

GR No. 17 Maintenance Requirements for Variable Pitch Propellers Installed on Aircraft Holding a UK Certificate of Airworthiness

(Previously Issued as Airworthiness Notice No. 75, Issue 11, 2 April 2004.)

I Introduction

- 1.1 Following the introduction of Part M Light (Part-ML) under Regulation (EU) 2019/1383, which became applicable on 24 March 2020, this GR does not apply to EASA aircraft types.
- 1.2 For most propeller types the propeller manufacturer will publish their recommended overhaul periods and any necessary overhaul / inspection instructions. The operator should observe these recommendations at the periods specified by the manufacturer unless an alternative is agreed by CAA and stated in the Approved Maintenance Programme. However, there are a number of propeller types for which the manufacturer has not published overhaul lives in terms of hours or calendar period. The purpose of this Generic Requirement is to prescribe mandatory action to ensure that these propellers are maintained in a satisfactory condition, by requiring periodic inspection.

2 Applicability

The requirements of this Generic Requirement are applicable to variable pitch propellers, variable pitch propellers which have been locked and to ground adjustable propellers. For modular propellers the calendar periods referred to in this Generic Requirement shall apply to propeller hubs and blades individually.

3 Compliance

- 3.1 Any overriding mandatory requirements in respect of particular propellers issued either by the Airworthiness Authority of the country of design of a propeller, the European Aviation Safety Agency (EASA) or by the CAA, will take precedence over this Generic Requirement. For the purposes of compliance with an AD which specifies requirements as a function of overhaul, the bare blade inspection required by paragraph 4.2.2 shall be deemed as an overhaul.

3.2 Propellers with no manufacturer recommended calendar overhaul limitation

- 3.2.1 For propellers where no calendar overhaul interval is recommended by the Manufacturer paragraphs 3.2.1 a) and 3.2.1 b) must be complied with;
 - a) At 3 years since new or overhaul or the inspection defined in paragraph 4.2.2 of this Generic Requirement, complete the hub/blade inspection specified in paragraph 4.2.1.
 - b) At 6 years since new or overhaul or the inspection defined in paragraph 4.2.2 of this Generic Requirement, overhaul the propeller in accordance with the manufacturer's instructions.
- 3.2.2 On reaching the manufacturer's recommended flight hour TBO period the propeller must be overhauled.
- 3.2.3 For propellers with composite blades, in the absence of any manufacturer's overhaul periods in terms of calendar time, the composite blades should be subject to overhaul

at a period not exceeding 6 years in accordance with the manufacturer's instructions. The 3 year inspection of paragraph 4.2.1 need not be carried out.

3.3 Propellers with a manufacturer recommended calendar overhaul limitation

3.3.1 Propellers which are currently maintained in accordance with paragraphs 4.2.1 (3 year inspection) and 4.2.2 (6 year bare blade inspection) of this Generic Requirement, may remain in service until the next scheduled inspection, in accordance with this Generic Requirement, at which point the following will apply;

a) At 3 years since inspection defined in paragraph 4.2.2 of this Generic Requirement, the propeller must either be overhauled in accordance with the manufacturer's instructions, or inspected in accordance with paragraph 4.2.1. of this Generic Requirement.

b) On reaching 6 years since inspection defined in paragraph 4.2.2 of this Generic Requirement, the propeller must be overhauled in accordance with the manufacturer's instructions. After this time the propellers shall continue to be overhauled in accordance with the manufacturer's instructions at the manufacturer's recommended period unless varied by the Approved Maintenance Programme.

3.4 The periods of operation or elapsed calendar time prescribed in the appendix to this Generic Requirement 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 manufacturer's recommendations. Periods of storage in excess of 2 years or subsequent to the initial installation shall be counted as if the propeller were installed. Where the specific manufacturer has provided information on this topic within their instructions then this should be followed.

3.5 The applicability and compliance requirements of this Generic Requirement are summarised in Tables 1 and 2 of the Appendix to this Generic Requirement.

4 Propeller Inspections

4.1 The inspection of propellers required by Tables 1 or 2 shall be undertaken by an organisation approved by the CAA for the purpose.

4.2 The inspections and re-work shall be carried out in accordance with the manufacturer's instructions and as a 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 in accordance with the manufacturer's instructions.

c) Examination for pitting, fretting, corrosion, cracking 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 de-icer boots or overshoes are installed on the blades, a detailed examination 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 re-protected. In cases where de-icer boots/overshoes are removed, replacement parts shall be installed

using the facilities prescribed and under conditions and procedures specified, in the relevant manufacturer's Overhaul Manual.

- d) Non Destructive Inspection of the hub and blade roots shall be carried out in accordance with the manufacturer's instructions except where it can be verified that Non Destructive Inspection of the hub and blade roots has been carried out in accordance with the manufacturer's instructions within the last 4 years.
- e) 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, in accordance with the manufacturer's instructions.

4.2.2 Bare blade inspection.

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 blade root bushings and plugs.
- d) Inspection of the complete blade surface for the presence of corrosion. Any corrosion shall be removed and the blades re-protected and prepared for the re-installation of the blade fittings.
- e) All NDI required for overhaul of the propeller shall be carried out in accordance with the manufacturer's instructions.
- f) Full dimensional inspection of all blades.

5 Record of Accomplishment

A comprehensive record of the inspection and work done in accordance with paragraph 4 of this Generic Requirement shall be retained and an entry, making a reference to this record, shall be inserted in the Propeller Log Book.

Appendix I to GR No. 17

(Previously Issued as Airworthiness Notice No.75 Appendix 1, Issue 3, 2 April 2004.)

Propellers shall be maintained in accordance with (a) of the appropriate following Table, unless no calendar overhaul period is published by the propeller manufacturer. In this case they shall be maintained in accordance with (b):

Table 1: Propellers fitted to Aircraft with MTOM of 5700 kg or above

(a)	Overhaul period	Whichever occurs first of operating hours or calendar period as published by the propeller manufacturer unless varied by the Approved Maintenance Programme.
(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 period inspection (ii) below; repeat at 1 year intervals.
	(ii) Bare blade inspection period	Not to exceed 6 years since new, overhaul or last bare blade inspection.

Table 2: Propellers fitted to Aircraft with MTOM 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 Programme.
(b)	Overhaul period	Operating hours as published by the propeller manufacturer or on condition where no calendar 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 (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 GR.