Airmaster Propellers Ltd
Variable Pitch Constant Speed Propellers for Light Aircraft

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SERVICE BULLETIN

APL-SB-12

Date of Issue: 11 October 2002

Applicability: Propeller Models: AP308 and AP332
Serial Numbers: All

Compliance: Initial: At next Periodic Inspection and Lubrication, or within 25 hours. Whichever is sooner.
Subsequent: At each Periodic Inspection and Lubrication.

SUBJECT: IMPROVED PROCEDURE FOR LUBRICATION OF BLADE ASSEMBLIES TO PROVIDE ENHANCED PROTECTION OF BLADE BEARINGS

Reason

1. Some examples of Airmaster AP308 and AP332 propellers have suffered failure of the bearings in the blade assembly resulting from inadequate application of grease to the blade bearings. It has been determined that inadequate lubrication of the bearings with grease has contributed to the bearing failure through accelerated wear, and inadequate protection of the bearing from moisture and corrosion.

2. This service bulletin addresses the correct lubrication of the bearings in the blade assembly.

3. This service bulletin replaces the existing instructions in the operator's manual for Periodic Inspection and Lubrication. The amended Periodic Inspection and Lubrication procedure is designed to ensure that the bearings remain adequately lubricated.

Materials and Parts Required

4. Grease for lubrication of the propeller is required. At manufacture Airmaster propellers are lubricated with Shell Aviation grease, 'AeroShell Grease 22' (ASG22). This grease complies with MIL-G-81322E, and the grease may be substituted with any other grease compatible with this standard. Greases compatible with MIL-G-81322E include:

- Shell Aviation grease — AeroShell Grease 22.
- Royal Lubricants grease — Royco22CF.
- Castrol grease — Braycote 622.
- Exxon grease — Unitemp 500.
- Mobil grease — Mobilgrease 28.

5. Some operators of Airmaster propellers have successfully used alternative greases in the propeller bearings. If an operator wishes to use alternative grease, it is recommended that Airmaster Propellers Ltd be consulted. Alternative greases should be fully synthetic, compatible with the existing grease, suitable for high bearing loads, resistant to water wash-out and to slinging, and should impart corrosion resistance.

Action

6. Carry out the amended Periodic Inspection and Lubrication procedure in accordance with the amendment to the operator's manual enclosed with this service bulletin.

7. The amendment to the operator's manual enclosed places particular emphasis on the following:

a. Ensuring that the propeller hub and blade assemblies are free from moisture.

b. Ensuring that the propeller hub and blade assemblies are free from significant corrosion.

c. Ensuring that sufficient grease remains in a position to provide protection and lubrication for the blade assembly bearings.

8. If the blade bearings are damaged and require replacement, consult Airmaster Propellers Ltd. The Warp Drive blade assembly is manufactured in a blade set-up jig, and replacement of the blade retention and thrust bearings would require that the blade angle be set-up again.

Subsequent Action and Compliance

9. Carry out the amended Periodic Inspection and Lubrication procedure in accordance with the amendment to the operator's manual enclosed with this service bulletin, on each occasion that it is required.

10. The Periodic Inspection and Lubrication procedure specifies that the procedure should be carried out at the first 25 hours, first 50 hours, first 100 hours, and subsequently at 100-hour intervals. Based on the experience gained and observations made while carrying out this procedure, consideration should be given to conducting the procedure more frequently. Propellers operated in

different environments, operated more or less often, or stored in different environments may lead to different observations being made during the Periodic Inspection and Lubrication.

11. The following factors should be taken into consideration when deciding how frequently to conduct the Periodic Inspection and Lubrication:

a. Whether the presence of moisture is observed within the propeller hub and blade assemblies.

b. Whether the presence of corrosion is observed within the propeller hub and blade assemblies.

c. Whether sufficient grease has remained in a position to provide protection and lubrication for the blade assembly bearings.

Note: Operators of propellers in environments of high humidity or corrosive environments due to a maritime climate should pay particular attention to the requirements for inspection and lubrication of their propeller.

12. If observations of any of the above factors indicate that an interval of 100 hours is too great between Periodic Inspection and Lubrication, then a smaller interval, such as 50 hours, should be chosen.

Recording

13. Record completion of service bulletin APL-SB-12 in propeller logbook.

ENCLOSURE: Amendment to Operator's Manual for AP332 and AP308 - Improved Procedure for Lubrication of Blade Assemblies to Provide Enhanced Protection of Blade Bearings.