove the rocker beam assembly from the support (1) attached to the aft crosstube assembly (2).
3. If the same rocker beam is to be re-used, inspect the beam for damage and condition. If serviceable, retain for reinstallation. If damaged, order P/N 400-052-009-123 from BHT-Approved supply centers.
4. Inspect the pivot support (1) on the aft landing gear crosstube assembly (2) for damage and condition. Refer to Technical Bulletin TB 407-05-68 for damage limits applicable to subject supports (1). Replace support (1) if damaged by referring to instructions found in paragraph 32-26 of the 407 maintenance manual.

-NOTE-

Pivot support (1) can be reworked while still attached to the crosstube assembly (2) unless it is also reworked per instructions of Alert Service Bulletin 407-02-50 or Technical Bulletin 407-05-68.

5. Refer to Figure 2 and draw lines on each side that will help you trim the pivot support (1) using a felt pen as follows;

Step 1a: (Ref. Detail D). Looking down at the support (1), start drawing a straight line located at 0.18 inch (4.57 mm) from the edge on top of the support (1).

Step 1b: (Ref. Section E-E). Looking sideways at the support (1), run the line made in step 1a straight and down following external contour of the support (1) but parallel to the edge. Extend this line down .500 inch (12.7 mm) on each side of the bolt pivot axis.

Step 2: (Ref. Detail F). Looking at the support, measure 0.280 inch (7.11 mm) from the center of the pivot hole and draw a lateral (horizontal) line on the machined face of the support (1), running from edge to edge.

Step 3: (Ref. Detail G). From the center of the pivot hole in the support (1), draw a line extending vertically on the machined face of the support (1).

Step 4: (Ref. Detail H). Mark a location at 0.42 inch (10.67 mm) on each vertical line made in Step 3 measured from the center of the pivot hole.

Step 5: (Ref. Detail H). Join the marked location made in Step 4 to each tip of the line made in step 3 located at the edges of the machined face. These new lines should be at 15 degrees in reference to a plane passing through the center of the pivot hole as seen in Detail F.

Repeat **Step 1a** through **Step 5f** as described above for opposite side of the support (1).

WARNING

Use of power tool is prohibited during rework of the support.

CAUTION

Make sure you protect the support(1) and the crosstube assembly(2) during the next steps.

6. (Ref. to Figure 3) Use a hand file and start removing material at the tip of the support (1) to obtain a shape as indicated in Detail C. Work the file at 45 degrees angles and in the orientation as seen in detail H and Section I-I until you reach the lines made earlier and you obtain the shape required.
7. Repeat step 6 for opposite side of the support (1).
8. After the shapes shown are obtained by hand filing method, use Aluminum Oxide abrasive paper, 320 grit or finer and sand each reworked surface to obtain a roughness of 125 RA (Roughness Average) maximum. Break all sharp edges by removing 0.015 inch (.381 mm) material by 45 degrees or by obtaining .15 Radius.

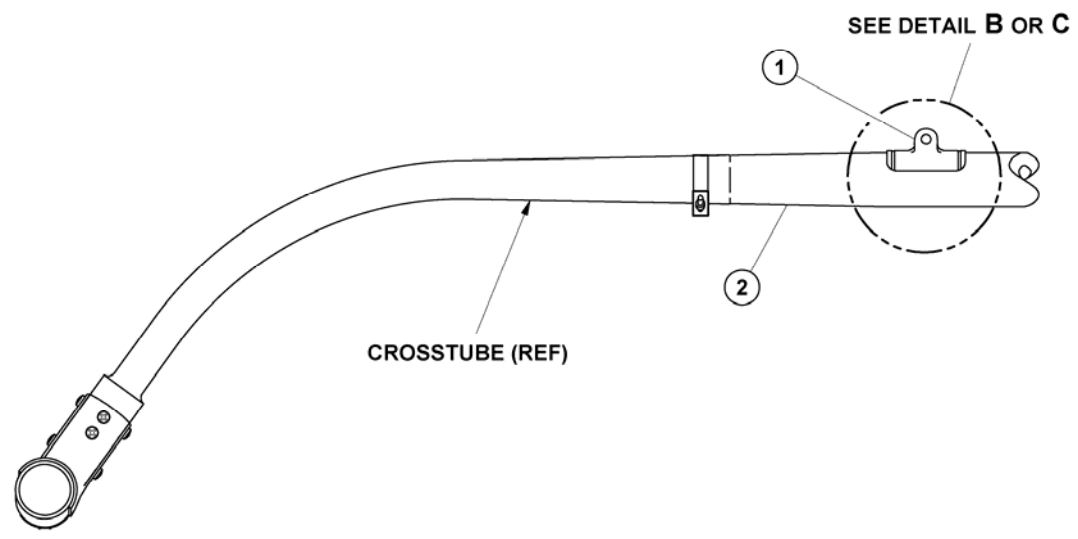
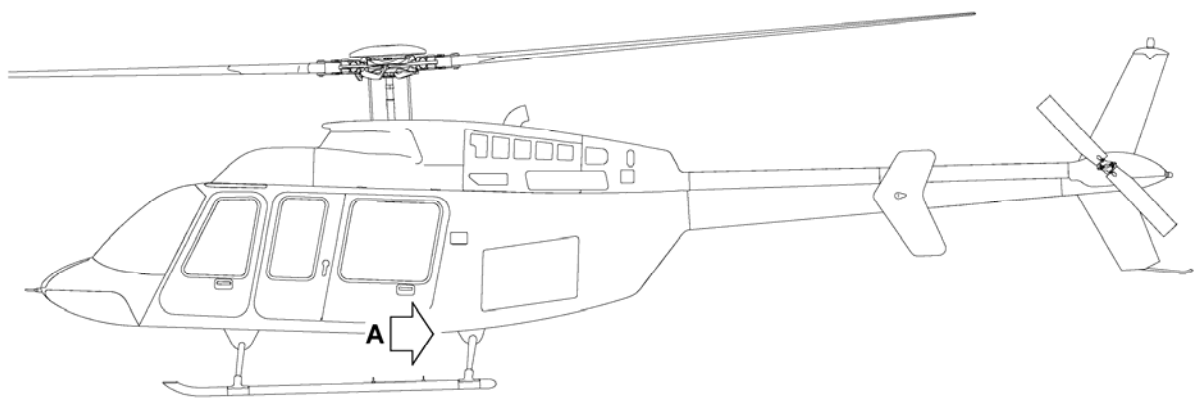
9. After rework, clean each surface with Acetone (C-316) or MEK (C-309) and let dry.
10. Inspect each reworked area by Fluorescent Penetrant Inspection method.
11. Clean reworked areas again as indicated in Step 9 and apply Polyamide Epoxy Primer coating (C-204). Apply final paint coating as required.
12. Re-install rocker beam on crosstube support (1) and attach with hardware. If a new rocker beam 400-052-007-123 is installed, verify that no interference exists and that the rocker beam will move freely before hardware is torqued between 20 to 60 inch/pounds and cotter pin is installed.
13. Refer to paragraph 32-9 in the 407 maintenance manual and install the landing gear assembly back on the helicopter.
14. Once modified, the aft crosstube assembly on your helicopter reflects the aft crosstube assemblies currently delivered by BHT as indicated below and can be used as direct replacement;

LANDING GEAR CONFIGURATION	AFT CROSSTUBE ASSY. BEFORE MODIFICATION	EQUIVALENT TO
Standard (LOW)	407-050-102-101(Note 1, 3) 407-050-102-103(Note 3) 407-723-104 (Note 4)	407-723-106 (AAI)
High	407-050-202-101(Note 2, 3) 407-050-202-103(Note 3) 407-725-104 (Note 4)	407-725-106 (AAI)
Emergency Floats	407-050-202-101(Note 2, 3) 407-050-202-103(Note 3) 407-725-104 (Note 4)	407-725-106 (AAI)

NOTES:

1. Aft crosstube 407-050-102-101 must comply with TB 407-05-68 and this TB first before being considered equivalent to P/N 407-723-106.
2. Aft crosstube 407-050-202-101 must comply with ASB 407-02-50 and this TB first before being considered equivalent to P/N 407-723-106
3. Product of Bell Helicopter Textron
4. Product of Aeronautical Accessories Inc. (AAI).

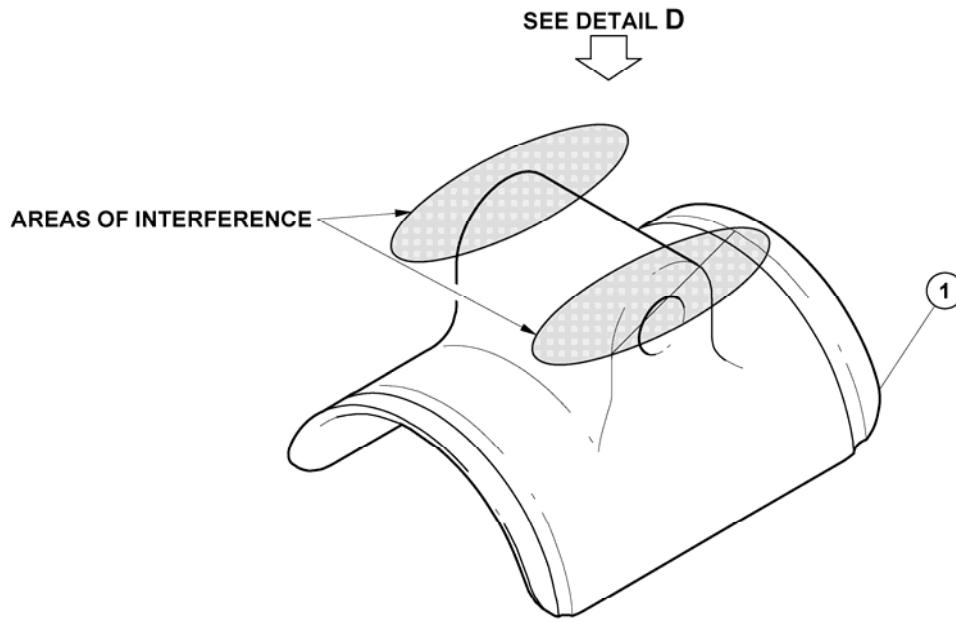
15. Annotate helicopter records to show compliance with this technical bulletin.



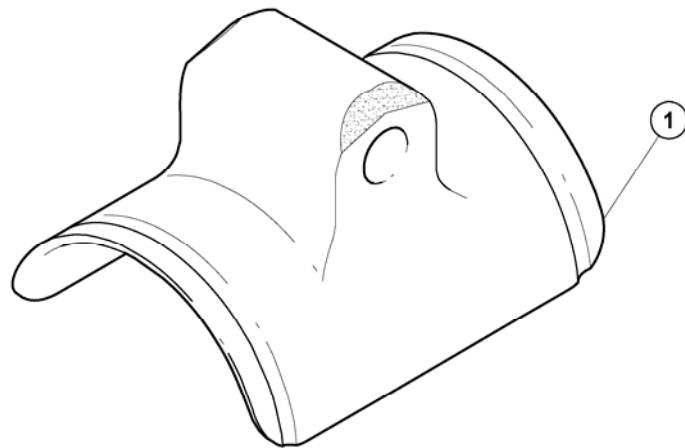
VIEW A
(ROCKER BEAM REMOVED FOR CLARITY)

05529_001

Figure 1: Landing gear rocker beam support, rework of.



DETAIL B
SUPPORT BEFORE MODIFICATION



DETAIL C
SUPPORT AFTER MODIFICATION

05529_002

Figure 2: Landing gear rocker beam support, preparation of (sheet 1 of 4).

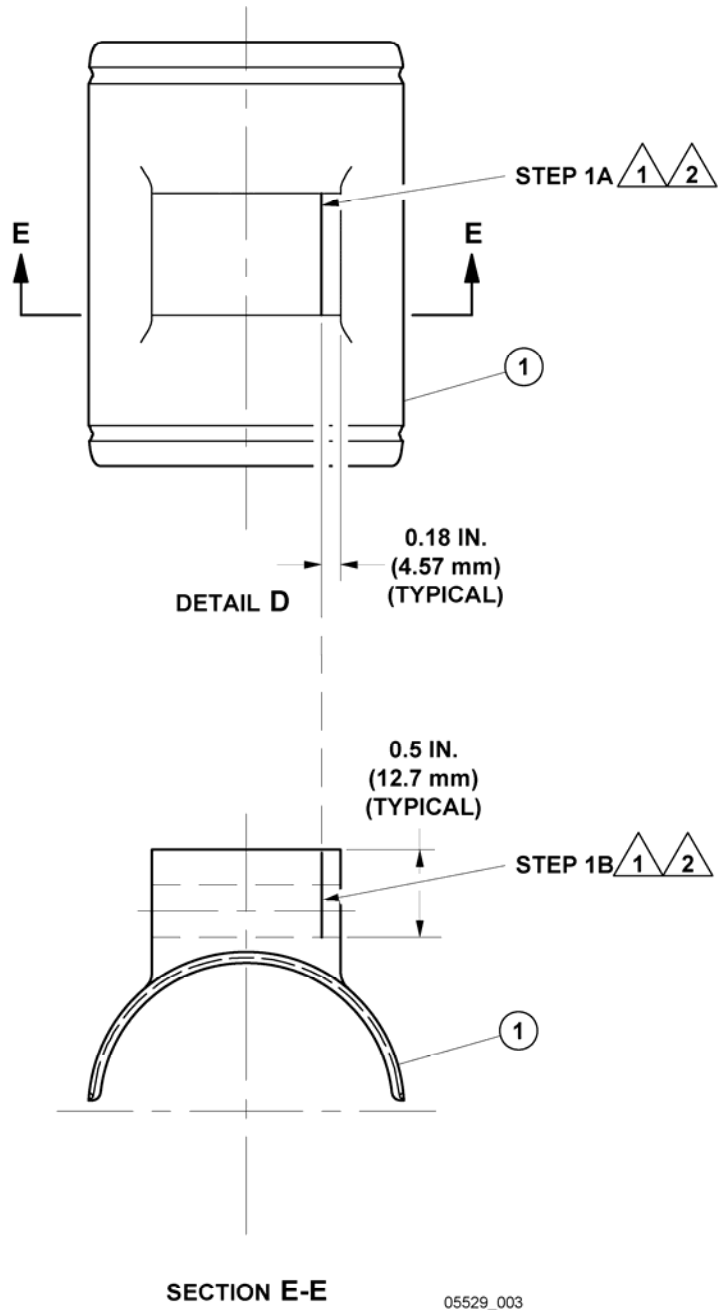
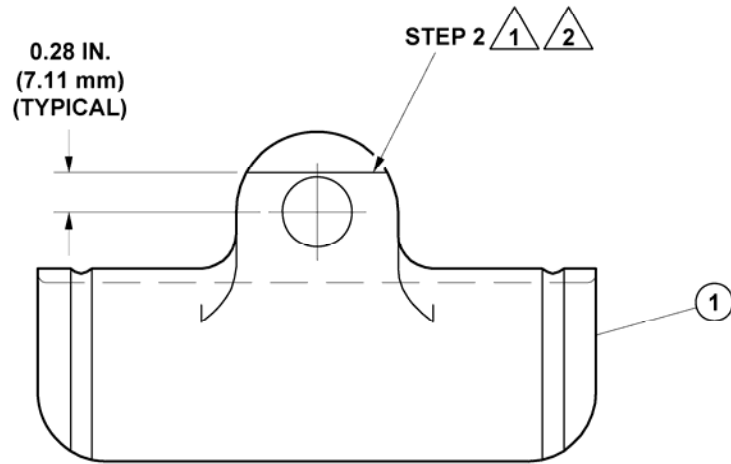
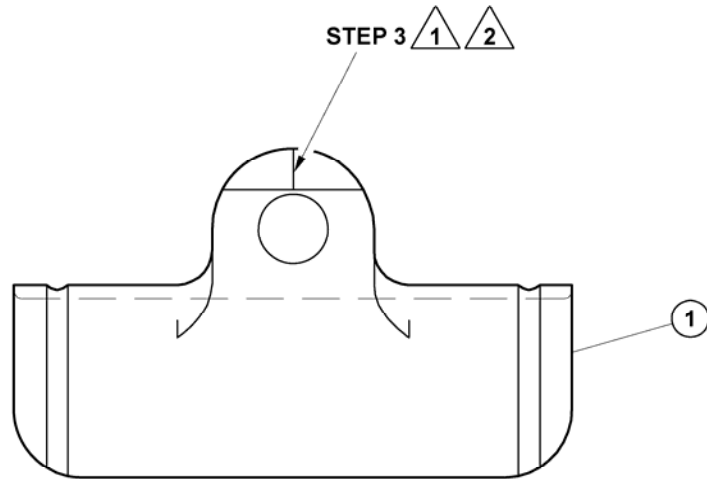


Figure 2: Landing gear rocker beam support, preparation of (sheet 2 of 4).



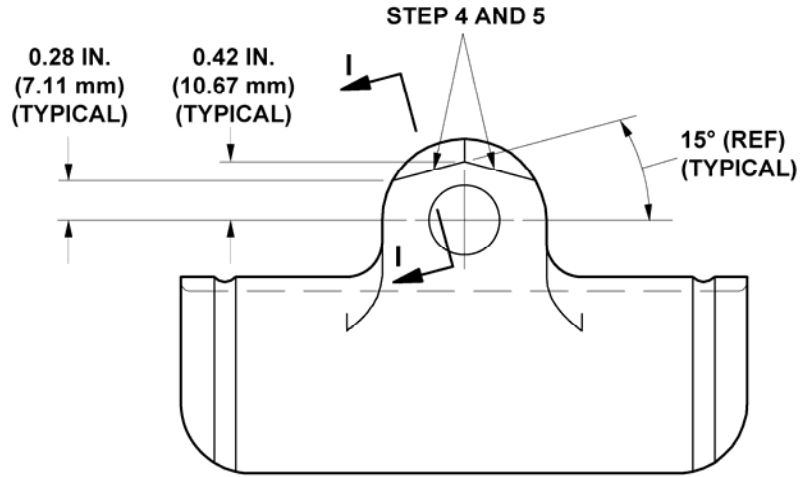
DETAIL F



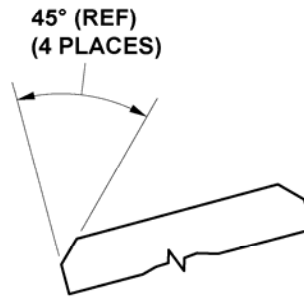
DETAIL G

05529_004

Figure 2: Landing gear rocker beam support, preparation of (sheet 3 of 4).



DETAIL H



SECTION I-I

RAM 05529_005

Figure 2: Landing gear rocker beam support, preparation of (sheet 4 of 4).

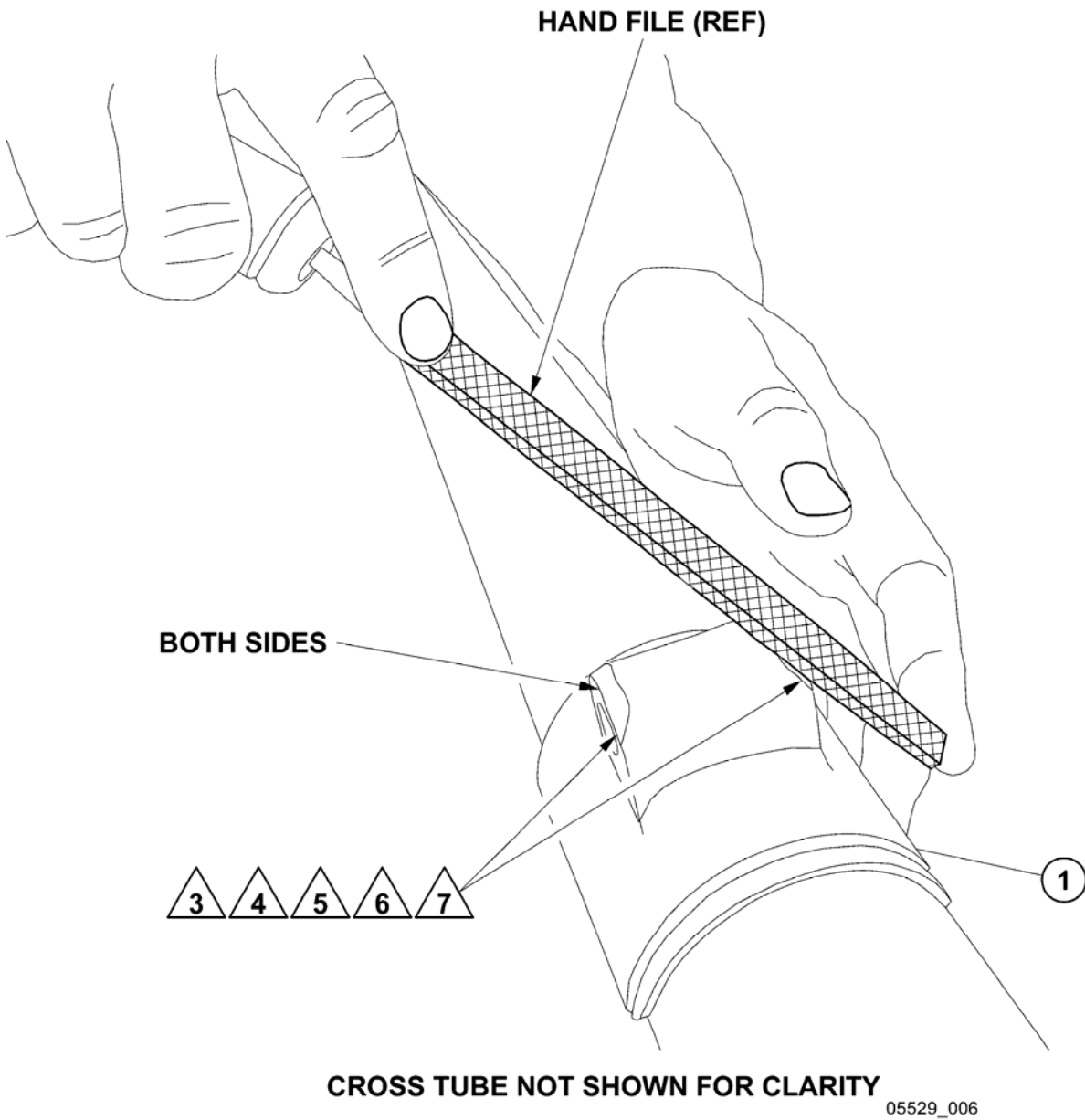


Figure 3: Landing gear rocker beam support, rework method.

LEGEND

1. 400-052-006-101 (Ref)
400-052-006-103 (Ref)
407-729-101 (AAI Ref #)
2. Aft crosstube assembly (Ref)

NOTES

- 1 Mark unmodified support with felt pen.
- 2 Mark and modify both sides of support.
- 3 Remove material using hand file only. Work the file at a 45° and in the orientation as shown in detail H and section I-I.
- 4 Rework surfaces to 125RA (roughness average) maximum, using 320 grit or finer aluminum oxide abrasive paper.
- 5 Clean surfaces after rework with acetone (C-316) or MEK (C-309).
- 6 Inspect reworked surfaces by fluorescent penetrant inspection method.
- 7 Apply polyamide epoxy primer (C-204) over reworked surfaces.