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Type: Instructions for Continued Airworthiness

Aircraft: TaylorCraft

Project: Replacement Modified Wing Strut

Release No.: C

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Prepared for: .

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LOG OF REVISIONS

REV Level	Date	Change Description	Approved
IR	September 24, 2007	Initial Release	
A	October 8, 2007	Update to include revised installation instructions from conformity.	
B	February 15, 2008	Company Name Change	
C	April 5, 2011	Add Part# AF-MA-A815A	

For current revision of this manual please contact the manufacturer.

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1.0 INTRODUCTION

This document presents Instructions for Continued Airworthiness as required for Supplemental Type Certificate. Once approved it meets the requirements of 14 CFR Part 23.1529 (Appendix G of Part 23) and FAA Order 8110.54 for light aircraft.

The following aircraft are covered by this document.

Data Sheet	Taylorcraft Models
A-643	A
A-696	BC, BCS12-D, BCS BC12-D1, BC-65 BCS12-D1, BCS-65 BC12D-85, BC12-65, BCS12D-85, BCS12-65 BC12D-4-85, BC12-D BCS12D-4-85
A-699	BF, BFS, BF-60, BFS-60, BF-65, BFS-65, BF 12-65, BFS-65
A-700	BL, BLS, BL-65 BLS-65, BL12-65, BLS12-65
1A9	19, F19, F21, F21A, F21B

The table below defines the replacements parts covered by the STC.

Identity	Original Taylorcraft Sealed Lift Strut, P/N	Replacement Sealed Lift Strut, Northern Airframes LLC. P/N
Sealed Front Lift Strut	MA-A815	AF-MA-A815 or AF-MA-A815A
Sealed Rear Lift Strut	MA-A854	AF-MA-A854

1.1 Verifying wing attach point angle on front strut.

- Measure attach angle of the front strut removed from your aircraft. Use the center line of the strut and the center line of the attach end to get the angle.
- If the measurement is 2 degrees then part # AF-MA-A815 is used.
- If the measurement is 8 degrees then part # AF-MA-A815A is used.

2.0 AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403 unless an alternative program has been FAA approved.

There are NO AIRWORTHINESS LIMITATIONS associated with this product.

3.0 INSTALLATION AND REMOVAL

Please read all instructions prior to beginning work.

The replacement struts do not come painted to your specific desire. Prior to installing the struts they should be painted with adequate time to allow a full cure of the paint. Installation prior to a full cure could result in damage to the finish or the struts.

Note

The aircraft must be leveled, longitudinally and laterally, in order to conduct the change out installation of the struts.

Longitudinal Aircraft Leveling:

- Place level on the horizontal stabilizer top surface.
- Raise the tail into the air and adjust so that the level bubble is centered or the level reads zero. (The tail wheel will need to rise approximately 36" above the ground).
- Support the tail wheel in a stand and secure. The level may now be removed from the elevator

Note

Since the elevator rigging may vary check both sides of the elevator, left and right, and average the readings.

Lateral Aircraft Leveling

- Place level on the top fuselage or seat cross tube.
- Place shims, or deflate tire, as required to level the aircraft.
- When level reads zero or bubble is centered the aircraft is laterally level.
- Secure the aircraft in this configuration. The level may now be removed from the cross tube.

Measurements:

Note

Wing dihedral is measured by placing the level along the bottom front spar cap. A digital level should be used for a direct measurement.

If no digital level is available then the dihedral angle a string can be placed between the wing tips. A vertical dimension from the wing root to the string will tell you the dihedral angle. ($3 \frac{3}{8}$ " is approximately 1° of dihedral)

Note

Wing washout is measured by using the first outboard rib (26" from tip) using the method described in figures 2.1 & 2.2.

Prior to removing the original struts take the following measurements.

<u>Rigging:</u> Dihedral Left Wing: _____ °	Dihedral Right Wing: _____ °
<u>Rigging:</u> Washout Left Wing" _____ in	Washout Right Wing" _____ in
<u>Weight:</u> Weight Left Front Strut: _____ lbs Weight Left Rear Strut: _____ lbs	<u>Weight:</u> Weight Right Left Front Strut: _____ lbs Weight Right Left Rear Strut: _____ lbs

Original Aircraft Wing, prior to installation of replacement struts.

Caution**Do not remove more than one strut at a time.**

Removal of any two aircraft struts may cause the aircraft to become unstable and result in damage of the aircraft or property and persons working on or around the aircraft.

Prior to beginning work the aircraft should be level and secure.

Instructions are the same for the left and right side struts.

Step	Instructions	Comments
1	Remove front and rear jury strut clamps from struts, swing up out of the way. Inspect hardware, retain if in airworthy condition.	Localized heat may be required to remove the jury strut clamps. Care must be taken in removing these items. Discard front jury strut clamp. Retain rear jury strut clamp for re-installation.
2	Remove the front strut. Inspect hardware, retain if in airworthy condition.	
3	Install appropriate (to your attach angle) replacement front wing strut using hardware retained. Use punch pin to secure bottom strut clevis.	Install P/N:AF-MA-A815 or AF-MA-A815A Top Hardware: AN5-13A, AN960-516, AN365-524, Qty as required
4	Remove rear strut noting amount of adjustment thread exposed. Inspect hardware, retain if in airworthy condition.	
5	Install rear wing strut matching the exposed threads to that in step 4 above.	It is recommended to use a thread corrosion protection substance on the rear strut top threads. See Introduction for details. Place AN960-516 washers on AN5 bolt at bottom fitting to assure correct thread grip.
6	Adjust the rear strut adjustment threads such that the wing washout is 1 5/16"	Increasing the length of the exposed threads will decrease the washout angle. See figure 2.1
7	Install Front Jury Strut Clamp such that the jury struts are plumb. The installer is responsible in making the proper bends to the jury strut clamp.	P/N AF 892 This clamp must be bent such that the jury strut vertical tube is aligned and centered on the front strut thickest portion. It is possible to make fine height adjustments to the jury struts at the threaded bolts on the underside of the wing. Utilize airframe adjustments in jury strut to align with new strut so there is no binding.
8	Repeat steps 1 - 7 for other side.	
9	Make appropriate notations in aircraft logs	

Dihedral Left Wing: _____°	Dihedral Right Wing: _____°
Washout Left Wing" _____in	Washout Right Wing" _____in

Aircraft Wing after installation of replacement struts.

Weight and Balance

Change in the weight and balance information will vary with aircraft.

The weights of the replacement struts are ;

Left Front Strut: 10 lbs 8 oz.

Left Rear Strut: 9 lbs 12 oz.

Front Jury Strut Clamp: 2 oz.

Any net change after replacement is obtained by subtracting the removed weight from the installed weight.

All centers of gravities for components will be unaltered.

Datum is the leading edge of the wing.

Make appropriate changes in aircraft logs.

The following figures are aids in determining the correct dihedral and washout angles.

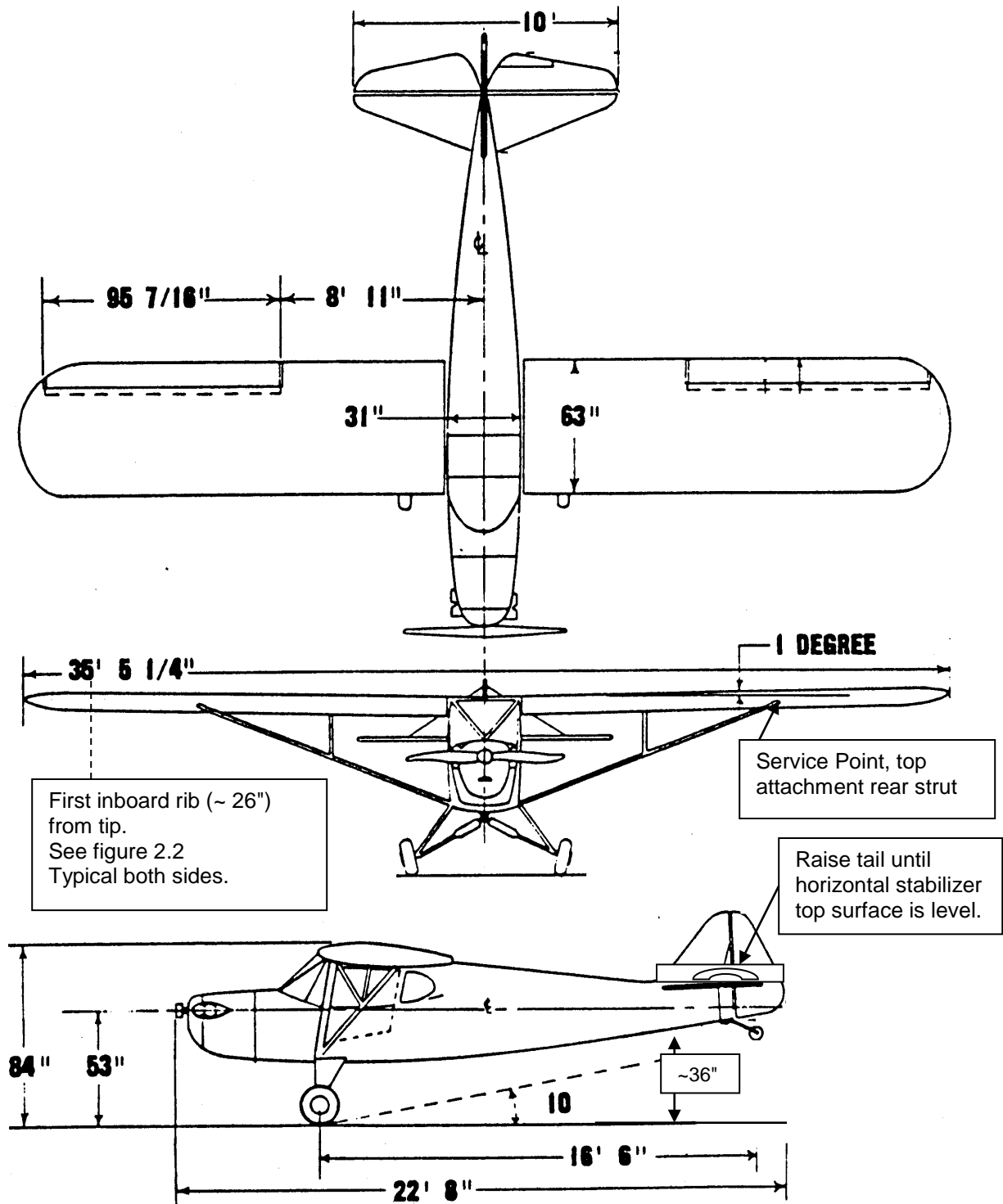
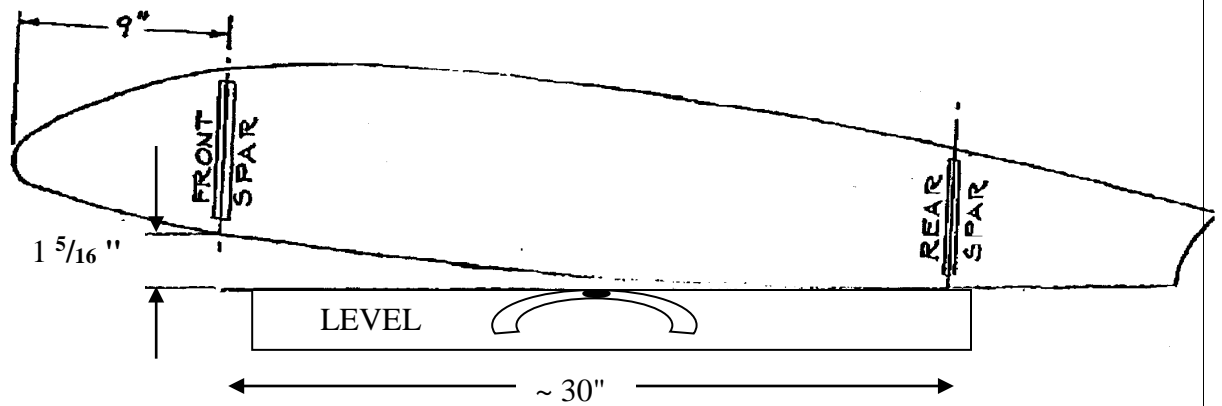


Figure 2.1: Three-view of Taylorcraft Aircraft

- Aircraft shown in longitudinal and lateral level attitude.
- Surface of stabilizers are parallel to thrust line of aircraft.
- Datum is leading edge of wing.



If offset is used to space level below wing add the offset dimension to 1 5/16".

Vertical distance between bottoms of wing, from the rear to front spar, should be for the correct wash out of the wing.

Figure 2.2: Wing section at rib approximately 26" from tip.

4.0 PERIODIC INSPECTION REQUIREMENTS

The following inspections are required as indicated.

Inspections	Description	100 hr	Annual	Special
Front and Rear Strut Inspection	Visual inspection of strut lower, jury strut, and upper connection. Special attention to; <ul style="list-style-type: none"> ○ weld lines for cracking. ○ fretting or corrosion between bolt clevis and wing fuselage. ○ Paint or metal wear at the jury strut attachment. 	X	X	
Front and Rear Strut Inspection	Inspect rear strut threads for play, cracking and corrosion.		X	
Front and Rear Strut Inspection	Inspect strut for damage at jury strut.			Hard Landing

5.0 REVISIONS

Records of purchasers will be maintained by Northern Airframes LLC.

Northern Airframes LLC. will contact purchasers with changes or revisions.