



Service Instruction SI-0013

Technical Portions FAA Approved

Epic Aircraft, LLC ♦ 22590 Nelson Road ♦ Bend OR 97701
Phone: 541-318-8849 ♦ Fax: 541-382-5125 ♦ Web: www.epicaircraft.com

Subject: Rudder Trailing Edge Damage Repair

ATA-Code: 27-20

Labor: 25 Hours

Effectivity: K003

Affected Model(s): E1000

Due: Before the next flight.

Compliance: Recommended ☐ Mandatory ☒

Recurrence: No

1 **BACKGROUND AND PURPOSE:**

During an inspection approximately 6" of the trailing edge of the rudder, just above the trim tab, was found to have a crack at the bond seam location and indications on the painted surface of contact with another object. This Service Instruction gives procedures to repair the damage.

2 **REFERENCES:**

Epic E1000 Airframe Maintenance Manual, PN SK05000000

3 **WARRANTY:**

Parts and labor costs for this Service Instruction are at the owner's expense.

4 **TOOLS:**

<u>No.</u>	<u>Description</u>	<u>Qty</u>	<u>Epic Aircraft Supplied</u>	<u>Customer Supplied</u>
1.	Common Hand Tools	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Thermocouples J or K type	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Portable bonding and repair controller and heaters	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5 **PARTS/MATERIALS:**

<u>No.</u>	<u>Part Number</u>	<u>Description</u>	<u>Qty</u>	<u>Epic Aircraft Supplied</u>	<u>Customer Supplied</u>
1.	Sandpaper	Aluminum Oxide, 80-220 Grit	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Scotch-Brite	General Purpose Pad 7447	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	White Cotton Flock - W200		A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Loctite EA 9360 Aero	Bonding paste	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12.	Imron AF740	Clearcoat	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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13.	Imron AF700, color Epic White 4192016	Basecoat	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14.	8989S	Accelerator	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15.	13100S	Activator	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16.	-	Isopropyl Alcohol, 99%	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17.	Hermitex 300 or Kimtech P2 or DuPont Sontara AC9165A	Wiping Cloth	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.	-	Paper, non-lined or plastic mixing cups	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19.	1220S	Primer	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20.		Stir sticks	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21.	416	Metal Glaze	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>

6 INSTRUCTIONS:

1. Set the BATT 1 and BATT 2 switches to OFF.
2. Remove all external electrical power from the airplane (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 24-40).
3. Remove the rudder (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 55-40).
4. Place the rudder on a suitable work surface.
5. Remove the paint from the damaged area (refer to Figure 1).
6. Trim the laminate from the trailing edge to expose the discrepant area, leaving 0.050" of laminate on each side of the trailing edge.

NOTE: Only remove the minimum amount of laminate required to complete the next step.

7. Carefully remove the adhesive and damaged material in the discrepant area. Adhesive removal is to extend 0.125" above and below the discrepant area until all damaged material is removed.
8. Tap test the area surrounding the repair to make sure the damage has been removed.
9. Clean and surface prep the repair region as follows:
 - a. Wash the surface with isopropyl alcohol.
 - b. Abrade the surface with 80 - 150 grit sandpaper.
 - c. Remove abrading dust with a vacuum before dry-wiping the surface with a clean, dry, lint-free cloth.

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- d. Final clean the surface by thoroughly wetting the surface with isopropyl alcohol then immediately wiping with a clean, dry, lint-free cloth in a single stroke. After each wipe, turn the drying cloth to a clean surface.

10. Mix Loctite EA 9360 Aero bonding paste with cotton flock filler at a ratio of 8% by weight.

**NOTE: Set aside a small amount of neat (not mixed with flock)
EA 9360 Aero Bonding paste for use in step 11.**

11. Within 30 minutes of step 10, wet out the surface of repair region using neat EA 9360 Aero Bonding paste. Apply paste in a thin layer on the remnant adhesive and exposed laminate in the repair region.
12. Within 30 min of step (10), completely fill the repair region with the bonding paste-cotton flock mix.

**NOTE: Take care to apply adhesive such that no air bubbles
or discontinuities are introduced to the repair region.**

13. Cure as follows:

- a. Cure for 24 hours at room temperature, or
- b. Cure by applying an air temperature ramp from ambient to 95 deg F at a max rate of 3 deg per minute. Once 95 deg is reached maintain air temperature at 95 deg +/- 5 deg for 120 minutes before allowing to cool.

14. Visually inspect for defects and tap test to make sure there are no voids.

15. Final cure as follows:

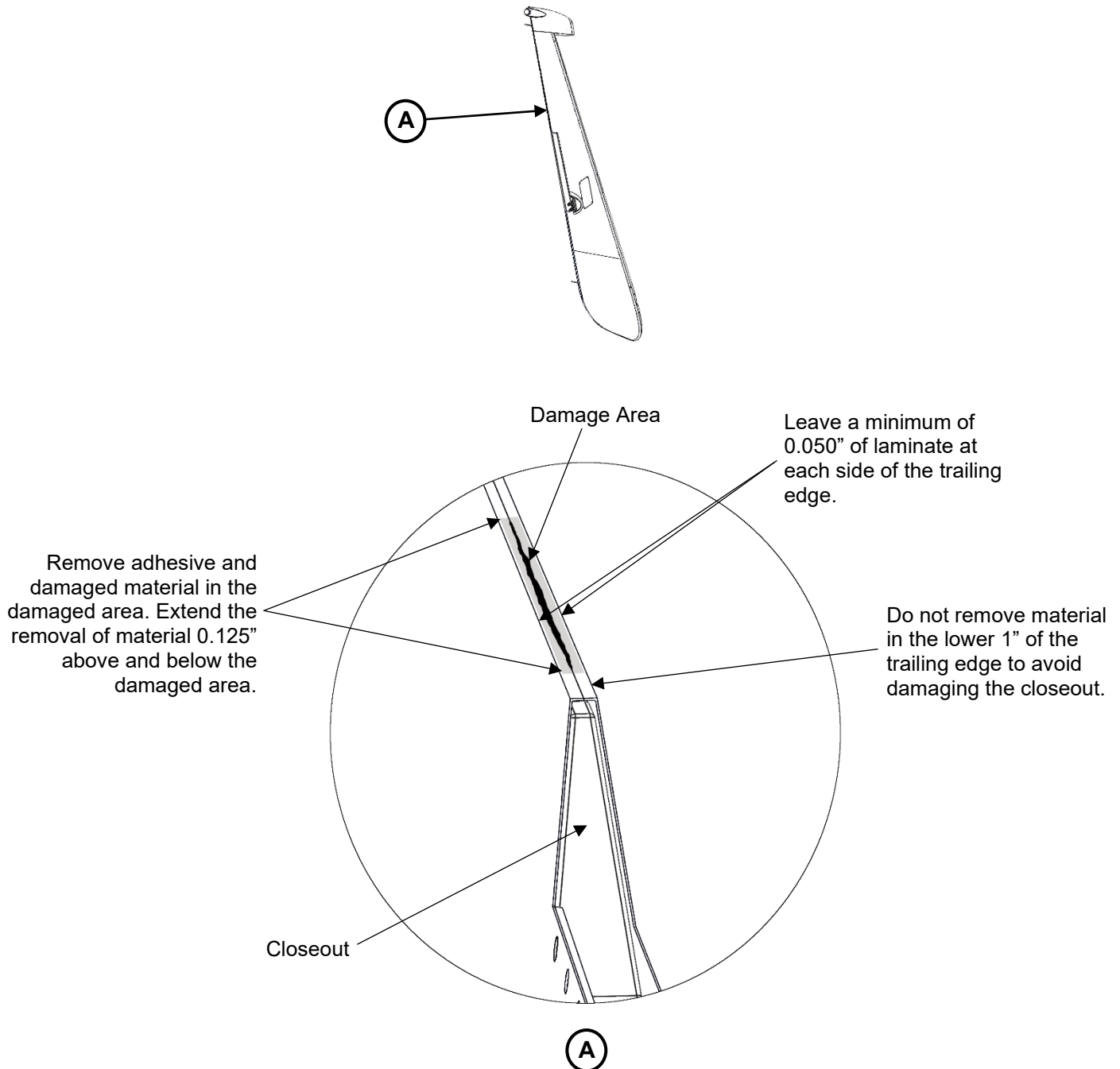
- a. Apply air temperature ramp from ambient (100°F or lower) to 160±10°F at a max rate of 5°F per minute.
- b. Maintain the air temperature at 160±10°F for a minimum of 90 minutes.
- c. Cool down the air temperature to 110°F or lower at a max rate of 5°F per minute before allowing to cool.

CAUTION: Use caution not to sand through the foil.

16. Prep, prime and paint the repair (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 51-20).
17. Check the balance of the rudder (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 55-40).
18. Install the rudder (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 55-40).

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Figure 1: Rudder Repair



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7 WEIGHT AND BALANCE:

Negligible

8 PUBLICATIONS AFFECTED:

N/A

9 RECORD COMPLIANCE:

Make appropriate entry in airplane maintenance records.

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Appendix A: Compliance Letter

Please complete and mail this form to Customersupport@epicaircraft.com

This is to certify that I have completed the work in accordance with the Epic Aircraft, LLC Service Instruction.

Aircraft Owner Information:

Date: _____ Aircraft Serial Number: _____ Aircraft Reg. Number: _____

Owner's Name: _____

Maintenance Entity Information

Name of Shop Performing the work: _____

Name of Person(s) Performing inspection and/or work: _____

Phone Number: _____ Email: _____

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