SERVICE BULLETIN

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Service Bulletin No. 2007-002
Date: November 8, 2007

Taylorcraft Considers Compliance Mandatory

Revision: IR

SUBJECT:

Inspection of: wing strut attach fitting part number A-A11 for cracks or corrosion.

PURPOSE:

The actions specified by this Service Bulletin are intended to inspect for and detect any internal or external cracks or corrosion of the wing strut attach fitting, and thereby prevent possible wing strut fitting failure and in-flight separation of the wing from the airplane resulting in loss of control of the airplane. The corrosion or cracking is most likely to occur in the section between the front and rear lift strut attach fittings were they are bolted to the fuselage. The corrosion or cracks, if allowed to progress, may lead to failure of the wing lift strut fitting, and probable loss of wing structure integrity. This Service Bulletin provides an inspection procedure to detect evidence of corrosion or cracks in the wing strut attach fitting part number A-A11.

FOR FURTHER INFORMATION ACCESS WWW.TAYLORCRAFT.COM OR CONTACT:

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engineering@taylorcraft.com

Parts Department
956-986-0700 ext: 14 or 15
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EVENTS LEADING TO THE ISSUANCE OF THIS SERVICE BULLETIN:

On July 28, 2007, the left wing of a Taylorcraft model BF12-65 separated from the airplane shortly after takeoff near Oregon City, Oregon. The accident investigator confirmed the lift strut attach fitting A-A11 was 70% corroded resulting in the left wing separation.

APPLICABILITY:

All Taylorcraft Aviation Airplane Models listed on Type Certificates A-696 and 1A9, to include the following airplane models, certificated in any category:
BC, BCS, BC-65, BCS-65, BC12-65, BCS12-65, BC12-D, BCS12-D, BC12-D1, BCS12-D1, BC12D-85, BCS12D-85, BC12D-4-85, BCS12D-4-85, 19, F19, F21, F21A, F21B, F22, F22A, F22B, F22C.

NOTE:

This Service Bulletin applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this Service Bulletin. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this Service Bulletin is affected, the owner/operator must request approval for an alternative method of compliance. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this Service Bulletin; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

COMPLIANCE:

Land based aircraft, excluding ski equipped aircraft must perform a one-time inspection in accordance with Part 1 of the instructions within the next ninety (90) calendar days. Remove all corrosion found during the inspection and corrosion protect the fitting in accordance with Part 2 of the instructions before returning the aircraft to service.

Aircraft that now have or have **ever** been float or snow ski equipped must perform Part 1 of the instructions within thirty (30) calendar days, or ten (10) hours of flight, whichever occurs first. Aircraft that continue to operate with floats or snow skis at any time following the initial inspection must repeat the inspection every forty eight (48) months thereafter. Remove all corrosion found during any inspection and corrosion protect the fitting in accordance with Part 2 of the instructions before returning the aircraft to service.

PERSONNEL REQUIREMENTS:

The procedures must be performed by or under the supervision of a licensed FAA airframe mechanic.

INSTRUCTIONS:

Part 1: Inspection

1. Remove landing gear to fuselage fairings L/R side.
2. Remove any aircraft fabric that is attached to the actual lower wing strut attach fitting. Use a razor to carefully cut and remove the fabric from the lower fuselage longerons up and around the strut attach fitting, leaving a minimum ½" gap around the strut attach fitting. Take care not to scratch the protective coatings or primer (see photo #1).
3. Remove all dirt, mud, fabric scraps, fabric glue residue, and any other foreign debris from external and/or internal surfaces of the fitting.
4. Lift up and rotate the step to allow a thorough visual inspection of the underside of the attach fitting. Use a strong light source and a small inspection mirror. Verify that the **drain hole** is open and clean using suitable metallic probe (see photos #2a & 2b).
5. Inspect all fitting external surfaces for signs of blistered paint, cracking or corrosion.
6. Using a ¼" **flexible borescope** carefully inspect the inner cavities of the fitting visible through the fore and aft ends of the fitting for signs of blistered paint, cracks or corrosion.

Pay particular attention to the inner lug area between the two struts (see photo #3 & 4) (Reference AC 43.13-1B, Chapter 5, Section 2 for visual nondestructive inspection).

7. If any signs of blistered paint, cracks or corrosion are discovered during this inspection, perform Part 2 of these instructions prior to further flight.
8. Touch up any damaged or missing paint or protective coatings with primer and paint in accordance with Part 2.
9. Repair the area around the fitting with an aircraft fabric patch, using aircraft fabric, coatings, and chemicals approved for the fabric system used in the aircraft. This fabric repair shall not extend over, cover, or restrict future visual access to the fitting. No ends or clippings of the new fabric repair are to be "tucked" into the fitting or cover up the drain hole.
10. Reinstall L/R side landing gear to fuselage fairings.

Part 2: Corrosion Removal/Treatment

1. Remove all corrosion by an approved mechanical method (Reverence AC 43.12-1B, Chapter 6) until clean bare metal is exposed.
2. To inspect and clean the inside center lug (internal cavity) on the A-A11 attach fitting, the wing lift strut bolt must be removed.
3. Level the aircraft so that the lower surface of the wing is as close to level with the ground as possible. Ideally, support the rear fuselage on a well padded sawhorse or secure stand under the rear fuselage a foot or so forward of the tailwheel. Support and restrain the aircraft from movement using wheel chocks, tiedowns, etc. so that the aircraft is secure in **both** fore-aft rolling and tail swing directions. Failure to properly accomplish this can lead to damage in later steps.
4. Support the weight of the outer wings so they will not drop when the strut bolts are removed.
5. Carefully remove the lower strut attach nut, and remove the bolt. Verify that the outer wing supports are holding the wing from moving. The wing cannot be allowed to move in order to prevent stresses or damage to the A-A11 attach fitting and aileron control circuit, which is still under flight tension.
6. When the wings are verified to be secure, remove the upper strut attach bolts, and carefully remove the struts. Be sure to remove the lower portion of the struts from the fuselage carefully, and without any **fore-aft** movement so that the strut mounting tabs are not bent. It is suggested to have a helper, both for holding the weight of the strut and preventing this fore-aft movement so you can pull the strut out in a straight movement.
7. When the clean bare metal has been exposed, make a further visual inspection using a ¼" **borescope** to determine the severity of any pitting, loss of material, cracks, or other defects (see photo #3).
8. If any amount of material has been lost in the fitting due to corrosion, or a crack has been discovered, the attach fitting must be repaired or replaced before the aircraft is returned to service. Contact Taylorcraft Aviation for factory approved repairs or replacement procedures.
9. After the inspection and/or repairs, solvent clean the bare metal and re-coat with a protective paint coating such as Zinc Chromate, 2 part epoxy primer, etc. This coating shall be applied in liquid form using small brushes, swabs, or syringes to mechanically force the liquid coating into all of the crevices and passages. After the liquid protective coating has been forced mechanically into the fittings "nooks and crannies" apply an additional spray coating of primer or paint to the entire unpainted surface(s). Apply two coats of a suitable epoxy or polyurethane topcoat to protect the primer.

10. Repair the area around the fitting with an aircraft fabric patch, using aircraft fabric, coatings, and chemicals approved for the fabric system used on the aircraft. This fabric repair shall not extend over, cover, or restrict future visual access to the fitting. No ends or clippings of the new fabric repair are to be "tucked" into the fitting or cover up the drain hole.
11. Reinstall struts and attach hardware. Verify wing leveling and operation of aileron controls.
12. Reinstall L/R landing gear to fuselage fairings.

ACCEPTANCE/REJECTION CRITERIA:

1. The following criteria shall be used for rejection and require repair or replacement of the wing strut attach fitting part number A-A11 prior to further flight:

    a. Any lift strut attach fitting with cracks

    b. Any lift strut attach fitting exhibiting corrosion pitting sites over a concentrated area.

FOR PURPOSES OF CONTINUED AIRWORTHINESS:

Amend the: annual inspection checklist and maintenance instructions to add the following text: "Thoroughly inspect the lower fuselage wing strut attach fitting and the lower 12 inches of the wing struts and mounting lugs for evidence of corrosion, damage, or missing protective paint coatings. Inspect the lower strut fitting thoroughly from below and above using a strong light source and inspection mirror. Inspect the strut, lower wing strut-fuselage attach point and surrounding area for any evidence of corrosion, bubbled or flaked paint, cracking or discoloration that could be caused by corrosion. If there is any evidence of corrosion, cracking, material loss or damage to the fitting, a further inspection must be performed as set forth in Taylorcraft Service Bulletin 2007-002 inspection of wing strut attach fitting part number A-A11 for cracks or corrosion."

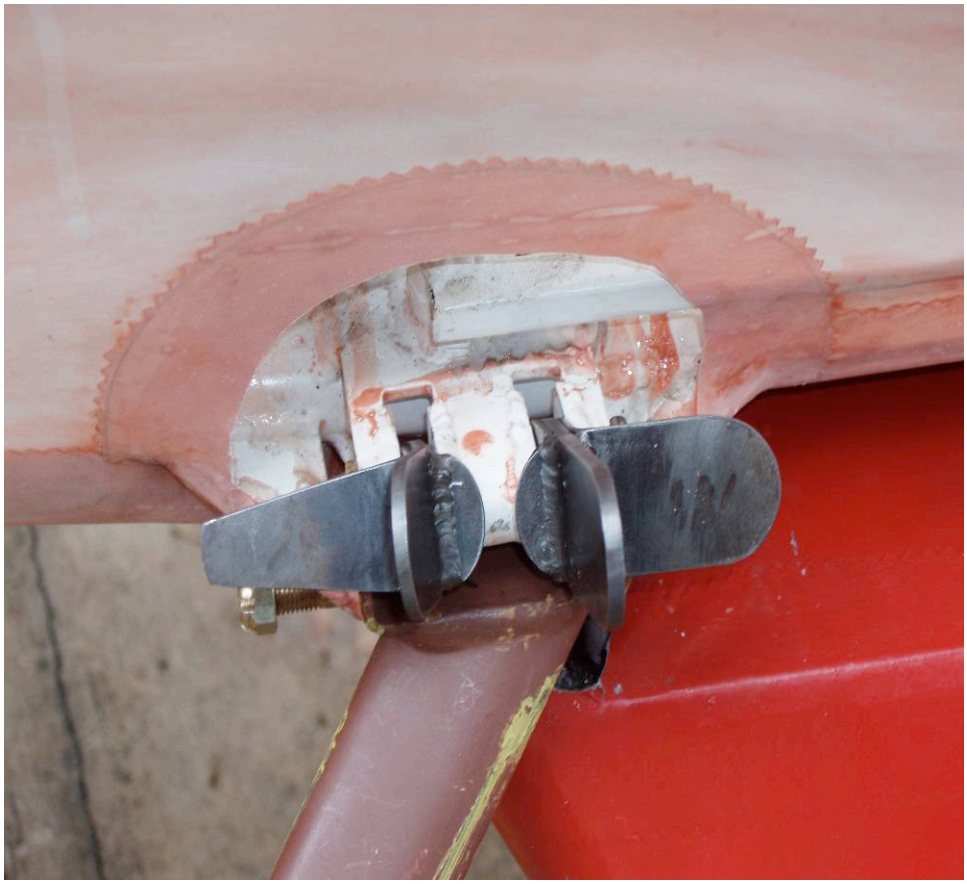

Fig. 1 Cut Fabric as Shown (Strut Ends Only Shown for Clarity)

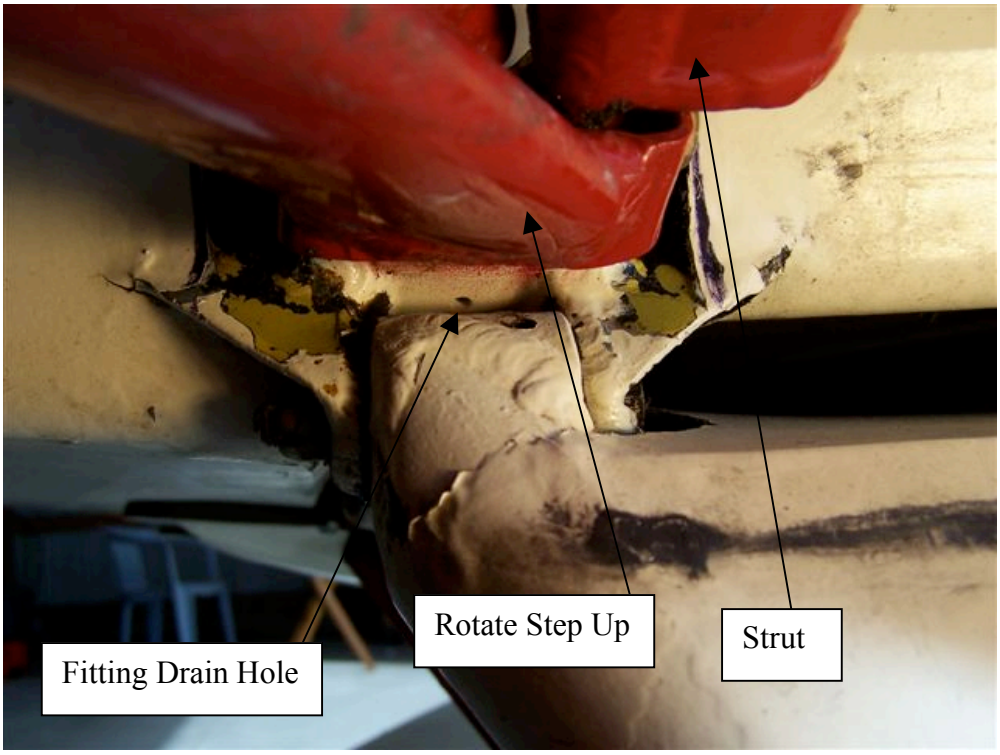

Fig. 2a Rotate Step Upward to Expose Fitting Lower Surface and Drain Hole

Fig. 2b Verify Drain Hole is Open

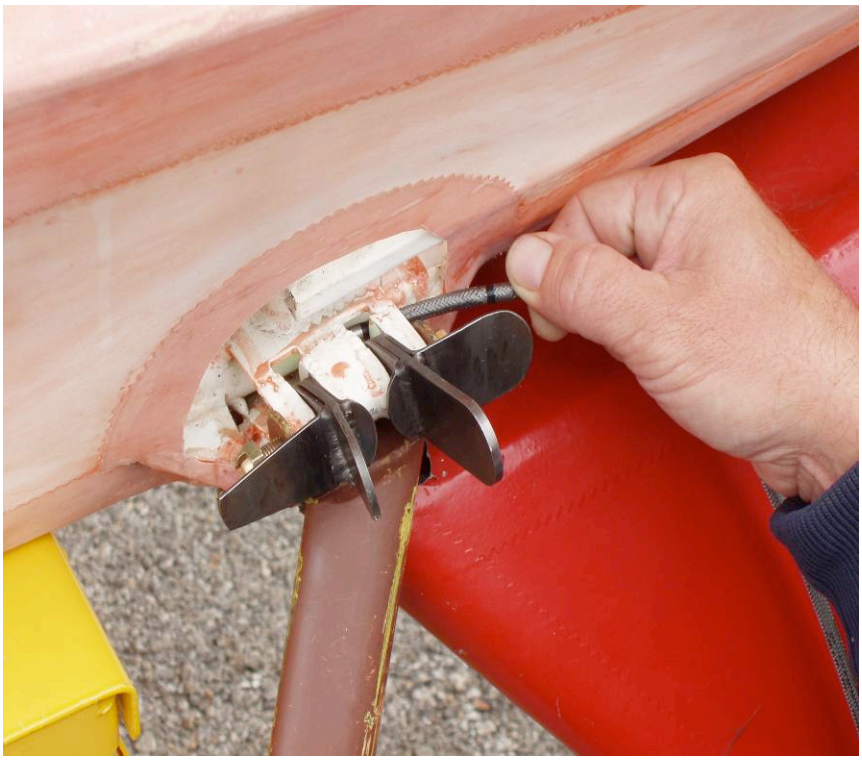

Fig. 3 Borescope Inspection (Strut End Fittings only shown to enhance view)

Fig. 4 Borescope View - Inside Center Lug Cavity

END OF DOCUMENT