

**DEPARTMENT OF CIVIL AVIATION
MALAYSIA
AIRWORTHINESS NOTICE**

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Date: 1 July 1997

MAINTENANCE REQUIREMENTS FOR VARIABLE PITCH PROPELLERS INSTALLED ON AIRCRAFT HOLDING A MALAYSIAN CERTIFICATE OF AIRWORTHINESS

1. Introduction

- 1.1 For most propeller types the propeller manufacturer will publish overhaul periods and any necessary maintenance inspection instructions which will be applied by the operator at the period specified unless varied by the Approved Maintenance Schedule.
- 1.2 It has been recognised though that there are a few propeller types where the manufacturer has not published overhaul life in term of hours or calendar period. In order to ensure that these propellers are maintained in a satisfactory condition, the inspections of this Notice are required to be applied at the period stated.
- 1.3 A situation also exists where, for low utilisation operation, the calendar period can be reached when the propeller has run only a small percentage of its operating hours limit. Under these circumstances, wear would not be expected to be a problem while degradation of seals and corrosion are more likely to exist. This Notice introduces an alternative maintenance policy which, subject to intermediate inspections, as specified in the appendix, will monitor the condition of the propeller such that it can operate beyond its calendar period to achieve its operating hourly limit.
- 1.4 Any overriding mandatory requirements in respect of particular propeller issued either by the Airworthiness Authority of the country of manufacture of a propeller, or by the DCA will take precedence over this Notice. For the purposes of compliance with an AD which specifies requirement as a function of overhaul, the bare blade inspection required by paragraph 4.2.2 shall be deemed as overhaul.

2 Applicability

- 2.1 The requirements of this Notice are applicable to variable pitch propellers, variable pitch propellers which have been locked and to ground adjustable propellers.

3. Compliance

- 3.2 The maintenance policy defined in either paragraph 3.1(a) or (b) or (c) must be applied to all variable pitch and ground adjustable propellers.
 - (a) Overhaul at the operating hours or calendar period recommended by the manufacturer, whichever ever occurs first, unless varied by the Approved Maintenance Schedule.
 - (b) The hub/blade and bare blade inspections specified in paragraph 4.2.1 and 4.2.2 of this Notice must be applied when :-
 - (i) No calendar or operating hours overhaul intervals are recommended by the manufacturer, or
 - (ii) Only operating hours intervals are recommended by the manufacturer with no associated calendar recommendation.
 - (c) For a propeller fitted to an aircraft which has low utilisation, and for which the manufacturer has specified overhaul periods in term of operating and calendar periods, the calendar life limitation only may be exceeded subject to hub/blade and bare blade inspections specified in paragraphs 4.2.1 and 4.2.2 of this Notice.
- 3.2 The periods of operation or elapsed calendar time prescribed in the appendix to this Notice shall be calculated from the date of the initial installation of the propeller on an aircraft following manufacture or complete overhaul of the propeller and may be preceded by a period of storage of up to 2 years which has been carried out in accordance with the manufacturers recommendations. Period of storage in excess of 2 years or subsequent to the installation shall be counted as if the propellers were installed.
- 3.3 The applicability and compliance requirements of this Notice are summarised in the appendix to this Notice, Table 1 and 2.

4. Propeller Inspection

4.1 The inspection required by Table 1 or 2 shall be undertaken by an organisation approved by the DCA for the purpose.

4.2 The inspection and re-work shall be carried out in accordance with the manufacturers instructions and as minimum shall include :-

4.2.1. Hub/blade inspection.

- (a) Dismantling of the propeller sufficiently to gain access to the blade root bearing assemblies.
- (b) Thorough cleaning of the blade root assemblies.
- (c) Examination for pitting, fretting, corrosion and other damage of the hub, bearings, blade roots, and housing, together with replacement of any disturbed seals. All of the blade surfaces shall be examined for damage, delamination (where applicable), and the presence of corrosion, removing the paint finish as necessary. In cases where deicer boots or overshoes are installed on the blades, a detailed examinations for corrosion around their edges shall be carried out, and, if any evidence is found, the boots/overshoes shall be removed to permit a full inspection of the masked areas. Any corrosion shall be removed, and the blades reprotected. In cases where deicer boots/overshoes are removed, replacement parts shall be installed using the facilities prescribed and under the conditions and procedures specified in the relevant manufacturers Overhaul Manual.
- (d) Checking the track of the propeller after refitting, then functioning throughout its operational range by means of an engine run to verify correct performance and to establish that any vibration is within acceptance limits.

4.2.2 Bare blade inspections.

In addition to the hub/blade inspection ref,4.2.1 ;

- (a) Removal of all de-icing boots or overshoes and fairings.
- (b) Removal of all paint and erosion protection.
- (c) Removal of all blades root, bushings and plugs.
- (d) Inspection of the complete blade surface for the presence of corrosion. Any corrosion shall be removed and the blades reprotected and prepared for the reinstallation of the blade fittings.
- (e) Full dimensional inspection of all blades.

5 Records of Accomplishment

5.1 A comprehensive record of the inspection and work done in accordance with paragraph 4 of this Notice, shall be prepared and retained and an entry, making a cross reference to this document, shall be inserted in the relevant Propeller Log Book. All such work and entries shall be certified by a duly authorised person, in the prescribed manner.

6 Cancellation

6.1 This Notice cancels Airworthiness Notice No. 37, Issue 1, dated 1 April 1987, which should be destroyed.

DIRECTOR GENERAL
DEPARTMENT OF CIVIL AVIATION
MALAYSIA

Propellers shall be maintained in accordance with either (a) or (b) of the appropriate following Table:

Table 1: Propellers fitted to Commercial Air Transport, Public Transport and Aerial Work and Private Category Aircraft, MTWA above 5700 kg.

(a) Overhaul period	Whichever occurs first of operating hours or calendar period as published by the propeller manufacturer unless varied by the Approved Maintenance Schedule.
(b) Overhaul period	Operating hours as published by the propeller manufacturer or on condition where no life has been published, subject to (i) and (ii) below
(i) Hub/blade inspection period	Inspect at 3 years since new or overhaul or inspection (ii) below.
(ii) Bare blade inspection period	Not to exceed 6 years since new, overhaul or last bare blade inspection.

Table 2: Propellers fitted to Commercial Air Transport, Public Transport, Aerial Work and Private Category Aircraft; MTWA below 5700 kg.

(a) Overhaul period	Whichever occurs first of operating hours or calendar period as published by the propeller manufacturer unless varied by the Approved Maintenance Schedule.
(b) Overhaul period	Operating hours as published by the propeller manufacturer or on condition where no life has been published, subject to (i) and (ii) below.
(i) Hub/blade inspection period	Inspect at 3 years since new of overhaul or inspection (ii) below (but may be phased to next annual check or Certificate of Airworthiness Renewal provided period does not exceed 4 years)
(ii) Bare blade inspection period	Not to exceed 6 years since new, overhaul or last bare blade inspection.

NOTE: Hub/blade inspections and bare blade inspections are to be in accordance with the procedures of paragraph 4 of this Notice.

