Transport Canada Transports Canada

Advisory Circular

Subject: **Pre-approved Aircraft Maintenance Schedule Tolerance**

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1.0 Introduction

(1) This Advisory Circular (AC) is provided for information and guidance purposes. It describes an example of an acceptable means, but not the only means, of demonstrating compliance with regulations and standards. This AC on its own does not change, create, amend, or permit deviations from regulatory requirements, nor does it establish minimum standards.

1.1 Purpose

(1) The purpose of this document is to provide guidance on the application and use of tolerances to tasks contained in aircraft maintenance schedules that have been pre-approved for use without the need for a formal approval by the Minister for the following aircraft:

(a) small non-commercially operated aircraft;

(b) non-commercially operated balloons; and

(c) balloons operating under Subpart 603 of the *Canadian Aviation Regulations* (CARs).

(2) This AC also provides guidance on how an appropriately rated and valid Aircraft Maintenance Engineer licence holder (known hereafter as an AME) can apply a tolerance to a task required by a maintenance schedule in accordance with paragraph 625.86 (8)(b) of Standard (STD) 625.

1.2 Applicability

(1) This document applies to owners of the aircraft identified above, Approved Maintenance Organizations (AMOs), AMEs and Transport Canada Civil Aviation (TCCA) personnel.

1.3 Description of changes

(1) Not applicable.

2.0 References and requirements

2.1 Reference documents

(1) It is intended that the following reference materials be used in conjunction with this document:

(a) Part I, Subpart 1 of the *Canadian Aviation Regulations* (CARs) — Interpretation;

(b) Part V, Subpart 71 of the CARs — Aircraft Maintenance Requirements;

(c) Part VI, Subpart 5 of the CARs — Aircraft Requirements;

(d) Standard 571 of the CARs — Maintenance;

(e) Standard 625 of the CARs — Aircraft Maintenance and Equipment Standards; and

(f) Civil Aviation Safety Alert (CASA) No. 2021-01 — Returning aircraft to service that have been parked or stored during the COVID-19 pandemic.

2.2 Cancelled documents

(1) By default, it is understood that the publication of a new issue of a document automatically renders any earlier issues of the same document null and void.

2.3 Definitions and abbreviations

(1) The following **definitions** are used in this document:

(a) **Aircraft Maintenance Engineer**: means a holder of a valid licence with the appropriate rating(s) issued pursuant to Subpart 403 of the CARs, and where applicable, has successfully completed a TCCA approved type training course in the case of a small turbine-powered helicopter**;**

(b) **Airworthiness Directive**: means an instruction issued by the Minister or by a civil aviation authority responsible for an aeronautical product type design that mandates a maintenance or operation action to ensure that an aeronautical product conforms to its type design and is in a condition for safe operation;

(c) **Airworthiness Limitation**: means a limitation applicable to an aeronautical product, in the form of a life limit or a maintenance task that is mandatory as a condition of the type certificate;

(d) **Deviation**: authorized by TCCA, means a one-time variation from the approved interval for a specific maintenance task or group of tasks;

(e) **Interval**: means the period defined in STD 625 or in the approved aircraft maintenance schedule (in hours, cycles or calendar time) that a particular maintenance task repeats and is required to be completed;

(f) **Maintenance Schedule**: means a schedule required pursuant to section 605.86 for the performance of the inspections and other maintenance required by these Regulations;

(g) **Owner**: means a person who has legal custody and control of the aircraft or system;

(h) **Non-commercially operated aircraft:** aircraft not operating under Subpart 406 or Part VII of the CARs;

(i) **Small Aircraft**: means an aeroplane having a maximum permissible take-off weight of 5700 kg (12,566 pounds) or less, or a helicopter having a maximum permissible take-off weight of 2730 kg (6,018 pounds) or less;

(j) **Task**: means an action or set of actions intended to restore an item to, or maintain it in, an airworthy condition, including inspection to determine if the item is airworthy;

(k) **Tolerance**: means the permissible variance associated with an interval at which the task is required to be accomplished.

(2) The following **abbreviations** are used in this document:

(a) **AC**: Advisory Circular;

(b) **AME**: Aircraft Maintenance Engineer;

(c) **AMO**: Approved Maintenance Organization;

(d) **CARs**: *Canadian Aviation Regulations*;

(e) **STD**: Standard; and

(f) **TCCA**: Transport Canada Civil Aviation.

3.0 Background

(1) Owners have the responsibility to maintain their aircraft in accordance with a maintenance schedule that conforms to section 625.86 of STD 625, as flying an aircraft that is not maintained

in accordance with its maintenance schedule is a contravention under section 605.86 of the CARs.

(2) Small non-commercially operated aircraft, non-commercially operated balloons, and balloons operating under Subpart 603 of the CARs are maintained, at a minimum, to a maintenance schedule that conforms to STD 625 Appendices B and C. This type of maintenance schedule is pre-approved for use.

(3) Where a task in a maintenance schedule may not be completed within the required interval, a tolerance to the task may be applied in accordance with subsection 625.86(8) of STD 625.

(4) This AC outlines the expectations and procedures to follow when requesting the services of an AME and includes the procedures to be used by the AME to determine if a tolerance may be applied.

4.0 Applying a tolerance to a pre-approved maintenance schedule task(s)

(1) Tolerances are not part of a pre-approved maintenance schedule. However, an AME may apply tolerance to an interval of a maintenance schedule task in accordance with subsection 625.86(8) of STD 625. Prior approval by TCCA for use of a tolerance is not required.

(2) A tolerance is applied once, after the condition of the aircraft has been assessed to determine if the aircraft can be operated safely for the period of the tolerance. The application of a tolerance does not constitute a permanent change to the aircraft maintenance schedule.

(3) A tolerance cannot be applied to:

(a) tasks mandated by airworthiness directives (ADs);

(b) tasks mandated by airworthiness limitations (AWL); and

(c) tasks that are overdue based on their last completion, as overdue tasks can only be extended by a maintenance schedule deviation authorization issued by TCCA.

4.1 Roles and responsibilities

(1) If an owner is unable to get the required scheduled maintenance of their aircraft completed before it is due, they can seek the services of an AME to determine if a tolerance can be applied.

(2) The aircraft owner would need to request the services of an AME far enough in advance to have their aircraft inspected to ensure that it is in satisfactory condition to determine whether a tolerance can be applied. The owner will need to provide the AME access to the aircraft and its technical records to properly assess and determine whether a tolerance can be applied.

(3) The owner will need to provide the AME with the necessary information on the specific task(s), and where applicable, the part number and serial number of the aeronautical product being considered for a tolerance.

(4) The AME performing the service is appropriately rated and has appropriate experience and skill on the aircraft make and model. An AME may or may not be employed by an AMO.

(5) The determination of whether a tolerance can or cannot be applied is within the knowledge, experience and skill of an AME and the privileges of their AME licence.

4.2 Aircraft inspection

(1) Prior to the application of a tolerance to a task or tasks, the aircraft is to be inspected by an AME. The objective of the inspection is to determine if the aircraft can safely be operated for the

tolerance period being requested by the aircraft owner. The depth of the inspection is determined by the AME, taking into consideration the task being considered for a tolerance.

(2) Aircraft that have low annual utilization rates or have been in storage may require additional inspections or maintenance. The scope of the additional work will vary depending on aircraft type, condition of the aircraft, age, how and where the aircraft was parked or stored, period of inactivity and recommendations from the aircraft manufacturer or design approval holder. Depending on these factors, the AME may find it necessary to perform additional maintenance not required by the owner or maintenance schedule but would be prudent based on their experience or recommendations by the aircraft manufacturer or design approval holder. Examples of additional maintenance considerations are found in Appendix A of this AC.

(3) A review of the aircraft technical records to determine if the aircraft history, utilization, and previous defects would have any impact on the safe operation of the aircraft for the duration of the tolerance should form part of the inspection.

(4) If the inspection involves specialized maintenance under Schedule II of 571 of the CARs, an appropriately rated AMO as described in section 571.04 of the CARs will need to perform and certify the maintenance.

4.3 Acceptable tolerance limits

(1) The results of the inspection will determine whether a tolerance can be applied within the following acceptable limits:

- (a) Inspections performed every 12 months in accordance with STD 625 Appendix B; no greater than 15%; and
- (b) Out of phase task intervals performed in accordance with STD 625 Appendix C, no greater than 10%.

(2) It may be necessary for the AME to adjust the amount of tolerance to a lower amount based on the inspection results.If the AME determines that a tolerance would have an effect on the safe operation of the aircraft, a tolerance cannot be applied.

4.4 Technical record and maintenance release

(1) If the inspection results in the application of a tolerance, the AME will record in the aircraft technical record the particulars of the maintenance performed in accordance with section 571.03 of the CARs including:

- (a) the results of the inspection and technical record review;
- (b) the tolerance selected;
- (c) the specific maintenance task or group of tasks;
- (d) the new interval; and
- (e) the signing of the maintenance release in accordance with section 571.10 of the CARs.

(2) Based on the inspection results, if it is determined by the AME that a tolerance cannot be applied, the AME shall record in the aircraft technical record the particulars of the maintenance performed including:

- (a) the results of the inspection and technical record review;
- (b) a brief description of why a tolerance could not be applied; and
- (c) the signing of the applicable maintenance release.

Note: Each scheduled interval of a task is calculated from the time the task was last carried out. For example, where a 12 month inspection is carried out at 13.2 months based on an applied 10% tolerance, the next inspection is due 12 months from the date the inspection was completed.

4.5 Tolerance not applied

(1) Where a tolerance cannot be applied by the AME based on applicability or inspection results, an owner may submit a request for a deviation authorization to TCCA for review in accordance with subsection 605.86(3) of the CARs.

5.0 Information management

(1) Not applicable.

6.0 Document history

(1) Not applicable.

7.0 Contact us

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Appendix A: Additional Maintenance Considerations

The list below is generic and non-exhaustive**.** Tasks listed may or may not be applicable for a given situation.

Aircraft parked/stored or with low utilization
1) Review calendar items of the aircraft maintenance schedule including applicable STD 625 Appendix C out of phase tasks;
2) Review aircraft, engine and propeller manufacturer or design approval holder recommendations for storage;
3) Verify how the aircraft was stored/parked, e.g., humidity control of engines and interior of aircraft;
4) Perform fuel contamination checks (water infiltration);
5) Inspect tires for flat spots;
6) Inspect wheel bearing for corrosion;
7) Inspect pitot/static system for contamination**.**