TARVER PROPELLER, LLC.

SERVICE BULLETIN No. 2000-001

Propeller Blade Inspection

A. Background:
There have been reports of in-service propeller failures due to deterioration (dry rot) of the wooden blade over time and corrosion of the blade root lag screws due to moisture. This condition, if not corrected, could result in propeller blade separation.

B. Effectivity:
This service bulletin is applicable to all Aeromatic propellers models F200, F200-H, 220, 220-1, 220H, all Flottorp (formerly Beech Roby) propellers models R100, R002, R003, all Beech Propellers models B200-100 (fitted with Flottorp blades FA200-244 and FA200-245), R201-100, R202-100, and R203-100 (fitted with Flottorp blades FA200-218, FA200-219 and FA200-220). The Aeromatic models listed above were originally manufactured by Koppers, then Unvair, then South 80, then Brown Propellers, LTD. The Beech models listed above were manufactured originally by Beech Aircraft Company, then Flottorp Manufacturing Company and Brown Propellers, LTD. Tarver Propellers, LLC is now the TC holder of the above model propellers and blades.

C. Compliance Requirements: Tarver Propellers, LLC considers compliance with this service bulletin to be mandatory.

D. Description:
This Service Bulletin provides information for repetitive visual inspection of all wooden blade propellers for looseness of the blades, corroded lag screws and decay (dry rot) at the blade leading edge, around the blade shank near the metal ferrule edges.

Note: Terminating action for the repetitive inspections imposed by this service bulletin will be provided by a future service bulletin.

E. Accomplishment Instructions:

Part I. Initial Inspection for Blade Looseness between the Blade Shank and Metal Ferrule.

Prior to further flight, visually inspect each propeller blade for mounting security by pushing and pulling (with one hand on the tip) the blade in a fore and aft motion. Check for looseness (play) between the wooden blade shank and their metal ferrule clamped at the hub.

1) If no looseness (play) is detected, the airplane may continue operation until compliance to Part II of this Service Bulletin.

2) If any looseness (play) exists between the wooden blade(s) and the metal ferrule clamped at the hub, prior to further flight, replace both propeller blades with airworthy blades in accordance with Tarver (Univair) Model F200 Automatic Variable-Pitch Propeller Service Manual, Tarver

(Univair) Model 220 Automatic Variable-Pitch Propeller Service Manual, Tarver (Univair) Flottorp controllable pitch Propellers Series R002 – R003 Service Manual or Raytheon (Beech) Operation and Service Instructions – Overhaul Instructions – Illustrated Parts Breakdown – Propellers R200, B200, 215 manual as applicable.

Note: Both propeller blades must be replaced since the blades must be matched in length, weight, center of gravity, tracking, etc., for proper dynamic operation of the propeller.

Upon replacement of either the propeller blades as required in paragraph 1) above, accomplish a propeller static balance in accordance with Paragraph 6.0 of Tarver Shop Inspection Procedure SIP-001.

Record the inspection results and if applicable, the replacement of the propeller and it's static balance in the airplane maintenance logbooks.

Part II. **Repetitive Inspections for Blade Looseness, Condition of Blade Lag Screws, Wood Decay (Dry Rot) at Blade Ferrule and Leading Edge Sheathing Looseness Condition.**

Within the next 100 hours Time In Service (TIS) or at the next aircraft annual, whichever occurs earlier, perform the inspections a), b), c) and d) in paragraphs below. Thereafter, repeat the inspections at intervals not to exceed 100 hours TIS or next airplane annual inspection, whichever occurs earlier.

At completion of the inspection steps described in a) 1), b), c), and d) perform a static balance of the propeller in accordance with Paragraph 6.0 of Tarver SIP-001.

a) Inspection for Blade Looseness.

Prior to further flight, inspect each propeller blade for mounting security by pushing and pulling (with one hand on the tip) the blade in a fore and aft motion. Check for looseness (play) between the wooden blade shank and their metal ferrule clamped at the hub (as referenced in above Part I).

1) If any looseness (play) exists between the wooden blade(s) and the metal ferrule clamped at the hub, prior to further flight, replace both propeller blades with airworthy blades in accordance with Tarver (Univair) Model F200 Automatic Variable-Pitch Propeller Service Manual, Tarver (Univair) Model 220 Automatic Variable-Pitch Propeller Service Manual, Tarver (Univair) Flottorp controllable pitch Service Manual R002 – R003, or Raytheon (Beech) Operation and Service Instructions – Overhaul Instructions – Illustrated Parts Breakdown – Propellers R200, B200, 215 manuals as applicable.

   Note: Both blades of the propeller must be replaced since the blades must be matched in length, weight, center of gravity, tracking, etc., for proper dynamic operation of the propeller.

Accomplish a "static balance" of the propeller in accordance with Paragraph 6.0 of Tarver Shop Inspection Procedure SIP-001.

2) If no looseness (play) was detected during the inspection in paragraph 1) above, continue to perform the inspection by removing the propeller from the airplane and performing the inspection per the following paragraphs b), c) and d).

b) Inspection for Corrosion and Correct installation of Lag Screws and Wood Dry Rot in blade base core center hole.

Perform a visual inspection for correct installation of the lag screws (i.e., type of lag screw, installation configuration) and tightness in accordance Tarver Shop Inspection Procedure SIP-001.

1) Perform inspection for adequacy of insertion (tightness) of the lag screws into the blade shank and for installations of correct type of lag screw. If any incorrect lag screw is installed or it fails the 150 in. lb. torque test replace the lag screw(s) with the correct lag screw(s) in accordance with Tarver SIP-001.

   If the torque is not obtainable then proceed for replacement of blades.

   Note: If or when returning a blade to service no more than one (1) missing or broken lag screw is permitted.

2) Perform a visual inspection for both corrosion of the lag screws and wood dry rot around the lag screws in accordance with paragraph 5.2 of Tarver SIP-001. If any corrosion or dry rot is detected, prior to further flight, replace both propeller blades with airworthy and matched blades as referenced in SIP-001. Check all lag screws for adequacy of insertion (tightness) into the blade root by applying 150 inch pounds of torque. If such torque is not possible to achieve then replace both blades.

   Note: Specks of rust on the heads of cadmium plated lag screws indicates that the plating has deteriorated and a strong probability that either the threads of the screw may be rusted and/or the wood material around the screw threads may be dry rot such that the screws fail to meet torque requirement.

3) Perform a borescope inspection of blade shank center hole inner wood surface in accordance with paragraph 5.2 of Tarver SIP-001. If any dry rot is detected, prior to further flight, replace both propeller blades with airworthy matched pair.

c) Inspection for Dry Rot near the Metal Ferrule of the Blade.

Perform a visual inspection for wood dry rot around the metal ferrule in accordance with Blade Inspection paragraph 5.2 and Replacement of Plastic Coating paragraph 5.4 of Tarver SIP-001. If any decay or dry rot is detected, prior to further flight, replace both propeller blades with airworthy blades.

d) Inspection for Dry Rot and Looseness at the Leading Edge Sheathing.

Perform an inspection for looseness of the propeller leading edge sheathing by holding the blade securely at the tip and flexing the leading edge with the other hand in accordance with Blade Inspection paragraph 5.2 of Tarver SIP-001. If any motion (looseness, play) exist between the sheathing and the wooden blade, remove the leading edge sheathing and inspect the area for wood dry rot and repair in accordance with Paragraph 5.2 of Tarver SIP-001.

Replace the affected plastic coating per paragraph 5.3 of Tarver SIP-001.

If the blade is not repairable then prior to further flight, replace both propeller blades with airworthy blades in accordance with Tarver SIP-001.

F. Publications Affected

a) Tarver (Univair) Material Process Specification, TP-100.
b) Tarver (Univair) Model F200 Automatic Variable Pitch Propeller Service Manual.
c) Tarver (Univair) Model 220 Automatic Variable Pitch Propeller Service Manual.
d) Tarver (Univair, Flottorp) Controllable Pitch Propeller Service Manual, Series R002, R003.
e) Raytheon (Beech) Operation and Service Instructions – Overhaul Instructions – Illustrated Parts Breakdown – Propellers B200, – R200, – 215.
f) FAA Aircraft Inspection and Repair AC 43.13-1B.
g) Tarver Shop Inspection Procedure SIP-001, Revision NC, July 25, 2000.

G. Weight and Balance: is not affected by the Propeller Blade Inspection.

H. Manpower estimated:

Part I. inspection of propeller blades installation (mounting) security	0. 25 hr.
Part II. Removal and reinstallation of propeller on aircraft	2 hrs.
Disassembly of propeller, inspection of Blades and re-assembly if no repair is required.	6 hrs.
Repair of blade(s)	4-10 hrs Part III.
Disassembly of propeller and blades' replacement	8 hrs.

I. Material Information:

Material and parts **c**ost availability. See Tarver Propeller LLC, 1500 Rio Vista Road, C4,

Fallon, Nevada, 89406.