

A stylized paper airplane icon in shades of blue and grey is positioned above a dashed grey line that represents a flight path, curving upwards and then downwards.

CIVIL AVIATION DIRECTIVE – 8401

**DESIGN +
ORGANISATIONAL
APPROVAL**

CAAM PART 21 SUBPART J

CIVIL AVIATION AUTHORITY OF MALAYSIA

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Introduction

In exercise of the powers conferred by section 24O of the Civil Aviation Act 1969 [Act 3], the Chief Executive Officer makes this Civil Aviation Directive (CAD) 8401 – Design Organisation Approval (CAAM Part 21 Subpart J), pursuant to Regulation 21, 189 and 193 of the Malaysian Civil Aviation Regulations (MCAIR) 2016.

This CAD provides the procedures and requirements pertaining to a certificate of approval and for any matters in relation thereto.

This CAD is published by the Chief Executive Officer under section 24O of the Civil Aviation Act 1969 [Act 3] and come into operation on 1st May 2021

Non-compliance with this Civil Aviation Directive

Any person who contravenes any provision in this CAD commits an offence and shall on conviction be liable to the punishment under section 24O of the Civil Aviation Act 1969 [Act 3].

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(Captain Chester Voo Chee Soon)
Chief Executive Officer
Civil Aviation Authority of Malaysia

Civil Aviation Directive components and Editorial practices

This Civil Aviation Directive is made up of the following components and are defined as follows:

Standards: Usually preceded by words such as “*shall*” or “*must*”, are any specification for physical characteristics, configuration, performance, personnel or procedure, where uniform application is necessary for the safety or regularity of air navigation and to which Operators must conform. In the event of impossibility of compliance, notification to the CAAM is compulsory.

Recommended Practices: Usually preceded by the words such as “*should*” or “*may*”, are any specification for physical characteristics, configuration, performance, personnel or procedure, where the uniform application is desirable in the interest of safety, regularity or efficiency of air navigation, and to which Operators will endeavour to conform.

Definitions: Terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.

Notes: Included in the text, where appropriate, Notes give factual information or references bearing on the Standards or Recommended Practices in question but not constituting part of the Standards or Recommended Practices;

It is to be noted that some Standards in this Civil Aviation Directive incorporates, by reference, other specifications having the status of Recommended Practices. In such cases, the text of the Recommended Practice becomes part of the Standard.

The units of measurement used in this document are in accordance with the International System of Units (SI) as specified in CAD 5. Where CAD 5 permits the use of non-SI alternative units, these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Throughout this Civil Aviation Directive, the use of the male gender should be understood to include male and female persons.



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1 General

1.1 Citation

1.1.1 These Directives are the Civil Aviation Directive 8401 – Design Organisation Approval (CAAM Part 21 Subpart J) [CAD 8401], Issue 01/Revision 00, and comes into operation on 1st May 2021.

1.1.2 This CAD 8401 8401 – Design Organisation Approval (CAAM Part 21 Subpart J), Issue 01/Revision 00 will remain current until withdrawn or superseded.

1.2 Applicability

1.2.1 The following persons shall be subject to this CAD—

- a) an applicant for a certificate of approval for design under regulation 21 of the MCAR; and
- b) a holder of a certificate of approval for design under regulation 21 of the MCAR.

1.3 Revocation

1.3.1 This CAD, revokes Notice 8401 issue 1 dated 22 March 2019.

1.4 Definition

1.4.1 In this CAD, unless the context otherwise requires—

Aeronautical Product means any aircraft, aircraft engine, aircraft propeller or a part to be installed thereon;

Authorised Signatory means authorised signatory under regulation 33 of the MCAR;

Certificate of Approval means a certificate of approval issued under regulation 21 of the MCAR;

DOM means Design Organisation Manual;

Major Repair means any repair of an aeronautical product that might appreciably affect the structural strength, performance, engine, operation flight characteristics or other qualities affecting airworthiness or environmental characteristics;

MCAR means Civil Aviation Regulations 2016;

Minor Repair means a repair other than a major repair; and

Modification means a change to the type design of an aeronautical product which is not a repair;

Permit to Fly means a permit issued under regulation 29 of the MCAR;

Supplemental Type Certificate means an approval of a major modification covering those areas or aspects of an aeronautical product that were modified;

Technical Standard Order or TSO means a detailed airworthiness specification as a minimum performance standard for specified articles.

Type Certificate means a Type Certificate issued by the Director General under regulation 23 of the MCAR;

2 Application for the Issuance of a Certificate of Approval [21.234]

- 2.1 An applicant for a certificate of approval shall submit—
- a) an application form to CAAM and accompanied by the prescribed fee;
 - b) data under paragraph 6 of this CAD and terms of approval requested to be issued under paragraph 10 of this CAD; and
 - c) an application form for the nomination of post holders and authorised signatories as follows—
 - (i) Chief Executive;
 - (ii) Head of Design Organisation;
 - (iii) Chief of Airworthiness;
 - (iv) Chief of Independent Monitoring;
 - (v) Compliance Verification Engineers; and
 - (vi) Any other persons responsible for making decision affecting airworthiness and environmental protection in the organisation.
- 2.2 The application forms under paragraphs 2.1(a) and 2.1(c) of this CAD shall be signed by the Chief Executive of the applicant.

3 Application for the Renewal of a Certificate of Approval

- 3.1 A holder of a certificate of approval shall submit an application form not less than 30 days prior to expiry date of the certificate of approval and accompanied by the prescribed fee.
- 3.2 CAAM may renew the certificate of approval if CAAM is satisfied that the holder of a certificate of approval has fulfilled all applicable requirements under this CAD.

4 Issuance of Provisional Certificate of Approval and Certificate of Approval [21.235]

- 4.1 CAAM may issue a provisional certificate of approval if:
- a) applicant complies with the applicable requirements under this CAD; and
 - b) CAAM is satisfied that the their safety management system is in accordance with CAD 19 for applicant of a Type Certificate (TC).
- 4.2 A holder of a provisional certificate of approval shall—
- a) be entitled to perform design activity in accordance with the terms and conditions specified in the provisional certificate of approval; and
 - b) not release the design data without an authorisation from CAAM.
- 4.3 CAAM may issue a certificate of approval if CAAM is satisfied that the organisation who holds a provisional certificate of approval has demonstrated technical competency in the design and has fulfilled applicable requirements under this CAD.
- 4.4 Where a certificate of approval is issued—
- a) the provisional certificate of approval shall have no effect; and
 - b) the holder of the provisional certificate of approval shall within a reasonable period from the date of issuance, return the provisional certificate of approval to CAAM.

5 Design Assurance System [21.239]

- 5.1 A holder of a certificate of approval shall demonstrate that it has established and is able to maintain a design assurance system for the control and supervision of the design of products, part and appliances, and design changes of products, parts and appliances covered by the application.
- 5.2 A holder of a certificate of approval shall ensure that the design assurance system shall be such as to enable the holder of a certificate of approval to—
- a) ensure that the design of products, parts and appliances and the design changes of products, parts and appliances comply with the applicable type certification basis, the applicable operational suitability data certification basis and environmental protection requirements;
 - b) ensure that its responsibilities are properly discharged in accordance with this CAD and the terms of approval under paragraph 10 of this CAD;
 - c) independently monitor the compliance with, and adequacy of, the documented procedures of the system which shall include a feed-back system to a person or a group of persons having the responsibility to ensure corrective actions.

- 5.3 A holder of a certificate of approval shall ensure the design assurance system shall include an independent checking function of the showings of compliance on the basis of which the organisation submits compliance statements and associated documentation to CAAM.
- 5.4 A holder of a certificate of approval shall specify the manner in which the design assurance system accounts for the acceptability of the products, parts or appliances designed or the tasks performed by its partners or subcontractors according to written methods and procedures which are agreed between applicant and its partners or subcontractors.

6 Data [21.243]

- 6.1 An applicant for a certificate of approval shall furnish a DOM to CAAM for approval which shall include—
- information on the organisation; and
 - the relevant procedures, the products, parts and appliances and changes to products, part and appliances to be designed.
- 6.2 If flight tests are to be conducted, the applicant for a certificate of approval shall furnished a flight test operations manual to CAAM defining the organisation's policies and procedures in relation to flight test. The flight test operations manual shall include—
- a description of the organisation's processes for flight test, including the organisation involvement into the permit to fly issuance process;
 - crewing policy, including composition, competency, currency and flight time limitations where applicable;
 - procedures for the carriage of persons other than crew members and procedures for flight test training, when applicable;
 - a policy for risk and safety management and associated methodologies;
 - procedures to identify the instruments and equipment to be carried; and
 - a list of documents that need to be produced for flight test.
- 6.3 Where any products, parts or appliances or any changes to the products, parts or appliances are designed by an applicant's partners or subcontractors, the applicant shall furnish a DOM to CAAM which shall include—
- a statement of how the applicant is able to give, for all products, parts and appliances, as the case may be, the assurance of compliance required under paragraph 5.3 of this CAD; and
 - descriptions and information on the design activities and the organisation of its partners or subcontractors.



- 6.4 A holder of a certificate of approval shall amend the DOM as necessary to remain an up-to-date description of the organisation, and copies of amendments shall be supplied to CAAM.
- 6.5 An applicant for and a holder of a certificate of approval shall furnish a statement of the qualifications and experience of the management staff and other persons responsible for making decisions affecting airworthiness, operational suitability and environmental protection in the organisation.

7 Approval Requirements [21.245]

- 7.1 On the basis of the information submitted in accordance with paragraph 6 of this CAD and in addition to complying with paragraph 5 of this CAD, an applicant for and holder of a certificate of approval shall demonstrate to the satisfaction of CAAM the following—
- a) the staff in all technical departments are of sufficient numbers and experience and have been given appropriate authority to be able to discharge their allocated responsibilities and these, together with the accommodation, facilities and equipment, are adequate to enable the staff to achieve the airworthiness and environmental protection objectives for the product; and
 - b) there is full and efficient coordination between departments and within departments in respect of airworthiness, operational suitability and environmental protection matters.

8 Changes in Design Assurance System [21.247]

- 8.1 A holder of a certificate of approval shall not make any changes to the design assurance system that is significant to the showing of compliance or to the airworthiness, operational suitability and environmental protection of the product, parts or appliances unless with the approval of CAAM.
- 8.2 For purposes of paragraph 8.1 of this CAD, the holder of a certificate of approval shall—
- a) submit an application form to CAAM; and
 - b) demonstrate to CAAM, on the basis of submission of proposed changes to the DOM.

9 Non-Transferability [21.249]

- 9.1 A certificate of approval issued by CAAM shall be personal to the person to whom it is issued and shall not be transferred or assigned to any other person.

10 Terms of Approval [21.251]

- 10.1 CAAM may impose such terms and conditions on the certificate of approval granted under this CAD, which is known as “terms of approval”.
- 10.2 The terms of approval may include the types of design work, the categories of products, parts and appliances of the applicant, and the functions and duties that the applicant is approved to perform in regard to the airworthiness, operational suitability and characteristics of noise, fuel venting and exhaust emission of products.
- 10.3 For certificate of approval covering type certification or TSO for Auxiliary Power Units (APU), the terms of approval shall contain in addition the list of products or APU.

11 Variations to the Terms of Approval [21.253]

- 11.1 In the case of variation to the certificate of approval or terms of approval attached to the certificate of approval, a holder of a certificate of approval shall submit—
- a) an application form and accompanied by the prescribed fee; and
 - b) proposed amendments or variations.
- 11.2 CAAM may vary the certificate of approval or terms of approval if CAAM is satisfied that the holder of a certificate of approval has fulfilled all applicable requirements under this CAD.

12 Design Investigation [21.257]

- 12.1 A holder of a certificate of approval shall make arrangements that allow CAAM to make any investigations, including investigations of its partners and subcontractors, necessary to determine compliance and continued compliance with the applicable requirements of this CAD.
- 12.2 A holder of a certificate of approval shall allow CAAM to access and inspect any aeronautical product, aviation facility, place or building, to review any report and perform or witness any flight and ground test necessary to check the validity of the compliance statements submitted by the applicant under paragraph 5.3 of this CAD.

13 Findings [21.258]

- 13.1 In the case of a holder of certificate of approval who fails to comply with any requirements of this CAD, the finding shall be divided into two (2) levels as follows—
- a) a level one finding is any non-compliance with this CAD which could lead to uncontrolled non-compliance with applicable requirements and which could affect the safety of the aircraft;



- b) a level two finding is any non-compliance with this CAD which is not classified as level one; and
- 13.2 For the purpose of paragraph 13.1 of this CAD, the holder of certificate of approval shall—
- a) in the case of a level one finding, demonstrate an immediate corrective action after written notification of the finding by CAAM;
 - b) in the case of level two finding, demonstrate corrective action within 14 working days after written notification of the finding by CAAM. In certain circumstances and subject to the nature of the finding, CAAM may extend the 14 days period subject to a satisfactory corrective action plan agreed by CAAM.
- 13.3 In the case level one or level two finding, a holder of certificate of approval shall comply with any order, instruction, requirement or direction by the Authority for purposes of safety of civil aviation.

14 Duration and Continued Validity [21.259]

- 14.1 A certificate of approval shall be valid for a period of not more than 1 year.
- 14.2 The certificate of approval is subject to suspension, revocation and variation under regulation 193 of the MCAR.
- 14.3 A holder of a certificate of approval may surrender the certificate of approval in accordance with regulation 192 of the MCAR.

15 Privileges [21.263]

- 15.1 A holder of a certificate of approval shall be entitled to perform design activities under this CAD and within its scope of approval.
- 15.2 Subject to paragraph 12.2 of this CAD, a holder of a certificate of approval may submit compliance documents for the purpose of obtaining—
- a) the approval of flight conditions required for a permit to fly;
 - b) a type certificate or approval of a major change to a type certificate;
 - c) a supplemental type certificate;
 - d) a TSO article design approval; or
 - e) a major repair design approval.
- 15.3 A holder of a certificate of approval shall be entitled, subject to its terms of approval and under the relevant procedures of the design assurance system—
- a) to classify changes to the type certificate and repairs as ‘major’ or ‘minor’;

- b) to approve minor changes to type certificate and minor repairs;
- c) to issue information or instructions containing the following statement:
'The technical content of this document is approved under the authority of the DOA ref. no. [xxxxxx].';
- d) to approve minor revisions to the aircraft flight manual and supplements, and issue such revisions containing the following statement:
'Revision no. [xx] to the AFM (or supplement) ref. [xx] is approved under the authority of the DOA ref. no. [xxxxxx].';
- e) to approve the design of major repairs to products or APU for which it holds the type certificate or the supplemental type certificate or TSO article design approval;
- f) to prepare and submit data packages for major modifications and major repair;
- g) to approve flight conditions not related to the safety of the design; and
- h) to enter into arrangements acceptable to CAAM for the production of approved designs by organisations acceptable to CAAM.

16 Obligations of the Holder

[21.265]

16.1 A holder of a certificate of approval shall—

- a) maintain the DOM in conformity with the design assurance system;
- b) ensure that the DOM is used as a basic working document within the organisation;
- c) determine that the design of products, parts and appliances or changes or repairs to the products, parts and appliances, as applicable, comply with applicable requirements and have no unsafe feature;
- d) except for minor changes or repairs approved under the privilege of paragraph 15 of this CAD, provide to CAAM statements and associated documentation confirming compliance with paragraph 16.1(c) of this CAD;
- e) provide information and instructions as required by CAAM related to required actions that relates to airworthiness directives; and
- f) subject to the privilege of paragraph 15.3(g) of this CAD, determine the flight conditions under which a permit to fly can be issued.