
AIRWORTHINESS DIRECTIVE

On the effective date specified below, and for the reasons set out in the background section, the CASA delegate whose signature appears below repeals Airworthiness Directive (AD) AD/PHS/18 Amdt 3 and issues the following AD under subregulation 39.001 (1) of CASR 1998 and subsection 33 (3) of the *Acts Interpretation Act 1901*. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct an unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Propellers - Variable Pitch - Hamilton Standard

**AD/PHS/18
Amdt 4**

Hub Cracking

20/2014

Applicability: All model 14RF-9, 14RF-19 and 14RF-21 propellers.

Note 1: These propellers may be installed on but are not limited to Embraer EMB-120 series, CASA CN-235 series and SAAB SF-340 series aircraft.

- Requirement:
1. (a) Perform a torque check of the propeller hub retaining nuts, in accordance with the applicable Hamilton Sundstrand Maintenance Manual (MM).
 - (b) Remove from service propellers where the hub retaining nuts are found not to meet the acceptance criteria outlined in the applicable Hamilton Sundstrand MM.
 - (c) Inspect hub dowel pin holes for cracks in accordance with the applicable Hamilton Sundstrand MM using the prescribed fluorescent penetrant inspection method.
 - (d) Remove from service propeller hubs with crack indications.
 - (e) If the initial propeller hub retaining nut torque check per requirement 1.(a) is acceptable in accordance with the applicable Hamilton Sundstrand MM, support the propeller with an appropriate lifting fixture and loosen the propeller hub retaining nuts. Tighten the propeller hub retaining nuts as detailed in the applicable Hamilton Sundstrand MM.
 - (f) Make a one-time entry in the propeller maintenance records to record:
 - (i) that the initial torque check was performed;
 - (ii) the propeller hub retaining nuts were loosened and tightened in accordance with Requirement 1.(e) of this Directive; and
 - (iii) the torque values.
 2. Repeat requirement 1.(a) up to and including 1.(d) of this Directive.

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3. Install all propellers using the propeller hub retaining nut tightening procedure defined in the applicable Hamilton Sundstrand MM. Record the torque values in accordance with Requirement 1.(f) (iii) of this Directive.
4. (a) Visually inspect for and investigate all external propeller oil leakage.
(b) If the leakage is found to be caused by other than a leak in the blade seal, the pressure relief valve, or actuator assembly, remove the propeller from service.

Note 3: FAA AD 94-06-05 Amdt 39-8853 refers.

- Compliance:
1. (a) Unless previously accomplished in accordance with the original issue or amendment 1, 2 or 3 of this Directive, within 30 days from the effective date of this Directive.
(b) Before further flight, based on Requirement 1.(a) findings.
(c) Concurrently with Requirement 1.(b).
(d) Before further flight, based on Requirement 1.(c) findings.
(e) Before further flight following completion of initial torque check per requirement 1.(a).
(f) Following completion of Requirement 1.(a) and 1.(e) of this Directive.
 2. At intervals not to exceed 500 flight hours.
 3. From the effective date of this Directive.
 4. (a) At intervals not to exceed 70 flight hours.
(b) Before further flight after the effective date of this Directive.

The effective date of this AD is 7 October 2014.

Background: This Directive was originally issued to address manufacturer's torquing procedures for the propeller hub retaining nuts, which was insufficient to prevent fretting during normal propeller operation. If allowed to continue, cracking of the propeller hub may occur.

AD/PHS/18 Amdt 1, which became effective on 27 November 2003, removed references to manufacturers' temporary revision and instead referred to the manufacturers publications that incorporate the correct values and procedures for torquing the propeller hub retaining nuts.

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AD/PHS/18 Amdt 4 (continued)

AD/PHS/18 Amdt 2, which became effective on 9 June 2005, corrected errors in Amendment 1 of the Directive with no change to the intent of the Directive.

AD/PHS/18 Amdt 3, which became effective on 22 November 2007, clarified the loosening of the propeller hub retaining nuts and recording of the torque values in the propeller maintenance records (which only has to be done initially and when a propeller is installed to the aircraft) and brings the oil leakage inspection interval in line with FAA AD 94-06-05.

This AD, AD/PHS/18 Amdt 4, clarifies the requirement of the non-destructive inspection method and makes minor editorial changes throughout the text.



Mike Higgins
Delegate of the Civil Aviation Safety Authority

30 September 2014