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SERVICE BULLETIN

No. SB-AG-78

Revision A: 02/09/2023

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 thru
157



Levan Tabidze
Vice President of Engineering



LOG OF REVISIONS

NOTE: Reformatting and correction of typographical errors is not considered revision. True revisions are indicated by a dark vertical line at the right margin of the lines revised.

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

CONTENTS

1. PURPOSE/REASON FOR PUBLICATION.....	2
2. SCOPE/COMPLIANCE	2
3. BY WHOM WORK WILL BE ACCOMPLISHED.....	2
4. APPROVAL	2
5. MAN HOURS	2
6. SPECIAL TOOLS	2
7. PARTS LIST.....	3
8. MODIFICATION	3
9. RECORD OF COMPLIANCE	14
10. RESPONSE CARD.....	14

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 a FAA Certified A&P mechanic with welding qualification or foreign equivalent.

4. APPROVAL

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

5. MAN HOURS

32 hours will be required.

6. SPECIAL TOOLS

- SB78-1 Locating Tool

7. PARTS LIST

QUANTITY	PART NUMBER	DESCRIPTION	APPLICABILITY
1	SB78-1	Locating Tool	
1	534220003-003	Channel – Stabilizer Attach – FWD	T34, H80, G10, HGT65
1	534220001-003	Channel – Stabilizer Attach – FWD	T660

8. MODIFICATION

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.

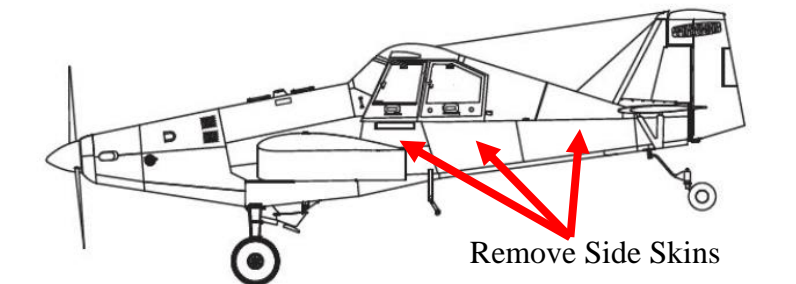


Figure 1. Aircraft Side Skins

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.

SBAG78-1 LOCATING TOOL FIT CHECK

1. Temporarily fit and attach SBAG78-1 Locating Tool to the airframe's existing horizontal stabilizer attach channels as shown in Figures 2 and 3.
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.

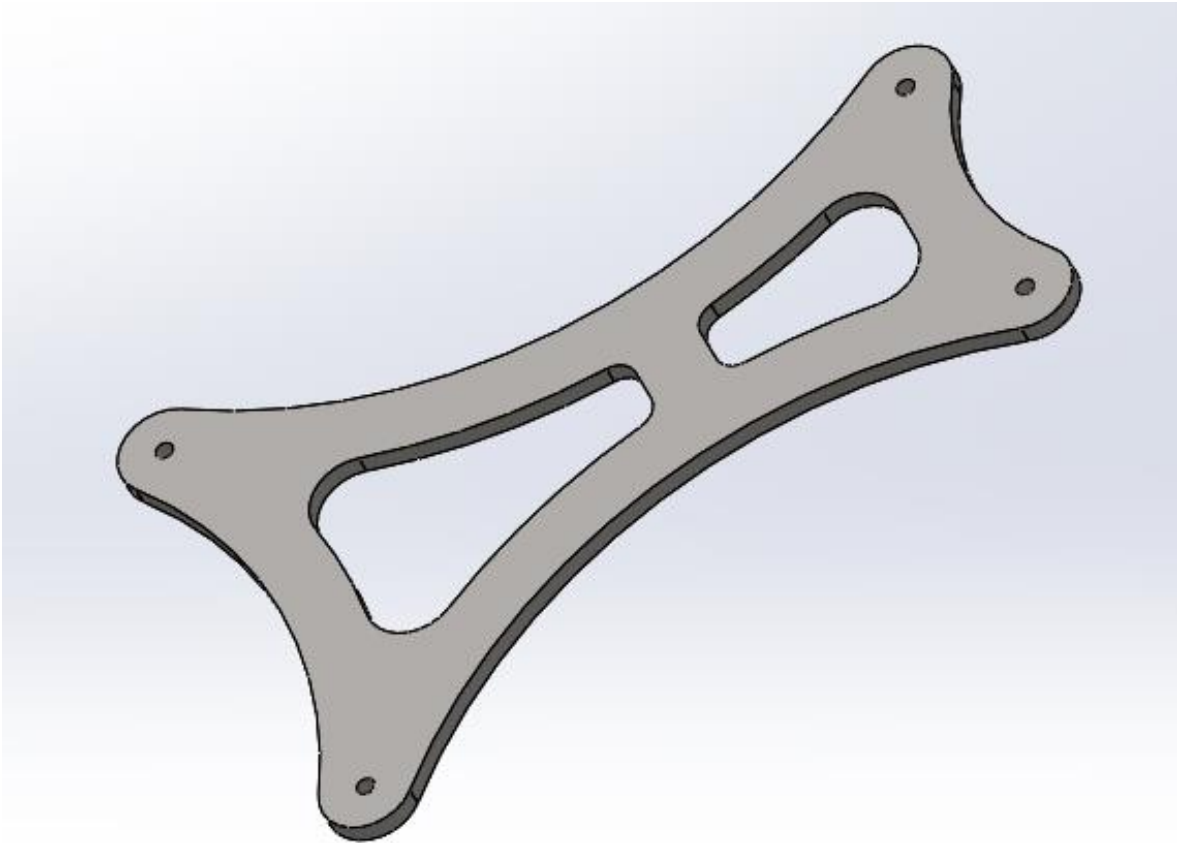


Figure 2. Model of SBAG78-1 Locating Tool



Figure 3. Attach SBAG78-1 Locating Tool to Horizontal Stabilizer in Similar Configuration

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 4) 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.

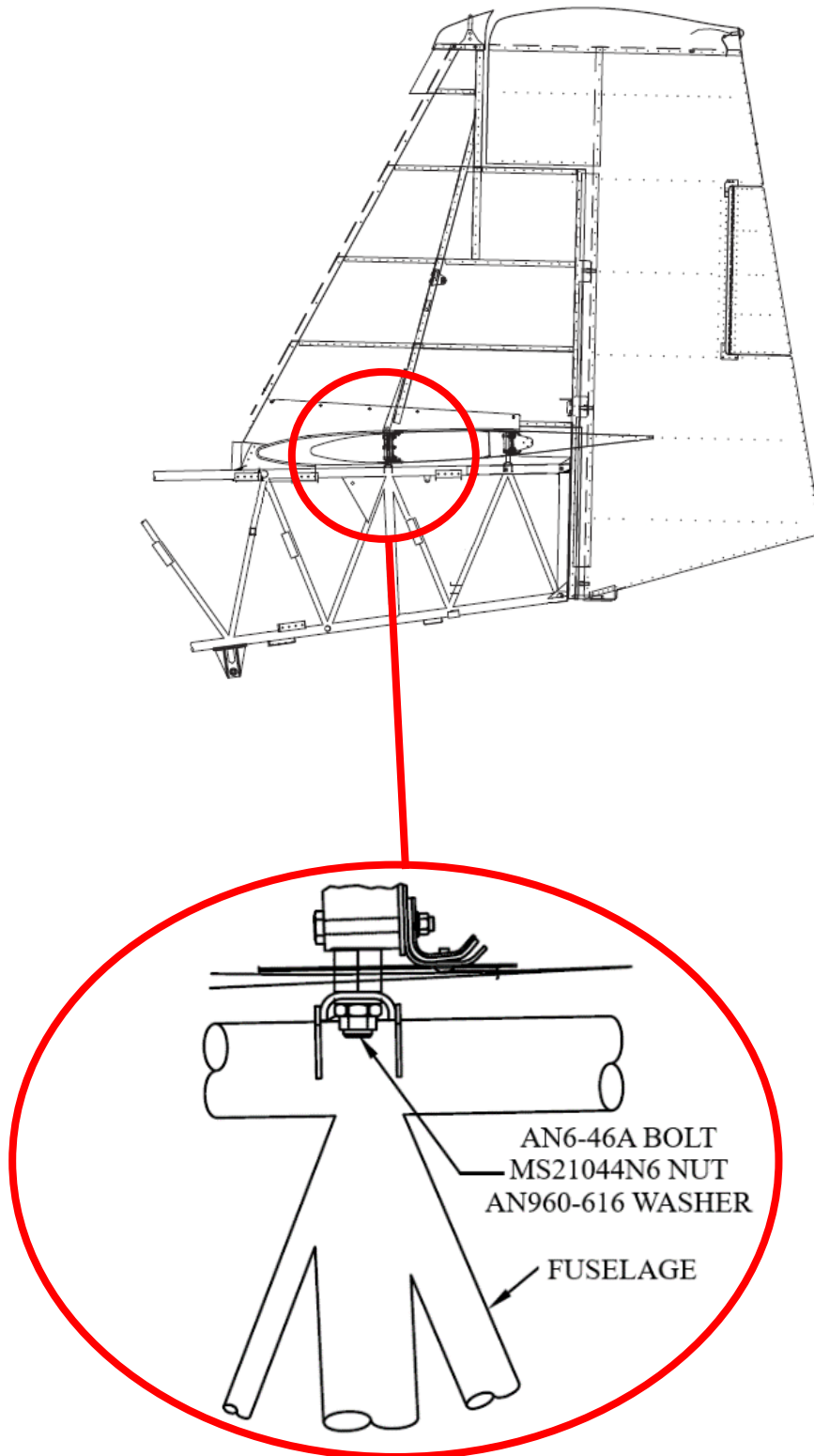


Figure 4. Nut, bolt, washer, and 10962-2 (10962-3 on T660) Channel

4. Clean area with commercially available acetone and re-inspect 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.

PREPARATION

1. Check fit of new 534220003-003 Channel or 534220001-003 T660 Channel:
 - a. Use AN6 bolts to temporarily fasten 534220003-003 or 534220001-003 Channel to the SB78-1 Locating Tool as shown in Figure 4. Temporarily fit the supplied weld fixture to airframe's aft stabilizer attach channel in the same fashion.
 - b. Verify the 0.5" dimension (0.38" for T660) from channel's upper surface to top of longeron. Refer to Figure 5. The weld fixture's lower surface should lie flush on both the fore and aft attach channels.

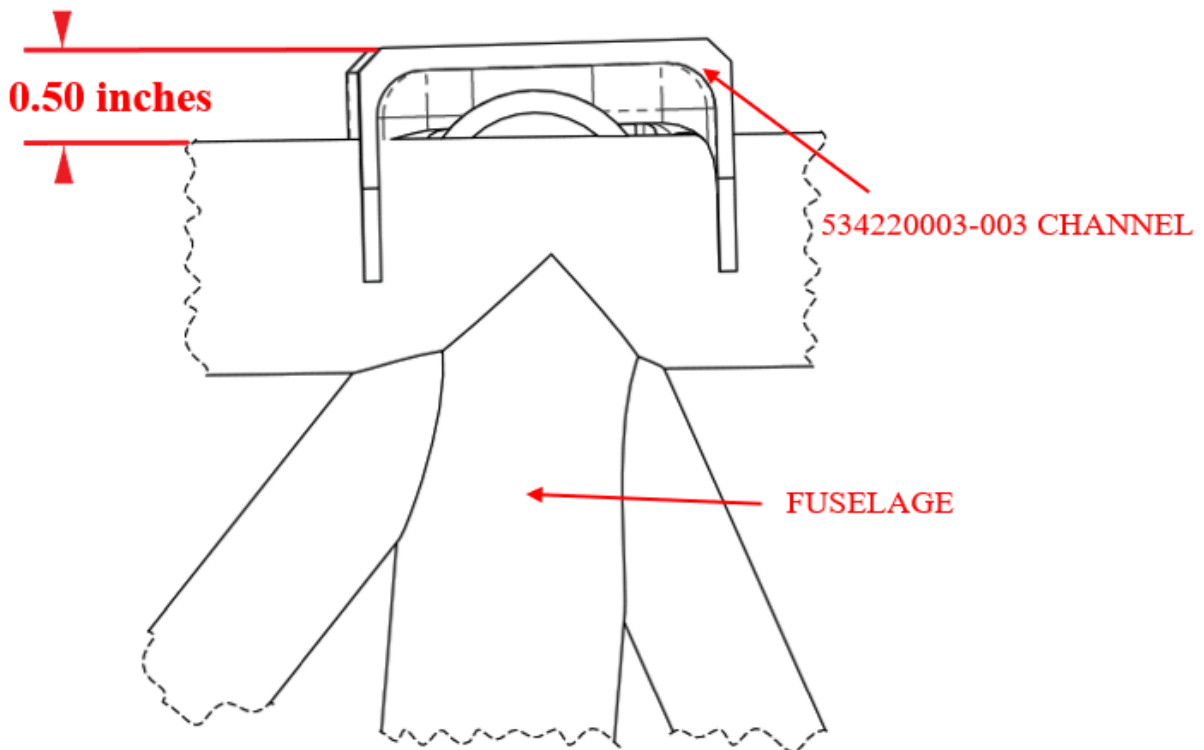


Figure 5: 534220003-003 Channel on Airframe

2. 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 degrease 534220003-003 or 534220001-003 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.
3. Cleaning agent or solvent (Acetone) used must leave no residue:
 - a. After cleaning, verify that the 534220003-003 or 534220001-003 Channel has no burrs or sharp edges.
 - b. Verify that the parent metal of airframe is undamaged.
4. Fixturing of new 534220003-003 or 534220001-003 Channel:
 - c. Fit and fasten 534220003-003 or 534220001-003 Channel to the special tool (SB78-1 Locating Tool) and to airframe's aft stabilizer attach channel.

INSTALLATION OF NEW CHANNEL

1. Weld 534220003-003 or 534220001-003 Channel to airframe
 - 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 1/2" from weld.

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. Topcoating of bare surfaces:
 - a. Apply a two-part polyester urethane top coat (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.

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.

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.

9. RECORD OF COMPLIANCE

Make appropriate entry in airplane maintenance records as follows:

“Thrush Service Bulletin SB-AG-78 Rev. A complied with at _____ total hours on aircraft.”

Modification accomplished by:

Name & Certificate #

Date

10. 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

Service Bulletin SB-AG-78 Rev. A 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.

Fold, Tape & Mail (Do Not Staple)

Return Address

Thrush Aircraft LLC.
Attn: Tech Support
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