



CIVIL AVIATION AUTHORITY OF BOTSWANA

GENERAL

ADVISORY

CIRCULAR

CAAB Document GAC-017

MAINTENANCE RECORDS AND RECORDS KEEPING SYSTEM

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TABLE OF CONTENTS

	Page number
1. Purpose	5
2. Status of this advisory circular	5
3. Effective Date	5
4. Applicability	5
5. Related Regulations	5
6. Related Publications	5
7. Definitions & Acronyms	5
8. Background	6
9. Maintenance Organisation Records	6
9.1 Requirements	6
9.2 Guidance	6
10. Operator's Aircraft Continuing Airworthiness Record System	7
9.3 Requirements	7
9.4 Guidance	9

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1. PURPOSE

This Advisory Circular (AC) provides information and guidance on recording of aircraft maintenance and retention of the maintenance data.

2. STATUS OF THIS ADVISORY CIRCULAR

This General Advisory Circular is an original issuance.

3. EFFECTIVE DATE

This GAC becomes effective immediately.

4. APPLICABILITY

This guidance is applicable to all persons, operators and organizations involved in maintenance of Botswana registered aircraft.

5. RELATED REGULATIONS

Copies may be obtained from the Government Printer.

- Civil Aviation (Approved Maintenance Organisations) Regulations
- Civil Aviation (Airworthiness) Regulations
- Civil Aviation (Air Operator Certification and Administration) Regulations

6. RELATED PUBLICATIONS

For further information on this subject, operators are advised to review the following ICAO publications -

- Annex 6 – Operation of Aircraft
- Doc 9760 – Airworthiness Manual

Copies may be obtained from Document Sales Unit, ICAO, 999 University Street, Montreal, Quebec, Canada H3C 5H7.

7. DEFINITIONS AND ACRONYMS

7.1 The following acronyms are used in this circular

AC	Advisory Circular
AD	Airworthiness Directive
AOC	Air Operator's Certificate
CAAB	Civil Aviation Authority of Botswana
ICAO	International Civil Aviation Organization
IPC	Illustrated Parts Catalogue
SB	Service Bulletin
SRM	Structural Repair Manual
TC	Type Certificate
STC	Supplemental Type Certificate

Advisory Circulars (ACs) are intended to provide advice and guidance to illustrate an acceptable means, but not necessarily the only means, of complying with the regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material. Where a regulation contains the words "prescribed by the Authority," the AC may be considered to prescribe a viable method of compliance, but status of that "prescription" is always "guidance" (never regulation).

8. BACKGROUND

- 8.1 Regulation 31 of the Civil Aviation (Approved Maintenance Organisation Regulations), 2012 requires an Approved Maintenance Organisation to record, in a form acceptable to the CAAB, details of all maintenance carried out, and retain a copy of all detailed maintenance records and any associated maintenance data.
- 8.2 Regulation 57 of the Civil Aviation (Airworthiness) Regulations requires an aircraft owner or operator to ensure that the records required to be kept under that Regulation are kept for a minimum period of one (1) year after the unit to which they refer has been permanently withdrawn from service or after the signing of the maintenance release certificate, as the case may be. (See *paragraph 10 of this AC for further clarification*). An AOC holder should ensure that a system has been established to keep, in a form acceptable to the CAAB, the detailed maintenance records to show that all requirements for signing of a maintenance release have been met.
- 8.3 Regulations 18 of the Civil Aviation (Air Operator Certification and Administration) Regulations requires an AOC holder to maintain records in a manner acceptable to the Authority. Details of the records to be maintained and the retention periods are specified in the Fifth Schedule of the AOC Regulations.

9. MAINTENANCE ORGANISATION RECORDS

9.1 Requirements

- 9.1.1 The organisation shall record all details of maintenance work carried out. As a minimum, the organisation shall retain records necessary to prove that all requirements have been met for issuance of the maintenance release certificate, including subcontractor's release documents.
- 9.1.2 The organisation shall provide a copy of each maintenance release certificate to the aircraft operator, together with a copy of any specific approved repair/modification data used for repairs/modifications carried out.
- 9.1.3 The organisation shall retain a copy of all detailed maintenance records and any associated maintenance data for two (2) years from the date the aircraft or component to which the work relates was released from the organisation.
- (a) Records under this paragraph shall be stored in a safe way with regard to fire, flood, and theft.
 - (b) Computer backup discs, tapes etc. shall be stored in a different location from that containing the working discs, tapes etc., in an environment that ensures they remain in good condition.
 - (c) Where an organisation approved under the Civil Aviation (Approved Maintenance Organisations) Regulations terminates its operation, all retained maintenance records covering the last two years shall be distributed to the last owner or customer of the respective aircraft or component or shall be stored as specified by the CAAB.

9.2 Guidance

- 9.2.1 Associated maintenance data is specific information such as repair and modification data. This does not necessarily require the retention of all Aircraft Maintenance Manual, Component Maintenance Manual, IPC, etc. issued by

the TC holder or STC holder. Maintenance records should refer to the revision status of the data used.

- 9.2.2 Properly executed and retained records provide owners, operators and maintenance personnel with information essential in controlling unscheduled and scheduled maintenance, and troubleshooting to eliminate the need for re-inspection and rework to establish airworthiness. The prime objective is to have secure and easily retrievable records with comprehensive and legible contents. The aircraft record should contain basic details of all serialized aircraft components and all other significant aircraft components installed, to ensure traceability to such installed aircraft component documentation and associated maintenance data.
- 9.2.3 The maintenance record can be either a paper or computer system or any combination of both. The records should remain legible throughout the required retention period.
- 9.2.4 Paper systems should use robust material that can withstand normal handling and filing.
- 9.2.5 Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used for maintenance should have at least one backup system which should be updated at least within twenty-four (24) hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorized personnel to alter the database.

10. OPERATOR'S AIRCRAFT CONTINUING AIRWORTHINESS RECORD SYSTEM

10.1 Requirements

- 10.1.1 At the completion of any maintenance, the associated maintenance release certificate shall be entered in the aircraft continuing airworthiness records. Each entry shall be made as soon as practicable but in no event more than thirty (30) days after the day of maintenance action.
- 10.1.2 The aircraft continuing airworthiness records shall consist of, as appropriate, an aircraft logbook, engine logbook(s) or engine module log cards, propeller logbook(s) and log cards, for any service life limited component and the operator's technical log.
- 10.1.3 The aircraft type and registration mark, the date, together with total flight time and/or flight cycles and/or landings, as appropriate, shall be entered in the aircraft logbooks.
- 10.1.4 The aircraft continuing airworthiness records shall contain the current:
 - (a) status of airworthiness directives and measures mandated by the CAAB in immediate reaction to a safety problem;
 - (b) status of modifications and repairs;
 - (c) status of compliance with maintenance programme;
 - (d) status of service life limited components;
 - (e) mass and balance report;
 - (f) list of deferred maintenance.

- 10.1.5 In addition to the authorized release document, component release form or equivalent, the following information relevant to any component installed shall be entered in the appropriate engine or propeller logbook, engine module or service life limited component log card:
- (a) identification of the component, and;
 - (b) the type, serial number and registration of the aircraft to which the particular component has been fitted, along with the reference to the installation and removal of the component, and;
 - (c) the particular component accumulated total flight time and/or flight cycles and/or landings and/or calendar time, as appropriate, and;
 - (d) information specified in paragraph 10.1.4 applicable to the component.
- 10.1.6 The person responsible for the management of continuing airworthiness tasks shall control the records as detailed in this paragraph and present the records to the CAAB upon request.
- 10.1.7 All entries made in the aircraft continuing airworthiness records shall be clear and accurate. When it is necessary to correct an entry, the correction shall be made in a manner that clearly shows the original entry.
- 10.1.8 An owner or operator shall ensure that a system has been established to keep the following records for the periods specified:
- (a) all detailed maintenance records in respect of the aircraft and any life-limited component fitted thereto, at least 24 months after the aircraft or component was permanently withdrawn from service, and;
 - (b) the total time and flight cycles as appropriate, of the aircraft and all life-limited components, at least 3 months after the aircraft or component has been permanently withdrawn from service, and;
 - (c) the time and flight cycles as appropriate, since last scheduled maintenance of the component subjected to a service life limit, at least until the component scheduled maintenance has been superseded by another scheduled maintenance of equivalent work scope and detail, and;
 - (d) the current status of compliance with maintenance programme such that compliance with the approved aircraft maintenance programme can be established, at least until the aircraft or component scheduled maintenance has been superseded by other scheduled maintenance of equivalent work scope and detail, and;
 - (e) the current status of airworthiness directives applicable to the aircraft and components, at least 12 months after the aircraft or component has been permanently withdrawn from service, and;
 - (f) details of current modifications and repairs to the aircraft, engine(s), propeller(s) and any other component vital to flight safety, at least 12 months after they have been permanently withdrawn from service.

Note: For the purpose of this paragraph, a "component vital to flight safety" means a component that includes certified life limited parts or is subject to airworthiness limitations or a major component such as, undercarriage or flight controls.

10.2 Guidance

- 10.2.1 Information on times, dates, cycles etc. should give an overall picture on the state of maintenance of the aircraft and its components. The current status of all service life-limited aircraft components should indicate the component life limitation, total number of hours, accumulated cycles or calendar time and the number of hours/cycles/time remaining before the required retirement time of the component is reached.
- 10.2.2 The current status of AD should identify the applicable AD including revision or amendment numbers. Where an AD is generally applicable to the aircraft or component type but is not applicable to the particular aircraft or component, then this should be identified. The AD status includes the date when the AD was accomplished, and where the AD is controlled by flight hours or flight cycles it should include the aircraft or engine or component total flight hours or cycles, as appropriate. For repetitive ADs, only the last application should be recorded in the AD status. The status should also specify which part of a multi-part directive has been accomplished and the method, where a choice is available in the AD.
- 10.2.3 The status of current modifications and repairs means a list of embodied modifications and repairs together with the substantiating data supporting compliance with the airworthiness requirements. This can be in the form of a Supplemental Type Certificate (STC), SB, Structural Repair Manual (SRM), or similar approved document. The substantiating data may include:
- (a) compliance programme; and,
 - (b) master drawing or drawing list, production drawings, and installation instructions; and,
 - (c) engineering reports (static strength, fatigue, damage tolerance, fault analysis, etc.); and,
 - (d) ground and flight test programme and results; and,
 - (e) mass and balance change data; and,
 - (f) maintenance and repair manual supplements; and,
 - (g) maintenance programme changes and instructions for continuing airworthiness; and,
 - (h) aircraft flight manual supplement.
- 10.2.4 Some gas turbine engines are assembled from modules and a true total time in service for a total engine is not kept. When owners and operators wish to take advantage of the modular design, then total time in service and maintenance records for each module is to be maintained. The continuing airworthiness records as specified are to be kept with the module and should show compliance with any mandatory requirements pertaining to that module.
- 10.2.5 When an owner/operator arranges for the relevant maintenance organisation to retain copies of the continuing airworthiness records on their behalf, the owner/operator will continue to be responsible for the retention of records. If they cease to be the owner/operator of the aircraft, they also remain responsible for the transferring the records to any other person who becomes the owner/operator of the aircraft.

- 10.2.6 Keeping continuing airworthiness records in a form acceptable to the CAAB normally means in paper form or on a computer database or a combination of both methods. Records stored in microfilm or optical disc form are also acceptable. All records should remain legible throughout the required retention period.
- 10.2.7 Paper systems should use robust material, which can withstand normal handling and filing.
- 10.2.8 Computer systems should have at least one backup system, which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorized personnel to alter the database.
- 10.2.9 Details of current modifications and repairs include the data supporting compliance with the airworthiness requirements. This can be in the form of a STC, SB, SRM, or similar document.
- 10.2.10 Continuing airworthiness records should be stored in a safe way with regard to fire, flood, theft, and alteration. Computer backup discs, tapes etc., should be stored in a different location from that containing the current working discs, tapes, etc. and in a safe environment. Reconstruction of lost or destroyed records can be done by reference to other records which reflect the time in service, research of records maintained by repair facilities and reference to records maintained by individual mechanics etc. When these things have been done and the record is still incomplete, the owner/operator may make a statement in the new record describing the loss and establishing the time in service based on the research and the best estimate of time in service. The reconstructed records should be submitted to the CAAB for acceptance.

Note: Additional maintenance may be required where records of major maintenance work have been completely lost, and the airworthiness of the aircraft/component cannot be ascertained.


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For/Civil Aviation Authority of Botswana



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