

December, 4th, 2010

To: Nashville, FSDO

From: Charles V. Avon

Re: Taylorcraft wheel and brake modification

To whom it may concern;

To improve the safety of N26658, a 1940 Taylorcraft BL 65, I have inspected the original shinn wheel and mechanical brakes assemblies and determined that they are unsuitable for use on an airworthy aircraft. This leaves me with a couple of options: either try to find serviceable shinn wheel and brake assemblies (which I have tried and haven't found anything satisfactory) or convert the airplane to hydraulic disk brakes. I cannot find any STC from Cleveland or any other company that would include the Taylorcraft BL65. In addition, the STC's I have seen through Cleveland for similar light airplanes have included larger brake calipers, which is way too much braking action for a light tailwheel aircraft (in my opinion).

I therefore have researched other options and discovered Grove Aircraft Landing Gear Systems, Inc. They are the FAA supplier of wheel and brake assemblies for some new models of American Champion, Maule Air, and Diamond Aircraft. In studying the pictures of their various packages, I have determined that I would like to use the light weight model 61-1 wheel and brake assemblies with Scott master cylinders. My reasoning for preferring this versus a Cleveland counterpart is that the wheel bearings are farther apart in the wheel hubs and therefore closer to the original shinn bearing spacing. They will still require spacers between the bearing and axle nuts, but the wider bearing spacing would spread the load out more similar to the original design.

In studying the tech articles and flight reviews of this particular aircraft design, it appears that the landing gear design has given the airplane a reputation for spirited ground handling, and I want to improve the ground handling while providing safe and dependable brakes. The Modification I am proposing will serve to make the airplane safer and more reliable.

Thank you for your consideration and help!

Charles V Avon



US Department
of Transportation
Federal Aviation
Administration

**MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)**

Form Approved
OMB No. 2120-0020
2/28/2011

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

| | | | |
|-------------|--|--|----------------|
| 1. Aircraft | Nationality and Registration Mark N26658 | Serial No. 2000 | |
| | Make Taylorcraft | Model BL | Series |
| 2. Owner | Name (As shown on registration certificate) Charles Victor Avon | Address (As shown on registration certificate) | |
| | | Address 1149 W. Main St | |
| | | City Hohenwald | State TN |
| | | Zip 38462 | Country USA |

3. For FAA Use Only

The data identified herein complies with applicable airworthiness requirements and is approved for the above described aircraft subject to a conformity inspection by a person authorized in FAR 43, Section 43.7.

Gerald A Martelli
Aviation Safety Inspector ACE-FSDO-19
Date 12/16/2010

| 4. Type | | 5. Unit Identification | | | |
|--------------------------|-------------------------------------|------------------------|--------------|--------------------------------|------------|
| Repair | Alteration | Unit | Make | Model | Serial No. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | AIRFRAME | _____ | (As described in Item 1 above) | _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | POWERPLANT | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | PROPELLER | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | APPLIANCE | Type | | |
| | | | Manufacturer | | |

6. Conformity Statement

| | | | | |
|------------------------------|---|---|--------------|-----------------------------------|
| A. Agency's Name and Address | | B. Kind of Agency | | C. Certificate No. A+P 3456094 |
| Name DAVID BLISS | Address 4432 AIRPORT ROAD City SPRINGFIELD State TN Zip 37172 Country USA | <input checked="" type="checkbox"/> U. S. Certificated Mechanic | Manufacturer | |
| | | <input type="checkbox"/> Foreign Certificated Mechanic | | |
| | | <input type="checkbox"/> Certificated Repair Station | | |
| | | <input type="checkbox"/> Certificated Maintenance Organization | | |

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

| | |
|--|---|
| Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/> | Signature/Date of Authorized Individual <i>David Bliss</i> JANUARY 4, 2011 |
|--|---|

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

| | | | | |
|----|------------------------------|----------------|--|--|
| BY | FAA Fit. Standards Inspector | Manufacturer | Maintenance Organization | Persons Approved by Canadian Department of Transport |
| | FAA Designee | Repair Station | <input checked="" type="checkbox"/> Inspection Authorization | Other (Specify) |

| | |
|--|---|
| Certificate or Designation No. A+P 3456094 1A | Signature/Date of Authorized Individual <i>David Bliss</i> JANUARY 4, 2011 |
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NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

N26658

JANUARY 4, 2011

Nationality and Registration Mark

Date

Removed original shinn and mechanical brakes. Installed Grove Aircraft Landing Gear Systems, Inc. Taylorcraft axel sleeve P/N 5045 over original axle also installed Grove torch plates over axle sleeve and bolted them to the original axle flange with 8 AN3-4 bolts and safety wired them with .032 wire. Next installed 600-6 wheels model number 61-1 with Grove Taylorcraft press cap P/N 5725 and original Taylorcraft axle washer and castle nut, and safety with cotter pin. Next install Scott master cylinders model number P/N 1248H and 1260H using 4 AN3-11 bolts and 4 AN365-1032A nuts and 4 AN970-3 washers. Next run hydraulic lines from master cylinders to calipers using aeroquip hose model 666 flexible hose and reusable 37 degree fittings. All hydraulic line installation performed in accordance with applicable paragraphs of AC 43.13-1B Chapter 9 Section 2 "Hydraulic Systems"

Aircraft weighed prior to flight and weight and balance recorded.

Instructions for Continued Airworthiness: Original size tire and tube (6.00 x 6) to be used with new wheel assemblies. Tire pressure to be maintained in accordance with original service manual. New wheel bearings service/inspection intervals will follow original equipment intervals as outlined in the service manual. The hydraulic system is to be serviced with MIL-H-5606 Hydraulic fluid. Brake pads to be replaced when worn as indicated by wear markers. Inspect installation at applicable intervals (annual or 100 hr.) using FAR 43 App. D and applicable paragraphs of AC 43.13-1B Chapter 9 Section 2 "Hydraulic Systems"

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Additional Sheets Are Attached

Paperwork Reduction Act Statement: The reason for collecting this information is to track major maintenance performed on aircraft. The collected information is used as part of the aircraft's historical file. The public reporting burden for this collection of information is estimated to average 30 minutes per response. Responses are mandated by 14 CFR Part 43. Collected information becomes part of the public record and no confidentiality is required. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control number associated with this collection is 2120-0020. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.