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## AIRWORTHINESS

### MAINTENANCE - ADMINISTRATION

#### DOCUMENTATION: ENTRIES IN AIRCRAFT, ENGINE AND PROPELLER LOGBOOKS AND ON CERTIFICATES RELATING TO MAINTENANCE OF AN AIRCRAFT

#### 1. Introduction

- 1.1. Part 43.03.1 of the NAMCARs 2020, as amended, requires that a logbook be kept for each aircraft, aircraft engine, and propeller. An associated mandatory document, the Certificate Relating to Maintenance of an Aircraft (CRMA) or a Certificate of Release to Service (CRS) contributes to the completion of such maintenance history.
- 1.2. The logbooks format must be approved by the Executive Director prior to its use.
  - 1.2.1. When at the first registration of an aircraft for which a Certificate of Airworthiness is to be issued by the NCAA, or
  - 1.2.2. At the time of the first engine overhaul after the issue of this AIC, or
  - 1.2.3. Whenever major airframe structural repairs become necessary after the issue of this AIC, or
  - 1.2.4. All current records and information must be transferred from previous logbook when new logbooks are opened. This information shall be certified as required by the person who transferred the information.
- 1.3. The purpose of logbooks is to provide a complete history of the equipment to which they relate. Entries therein must be accurate and neat and, whilst being concise, must contain all relevant facts.
- 1.4. Page 2 of these logbooks contains instructions with regard to the opening of the logbook and the recording of entries therein. Provision is made for the recording of the following:
  - 1.4.1. Airframe, engine and propeller particulars;
  - 1.4.2. Major defects and damage;
  - 1.4.3. Compass check swings;
  - 1.4.4. Class I product replacement;
  - 1.4.5. Airworthiness Directives (both recurrent and non-recurrent action);

- 1.4.6. Manufacturers Service Bulletins, Service Letters and Instructions (both recurrent and non-recurrent action);
  - 1.4.7. Engine components;
  - 1.4.8. Class II product overhaul;
  - 1.4.9. Scheduled inspections;
  - 1.4.10. Scheduled and non-scheduled maintenance and defect rectification on airframes, engines, propellers and accessories and any relevant matter.
- 1.5. Aircraft Maintenance Organisations (AMO's) and Aircraft Maintenance Engineer' license (AMEL) responsible for the opening of logbooks must do so strictly in accordance with the instructions applicable thereto.
2. Flight Time
- 2.1. Flight time means in the case of an aeroplane the time from the moment the aircraft moves under its own power for the purpose of taking off for flight until the moment it comes to rest at the end of the flight, and in the case of a helicopter from the time the engine or engines are started for the purpose of flight until they are switched off on completion of the flight.
  - 2.2. Overhaul and inspection due times in accordance with Approved Maintenance Schedules, should be based on the "Total time" shown on the flight folio and transferred to the respective logbooks.
  - 2.3. When a time recording device is fitted to an aircraft, the following shall apply.
    - 2.3.1. The device shall be installed in accordance with the aircraft manufacturers installation or approved drawings,
    - 2.3.2. Approval by the Executive Director shall be obtained prior to the installation of such a time recording device,
    - 2.3.3. The times recorded on that instrument are acceptable as "Flying time" and the respective reading must be entered in the appropriate column of the logbook whenever any maintenance work is done.
  - 2.4. When such a time recording device is replaced, the readings on both the replaced and the replacement devices must be recorded in the logbooks against the exact total flying time that such replacement took place. Thereafter to facilitate calculation of total time, both the final reading of the replaced instrument and the initial reading of the installed instrument, shall be recorded in the airframe logbook at the bottom of each completed page and at the top of the succeeding page.
3. Recording of routine maintenance
- 3.1. Entries in logbooks shall be made legibly and in ink before the aircraft is released for service or within 48 hours of the completion of the work to which they refer. In the case of work performed away from the aircraft's base, entries relating thereto must be transferred to the respective logbook(s), within 48 hours after the return of the aircraft to its base.
  - 3.2. Once completed, all MPI's and Programmed Maintenance as prescribed by the approved maintenance schedule or programmed maintenance schedules, must be recorded on the pages provided for listing scheduled inspections.
  - 3.3. On the successful completion of any additional work found necessary in consequence of an inspection, details of this work must be recorded in the defects rectified column of the pages reserved for that purpose and such entries must be appropriately certified.

#### 4. Overhaul and modifications

In the event of the overhaul of a Class I product the applicable logbook must accompany the product. No facility (AMO) may attempt to overhaul a Class I product without having in its possession the necessary manuals pertaining to the work being carried out. The subsequent logbook entries or CRMA's must state the following:

- 4.1. Reason for the overhaul, repair or modification;
- 4.2. Titles, part number of manuals, and test schedules used and their revision status;
- 4.3. Modifications embodied;
- 4.4. Service Bulletins checked and complied with;
- 4.5. Major replacements;
- 4.6. Items repaired or overhauled;
- 4.7. Tests carried out and
- 4.8. The job card number concerned.

#### 5. Repairs

A description of repairs carried out must be recorded legibly and in black ballpoint pen in the appropriate logbook(s) and on the CRMA, subsequently mentioning the following:

- 5.1. The reason for the repairs;
- 5.2. A list of structurally important materials or parts used and the maintenance history thereof if applicable;
- 5.3. The approval number of the approved repair scheme complied with during the repair or the authority for the repair e.g.: AC-43-13-1A figure 21; and 31;
- 5.4. For welded repairs, the name of the AMO or the certified welder(s) who did the welding, and the welders approval/license number. The records (and CRMA) must furthermore make adequate mention of the following;
- 5.5. Mass and balance report after major repairs which alter the empty mass of the aircraft; and
- 5.6. Test flight data and completion of forms FSS-AIR-FORM 100/11, FSS-AIR-FORM101/11 or FSSAIR-FORM102/11 for submission to the NCAA, where applicable.

#### 6. Replacement

A description of work done is required and the following detail must appear in both logbook and CRS/CRMA:

- 6.1. The reason for removal or replacement of a Class I or Class II product or part and the position thereof on the aircraft if applicable;
- 6.2. The serial number(s) of the products or parts removed and installed, respectively;
- 6.3. The operating hours and/or cycles at the time of removal and installation;
- 6.4. A list of Class I and Class II products used as replacement parts and their part or serial numbers, including attachment bolts;
- 6.5. Should a previously used Class I or II product or part be installed on an aircraft, its previous maintenance history shall be recorded as well as details of inspections, modifications and tests carried out to ensure that such product or part is indeed serviceable.

- 6.6. Copies of CRMA's reflecting any change of Class I products must be forwarded to the NCAA concurrent with the Inspection Report, FSS-AIR-FORM 098/12 Aircraft and FSS-AIR-FORM 099/12 Helicopters.

## 7. Adjustments

A brief description of the adjustment(s) made must be recorded in the appropriate logbook quoting the respective section of the relevant maintenance manual consulted. Adjustment to compasses shall be recorded in the airframe logbook on the pages provided for that purpose.

## 8. Modifications and special inspections

A brief description of the modification embodied or special inspection carried out shall be recorded where applicable in the appropriate aircraft logbooks. The reference number of the respective Airworthiness Directive (AD), Service Bulletin (SB), Service Instruction (SI), Service Letter (SL) or approved modification shall be quoted.

## 9. Certifying of entries

- 9.1. The requirements set out in paragraph 3 shall be complied with.
- 9.2. All CRS/CRMA's or entries must be dated and certified by the authorized person and his approval stamp must appear on the certificate.
- 9.3. CRS/CRMA's may be issued in lieu of an entry in the logbook concerned and the following precepts shall then be followed:
  - 9.3.1. The requirements set out in paragraphs 4, 5, 6, 7 and 8 must be complied with;
  - 9.3.2. The CRS/CRMA shall be in typescript;
  - 9.3.3. CRS/CRMA's must be numbered in sequence;
  - 9.3.4. CRS/CRMA's shall identify the aircraft or product to which they refer by quoting a serial number and registration marking or a part number;
  - 9.3.5. If the CRS/CRMA consists of more than one page the pages will be numbered consecutively;
  - 9.3.6. A copy of each CRS/CRMA shall be kept for a period of at least 10 years by the facility concerned.
  - 9.3.7. The originals of CRS/CRMA's must be pasted in the appropriate logbook;
  - 9.3.8. Copies of CRMA's referring to major repairs and the overhaul of Class I products must be forwarded to this Authority.

## 10. Other entries

Unusual occurrences e.g. aircraft struck by lightning, heavy landing, bird strike, forced landing etc shall be recorded in the respective logbook(s). Such entries should specify the nature, date and place of the occurrence and, in the case of an emergency landing, the reason why the landing was made. A copy of each such entry shall be forwarded to the responsible airworthiness inspector for his attention.

## 11. Safekeeping of logbooks

The importance of safeguarding logbooks cannot be over emphasized. If they are lost, it may be necessary to have extensive maintenance done to prove the airworthiness of the aircraft, engine or propeller concerned to the satisfaction of the Executive Director. Attention is drawn to the requirement contained in Part 43.03.1 of the CAR's, as amended regarding the preservation of logbooks. The carriage of logbooks in the aircraft to which they relate is to be avoided whenever possible. However, it is accepted that they can be carried in the aircraft to which they relate when that aircraft is proceeding from its base to a place where an inspection is to be performed as no facility may perform an inspection unless the logbooks are available for perusal.