





BY: Jack L. Sledge	DATE: 6/24/14	 P.O. Box 1209 Decatur, Texas 76234	DRAWING NO.: 2301
APPROVED:			REVISION: B
PAGE: 1 of 3		TITLE: <u>Instø Instructions for Hartzell HC-C2YR-1N/ NG8301-3 Propeller on Aviat A-1 Series</u>	MAKE/MODEL: Aviat Aircraft Inc. A-1, A-1A,A-1B,A-1C-180,A-1C-200

Log of Revisions

<u>Revision Letter</u>	<u>Revision Date</u>	<u>Change Description</u>	<u>Approval</u>
IR	4/4/14	Initial Release	
A	5/31/14	Changed Low Pitch Blade Angle Was: 10.3° ± 0.2°; Added Step 10, Step 11 and Step 12; Step 6 - Added C-3568-() spinner	
B	6/24/14	Added 85 pph minimum fuel flow	


Installation Instructions

- 1) The following reference material is required in addition to the installation instructions outlined herein:
 - Aviat Aircraft, Inc. Model A-1 and A-1A Instructions for Continued Airworthiness document number 70192-002, latest approved revision.
 - Aviat Aircraft, Inc. Model A-1B Instructions for Continued Airworthiness document number 70192-004, latest approved revision.
 - Aviat Aircraft, Inc. Model A-1C Instructions for Continued Airworthiness document number 70192-006, latest approved revision.
 - Hartzell Propeller Ownerø Manual no. 145, latest FAA approved revision.
- 2) Installation Eligibility: The Hartzell model HC-C2YR-1N/NG8301-3 propeller is approved for installation on the following Aviat Aircraft, Inc. models ø A-1, A-1A, A-1B, A-1C-180 and A-1C-200. The applicable engines are: Lycoming O-360-C1G, O-360-A1P and IO-360-A1D6.
- 3) These instructions outline the procedures for removing the existing propeller and installing the Hartzell model number HC-C2YR-1N/NG8301-3 propeller in accordance with Supplemental Type Certificate number SA11177SC.
- 4) Remove the existing propeller and spinner in accordance with the Aviat Aircraft Instructions for Continued Airworthiness referenced above in step 1.
- 5) Perform pre-installation procedures on the new propeller in accordance with Hartzell Ownerø Manual 145 in the øInstallation and Removalö section. Note: This propeller is a -1 style propeller which does not have an air charge.
- 6) The Hartzell part number 105656() spinner assembly or C-3568-() spinner assembly are approved for installation on these aircraft in combination with the new Hartzell propeller.
- 7) Install the spinner bulkhead on the new propeller hub in accordance with Hartzell Ownerø Manual 145 using the procedures found in the Spinner Pre-Installation subsection of the øInstallation and Removalö section.

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- 8) Install the new Hartzell propeller on the aircraft in accordance with Hartzell Owner's Manual 145 Installation and Removal section. Use installation instructions for Installation of Rø Flange Propellers in Manual 145.
- 9) Install the Hartzell spinner dome on the propeller in accordance with Hartzell Owner's Manual 145 using the procedures found in the Spinner Installation subsection of the Installation and Removal section. Note: Use the procedures for a Single Piece Spinner Dome.
- 10) If the existing tachometer is not already marked per the markings below, remove it in accordance with the Aviat Aircraft Instructions for Continued Airworthiness referenced above in Step 1 and remark it as follows, then re-install in the same location.

Green Arc: 500 to 2700 RPM
Red Radial: 2700 RPM
- 11) If a propeller rpm restriction placard is installed on the instrument panel adjacent to the tachometer, remove it. It is not required with the new propeller.
- 12) For aircraft equipped with a Lycoming O-360-C1G or A1P engine: Verify the carburetor is set to a takeoff fuel flow that is within the upper 5% of the established limits (85 pounds per hour minimum).
- 13) Perform a ground run-up, leak check and idle rpm check. Adjust engine idle speed if necessary to achieve 600-675 rpm at idle in accordance with the Aviat Aircraft Instructions for Continued Airworthiness referenced above in Step 1.
- 14) Re-install engine cowling in accordance with the Aviat Aircraft Instructions for Continued Airworthiness referenced above in step 1.
- 15) The diameter limits for the Hartzell HC-C2YR-1N/NG8301-3 propeller are:
Maximum Diameter: 80.0 inches. Note: No cutoff allowed.
- 16) The blade angle limits for the Hartzell HC-C2YR-1N/NG8301-3 propeller are:
 - Low Pitch Blade Angle (measured at 30 inch blade station):
Aircraft equipped with Lycoming O-360-C1G or A1P engine: $10.0^{\circ} \pm 0.2^{\circ}$
Aircraft equipped with Lycoming IO-360-A1D6 engine: $10.5^{\circ} \pm 0.2^{\circ}$
 - High Pitch Blade Angle: $30.0^{\circ} \pm 1.0^{\circ}$ (measured at the 30 inch blade station)
- 17) The installation of this propeller requires that 8.50 X 6 (or larger) tires must be installed in order to achieve adequate propeller ground clearance. See aircraft Type Certificate data sheet A22NM, Note 13 and 14 for tire types that are currently approved that meet this size criteria.

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18) Update the aircraft empty weight and center of gravity records as follows:

If ó

Hartzell model HC-C2YK-1BF /F7666A Propeller & Spinner	is being removed, then	*Subtract 14 lbs. at F.S. 4.0 in.
Hartzell model HC-C2YR-1N /N7605 Propeller & Spinner		*Subtract 2 lbs. at F.S. 4.0 in.
Hartzell model HC-C2YR-1BF /F8477-4 Propeller & Spinner		*Subtract 18 lbs. at F.S. 4.0 in. (200 HP) *Subtract 29 lbs. at F.S. 4.0 in. (180 HP)
MT Propeller model MTV-15-B/205-58 Propeller & Spinner		*Subtract 1 lbs. at F.S. 4.0 in.

*Weights shown assume composite 105656() spinner is used. The aluminum C-3568-() spinner weighs 2 lbs. more than the composite spinner.

If a propeller other than the ones listed above is being removed, obtain the weight and c.g. location of the removed propeller and subtract that from the existing weight and balance. The new Hartzell propeller/105656 spinner weighs 44.5 lbs. at a c.g. location of F.S. 4.0 inches. Add this to the existing weight and balance records.

19) Insert the Alamo Aerospace òFAA Approved Airplane Flight Manual Supplementö, report number 55174-5 in the òSupplementsö section of the existing AFM.

20) Complete FAA form 337 and return the aircraft to service.

21) Perform a functional flight test using normal procedures, note takeoff rpm during the takeoff roll/climbout. Adjust governor High-RPM stop if necessary to achieve proper takeoff rpm.