ISO 9001: 2015 CERTIFIED

FIJI AIRWORTHINESS NOTICE

CIVIL AVIATION AUTHORITY OF FIJI
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FAN 01/21

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1 June 2021

ALTERNATIVE MEANS OF COMPLIANCE FOR THE CONDUCT OF CERTIFICATE OF AIRWORTHINESS FLIGHT TEST – REQUIREMENTS AND ADDITIONAL INFORMATION

1 INTRODUCTION

1.1 This Airworthiness Notice is being issued pursuant to Regulation 146 of the Air Navigation Regulations 1981, after taking into account that this is not likely to affect aviation safety, prescribes the requirements and procedures for providing an Alternative Means of Compliance for the Conduct of Airworthiness Flight Test.

1.2 This Airworthiness Notice prescribes the requirements for the promulgation of procedures for providing an Alternative Means of Compliance for the Conduct of Airworthiness Flight Test.

1.3 A Variation or Non-compliance with the SD-Airworthiness of Aircraft, Chapter 3-5, requirements of the Flight Test are permissible, with a CAAF Exemption Approval.

2 BACKGROUND

2.1 The Certificate of Airworthiness (CoA) is a requirement pursuant to ANR 12, ANR 13, and ANR 14 and SD-Airworthiness of Aircraft.

2.2 The aforementioned regulations state that the Authority may issue, subject to conditions as it thinks fit, a certificate of airworthiness in respect of an aircraft, if it is satisfied that the aircraft is airworthy having regard to certain conditions which include the Conduct of an Airworthiness Flight Test. In some instances, operators, may opt to be exempted from this requirement, therefore this Airworthiness Notice, is being issued as a guideline.

3 APPLICABILITY

3.1 This Airworthiness Notice is applicable to all Fiji-registered aircraft.

4 PROCEDURES

4.1 The Flight Test requirements in the SD-Airworthiness of Aircraft, shall be entered into the relevant forms provided by the Authority.

4.2 The CoA Flight Test exemption must be approved by the Authority. This approval is processed on receipt of the CAAF Form CA108 – *Application for Exemption,* a Safety Case (For details of a Safety Case, see Paragraph 7 of this Airworthiness Notice) and supporting documents listed in 4.3.

4.3 The CoA Flight Test Exemption Approval may include (but not limited to) the following elements, as Alternative Means of Compliance (AMC) in lieu of the prescribed elements Chapter 3-5 of the SD-Airworthiness of Aircraft:

a. Original Equipment Manufacturer (OEM) supporting data for the AMC;

b. Engine Oil Consumption Monitoring;

c. MRB/Propeller balancing reports;

d. Engine Condition Trend Monitoring (ECTM);

e. Health and Usage Monitoring System (HUMS);

f. Reliability Maintenance Program;

g. Defect Investigation meetings/reports review committee;

h. Flight Data Analysis (FDA);

i. Flight Data Recorder (FDR);

j. Airframe Health Monitoring;

k. Technical approved training is required for the Planning and Technical services personnel in the skills of engine trend monitoring, gathering of data to produce a reliability report and engine oil consumption. Personnel training record for the technical services and other relative support functions essential to the technical support is required.

l. Approved data – Maintenance Publications and maintenance programs are maintained to the latest revisions. Airworthiness directives and mandatory service bulletins are adhered to, including in-service airworthiness letters.

m. The technical services functions stated in [a] is added as an addendum to the MMOE which is subject to CAAF approval.

n. A Full CAAF audit of the technical support functions and aircraft inspection is to be conducted as a condition of the AMOC approval.

4.4 The CoA Flight Test Exemption Application must clearly state the following:

a. State the Regulation that the AMC refers to;

b. Briefly outline the issue that the AMC intends to address;

c. State the paragraph(s) of the implementing rules to which the AMC refers to;

d. State whether or not there is already a CAAF AMC on the same issue. If yes, include the reference(s);

e. State the exact wording in the required format for the Acceptable Means of Compliance (AMC);

f. Summarise the AMC, describing how it proposes to achieve compliance with the implementing rule;

g. Give any additional relevant information.

h. Indicate the number of documents attached and include a brief description of each of them (e.g. organisation's internal procedures, Risk Assessment, studies/safety assessments/case);

i. The application should be completed and signed by the Quality Assurance Manager.

4.5 The Authority shall review each exemption application on a case by case basis and request additional information as necessary, and may require a special audit in order to fully assess the exemption application. The operator shall be notified in writing on the outcome of the decision.

NOTE:

The CoA application document shall be submitted, a month before the expiry date. The Flight Test shall be completed, at least 10 days before the CoA expiry date and hard copies must be submitted at least 1 week before the CoA expiry date. Failure to comply with these deadlines may result in a delay in the issue of the C of A.

5 RENEWAL OF CERTIFICATE OF CERTIFICATE OF AIRWORTHINESS

A renewal period of 12 months will be issued once the Authority review process is found to be satisfactory. The operator will be notified, prior to the expiry date of findings, or other matters that are not acceptable during the CoA review process. It may be necessary that all findings that affect the airworthiness of the aircraft are closed, with evidence submitted to the Authority, prior to the issue of the certificate.

6 EXTENSION OF CERTIFICATE OF AIRWORTHINESS

Extension of a CoA, for a short period of up to 1 month, may be issued based on special circumstances where, **the Authority is not able to access the aircraft and its supporting documents.** An extension application letter shall be submitted to the Authority, together with the justification and support documents, that may be required in lieu of the normal, CoA renewal process.

The Authority may consider additional extensions, provided the AMO, continues to prove that the Continuous Airworthiness requirements are being met. These provisions shall be limited to no more than 3 extensions, whilst extreme circumstance restrictions such as the ones related to Covid19 are in force. Beyond the third extension, the operator shall arrange to have the aircraft made available to the CAAF in order to conduct the full review process. The normal review and assessment fees shall apply.

7 SAFETY CASE

7.1 The purpose of a safety case can be defined in the following terms:

A safety case should communicate a clear, comprehensive and defensible argument that a system is acceptably safe to operate in a particular context.

7.2 The following are important aspects of the above definition:

a. '**argument'** – Above all, the safety case exists to communicate an argument. It is used to demonstrate how someone can reasonably conclude that a system is acceptably safe from the evidence available.

b. '**clear'** – A safety case is a device for communicating information, usually to a third party (e.g. a regulator). In order to do this convincingly, it must be as clear as possible.

c. '**system'** – The system to which a safety case refers.

d. '**acceptably'** – Absolute safety is an unobtainable goal. Safety cases are there to convince someone that the system is safe enough (when compared against some definition or notion of tolerable risk).

e. '**context'** – Context-free safety is impossible to argue. Almost any system can be unsafe if used in an inappropriate or unexpected manner. It is part of the job of the safety case to define the context within which safety is to be argued.

7.3 REQUIREMENTS, ARGUMENT AND EVIDENCE

Underlying the descriptions of the safety case given above are a view of the safety case consisting of three principal elements: Requirements, Argument and Evidence. The relationship between these three elements is depicted in Figure 1.

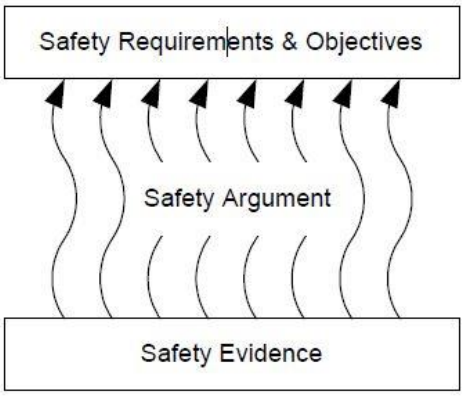

Figure 1 – The Role of Safety Argumentation

The safety argument is that which communicates the relationship between the evidence and objectives.

7.4 Both argument and evidence are crucial elements of the safety case that must go hand-in-hand. Argument without supporting evidence is unfounded, and therefore unconvincing. Evidence without argument is unexplained – it can be unclear that (or how) safety objectives have been satisfied.

7.5 Whilst there are variations between the recommendations of the standards the following list illustrates the most typical headings expected within a safety case report:

a. Scope:

The 'Scope' section plays an important role within the safety case. As mentioned earlier, a safety case cannot argue the safety of a system in any context.

b. System Description:

It is usual to present an overview of the system within the safety case.

c. System Hazards and Safety Requirements:

The purpose of the 'Safety Hazards' and 'Safety Requirements' is straightforward. In the section on hazards the safety case must describe the key hazards posed by the system in question. The primary information relating to hazards should remain the Hazard Log. The purpose of this section is simply to summarise the identified hazards. All safety requirements should similarly be brought together and summarised in the 'Safety Requirements' section. Safety requirements may arise from a wide range of sources – the customer, safety standards, derived from hazard analysis, and/or requirements cascading down higher-level systems.

d. Risk Assessment / Hazard Control:

The purpose of the 'Risk Assessment' section is to describe the assessed level of residual risk associated with each of the identified hazards. The residual risk is the risk remaining after the risk reduction measures (described in the next section of the safety case report) have been applied. This section would typically discuss how the assessed level of risk compares with established risk acceptance criteria (e.g. tolerable probabilities for given severity events). If appropriate, ALARP (As Low as Reasonably Practicable) arguments may also be presented within this section.

e. Risk Reduction Measures / Safety Analysis / Test

These two sections ('Risk Reduction Measures' and 'Safety Analysis') present the 'heart' of the product safety argument. The first of these sections presents the technical discussion of the risk reduction measures (whether reduction in probability of hazard

occurrence or mitigation of hazard occurrence) that have been used. The argument (even if only implicitly) is that these measures are sufficient. This argument must be backed by the following section ('Safety Analysis') that presents an overview of the safety evidence available (analysis, test, inspection, in-service evidence etc.) and how it justifies the adequacy and sufficiency of the measures adopted. As with the system description section, it is important to note that the 'Safety Analysis' section presents only a summary of the evidence available – it is typical for the evidence (e.g. test results) to maintained in separate reports and for the safety case to merely refer to them.

f. Safety Management System & Development Process Justification:

The penultimate two sections ('Safety Management System' and 'Development Process Justification') present process safety arguments. From such arguments confidence in the safety of the system is built upon knowledge and the processes used during the assessment of the system.

g. Conclusions

Finally, the safety case report should present the key conclusions and high-level findings that convince the reader that the system is acceptably safe to operate in its intended context.