



# SERVICE BULLETIN

## SB-AG-78

Revision B: 12/17/2024

### Horizontal Stabilizer Attach Channel Repair

**AIRPLANES AFFECTED:**

**MODEL**

**SERIAL NUMBERS**

S2R-T34

273 & UP

S2R-H80

101 & UP

S2R-G10

169 & UP

S2R-HGT65

011 & UP

S2R-T660

101 thru 162 except 153 - 157

*DAVID E. YARBROUGH*

David Yarbrough  
Director of Engineering

## LOG OF REVISIONS

**NOTE:** Reformatting and correction of typographical errors is not considered revision.

Rev.	Page	Description of Revision	By:
IR	All	New Document Initial Release.	B. Tobin 02/06/2023
A	Cover, 2, 3	Added S2R-HGT65 to affected aircraft model list and updated serial numbers for all aircraft. Added S2R-HGT65 to Section 1 and Section 2. Added "APPLICABILITY" column to Section 7.	B. Tobin 02/09/2023
B	3, 4, 6, 8, & 10  5 All 5&6	Updated part number of Locating Tool to ESK-807. Updated Parts List. Changed "MODIFICATION" to "REPAIR". Section 8 became "FIT CHECK".	T. Surratt 12/17/2024

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## **1. PURPOSE/REASON FOR PUBLICATION**

On occasion, damage to P/N 10962-2 “Channel, Stabilizer Attach, Fwd” has been detected during normal periodic inspections of Thrush Models S2R-T34, S2R-H80, S2R-G10, S2R-HGT65, and S2R-T660 aircraft. This Service Bulletin provides instructions and parts to repair this damage by removing and replacing the affected channels with improved parts.

**NOTE:** This Service Bulletin addresses only the proper replacement of the damaged 10962-2 Channel and does not establish or otherwise address the overall airworthiness of the airframe or aircraft.

## **2. SCOPE/COMPLIANCE**

This Service Bulletin is highly recommended for S2R-T34, S2R-H80, S2R-G10, S2R-HGT65, and S2R-T660 airplanes.

## **3. BY WHOM WORK WILL BE ACCOMPLISHED**

The work is to be accomplished by an FAA Certified A&P mechanic with welding qualification or foreign equivalent.

## **4. APPROVAL**

This Service Bulletin is approved by the Director of Engineering at Thrush Aircraft, LLC.

## **5. MAN HOURS**

32 hours will be required.

## **6. SPECIAL TOOLS**

ESK-807 Locating Tool

## 7. PARTS LIST

### 7.1 510 GALLON SERIES

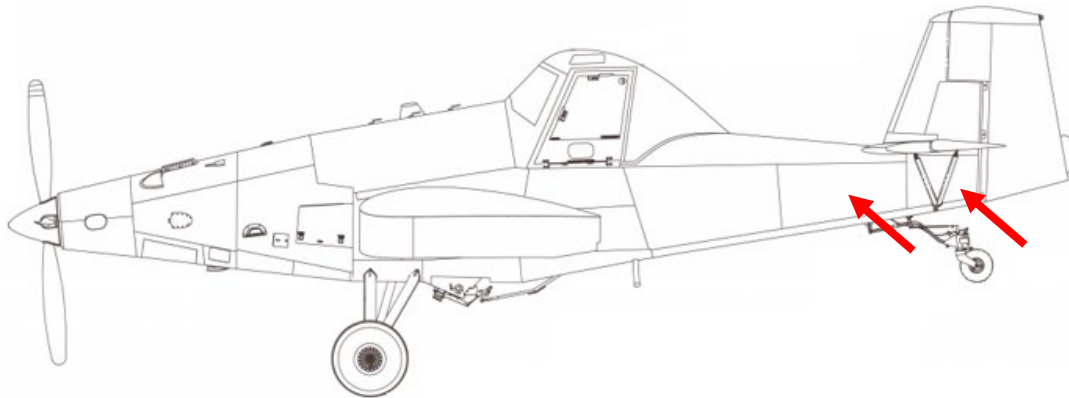
QTY	PART NUMBER	DESCRIPTION	CONFIGURATION
1	ESK-807	Locating Tool	ALL
1	534220001-001	Channel – Stabilizer Attach – FWD	A

### 7.2 660 (710) GALLON SERIES

QTY	PART NUMBER	DESCRIPTION	CONFIGURATION
1	ESK-807	Locating Tool	ALL
1	534220001-003	Channel – Stabilizer Attach – FWD	B
1	534220001-005	Channel – Stabilizer Attach – FWD	C

## 8. FIT CHECK

1. Remove side skins (LH or RH). (Reference Figure 8-1)



**Figure 8-1**

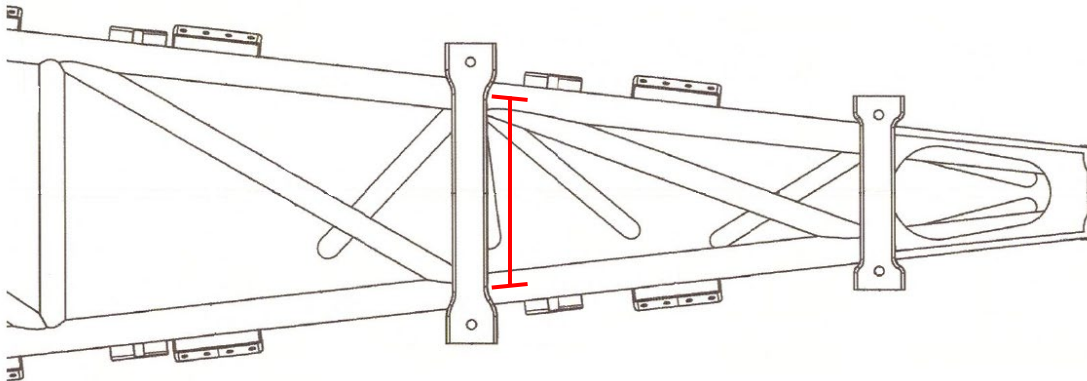
2. Locate scale (at least 12") on aft side of vertical longerons below Fwd. Attach Channel and find measurement center to center of horizontal longerons. (Reference Figures 8-2 & 8-3)

**NOTE:** Measurements are approximate.

3. Use table in Figure 8-2 to determine applicable kit.
4. Order kit by contacting Thrush at [parts@thrushaircraft.com](mailto:parts@thrushaircraft.com) or your local Dealer/Service Center.

**NOTE:** Contact Thrush if there are any issues with fit.

CONFIGURATION TABLE	
Measurement	Configuration
8.9"	A
7.7"	B
7.3"	C



**Figure 8-2**



**Figure 8-3**

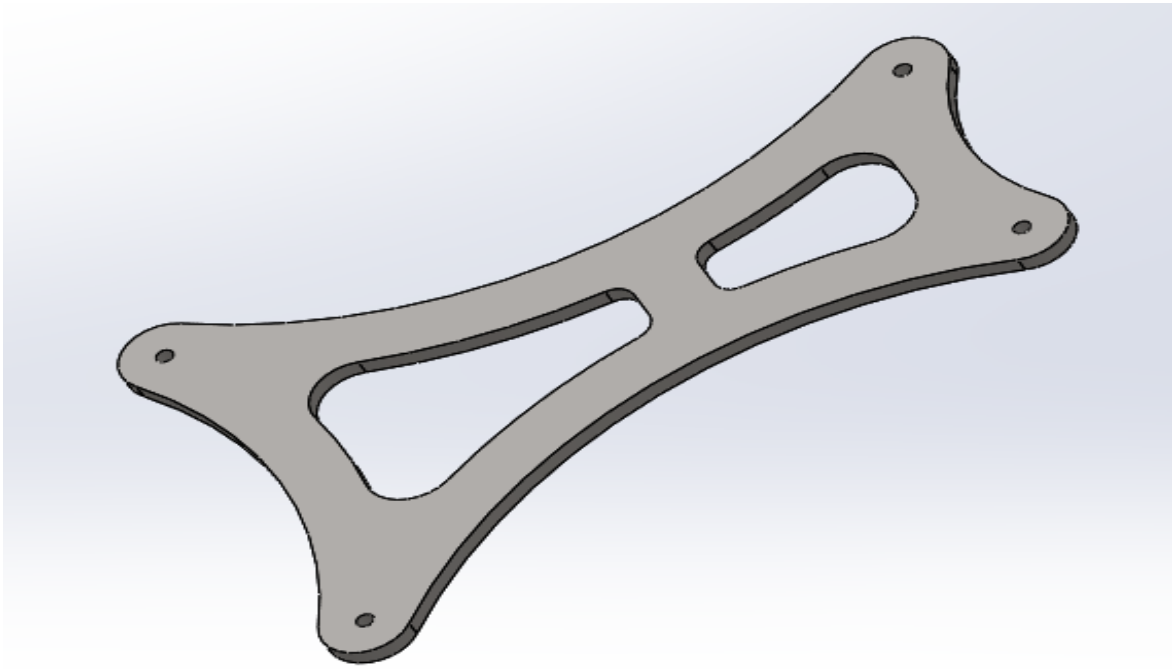
## 9. REPAIR

### 9.1 ACCESS TO CHANNEL 10962-2 (10962-3 on T660)

1. Move aircraft to an appropriately protected and equipped service area absent of any flammable materials.
2. Remove aircraft side skins as required.
3. Disconnect rudder control cables from rudder. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
4. Remove rudder and vertical stabilizer from aircraft. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
5. Disconnect elevator and pitch trim controls from surfaces. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
6. Remove elevators from aircraft according to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
7. Remove horizontal stabilizer from aircraft. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.

### 9.2 ESK-807 LOCATING TOOL FIT CHECK

1. Temporarily fit and attach ESK-807 Locating Tool to the airframe's existing horizontal stabilizer attach channels. (Reference Figures 9-1 & 9-2)
2. Verify the fixture's fit with both the horizontal stabilizer and the airframe's matching stabilizer attach channel fastener holes. Fasteners should install with minimal effort.
3. Remove fixture after fit verification.



**Figure 9-1 Model of ESK-807 Locating Tool**

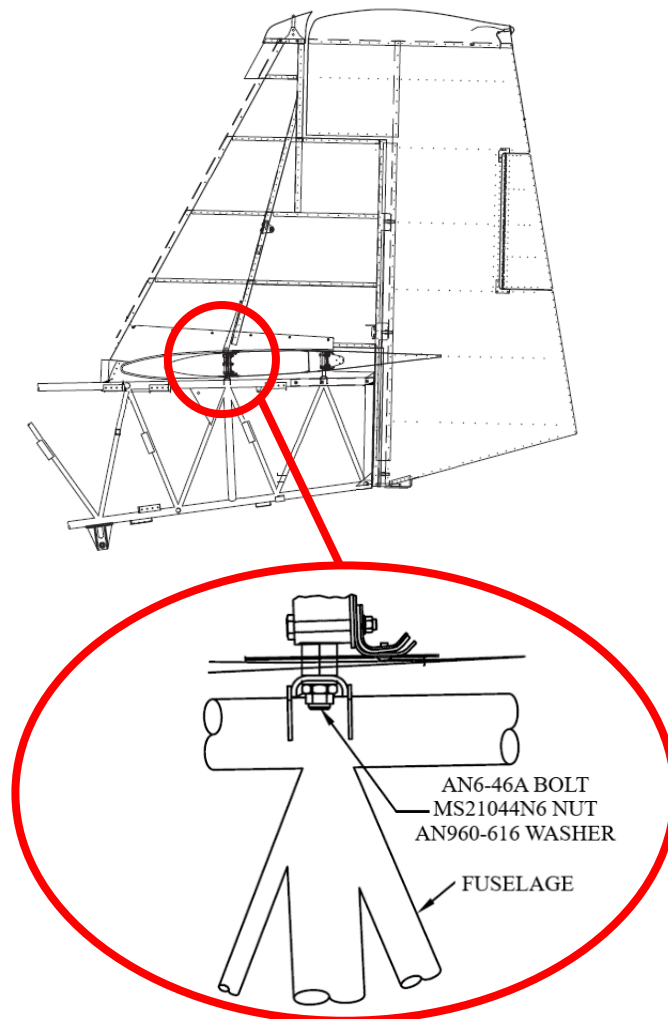


**Figure 9-2**



### 9.3 REMOVAL OF CHANNEL 10962-2/-3

1. Prepare and fit welding blankets as required to protect aircraft from weld heat, grinding sparks, and swarf, and to collect and capture as much grinding swarf as possible.
2. Remove any flight control mechanism components that may potentially be contaminated by swarf.
3. Grind or saw to remove 10962-2 Channel (10962-3 on T660) (shown in Figure 9-3) and its gussets from the airframe longerons, transverse member, and vertical members. Use extreme care to avoid any damage to adjacent airframe members' parent metal. Leave welds .01 to .02 proud of parent metal's surface.



**Figure 9-3 Nut, bolt, washer, and 10962-2 (10962-3 on T660) Channel**

4. Clean area with commercially available acetone and reinspect to ensure no further damage.
5. Locally remove finish from all areas within 1 inch of joints to be fused, assuring parent metal is undamaged in the process.

## 9.4 PREPARATION

1. Use AN6 bolts to temporarily fasten the channel to the ESK-807 Locating Tool.
2. Temporarily fit the supplied weld fixture to airframe's aft stabilizer attach channel in the same fashion.  
**NOTE:** The weld fixture's lower surface should lie flush on both the fore and aft attach channels.
3. Surface preparation for welding:
  - a. Remove all grinding swarf and foreign material from the surfaces to be joined. Do not use compressed air.
  - b. Use commercially available acetone to clean and de-grease the channel and airframe surfaces within 1 inch of the joint. All traces of sanding debris, grit, oil, grease, scale, and corrosion must be removed from the surfaces to be joined.
4. Cleaning agent or solvent (Acetone) used must leave no residue:
  - a. After cleaning, verify that the channel has no burrs or sharp edges.
  - b. Verify that the parent metal of airframe is undamaged.
5. Fixturing of the new channel:
  - a. Fit and fasten the channel to the special tool (ESK-807 Locating Tool) and to airframe's aft stabilizer attach channel.

## 9.5 INSTALLATION OF NEW CHANNEL

1. Weld the channel to the airframe following best practices.
  - a. Joining is to be accomplished by the Gas Tungsten Arc Welding (GTAW) process, also known as the TIG welding process.
    - Electrode: 2% thoriated tungsten
    - Filler Metal: E70S-2 Rod
    - Shielding Gas: 100% Argon
  - b. Tack-weld parts in a sufficient number of locations to assure stability for welding.
  - c. Order weld sequence and weld duration to prevent weld distortion.
2. Weld Inspection:
  - a. Examine weld to assure absence of any defects, including:
    - Inadequate penetration
    - Burn-through
    - Undercutting
    - Cracking
    - Cold overlap or projecting globules
    - Porosity
    - Signs of arc strike
  - b. The finished weld should have the following characteristics:
    - Weld should be smooth and of uniform thickness.
    - Weld profile should taper off smoothly and uniformly to base metal.
    - No oxide should be formed more than ½" from weld.

## 9.6 REFINISHING OF BARE SURFACES

1. Surface preparation:
  - a. Lightly sand adjacent surfaces to assure well-bonded feathered lapping of finish. Use commercially available acetone to remove all traces of sanding debris/grit, oil, grease, scale, and corrosion from the bare surfaces and painted areas to be feathered prior to application of finish.
2. Priming of bare surfaces:
  - a. Apply a MIL-P-23377F two-part epoxy primer (PPG 3995 Primer) by spraying, brushing, or flow coating/draining.
  - b. Assure complete coverage of channel and above transverse tubular airframe member.
3. Top coating of bare surfaces:
  - a. Apply a two-part polyester urethane topcoat (PPG FDXH Color and PPG 3996 Hardener) by spraying, brushing, or flow coating/draining.
  - b. Assure complete coverage of channel and above transverse tubular airframe member.

## 9.7 REINSTALLATION OF EMPENNAGE

1. Re-install the horizontal stabilizer assembly. Refer to instructions found in the Flight Controls section of the applicable Maintenance Manual.

### NOTE

Adjust and inspect the angle of incidence when re-installing the horizontal stabilizer. Refer to the instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.

2. Re-install elevator assembly. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
3. Reconnect and re-rig elevator and pitch trim controls to surfaces. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
4. Re-install vertical stabilizer assembly. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
5. Re-install rudder assembly. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
6. Reconnect and re-rig rudder controls to surface. Refer to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.
7. Note that any additional flight control components specifically removed, to avoid contamination, must also be reinstalled and re-rigged according to instructions found in the Flight Controls section of the applicable Aircraft Maintenance Manual.

## 9.8 RETURN TO SERVICE

1. Verify removal of all FOD, including grinding swarf, dislodged dirt and debris, weld spatter, scraps of welding filler rod, and fasteners.
2. Reinstall aircraft side skins to close aircraft.
3. Obtain necessary approvals for return to service.
4. Visually inspect weld seams and attach bolts every 100 hours.

## 10. RECORD OF COMPLIANCE

Make appropriate entry in airplane maintenance records as follows:

“Thrush Service Bulletin SB-AG-78 Rev. B complied with at \_\_\_\_\_ total hours on aircraft.”

Modification accomplished by:

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Name & Certificate #	Date
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## 11. RESPONSE CARD

The final step in compliance with this Service Bulletin is to complete and return the compliance card on the next page. It may be mailed, faxed, or scanned and e-mailed.

Fax to:	Technical Support	229-439-9790
Email to:	Technical Support	support@thrushaircraft.com

## 12. SERVICE BULLETIN SB-AG-78 REV. B COMPLIANCE REPORT

Aircraft S/N:	Aircraft Owner:
Aircraft Registration #:	Address of Owner:
Airframe total time:	City & State:
Engine total time:	Physical location:
Complied with by:	Date of Compliance:
Signature:	Certificate #:

**PLEASE RETURN THIS REPORT ONLY AFTER MODIFICATION IS MADE**

This response card may be mailed, faxed to (229) 317-8225, or emailed to [support@thrushaircraft.com](mailto:support@thrushaircraft.com).

Fold, Tape & Mail (Do Not Staple)

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Return Address

**Thrush Aircraft LLC.  
Attn: Tech Support  
300 Old Pretoria Road  
Albany, Ga 31721**