

## **CERTIFICATION OF AERONAUTICAL PRODUCTS AND PARTS MANUFACTURED IN MALAYSIA**

### **1. Introduction**

- 1.1 This document sets out the certification procedures for aeronautical products and parts manufactured in Malaysia where the Department of Civil Aviation has primary responsibility for the Type Approval.
- 1.2 The Malaysian Civil Aviation Regulations (MCAIR) make provisions for the adoption of internationally recognised design standards for the certification of aeronautical products. The code of airworthiness published as FAR's, JAR's and BCAR's are accepted by DCA Malaysia as the design standards for aeronautical products and parts.
- 1.3 This Appendix further adopts BCAR's Section A (CAP 553) as the certification process for the certification of aeronautical products manufactured in Malaysia where DCA Malaysia has primary responsibility for the Type Approval of the products and parts.

### **2. Type Certification**

- 2.1 The procedural process adopted for Type Design Approval include :
  - 2.1.1 BCAR A2-2 - Type Certification
  - 2.1.2 BCAR A2-3 - Flight Testing for Type Certification
  - 2.1.3 BCAR A2-4 - Type Certification of a Variant
  - 2.1.4 BCAR A2-5 - Approval of Modifications or Changes to Type Certificates
- 2.2 The DCA will accept an application for a Type Certificate submitted by an Organisation holding or undergoing Design Organisation Approval under the procedural process of BCAR A8-1 (Primary Company) or A8-8 (Design Organisation).
- 2.3 The application shall be made in a manner acceptable to DCA and together with the application for issue of a Certificate of Airworthiness on Form JPA-AP2 as reflected at paragraph 5.1.3 of Notice No. 1, these will serve as an application for a Type Certificate. The application should be accompanied by :
  - 2.3.1 a general description and specifications of the aircraft or component, including a three-view drawing and available preliminary basic data; and
  - 2.3.2 a statement identifying the airworthiness standards to which the aircraft or component is designed, including also information on the operating limitations and special conditions, if any, specified by the DCA.
- 2.4 Where in the opinion of DCA, the airworthiness regulations do not contain adequate or appropriate safety standards for an aircraft, aircraft engine or component, because of novel or unusual design features, Special Conditions may be imposed or certification may be refused.
  - 2.4.1 Compliance with the special conditions is normally proven by analyses or by demonstration by the applicant, to the satisfaction of the DCA.
- 2.5 A type design record must be maintained by the organization responsible for the type design as an important requirement of the type certification process. This record should consist of at least the following :
  - 2.5.1 the drawings and specifications, and a listing of those drawings and specifications necessary to define the configuration and design features of the product shown to comply with the requirements applicable to the product;
  - 2.5.2 reports on analysis and tests undertaken to substantiate compliance with the applicable requirements;
  - 2.5.3 information, materials and processes used in the construction of the aircraft;
  - 2.5.4 an approved flight manual or its equivalent (type-related document) including the master minimum equipment list and configuration deviation list (if applicable);
  - 2.5.5 an approved materials review board (MRB) report, maintenance programme or equivalent document, and aircraft maintenance manual with details of manufacturer's recommended and DCA accepted scheduled maintenance plan and procedures guidelines; and

- 2.5.6 any other data necessary to allow, by comparison, the determination of airworthiness and noise characteristics (where applicable) of later products of the same type.
- 2.6 A Type Certificate when issued is effective until surrendered, suspended, revoked or a termination date is otherwise established by the DCA. A Type Certificate shall be issued when the DCA is satisfied that at least :
- 2.6.1 the design meets all the relevant requirements specified in the airworthiness standards and special conditions laid down by the DCA for the type of aircraft or component;
- 2.6.2 type inspection has been completed and the prototype has been found to meet all pertinent requirements;
- 2.6.3 all equipment, fittings, etc., are in accordance with the pertinent standards;
- 2.6.4 the prototype aircraft has been test flown and found to comply with all the performance requirements of the pertinent airworthiness standards;
- 2.6.5 a copy of the applicant's flight trials documentation has been submitted to the DCA;
- 2.6.6 reports showing the computations and tests required in connection with calibration of instruments used for test purposes, and in the correction of test results to standard atmospheric conditions, have been submitted;
- 2.6.7 the flight manual has been prepared by the organization responsible for the type design and approved by the DCA;
- 2.6.8 the Type Certificate Data Sheet, setting forth limitations prescribed by the applicable airworthiness regulations and any other limitations and information found necessary for type certification, has been submitted;
- 2.6.9 the servicing, repair and overhaul instructions have been prepared by the organization responsible for the type design and acceptable by the DCA, as appropriate;
- 2.6.10 production drawings have been examined and acceptable by the DCA; and
- 2.6.11 type design record together with any design certificates required by the DCA have been submitted to the DCA.
- 2.7 The Type Certificate shall be attached with the Type Certificate Data Sheet which shall be completed by the time the certificate is issued. When several models are included in the same certificate, information shall be repeated for each model, except for such common items as datum, mean aerodynamic chord, levelling means, control surface movements, etc.
- 2.7.1 The holder of the Type Certificate is the organization that has taken responsibility for the design of the aircraft. In the case of a jointly designed aircraft and in the case where design work is subcontracted to other organizations, DCA will require one organization to carry the responsibility for the whole design.
- 2.7.2 Transfer of a Type Certificate may only be made to an Organisation holding Design Organisation Approval accepted under the procedural process of BCAR A8-1 (Primary Company) or A8-8 (Design Organisation).
- If the new Type Certificate holder is in a different State, the two associated authorities will need to resolve any problems arising from different backgrounds and procedures for type certification in the two States.
- 2.8 In respect of identification and markings by the type certificate holder, this should be done by means of a fireproof plate and markings which is affixed in a prominent position and shall include the following information.
- 2.8.1 Builder's name
- 2.8.2 Model designation
- 2.8.3 Builder's serial number
- 2.8.4 Type Certificate number
- 2.8.5 Any other information the Director General finds appropriate.

### **3. Certificate of Airworthiness**

- 3.1 The procedural process adopted for issue of a Certificate of Airworthiness include:-
- 3.1.1 BCAR A3-2 - Issue of Certificate of Airworthiness
  - 3.1.2 BCAR A3-3 - Flight Testing for Issue of a Certificate of Airworthiness
  - 3.1.3 BCAR A5-3 - Maintenance, Overhaul and Repair Manuals
  - 3.1.4 BCAR A5-4 - Weight and Balance of Aircraft
  - 3.1.5 BCAR A7-2 - Flight Manual
- 3.2 The DCA will accept an application for a Certificate of Airworthiness from the Owner (or the agent of the owner) of an aircraft.
- 3.3 The application shall be made in a manner acceptable to DCA and together with the application for issue of a Certificate of Airworthiness on Form JPA-AP2 as reflected at paragraph 5.1.3 of Notice No. 1, these will serve as an application for a Certificate of Airworthiness.
- 3.4 The Certificate of Airworthiness is issued to aircraft for which a Type Certificate has been issued as at paragraph 2 (Type Certification) and the process at paragraph 3 are met.
- 3.5 The Certificate of Airworthiness may be amended or modified only upon applications to the DCA.
- 3.6 The Certificate of Airworthiness is effective within any period specified, as long as maintenance is performed with the applicable maintenance requirements and provided the aircraft remains on the national register.
- 3.7 A Certificate of Airworthiness is transferred with a change of ownership of the aircraft; provided the aircraft remains on the same register.
- 3.8 In respect of identification and markings by the TSO holder, this should be done by permanently and legibly markings each article with the following information:-
- 3.8.1 The name and address of the manufacturer
  - 3.8.2 The name, type, part number or model designation of the article
  - 3.8.3 The serial number or the date of manufacture of the article or both
  - 3.8.4 The applicable TSO number.

### **4. Export Airworthiness Approval**

- 4.1 The procedural process adopted for Export Airworthiness Approval include:
- 4.1.1 BOAR A3-6 - Certificates of Airworthiness for Export
- 4.2 The DCA will accept an application for an export airworthiness approval from:-
- 4.2.1 The manufacturer of a new aircraft part or appliance.
  - 4.2.2 The owner of a used aircraft
- 4.3 The applicant shall notify DCA in writing of any special requirements of the importing country.
- 4.4 The application shall be made in a manner acceptable to DCA and together with the application for issue of a Certificate of Airworthiness on Form JPA-AP2 as reflected at para 5.1.3 of Notice No. 1, these will serve as a an application for a Certificate of Airworthiness for Export
- 4.5 Export airworthiness approval of a complete aircraft is issued in the form of a Certificate of Airworthiness for Export. Such a certificate does not authorise the operation of the aircraft.

4.6 Export airworthiness approval of other products, parts or appliances are issued in the form of Authorised Released Certificate i.a.w. DCA Airworthiness Notice No. 29.

## **5. Equipment / Accessories Approval**

5.1 The procedural process adopted for Aircraft Equipment and Accessories approval include:-

5.1.1 BCAR A4-8 - Design Approval for Aircraft Equipment and Accessories.

5.2 The DCA will accept an application for equipment and accessory approval (including TSO Products) from Organisations which are required to be approved to cover the design and manufacture of equipment and appliances.

5.3 In respect of products produced to FAA TSO standard, DCA will act on behalf of the applicant towards obtaining direct FAA TSO approval provided an application is made to DCA and that an Agreement exists between Malaysia and the United States of America to facilitate this process.

5.4 An application for equipment and accessory approval shall be made in a letter and a Declaration of Design and Performance (D.D.P.) shall be submitted together with each application.

5.5 The Equipment and Accessory approval when issued is not transferable. It is effective until surrendered, withdrawn or otherwise terminated by DCA.

## **6. Approval of Organisation**

6.1 The procedural process adopted for approval of organisations connected with the design and manufacture of aeronautical products and parts include: BCAR A8-1 - Primary Companies

6.1.1 BCAR A8-2 - Suppliers

6.1.2 BCAR A8-8 - Design Organisations

6.1.3 The DCA will accept an application for an Organisational Approval if the applicant-

6.2 The DCA will accept an application for an Organisation Approval if the applicant-

6.2.1 Holds or applies for Type Design Approval.

6.2.2 Holds or applies for Equipment and Accessory Approval.

6.2.3 Holds rights to manufacture under a licensing agreement

6.3 The application shall be made in a manner acceptable to DCA and using form JPA-AP7 and AP7A.

6.4 The Organisation Approval is valid until surrendered, suspended, revoked or a termination date is otherwise established by DCA. The Organisational Approval is not transferable.

6.5 Production Organization Approval holder shall:

6.5.1 Mark all products and parts in accordance with applicable regulations.

6.5.2 Determine that each part and completed product conforms to the type design and is in a condition for safe operation.

6.5.3 Issue a statement of conformity for each part and completed product.

6.6 Materials used in those parts of an aircraft which are essential for its safe operation shall conform to approved specifications.

## **7. Instructions on Continuing Airworthiness**

7.1 The holder of the Type Certificate for an aircraft certified to a DCA accepted code of airworthiness (e.g. FAR 23) shall furnish at least one set of complete Instructions for Continued Airworthiness prepared i.a.w. the applicable requirements to the accepted code of airworthiness (e.g. FAR 23.1529), to each known owner of the aircraft type upon its delivery or upon issue of the Certificate of Airworthiness for the affected aircraft, whichever occurs later and thereafter make those instructions available on request to any other person required to comply with any of the terms of those Instructions.

7.2 In addition, changes to the Instructions for Continued Airworthiness shall be furnished to all known operators of the product and shall be made available on request to any person required to comply with those Instructions.

**8. Service Difficulty Reporting**

- 8.1 The requirement for Mandatory Occurrence Reporting is required via MCAR whereby a Type Design Organisation shall report to DCA any failure, malfunction or defect in a product, part or appliance covered by the Type Design Approval of which he is aware and which has resulted in or may result in an unsafe condition.

The process of reporting is reflected in the DCA Leaflet on Mandatory Occurrence Reporting.

In the process of investigations, the Type Design Organisation becomes aware of defects that affect continuing airworthiness of the aircraft, the DCA shall be advised in order that appropriate joint action may be taken. Such advice shall be given to the DCA irrespective of the country of registration of the aircraft or whether the defect occurs in Malaysia or overseas.

**9. General**

- 9.1 Authority for aircraft certification is vested in the Department of Civil Aviation (DCA), correspondence should be addressed to:-

Department of Civil Aviation,  
Airworthiness Division,  
Aras 1, Blok D5,  
Pusat Pentadbiran Kerajaan Persekutuan,  
62502 Putrajaya,  
MALAYSIA.

- 9.2 Where DCA staff will be required to visit locations outside Malaysia, the applicant will be responsible for associated travel and subsistence costs and an appropriate undertaking in writing must be supplied. An estimate will be supplied on request. In some cases, a deposit against these costs may be required.

**10. Summary**

- 10.1 A Type Certificate issued by DCA constitutes a statement that the Type Certificate holder to which the certificate refers, has shown compliance with the applicable requirements defined in the applicable code of airworthiness, e.g. FAR's 23 which has been accepted by DCA
- 10.2 A Certificate of Airworthiness at the effective date issued by DCA, is considered on the basis that-
- 10.2.1 The aircraft conforms to type design approval by DCA under a Type Certificate.
- 10.2.2 The aircraft is constructed under the supervision of an Organisation approved by DCA.
- 10.2.3 The aircraft complies with applicable Airworthiness Directives and is in a condition for safe operation.
- 10.3. The process of issuing the Certificate of Airworthiness for an aircraft meets Malaysian Civil Aviation Regulations in respect of an aircraft found "fit to fly" or "airworthy".

DIRECTOR GENERAL  
DEPARTMENT OF CIVIL AVIATION  
MALAYSIA