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**Civil Aviation Authority  
of Fiji**

## **AIRWORTHINESS OF AIRCRAFT**

Published by:  
Civil Aviation Authority of Fiji  
Private Mail Bag, NAP 0354  
Nadi International Airport  
Fiji

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# Standards Document

## AIRWORTHINESS OF AIRCRAFT

**Civil Aviation Authority of Fiji**

Private Mail Bag, NAP 0354

Nadi International Airport

Fiji

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## PREFACE

### General

Fiji's National Aviation Law consists of a three tier regulatory system, comprising Acts, Regulations and Standards Documents; the purpose of which is to ensure, where deemed appropriate, compliance and conformance with ICAO Standards and Recommended Practices (SARPS).

The three tier regulatory system represents Fiji's Primary Legislation System and Specific Operating Regulations to meet Critical Elements CE1 and CE2 of ICAO's Eight Critical Element of a safety oversight system.

Standards Documents (SD) are issued by the Civil Aviation Authority of Fiji under the provision of Section 14 (3) (b) of the Civil Aviation Authority Act 1979 (CAP 174A)

Where appropriate, the SD also contains technical guidance (Critical Element CE5) on standards, practices, and procedures that are acceptable to the Authority.

Notwithstanding the above, and where specifically indicated in this Standards Document that such a provision is available, consideration may be given to other methods of compliance that may be presented to the Authority provided they have compensating factors that can demonstrate a level of safety equivalent to or better than those prescribed herein. Accordingly, the Authority will consider each case based on its own merits holistically in the context of and relevancy of the alternative methods to the individual applicant.

When new standards, practices, or procedures are determined to be acceptable, they will be added to this document.

### Purpose

This Document is intended for use by CAAF, applicants for, and holders of, an Aircraft Certificate of Airworthiness and for their staff.

### Change Notice

This Standards Document has been developed pursuant to the Authority's obligation to provide oversight on certified operators and their personnel, as well as the operator's obligation to comply with standards notified by the Authority and is the means by which such notification is given.



GEORGE TUDREU  
ACTING CHIEF EXECUTIVE

## CONTENTS

Chapter 1-2 Categories of Aircraft.....	1-2
Chapter 2-2 Type Approval.....	3-8
Chapter 2-5 Approval of Modifications.....	9-12
Chapter 3-2 Issue of Certificate of Airworthiness.....	13-16
Appendix 1 to Chapter 3-2.....	17-18
Chapter 3-4 Renewal of Certificate of airworthiness.....	19-24
Chapter 3-5 Flight Testing for Issue or Renewal of Certificates of Airworthiness.....	25-30
Chapter 3-8 Certificates of Fitness for Flight.....	31-32
Chapter 3-11 Aircraft Radio Installations.....	33-37
Chapter 6-2 Maintenance of Aircraft .....	38-50
Appendix 1 to Chapter 6-2.....	51-65
Chapter 6-4 Weight and Balance of Aircraft.....	66-69
Appendix 1 to Chapter 6-4.....	70-71
Chapter 6-5 Minimum Equipment Lists.....	72-75
Chapter 6-6 Mandatory Modifications and Inspections.....	76-79
Procedures for Implementation	
Chapter 6-7 Certification of Inspections, Overhauls, Modifications, Repairs and Replacements.....	80-86
Chapter 6-8 Flight Testing after Modification or Repair.....	87-88
Chapter 7-2 Flight Manuals.....	89-92
Chapter 7-5 Approval of Maintenance Programmes & Schedules.....	93-98
Chapter 7-8 Technical Logs.....	99-102
Chapter 7-10 Weight and Balance Report.....	103-109
Appendix 1 to Chapter 7-10.....	110-113
Appendix 2 to Chapter 7-10.....	114-117
Chapter 8-15 Aeroplanes & Rotorcraft Not Exceeding 2730kg.....	118-120
Appendix 1 to Chapter 8-15.....	121-123

## CHAPTER 1-2

### CATEGORIES OF AIRCRAFT

#### 1 INTRODUCTION

The Certificate of Airworthiness or Permit to Fly imposes conditions affecting the manner in which an aircraft may be maintained and operated, and the purposes for which it may be used. The conditions are imposed in the following manner:-

- (a) By placing an aircraft in Categories which indicate the uses for which the aircraft is approved.
- (b) By indicating either in the Certificate of Airworthiness or Permit to Fly or in their associated documents the detailed limitations which must be observed.

#### 2 CATEGORIES AND PURPOSES

2.1 The categories in which an aircraft may be placed are as follows:-

##### 2.1.1 Certificates of Airworthiness

- (a) Transport Category (Passenger)
- (b) Transport Category (Cargo)
- (c) Aerial Work Category
- (d) Private Category
- (e) Special Category

##### 2.1.2 Permit to Fly

NOTE: A Permit to Fly may be issued in respect of an aircraft, in accordance with Regulation 12(1)(d) of the Air Navigation Regulation. The CAAF will not normally issue a Permit to Fly in respect of an aircraft of a type that is eligible for a Certificate of Airworthiness in any of the categories of 2.1.1.

2.2 The purposes for which the aircraft may fly are as follows:-

- (a) **Transport Category (Passenger):** Any purpose.
- (b) **Transport Category (Cargo):** Any purpose, other than the public transport of passengers.
- (c) **Aerial Work Category:** Aerial work only.
- (d) **Private Category:** Any purpose, other than public transport or aerial work.
- (e) **Special Category:** Any purpose, other than public transport specified in the Certificate of Airworthiness but not including the carriage of passengers unless expressly permitted.
- (f) **Permit to Fly.** Any purpose, other than public transport or unless expressly permitted aerial work, specified on the Permit to Fly.

Flights over or into another country by an aircraft in respect of which either a Special Category Certificate of Airworthiness or a Permit to Fly has been issued and, in the case of a Permit to Fly, an exemption has been granted, will normally require the permission of the Authority of that country.

## CHAPTER 2-2

### TYPE APPROVAL

#### 1 INTRODUCTION

- 1.1 Type Approval by the CAAF is indicated by the issue of an Airworthiness Approval Note (AAN).
- 1.2 Applicants for the certification of aircraft in Fiji should be aware that, in accordance with the requirements of the ANR and STANDARDS DOCUMENT - AIRWORTHINESS OF AIRCRAFT, all such aircraft, irrespective of their size, will normally be subject to such investigations by the CAAF as are deemed to be necessary, in order to establish, taking into account their design, construction, modification standard and original approval basis, that an acceptable level of airworthiness has been met. However, in order to achieve this, the principles of granting Fiji Type Approval by accepting (validating) the certification approval granted by the Authority of the state of manufacture, will be used as far as possible. The degree by which the approval of the Authority of the state of manufacture can be taken into account, and the amount of additional CAAF investigation required, will depend on various criteria. The CAAF will also require knowledge of the arrangements for post-approval design support in order to be satisfied that this airworthiness standard may be expected to be sustained after approval.
- 1.3 When a Fiji Type Approval has been granted, all aircraft of a type which conform to the defined standard would qualify for a Certificate of Airworthiness, provided the condition of the aircraft concerned was acceptable to the CAAF.

#### 2 SCOPE OF APPLICATION OF THE TYPE APPROVAL

The issue of a Fiji Airworthiness Approval Note (AAN) is a pre-requisite to the issue of a Certificate of Airworthiness in the Transport, Aerial Work or Private Category, where an aircraft of that type has not previously been issued with a Fiji Certificate of Airworthiness in that category.

#### 3 INITIAL PROCEDURE FOR OBTAINING TYPE APPROVAL

The application for the issue of a Certificate of Airworthiness on CAAF Form AW 101G will also serve as an application for Type Approval. No separate application will be needed. Application should be made sufficiently in advance of the required approval date to allow time for the CAAF investigations including approval of the Flight Manual (see 4.6) to be completed. The CAAF will, on request, provide an estimate of the costs of an investigation, particularly where foreign visits are involved.

## **4 TYPES FOR WHICH A FIJI CERTIFICATE OF AIRWORTHINESS HAS NOT PREVIOUSLY BEEN ISSUED**

- 4.1 Newly manufactured large transport aeroplanes shall have been certificated by the state of design to the appropriate EASA Certification Specification (CS) or Federal Air Regulations (FAR) code or Transport Canada Civil Aviation Regulations (CAR) standards. Other state of design TCDS's with an equivalent FAA, EASA or Transport Canada standard may be considered.
- 4.2 Newly manufactured and used small aircraft (those below 5700 kg), shall have been certificated by the state of design to the appropriate EASA Certification Specification (CS) or Federal Air Regulations (FAR) code or Transport Canada Civil Aviation Regulations (CAR) standards. Other state of Design TCDS's with an equivalent FAA, EASA or Transport Canada Standard may be considered.
- 4.3 Any modifications or STC's embodied on imported aircraft which have been installed since the aircraft was built must be declared by the applicant. These modifications will be investigated by the Authority and if found unacceptable will cause the certification to be rejected. The certification is to include state of design Airworthiness Directives.
- 4.4 The extent and depth of the CAAF investigation will vary according to the design features of the aircraft, current condition, including in particular the type of powerplant. Due to the limited resources within CAAF, specialist and expert opinion may need to be sought from other certifying authorities. The CAAF will on request provide an estimate of the cost of an investigation as it sees fit particularly where visits to a foreign constructor/owner or consultation with other certifying authorities are involved.
- 4.5 As a result of its investigation and consultation with other certifying authorities, the CAAF may prescribe certain additional requirements or special conditions, to be met prior to issue of a Fiji Airworthiness Approval Note (AAN).
- 4.6 **Performance and Flight Manual**
- 4.6.1 For aeroplanes and rotorcraft, a Flight Manual must be provided which contains the limitations, procedures and performance information to meet the Fiji Air Navigation Regulations and in accordance with the BCAR, FAR or JAR regulations applicable to the type of aircraft being investigated. The Flight Manual will normally be produced by the manufacturer, and the Authority of the state of manufacture may be asked to approve the Flight Manual on behalf of the CAAF.
- 4.6.2 Piston-Engine Light Aircraft (Aeroplanes and Rotorcraft) in the Private, Special and Aerial Work Categories. The Flight Manual or Pilot's Operating Handbook, as appropriate, (including all relevant supplements) which has been approved by the Authority of the state of manufacture for use on that aircraft, will be accepted by the CAAF without investigation.

4.6.3 In all cases two copies of the Flight Manual or Pilot's Operating Handbook, as appropriate, are required to be submitted in English.

#### 4.7 CAAF Flight Testing

Regardless of the extent of the investigation, an aircraft of the same design standard as that submitted for approval shall be placed at the disposal of the CAAF so that, at its discretion, CAAF nominated test pilots may:-

- (a) Carry out any flight tests necessary as part of the investigation to confirm compliance with the appropriate requirements, or other regulations applicable to the type.
- (b) Become familiar with the flight characteristics of the aircraft.
- (c) Gain information for use in preparing CAAF Airworthiness Flight Test Schedules.

#### 4.8 Post Approval Design Support by Manufacturer and Approval Authority

Unless the CAAF is already aware of them, confirmation will be required of the arrangements made by the manufacturer and the Authority of the state of manufacture for providing the necessary continuing airworthiness support after approval.

### 5 CHANGE OF CATEGORY

5.1 Aircraft types investigated in accordance with 4 will be eligible for approval in any Category (Private, Aerial Work or Transport). In changing from Private to Aerial Work or Transport Category, modifications or additional equipment installations may be necessary to satisfy requirements or Fiji air navigation legislation. It is normal that the investigations carried out in accordance with 4 will have identified such changes. However, where an aircraft has been certificated in the Private or Aerial Work category and application is subsequently made for approval in the Transport Category, further investigation, flight testing and Flight Manual review may be necessary, as a result of which the CAAF may prescribe additional requirements or special conditions with which the applicant may be asked to establish compliance.

5.2 In the case of piston-engine aircraft below 2730 kg MTWA certificated in the Private or Aerial Work Category, the additional design investigation necessary for

approval in the Transport Category will be limited to differences arising out of the Requirements and Fiji air navigation legislation.

## **6 SERIES AIRCRAFT**

Where an aircraft type has already been certificated in the Fiji, Series aircraft may normally be accepted without further technical investigation. However, for an aircraft to be accepted as a Series aircraft, it is essential that it and its equipment, build standard, and means of compliance with any specified CAAF Special Conditions or Additional Requirements, should be demonstrated as being substantially similar to another aircraft of the type or variant thereof accepted for Fiji certification; significant differences must be identified and may necessitate further investigation (see 7 below).

## **7 DERIVATIVE AND MODIFICATIONS**

7.1 New Models and Derivatives. Whenever new models or derivatives of a type previously accepted by the CAAF are submitted for approval, the need for any investigation or Flight Manual review will follow the criteria and procedures in 4 and 5 above.

### **7.2 Modifications.**

7.2.1 Any modification (including STCs) incorporated on an aircraft of a type, which has been approved by an Authority which the CAAF accepts as having airworthiness standards broadly equivalent to those of the CAAF, will be accepted without investigation. Where such a modification is incorporated on an aircraft certificated in the Transport Category and is likely to be affected by the requirements of the Fiji air navigation legislation, the aircraft may be subject to a CAAF investigation and the Flight Manual will be subjected to review.

7.2.2 If a modification, which is subject to a CAAF investigation as determined above, could affect the flying qualities, performance, crew procedures or flight deck layout, then flight testing in accordance with the relevant section of 4.7 above may be undertaken.

## **8 DOCUMENTS AND MANUALS**

Irrespective of the depth of investigation required by this Chapter, before an aircraft can be accepted for Fiji approval, all documents necessary for the investigation and those for approval, operation and continued airworthiness of the aircraft must be provided in English.

## 9 THE AIRWORTHINESS APPROVAL NOTE (AAN)

9.1 In most cases (see 2 above), with the co-operation of the applicant, the CAAF will prepare and issue the Airworthiness Approval Note (AAN).

The Airworthiness Approval Note (AAN) will contain the following information:-

- (a) A reference to a Foreign Type Certificate number.
  - (b) The designation of the type.
  - (c) The Manufacturer (Type Certificate Holder).
  - (d) A statement that the type of aircraft concerned is acceptable for Fiji airworthiness approval.
  - (e) A reference to the associated Type Certificate Data Sheet.
- 9.2 The Type Certificate Data Sheet associated with the Foreign Type Certificate will be referred to in the AAN and will give the basis of approval and the designation of each aircraft variant certificated, and also define some general particulars of the design.
- 9.3 The Airworthiness Approval Note will be issued to the applicant.
- 9.4 Copies of Airworthiness Approval Notes may be obtained from the CAAF.



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## CHAPTER 2-5

### APPROVAL OF MODIFICATIONS

#### 1 1 INTRODUCTION

##### 1.1 Modifications

Modifications are changes made to a particular aircraft, including its components, engines, propellers, radio apparatus, instruments, equipment, and their installations. Substitution of one type for another when applied to components, engines, propellers, radio installations, accessories, instruments and equipment, is also considered to be a modification. The approval of modifications will be subject to compliance with the procedures outlined in this chapter.

#### 2 MODIFICATIONS NOT PREVIOUSLY INVESTIGATED AND APPROVED

##### 2.1 General

- 2.1.1 At an early stage of the design or process related to the incorporation of a modification, brief particulars shall be provided to the CAAF Air Safety Department so that the modification may be classified.
- 2.1.2 A modification will be classified as Minor or Major according to the nature and extent of the CAAF investigation in connection with its approval. Where the investigation indicates that the particulars given in the Certificate of Airworthiness, or associated documents, will need amendment (even though no physical change to the aircraft is involved) the CAAF may require Major modification procedure to be followed where the amendments are significant.
- 2.1.3 Where the modification is such that the CAAF requires the aircraft to be investigated as a variant, the relevant procedures of Chapter **2-2** will apply.
- 2.1.4 All modifications, excepting those which are agreed by the CAAF to be of such a nature that airworthiness is not affected, shall be approved by the CAAF, either directly, or through the modification procedures of an appropriately approved or accepted organisation.
- 2.1.5 The applicant shall ensure, where necessary through the medium of an organisation approved or accepted by the CAAF for the purpose that the proposed modification is such that the design of the aircraft, when modified, complies with:-

- (a) The Requirements in force at the time the aircraft type was originally certificated.
  - (b) Such other requirements as the CAAF may notify, in writing, in respect of the aircraft design.
- 2.1.6 All relevant design information, drawings and test reports shall be held at the disposal of the CAAF. No such design records shall be destroyed without authorisation from the CAAF.
- 2.1.7 Each design drawing shall bear a descriptive title, drawing number, issue number and date of issue. All alterations to drawings shall be made in accordance with a drawing amendment system such as will ensure amendment to design records.
- 2.1.8 Immediately an alteration is made to a drawing, whether the alteration is permanent or temporary, the drawing shall be identified with a new issue number and date. Where an alteration affects the interchangeability of any item in any way, a new part number shall be issued such as to avoid confusion with the original item.
- 2.1.9 Modification documents shall bear a modification reference number, issue number and date, a description of the modification, together with a list of parts and assemblies affected by the modification and, where necessary, drawings giving particulars of the parts before and after modification.
- 2.1.10 Where modifications affect unit interchangeability, or are of such an extent as to require amendment of approval documents or any documents associated with the Certificate of Airworthiness, a separate type or designation reference shall be allocated to the modified unit.
- 2.1.11 Where modifications affect or impinge upon the content of the Approved Minimum Equipment List (MEL), applicants will be required to ensure that notification of these effects is provided to the CAAF so that the necessary action can be taken to ensure that the relevant MEL is revised.

## 2.2 Major Modifications

The following procedures will apply in the case of a modification classified by the CAAF as a Major modification.

- 2.2.1 CAAF Form AW 101B, copies of which may be obtained from the CAAF Air Safety Department, shall be completed and returned to the same address. The total fee will be based on the cost of the investigation and the CAAF will, during the course or upon completion of the investigation, notify the applicant in writing accordingly.

2.2.2 Due to the limited resources available to the CAAF it is normal practice to only accept Major modifications which are supported by a Supplementary Type Certificate or Design Data approved by the Authority of the State of Design.

2.2.3 Modifications approved by the Authority of the State of Design and promulgated in the form of manufactures' Service Bulletins are considered by the CAAF to be approved.

2.2.4 The CAAF will signify approval of a Major modification by forwarding a copy of the Airworthiness Approval Note to the applicant.

### 2.3 **Minor Modifications**

When the design of a modification, classified as Minor, is undertaken by other than an organisation either approved or accepted for the purpose by the CAAF, CAAF approval will be signified by forwarding a copy of CAAF Form AW 101C to the applicant.

### 2.4 **Modification Record**

When the design of a modification is undertaken by an organisation either approved or accepted by the CAAF for the purpose a record of the following particulars shall be prepared and kept in a book or folder bearing the title 'Modification Record':-

- (a) Aircraft type.
- (b) Title and brief description of modification.
- (c) Modification reference number.
- (d) Modification class.
- (e) Airworthiness Approval Note number (in the case of a Major modification).
- (f) Reference to the associated Flight Manual amendment number.
- (g) Reference to the associated Maintenance, Overhaul and Repair Manuals, Crew Manual and Maintenance Schedule amendment numbers.
- (h) Reference to the associated MEL revision (if appropriate).

2.4.1 The Modification Record shall be made available to the CAAF for examination.

### **3 MODIFICATIONS ALREADY APPROVED**

- 3.1 Information concerning the conditions of acceptance of modifications previously approved by the CAAF will not be confidential to the applicant and may be made available by the CAAF on request. This does not apply to design information, including drawings and test reports; these are held, by the CAAF, as confidential documents.

### **4 MANDATORY MODIFICATIONS**

- 4.1 Mandatory modifications are promulgated in manufacturers' Service Bulletins, or equivalent documents, which contain a statement that the modification has been classified as mandatory by the Civil Aviation Authority of the State of Design or manufacturer. These mandatory modifications are summarised in the Airworthiness Directive summaries published by the Airworthiness Authority responsible.

## CHAPTER 3-2

### ISSUE OF CERTIFICATES OF AIRWORTHINESS

#### 2 1 INTRODUCTION

- 1.1 A Prototype aircraft is one that is to be investigated for the issue of a Certificate of Airworthiness.
- 1.2 A Variant is an aircraft that embodies certain design features, dissimilar to the Prototype aircraft, which are required to be investigated for certification purposes.
- 1.3 A "Series aircraft" is one which is similar in every essential respect to the design of an aircraft for which a Certificate of Airworthiness and, where applicable, a Type Certificate, has previously been issued.
- 1.4 The issue of a Certificate of Airworthiness to an aircraft is dependent on the aircraft being registered in the Fiji and will be subject to compliance with the procedures outlined in this Chapter, and also with the Type Approval procedures outlined in Chapter **2-2**.
- 1.5 In the case of aircraft to be investigated for the issue of a Certificate of Airworthiness in the Special Category, the CAAF may accept proposals which would vary the procedures in this Chapter **3-2**.
- 1.6 Before the issue of a Certificate of Airworthiness in the Transport, Aerial Work, or Private Category type aircraft must qualify for Fiji Type Approval. The procedures for type certification are given in Chapter **2-2**.

#### 2 APPLICATION

- 2.1 CAAF Form AW 101G, copies of which may be obtained from the CAAF Air Safety Department, shall be completed and returned to the same address, together with the appropriate initial fee.
- 2.2 The charges are prescribed in the CAAF Scheme of Charges and also noted on CAAF Form AW 101G. The applicant shall pay charges equal to the cost of the investigation, but not exceeding the amount prescribed in the CAAF Scheme of Charges. During the course of the investigation the CAAF will normally render accounts at monthly intervals.
- 2.3 During the investigation, if it is necessary for a CAAF Airworthiness Officer to travel outside the Fiji, the CAAF will require the applicant to meet the additional costs involved.

### 3 GENERAL

- 3.1 The applicant shall, for every aircraft to be issued with a Fiji Certificate of Airworthiness, send to the CAAF the appropriate Certificate of Airworthiness issued by the State of construction, the Type Certificate Data Sheet (TCDS) where applicable (see Chapter **2-2**) and a suitable transfer document issued by the last state of registry (see Appendix 1). In cases where a Flight Manual has been issued (see Chapter **7-2**) this shall be provided and shall conform to Fiji requirements. Additionally the applicant may be required to provide the following particulars: -”
- (a) The National Requirements with which the aircraft complies giving title, issue numbers and effective date.
  - (b) Such deviations from the National Requirements as may have been authorised in writing by the Authority which issued the Certificate of Airworthiness.
- 3.1.1 In the case of aircraft of a type for which a Fiji certificate has not previously been granted, where applicable, two copies of the Flight Manual shall be provided which shall conform to Fiji requirements, and the relevant revisions and amendments shall be supplied for each copy (see Chapter **7-2**)
- 3.1.2 During the investigation of the aircraft, the CAAF may decide that additional requirements must be met and these will be notified in writing to the applicant.
- 3.2 The aircraft shall be in a condition acceptable to the CAAF to enable the CAAF to inspect it as necessary.
- 3.3 All relevant records shall be made available to the CAAF for examination. No such records shall be destroyed without authorisation from the CAAF. Maintenance records forming part of the log book (see paragraph 3.6) shall be kept for the same period as the log book, i.e. until a date two years after the aircraft, engine or variable-pitch propeller has been destroyed or has been permanently withdrawn from use.
- 3.4 If work on the aircraft is required to be undertaken in the Fiji, then such work shall be carried out under the supervision of an Organization approved by the CAAF for the purpose or under the supervision of an appropriately licensed aircraft engineer. Before the work is finally certified, the Quality Manager of the Approved Organisation or the licensed aircraft engineer shall be satisfied that the work has been carried out, inspected, and tested where necessary, in conformity with the specifications, drawings and instructions relating to the approved design.

- 3.5 Full particulars of the work done shall be entered in the appropriate log book and a Certificate of Release to Service shall be attached thereto (see Chapter 6-7).
- 3.6 When the particulars of the work done are so voluminous that it is inconvenient to record the details in the space provided in the log book, the details shall be entered in a separate maintenance record which shall be numbered for identification purposes, certified in the same manner as that required for the relevant entry in the log book, and kept safely in order that it may be produced for examination. The reference number of such record, and particulars of the place where it may be examined, shall be inserted in the log book together with a brief description of the work to which the record relates. When aircraft, engine and propeller log books are not required to be kept, the particulars of the work done and relevant certificate shall be entered in a suitable maintenance record book or folder and made available to the CAAF for examination.
- 3.7 The aircraft shall be weighed and copies of the Weight and Centre of Gravity Schedule and, where appropriate, the Weight and Balance Report shall be provided (see Chapter 7-10).

NOTE: The CAAF may agree to the acceptance of weight and centre of gravity details obtained from current documents relating to the aircraft.

- 3.8 When required by the CAAF, a Certificate of Fitness for flight shall be issued and the aircraft shall be tested in flight to schedules approved by the CAAF (see Chapter 3-5). The Certificate shall be issued in duplicate and one copy kept elsewhere than in the aircraft. Particulars and results of such testing shall be provided.
- 3.9 Copies of the crew manuals, maintenance, overhaul and repair manuals and, in the case of an aircraft of a type for which Fiji certification has not previously been granted, an additional copy of these documents shall be supplied to the CAAF together with a complete set of all Service Bulletins issued in respect of the aircraft, engines and propellers concerned.
- 3.9.1 Before the issue of a Fiji Certificate of Airworthiness all relevant manuals shall be amended, where necessary, in respect of modifications embodied by the applicant before acceptance of the aircraft by the CAAF for certification and two copies of the amendment shall be given to the CAAF. In the case of an aircraft of a type for which Fiji certification has not been granted previously, the applicant shall give to the CAAF a copy of each finally accepted manual.
- 3.9.2 It shall be the responsibility of the applicant to make the necessary arrangements with the constructors of the aircraft and the engine manufacturers to receive amendments to these manuals together with any Service Bulletins that may be issued from time to time.
- 3.9.3 It shall be the responsibility of the applicant to obtain such additional technical information as the CAAF may require in respect of the aircraft, its engines and equipment.
- 3.10 To facilitate delivery of aircraft to the Fiji the CAAF may, under appropriate circumstances, issue a temporary Fiji Certificate of Airworthiness before the aircraft and its documents are

available for inspection in the Fiji, provided the number and date of issue of the foreign Certificate of Airworthiness are made available.

#### **4 MAINTENANCE REVIEW BOARD**

- 4.1 To determine the initial maintenance and inspection requirements, a Maintenance Review Board (see **5-2**) will normally have been established by the state of manufacture for all Prototype aircraft the MTWA of which exceeds 5700 kg, and other aircraft as deemed necessary by the CAAF, prior to Fiji Category certification.

#### **5 MANUALS**

- 5.1 Particulars for inclusion in the Flight Manual shall be provided (see **7-2**).
- 5.2 Copies of Maintenance, Overhaul and Repair Manuals and the Crew Manual, shall be provided.

## APPENDIX 1 to CHAPTER 3-2

### TRANSFER DOCUMENT

The transfer document referred to in paragraph 3.1 of **3-2** may be one of the following:

1. A Certificate of Airworthiness for Export issued by the exporting airworthiness authority within 60 days of the date of application for the Fiji Certificate of Airworthiness

or

The following documents will be accepted in combination as a transfer statement:-

2. A current domestic Certificate of Airworthiness.

PLUS

The following statement issued within 60 days of the date of application and signed by the National Aviation Authority of the last state of registry:-

#### **REGISTRATION TYPE CONSTRUCTOR'S No.**

**The [National Aviation Authority (NAA)], having inspected the above aircraft and its records on (date), hereby certifies that the aircraft is in accordance with: Type Certificate Data Sheet (xxxx) and is in an airworthy condition.**

All Airworthiness Directives applicable to the type and all relevant maintenance activities have been addressed, with the exceptions previously agreed by the CAAF listed below.

Throughout the time the aircraft was on the (country) registry it remained under civilian and not military control.

The [NAA] further declares that had the aircraft been presented for renewal of the certificate of Airworthiness or the issue of an Export Certificate of Airworthiness such a certificate would have been issued".



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## CHAPTER 3-4

### RENEWAL OF CERTIFICATE OF AIRWORTHINESS

#### 1 INTRODUCTION

##### 1.1 General

1.1.1 The renewal of a Certificate of Airworthiness shall be subject to compliance with the procedures set out in this Chapter.

#### 2 APPLICATION

CAAF Form AW 101H, copies of which may be obtained from offices of the CAAF Air Safety Department, shall be completed and returned to the same address, at least one month before the date on which the renewal is required. The application shall be accompanied by the appropriate charge, which is prescribed in the scheme of charges levied under the Air Navigation Regulations.

2.1 If, for the CAAF investigation, travel outside the Fiji is necessitated, the Applicant will be required to meet the additional costs.

#### 3 PROCEDURE NO. 1

3.1 The aircraft and its records shall be in a condition acceptable to the CAAF, for such inspections as are considered necessary.

3.2 The aircraft and the relevant records shall be reviewed by an appropriate Approved Organisation or by an appropriately licensed aircraft maintenance engineer, to determine the work to be undertaken to maintain the airworthiness of the aircraft.

3.2.1 Where an inspection is carried out on an aircraft, specifically for the purpose of renewal of the Certificate of Airworthiness, an Inspection Report shall be prepared by an appropriate Approved Organisation or by an appropriately licensed aircraft maintenance engineer, detailing the work required, and a copy shall be given to the CAAF.

3.2.2 In determining the work to be undertaken on the aircraft, due account shall be taken of (a) to (g).

- (a) The age, areas and types of operation, and conditions of storage of the aircraft.
- (b) Compliance with the requirements of the Approved Maintenance Schedule (see Chapter 7-5).
- (c) Work already certified in the relevant records.

- (d) The periods between overhauls, prescribed or Approved by the CAAF, in respect of the aircraft and its parts.
- (e) Such other requirements or instructions, Approved by the CAAF (e.g. mandatory modifications and inspections) relating to the maintenance of airworthiness.
- (f) Foreign airworthiness directives adopted by the CAAF, and UK CAA Additional Directives and Airworthiness Notices, where appropriate, in respect of the aircraft and its parts.
- (g) The manufacturer's recommendations in Service Bulletins, or equivalent documents.

NOTE: Items (b) to (g) may be covered by a Condition Monitored Maintenance Programme Approved by the CAAF (see **6-2** Appendix 1).

3.2.3 The CAAF may decide on the work which is necessary on the aircraft.

- 3.3 All work undertaken in connection with the renewal of the Certificate of Airworthiness of the aircraft shall be supervised either by an Organisation Approved by the CAAF for the purpose or by an appropriately licensed aircraft maintenance engineer, at a place where the equipment, the general conditions under which the work is undertaken, and the necessary supervisory procedures are to a standard acceptable to the CAAF. Before the work is finally certified, the Approved Organisation, or the licensed aircraft maintenance engineer, shall be satisfied that the work has been carried out, inspected, and tested where necessary, for conformity with the specifications, drawings and instructions relating to the Approved design and with the requirements for the continuing airworthiness of the aircraft and its equipment.
- 3.4 The aircraft shall have been tested in flight in accordance with Chapter **3-5**. Where a flight test is necessary and the Certificate of Airworthiness has expired a Certificate of Fitness for Flight (see Chapter **3-8**) shall have been issued.

## **4 PROCEDURE NO. 2**

- 4.1 The aircraft and its records shall be in a condition acceptable for such inspections as are considered necessary.

- 4.2 An Inspection shall be carried out, at the premises of a CAAF Approved Maintenance Organisation with the scope of approval valid for the particular aircraft type. In deciding the depth of the Inspection and the extent of the work to be undertaken to maintain the airworthiness of the aircraft and to enable the recommendation for the renewal of the Certificate of Airworthiness to be made, the Approved Organisation shall take account of (a) to (g).
- (a) The age, areas and types of operation, and conditions of storage of the aircraft.
  - (b) Compliance with the requirements of the Approved Maintenance Schedule.
  - (c) Work already certified in the relevant records.
  - (d) The periods between overhauls, prescribed or Approved by the CAAF, in respect of the aircraft and its parts.
  - (e) Such other requirements or instructions, Approved by the CAAF (e.g. mandatory modification and inspections) relating to the maintenance of airworthiness.
  - (f) Foreign airworthiness directives adopted by the CAAF, and UK CAA Additional Directives and Airworthiness Notices, where appropriate, in respect of the aircraft and its parts.
  - (g) The manufacturer's recommendations in Service Bulletins, or equivalent documents.
- 4.2.1 Following the Inspection, an Inspection Report, in which any work which has been undertaken is detailed, shall be prepared, certified, and included in the aircraft records.
- 4.3 All work in connection with the renewal of the Certificate of Airworthiness of the aircraft shall be by an organisation responsible for the maintenance of the aircraft at a place where the equipment, the general conditions under which the work is undertaken, and the necessary supervisory procedures are to a standard acceptable to the CAAF. Before the work is finally certified, the Approved Organisation shall be satisfied that the work has been carried out, inspected, and tested where necessary, for conformity with the specifications, drawings and instructions relating to the Approved design, and with the requirements for the continuing airworthiness of the aircraft and its equipment.
- 4.3.1 Confirmation of compliance with 4.3 and the recommendation for the renewal of the Certificate of Airworthiness shall be given by the Approved Organisation on CAAF Form AW 101A. When completed a copy shall be submitted to the CAAF with the Certificate of Airworthiness which is recommended for renewal. A copy of CAAF Form AW 101A shall be included in the aircraft records and a copy shall be retained by the Approved Organisation.
- 4.4 The CAAF will generally require to survey an aircraft during the time of renewal. The CAAF may then decide on the extent of the investigation and on any additional work required to permit renewal of the Certificate of Airworthiness.

- 4.5 The aircraft shall have been tested in flight, in accordance with Chapter 3-5. Where a flight test is necessary and the Certificate of Airworthiness has expired a Certificate of Fitness for Flight (see Chapter 3-8) shall have been issued.

## 5 RE-WEIGHING OF AIRCRAFT

- 5.1 Re-weighing of aircraft at the time of renewal of the Certificate of Airworthiness will be dependent on the date of the last weighing, and on the history of the aircraft.  
NOTE: Aircraft are, normally, weighed when all manufacturing processes are completed.

5.1.1 Aircraft of more than 5700 kg MTWA shall be re-weighed within two years after the date of manufacture, and subsequent check weighing shall be carried out at intervals not exceeding five years, and at such other times as the CAAF may require.

5.1.2 Aircraft of 5700 kg MTWA or less, shall be re-weighed at such times as the CAAF may require.

5.1.3 The CAAF shall be consulted if there is any doubt as to whether the aircraft ought to be re-weighed.

5.1.4 When re-weighing is necessary, an amended Weight and Centre of Gravity Schedule, or its equivalent as prescribed in Chapter 5-6, shall be prepared. During the course of any re-weighing procedures the accuracy of all data previously recorded, for example lever arms, shall be checked e.g. against the appropriate manufacturer's current data.

## 6 RECORDS AND LOG BOOKS

- 6.1 Aircraft records in the form of log books, separate maintenance records forming part of log books, or maintenance records kept by any other method approved by the CAAF, shall be made available to the CAAF.

NOTE: The Air Navigation Regulations require that log books, and other documents which are identified and referred to in the log books (therefore, forming part of the log books), shall be preserved until a date two years after the aircraft, engine or variable pitch propeller has been destroyed or permanently withdrawn from use.

- 6.2 All relevant inspection records shall be made available to the CAAF.

- 6.2.1 Inspection records shall not be destroyed without authorisation from the CAAF.
- 6.3 Full particulars of the work done relating to the renewal of the Certification of Airworthiness shall be entered in the appropriate log book(s) or other Approved maintenance records, and a Certificate of Release to Service shall be completed and shall be attached or included, as appropriate (see Chapter **6-7**).
- 6.3.1 When it is more convenient, particular of the work done may be entered in a separate maintenance record which shall be certified in the same manner as that required for entries in the log books. The reference number of this record, and the place where it may be examined, shall be entered in the logbooks under a brief description of the particular work.

## **7 MANUALS**

- 7.1 A check shall be made that the Flight Manual, or in cases where a Flight manual is not issued, the appropriate Pilot's Operating Handbook or Owners Manual, is up to date, and any necessary action to bring it up to date shall be taken. The Manual or Handbook shall be made available to the CAAF.
- 7.2 Maintenance, Overhaul and Repair Manuals used shall be up to date, and where necessary they shall be amended in order to incorporate such amendments as may be necessary to cover the physical state of the aircraft.



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## CHAPTER 3-5

### FLIGHT TESTING FOR ISSUE AND RENEWAL OF CERTIFICATES OF AIRWORTHINESS OR PERMITS TO FLY

#### 1 GENERAL

- 1.1 Flight tests shall be completed prior to the issue of a Fiji Certificate of Airworthiness and thereafter periodically to ensure that the aircraft flight characteristics and the functioning in flight of the aircraft do not differ significantly from those acceptable to the CAAF for the aircraft type and to ensure proper functioning in flight.

NOTES:-(1) Consideration may be given to other methods of compliance that may be presented to the Authority provided they have compensating factors that can demonstrate a level of safety equivalent to or better than those prescribed herein. The CAAF may accept an Alternative Means of Compliance (AMOC) in lieu of the foregoing provision of carrying out a flight test for the purpose of issue and renewal of Certificates of Airworthiness or Permits to Fly.

(2) The acceptability of any such instrument or AMOC is subject to review by CAAF. The Authority will consider each case based on its own merits holistically in the context of and relevancy of the alternative methods to the individual applicant.

(3) The CAAF may also require concurrence from the OEM against carrying out periodic flight tests for in-service airplane and the same shall be made available to the CAAF.

(4) The Operator along with the contracted Maintenance Organisation shall be liable for aircraft flight characteristics and ensure the functioning in flight of the aircraft do not differ significantly from those acceptable to the CAAF for the aircraft type **should** any such AMOC be presented in lieu of a normal flight test report.

(5) The Authority in exercise of its powers and functions under the Civil Aviation Authority of Fiji Act 1979 and ANR 146 (4) has published an Airworthiness Notice which defines the applicability, pre-requisites and requirements to qualify for an AMOC (alternative means of compliance) in lieu of a periodic flight test.

- 1.2 In order that the CAAF may accept reports on flight test matters, the qualifications and experience of personnel involved in flight testing under the provisions of this Chapter shall be acceptable to the CAAF. Flight test personnel shall be provided with adequate facilities and equipment for the effective performance of their duties.

- 1.3 Airworthiness Flight Tests shall be completed prior to the issue of a Fiji Certificate of Airworthiness and thereafter:-

- (i) at periods determined by the CAAF.
- (ii) as defined by a fleet test programme agreed between the CAAF and the operator, maintenance organisation.

- 1.4 Airworthiness Flight Tests may normally be conducted under the supervision of the operator or Maintenance Organisation or other organisation acceptable to the CAAF, provided that the pilot/flight crew are acceptable to the CAAF for that purpose. In the case of turbo-jet aircraft with a Maximum Total Weight Authorised exceeding 15000 kg, the pilot shall have been specifically briefed and accepted for the task by the CAAF.

NOTES: (1) The CAAF may require to supervise a proportion of these flight tests, and will notify the Operator or Maintenance Organisation accordingly.

- (2) The acceptability of a pilot will be evaluated against his competence, having regard to his previous conduct and experience and his familiarity with the appropriate test schedule, flight test techniques and safety precautions.

## 2 FLIGHT TEST SCHEDULES

### 2.1 Airworthiness Flight Test Schedules

The flight tests shall be made in accordance with (a) or (b):-

- (a) to the appropriate Airworthiness Flight Test Schedule which may be obtained on request from the CAAF.
- (b) to a schedule, approved or accepted by the CAAF, containing, as minimum, the tests laid down in the Airworthiness Flight Test Schedule. Such a schedule shall contain details of the aircraft type to which it refers, shall be marked with a reference number, issue number, and date, and shall include the following:-
  - (i) Tests to check the aircraft performance.
  - (ii) Tests to check that the handling characteristics are satisfactory and have not deteriorated with time.

NOTES: (1) The tests will take account of the flying characteristics of the aircraft revealed during flight tests on the Prototype, the results of tests on Series aircraft and the history of the aircraft.

(2) It is convenient for the flight test schedule to contain the following handling tests, as these combine, in a brief form, checks on various flight characteristics.

- (i) A qualitative assessment of the take-off.
- (ii) An assessment of the trim to the aircraft and the effectiveness of primary flight controls and trimmers, in steady flight.
- (iii) Hover manoeuvres for helicopters.
- (iv) Flight at maximum speed.
- (v) Stalls in the take-off and landing configurations.
- (vi) A qualitative assessment of the landing.

- (iii) Tests to check functioning of the aircraft equipment in flight.

**NOTE:** Controls, systems and equipment which are used regularly may be considered, for the purpose of this schedule, to have been checked on the basis of normal usage.

### 3 FLIGHT TEST RESULTS

- 3.1 The flight test results, in a form acceptable to the CAAF, shall be submitted for acceptance to the organisation which is supervising the Certificate of Airworthiness issue/renewal procedure. Once accepted by that organisation, the results shall be forwarded to the CAAF for record purpose.
- 3.2 The flight test results shall include a certificate, in the following form, which shall be signed by the pilot who conducted the test.

<p><b>FLIGHT TEST CERTIFICATE</b></p> <p>Aircraft Type: .....</p> <p>Registration : .....</p> <p>Constructor's No. ....</p> <p>I CERTIFY that I have tested the above aircraft to Airworthiness Flight Test Schedule reference .....</p> <p>The following deficiencies and unsatisfactory features were revealed by the flight tests or noted at other times during the flight(s)_and I CONSIDER that those annotated "R" and/or "FT" should be dealt with as follows:-</p> <p>(a) Those annotated "R" should be rectified prior to the renewal of the Certificate of Airworthiness or flight for hire or reward, whichever occurs first.</p> <p>(b) Those annotated "FT" re-assessed in flight, following remedial action, before the defect can be considered to be rectified.</p> <p>1. ....</p> <p>2. ....</p> <p>3. ....</p> <p>The above have been transcribed to ..... for rectification and clearance.</p> <p>Pilot ..... Signed .....</p> <p>Date ..... Licence No. ....</p>
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## 4 FLEET TESTING PROGRAMMES

4.1 As an alternative to periodic airworthiness flight testing of individual aircraft, a programme of flight testing of sample aircraft from a fleet may be agreed with the CAAF, and such sampling will be accepted by the CAAF as being representative of fleet characteristics.

### 4.2 Basic Requirements

To be acceptable as a fleet and eligible for a fleet testing programme, the aircraft shall:-

- (a) Be of an acceptably similar type.
- (b) Be certificated in the Transport Category and have a Maximum Total Weight Authorised exceeding 2730 kg.
- (c) Be controlled by an Organisation, or Organisations acceptable to the CAAF.
- (d) Have produced consistently satisfactory results in previous Airworthiness Flight Tests for an acceptable period of time.

NOTE: Each aircraft of the type will be subjected to an Airworthiness Flight Test at the end of its first year of operation and if data from such tests is sufficient to confirm compliance with (d), those aircraft which have proved to be satisfactory may be considered as eligible for setting up a fleet test programme in accordance with 4.3. If the data in respect of a particular aircraft is insufficient to confirm compliance with (d) then that aircraft will be subjected to further Airworthiness Flight Tests at the end of subsequent year(s). An aircraft may be added to an established fleet after one annual test, provided that the results of that test are satisfactory.

### 4.3 General

4.3.1 The size and make-up of each fleet shall be agreed with the CAAF.

4.3.2 For each agreed fleet, a flight testing programme shall be agreed with the CAAF.

4.3.3 The minimum annual sample required for each fleet shall be 20% of the fleet, or three aircraft, whichever is the lesser, but not less than one aircraft. The frequency and the maximum time period between consecutive tests on individual aircraft shall normally be as in Table 1, but the time period shall not exceed 10 years.

NOTE: Frequencies for some fleets of fixed-wing aircraft and for helicopter fleets may be set differently where the circumstances warrant testing at a higher frequency.

4.3.4 In addition to the reductions in test frequency resulting from fleet testing, the CAAF may agree to reductions in the content of the Airworthiness Flight Test Schedules against which the sample aircraft are tested.

NOTE: The intent of the reductions is to eliminate any tests which have produced consistently satisfactory results over several years and to avoid duplication of tests between the Airworthiness Test Schedule and the ground maintenance schedule, where

such duplication could be justified on grounds of unsatisfactory results from previous tests or limited validity of the ground check involved.

**Table 1**

NUMBER OF AIRCRAFT IN FLEET	YEAR						
	1	2	3	4	5	6	7
1(A)	A	A	A	A	A	A	A
2(A-)	A	B	A	B	A	B	A
3(A-C)	A	B	C	A	B	C	A
4(A-D)	A	B	C	D	A	B	C
5(A-E)	A	B	C	D	E	A	B
6(A-F)	AB	C	D	E	F	AB	C
7(A-G)	AB	C	DE	F	G	AB	C
8(A-H)	AB	C	DE	F	GH	AB	C
9(A-I)	AB	CD	EF	G	HI	AB	CD
10(A-J)	AB	CD	EF	GH	IJ	AB	CD
11(A-K)	ABC	DE	FG	HI	JK	ABC	DE
12(A-L)	ABC	DE	FGH	IJ	KL	ABC	DE
13(A-M)	ABC	DE	FGH	IJ	KLM	ABC	DE
14(A-N)	ABC	DEF	GHI	JK	LMN	ABC	DEF
15(A-O)	ABC	DEF	GHI	JKL	MNO	ABC	DEF
16(A-P)	ABC	DEF	GHI	JKL	MNO	PAB	CDE
17(A-Q)	ABC	DEF	GHI	JKL	MNO	PQA	BCD
18(A-R)	ABC	DEF	GHI	JKL	MNO	PQR	ABC
19(A-S)	ABC	DEF	GHI	JKL	MNO	PQR	SAB
20(A-T)	ABC	DEF	GHI	JKL	MNO	PQR	STA
21(A-U)	ABC	DEF	GHI	JKL	MNO	PQR	STU

NOTE: For fleets of more than 21 aircraft, the fleet annual sample size should remain at 3 aircraft and the time between consecutive tests on individual aircraft should increase accordingly subject to the maximum interval laid down in para 4.3.3.

4.3.5 The fleet testing programme shall be reviewed in the event of:-

- (a) Any significant change to the aircraft in the fleet (e.g. a change of engine rating or type).
- (b) Any failure to maintain the standards on which the programme was based.
- (c) Any failure to carry out the programme.

## **5 OPERATING THE PROGRAMME**

5.1 The CAAF shall be given the opportunity to participate in any flight test associated with the programme.

5.2 The programme shall be controlled under arrangements acceptable to the CAAF.

The programme may be controlled by:-

- (a) the operator of the aircraft in the fleet, or
- (b) the organisation responsible for the maintenance of the aircraft in the fleet, or
- (c) in the case of an agreement between Operators to pool their fleets, a fleet co-ordinator nominated by the Operators.

5.3 The CAAF shall be kept informed of any changes to the size or make-up of the fleet, so that the programme may be amended as necessary.

5.4 The CAAF shall be kept informed of any failure to comply with the programme, so that the programme can be amended as necessary by the CAAF.

5.5 The CAAF may, where it considered it to be necessary, require an Airworthiness Flight Test to be carried out on any aircraft covered by the programme in any year (e.g. in order to correct for slippage, or to clarify any doubts about the flying qualities of individual aircraft or of the fleet).

5.6 Airworthiness Flight Tests shall be completed within the time period three months either side of the nominal date for the aircraft concerned.

## CHAPTER 3-8

### CERTIFICATES OF FITNESS FOR FLIGHT

#### 3 1 INTRODUCTION

- 1.1 In accordance with Regulation 14 of the Air Navigation Regulations an aircraft for which a Certificate of Airworthiness is not in force shall fly for the purpose of enabling it to:-
- (a) qualify for the issue or renewal of a Certificate of Airworthiness or of the validation thereof or the approval of a modification of the aircraft, after an application has been made for such issue, renewal, validation or approval as the case may be; or
  - (b) proceed to or from a place at which any inspection, approval, test or weighing of, or the installation of equipment in, the aircraft is to take place for a purpose referred to in subparagraph (a), after such an application has been made, or at which the installation of furnishings in, or the painting of, the aircraft is to be undertaken; or
  - (c) proceed to or from a place at which the aircraft is to be or has been stored.
- 1.2 Before an aircraft flies under this Regulation the aircraft and its engines shall be certified as fit for flight. This Chapter details the type of Certificate required.

NOTE: The Conditions for flight are prescribed in the appropriate Air Navigation Regulation but should only be used for Fiji airspace related operations.

#### 2 CERTIFICATE OF FITNESS FOR FLIGHT

- 2.1 The Certificate shall be as follows:-

AIRCRAFT ..... CON NO ..... ENGINE ..... S/No(s) .....

**It is hereby certified that the aircraft defined hereon has been inspected and is fit for flight provided it is properly loaded.**

**This Certificate is valid until ..... or until the airworthiness condition of the aircraft is altered, whichever is earlier.**

..... 'A' Licence No .....

Signed

..... 'C' Licence No .....

Signed ..... CAAF Approval No .....

- 2.2 The period of validity shall be stated but shall not exceed 7 days.
- 2.3 The Certificate shall be issued in duplicate and one copy kept elsewhere than in the aircraft.
- 2.4 A Certificate of Fitness for Flight shall be issued only by the following:-
  - (a) The holder of an appropriate aircraft maintenance engineer's licence granted or rendered valid in the Fiji.
  - (b) An organization approved by the CAAF under SD – ANR145C APPROVAL OF AIRCRAFT MAINTENANCE ORGANISATIONS where the Schedule of Approval refers to particular types of aircraft.
- 2.5 If the original airworthiness condition of the aircraft is affected during the period of validity, the Certificate shall be re-issued.

### **3. PERMISSION TO FLY OUTSIDE OF THE FIJI**

- 3.1 Permission to fly over any foreign country under a Certificate of Fitness for flight or, a Permit to Fly that may be issued by the CAAF, for the purposes outlined in paragraph 1.1 above, must be obtained from the National Aviation Authority of that country by the Operator.

## CHAPTER 3-11

### AIRCRAFT RADIO INSTALLATIONS

#### 1 INTRODUCTION

- 1.1 The application and issue of a radio station licence referred to in ANR 107 shall be subject to compliance with procedures set out in this Chapter.

#### 2 APPLICATION FOR RADIO INSTALLATION LICENCE

- 2.1 An application form, copies of which may be obtained from the Ministry of Telecommunications, Government Buildings, Suva, shall be completed and returned to that address. The Ministry will forward a licence to the applicant, which becomes valid only when CAAF FORM AW 102I (see 3.5), "Certificate of Approval of Aircraft Radio Installation", is issued by the CAAF, except that the licence authorises the applicant to carry out such ground and flight tests, before the CAAF issues the Certificate of Approval, as are necessary to comply with 3.2.

#### 3. APPLICATION FOR CERTIFICATE OF APPROVAL OF AIRCRAFT RADIO INSTALLATION

- 3.1 For an aircraft not having a Certificate of Airworthiness, the application for a Certificate of Approval of Radio Installation is a routine matter after the applicant has completed a formal application, on CAAF FORM AW 101G (Chapter 3-2), for a Certificate of Airworthiness and completed item 3.2 on the form, "Is radio fitted?"
- 3.2 Where the aircraft has already been issued with a Certificate of Airworthiness, and a Certificate of Approval of Aircraft Radio Installation is desired, the applicant shall complete CAAF FORM AW 108B, a change to the original Approval of Aircraft Radio Installation as a result of a modification.
- 3.3 Where a modification, previously approved by the CAAF, has been incorporated in the aircraft introducing a radio installation and a Certificate of Approval of Aircraft Radio Installation is desired, the applicant shall send to the CAAF such documents as are necessary to give details of the modification, and also to show that the work has been certified in accordance with the approved procedures.

## **4. APPROVAL OF AIRCRAFT RADIO INSTALLATIONS**

### **4.1 Design**

The applicant shall ensure that the design of the installation complies with:-

- (a) The Requirements in force at the time the application for a Certificate of Approval of Aircraft Radio Installation is received by the CAAF.
- (b) Such other requirements as the CAAF may notify in writing, for a particular installation.

4.1.1 All relevant design information, drawings and test reports shall be held at the disposal of the CAAF. No such design records shall be destroyed without authorisation from the CAAF.

4.1.2 Each design drawing shall bear a descriptive title, drawing number, issue number and date of issue. All alterations to drawings shall be made in accordance with a drawing amendment system which will ensure amendment to design records.

4.1.3 Immediately after an alteration is made to a drawing, whether the alteration is permanent or temporary, the drawing shall be identified with a new issue number and date. Whether an alteration affects the interchangeability of an item in any way, a new part number shall be issued such as to avoid confusion with the original item.

### **4.2 Survey, Ground and Flight Tests.**

The approval of an aircraft radio installation is based on a survey by the CAAF, followed by such ground and flight tests as are required in respect of the particular installation, to prove the satisfactory functioning of the installation.

4.2.1 The applicant shall arrange with the CAAF a convenient time, date, and place, for making the survey.

4.2.2 The applicant shall carry out the flight test, in accordance with the ground and flight tests as may be required by the manufacturer and CAAF, in respect of the particular radio installation.

### **4.3 Radio Flight Test Report**

On the satisfactory completion of the survey and the ground and flight tests, a Radio Flight Test Report in Appendix 1 of this SD Chapter 3-11 shall be forwarded to the CAAF. The Radio Flight Test Report shall include information under the following headings, together with such additional information as is required by the CAAF in a particular case:-

- (a) Type and registration marks of aircraft.
- (b) Type of installation.
- (c) Modification reference number.
- (d) Date and time of test.

- (e) Position and height of the aircraft and details of the radio tests, including particulars of aerials and transmitter(s) used.

#### 4.4 Radio Flight Test Certificate

A certificate in the following form shall be signed by the pilot, or radio operator, as appropriate, at the conclusion of the flight tests:-

**I hereby certify that, with the exceptions stated below, the radio installation in the above designated aircraft has been proved to perform satisfactorily in flight the functions for which it is approved.**

**Exceptions** ..... **Signed** .....

- 4.5 **Notification of Approval** The CAAF will issue a "Certificate of Approval of Aircraft Radio Installation" (CAAF FORM AW 102I) to signify approval of the radio installation.

- 4.6 Three copies of the Certificate will be produced by the CAAF. One copy will be forwarded to the Ministry, one for the Operator and one will be kept in the CAAF file for the aircraft.

### 5 MODIFICATIONS TO AIRCRAFT RADIO INSTALLATIONS -

- 5.1 Application for approval of a modification to an aircraft radio installation shall be made in accordance with the major modification procedures in Chapter 2-5.

- 5.2 The applicant shall ensure that the design of the modification complies with:-

- (a) The requirements in force at the time the application for the Major modification is received by the CAAF.
- (b) Such other requirements as the CAAF may notify, in writing, for a particular modification.

- 5.3 When a change is made to a component which has already been the subject of a mandatory modification and this produces a new or modified component which achieves all the objectives of the previous mandatory modification, then the latter modification becomes an acceptable alternative to the previous one, and shall be shown in the Company's modification system and associated documentation.

### 6 CHANGE OF OWNERSHIP

- 6.1 A change of aircraft ownership invalidates the radio installation licence; the new owner shall apply to the Ministry of Telecommunications for a new licence.

## APPENDIX 1 – CHAPTER 3-11 AIRCRAFT RADIO FLIGHT TEST REPORT

Aircraft Type:		Part of Flight Test Report	
Registration	DQ-	Date of Test	
Pilot in Command			

COMMUNICATION RADIO								
Equipment	Type	Authorised Ground station	Freq.	A/C Position and Distance from Station	Alt.	Time (Z)	Reported	
							TX	RX
VHF COMM (1)								
VHF COMM (2)								
HF COMM								

To be acceptable, a VHF Communication test must establish a minimum range of 20 nm from a height of 2000ft above the ground station. At greater heights the range so established must be corresponding greater.

NAVIGATION AIDS							
Type	Ground Station	Freq.	Aircraft Position	Actual Radial	Audio Ident.	Flag Ind. of Reliable Signal	Pointer Indicator
VOR (1)							
VOR (2)							
LOC (1)							
LOC (2)							
GNSS (1)							
GNSS (2)							
Marker (LO Setting if fitted)	Beacon		Ground Station		Audio		Light
	Oute				Satis	Unsatis	Satis
	Middle				Satis	Unsatis	Satis
Type	Ground Station	Freq.	Aircraft Position	Heading	Actual relative Bearing	Indicated Bearing	
ADF (1)							
ADF (2)							
DME	Type		Ground Station	Freq.	Aircraft Position	Range	
AERA NAV							
TRANSPONDER	Type	Ground Station	Code	Range	Alt.	Reported Signal	
CODING ALTIMETER	Type		Indicated Altitude (1013 mb)		Reported Altitude		



INTER-COMM	Type	Operation
<b>FLIGHT TEST DEFECT(S)</b>		
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Note: The provision of false information, or failure to disclose information, relevant to the grant of an aviation document constitutes an offence under Section 17A(5)(b) of the Civil Aviation Authority Act 1979, and Regulation 128 of the Air Navigation Regulations 1981. The applicant will be subject to prosecution as well as the revocation, suspension or cancellation, of their aviation document, or in the event of initial issue, the rejection of the application.

**DECLARATION**

I hereby certify that, with the exceptions stated below, the radio installation in the above designated aircraft has been proved to perform satisfactorily in flight, at the mandated distances (where applicable), and the functions for which it is approved.

**Exceptions** ..... **Signed**.....

(By Pilot In command of Flight Test)

**Print Name:** .....

For CAAF Use only				
Report Logged by:	Appointment:	Date:	Sign:	Comments:
Report seen by:	AA - AW	/ / 20		
	AEI/AMI	/ / 20		
	FOI - D/ FOI - RW	/ / 20		
	SAMEI	/ / 20		
	SFOI - D	/ / 20		

## CHAPTER 6-2

### MAINTENANCE OF AIRCRAFT

#### 1 INTRODUCTION

- 1.1 In accordance with the Air Navigation Regulations, an aircraft registered in the Fiji for the purpose of Public Transport or for Aerial Work shall not fly unless it has been maintained in accordance with a Maintenance Schedule approved by the CAAF, and Certificates of Maintenance issued certifying that maintenance has been carried out in accordance with such Schedules. Approved Maintenance Schedules are also required by this Chapter for all aircraft in the Private Category and where directed in a particular case for any other aircraft in the Special Category.

NOTE: The term **Maintenance Programme**, is intended to embrace both scheduled maintenance tasks and the associated procedures (including reliability monitoring). The term **Maintenance Schedule** is intended to embrace a document which includes the maintenance tasks alone (including any associated approval documents), it would not normally include maintenance procedures. Throughout this Chapter and Appendix the term **Programme** is intended to include both the scheduled tasks and the associated procedures.

#### 2 GENERAL

- 2.1 An aircraft registered in the Fiji shall be maintained in accordance with a Maintenance Schedule or Maintenance Programme approved by the CAAF in the following circumstances:-
- (a) For aircraft in respect of which a Certificate of Airworthiness in the Transport Category (Passenger), Transport Category (Cargo), Aerial Work Category or Private Category is in force.
  - (b) For aircraft in respect of which a Certificate of Airworthiness in the Special Category is in force, when so prescribed on the particular Certificate of Airworthiness.
- 2.2 A reliability programme is required when specified by the Manufacturer's Maintenance Planning Document or a Maintenance Review Board Report. Operators may, however, develop their own reliability monitoring programme when it may be deemed beneficial from a maintenance planning point of view.

### **3 MAINTENANCE SCHEDULE**

#### **3.1 General**

Schedules and Programmes submitted for approval shall comply with this paragraph 3 as appropriate. The procedures which are required to be followed to obtain CAAF Approval of Maintenance Schedules are set out in **7-5**.

NOTE: **6-2** Appendix No. 1 contains supplementary information for Condition Monitored and Reliability Centred Maintenance Programmes including those associated with engines and auxiliary power-units, installed in aircraft certificated in the Public Transport, Aerial Work or Private Categories.

#### **3.2 Maintenance Schedule**

The Schedule which is submitted to the CAAF for approval shall contain the basic information prescribed in (a), (b), (c), (d) and (e).

##### **(a) General**

- (i) Reference number, issue number and date.
- (ii) Registered name(s) and address (es) of the Owner(s)/Operator(s).
- (iii) Type and model(s) of aircraft, engines, auxiliary power-units, and, where applicable, propellers.
- (iv) Areas of operation of the aircraft.
- (v) Class of work in relation to the areas of operation.
- (vi) Registration Marks of aircraft maintained in accordance with the schedule.
- (vii) Details of any arrangements involving the co-operation of more than one Operator, or which involve the combination of information from other aircraft fleets for the purpose of providing additional statistical and sampling material: see also Appendix 1, 2.6.

NOTE: The CAAF will consider accepting a group of Operators, who are operating similar aircraft, combining for the purpose of sampling, provided that:-

- they can demonstrate similarity of operations, procedures, modification standards and, maintenance requirements.
- they are subject to similar overhaul procedures, and
- the sampling is not confined to any particular Operator

(b) **Primary Maintenance Process**

In respect of each part of the aircraft, its engines and auxiliary power-units, propellers, components, accessories, equipment, instruments, electrical and radio apparatus, and all associated systems and installations (hereinafter referred to as "an item"), a list of the primary maintenance processes in terms of (i) to (vi):-

- (i) Cross reference, where applicable, to the source of the task (e.g. Maintenance Review Board (MRB) and Maintenance Planning Document (MPD).
- (ii) Periods at which the item shall be inspected, together with the type and degree of inspection.
- (iii) Periods at which the item shall, as appropriate, be checked, cleaned, lubricated, adjusted and tested.
- (iv) Periods at which the item shall be overhauled or replaced by a new or overhauled item, expressed in terms of:-
  - a criterion related to usage, e.g. a period of time, number of cycles, number of landings.
  - A criterion related to conditions, e.g. limits of wear, limiting dimensions.

NOTE: Where actual criteria are not included in the Schedule, they should be defined by cross reference to acceptable documents e.g. Approved Maintenance Manual or Maintenance Planning Document.

- (v) The Mandatory Life Limitations to which certain parts of aircraft, engines, propellers, auxiliary power units and systems, the failure of which could have a hazardous effect on the aircraft, are subject. These limitations, unless otherwise agreed by the CAAF, shall be identical to those specified in the Mandatory Life Limitations section of the Manufacturer's Recommended Maintenance Programme (see **5-3**). The limitations may be itemised in the schedule, or included by reference to the appropriate airworthiness data.
- (vi) Such other processes as are agreed by the CAAF e.g. condition monitoring (see Appendix).

(c) **Record of Amendments**

Provision for a record of the amendments incorporated in the Schedule.

(d) Reference to the source of the content of the schedule e.g. MRB, MPD, and Maintenance Manual.

(e) **Check cycle criteria**

The criteria for 'packaging' checks shall be described (e.g. A Check - 400FH, B Check - 800 FH etc.).

#### **4 CERTIFICATE OF MAINTENANCE**

4.1 An aircraft registered in the Fiji in respect of which a Certificate of Airworthiness in the Transport Category (Passenger), Transport Category (Cargo) or Aerial Work Category is in force, shall be subject to a maintenance review at intervals specified in the Approved Maintenance Schedule or the relevant Approval Document of the Maintenance Schedule, as appropriate. At the completion of a review, a Certificate of Maintenance shall be issued.

4.2 The Signatory shall only issue a Certificate of Maintenance when satisfied, at the time of the review, that the following aspects of maintenance have been carried out:-

(a) All maintenance specified in the Approved Maintenance Schedule has been carried out within the prescribed time period and any extension to limiting periods is in accordance with CAAF approved procedures.

(b) All modifications and inspections deemed mandatory by the CAAF have been carried out within the prescribed time periods and any extension to limiting periods has been authorised by the CAAF. Due account must be taken of any repetitive inspections.

(c) All defects entered in the Technical Log have been rectified or deferred in accordance with CAAF approved procedures.

(d) All Certificates of Release to Service required have been issued in accordance with the procedures of **6-7**, paragraph 8 or ANR145C as necessary.

NOTE: (1) The time intervals for the Certificate of Maintenance will be specified on a calendar 'not exceed' basis only and therefore, it is not necessarily intended to align with any check.

(2) The Certificate of Maintenance requires only one signature.

## **5 CERTIFICATE OF MAINTENANCE FORMAT**

5.1 The Certificate of Maintenance shall be in the following format:-

<p><b>CERTIFICATE OF MAINTENANCE</b></p> <p>Aircraft Type.....</p> <p>Nationality and Registration Mark.....</p> <p>CAAF Approved Maintenance Schedule Reference.....</p> <p>Certified that the maintenance of this aircraft including its engines together with its equipment and radio station has been carried out in accordance with the Approved Maintenance Schedule as required by the Air Navigation Regulations for the time being in force.</p> <p>The next Certificate of Maintenance is due.....</p> <p>Signed.....</p> <p>Authorisation No.....</p> <p>Date.....</p> <p>Organisation.....</p>
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## **7 CERTIFICATE OF MAINTENANCE SIGNATORIES**

7.1 A Certificate of Maintenance shall be issued only by:-

- (a) the holder of an aircraft maintenance engineer's licence granted under the Air Navigation Regulations being a licence which entitles the holder to issue that certificate, or
- (b) the holder of an aircraft maintenance engineer's licence granted under the law of a country other than the Fiji and rendered valid under the Air Navigation Regulations in accordance with the privileges endorsed on the licence, or

- (c) a person whom the CAAF has authorised to issue a Certificate of Maintenance in a particular case and in accordance with that authority, or
- (d) a person authorised by an Organisation approved by the CAAF as being competent to issue such a certificate and in accordance with that authorisation and approval.

NOTE: Notwithstanding the foregoing in approving a Maintenance Schedule, the CAAF will specify who may issue a Certificate of Maintenance. For an Organisation approved in accordance with ANR145C, Appendix 8 to ANR145C sets out the CAAF requirement for the Authorisation of Personnel. For all other cases the signatory will be an engineer possessing a Type Rated Licence valid in at least two categories (other than Category X Compasses), each category being appropriate to the particular aircraft type.

## **8 CERTIFICATE OF RELEASE TO SERVICE- NON-COMMERCIAL AIR TRANSPORT**

(NOTE: Certificate of Release to Service for Commercial Air Transport shall be in accordance with ANR145C.)

- 8.1 A Certificate of Release to Service replaces the Certificate of Compliance prescribed by ANR 16 and shall be issued after overhauls, repairs, replacements, modifications and mandatory inspections have been carried out on an aircraft, which is registered in Fiji and has a Certificate of Airworthiness in force, except as follows:-
- (a) A Certificate of Release to Service is not required for aircraft not exceeding 2730 kg MTWA with a Certificate of Airworthiness in the Special Category unless the CAAF gives a direction to the contrary.
  - (b) If a repair or replacement of a part of an aircraft is carried out when the aircraft is at such a place that is not reasonably practicable (i) to carry out the work in a manner that a Certificate of Release to Service may be issued or (ii) for the Certificate to be issued at that particular place, the Commander may fly the aircraft, if, in his opinion, it is safe to do so, to the nearest place at which a Certificate may be issued.

NOTE: - The ANR prescribes that in such cases written particulars of the flight and the reasons for making it are to be given to the CAAF within ten days thereafter.

- 8.2 A Certificate of Release to Service shall be issued at the completion of any Scheduled Maintenance Tasks specified by an Approved Maintenance Schedule on an aircraft which is registered in Fiji and has a Certificate of Airworthiness in any category (except Special Category) except that:-  
The Certificate of Release to Service issued at the completion of any Scheduled Maintenance Tasks shall be signed in each of the licence/authorisation categories relevant to the work specialty of the particular Scheduled Maintenance Tasks, except that the CAAF may direct, for specific aircraft types, that some 'X' category certifications are not required.

- 8.3 A Certificate of Release to Service shall only be issued for a particular overhaul, repair, replacement, modification, mandatory inspection or Scheduled Maintenance Tasks when the signatory is (signatories are) satisfied that the work has been properly carried out, having due regard to the use of:-
- (a) up-to-date and approved airworthiness data including manuals, drawings, specifications, CAAF mandatory modifications/inspections and where applicable, company procedures,
  - (b) recommended tooling and test equipment which is currently calibrated where applicable, and
  - (c) a working environment appropriate to the work being carried out.
- 8.4 The Certificate of Release to Service shall contain particulars of work done or the inspection completed and the Organisation and place at which the work was carried out. Depending upon the application of the certificate, details of the aircraft type, registration, component type, part number and serial number shall be recorded as applicable. The certification shall be worded in the following manner:-
- " The work recorded above has been carried out in accordance with the requirements of the Air Navigation Regulations for the time being in force and in that respect the aircraft/equipment is considered fit for release to service."**
- NOTES: (1) Mandatory inspection, for the purpose of this Chapter **6-2**, are those inspections classified as mandatory by the CAAF, where the inspection itself is the work.
- (2) For Organisations approved in accordance with ANR145C, the certification may be issued in accordance with procedures specified in the Organisation exposition.
- 8.5 The Certificate of Release to Service shall be signed by a person specified in 9 except that the CAAF may direct which of these persons shall sign in a particular case. The signatory/signatories shall record licence/approval/authorisation reference number as appropriate, together with the date.

## 9 CERTIFICATE OF RELEASE TO SERVICE SIGNATORIES

- 9.1 For aircraft operated for the purpose of Commercial Air transport, a Certificate of Release to Service shall only be issued by appropriately authorised staff on behalf of the ANR145C approved Maintenance Organisation, in accordance with procedures specified in the Maintenance Organisation Exposition.
- 9.2 For Non Commercial Transport purposes, a Certificate of Release to Service shall be issued only by one of the following:-
- (a) The holder of an aircraft maintenance engineer's licence granted under the Air Navigation Regulations, being a licence which entitles the holder to issue that certificate.
  - (b) The holder of an aircraft maintenance engineer's licence granted under the law of a country other than the Fiji and rendered valid under the Air Navigation Regulations in accordance with the privileges endorsed on the licence.
  - (c) The holder of an aircraft maintenance engineer's licence or authorisation as such an engineer granted or issued by or under the law of any Contracting State other than the Fiji in which the overhaul, repair, replacement, modification or inspection has been carried out, but only in respect of aircraft which the Maximum Total Weight Authorised does not exceed 2730 kg and in accordance with the privileges endorsed on the licence.
- NOTE: "Contracting State" means any State which is a party to the Convention on International Civil Aviation at Chicago on 7th December 1944.
- (d) A person, approved by the CAAF as being competent to issue such Certificates, and in accordance with that approval.
  - (e) A person authorised by the CAAF to issue the Certificate in a particular case, and in accordance with that authority.
  - (f) A person authorised by an Organisation approved in accordance with ANR145C, as being competent to issue such a certificate and in accordance with that authorisation and approval.
- 9.3 In relation only to the adjustment and compensation of direct reading magnetic compasses, the holder of an Airline Transport Pilot's Licence (Aeroplanes), granted or rendered valid under the Air Navigation Regulations, may also issue a Certificate of Release to Service.

## 10 DUPLICATE INSPECTION

- 10.1 Certain parts in an aircraft's structure or system (including controls and control systems) which are vital to the safety of the aircraft, are not only designed to achieve the appropriate high integrity but are also dependent upon specified maintenance actions to safeguard their integrity throughout the life of the aircraft.

For such parts normal inspection procedures and techniques may not provide verification with a sufficiently high degree of confidence, and it will be necessary for two independent (duplicate) inspections to be carried out after initial assembly, or re-assembly following disconnection or adjustment.

## 10.2 Definitions

### 10.2.1 Control System

A system by which the flight path, attitude, or propulsive force of an aircraft is changed, including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

### 10.2.2 Duplicate Inspection

An inspection first made and certified by one qualified person and subsequently made and certified by a second qualified person.

### 10.2.3 Vital Point

Any point on an aircraft at which a single mal-assembly could lead to a catastrophe i.e. in loss of aircraft and/or in fatalities.

10.2.3.1 For aircraft manufactured in accordance with a Type Certificate issued on or after 1<sup>st</sup> January 1986 the vital points shall be identified and listed in the maintenance documents. The identification and listing of vital points will not be required to be made retrospectively for existing aircraft so that alternative standards will need to exist for some time.

10.2.3.2 For aircraft the MTWA of which exceeds 5700 kg, which are manufactured in accordance with a Type Certificate issued prior to 1<sup>st</sup> January 1986 and no such identification and listing of vital points has been provided, an operator with the necessary design approval or otherwise in consultation with a competent design organization, may identify and list such points and apply to the CAAF to have the list incorporated in the aircraft maintenance documents. Provided such a list is accepted by the CAAF, the operator need then carry out duplicate inspections following disturbance of the listed points only.

10.2.3.3 For aircraft the MTWA of which does not exceed 5700kg, which are manufactured in

accordance with a Type Certificate issued prior to 1<sup>st</sup> January 1986 and no such identification and listing of vital points has been provided, an operator may, with the agreement of the CAAF, adopt an agreement similar to that described in 10.2.3.2 except that the proposals need cover only the control systems and duplicate inspections need be carried out on the listed points.

10.2.3.4 If no arrangement such as described in 10.2.3.2, 10.2.3.3 has been agreed by the CAAF, the need for duplication inspection of all control systems will remain.

### 10.3 Procedures-General

10.3.1 A duplicate inspection of all vital points/control systems in an aircraft shall be made after initial assembly and before a Certificate of Release to Service has been issued after overhaul, repair, replacement, modification or adjustment and, in any case, before the flight.

NOTE: Depending on the extent of the work it may be possible to limit the duplicate inspection of a control system to that part of the system which has been disturbed.

10.3.2 The first and second inspections must take account of the full extent of the work undertaken and not simply the immediate area of disturbance. This is to ensure that distant or remote parts of the system that may have been affected by the disturbance are also subject to duplicate inspections. Where work has been carried out on other systems for safety precautions, or to enhance accessibility, the need to carry out a duplicate inspection on these systems shall be considered. Persons who carry out and certify duplicate inspections are therefore required to undertake an independent review of the complete task, as detailed in the maintenance manual and reference to worksheets used, including shift hand-over records, to assess the scope of the duplicate inspection(s) required.

10.3.3 It may not be possible to inspect the complete vital point/control system when assembled in the aircraft, due to routing the controls through conduits or boxed-in sections and the pre-sealing of various units. In these cases the persons certifying the duplicate inspection shall be satisfied that a duplicate inspection has been made previously on the units and covered sections and that the sealed units are acceptable for the particular use. Such tests as are necessary shall be completed to determine that these particular units and sections have full, free and correct directional movement.

10.3.4 Vital points/control systems subject to duplicate inspection must not be disturbed or re-adjusted after the first certified inspection and the second part of the duplicate inspection must, as nearly as possible, follow immediately after the first part

NOTE: (1) In some circumstances, due to peculiarities of assembly or accessibility, it may be necessary for both parts of the inspection to be made simultaneously.

(2) It is desirable that the inspections of a control system are made as near as is practicable to the time of the intended flight and that the full extent of the disturbance is understood by both persons who carry out the duplicate inspections.

- 10.3.5 If a vital point/control system is disturbed after completion of the duplicate inspection, that part which has been disturbed shall again be inspected in duplicate and a Certificate of Release to Service issued before the aircraft flies
- 10.3.6 The duplicate inspection shall be the final operation to establish the integrity of the vital point/control system when all the work has been completed and shall take into account all the relevant instructions and information contained in the associated technical data.
- 10.3.7 The inspections prescribed for vital points/control systems in this Chapter shall include an inspection to ensure that full, free and correct movement of the controls is obtained throughout the systems relative to the movements of the crew controls. An additional inspection shall be made, when all covers and fairings are finally secured, to ensure that full, free and correct movement of the controls is obtained.
- 10.3.8 Persons qualified to make the first and/or second part of a duplicate inspection are as follows:-
- (a) Aircraft engineers appropriately licensed in Categories A, B, C, D and X.
  - (b) Persons employed by approved Organisations, who are appropriately authorised to make such inspections and to certify the task itself in accordance with company procedures. For aircraft used for the purpose of Commercial Air Transport an Organisation will be required to hold ANR145C Approval.

NOTE: Certification responsibilities in relation to the Air Navigation Regulations affecting Licensed Aircraft Maintenance Engineers and members of Approved Organisations are given in SD LICENSING – AIRCRAFT MAINTENANCE ENGINEER’S Appendix 3.

- 10.3.9 Should a minor adjustment of the vital point/control system be necessary when the

aircraft is away from base, the second part of the duplicate inspection may be completed by a pilot or flight engineer licensed for the type of aircraft concerned, providing that Authorisation is granted by the responsible ANR145C Approved Maintenance Organisation, if the aircraft is being used for the purpose of Commercial Air Transport.

#### 10.4 Procedures - Control System Units or Components

10.4.1 Where appropriate to the type of unit or component forming part of a vital point/control system, a schedule of inspections and functioning tests shall be compiled at manufacture, overhaul and repair, and the following shall be certified:-

- (a) Duplicate inspection of the section/parts of the units or components which will be concealed during bench assembly and which cannot be proved during inspections and functioning tests when installed in the aircraft vital point/control system.

NOTE: Where such work is a sub-contract order, instructions regarding all inspections/tests should be stated on the order, the release documentation from the sub-contractor being certified appropriately.

- (b) Duplicate inspection of the completed assembly of the unit or component, functioning and checking for correct relative movement.

10.4.2 Persons qualified to make the first and/or second part of the duplicate inspection required at paragraph 10.4 are as follows:-

For Approved Maintenance Organisations who release control system units and components, both inspections and subsequent Certificates of Release to Service must be issued by persons authorised by the Maintenance Organisation approved under ANR145C.

### 11 RETENTION OF RECORDS

11.1 When all the relevant work has been carried out, a Certificate of Release to Service shall be entered in/attached to the appropriate log book and signed by the authorised persons.

- (a) Where it is more convenient, the required particulars may be entered in a separate record, but an entry shall be made in the appropriate log book, containing a summary of the work carried out and a cross-reference to the document containing the Certificate of Release to Service.
- (b) Where an alternative record system has been agreed, the format and location of such certificates shall be in accordance with that agreement.
- (c) Certificates of Maintenance shall be issued in duplicate. One copy shall be carried in the aircraft and the other copy shall be kept elsewhere than in the aircraft for a period of not less than two years from the date of issue or for such periods as may be otherwise agreed.

**NOTES:** The Air Navigation Regulations require that log book, and other documents which are identified and referred to on the log book (therefore forming part of the log books) shall be preserved until a date two years after the aircraft, the engine or the variable pitch propeller, as the case may be, has been destroyed, or permanently withdrawn from use, except that the CAAF may consider a different retention period in a particular case.

## APPENDIX 1 TO CHAPTER 6-2

### MAINTENANCE PROGRAMMES

#### RELIABILITY CENTRED MAINTENANCE AND CONDITION MONITORED MAINTENANCE PROGRAMMES

## 1 INTRODUCTION

- 1.1 This appendix describes an acceptable means of compliance with the requirements of **6-2** in respect of Reliability Centred and Condition Monitored Maintenance Programmes where maintenance task selection and frequency are based upon reliability predictions. The word Programme is used throughout and refers to the reliability monitoring procedures. Condition Monitored Maintenance concepts were fundamental to earlier Maintenance Steering Group (MSG) derived programmes (e.g. MSG 2) and where appropriate, the MSG analysis resulted in a condition monitoring task: Condition Monitored Maintenance is a form of Reliability Centred Maintenance. The Condition Monitor task was not used in later MSG revision (e.g. MSG 3) but the concept of Reliability Centred Maintenance is, however, central to the continuing effectiveness of these later programmes where maintenance task selection and frequency are based upon reliability predictions.
- 1.2 MSG analysis and the attendant MRB procedures, are used by type certificate applicants to develop scheduling information to meet the JAR/FAR 25.1529 Appendix H instructions for continuing airworthiness. The MRB procedures may be found in JAA Administrative and Guidance Material Section 2, Part 2 Chapter 16, FAA AC 121.22A or BCAR **5-2**. For type certification prior to the adoption of JAR-25, the requirement for continuing airworthiness information in to be found in BCAR **B5-3**.
- 1.3 A description of how each part of the requirement of **6-2** will be met, should be included in the Preface of the Approved Maintenance Schedule. This description may, in agreement with the CAAF, be presented in another form provided that full cross reference to associated documentation is made in the Approved Maintenance Schedule.

## 2 THE PROGRAMME

- 2.1 In preparing the Programme details for compliance with **6-2**, account should be taken of this paragraph, and for engines and auxiliary power-units, account should also be taken of paragraph 3 of this appendix. All associated procedures should be clearly defined. The contents of these paragraphs are an acceptable means of meeting the requirement.
- 2.2 **Objectives.** A statement should be included summarising as precisely as possible the prime objectives of the Programme. The extent of the objectives should be directly related to the scope of the Programme, which could vary from a component defect monitoring system to an integrated maintenance management programme. The manufacturer's maintenance planning document may give guidance on the objectives and should be consulted in every case.

2.3 **Identification of Items.** The items controlled by the Programme should be stated. Where some items (e.g. aircraft structure, engines, APU) are controlled by separate inspection and development procedures, the associated procedures will be subject to individual approval by the CAAF, e.g. individual Sampling or Life Development Programmes, Constructor's Structure Sampling Programmes. These supplemental documents shall form part of the approved Maintenance Management Exposition (MME) or Maintenance Organisation Exposition (MOE) as appropriate and should be cross-referenced in the programmes.

2.4 **Terms and Definitions.** The significant terms and definitions applicable to the Programme should be clearly identified. Terms already defined in the World Airlines Technical Glossary of Terms should be used. The number of other defined terms should be kept to a minimum.

## 2.5 Information Sources and Collection

2.5.1 Sources of information should be listed, and the procedures for the transmission of information from the sources, together with the procedure for collecting and receiving it, should be set out in detail. These procedures should be listed in the MME or MOE as appropriate.

2.5.2 The type of information to be collected should be related to the objectives of the Programme and should be such that it enables both an overall broad based assessment of the information to be made and also allows for assessments to be made as to whether any reaction, both to trends and to individual events, is necessary. The following are examples of the normal prime sources:-

- (a) Pilots Reports.
- (b) Technical Logs.
- (c) Aircraft Maintenance Access Terminal/On-board Maintenance System readouts.
- (d) Maintenance Worksheets.
- (e) Workshop Reports.
- (f) Reports on Functional Checks.

- (g) Reports on Special Inspections.
- (h) Stores Issues/Reports.
- (i) Air Safety Reports.
- (j) Reports on Technical Delays.

2.5.3 In addition to the normal prime sources of information, due account should be taken of continuing airworthiness and safety information promulgated by Airworthiness Authorities, Constructors and Manufacturers.

2.6 **Pooling Arrangements.** In some cases, in order that sufficient data may be analysed, it may be desirable to "pool" data: i.e. collate data from a number of Operators of the same type of aircraft, engine or APU. For the analysis to be valid, the aircraft concerned, mode of operation, and maintenance procedures applied must be substantially the same. Variations in utilisation between two Operators may more than anything, fundamentally corrupt the analysis. Although not exhaustive, the following list gives guidance on the primary factors which need to be taken into account:-

- (a) Aircraft, engine or APU design commonality.
- (b) Modification embodiment state, including SB compliance.
- (c) Operational Environment, route structure, engine hour/cycle ratio.
- (d) Aircraft Age.
- (e) Utilisation, e.g. Low/High/Seasonal etc.
- (f) Respective fleet size.
- (g) Operating Rules applicable (e.g. ETOPS/RVSM/RNP 10/All Weather etc.)
- (h) Operating Procedures.
- (i) Maintenance Procedures.
- (j) Maintenance Standards applicable.
- (k) Lubrication Programme.
- (l) MPD Revision or escalation applied or maintenance programme/schedule applicable.
- (m) Data Collection procedures.
- (n) Engine/APU refurbish/rework specification.

Although it may not necessarily for all of the foregoing to be completely common, it is necessary for a substantial amount of commonality to prevail. Changes by any one of the Operators to the above, requires assessment in order that the pooling benefits can be maintained. Where an Operator wishes to pool data in this way, the approval of the CAAF should be sought prior to any formal agreement being signed between Operators.

## 2.7 Displays

- 2.7.1 Collected information may be displayed in either graphical or tabular presentations or a combination of both. The rules governing any separation or discarding of information prior to incorporation into these displays should be stated. The format of any display should be such that the identification of trends, specific highlights and related arisings would be readily apparent.
- 2.7.2 Displays should include provisions for "nil returns" to aid the examination of the total information.
- 2.7.3 Where "standards" or "alert levels" are included in the Programme, the display information should be oriented accordingly.

## 2.8 Examination, Analysis and Interpretation of Information

- 2.8.1 The method employed for examining, analysing and interpreting the Programme information should be explained.
  - (a) **Examination.** Methods of examination of information may be varied according to the content and quantity of information of individual Programmes. These can range from examination of the initial indication of performance variations to formalised detailed procedures at specified periods and the methods should be fully described in the Programme documentation.
  - (b) **Analysis and Interpretation.** The procedures for analysis and interpretation of information should be such as to enable the performance of the items controlled by the Programme to be measured. They should also facilitate recognition, diagnosis and recording of significant problems.

The whole process should be such as to enable a critical assessment to be made of the effectiveness of the Programme as a total activity. Such a process may involve:-

- (i) Comparisons of operational reliability with established or allocated standards (in the initial period these could be obtained from in-service experience of similar equipment or aircraft types).
- (ii) Analysis and interpretation of trends.
- (iii) The evaluation of repetitive defects.
- (iv) Confidence testing of expected and achieved results.
- (v) Studies of life-brands and survival characteristics.
- (vi) Reliability predictions.
- (vii) Other methods of assessment.

2.8.2 The range and depth of engineering analysis and interpretation should be related to the particular Programme and to the facilities available. The following, at least, should be taken into account:-

- (a) Flight defects and reductions in operational reliability
- (b) Defects occurring on-line and at main base.
- (c) Deterioration observed during on-line and at main base.
- (d) Workshop and overhaul facility findings.
- (e) Modification evaluations.
- (f) Sampling programmes.
- (g) The adequacy of maintenance equipment and publications.
- (h) The effectiveness of maintenance procedures.
- (i) Staff training.
- (j) Service bulletins, technical instructions, etc.

2.8.3 Where the Operator relies upon contracted maintenance and/or overhaul facilities as input to the Programme, the arrangements for availability and continuity of such information should be established and details should be included.

- 2.9.1 The procedures and timescales both for implementing corrective actions and for monitoring the effects of corrective actions should be fully described. Corrective actions should correct any reduction in reliability revealed by the Programme and could take the form of:-
- (a) Changes to operational procedures or techniques.
  - (b) Maintenance changes involving inspection frequency and content, function checks, overhaul requirements and time limits, which will require amendment of the scheduled maintenance periods or tasks in the approved Programme.
  - (c) Amendments to Approved manuals (e.g. Maintenance Manual, Crew Manual).
  - (d) Initiation of modifications.
  - (e) Special inspections or fleet campaigns.
  - (f) Spares provisioning.
  - (g) Staff training.
  - (h) Manpower and equipment planning.
- 2.9.2 The procedures for effecting changes to the Programme should be described, and the associated documentation should include a planned completion date for each corrective action, where applicable.
- 2.10 **Organisational Responsibilities.** The Organisational structure and the departments responsible for the administration of the Programme should be stated. The chains of responsibility for individuals and departments (Engineering, Production, Quality Control, Operations, etc.) in respect of the Programme, together with the formation and functions of any Programme control committees, should be defined. This information should be contained in the Maintenance Management Exposition or Maintenance Organisation Exposition as appropriate.

2.11 **Presentation of Information to the CAAF.** The production of reports and the notification of Programme events to the CAAF will have to be agreed with the CAAF. As the information to be supplied to the CAAF will vary for individual Programmes, the Programme and its associated documentation should define at least the following:-

- (a) The format and content of routine and event reports.
- (b) The time scales for the production of reports together with their distribution.
- (c) Details of any special reports (Annual Reports, special investigation, etc.).
- (d) Reports supporting requests for increases in periods between maintenance (escalation) and for amendments to the Programme. These reports should contain sufficient detailed information to enable the CAAF to make its own evaluation where necessary.
- (e) The production and distribution of agenda and minutes of various meetings related to the Programme and its functions.
- (f) The identification of the availability of any non-reportable information which may be used to support the Programme (e.g. "in-house" information).
- (g) Any relationship between the reporting procedures of the Programme and the requirements for Mandatory Occurrence Reporting.

## 2.12 **Evaluation and Review**

2.12.1 Each Programme should describe the procedures and individual responsibilities in respect of continuous monitoring of the effectiveness of the Programme as a whole. The time periods and the procedures for both routine and non-routine interviews of maintenance control should be detailed (progressive, monthly, quarterly, or annual reviews, procedures following reliability "standards" or "alert levels" being exceeded, etc.).

2.12.2 Each Programme should contain procedures for monitoring and, as necessary, revising the reliability "standards" or "alert levels". The Organisational responsibilities for monitoring and revising the "standards" should be specified together with associated time scales.

2.12.3 Although not exhaustive, the following list gives guidance on the criteria to be taken into account during the review:-

- (a) Utilisation.
- (b) Fleet Commonality
- (c) Alert Level adjustment criteria.
- (d) Adequacy of data.
- (e) Reliability Procedure audit.
- (f) Staff Training.
- (g) Operating and Maintenance Procedures.

2.13 **Condition Monitored Maintenance.** Condition monitoring is not acceptable as the primary maintenance process for any items, the failure of which can produce:-

- (a) a hazardous increase in crew work load; or
- (b) degradation of flight qualities, performance or strength of the aircraft; or
- (c) fire; or
- (d) the necessity for an unscheduled landing, marginal conditions for occupant or injury to occupants.

NOTE: This prohibition is not acceptable to 'real-time' installed condition monitoring systems such as Helicopter Usage Monitoring system.

## 2.14 Operator Reliability Programmes

2.14.1 Operators who select to submit for approval a reliability centred maintenance programme, even though the TC holder may not require it, must include in the programme a classification listing which will indicate the importance of each item to continued airworthiness of the aircraft in the event of failure of the time so classified. Normally, this classification is applied after consultation between the Operator, Constructor and the CAAF, but, alternatively, due account may be taken of MRB findings and MSG logic analysis in arriving at the appropriate classification.

NOTE: The classification listing criteria may also be applied to maintenance schedules/programmes, which do not employ an associated reliability programme, since the classifications have been found useful in determining airworthiness significance of escalation revisions.

2.14.2 Classification should be as follows:-

- (a) Items, the failure of which, would reduce the airworthiness of the aircraft to an unacceptable level. The reliability of such items will be controlled by the allocation of an overhaul period and/or Failure Rate Monitoring.
- (b) Items, the failure of which, may reduce the airworthiness of the aircraft, but not to an unacceptable level. Such items will be controlled by Failure Rate Monitoring. Where it is known that an item is subject to wear or deterioration, the allocation of an overhaul period may be necessary.
- (c) Items, the single failure of which does not affect the airworthiness of the aircraft.

NOTE: There are certain items in the aircraft, the failure of which, when associated with an emergency, could endanger the aircraft, e.g. warning circuits normally dormant. Such items may not be included in the above classification but are monitored in accordance with scheduled check inspection, functioning or test procedures.

### 3 MAINTENANCE PROGRAMMES - ENGINES AND AUXILIARY POWER-UNITS

3.1 **Introduction.** This paragraph 3 defines an acceptable means of compliance with the requirements of **6-2** for engines and auxiliary power-units (engine/APU) in respect of Reliability Centred Maintenance and Condition Monitored Maintenance Programmes.

3.2 **Applicability.** A Reliability Centred Maintenance and Condition Monitored Maintenance Programme for an engine/APU is required when the restoration task for the engine/APU is not defined as either a Hot Section Inspection (HSI) and/or overhaul in accordance with the Constructor's approved engine overhaul manual.

3.3 **Approval.** Engine/APU Programmes should comply with this paragraph 3 and form part of the associated aircraft Programme. The procedures that are to be followed to obtain CAAF approval of the Programmes, and amendment to them, are set out in **7-5**.

#### 3.4 **The Programme**

3.4.1 **Introduction.** An engine/APU Reliability Centred Maintenance and Condition Monitored Maintenance Programme provides for the integration of Reliability Analysis, Hard Time Control, On Condition and Condition Monitoring into one Programme. It may vary in size and scope depending on the complexity and number of different engine and APU types being controlled by the Programme. The Programme sets out the means to

identify both on-wing and off-wing maintenance tasks. On-wing engine/APU maintenance tasks and their intervals are initially established from Maintenance Review Boards (MRBs). Off-wing maintenance tasks and intervals are initially established by means of threshold and opportunity samples, Constructor's Engine Maintenance Planning Guides and the inspection requirements of the Engine Manuals.

The on-wing and off-wing maintenance tasks and intervals may be changed as a result of reviewing the experience gained by operating the Programme and information provided in Service Bulletins, Manual Revisions, Service Letters, Airworthiness Directives and other relevant sources.

NOTE: For the purposes of this Appendix, off-wing maintenance tasks are defined as the content of engine/APU rework or refurbish specifications and their associated time related intervals.

- 3.4.2 **Objectives.** A statement should be included summarising the objectives of the Programme, together with a definition of the engines/APU types controlled by the Programmes and the associated aircraft in which those engines/APU types are installed.
- 3.4.3 **Identification.** The engine/APU Programme document can be unique and separate from the associated aircraft Programme or it can form part of the aircraft Programme. If it is a separate document, it should be identified by a reference number, issue number and date and be cross referred from the appropriate part of the aircraft programme.
- 3.4.4 **Data Pooling Arrangements.** See paragraph 2.6 of the Appendix for the primary factors which, where appropriate, should be taken into account for engines and APUs.
- 3.4.5 **Sub-contract.** SD – AIR OPERATOR'S CERTIFICATE makes provision for the Operator to enter into a sub-contract arrangement with an Organisation which has the necessary resources and experience on the engine/APU type, to manage the Programme, and is acceptable to the Authority. However, this sub-contract arrangement does not absolve the Operator from the overall responsibility for ensuring the safe operation and continuing airworthiness of the aircraft to which the engine/APU is installed.
- 3.4.6 **Data Collection, Analysis and Interpretation.** (See also paragraphs 2.5 and 2.8 of this Appendix.) The data required for analysis and control of the engine/APU programme together with associated procedures for the collection analysis and interpretation of the data should be defined in the Programme. These procedures should be listed in the MME or MOE as appropriate. The following is typical of the data which should be collected for an engine/APU Programme:-
  - (a) Oil consumption trend monitoring.
  - (b) Pilots Reports.

- (c) Aircraft Maintenance Access Terminal/On-board Maintenance System readouts.
- (d) Boroscope inspection findings.
- (e) Magnetic Chip Detector findings.
- (f) In flight shut down, abandoned take-off, unscheduled removal rates and causes.
- (g) Delay and cancellation rates and causes.
- (h) Performance trend analysis.
- (i) Engine and APU removal reports.
- (j) Airworthiness Directives.
- (k) Manufacturer's information and publications, e.g. Service Bulletins, Service Letters, All Operator Wires, etc.
- (l) Engine/APU and Component Workshop Strip and Condition reports.
- (m) Vibration monitoring.
- (n) Sampling programme findings.
- (o) Reliability Programme (statistical displays).

The final list of data to be collected, analysed and interpreted should be related to the objectives of the Programme and experience of operating the particular engine/APU type.

- 3.4.7 **Sampling Programme.** The Programme should define a threshold life at which a sample engine/module of APU should be scheduled for removal if sufficient data regarding engine/module or APU internal; conditions has not been generated by previous scheduled or unscheduled removals. Subsequent requirements should be based upon a review of all applicable evidence e.g. defect investigations, workshop investigations, health monitoring data and evidence from other Operators.

- 3.4.8 **Technical Record Keeping and Life Limited Components.** The Programme should give details of the method used and organisational responsibilities for recording flying hours, engine/APU cycles, training "touch and go" landings etc. which are needed to show compliance with the mandatory life limitations of the engine/APU and for controlling 'hard' and 'soft' time intervals. The procedure for complying with gas turbine engine parts subject to retirement or ultimate (scrap) lives where applicable should also be defined.
- 3.4.9 **Refurbish and Rework Specifications.** Every engine, module and APU whose restoration task is not defined as either a HSI or Overhaul in accordance with appropriate Overhaul Manual (Engine Manual) should have a rework or refurbish specification established in accordance with the procedures defined in the Programme. The Specification should define the minimum modification standard and the degree of strip inspection and rework necessary to release an engine, module or APU for specified periods of service usage. The content of the Specification should be based upon the appropriate Constructor's Maintenance Planning Guides, threshold and opportunity samples, the inspection requirements of the engine manuals and the review and analysis of the data collected by the Programme.
- 3.4.10 **Repair and Overhaul Organisations.** The Programme should define the nominated CAAF approved or accepted engine and APU repair and overhaul organisations which are to be used, together with any contractual instructions to which the Organisations will be required to work. This information should be contained in the MME or MOE as appropriate.
- 3.4.11 **Corrective Actions.** (See also paragraph 2.9 of this Appendix). The Programme should define the means by which the collected data is routinely analysed and interpreted in order to monitor the effectiveness of the current on-wing and off-wing maintenance tasks and airworthiness of the fleet and so identify the need for any remedial action and appropriate timescales. The procedure for changing or escalating any of the on and off-wing tasks, inspections and time intervals should also be defined in the Programme.
- 3.4.12 **Organisational Responsibilities.** The Organisational structure of the Operator and where appropriate the sub-contracted maintenance, repair and overhaul Organisations responsible for the administration and control of the Programme should be defined. The responsibilities for decision making with respect to both the on-wing and off-wing elements of the Programme shall be clearly defined in the Programme. This information should be contained in the MME or MOE as appropriate.
- 3.4.13 **Management Evaluation and Review.** (See also paragraph 2.12 of this Appendix). the Programme should be managed effectively and ensure that good communications prevail between the various technical and quality departments of the Operator and if appropriate, the sub-contracted maintenance, engine and APU repair or overhaul Organisations. The Programme should define how the review, agreement, co-ordination and communication are ensured in the following areas:-
- (a) **Contractual Arrangements.** Where the Operator sub-contracts any of the on-wing or off-wing engine/APU maintenance, repair and overhaul,

Programmes require the details of the arrangements for maintenance, repair and overhaul to be clearly defined in the written maintenance contract. This is necessary to ensure that the technical and quality personnel of all the sub-contract Organisations which are involved in the application of the contract have a common understanding of the technical requirements of the Programme and of their respective duties and responsibilities.

- (b) **Engine/APU Workscopes.** Each engine, module and APU upon removal from an aircraft, should have an individual workscope prepared. The workscope should detail the reason for removal, engine/APU hours and cycles accrued in service, list any outstanding defects and define the required work to be carried out during the shop visit, cross referring, where appropriate, to the refurbish specification. The content of the workscope should also reflect any corrective actions which the Programme has previously identified as needing to be carried out at this shop visit. Where sub-contract arrangements exist, the content of the workscope should be agreed by the Operator and the sub-contract maintenance, engine repair and overhaul Organisation as appropriate.
- (c) **Rework and Refurbish Specification.** Regular liaison between the technical and quality personnel of the Operator and where appropriate, the sub-contract maintenance, engine/APU repair and overhaul Organisation should take place to review, and update the content of the engine, module and APU rework and refurbish specifications. The review should be based upon the results of the analysis conducted upon the data collected in accordance with paragraph 3.4.6 of this Appendix.
- (d) **Technical and Quality Review.** It is necessary for the Operator and where appropriate the sub-contracted maintenance, engine repair and overhaul Organisations to periodically review all of the data inputs and reliability analysis defined in the Programme together with any adverse quality audit findings and action taken. The review should seek to adjust "alert levels", identify trends, address any reduction in reliability or increase of in-flight shut down rate, delays, and cancellations and so implement any necessary remedial action.

- (e) **Management Overview.** Every Programme should have a controlling body that is responsible for the implementation, decision making and overall running of the Programme. Management at a senior level (Quality Manager, Engineering Manager etc.) should periodically review the effectiveness of the Programme, and where necessary, implement changes.

3.4.14 **Changes to the Programme.** Any significant changes to the Programme will require approval of the CAAF. (See also paragraph 3.3 of this Appendix.)

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## CHAPTER 6-4

### WEIGHT AND BALANCE OF AIRCRAFT

#### 1 INTRODUCTION

This Chapter 6-4 prescribes the requirements for the weighing of aircraft, the determination of the corresponding centre-of-gravity position and the provision of information from which the loading for flight can be correctly determined.

NOTE: The operator's responsibilities are prescribed in the Air Navigation Regulations.

#### 2 DEFINITIONS

##### 2.1 Basic Weight

Basic Weight is the weight of the aircraft and all its basic equipment, plus that of the declared quantity of unusable fuel and unusable oil. In the case of turbine-engine aircraft and aircraft the Maximum Total Weight Authorized of which does not exceed 5700 kg, it may also include the weight of usable oil.

##### 2.2 Basic Equipment

Basic Equipment is the unconsumable fluids, and the equipment which is common to all roles for which the operator intends to use the aircraft.

##### 2.3 Variable Load

Variable Load is the weight of the crew, of items such as the crew's baggage, removable units, and other equipment the carriage of which depends upon the role for which the operator intends to use the aircraft for the particular flight.

##### 2.4 Disposable Load

Disposable load is the weight of all persons and items of load, including fuel and other consumable fluids, carried in the aircraft, other than the Basic Equipment and variable Load.

NOTE: To obtain the total loaded weight it is necessary to add to the Basic Weight the weights of those Variable and Disposable Load items which are to be carried for the particular role for which the aircraft is to be used.

### 3 GENERAL

- 3.1 Aircraft shall be weighted when all manufacturing processes have been completed, and in accordance with the procedures in this paragraph 3.

**NOTE:** The CAAF will consider applications from aircraft operators to weigh certain types of aircraft on a sampling basis (i.e. representative aircraft, as weighed, would be acceptable for others of the same standard).

- 3.1.1 Aircraft the Maximum Total Weight Authorized of which exceeds 5700 kg shall be re weighed within two years after the date of manufacture, and subsequent check weighing shall be made at intervals not exceeding five years, and at such times as the CAAF may require.
- 3.1.2 Aircraft the Maximum Total Weight Authorized of which does not exceed 5700 kg, shall be re-weighed at such times as the CAAF may require, but should not exceed 10 years from the date of previous weighing.
- 3.2 When an aircraft is weighed, the condition of the aircraft (i.e. the equipment and other times of load such as fluids in tanks) shall be recorded. The equipment installed should not differ from that included in the declared list of Basic Equipment associated with the Weight and Centre-of-Gravity Schedule or the Loading and Distribution Schedule as appropriate.
- 3.3 The Basic Weight and the corresponding c.g. position shall be determined and entered in the Weight and Centre-of-Gravity Schedule or in the Loading and Distribution Schedule as appropriate.
- 3.4 The CAAF may require that the actual weight of the items of Variable Load be ascertained.
- 3.5 A Weighing Record containing records of the weighing and the calculations involved shall be made available to the CAAF, and such records shall be retained by the operator. When the aircraft is again weighed the previous Weighing Record shall be retained with the aircraft records.
- 3.6 Operators shall maintain records of all known weight and c.g. changes which occur after the aircraft has been weighed, and such records shall be retained by the operator.

### 4 WEIGHT AND BALANCE REPORT - AIRCRAFT EXCEEDING 5700 KG

- 4.1 A weight and Balance Report shall be produced for each Prototype, Variant and Series aircraft the Maximum Total Weight Authorized of which exceeds 5700 kg.

**5 WEIGHT AND CENTRE-OF-GRAVITY SCHEDULE - AIRCRAFT EXCEEDING 2730 kg** (see Chapter 7-10 App. No. 1)

A Weight and Centre-of-Gravity Schedule shall be provided for each aircraft the Maximum Total Weight Authorized of which exceeds 2730 kg, except that for an aircraft the Maximum Total Weight Authorized of which exceeds 5700 kg the information contained in Parts B and C of the Schedule may, for a new aircraft, be given as part of the Weight and Balance report.

**6 WEIGHT AND CENTRE-OF-GRAVITY SCHEDULE - AIRCRAFT NOT EXCEEDING 2730 kg** (see Chapter 7-10 App. No. 2)

For aircraft the Maximum Total Weight Authorized of which does not exceed 2730 kg, either a Weight and Centre-of-Gravity Schedule which complies with 5 and shall contain instructions for the determination of the loaded weight, the total moments and resultant e.g positions, or a Loading and Distribution Schedule which complies with Chapter 7-10 Paragraph 3 shall be provided.

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## APPENDIX NO. 1 TO CHAPTER 6-4

### WEIGHT AND BALANCE OF AIRCRAFT - FLEET MEAN WEIGHT AND FLEET MEAN CENTRE-OF-GRAVITY

#### 1 INTRODUCTION

An alternative arrangement to the periodical check weighing of individual aircraft is to establish a Fleet Mean Weight and Fleet Mean Centre-of-Gravity Position, and this method is acceptable to the CAAF where an operator uses three or more aircraft of the same type. Application for acceptance of this arrangement should be made in writing to the CAAF Air Safety Department, giving a table of aircraft weights which it is intended will form the basis of the Fleet Mean Weight. Where such an arrangement is adopted, the provisions of this Appendix No. 1 will apply.

#### 2 GENERAL

The Initial Fleet Mean Weight should be based on the mean of the weights of all the aircraft of the same type in the fleet, and this should be reviewed annually by sample weighing (see 3).

2.1 The Fleet Mean Weight is the greatest of the following weights:-

- (a) The mean Basic Weight of all aircraft of the same type in the fleet.
- (b) The mean Basic Weight of aircraft of the same type in the most recent sample weighings.
- (c) The Basic Weight of the heaviest aircraft in the fleet, less 0.5% of the Maximum Landing Weight.

2.2 If a Fleet Mean Weight is used, a weight control system should be established to account for modification and repairs. Where there is a weight increase greater than 0.2%, the CAAF should be informed in order to consider the validity of the established Fleet Mean Weight.

2.3 Where the weight of an aircraft differs significantly from the remainder of the fleet it is acceptable to exclude this from the fleet. Separate fleets may be established each with differing Fleet Mean Weights.

2.4 To establish a Fleet Mean Weight for an existing fleet of aircraft to which will be added other aircraft of the same type, the new Fleet Mean Weight should be based on an up-to-date sample in accordance with the sampling procedures (see 3) drawn in proportion to the relative sizes of the original fleet and the additional aircraft.

#### 3 PERIODICAL SAMPLING PROCEDURES

3.1 The number of aircraft to be weighed each year is:-

Number in Fleet	Number to be Weighed
3	3
4 and 5	4
6 and 7	5
8 to 13	6
14 to 23	7
24 and over	6 plus 10% of the number of aircraft over 9

3.2 The number of samples may be reduced, by prior agreement with the CAA F, where it can be shown that the variation in fleet weights is not significant from year to year.

3.3 Periodical sample weighing should be made in accordance with 3.1 from those aircraft in the fleet which show the greatest elapsed time between weighings.

#### 4. FLEET MEAN CENTRE-OF-GRAVITY POSITION

This should be established by using the same appropriate procedures as for the Fleet Mean Weight, except that an aircraft with c.g. position greater than 0.5% SMC from the Fleet Mean C.G. Position should not be included in the fleet.

## CHAPTER 6-5

### MINIMUM EQUIPMENT LISTS

#### 1 INTRODUCTION

- 1.1 Regulation 15 of the Air Navigation Regulations requires that on the termination of every flight the pilot in command shall enter on the technical log particulars of any defect in any part of the aircraft or its equipment which is known to him.
- 1.2 Information and instruction intended to enable the determination of extent of unserviceable equipment and systems which may exist at the commencement of a flight while still allowing the safe operation of the affected aircraft shall be provided in the form of a Minimum Equipment List (MEL). See SD - AIR OPERATOR'S CERTIFICATE Section 3 paragraph 16. The MEL shall be prepared by the operator and shall be no less restrictive than the approved MMEL for the same aircraft type.
- 1.3 Unless otherwise determined by the CAAF the format in which the MEL is to be presented should conform to that of the approved MMEL for the particular aircraft type. Variations in the layout used will be permitted within the overall constraint that an MEL shall be no less restrictive than the corresponding MMEL. These variations may take account of varying equipment and systems installations, differences due to aircraft variants within a given type and operators circumstances, experience, capabilities route structure and practices etc.

#### 2 PRODUCTION OF THE MEL

- 2.1 The operator will use the MMEL which is approved by the Authority of the state of manufacture for that aircraft type, as the basis for producing the MEL.
- 2.2 The MEL will be so written that it is no less restrictive than the MMEL. The operator's circumstances, (experience on type, maintenance support etc.) will be a factor which is taken into account when the MEL is reviewed against the MMEL by the CAAF Air Safety Department.
- 2.3 If an MMEL has not yet been approved for a particular aircraft type, the operator may only operate with items unserviceable under an alternative arrangement agreed by the CAAF. In practice this will be some form of MEL (or equivalent) document acceptable to the CAAF) which will be agreed by the CAAF and, in the case of aircraft operated in the Transport category under an Air Operator's Certificate (AOC), encapsulated within the Operations Manual.
- 2.4 In the case of aircraft certificated in the Transport Category and operated under an AOC, the MEL will form part of the Operations Manual, and in that respect will be subject to the same procedures which already exist (ANR Regulations 43 refers).

### **3 SUBMISSION OF MEL**

See SD – AIR OPERATOR’S CERTIFICATE Part 1 paragraph 16.

### **4 CHARGES**

CAAF charges for the investigation of the MEL are included in the scheme of charges levied under the Air Navigation Regulations.

### **5 ACCEPTANCE OF THE MEL**

Following investigation by the CAAF, acceptance of the MEL will be signified in writing to the operator.

### **6 AMENDMENTS TO THE MEL** Amendments to the MEL may be necessary, or may be initiated, under the following circumstances:-

- 6.1 If the MMEL is amended to become more restrictive. (where an amendment leads to the MMEL becoming less restrictive, the prerogative to incorporate the change into the MEL will rest with the operator in consultation with CAAF Air Safety Department).
- 6.2 On the request of the operator, provided the proposed change is no less restrictive than the MMEL and with the agreement of the CAAF Air Safety Department.
- 6.3 As required by the CAAF Air Safety Department in the light of experience or where it can be shown that in the circumstances of the operator the MEL is too permissive.

### **7 OPERATIONS WITH MULTIPLE UNSERVICEABILITIES**

In most cases, multiple unserviceabilities of unrelated aircraft systems can not be addressed by the MMEL nor consequently by the MEL. The decision as to whether or not to despatch with multiple unserviceabilities, which individually would be allowed by the MEL, will remain strictly with the aircraft Commander, taking into consideration advice from the operator’s specialists where available.

## **8 SPECIAL PROCEDURES FOR OPERATIONS OUTSIDE THE CONDITIONS OF THE MEL**

- 8.1 Under certain specified conditions and circumstances operators may on application be granted authorisation by the CAAF to introduce and implement Special Procedures for operations outside the conditions of the MEL. When given authorisation by the CAAF operators with extensive experience of a particular aircraft type and the necessary operational, management and engineering support facilities may exercise this as a 'one-off' special procedure to operate an aircraft strictly for the purpose of returning to a place where it is reasonably practical for repairs to be made, with unserviceabilities of systems or equipment not permitted by the MEL. In such circumstances, alternative compensatory factors like increase fuel reserves, enhanced weather minima, and in extreme cases, no carriage of passengers, may need to be applied.
- 8.2 Where an operator has been granted authorisation to exercise this discretion for a particular aircraft type, this will be clearly stated by the CAAF. When this discretion is exercised the operator would be required to notify the CAAF in writing, within 10 days, with the full details. A rapid response would be applied by the CAAF in order to determine if a change to the MEL was required or whether the operator had exercised this discretion inappropriately.

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## CHAPTER 6-6

### MANDATORY MODIFICATIONS AND INSPECTIONS PROCEDURE FOR IMPLEMENTATION

#### 1 INTRODUCTION

- 1.1 Mandatory inspections, for the purpose of this Chapter are those inspections declared as mandatory by the CAAF where the inspection itself is the work.
- 1.2 The provisions of Regulations 13(10)(c) of the Air Navigation Regulations are such that a Certificate of Airworthiness in respect of an aircraft registered in the Fiji will cease to be in force until any modifications or inspection, being a modification or inspection required by the authority, is completed.
- 1.3 For the purpose of compliance with Regulation 13 (10)(c) a “modification or inspection required by the Authority” is one which has been declared as mandatory by the CAAF. It is, therefore, incumbent on the Operator to ensure that he is aware of the published information (Service Bulletins, Technical News Sheets, etc.) concerning mandatory modifications and inspections in respect of his aircraft including its engines, propellers, radio, accessories, instruments and equipment and to act accordingly.

NOTE: The Operator is advised to institute a procedure for the assessment of published information in order to ensure that an adequate and timely response will be made.

- 1.4 If, in the course of work connected with matters dealt with in this Chapter, the Operator becomes aware of any potential airworthiness problems he should, without delay, advise the CAAF Air Safety Department.

#### 2 AIRWORTHINESS DIRECTIVES

- 2.1 The following modifications and inspections are declared by the CAAF as mandatory unless notification by the CAAF is made to the contrary.
  - (a) Those notified as mandatory in a foreign Airworthiness Directive or equivalent notification issued by the Responsible Authority of the State of Construction.
  - (b) Those notified in a UK CAA Additional Airworthiness Directive.
  - (c) Those necessary to comply with UK CAA Airworthiness Notices of a mandatory character (e.g. Nos. 41, 81).
- 2.2 Wherever possible, the criterion for embodiment or compliance is fixed to coincide with periodical inspections or overhauls so that the Operator has a reasonable amount of time for carrying out the work. In addition, consideration is given to the possibility of a special inspection procedure as, at least, a temporary alternative to the embodiment of a modification. Operators and their contracted maintenance organisations are expected, when necessary, to make priority arrangements to achieve compliance within the period specified.

- 2.3 The initial notification of a mandatory modification or inspection by the constructor/manufacturer (e.g. Service Bulletins, Technical News Sheet) is distributed to all known operators of the aircraft and to all Airworthiness Authorities to whom those operators are responsible.

**NOTES:** (1) In view of the notification procedure described in paragraph 2.3, Operators and organisations undertaking maintenance or overhaul of aircraft have a duty to ensure that their names and addresses are known to the constructors of the aircraft for which they are responsible.

(2) As a general rule modifications and inspections notified by an equipment manufacturer as mandatory will have been the subject of discussion and agreement between the equipment manufacturer and the aircraft constructor and would have allowed the aircraft constructor to issue a covering bulletin, where this is appropriate. However, Operators are reminded of their responsibility for ascertaining the total requirements for a complete aircraft including its equipment.

### **3 UK CAA ADDITIONAL AIRWORTHINESS DIRECTIVES**

- 3.1 The UK CAA may vary the content or application of an Airworthiness Directive for aircraft which are not of UK manufacture, in which case details will be promulgated in a UK CAA Additional Airworthiness Directive<sup>1</sup> preceded, if necessary, by a UK CAA Emergency Airworthiness Directive. Where the UK CAA has issued a UK CAA Additional Airworthiness Directive in advance of the notification by the Responsible Authority of the State of Construction, the UK CAA Directive shall be observed, unless subsequently revoked.
- 3.2 It is important that operators of aircraft on the Fiji register arrange to receive copies of the applicable Airworthiness Directives and use the latest issue so that any requirements additional to the previous issue can be complied with.
- 3.3 Airworthiness Directives usually refer to constructor/manufacturer bulletins, etc., therefore owners, operators and organisations undertaking maintenance or overhaul of aircraft should ensure that their names and addresses are known to constructors of the aircraft for which they are responsible.

### **4 WORK AND CERTIFICATIONS**

- 4.1 Work undertaken in incorporating a mandatory modification, or in carrying out a mandatory inspection, shall be supervised by an Organisation approved by the CAAF for the purpose or by an appropriately licensed aircraft maintenance engineer.

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<sup>1</sup> Issued in the UK CAA Publication 'Foreign Airworthiness Directives'

- 4.2 Where it is necessary to amend the particulars in the Certificate of Airworthiness or Flight Manual, the Certificate or Manual shall, unless agreed otherwise by the CAAF, be forwarded to the CAAF Air Safety Department.
- 4.3 Full particulars of the work done to incorporate the modification, or details, results and work arising from the mandatory inspection shall be entered in the appropriate log book, quoting the reference number of the appropriate document e.g. Airworthiness Approval Note for a Major modification, Service Bulletin for a mandatory inspection. A Certificate of Release to Service shall be completed, where appropriate, and attached thereto.
- 4.4 All relevant records of modifications and mandatory inspection shall be made available to the CAAF for examination on request, and these shall not be destroyed without authorisation from the CAAF.

NOTE: The Air Navigation Regulations requires that log books, and other documents which are identified and referred to in the log books (therefore forming part of the log books) shall be preserved until a date two years after aircraft, the engine or the variable pitch propeller, as the case may be, has been destroyed, or permanently withdrawn from use.

- 4.5 When a change is made to a component which has already been the subject of a mandatory modification and this produces a new or modified component which achieves all the objectives of the previous mandatory modification, then the latter modification, becomes an acceptable alternative to the previous one, and shall be shown in the Company's modification system and associated documentation.

## **5 UK CAA AIRWORTHINESS NOTICES**

Certain UK CAA Airworthiness Notices have traditionally been adopted by the CAAF, and may have been incorporated into Fiji Standards Documents. Some of these are of a mandatory nature and those adopted but not directly incorporated into SDs will be notified to industry by the issue of an appropriate Aeronautical Information Circular (AIC).

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## CHAPTER 6-7

### CERTIFICATION OF INSPECTIONS, OVERHAULS, MODIFICATIONS, REPAIRS AND REPLACEMENTS

**1 INTRODUCTION** In accordance with the Air Navigation Regulations an aircraft registered in the Fiji being an aircraft in respect of which a Certificate of Airworthiness issued or rendered valid under the Air Navigation Regulations is in force, shall not fly unless there is in force a Certificate of Release to Service issued in respect of any overhauls, repairs, replacements, modifications, maintenance, mandatory inspections or scheduled maintenance inspections to the aircraft or any part of the aircraft or such of its equipment as is necessary for the airworthiness of the aircraft. In addition, a Certificate of Release to Service is required for all such work carried out on radio equipment and equipment specified in Regulation 23.5 of the Air Navigation Regulations except where certain exclusions are identified. This Chapter **6-7** concerns inspections, overhauls, modifications, repairs and replacements applicable to aircraft and, where appropriate, to components, engines, propellers, radio apparatus, accessories, instruments, equipment, their installations and the issue of certificates of release to service thereto.

- NOTES:(1) Owners, operators, and organizations undertaking overhaul/maintenance on aircraft should ensure that the constructor of each type of aircraft is informed of their names and addresses to facilitate distribution of the documents notifying mandatory modifications and inspections.
- (2) The Certificate of Release to Service replaces the Certificate of Compliance required by the Fiji ANR (see AIC 4/98 para 4.3).

## 2 INSPECTIONS, OVERHAULS, MODIFICATIONS, REPAIRS AND REPLACEMENTS

### 2.1 General

- 2.1.1 Inspections, overhauls, modifications, repairs, and replacements shall be carried out in accordance with the approved Manuals, drawings and schedules related thereto, and any other documents required or recognised, by the CAAF.
- 2.1.2 Further, in the case of structural repairs to an aircraft, where the repairs are of a major nature, or not covered in the particular approved Manual, the approved Organisation or the appropriately licensed aircraft maintenance engineer concerned, shall advise the CAAF Air Safety Department of the nature of the repairs before the work commences. Repair schemes, not previously approved by the CAAF, will be investigated as modifications in accordance with the procedures in Chapter **2-5**.
- 2.1.3 Replacement parts shall be certified by an ANR145C Organization approved by the CAAF for the purpose, or by an alternative procedure agreed by the CAAF. (See AIC 3/99).

## 2.2 Work and Certifications

- 2.2.1 Inspection, overhaul, modification, repair, and replacement work shall be supervised by an Organization approved by the CAAF for the purpose (see SD-ANR145C APPROVAL OF AIRCRAFT MAINTENANCE ORGANISATIONS) or by an appropriately licensed aircraft maintenance engineer.
- 2.2.2 Where the work is to be carried out on an aircraft registered in the Fiji by a foreign Organization not approved by the CAAF, suitable arrangements shall be agreed with the CAAF Air Safety Department.
- 2.2.3 Depending on the nature of the overhaul, modification, repair, or replacement made to the aircraft, the following may be required by the CAAF:-
- (a) The aircraft to be weighed, and an amended Weight and Centre-of-Gravity Schedule, or its equivalent as prescribed in Chapter **7-10** to be prepared.
  - (b) A Certificate of Fitness for Flight issued (See Chapter **3-8**) and the aircraft to be tested in flight to schedules approved by the CAAF in accordance with Chapter **6-8**.
- 2.2.4 Before a Certificate of Release of Service or its foreign equivalent is issued, the work shall have been inspected, and tested where necessary, in conformity with the specifications, drawings and instructions relating to the modification or mandatory inspections. Where appropriate, the instructions shall include a copy of the original Airworthiness Approval Note for a Major modification, or a copy of the CAAF Form AW 101C for a Minor modification.
- 2.2.5 The aircraft shall be made available to enable the CAAF to inspect it as necessary.
- 2.2.6 When the work has been fully inspected, and tested where necessary, for conformity with the specifications, drawings and instructions relating to the overhaul, modification, repair or replacement, the necessary certification and, where appropriate, log book entries shall be completed in accordance with 5. Where applicable the instructions shall include a copy of the original Airworthiness Approval Note for a major modification, or a copy of the CAAF Form AW 101C for a minor modification. Where the work has been carried out by a foreign Organisation, in accordance with 2.2.2, the Organisation for whom the work has been carried out shall raise a Certificate of Release to Service where such is required, using the foreign certificate as evidence that an acceptable standard has been achieved.

## 3 CERTIFICATE OF RELEASE TO SERVICE

- 3.1 A Certificate of Release to Service replaces the Certificate of Compliance required by the Fiji ANR and shall be issued after overhauls, modifications, repairs, replacements, modifications and mandatory inspections have been carried out on an aircraft, which is registered in the Fiji and has a Certificate of Airworthiness in force, except as follows:-

- (a) A Certificate of Release to Service is not required for repairs or replacement carried out on an aircraft with a Certificate of Airworthiness in the Special Categories.
- (b) If a repair or replacement of a part of an aircraft is carried out when the aircraft is at such a place that it is not reasonably practicable (i) to carry out the work in a manner that a Certificate of Release to Service may be issued, or (ii) for the Certificate to be issued at that particular place, the Commander may fly the aircraft, if, in his opinion, it is safe to do so, to the nearest place at which a Certificate may be issued.

NOTE: The ANR prescribes that in such cases written particulars of the flight and the reasons for making it are to be given to the CAAF within ten days thereafter.

3.2 A Certificate of Release to Service shall only be issued for a particular inspection, overhaul, modification, repair or replacement when the signatory is (signatories are) satisfied that the work has been properly carried out, having due regard to the use of:-

- (a) up-to-date instructions including manuals, drawings, specifications, mandatory modifications/inspections required by the CAAF and company procedures,
- (b) recommended tooling and test equipment which is currently calibrated where applicable, and
- (c) a working environment appropriate to the work being carried out.

3.3 The Certificate of Release to Service shall contain particulars of the work done or the inspection completed and the organisation and place at which the work was carried out. Depending upon the application of the certificated, details of the aircraft type, registration, component type, part number and serial number shall be recorded as applicable.

- 3.3.1 The certificate when issued by other than a ANR145C maintenance organisation shall be worded in the following manner:-

**“The work recorded above has been carried out in accordance with the requirements of the Air Navigation Regulations for the time being in force and in that respect the aircraft/equipment is considered fit for release to service.”**

- 3.3.2 The certificate when issued by a ANR145C maintenance organisation shall be worded in the following manner:-

**“Certifies that the work specified except as otherwise specified was carried out in accordance with ANR145C and in respect to that work the aircraft/aircraft component is considered ready for release to service.”**

3.4 The Certificate of Release to Service shall be signed by a person specified in 4 except that the CAAF may direct which of these person shall sign in a particular case. The signatory/signatories shall record licence/approval/authorisation reference number as appropriate, together with the date.

## **4 CERTIFICATION OF RELEASE TO SERVICE SIGNATORIES**

4.1 A Certificate of Release to Service shall be issued only by one of the following:-

- (a) The holder of an aircraft maintenance engineer's licence granted under the Air Navigation Regulations being a licence which entitles the holder to issue that certificate.
- (b) The holder of an aircraft maintenance engineer's licence granted under the law of a country other than the Fiji and rendered valid under the Air Navigation Regulations, in accordance with the privileges endorsed on the licence.
- (c) A person, approved by the CAAF as being competent to issue such Certificates, and in accordance with that approval.

- (d) A person authorised by the CAAF to issue the Certificate in a particular case, and in accordance with that authority.
- (e) A person appropriately authorised by a ANR145C maintenance organisation (see SD - ANR145C APPROVAL OF AIRCRAFT MAINTENANCE ORGANISATIONS) and within the scope of the ANR145C maintenance organisation's scope of approval.

4.2 In relation only to the adjustment and compensation of direct reading magnetic compasses, the holder of an Airline Transport Pilot's Licence (Aeroplanes), granted or rendered valid under the Air Navigation Order, may also issue a Certificate of Release to Service.

## 5 RETENTION OF RECORDS

5.1 When all the relevant work has been carried out, a Certificate of Release to Service shall be entered in/attached to the appropriate log book and completed in accordance with this Chapter 6-7.

- (a) Where it is more convenient, the required particulars may be entered in a separate record, but an entry shall be made in the appropriate log book, containing a summary of the work carried out and a cross-reference to the document containing the Certificate of Release to Service.
- (b) Where an alternative record system has been agreed then the format and location of such certificates shall be in accordance with that agreement.
- (c) Where work has been carried out in accordance with the provision of 3.1(b) then the details of such work together with the date, pilot's licence number and signature of the person who carried out the work shall be entered in the appropriate log book.

5.2 Full particulars of work done to incorporate modifications shall be entered in the appropriate log book, quoting the reference number of the appropriate document, e.g. Airworthiness Approval Note for a Major modification, Service Bulletin for a mandatory inspection. A Certificate of Release to Service shall be issued, where appropriate, and attached thereto (see 2.2.6).

5.3 When it is more convenient, the information required by 5.2 may be entered in a separate record which shall be certified in the same manner as that required for entry in the appropriate log book. The reference number of this record, and the place where it may be examined, shall be entered in the log book under a brief description of the particular modification. A similar record shall be kept when log books are not required.

5.3 When it is more convenient, the information required by 5.2 may be entered in a separate record which shall be certified in the same manner as that required for entry in the appropriate log book. The reference number of this record, and the place where it may be examined, shall be entered in the log book under a brief description of the particular modification. A similar record shall be kept when log books are not required.

5.4 All relevant records of mandatory inspections, overhauls, modifications, repairs and replacements shall be made available to the CAAF for examination on request, and these shall not be destroyed without authorisation from the CAAF.

NOTE: The Air Navigation Regulations requires that log books, and other documents which are identified and referred to in the log books (therefore forming part of log books) shall be preserved until a date two years after the aircraft, the engine or the variable pitch propeller, as the case may be has been destroyed, or permanently withdrawn from use.

## 6 MANUALS

6.1 Amendments to Manuals, i.e. the Flight Manual (see Chapter 7-2), Maintenance, Overhaul and Repair Manuals (see Chapter 7-4) or the Crew Manual (see Chapter 7-3) or the Maintenance Schedule (see Chapter 7-5) arising from incorporation of a Major or Minor modification in an aircraft shall be made in accordance with the requirements of the particular Chapters. In the case of Minor modifications approved under CAAF Form AW 101B procedure the applicant shall submit details of the proposed amendments to the CAAF for approval.

6.2 Where it is necessary to amend the particulars in the Certificate of Airworthiness or Flight Manual, the Certificate or Manual shall, unless agreed otherwise by the CAAF, be forwarded to the CAAF Air Safety Department.

## **7 WORK BY FOREIGN ORGANISATIONS NOT APPROVED BY THE CAAF**

7.1 Where the CAAF has entered into a special arrangement with a foreign country, the supervision and associated release documentation should follow the terms of that agreement.

7.2 In the absence of a special arrangement in accordance with 7.1, 7.2.1 or 7.2.2 may be applied.

7.2.1 Where the airworthiness arrangements in the foreign country achieve a standard acceptable to the CAAF, work may be accepted from organisations within that country provided it is accompanied by a suitable certificate supported by the Responsible Authority of the state concerned. The type or work, detail arrangements and form of certificate required should be agreed in consultation with the CAAF.

7.2.2 Work from other foreign Organisations not in countries covered by 7.2.1 may be accepted on an ad hoc basis, and the arrangements should be agreed, case by case, with the CAAF.

## CHAPTER 6-8

### FLIGHT TESTING AFTER MODIFICATION OR REPAIR

#### GENERAL

The flight testing of aircraft shall comply with the procedures set out in this Chapter, as follows:-

- (a) Modifications to aircraft and Variants under investigation for the issue of a Certificate of Airworthiness or a Permit to Fly.
- (b) Aircraft which have undergone structural repairs which could affect their flight characteristics.

NOTE: Owners are required to arrange adequate insurance to cover damage to the aircraft and to third parties.

In order that the CAAF may accept reports on flight test matters, the qualifications and experience of personnel involved in flight testing under the provisions of this Chapter shall be acceptable to the CAAF. Flight test personnel shall be provided with adequate facilities and equipment for the effective performance of their duties.

#### 4 MODIFICATIONS AND REPAIRS TO AIRCRAFT AND VARIANTS

The requirements and procedures to this paragraph 2 are applicable:-

- (a) In respect of modifications to aircraft.
- (b) In respect of repairs to aircraft.

If in the opinion of the CAAF, the design of an aircraft is so modified as to affect the flight characteristics or the functioning in flight of the aircraft, the CAAF may decide that a flight test evaluation is required. The schedule of flight testing shall include:-

- (a) The flight test necessary to re-establish compliance with the appropriate airworthiness requirements.
- (b) The flight tests necessary to provide new or revised information for inclusion in the documents associated with the Certificate of Airworthiness (or Permit to Fly).
- (c) Flight tests as contained in the approved Airworthiness Flight Test Schedule for an aircraft of the basic type concerned (Chapter **3-3**) except where these tests are covered by the tests referred to in (a) and (b).

- 2.3 Where no specific flight test evaluation is required, the aircraft shall be flight tested as a Series aircraft in accordance with Chapter **3-3**.

## CHAPTER 7-2

### FLIGHT MANUALS

#### 1 INTRODUCTION

1.1 A Flight Manual is a document prescribed by the International Civil Aviation Organisation and is intended primarily for use by the flight crew. The Manual contains limitations, recommended procedures and information of a nature such that adherence to it will enable the level of safety which is intended by the Airworthiness Requirements and the Air Navigation legislation to be regularly achieved. The Flight Manual, by definition in the Air Navigation Regulations forms part of the Certificate of Airworthiness.

NOTES: (1) The requirements of this Chapter do not apply to aircraft of which the Prototype was certified before 5<sup>th</sup> April, 1949.

(2) In this Chapter, the term 'Flight Manual' includes any documents accepted in place of a Flight manual.

1.2 Flight Manuals and amendments thereto shall be approved, amended, and published in accordance with the procedures set out in this Chapter.

#### 2 APPLICABILITY

The requirements and procedures of this Chapter are applicable to Flight Manuals which are required to be provided as part of the certification documentation of a type of aircraft new to the Fiji, and to new Flight Manuals for Variants or Series for which an application been made for a Fiji Certificate of Airworthiness.

2.1 In respect of aircraft the Maximum Total Weight Authorised of which does not exceed 2730 kg, a Flight Manual need not be supplied provided that: -

- (a) A Flight Manual is not prescribed as a mandatory part of the Certificate of Airworthiness by the Responsible Authority of the State of Origin of the aircraft, and
- (b) The limitations, procedures and information necessary for the operation of the aircraft in accordance with the Air Navigation Order are promulgated in and acceptable document other than a Flight Manual.

### 3 GENERAL

- 3.1 Flight Manuals and all amendments thereto shall be subject to acceptance or approval, as appropriate, by the CAAF.
- 3.2 Flight Manuals provided in compliance with this paragraph 3 shall be approved in accordance with procedures acceptable to the Responsible Authority of the State of Origin of the aircraft (hereinafter referred to as the 'Responsible Authority'), and in addition shall comply with any special conditions prescribed by the CAAF.

NOTE: It is the usual practice for Flight Manuals to be prepared and published by the constructor\*, but a Manual prepared and published by some other body will be acceptable provided that it complies with 3.2.

- 3.3 For Flight Manuals provided in compliance with this paragraph 3, the applicant shall be responsible for, and shall make the necessary arrangements to ensure, the supply of any amendments, which are necessary to keep the Flight Manual up to date for as long as an aircraft of the type remains registered in the Fiji (see paragraph 5).
- 3.4 Flight Manuals provided in compliance with this paragraph shall be in the English language.

### 4 ACCEPTANCES AND PUBLICATION OF INITIAL MANUAL

- 4.1 The CAAF will, after taking account of the size and complexity of the aircraft, advise the applicant of the CAAF timetable for approving the Flight Manual.
- 4.2 The Flight Manual shall be identified either by a unique reference number, or by the exact designation of all the aircraft to which the Manual is to apply.
- 4.3 Two copies of the Flight Manual shall be supplied to the CAAF for examination and acceptance in accordance with the agreed timetable.
- 4.4 When the CAAF has completed its examination of the Flight Manual, the applicant will be notified of CAAF acceptance or of any alterations to it that are considered necessary prior to such acceptance.
- 4.5 When the Flight Manual is acceptable to the CAAF, copies, in the final form, shall be sent to the CAAF as follows:-
- (a) One copy appropriate to each aircraft for which application for a Certificate of Airworthiness has been made; each copy to include the registration marks and constructor's serial number of the particular aircraft.
  - (b) One copy for retention by the CAAF.

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\* Hereinafter referred to as the Originator of the Manual

## 5 ACCEPTANCE OR APPROVAL AND PUBLICATION OF AMENDMENTS

The procedure for the amendment of Flight Manuals accepted and published in accordance with paragraph 4 shall be in accordance with this paragraph 5.

- 5.1 The applicant shall supply such amendment as is necessary to maintain compliance with 3.3, and shall indicate to which aircraft the proposed amendments are applicable.
- 5.2 Amendments that are initiated by the Originator of the Manual shall be processed and accepted in accordance with 5.4.
- 5.3 Changes which are initiated by an applicant other than the Originator of the Manual or the CAAF shall be processed and accepted in accordance with 5.4, and shall be effected by means of a Change Sheet or by a Supplement.
  - (a) Each Change Sheet or Supplement shall, unless agreed otherwise by the CAAF, be produced by, and shall be submitted for approval through, the medium of an Organisation approved by or accepted by the CAAF for the purpose, and shall comply with the appropriate requirements.

NOTES: (1) Where the amendment involves the copying of a previously approved amendment or alterations to reflect changes of relatively small significance, material may be accepted from suitable Organizations not formally approved by the CAAF.

(2) A Change Sheet, which consists of an additional page or pages, is normally used to cover simple changes to existing data. It is embodied in the Flight Manual adjacent to the basic page to which the change relates.

(3) A Supplement is normally used to introduce a new role for the aircraft or the installation of major items of equipment.

- 5.4 The requirements of this paragraph 5.4 are applicable to amendments initiated in accordance with 5.2 or 5.3.
  - (a) Two copies of the proposed amendments shall be sent to the CAAF for acceptance or approval, at least three weeks in advance of the desired date for publication.

NOTE: In the respect of amendments already approved by the Responsible Authority, the investigation by the CAAF will normally be limited to the extent necessary to ensure that the amendments are consistent with:-

    - (i) The basis upon which the type of aircraft was certificated.
    - (ii) Current Fiji Air Navigation legislation.
  - (b) The applicant shall make any alterations that the CAAF may consider necessary at this stage.
  - (c) When the amendments have been approved by the CAAF, one copy of the amendments to be made to the Flight Manual of each particular aircraft, together with embodiment instructions, shall be sent by the Originator of the Manual or

applicant, as appropriate, to the owner or operator of each aircraft affected, and the CAAF shall be informed when this has been done.

- (d) One copy of the amendments as approved or accepted, as appropriate, shall be supplied to the CAAF for retention.
- (e) The Operators shall, in accordance with the instructions provided, incorporate the amendments.

## 5.5 Series Aircraft

At least seven days before the date of which certificate of a Series aircraft is desired, the applicant shall send to the CAAF, for examination, a copy of the Flight Manual relating to the aircraft; the manual to include the Fiji registration marks and constructor's serial number. This copy shall include all applicable amendments embodied in accordance with 5.4. If the Flight Manual contains any material or amendments which have not previously been accepted or approved by the CAAF, the procedure of 5.4 shall be followed. When the Flight Manual has been examined and found to be satisfactory, it will be issued to the applicant with the Certificate of Airworthiness.

## 6 CERTIFICATE OF AIRWORTHINESS RENEWAL

The requirements concerning the Flight Manual at Certificate of Airworthiness renewal are prescribed in Chapter **3-4**.

NOTE: In respect of an aircraft, which, before renewal of the Certificate of Airworthiness, has been registered in a foreign State and is to be registered in the Fiji, it may be necessary to obtain a new Flight Manual, to a standard acceptable for the type, in accordance with paragraph 4.

## CHAPTER 7-5

### APPROVAL OF MAINTENANCE PROGRAMMES & SCHEDULES

#### 1 INTRODUCTION

- 1.1 **Applicability.** The requirements of this Chapter are applicable to Maintenance Schedules and Maintenance Programmes (hereinafter referred to as the "Schedule" and the "Programme") submitted for Approval as required by the Air Navigation Regulations.
- 1.2 **Purpose.** This Chapter provides an applicant intending to gain CAAF approval of a Schedule or Programme, or amendments thereto, with:
- (i) Procedures to follow when seeking to gain CAAF Approval of a Schedule or Programme.
  - (ii) Procedures for the control and approval of amendments to Schedules or Programmes
- 1.3 **Approval.** When satisfied with the content of the Schedule or Programme, the CAAF will signify this approval by issuing a CAAF Approval Document CAAF Form AW 102E to the applicant.

#### 2 MAINTENANCE SCHEDULE APPROVAL PROCEDURES

- 2.1 To comply with the Air Navigation Regulations, aircraft with a Certificate of Airworthiness in the Transport Category (Passenger), Transport Category (Cargo), or Aerial Work, the applicant shall submit for approval a Maintenance Schedule and, where applicable, all of the associated procedures intended to ensure that the airworthiness of the aircraft will be preserved on a continuing basis. These procedures shall, as a minimum, ensure a review of the effectiveness of the Schedule on a continuing basis. Schedules shall be submitted and approved in accordance with this paragraph 2.
- 2.2 Normally the CAAF expects that all Schedules will be based upon the TC Holder's recommendations. The Schedule may use the traditional processes of inspection, servicing, and replacement/overhaul at stated periods, or such processes may be combined with other processes which permit the adjustment of the work content and periods in accordance with information derived from the operation and maintenance of the aircraft concerned.
- 2.3 Notwithstanding 2.2 it may be possible for the Operator to develop or escalate the TC Holder's Programme in accordance with the procedures approved by the CAAF (see 3.1 below).

NOTE: Where it is proposed that such maintenance processes be monitored by statistical reliability procedure of a condition monitored or reliability centred Maintenance Programme, such a procedure will need the approval of the CAAF, and will be deemed part of the Schedule.

- 2.4 Where Maintenance Review Board (MRB) procedures are applicable to the Type Certification of a particular type, then these procedures will be applied as applicable.

NOTE: (1) Where TC Holder's maintenance planning data developed from an MRB is used, this should be clearly identified in the schedule.

(2) Certification Maintenance Requirements (CMR) may arise as a result of the System Safety Assessment necessary for compliance with JAR/FAR 25.1309. The associated tasks should be clearly identified as being separate from MRB tasks. (See also paragraph 3.1.4).

- 2.5 Application for approval of the Schedule shall be made in the first instance to the CAAF Air Safety Department. A CAAF Maintenance Schedule Approval Reference number will be allocated by the CAAF. Amendments to Schedules shall be submitted directly to the CAAF. A copy each of the Schedule or amendment, and any other documents or procedures, required in a particular case, shall be forwarded by the applicant to the CAAF as advised.
- 2.6 For aircraft with a Certificate of Airworthiness in the Transport (Passenger or Cargo) category operated for the purpose of Public Transport, or an aircraft with a Certificate of Airworthiness in the Aerial work category, the Operator shall complete and submit a copy of CAAF Form AW 105A (Standard Maintenance Practice 9) along with the Schedule to the CAAF Air Safety Department. For aircraft above 5700 kg MTWA the Operator shall complete and submit a copy of CAAF Form AW 104C along with the Schedule to the CAAF ASD.
- 2.7 For aircraft with a Certificate of Airworthiness in the Transport (Passenger or Cargo) or Private Category, not used for the purpose of Commercial Air Transport, the Operator shall complete and submit a copy of CAAF Form AW 105B (Standard Maintenance Practice 19) together with a copy of the applicable Type Certificate Holder's recommended maintenance scheduling data, to the CAAF Air Safety Department, for approval. If the applicant chooses to submit a Schedule that is an alternative to that recommended by the TC holder, then the applicant must demonstrate that the proposed alternative will result in an equivalent level of safety. This alternative may result in a detailed assessment by the CAAF.
- 2.8 Introduction to the Schedule/Programme must contain the following information:-
- (a) CAAF Form AW 102E Approval Document.

- (b) Standard Maintenance Practices (SMP) as appropriate, including applicable aircraft.
- (c) Schedule of Programme Revision Record
- (d) Check Cycle criteria (e.g. A Check-400 FH, B Check-800 FH etc.)
- (e) Certification Maintenance Requirement, Mandatory Life Limits, Mandatory Regulatory Requirements.
- (f) MRB Safety Route (e.g. route 5 or 8) tasks (if applicable) or equivalent,
- (g) Reference to applicable maintenance control procedures or documents.
- (h) Sampling Programme details or procedures.
- (i) Schedule or Programme general particulars (see **6-2** 3.2 (a)).

2.9 The applicant shall nominate a person (keeper or controller) who shall be responsible for the upkeep or control of the Schedule, including ensuring that the Schedule is suitably amended where applicable following the regular review.

### **3 GENERAL**

#### **3.1 Amendments to Approved Schedules and Programmes**

- 3.1.1 Amendments to approved Schedules or Programmes may only be approved when the CAAF is satisfied with the contents. The data in an approved Schedule or Programme shall, where appropriate, be amended by the Operator to reflect the embodiment of mandatory and non-mandatory modifications and inspections, the incorporation of constructors and manufacturers requirements (bulletins, etc.), and the effects of maintenance experience. Amendments shall not be incorporated without the approval of the CAAF, unless an alternative method of approving such amendments has been accepted by the CAAF.
- 3.1.2 Amendments required by the CAAF shall be incorporated in the approved Schedule or Programme.
- 3.1.3 For aircraft types where CMR tasks are identified as part of the TC process, these tasks are subject to separate procedures for escalation: (JAR-25, AMJ 25-19 should be referred to for guidance).

- 3.2 **Applicability to Individual Aircraft.** The Schedule or Programme submitted to the CAAF for approval, must contain a list of the registration marks of the aircraft intended to be maintained in accordance with the Schedule or Programme: changes to the list of aircraft constitute an amendment to the Schedule or Programme and as such requires the approval of the CAAF. The introduction of aircraft to the Schedule or Programme, will also require an assessment by the applicant, of those (that) aircraft's maintenance records, to determine what work must be carried out to align the aircraft concerned with the Schedule or Programme. The agreement of the CAAF should be sought for the content of this alignment check when such amendments are anticipated.
- 3.3 **Maintenance Schedule and Maintenance Programme Review Procedures**
- 3.3.1 The applicant shall submit for approval to the CAAF, procedures to ensure that the Schedule or Programme is reviewed for effectiveness on a regular basis (see SD-AIR OPERATOR'S CERTIFICATE Section 3 Chapter 3) with the review carried out, as a minimum, once every 12 months. When the effectiveness of the Programme or Schedule falls below the established criteria, the Programme or Schedule shall be amended as necessary to take into account the findings of such reviews.
- 3.3.2 The review procedures may include the Operator's escalation procedures which ensures that the Schedule or Programme is developed to reflect current operating experience and the TC holder's recommendations.
- 3.3.3 All procedures intended to meet the intent of this paragraph 3.3 shall be submitted to the CAAF for approval.
- 3.4 **Maintenance Task Card and Maintenance Instruction Development Procedures**
- 3.4.1 The applicant may choose to develop Task Cards or Maintenance Instructions from the Schedule or Programme for ease of interpretation. These Task Cards or Instructions shall be developed using procedures approved by the CAAF. It is important that the content of the Task Cards or Instructions accurately reflects the content of the approved Schedule/Programme and the content of the aircraft maintenance manual. Task Cards and Maintenance Instructions must be revised to reflect revisions to source documents. There shall be a continuing audit of the effectiveness and applicability of these cards or instructions and the associated development procedures.
- 3.4.2 Task Cards may additionally be developed by the applicant for non-scheduled or non-routine tasks. The procedures used to reflect these non-routine cards shall be submitted for approval in accordance with paragraph 3.4.1 above.

- 3.4.3 Where Maintenance Tasks or Maintenance Manual procedures are broken down into discrete maintenance steps or maintenance instructions, in particular for complex tasks, then the procedures used to develop these instructions shall be approved in accordance with 3.4.1 above.
- 3.4.4 All Task Cards and any associated Maintenance Instructions shall be separately identified and be controlled by a revision identification system. Each task or instruction should clearly cross refer to the relevant Schedule or Programme task or maintenance manual reference as applicable.
- 3.5 **CAAF Requirements.** Schedules or Programmes and all associated airworthiness data, including that data used for the substantiation of escalation programmes shall be made available to the CAAF upon request.

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## CHAPTER 7-8

### TECHNICAL LOGS

#### 1 INTRODUCTION

The Air Navigation Regulations require that a Technical Log shall be kept for an aircraft registered in the Fiji in respect of which a Certificate of Airworthiness in either the Transport or Aerial Work Categories is in force. The Air Navigation Regulations further require that a Technical Log shall contain details of the time the aircraft took off and landed, particulars of defects and any other information affecting the airworthiness or safe operation of the aircraft.

NOTE: In the case of an aircraft not exceeding 2730 kg Maximum Total Weight Authorised which is not operated by a person who is the holder of an Air Operator's Certificate or required to hold such a Certificate, an alternate form of record may be approved by the CAAF.

#### 2 BASIC TECHNICAL LOG REQUIREMENTS

2.1 The Technical Log shall contain the following:-

- (a) A Title Page with the registered name and address of the operator, the aircraft type and the full international registration marks of the aircraft.
- (b) A valid Certificate of Maintenance.
- (c) A Maintenance Statement of the next inspection due to comply with the inspection cycle of the Approved Maintenance Schedule and any out of phase inspection or component change due before that time.

NOTE: SD – AIR OPERATOR'S CERTIFICATE Section Three gives an example of a Maintenance Statement which includes the Certificate of Release to Service required by Chapter 6-2 and which would be acceptable to the CAAF.

- (d) A readily identifiable section containing sector record pages. Each page shall be pre-printed with the operator's name and page serial number and shall make provision for recording the following:-
  - (i) The aircraft type and registration mark.
  - (ii) The date and place of take-off and landing.
  - (iii) The times at which the aircraft was chocked off to chock on.
  - (iv) Particulars of any defect in any part of the aircraft affecting the airworthiness or safe operation of the aircraft which is known to the Commander or, if no such defect is known to him, an entry to that effect.
  - (v) The date and signature of the Commander following completion of item (d) (iv).

- (vii) A Certificate of Release to Service as required by Chapter 6-2 in respect of any work carried out for the rectification of defects. This certificate shall be entered in such a position and manner as to be readily identifiable with the entry of the defect to which it relates.
- (viii) The quantities of fuel and oil uplifted, and the quantity available in each tank, or combination of tanks, at the beginning of each flight.
- (ix) The running total of flying hours, such that the hours to the next inspection can be readily determined.
- (x) Provision for pre-flight and daily inspection signatures.
- (xi) The times when ground de-icing was started and completed.

NOTES: (1) Where sector record pages are of the multi-sector "part-removable portion" type then such "part-removable portions" shall contain any of the above information necessary plus all relevant data from 3, if applicable, to ensure the safe operation of the aircraft.

(2) Examples of sector record pages which would be acceptable to the CAAF are shown in SD – AIR OPERATOR'S CERTIFICATE Section 3.

(e) A readily identifiable section containing acceptable deferred defect record pages. Each page shall be pre-printed with the operator's name and page serial number and shall make provision for recording the following:-

- (i) A cross reference for each deferred defect record pages. Each page shall be pre-printed with the operator's name and page serial number and shall make provision for recording the following:-
- (ii) The original date of occurrence of the defect deferred.
- (iii) Brief details of the defect.
- (iv) A cross reference for each deferred defect such that the action in respect of such deferred defect can be readily identified on the sector record page.

NOTE: An example of a deferred defect record page which would be acceptable to the CAAF is shown in SD – AIR OPERATOR'S CERTIFICATE Section 3.

- 2.2 The format of all sector record pages shall be submitted to the CAAF for acceptance, and agreement in respect of the supplementary information required (see 3).

### 3 SUPPLEMENTARY TECHNICAL LOG REQUIREMENTS

3.1 It will be necessary to record additional information for a specified aircraft. The following items are typical of what is required, where appropriate, but the list is not intended to be exhaustive:-

(a) **Maximum or Intermediate Contingency Power**

It is necessary to record the duration of maximum and intermediate contingency power usage, and subsequently to transfer the information to the engine log book or maintenance record. For rotorcraft the record of each use of these powers must also subsequently be transferred to the log cards or other appropriate documents applicable to those components of the transmission which always transmit the power from a single engine only, i.e. components upstream of any combining gearbox.

(b) **Landings**

The number of landings carried out will be necessary for undercarriage component life consideration.

(c) **Flight Pressure Cycles**

The number of pressure cycles will be necessary for fuselage life considerations.

3.2 Supplementary information shall be assessed by the operator and agreed by the CAAF.

### 4 RETENTION OF RECORDS

4.1 All entries in the Technical Log shall be made in duplicate, with provision for one copy of each entry to be removed and retained on the ground before the next flight, except that, in the case of an aeroplane of which the maximum total weight authorised does not exceed 2730 kg, or a helicopter, if it is not reasonably practicable for the copy of the technical log to be kept on the ground it may be carried in the aeroplane or helicopter, as the case may be, in a box approved by the CAAF for that purpose. Adequate arrangements shall be made to extract information recorded in the Technical Log for use by the maintenance organization and component overhaul organization.

4.2 All entries in the Technical Log shall be retained by the operator for a period not less than two years after the particular aircraft has been destroyed or permanently withdrawn from services except that the CAAF may consider a different retention period in a particular case.



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## CHAPTER 7-10

### WEIGHT AND BALANCE REPORT

#### INTRODUCTION

**This Chapter 7-10 contains guidance for compiling weight and balance reports and weight and centre-of gravity schedules as required by Chapter 6-4.**

#### **1 WEIGHT AND BALANCE REPORT - AIRCRAFT EXCEEDING 5700 KG**

- 1.1 A Weight and Balance Report shall be produced for each Prototype, Variant and Series aircraft the Maximum Weight Authorised of which exceeds 5700 kg.
- 1.2 The Weight and Balance Report shall record such loading data as is essential to enable the particular aircraft to be correctly loaded, and shall include sufficient information for an operator to produce written loading instructions in compliance with the requirements of the Air Navigation Regulations.
- 1.3 The Weight and Balance Report shall apply to the aircraft in the condition in which it is to be delivered to the user.
- 1.4 One copy of the Weight and Balance Report shall be sent to the CAAF Air Safety Department.
- 1.5 The Weight and Balance Report shall include the following items:-
  - (a) Reference number and date.
  - (b) Designation, nationality, and registration marks of the aircraft, or if these are not known, the constructor's serial number.
  - (c) A copy of the Weighing Record, produced in accordance with Chapter **6-4**, 3.5.
  - (d) A copy of the Weight and Centre-of-Gravity Schedule including the list of Basic Equipment, if this is separate from Part A of the Schedule (see 2.7.2).
  - (e) A diagram and a description of the datum points which are used for weighing and loading and an explanation of the relationship of these points to the fuselage frame numbering system or other identifiable points, and, where applicable, to the standard mean chord (SMC).
  - (f) Information on the lever arms appropriate to items of Disposal Load. (This should include the lever arms of fuel, oil and other consumable fluids or substances in the various tanks (including agricultural material in hoppers), which, if necessary, should be shown diagrammatically or graphically; lever arms of passengers in seats appropriate to the various seating layouts; mean lever arms of the various baggage holds or compartments).

- (g) Details of any significant effect on the aircraft e.g. of any change in configuration, such as retraction of the landing gear.

## 2 WEIGHT AND CENTRE-OF-GRAVITY SCHEDULE-AIRCRAFT EXCEEDING 2730 KG (see 7-10 App., No.1)

A Weight and Centre-of-Gravity Schedule shall be provided for each aircraft the Maximum Total Weight Authorised of which exceeds 2730 kg, except that for an aircraft the Maximum Total Weight Authorised of which exceeds 5700kg the information contained in Parts B and C of the Schedule may, for a new aircraft, be given as part of the Weight and Balance Report.

NOTE: (1) The Weight and Centre-of-Gravity Schedule may be in the form set down in 7-10 App., No. 1, but variations are permitted within the Requirements.

(2) Where reference is made in 7-10 App., No. 1, to the Flight Manual, but such a document has not been issued, it will be necessary to refer to the Certificate of Airworthiness.

2.1 Each Schedule shall be identified by the aircraft designation, nationality and registration marks, or if these are not known, by the constructor's serial number. The date of issue of the Schedule shall be given and the Schedule shall be signed by a representative of an approved Organisation or a person acceptable to the CAAF. A statement shall be included indicating that the Schedule supersedes all previous issues.

2.2 The date and reference number of the Weight and Balance Report, or, as appropriate to the weight, other acceptable information upon which the Schedule is based, shall be given.

NOTE: For aircraft for which a Weight and Balance Report is not mandatory, the Weighing Record would normally be used (see 5-4, 3.5)

2.3 A copy of each issue of the Schedule shall be retained by the operator, and where the Schedule is re-issued the previous issue shall be retained with the aircraft records. A copy of the current Schedule and any related list of Basic Equipment (see 2.7), shall be sent to the CAAF Air Safety Department.

2.3 For aircraft the Maximum Total Weight Authorised of which does not exceed 5700 kg, a copy of the Schedule shall be included in the Flight Manual, if a Flight Manual is applicable, or if this is not the case, displayed or retained in the aircraft in a suitably identified stowage.

- 2.4 Operators shall issue a revised Weight and Centre-of-Gravity Schedule when the weight and c.g. is known to have changed to an extent greater than that which has been agreed by the CAAF as applicable to a particular aircraft type.
- 2.5 If the aircraft has not been re-weighed, the revised Weight and Centre-of-Gravity Schedule shall contain a statement that calculations have been based on the last Weight and Balance Report, or other information (see 2.2), and the known weight and c.g. changes.
- 2.6 The datum to which the c.g. limits relate is defined in Part A (see 2.7) and this may be different from the datum defined in the Certificate of Airworthiness or Flight Manual. When a different datum is used it shall be adequately defined, its precise relationship to the datum in the Certificate of Airworthiness or Flight Manual shall be given, and any lever arms and moments which appear in any part of the Schedule shall be consistent with the datum so declared.

NOTE: In the case of helicopters, it may be necessary to present lever arms and moments about more than one axis, depending on the c.g. limits specified in the Flight Manual.

## 2.7 Part A Basic Weight

The Basic Weight and the associated position of the c.g. of the aircraft as derived from the most recent Weight and Balance Report or other information together with any subsequent weight and c.g. changes, shall be stated. The position (retracted or extended) of the landing gear associated with this information shall be stated.

2.7.1 Where the Maximum Total Weight Authorised does not exceed 5700 kg, Part A shall also include the list of Basic Equipment showing the weight and lever arm of each item, or this information may form separate pages attached to the Weight and Centre-of-Gravity Schedule, with a suitable reference in Part A of the Schedule to this procedures.

2.7.2 Where the Maximum Total Weight Authorised exceeds 5700 kg, Part A shall include the list of Basic Equipment showing the weight, lever arm and moment of each item, or shall make reference to the document in which such a list is included.

## 2.8 Part B Variable Load

The variable Load may be detailed for as many roles as the operator wishes, but for every role the weights and moments shall be given. Weights of crew members may be assumed to be not less than the weights shown in the Air Navigation Regulations, provided that the Maximum Total Weight Authorised exceeds 18000 kg or the aircraft has a total seating capacity for 30 or more persons. Otherwise the weight of each person must be determined by weighing.

## 2.9 Part C Loading Information

This shall include all relevant information so that, knowing the Disposable Load which is intended to be carried, the weight and the position of the centre-of-gravity of the aircraft can be calculated. At least the following shall be given:-

- (a) The lever arm of the c.g. of a passenger in each seat.
  - (b) The mean lever arm of each compartment or area in the aircraft where Disposal Load, such as luggage or freight, may be placed.
  - (c) Any significant change in the c.g. of the aircraft (change in moment) which will result from a change in configuration, such as the retraction and extension of the landing gear.
  - (d) The lever arm of the c.g. of fuel, oil and other consumable fluids or substances in each tank, including any significant variation of the lever arm with the quantity loaded.
  - (e) The maximum total usable capacities of the tanks for fuel, oil and other consumable fluids or substances and the weight of fluids or substances when the tanks are filled to their capacities assuming typical densities.
- 2.10 A statement shall be made in the Schedule to the effect that it is a requirement of the Air Navigation Regulations that the commander satisfies himself before take-off that the load is of such weight, and is so distributed and secured, that it may safely be carried on the intended flight.
- 2.11 The weights, distances, moments and quantities may be given in any units provided that these are used consistently and do not conflict with the markings and placards on the aircraft.

### **3 WEIGHT AND CENTRE-OF-GRAVITY SCHEDULE-AIRCRAFT NOT EXCEEDING 2730 KG (see 7-10 App., No. 2,1)**

For aircraft the Maximum Total Weight Authorised of which does not exceed 2730 kg, either a Weight and Centre-of –Gravity Schedule which complies with 2 and 3.2, or a Loading and Distribution Schedule which complies with 3.1 shall be provided.

#### **3.1 Loading and Distribution Schedule (See 7-10 App., No. 2, 2)**

- 3.11 The Loading and Distribution Schedule (hereinafter in this paragraph 3.1 referred to as “the Schedule”) shall contain at least the information in **7-10** App., No.2.
- 3.1.2 Each Schedule shall be identified by the aircraft designation, nationality and registration marks, or if these are not known, by the constructor’s serial number.
- 3.1.3 A copy of each issue of the Schedule shall be retained by the operator, and when the Schedule is re-issued the previous issue shall be retained with the aircraft records. A copy of the current Schedule and any related list of Basic Equipment shall be sent to the CAAF Air Safety Department.
  - (a) A copy of the Schedule shall be included in the Flight Manual, if a Flight Manual is applicable, or, if this is not the case, the Schedule shall be displayed or retained in the aircraft in a suitably identified stowage.
- 3.1.4 Operator shall issue a revised Schedule when:-
  - (a) The Basic Weight of the aircraft is known to have undergone changes in excess of 0.5% of the Maximum Total Weight Authorised, or
  - (b) The total moment applicable to the Basic Weight is known to have changed to an extent greater than that which has been agreed by the CAAF as applicable to a particular aircraft type.
- 3.1.5 If the aircraft has not been re-weighed the revised Schedule shall contain a statement that calculations have been based on the last Weighting Records and the known weight and moment changes.
- 3.1.6 Instructions for the use of the Schedule, together with the Loading Graphs, shall be included.
- 3.1.7 A statement shall be given in the Schedule to the effect that it is a requirement of the Air Navigation Regulations that the commander satisfies himself before the aircraft takes off that the load is of such a weight, and is so distributed and secured that it may safely be carried on the intended flight.
- 3.1.8 The weight, distances, moments and quantities may be given in any units provided that these are used consistently and do not conflict with the markings and placards on the aircraft.

### 3.19 Part A Basic Data

Part A shall contain the following:-

- (a) The Basic Weight and the associated moment, and c.g. position of the aircraft, as derived from the most recent Weighing Record, together with any subsequent changes.
- (b) The Maximum Total Weight Authorised appropriate to each permitted use (eg. aerobatics).
- (c) The definition of the c.g. datum.
- (d) The date and reference number of the Weighing Record and list of Basic Equipment upon which the Schedule is based.
- (e) The date and reference of the Loading Graphs of the Loading and Distribution Schedule shall be given.
- (f) A statement of the date of preparation and validity of the Schedule, signed by representative of an approved Organisation, or a person acceptable to the CAAF. A statement shall also be included indicating that the Schedule supersedes all previous issues.

#### 3.1.10 Part B Loading

Columns shall be provided which list all standard items of Variable Load and make provision for the associated weigh and c.g. moments to be recorded and totalled for a particular flight. Columns shall also be provided for recording an example of a typical aircraft loading calculation. This example shall employ the same weight and c.g. moments figures as recorded in the Loading Graphs (see 3.1.11).

#### 3.1.11 Part C Loading Graphs

Graphs, sufficient to ascertain moments, and to enable the operator to determine that the aircraft loaded weight and c.g. moment are within the prescribed limits shall be provided. The graphs shall be identified by aircraft designations, date of compilation and source. Suitable sources are the aircraft constructor or other competent person. An example application shall be included using the same figures as employed in the Loading and Distribution Schedule example.

In addition to compliance with 2 the Weight and Centre-of-Gravity Schedule for aircraft the Maximum Total Weight Authorised of which does not exceed 2730 kg, shall contain instructions for the determination of the loaded weight, the total load moments and resultant c.g. positions.

## APPENDIX NO. 1 TO CHAPTER 7-10

### WEIGHT AND CENTRE-OF-GRAVITY SCHEDULES FOR AIRCRAFT EXCEEDING 2730 KG

#### 1 INTRODUCTION (see 6-4,5)

This 7-10 App., No. 1 presents a specimen Weight and C.G. Schedule which constitutes an acceptable means of compliance with the appropriate requirements of 6-4,5, and where elected with 6-4,6.

**NOTE:** Metric Units are shown on the specimen. Where it is necessary to use Imperial Units these should be used throughout.

#### SPECIMEN SCHEDULE

Reference	:	NAL/286
Produced by	:	Coconut Aviation Ltd
Aircraft Designation	:	Flynow 2E
Nationality and Registration Marks	:	DQ-BUZ
Constructor	:	F.L.Y. Co. Ltd.
Constructor's Serial Number	:	44
Maximum Total Weight Authorised	:	3310 kg
Centre-of-Gravity Limits	:	Refer to Flight Manual reference Number 90/946

#### PART A BASIC WEIGHT

The Basic Weight of the aircraft as calculated from Weight and Balance Report/Weighing Record\*

NAL/W/95 dated 21 March 2000 is : 2500 kg

The c.g. of the aircraft in the same condition at : 318 cm aft of datum  
This weight and with the landing gear extended is :

The total moment about the datum in this  
Condition in kg cm/100 is : 7950

**NOTE:** The datum is at fuselage station 0 situated 285 inches forward of the wing leading edge. This is the datum defined in the Flight Manual. All lever arms are distances in inches aft of datum.

\* Delete as appropriate

The Basic Weight includes the weight of 22.5 litres unusable fuel and 4.5 litres unusable oil and the weight of the following items which comprise the list of Basic Equipment:-

	WEIGHT (kg)	LEVER ARM (cm)
Two Marzell propeller type BL-H3Z30	58 each	190
Two engine driven 100 ampere alternators Type GE-361	12 each	293
One 13 Ah Ni-Cd battery CB-7	14	383
etc.	etc.	etc.

#### PART B VARIABLE LOAD

The weight, lever arms and moments of items of Variable Load are shown below. The Variable Load depends upon the equipment carried for the particular role.

	WEIGHT (kg)	LEVER ARM (cm)	MOMENT (100 kg cm)
Pilot (one)		270	
De-icing fluid 7 litres	5	351	18
Life-jackets (7)	6	338	20
Row 1 passenger seats (two)	60	433	260
Row 2 passenger seats (two)	60	538	323
Row 3 passenger seats (two)	60	621	373
Table	5	641	32
One stretcher and attachments (in place of seat rows 2 and 3)	18	558	100
Medical stores	7	626	44

**PART C - LOADING INFORMATION (DISPOSABLE LOAD)**

The total moment change when the landing gear is retracted in kg cm/100 is: -16.

The appropriate lever arms are:-

	<b>WEIGHT (kg)</b>	<b>LEVER ARM (cm)</b>	<b>CAPACITY (litres)</b>
Fuel in tanks 1 and 2	614*	363	855
Engine Oil	22*	175	25
Forward baggage		53	
Rear baggage		654	
Passengers in Row 1 seats		433	
Passengers in Row 2 seats		538	
Passengers in Row 3 seats		621	
Patients in stretcher		558	

**NOTE:** To obtain the total loaded weight of aircraft, add to the Basic Weight the weights of the items of Variable and Disposable Load to be carried for the particular role.

This Schedule was prepared (date) ..... and supersedes all previous issues.

Signed: ..... Inspector/Engineer

On behalf of .....

Approval Reference .....

**NOTE:** (Not part of the specimen Schedule) In Part B, Variable Load, of this Schedule the actual weight of the pilot is required in accordance with the Air Navigation Regulations for aircraft the Maximum Total Weight Authorised of which does not exceed 18000 kg or with less than 30 persons seating capacity. Hence the pilot's weight and calculated moment are omitted in the example.

\* Densities - Petrol 0.718 kg/litre; Kerosene 0.808 kg/litre; Oil 0.898 kg/litre

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**APPENDIX NO. 2 TO CHAPTER 7-10**

**WEIGHT AND CENTRE-OF-GRAVITY AND LOADING AND DISTRIBUTION SCHEDULES-  
AIRCRAFT NOT EXCEEDING 2730 KG**

**1 INTRODUCTION (See 6-4,6)**

**This App., No. 2 contains acceptable means of compliance in respect of Weight and Centre-of-Gravity and Loading and Distribution Schedules provided in accordance with 6-4, 6.**

**2 LOADING AND DISTRIBUTION SCHEDULE (See 6-4, 6)**

**The Schedule (including the graphs) and the List of Basic Equipment should, as far as is practical, take the form of Figs. 1, 2 and 3.**

**AIRCRAFT LOADING AND DISTRIBUTION SCHEDULE FOR AIRCRAFT NOT EXCEEDING 2730 KG**

Aircraft Type:..... Aircraft Registration:..... C/N .....

5

**PART A BASIC DATA**

ITEM	WEIGHT	MOMENT	C G POSITION
Basic Aircraft			
MTWA	Normal Use		The C.G. datum is defined as..... .....
	Aerobatic Use		

NOTE: Basic Aircraft Weight and C.G. Position were determined from the following documents contained in the aircraft records.

(a) Weighing Record Ref: ..... Date: .....

(b) Basic Equipment List Ref: ..... Date: .....

(c) Loading and Distribution Charts Figs. 1 and 2 Ref: ..... Date: .....

This Schedule was prepared and the Loading and Distribution Charts Figs. 1 and 2 were current on ..... and supersede all previous issues.

Signed: ..... Authority:.....

**PART B LOADING**

- To obtain moments of items, refer to Fig 1 , and read off moment from corresponding weight. Repeat this for all items of load, and record both weight and moment in the appropriate columns below.
- Total the weight column. TOTAL THE MOMENT COLUMNS, ASCERTAIN THE RESULTANT MOMENT, and apply the results to Fig 2 in order to ascertain that the resulting intersection point falls within the permissible loading envelope, appropriate to the certification Category. The envelope(s) take account of fuel usage in flight Examples of the use of the Figures are shown by arrowed lines.

ITEM	EXAMPLE AIRCRAFT		YOUR AIRCRAFT	
	WEIGHT	MOMENT (+) (-)	WEIGHT	MOMENT (+) (-)
Basic Weight (See Part A)				
Fuel – Standard (@ 7.2lb/imp gallon) (@ 6.0lb/US gallon) (@ 0.718kg/litre)				
Fuel – Long Range (@ 7.2lb/imp gallon) (@ 6.0lb/US gallon) (@ 0.718kg/litre)				
Pilot and Passenger (Row 1)				
Passenger (Row 2)				
Passenger (Row 3)				
Baggage				
TOTALS OF MOMENTS				
TOTAL WEIGHT & RESULTANT MOMENT				

In accordance with the ANR it is a requirement that the pilot satisfies himself before take-off that the load is of such a weight, and is so distributed and secured, that it may safely be carried on the intended flight. Full conformity with the instructions contained in the this document will ensure compliance with the Flight Manual in respect of aircraft loading.

Fig. 1 (7-10 App., No. 2) FRONT OF SCHEDULE

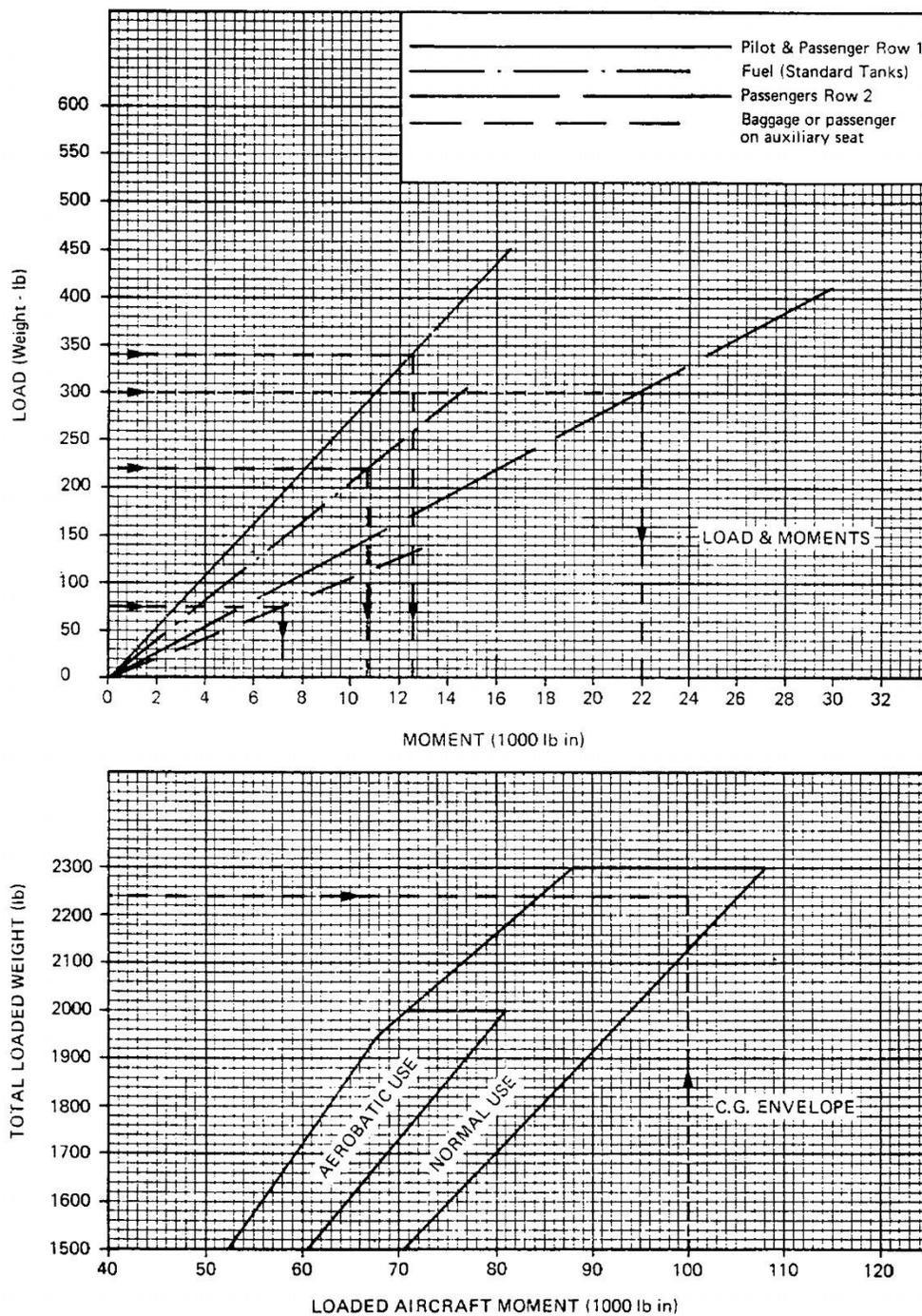


Fig. 2 (7-10 App., No. 2) REVERSE OF SCHEDULE

<u>LIST OF BASIC EQUIPMENT</u>	Ref:	Date:	
Aircraft Type:.....	Aircraft Registration: .....	C/N	
.....			
<u>PART A BASIC DATA</u>			
1. The aircraft is as defined in Type Certificate Data Sheet (or equivalent) .....			
2. The Weighing Record from which the Basic Aircraft Weight is calculated is Ref: ..... Date:.....			
3. The Basic Aircraft Weight is ..... made up as follows:- (a) Basic aircraft, including standard equipment (e.g. seat lap straps) (b) Items of non-standard equipment, as listed in Part B.			
4. The moment of the aircraft as at 3 is .....			
<u>PART B NON-STANDARD EQUIPMENT INCLUDED IN WEIGHT STATED IN PART A</u>			
<b>ITEM</b>	<b>WEIGHT</b>	<b>MOMENT</b>	<b>DATE OF CHANGE OR EMBODIMENT</b>
		(+)	(-)
<u>PART C NON-STANDARD EQUIPMENT NOT INCLUDED IN WEIGHT STATED IN PART A</u>			
<b>ITEM</b>	<b>WEIGHT</b>	<b>MOMENT</b>	<b>DATE OF CHANGE OR EMBODIMENT</b>
		(+)	(-)
<p><b>NOTE:</b> When re-calculation of Basic Aircraft Weight is made (see SD – AIRWORTHINESS OF AIRCRAFT, Chapter 6-4), items in Part C should be included in the re-calculation and moved to Part B.</p>			

Fig.3 (7-10 App., No. 2) LIST OF BASIC EQUIPMENT

3 WEIGHT AND CENTRE-OF-GRAVITY SCHEDULE (See 7-10, 3.2)

**An acceptable means of compliance with 7-10, 3.2 would be included in the Schedule instructions on the following lines:-**

**SPECIMEN INSTRUCTIONS**

- 1. By reference to Weight and Centre-of-Gravity Schedule, ascertain the lever arm of each item (Basic Weight, Variable Load, Disposable Load).**
- 2. To obtain moment of an item, multiply the weight of the item by the corresponding lever arm, and record the moment for each item of load, giving the moment a positive sign if the item is aft of the datum, and a negative sign if it is forward of the datum. Enter the weight of the item in the weight column.**
- 3. Total the weight column.**
- 4. Total the moment columns. If (+) and (-) moments are recorded total each column and obtain the total resultant moment, by subtracting the lesser from the greater.**
- 5. Divide the total (or total resultant) moment by the total weight to obtain c.g. position positive or negative, relative to the datum, and check that this is within the prescribed c.g. limits.**
- 6. To check that the fuel consumed during a flight does not cause the c.g. position to be outside the prescribed limits, re-total the weights in 3 and the moments in 4, but omitting the total fuel weight and the corresponding moment(s), respectively. Add the weight and moment of the fuel expected to remain in the tanks at the end of the flight. Divide the final Total resultant moment by the final total weight to obtain the c.g. position, and check that it is still within the prescribed c.g. limits.**

**NOTE: Where there are any other significant quantities of consumable fluids or substances (e.g. crop spraying), similar account should be taken of them.**

## CHAPTER 8-15

### AEROPLANES & ROTORCRAFT NOT EXCEEDING 2730 kg - MAINTENANCE ORGANISATIONS - GROUP M3

#### 1. INTRODUCTION (See Chapter 8-15 Appendix 1 Paragraph 1)

- 1.1 The requirements of this Chapter 8-15 are applicable to the Approval of Organisations to perform the functions specified in 1.2, in respect of aeroplanes and rotorcraft the Maximum Total Weight Authorised of which does not exceed 2730 kg.
- 1.2 An Organisation may, subject to compliance with the requirements of this Chapter 8-15, be Approved in respect of aeroplanes and rotorcraft certificated in the Private Category:-
- (a) To undertake assessments and to make recommendations to the CAAF in respect of the renewal of Certificates of Airworthiness in accordance with Chapter 3-4.
  - (b) To perform, in respect of the maintenance of aircraft see Chapter 6-2 such maintenance checks (see 8-15 App., 1) as are prescribed in the Approved Maintenance Schedule and which are required to be completed by an Organisation Approved by the CAAF for the purpose.
  - (c) To perform the Maintenance in accordance with Chapter 3-4.

#### 2. APPLICATION

Application for Approval shall be made on CAAF Form AW 101L and AW 102J, copies of which may be obtained from the CAAF, which when completed in duplicate should be returned to the same address.

**NOTE:** Organisations currently Approved for the overhaul of aircraft in accordance with Chapter 8 which desire Approval in accordance with this Chapter 8-15 should also follow this procedure.

#### 3. GRANT OF APPROVAL

##### 3.1 Personnel (See Chapter 8-15 Appendix paragraph 2 and 3)

- 3.1.1 The Applicant shall nominate, for CAAF acceptance, personnel who will be employed specifically for the purposes of 1.2(a), (b) and (c), in accordance with this paragraph 3.1.1.
- (a) The holder of a CAAF Aircraft Maintenance Engineers' Licence, with Type Ratings in at least both Categories A and C, with acceptable experience in the light aircraft maintenance field, who will be responsible for recommendations to be made in accordance with 1.2(a).
- NOTE:** More than one such person may be nominated.
- (b) Any additional holders of CAAF Aircraft Maintenance Engineers' Licences with Type Ratings appropriate to certifications to be made in accordance with 1.2(b) and (c), and who will be responsible for making such certifications.
- 3.1.2 Where, in some instances certifications, including Categories X and R, may need to be made by personnel not Permanently employed by the Organisation, the Applicant shall satisfy the CAAF that acceptable arrangements exist between the particular person and the Organisation.

- 3.1.3 The Applicant shall satisfy the CAAF that licensed and unlicensed staff are of sufficient numbers and are so experienced that they may reasonably be expected to undertake the volume and type of work appropriate to the certifications to be made (see Chapter **8-15** Appendix paragraph 3.3).
- 3.2 Organisation and Procedures (see Chapter **8-15** Appendix paragraph 3)
- 3.2.1 The Applicant shall satisfy the CAAF that the technical and administrative procedures in respect of:-
- (a) matters affecting continued airworthiness,
  - (b) evaluation of technical information issued by manufacturers and Airworthiness Authorities, are compatible with the likely volume of work.
- 3.2.2 Where an Organisation is already Approved in accordance with this Chapter, procedures relating to the C of A issue or renewal inspections and to the subsequent recommendation shall be added to the Exposition of the Organisation.
- 3.2.3 Where applicable the terms of reference of persons nominated in accordance with 3.1.1, as applicable to the activities covered by the Approval shall be the subject of agreement by the CAAF.
- 3.2.4 An Organisation approved as a Group M3 Organisation placing orders on suppliers and unapproved organisations shall satisfy itself that the origin of each item supplied is identified and that the item is acceptable and suitable for the intended purpose.

NOTE. CAAF Approved Organisations when undertaking work outside their terms of Approval are deemed to be unapproved.

- 3.3 Accommodation
  - 3.3.1 Hangar accommodation, with adequate lighting and power supplies and of sufficient size to house the maximum number of aircraft expected to be worked on at any one time, shall be provided. Approval of the main premises may, for a particular case and with the agreement of the CAAF, be extended to cover other premises.
  - 3.3.2 The accommodation shall include suitable areas where publications and drawings may be studied and where aircraft maintenance documents may be prepared and stored.
  - 3.3.3 Adequate storage arrangements, together with the necessary records and systems for controlling aircraft components, parts and materials shall be provided.
- 3.4 Equipment
  - 3.4.1 Adequate equipment, including general maintenance equipment and specialised tools shall be provided.
  - 3.4.2 The calibration of test equipment shall be checked as frequently as is necessary to maintain confidence in the of the equipment.

## APPENDIX 1 TO CHAPTER 8-15

### ASSESSMENT OF SUITABILITY FOR APPROVAL

#### 1. INTRODUCTION (See Chapter 8-15, 1)

The purpose of Approval in accordance with Chapter 8-15 is to ensure, for an aeroplane or rotorcraft for which application for issue or first renewal of the Certificate of Airworthiness is made on or after 1st April, 1978, that as a condition of renewal of the C of A at the end of the 12 month period of validity:-

- (a) for aeroplanes or rotorcraft certificated in the:-
  - (i) Transport and Aerial Work Categories, the Checks prescribed in the Approved Maintenance Schedule,
  - (ii) Private Category, the Check prescribed in the Approved Maintenance Schedule which is coincident with the C of A renewal, and
- (b) for aeroplanes or rotorcraft certificated in the Transport, Aerial Work and Private Categories, the C of A Inspection, will have been completed only at an Organisation appropriately Approved by the CAAF for the purpose.

#### 2. PERSONNEL. (See Chapter 8-15, 3.1)

The recommendation for the renewal of the Certificate of Airworthiness has to be made after consideration of, and compliance with, the requirements of Chapter 3-4. The Maintenance Checks to be completed by holders of the Fiji, Type Rated Licences appropriate to the inspection. As a minimum, the Organisation should have on its staff, personnel holding Fiji Type Rated Licences in Categories A and C covering the aircraft types involved. In particular the person nominated in accordance with Chapter 8-15, 3.1.1(a) will have to hold an appropriate CAAF Aircraft Maintenance Engineers' Licence with Type Ratings in at least Categories A and C, with experience acceptable to the CAAF.

#### 3. ORGANISATION AND PROCEDURES (See Chapter 8-15, 3.2)

- 3.1 The Applicant will have to satisfy the CAAF that the management of the Organisation will be conducted with due regard to the needs of continuing airworthiness.
- 3.2 The Organisation will have to be such, in the opinion of the CAAF, as to ensure that in all matters affecting airworthiness full and efficient co-ordination exists between individual licensed aircraft maintenance engineers and other members of the staff.
- 3.3 In all areas of direct CAAF delegated functions, e.g. the evaluation and reporting of flight tests, the Applicant will have to satisfy the CAAF that the persons nominated to exercise the authority are

competent and adequately experienced. Suitable procedures, including provision for verification, will have to be defined and applied to ensure the accuracy of documents prepared for such delegated functions.

3.4 When assessing an Organisation for Approval the CAAF will examine the methods used to control maintenance and this will include:-

- (a) An assessment of the information contained in CAAF Form AW 101L.
- (b) The structure of the Organisation.
- (c) The number of licensed aircraft maintenance engineers employed and the scope of the licences held by these engineers, appropriate to the Approval.
- (d) The adequacy of the facilities, accommodation and equipment necessary to cover those types of aircraft appropriate to the Approval.
- (e) The holding of technical publications data for those types of aircraft appropriate to the Approval.
- (f) The methods of assessing information promulgated by the manufacturers and Airworthiness Authorities to ensure continued airworthiness.
- (g) Procedure for the preservation of technical records.

3.5 Publications and information

3.5.1 The Organisation shall make available to the staff concerned the necessary technical data, e.g. CAAF publications, approved manuals, specifications, data sheets and related literature appropriate to the class of work for which Approval is sought.

- (a) The technical data shall consist of that issued from the manufacturers by way of maintenance manuals, micro fiche, service bulletins and other forms of continuing airworthiness information.
- (b) Written agreements shall be made by the Organisation with the appropriate manufacturers, or other recognised suppliers, for the supply of amendments and changes to the publications held. A suitable system for amending the documents shall be provided.

- (c) Where technical data is held on loan it shall be the responsibility of the user to ensure that the documents concerned are amended up to date.

#### **4. CONTINUATION OF APPROVAL**

- 4.1 The Organisation shall be maintained to the standard necessary to undertake the work for which it is Approved, and the CAAF shall, at all reasonable times, have access to the Organisation for the purpose of assessing this standard at any given time.
- 4.2 Changes of personnel nominated in accordance with 3.1.1 shall be notified to the CAAF in writing for acceptance.
- 4.3 The CAAF shall be consulted where there is any difficulty about the interpretation of the requirements, the associated procedures, or on any airworthiness matter, which involves new problems or techniques.
- 4.4 The CAAF may revoke, suspend or vary the Terms of Approval if the conditions prescribed for Approval are not maintained.