ACFT-01 AIRCRAFT TYPE CERTIFICATE ACCEPTANCE

1.0 BACKGROUND

Acceptance of type certificates issued by the Civil Aviation Authority of the State of Design for Class I Aeronautical Products was introduced on August 10, 1995, when the Department of Civil Aviation of Lao PDR (DCA), in Lao Civil Aviation Safety Regulations (LCAR) Part 5, 5.4.1.5 (b).

This regulation is incorporated in the Airworthiness Inspection Manual for Type Certificate Acceptance, specifically provides the mandate needed for the Aircraft Engineering Section, Airworthiness Section, of the Flight Safety Division, to exercise the Acceptance function on imported aircraft, including, its engine(s) and propeller(s), in order to determine the adequacy of airworthiness requirements and the compliance level with the adopted FAA Airworthiness Codes and its operational suitability, to our local corrosive, hot and moist environmental conditions. Once this criteria has been established and determined, it therefore becomes eligible for registration and issuance of an individual airworthiness certificate for general aviation and/or air commerce usage.

The pertinent provisions of this manual, provides that the process of type certification and/or type certificate Acceptance of an aircraft, its engines and propellers including its major components, appliances, equipment, accessories and/or appurtenances in connection with its original type certificate or type certificate Acceptance is exclusively delegated to duly licensed Aeronautical Engineers in the Department of Civil Aviation of Lao PDR (DCA), who are endowed and equipped with the basic knowledge to understand the intricacies of aircraft beginning from the design concept and to deal with the complexities involved in the certification process.

The newly developed LCAR Part 5.4.1.8(c) requires that all first-of-a-kind aircraft must undergo the Type Certificate Acceptance process to become eligible for import and obtain Lao registration and standard Certificate of Airworthiness.

1.1 OBJECTIVES

Basically, the objective of the type certificate Acceptance is to understand the process by which the aircraft, including its engines and propellers, as applicable, was issued a type certificate by the Civil Aviation Authority of the State of Design as it relates to the airworthiness standards adopted and the environmental conditions of the Lao PDR. To establish regulatory control of the product once allowed to operate in our landlocked country. The aircraft type certificate acceptance is normally carried out in foreign countries by licensed aeronautical engineers of the respective airline in cooperation with the Airworthiness Section of FSD-DCA, particularly at the facilities of the product manufacturers.

The process includes evaluation and inspection of the facility, review and familiarization of the aircraft beginning from its design concept, manufacturing process and the different tests conducted to overcome the requirements associated for its type certification. In essence, type certificate Acceptance includes the approval of the instructions for the continuing airworthiness, maintainability, accessibility, production quality, repetition of manufacture, inspection and training programs.

1.2 APPLICATION

The supply of the data specified in paragraph 1.7 (A) of this document is an important requirement for the issue of a type certificate Acceptance. It is not necessary for an example of the aircraft type to have been imported.

(A). Aircraft type details

The foreign type certificate and exactly which models the type acceptance certificate is to cover should be carefully specified in the application. The only restriction on the number of models that can be included is that they must all be included on the same foreign type certificate and the data supplied, including flight manuals, must cover all the models.

The category of type acceptance granted will usually follow the category shown on the foreign type certificate, subject to a review of the certification basis by the AES.

(B). Supply of data

Data supporting the application should be supplied at the time of the application, or, if it is not available at that time, a covering letter should be supplied giving the reasons and details of when the data will be available.

The applicant should supply with the application-,

- original or photocopies of the—
  1. type certificate
  2. data sheet
  3. compliance summary document

- originals of the—
  1. flight manual
  2. maintenance manual
  3. parts catalogue
  4. service information for the engine and propeller

A copy of the airworthiness design standards only if it is one not already held by the DCA

An inherent part of type acceptance is continued support of the aircraft and component documentation. This will inevitably require the support of the respective manufacturers who should advise in writing that they will supply updates of manuals.

Where the application is for a model on a foreign type certificate, where another model on the same type certificate has already been type validated, the DCA should be consulted before requesting data from the manufacturer as some or all of the data requirements may already be held by the DCA.

For larger aircraft certificated under FAR Part 25 or an equivalent it is desirable to supply additional data that may subsequently be required for other DCA certificates or approvals. Examples of such additional data are included in Appendix ACFT-01(d) to this document.

1.2 PURPOSE

The development of these procedures are purposely designed to set-up the guidelines and to ascertain the responsibilities of the acceptance team that is tasked to conduct the acceptance activities for the particular aeronautical product being applied for.

1.3 DESIGN STANDARDS

By virtue of LCAR 5.4.1.2 (a) the DCA accepts Type Certificates issued by the FAA, JAA, and EASA. TC or any other state which meets the requirements of LCAR 5.4.1.2 (b)

Therefore the reference design standard is the standard to which the subject aircraft was proven to be in compliance with at the time of the original TC issue.

Where aeronautical products render the above standards inadequate, the Director General of DCA shall impose special conditions and/or requirements necessary to provide an equivalent level of safety

Note: Aircraft Noise Certification is defined in Section 5.4 of Part 5, Lao Civil Aviation Safety Regulations, and corresponding procedures are discussed in Volume 2 Chapter 6 of this Manual.

1.4 TYPE CERTIFICATE ACCEPTANCE PHASES

PHASE I - Pre-Application

- Receive letter from prospective aircraft buyers or aircraft manufacturers inquiring the DCAs importation requirements for a first-of-a-kind type of aircraft to be entered in RDPL-registry.
- Issue reply letter to advise the inquiring party of the DCAs requirements, process to be undertaken for the acceptance activity/agenda and initial documents to be submitted for evaluation.

PHASE II - Formal Application

Formal application begins when the accomplished application form is received from the aircraft manufacturer and officially endorsed by the Certificating Authority which includes the focal contact for the acceptance. At this instance, the Project Manager will perform the following: or Airworthiness Manager.

- Evaluate submitted documents to gain an overview of the project
- Discuss through communications with the applicant some essential issues associated with the acceptance activity.
- Creation of a acceptance team and preparation for the on-site visit
- Details in 1.5 and 1.6

PHASE III – On Site Visit

- Commence the initial/kick off meeting with applicant to officially open the acceptance agenda.
- Continue the series of meetings in accordance with agreed agenda (see 1.6, 5) in order to fully understand the certification of the subject aeronautical product.
- Review pertinent documents related to the certification.
- Prepare an overall assessment report upon completion of the facility visit.
- Details in 1.7

PHASE IV- Issuance of Validated Certificate

- Should there be open issues identified during the visit, the team may issue official letter to the applicant for their compliance, depending on the degree of discrepancies.
- Once all issues have been closed and the required documents have been submitted, a Validated Type Certificate will be processed.
- Details in 1.9 and 1.10

PHASE V – Post Certification

- Implementation of Mandatory Continuing Airworthiness Information issued by State of Design
- Amendments or revisions of Validated Type Certificate shall be made when there are changes to the Type Certificate. Such as: change of Type Certificate Holder; TC Holder Address; inclusion of additional variants which does not require the issuance of another TC; etc...

1.5 APPLICATION

Once an application for type certificate acceptance is received, the Aircraft Engineering Section, Airworthiness Section, Flight Safety Division, DCA will acknowledge receipt of the application (See Appendix ACFT-01(a) which provide the details and information regarding the type acceptance procedures including the date of the technical visit, acceptance activities/agenda, and the documents required as specified in 7. The Team Leader shall provide the Program Manager of the applicant with a proposed schedule of activities. The itinerary of activities for the acceptance visit shall be defined as close as possible in order to avoid conflict and will be on a day-to-day basis depending on the program of activities/agenda for each type of product to be covered. The team shall arrange all required documents for evaluation to be made available on site and determine after the review, which are to be sent to DCA at the completion date of the acceptance. It shall be the responsibility of the Program Manager to provide these documents on site. During the evaluation, there may be additional requirements in order to obtain further information and documents necessary for the safe operation of the aircraft.

1.6 ADMINISTRATION

1. TEAM SELECTION

The success of achieving the objectives will depend largely on the personnel selected to conduct the acceptance project. The size of the team required to perform the scheduled acceptance depends on the number, size and complexity of the aircraft. Normally, a team is composed of a minimum of three (3) aeronautical engineers.

2. ACCEPTANCE TEAM MEMBERS ESSENTIAL QUALITIES

a) Can demonstrate analytical ability
b) Attention to detail and thoroughness
c) Tack and diplomacy in dealing with people
d) Application of knowledge to practical situation
e) Planning and organizing work
f) Ability to write acceptable reports
g) Skill in oral and written communications

3. TEAM BRIEFING

The team leader will brief the team members prior to the technical visit. The briefings shall include the plans and techniques to be used in the acceptance session including specific functions to be assigned to each member in order to ensure their familiarity with all aspects of the acceptance process. The team member shall be cautioned not to suggest or request corrective action to the manufacturer at the time he makes a finding of unsatisfactory result. It shall be noted and included in the team's assessment report.

4. PRE-TRAVEL ARRANGEMENT

To expedite the schedule of the technical visit, the travel arrangement must be agreed upon between the product program manager and the acceptance team leader defining the program of activities, requirements and the expenses to be incurred in the acceptance process. Further, applicant is also required to provide familiarization courses to the acceptance team sufficiently related to the proposed program of activities. A confirmation letter from the applicant/program manager is necessary to effect the request for the necessary travel documents of the team.

5. PROPOSED AGENDA

The agenda should discuss the topics preferably in this order/manner for a clear understanding of the certification process:

1. Overview of the subject (airframe; aircraft systems; engine; aircraft performance; etc.)
2. Compliance to applicable regulations/FARs (presentation of compliance checklist)
3. Presentation of sample reports to DCA
4. Exemptions/equivalent level of safety findings, and Special Conditions issued by the Certifying Authority

SUBJECT/TOPICS

Aircraft

1. Airframe Design and Construction
2. Fatigue Analysis
3. Ground/Flight Loads
4. Emergency Landing Loads
5. Crashworthiness
6. Flutter
7. Interiors and Crashworthiness
8. Fatigue and Damage Tolerance Assessment
9. Performance (takeoff, stalling speed, en route, climb, glide, landing, stalls, T/O path & speeds, TORA, ASDA & one-engine inoperative)
10. Flight characteristics (controllability and maneuverability – all phases)
11. Trim requirements (longitudinal, lateral and directional)
12. Ground, stall and water handling characteristics
13. Stability (static, static lateral & dynamic stability)
14. Structures and Systems Safety Assessment
15. High Intensity Radiated Fields (HIRF)
16. Hydraulic System
17. Flight Control System
18. Landing Gear System

19. Environmental System
20. Fire Protection System
21. Communications/Navigations/Surveillance (RADAR)
22. Warning & Indication System
23. Display Systems
24. Systems Wiring
25. Electrical Power Generation & Distribution Systems
26. Automatic Flight Control System
27. Flight Instrument and Indicators
28. Lightning Systems
29. Recording Systems and ELTs
30. Operating Rules
31. Continued Operational Safety
32. Environmental Standards (Noise, Fuel Venting)
33. Compliance with DCA LCAR Part 7

Engine

1. Powerplant Performance and Limits Evaluation
2. Powerplant Operation Characteristics
3. Powerplant Control System
4. Lightning and HIRF
5. Reversing Systems
6. Fire Protection and Prevention
7. Failure and Safety Analysis
8. Continued Operational Safety
9. Drive Systems
10. Cooling Systems
11. Fuel Systems
12. High Energy Rotors
13. Icing
14. Vibration
15. Induction Systems and Foreign Object Ingestion

Propeller (As applicable)

1. Fatigue tests
2. Endurance tests and functional test
3. Pitch control systems test
4. Special tests, adjustments and replacements
5. Design and construction
6. Design features, materials, specifications
7. Tests and inspection
8. Blade retention test
9. Installation and operations
10. Instructions for Continued Airworthiness

1.7 ON SITE ACTIVITIES

In order for the acceptance team to cover all the agreed agenda and related activities, the schedule must be followed rigorously as possible. The contents of the itinerary will vary depending on the scope of the evaluation.

The Program Manager shall coordinate the meeting between the Acceptance Team (Validating Authority) and the officials of the Certificating Authority. Only certification of product on related matters and national regulatory policy issues will be discussed during this meeting. The technical evaluation and inspection shall be conducted at the manufacturer's facilities for which approval is sought. The acceptance/evaluation shall consist of reviewing the following technical data, as applicable:

a) Certification Basis
b) General Compliance Checklist
c) Brief Ground/Flight Test Program
d) Noise/Acoustical Test Plan
e) Quality Control Assurance
f) Aircraft/Engine Fatigue Test
g) Aircraft Damage Tolerance Test
i) Approval and Surveillance of Production Organization
j) Design Organization Approval
k) Maintenance Reliability Program
l) Aircraft Structure & Landing Gear System
m) Propulsions and System
n) Manufacturing processes
o) Aircraft Characteristics and Performance
p) Aircraft Structural Repair
q) Aircraft Weight and Balance
r) Master Minimum Equipment List
s) Fatigue and Damage Tolerance Test for Components
t) Product Warranty and Support
u) Instructions for Continuing Airworthiness
v) Aircraft Accident Investigation Assistance

After the on-site process, the acceptance team is required to provide the Program Manager a narrative assessment or progress report on the result of the evaluation and review of the product under type acceptance.

REQUIRED DOCUMENTS/MANUALS FOR SUBMISSION TO DCA

A. Aircraft

1. Authenticated copy of the Aircraft Type Certificate
2. Authenticated copy of the Aircraft Type Certificate Data Sheets
3. Copy of the Production Certificate and Production Limitation Records
4. Company Profile/Organizational Set-up
5. Aircraft Three-View Drawing
6. General Compliance Program/Certification Plan
7. Manufacturer's Minimum Equipment List
8. Weight and Balance Manual
9. Flight Test Certification Program
10. Airworthiness Directives (AD) Summary List
11. Service Bulletins
12. Maintenance Manuals

13. Aircraft Flight Manual
14. Aircraft Operations Manual
15. Structural Repair Manual (SRM)
16. Corrosion Protection and Control Program
17. Quality Control/Assurance Manual
18. Noise/Acoustical Certification Results
19. Training Manual
20. Other important documents relevant to the acceptance process.

B. Engine

1. Authenticated copy of the Engine Type Certificate
2. Authenticated copy of the Engine Type Certificate Data Sheets
3. Production Certificate and Production Limitation Records
4. Company Profile/Organizational Set-up
5. General Compliance Program/Certification Plan
6. Airworthiness Directives (AD) Summary List
7. Service Bulletins
8. Overhaul/Shop Manual
9. Maintenance Manuals
10. Quality Control/Assurance Manual
11. Installation Manual
12. Standard Practices Manual
13. Training Manual
14. Other important documents relevant to the acceptance process.

C. Propeller

1. Authenticated copy of the Propeller Type Certificate
2. Authenticated copy of the Propeller Type Certificate Data Sheets
3. Production Certificate and Production Limitation Records
4. Company Profile/Organizational Set-up
5. General Compliance Program/Certification Plan
6. Airworthiness Directives (AD) Summary List
7. Propeller model specification
8. Propeller model parts list
9. Service Bulletins
10. Propeller Maintenance Manuals
11. Propeller Component Maintenance Manual
12. Other important documents relevant to the acceptance process.

1.8 REVIEW & ACCEPTANCE OF MODIFICATIONS/STCs :

It is important to include in the review of all non standards/basic embodiments to the aircraft or components, such as modifications and STCs. This will lessen the technical work and evaluation should the operator preferred or decided to avail of these modifications/STCs in the future.

1.9 WAIVERS/ EXEMPTIONS, OR SPECIAL CONDITIONS GRANTED/ISSUED BY CIVIL AVIATION AUTHORITY OF THE STATE OF DESIGN

Waivers/exemptions from the authority of the State of Design are more likely to be accepted by the DCA provided that the data used to substantiate the exemptions are submitted for

acceptability. Should the compliance be deemed to be inadequate/unacceptable this may be resolved through comparison of specific airworthiness/environmental standard of other CAA which has issued a TC for a similar aircraft. Should the specific airworthiness/environmental requirement generate a waiver/exemption with more stringent conditions then stricter requirements may be imposed. Otherwise the applicant must demonstrate compliance to the subject airworthiness requirement if such waiver/exemption granted by the said CAA rather than the CAA of the State of Design is still unacceptable.

Likewise, special conditions issued/certified by the CAA of the State of Design are normally accepted as part of the TC Acceptance process provided the Special Conditions granted during the time of certification provide the same level of safety as the current requirements, It is therefore imperative that current airworthiness standards be complied with prior to the issuance of a validated TC in order to ensure safety, otherwise additional substantiation must be submitted by the applicant for acceptance by DCA.

1.10 PREPARATION OF ACCEPTANCE REPORT

The acceptance team shall prepare a complete and official acceptance report within 30 days after their return in office furnishing a copy of their report to the Director General of the DCA. The report should contain information and recommendations related to the task assignment. A synopsis of the contacts with foreign regulatory and company officials should be included.

The following can be used as a guide in preparing a report:

Company Name:
Company Address:
Personnel Contact:
Aircraft : (Type - Model - Designation – Tech. Description-In-Service Experience/Reliability)
Q. A. Manager:
Quality Control Manual:
Members of Acceptance Team:
Company History/Background:
Certification Basis:
Topics Discussed:
Important Areas of Concern: (GCP, AD Notes Compliance, Certificates, Special Processes/Test, Life Limits)
Documentations:
Facility Tour:
Meeting with Exporting Airworthiness Reps:
Assessment:

1. Adequacy of Design Standards
2. Acceptability of Equivalent Level Of Safety (ELOS) findings

Recommendation:

1.11 PREPARATION OF A VALIDATED CERTIFICATE

Include in the travel report is the Validated Type Certificate for the Products validated and endorsing the same to the Director General, through the Chief, FSD AIS, for his signature/approval.

Likewise, all other document supporting the validated type certificate should also be prepared.

1.12 APPENDICES

Appendix ACFT-01(a) – Application Form
Appendix ACFT-01(b) – Certificate
Appendix ACFT-01(c) – Transmittal letter
Appendix ACFT-01(d) – Additional data

Appendix ACFT-01(a)

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity
****

Ministry of Public Works and Transport.
Department of Civil Aviation.

APPLICATION FOR TYPE CERTIFICATE ACCEPTANCE OF AERONAUTICAL PRODUCT(S)

1. Aeronautical product(s) applied for:

   □ Aircraft □ Engine □ Propeller

2. Status of applicant with respect to the aeronautical products to be validated:

   □ Original designee □ Licensee

3. Applicant's name: _____

4. Applicant's complete mailing address including telephone and fax no.:

   _____

   _____

5. Aeronautical product descriptions:

   Aircraft model: _____
   Classification/type: _____
   State(s) of Design: _____
   Engine/s model: _____
   State(s) of Design: _____
   Propeller installed (if applicable) _____
   Model: _____
   State(s) of Design: _____

6. Reference *(enclose copies with application):*
   Type certificate and type certificate data sheets or its equivalent
   Supplemental type certificate *(as applicable)*
   Production certificate and production limitation record(s)
   General description of the aeronautical product

7. Certification basis: _____

8. Certification fee *(LKIP "TBD")* Official Receipt No. _____ as per Dept. Order No. 94-762 series 1993

9. We hereby certify that the statement of this application and attachments furnished herein are true and correct.

For the designee of the aeronautical product

_____ Date of Application: _____

Appendix ACFT-01(b)

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity
****

Ministry of Public Works and Transport.
Department of Civil Aviation.

No. TC-03/09DCA

Aircraft Type Certificate

This certifies that the aeronautical product(s) mentioned below meet(s) the airworthiness requirements for import into Lao PDR and is/are eligible for registration and operation, in accordance with the Lao Civil Aviation Safety Regulations issued by the Department of Civil Aviation of Lao PDR.

Product(s): **DHC-8-101, 102, 103, 106**
DHC-8-201, 202
DHC-8-301, 311, 314, 315
DHC-8-400, 401, 402

Manufacturer: **Bombardier Inc.**
123 Garratt Boulevard
Downs view, Ontario
Canada
M3K 1Y5

References: Transport Canada Civil Aviation (TCCA) Type Certificate A-142 and Type Certificate Data Sheet (TCDS) A-142 Issue 30, dated April 12, 2007

Certification Basis: As per TCCA TCDS A-142

Acceptance Basis: Lao People Democratic Republic Act No. 9497, and LCAR Part 5, 5.4.1.8 (c)

This certificate shall remain in effect unless surrendered, or sooner suspended, cancelled, or revoked for cause(s) by the Director General of Civil Aviation of Lao PDR.

Date of Issue:

Director General

Appendix ACFT-01(c)

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity
****

Ministry of Public Works and Transport.
Department of Civil Aviation.

Ref. No_____/DCA
Date: _____

To: _____
ATTN: **MR. KARL YAEGER**
FAA Designated Engineering Representative
International Aero Engines
400 Main Street M/S 169-10
East Hartford, CT 06108
USA

Dear Mr. Yaeger,

Enclosed are the approved Validated Type Certificate of IAE 2500 engine series model and its Official Receipt of payment. Please advise us once these documents are received.

Very truly yours,

Director General

APPENDIX ACFT-01(d)

ADDITIONAL DATA EXAMPLES FOR LARGER AIRCRAFT CERTIFICATED UNDER FAR PART 25

DATA	USE
Maintenance, overhaul and repair manuals for airframe, engines, propellers and equipment additional to those required under 1.2 (B)	Evaluation and issue of airworthiness directives. Defect and engineering investigations
The detailed specification for the type	Conformity with Operating rule equipment requirements.
Electrical load analysis	Approval of design changes
Operations manual	Approval of Operators Operations Manual and training courses
Master minimum equipment list (MMEL	Approval of DCA MELs
Maintenance planning document (MPD)	Approval of maintenance programmes.
Maintenance review board document (MRB)	Approval of maintenance programmes
Maintenance schedule	Approval of maintenance programmes

Type Certificate Acceptance Checklist

Aircraft type & model No: .....

Company Address: .....

.....

Date of inspection: .....

Required Type Certificate Acceptance Inspection.		S/U/NA	Remarks
1	Designation of type:..... Manufacturer:……		
2	Requesting organization:……..		
3	Application form as per Appendix-ACFT-01 (a) AIM Vol-II, Chapter 1 ?		
4	Type Certificate Data Sheet (Copy) ?		
5	Three view drawing of the aircraft. ?		
6	Are there a List of docs (for technical parts or any equivalent documents to support continued Airworthiness). ?		
7	Are there Type certificate acceptance by the authority and others (Copy)?.		
8	Written confirmation request for supply of all Tech. Publications?		
9	Are there Type certificate issued by (FAA,EASA, CAA, JAA)?.		
10	Type certificate number:…….....		
11	Type certificate issuing authority's name: …….....		
12	Fee as per 003 decrees, 2008.		
13	Aircraft documents in English ?.		
14	Notification to state of design?.		
15	Type certificate acceptance permission fulfilled as per:		
Comments/Summary:			
Items completed by:		Date:	