



Service Bulletin SB-0031

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 Bondline Inspection

ATA-Code: 27-20

Labor: 4.0 hours

Effectivity: K003 – K029

Affected Model(s): E1000, E1000 GX

Due: Next maintenance interval
or 120 days, whichever occurs first.

Compliance: Mandatory

Recurrence: N/A

1 **BACKGROUND AND PURPOSE:**

During a recent annual inspection, an unbonded region was found in a Rudder trailing edge. This condition is believed to potentially affect an unknown number of aircraft in the fleet. Epic has thoroughly analyzed the condition and determined it is not a risk to continued operational safety of the aircraft but may result in cracks in the trailing edge paint.

This Service Bulletin gives inspection instructions to determine if the aircraft is affected.

2 **REFERENCES:**

Epic E1000 Aircraft Maintenance Manual, PN SK05000000

3 **WARRANTY:**

For aircraft under warranty, parts and labor will be covered by Epic Aircraft, LLC if the work is performed within the compliance period and at an Authorized E1000 Service Center.

4 **APPROVAL:**

The engineering aspects of this service document have been shown to comply with the applicable Federal Aviation Regulations and are FAA approved.

5 **REVISION :**

C: If the original issue, revision A, or revision B of this service bulletin was complied with, compliance with revision C is not required.

- Deleted recurrence requirement.
- Clarified compliance requirements and repair options.

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6 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.	UT Flaw Detector – Krautkramer USN 58L	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	1 MHz 0.5" Pulse Echo Transducers	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Transducer Alignment Tool	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

7 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.	416	Metal Glaze	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	1220S	Primer	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Imron AF740	Clearcoat	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Imron AF700	Basecoat – color to match existing colorway	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.	8989S	Accelerator	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.	13100S	Activator	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.	-	Ultrasonic Couplant	A/R	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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8 INSTRUCTIONS:

1. Set the BATT 1 and BATT 2 switches to OFF.
2. Remove all external electrical power to the airplane (refer to Chapter 24-40).
3. Visually inspect the trailing edge of the Rudder in the regions shown in Figure 1.

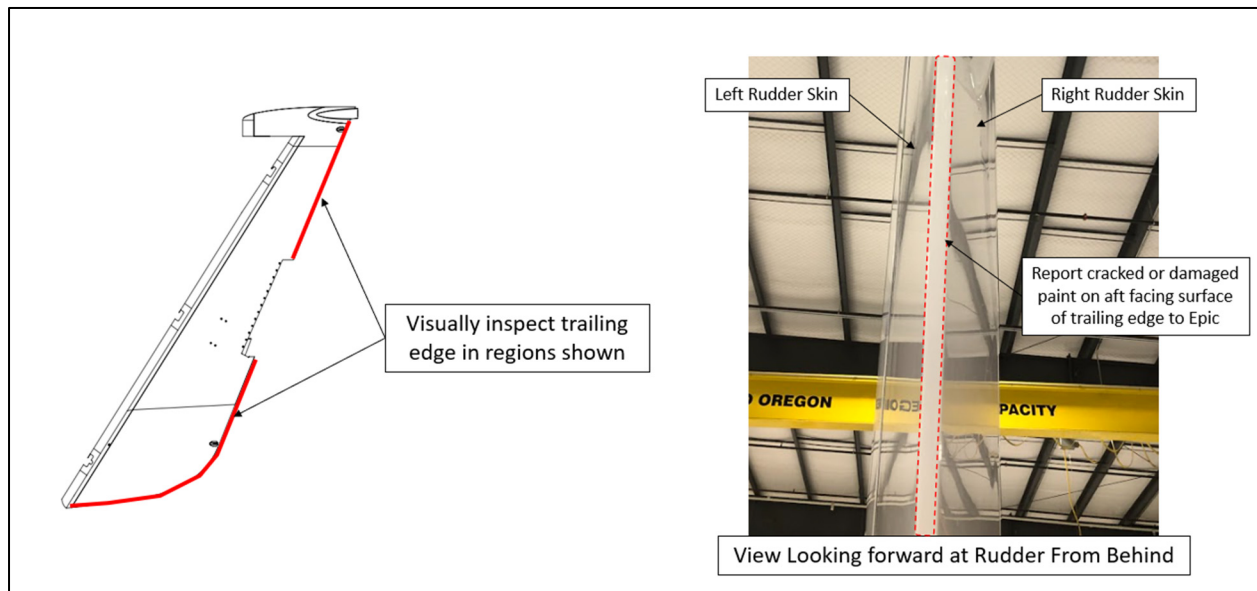


Figure 1: Inspection Region

4. If no cracks in the paint are found, make an entry in the maintenance log that steps 7-9 are to be completed at the next annual inspection.
5. If cracks in the paint totaling less than 12" in length are found, do the steps that follow:
 - a. Prep, prime and touch up paint in the cracked region (refer to Epic E1000Aircraft Maintenance Manual, PN05000000, chapter 51-20).
 - b. Make an entry in the maintenance log that steps 7-9 are to be completed at the next annual inspection.
6. If cracks in the paint totaling greater than 12" in length are found, proceed to step 7.
7. Perform an ultrasonic inspection of the entire rudder trailing edge bondline as follows:
 - a. Remove all soils, dirt, and other debris which might interfere with inspection or damage inspection equipment. Verify the sound entry surface is clear of resin ridges/flashing along the trailing edge and width of the sound entry surface. If necessary, wipe the inspection area with isopropyl alcohol and a lint free cloth.

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- b. Perform a tap test on the inspection area shown in figure 3.
- c. Set up the Krautkramer USN 58L as follows (refer to figure 2):
 - i. Attach both transducers via cables to ultrasonic flaw detector and turn on unit.
 - ii. Set range to approx. 4 in.
 - iii. Set Probe Delay to 0.00 μ S
 - iv. Set Velocity to 0.1181 in/ μ S.
 - v. Press “PLSRCVR” and then select “RECIEVER”. Set frequency to appropriate frequency to the probe selected per Section 6.2. Press “DUAL” until it reads “Through” for through transmission.
 - vi. Place a small amount of couplant on transducers and lightly press them together. A signal should appear on the screen.
 - vii. Use “DISPLAY DELAY” or “PROBE DELAY” to search for the signal and place it in the desired part of the screen. It is recommended practice to place the signal in the middle of the screen in order so it can shift left or right for changes in thickness.

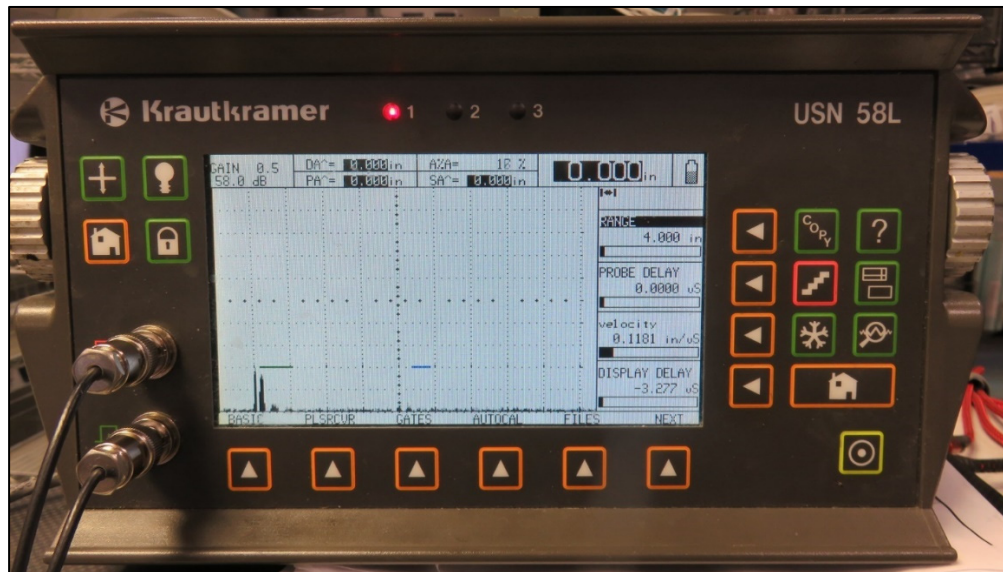


Figure 2: Set Up

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8. Perform the inspection as follows:

- a. Locate the bond line on the trailing edge of the rudder, above and below the trim tab cut-out as shown in Figure 3.
- b. Apply couplant or water and place both transducers on either side of the bonded rudder skin and verify signal. Increase gain (dB) until signal reached 80-100% full screen height.

NOTE: Due to the change in bond line thickness, repeat this process when transitioning from one side of the rudder trim tab cut-out to the other.

- c. Slide transducers along the length of the trailing edge, while ensuring transducers are parallel to each other.

NOTE: The alignment tool (Figure 4) should be used whenever possible, except for any non-parallel surfaces (e.g., the bottom of the rudder trailing edge).

- d. Any loss of signal shall be recorded and evaluated as a relevant indication.
- e. Rejection Criteria: Voids or disbonds 1.0" x 1.0" or greater, spaced 10" or less apart.

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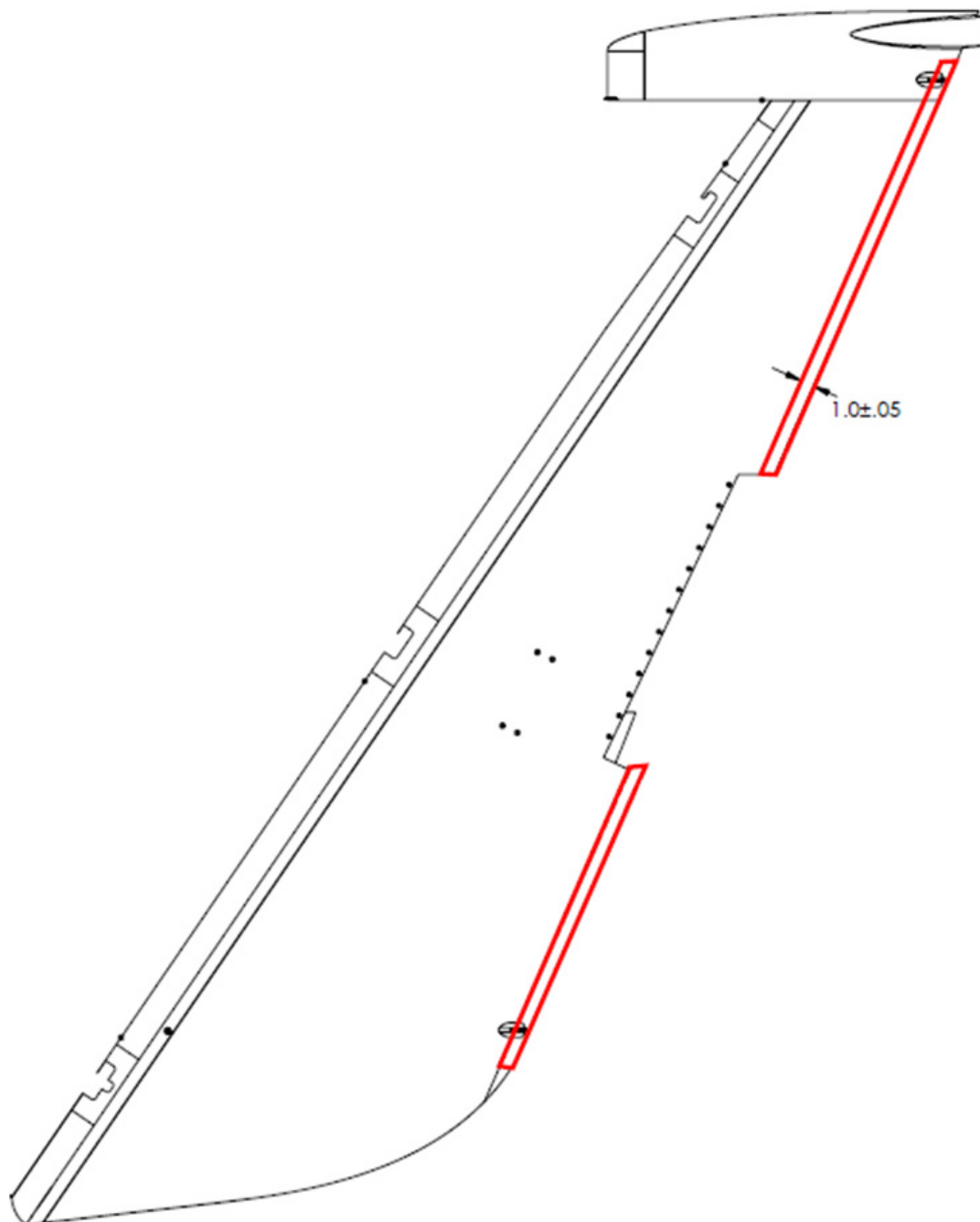


Figure 3: Inspection Area

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Figure 4: Alignment Tool

9. Report inspection results to Epic, include the location of the cracked paint and results of the tap testing and ultrasonic inspections for disposition :

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NOTE: Repair options will be determined by the ultrasonic inspection results. Repair may either be compliance with SB-0036 or an aircraft specific Service Instruction may be issued.

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9 WEIGHT AND BALANCE:

Negligible

10 PUBLICATIONS AFFECTED:

N/A

11 RECORD COMPLIANCE:

Make appropriate entry in airplane maintenance records:

- If no cracking is found in the rudder trailing edge paint, compliance with steps 1 – 4 shall be noted in the maintenance records at the initial compliance of this Service Bulletin. Full compliance of this Service Bulletin shall be noted in the maintenance records when the ultrasonic inspection is performed at the aircraft's next Annual Inspection.
- If cracks 12" or less are found, compliance with steps 1 – 5 shall be noted in the maintenance records at the initial compliance of this Service Bulletin. Full compliance of this Service Bulletin shall be noted in the maintenance records when the ultrasonic inspection is performed at the aircraft's next Annual Inspection.
- If the ultrasonic inspection is performed at the initial compliance of this Service Bulletin, full compliance of this Service Bulletin shall be noted in the 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 Bulletin.

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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