

Revision 5

10 June 2016

Product Certification—Type Acceptance Certificates

General

Civil Aviation Authority advisory circulars contain guidance and information about standards, practices, and procedures that the Director has found to be an **acceptable means of compliance** with the associated rules and legislation.

However, the information in the advisory circular does not replace the requirement for participants to comply with their obligations under the Civil Aviation Rules, the Civil Aviation Act 1990 and other legislation.

Advisory circulars reflect the Director's view on the rules and legislation. They express CAA policy on the relevant matter. They are not intended to be definitive. Consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate advisory circular. Should there be any inconsistency between this information and the rules or legislation, the rules and legislation take precedence.

An advisory circular may also include **guidance material** generally, including guidance on best practice as well as guidance to facilitate compliance with the rule requirements. However guidance material must not be regarded as an acceptable means of compliance.

An advisory circular may also include **technical information** that is relevant to the rule standards or requirements.

Purpose

This advisory circular provides methods acceptable to the Director for showing compliance with Civil Aviation Rule Part 21 Subparts B and D. This material is intended to assist organisations and persons in gaining certification for aircraft types to be operated in New Zealand.

Related Rules

This advisory circular relates specifically to Civil Aviation Rule Part 21, Subparts B and D.

Change Notice

Revision 5 maintains guidance information on type acceptance only; removes guidance information on type certification, which will be contained in a separate new Part 21 advisory circular; and updates the title of the advisory circular to reflect its current contents.

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Introduction

To be eligible to operate in New Zealand under Part 91 an aircraft must have been issued with an airworthiness certificate (or a flight permit for a microlight).

Civil Aviation Rule Part 21 Subpart H prescribes the requirements for the issue of airworthiness certificates to aircraft. Airworthiness certificates are issued in four categories; standard, restricted, special and provisional.

Only aircraft in the standard or restricted category are eligible for the carriage of persons or goods for hire or reward under Part 91 and only aircraft in the standard category are eligible for air transport operations under Parts 121, 125 or 135. Aircraft are only eligible to be issued with an airworthiness certificate in the standard or restricted category if they have been type certificated in New Zealand or type certificated in a foreign country and subsequently type accepted in New Zealand.

Type certificates and type acceptance certificates are issued and changed under Part 21 including—

- Subpart B that covers—
 - type certification of products (aircraft, aircraft engines, or propellers) in New Zealand
 - type acceptance of foreign type certificated products imported into New Zealand
- Subpart D that covers changes to type certificates and type acceptance certificates.

This advisory circular gives guidance for applicants wishing to apply for the issue of, or the change to, a type acceptance certificate.

Refer to *AC21-7 Product Certification—Type Certificates* for information on applying for or amending a type certificate.

Type Acceptance Certificates

General

Type acceptance is a very straightforward process involving validation of a foreign type certificate. There should be no difficulties obtaining type acceptance of a foreign type certificate that has been issued in the normal category or equivalent by a “recognised” national airworthiness authority, such as from Australia, Canada, USA or Europe. Their design standards and airworthiness certification processes are familiar to CAA. If an importer is contemplating importing an aircraft with a type certificate from a country that CAA has had no previous experience, such as from Asia, Africa, Central America, or Eastern Europe, you should consult with CAA prior to making an application.

Once issued, any subsequent aircraft of that type covered by the type acceptance certificate are eligible for the issue of an airworthiness certificate under Part 21 Subpart H.

All aircraft must go through the entry process for the issue of an airworthiness certificate. See advisory circular AC21-2 for further details.

For the issue of a type acceptance certificate, rule 21.41 requires the applicant to show that the aircraft complies with a set of airworthiness and environmental standards specified in Part 21, Appendix C.

Effective dates for type acceptance certificates

For type acceptance certificates, rule 21.41 accepts the effective date of the applicable standards as the date assigned in the foreign type certificate, or an equivalent document, unless the Director specifies another date in writing.

The Director will only specify other dates where the foreign procedures would make the level of standards inconsistent with those that apply for New Zealand type certification.

Design Standards—Standard Category

For the issue of a standard category type acceptance certificate the set of airworthiness and environmental standards are prescribed in Part 21, Appendix C (a) and include—

- FAR Parts 23 to 36 inclusive
- airworthiness standards that are found by the Director to—
 - comply with the International Civil Aviation Organisation (ICAO) Annex 8 requirements; and
 - provide levels of safety equivalent to the basic airworthiness standards of the FAR Parts 23-35.

In addition, Part 21 Appendix C (c) details the requirement to provide a flight manual as part of the design standards for an aircraft.

Equivalent Airworthiness Standards

Although the basic design standards are the FARs, the Director accepts as equivalent the standards, which were in force at the time the type certificate was issued. The Director also accepts as equivalent British or European design requirements, or their earlier versions.

Sets of standards accepted by the Director as being equivalent standards for the issue of a standard category type acceptance certificate are listed in Appendix 3 to this advisory circular. When an

applicant applies under each of these standards the flight manual requirements of Part 21, Appendix C (c) should also be applied.

The paragraph under Part 21, Appendix C (c) means that if the original design standards which an aircraft was approved under for the foreign type certificate did not require a Flight Manual, and therefore there is none referenced under the foreign type certificate, then a suitable document to be adopted in New Zealand must be provided. For example, the FAA did not require Flight Manuals to be approved for light aircraft until around 1978. (Instead, any mandatory information or flight limitations were provided to the pilot in the form of instruments markings and placards). However, the aircraft type certificate holder still provided a pilot's manual in some form, which was often called the Owner's Manual or something similar. CAA usually just adopts this document as the Flight Manual in New Zealand.

If the aircraft does not have such a handbook, for example if it is very old, then CAA can help in the selection of a suitable document. If there is no Flight Manual as part of the foreign type certificate, we recommend the applicant just state that fact on the application and request assistance from CAA with identification or production of an alternative Flight Manual.

An applicant for type acceptance will not normally have to consider whether the design standards for the foreign type certificate are acceptable, provided the foreign type certificate was either issued by a recognised country, or it has been previously validated by one of the recognised national airworthiness authorities, such as the FAA.

Changes to Type Acceptance Certificates

Changes to type acceptance certificates are covered by Part 21 Subpart D.

Part 21 Subpart D states that applications for changes to a type acceptance certificate are treated as applications for a new type acceptance certificate. This is because—

- there is no holder of a type acceptance certificate and
- the only reason a change would be likely to be required would be to add an additional model to an existing certificate.

Originally, the Director issued a new certificate and type acceptance report for each new application. Current policy is that a type acceptance report is issued to cover each foreign type certificate, and includes all applicable models and variants listed on that foreign type certificate. The report is amended to a later revision number to add new models or serial number ranges.

Type Acceptance Certificate—Application

General

A type acceptance certificate is issued on the basis of the supply of the data specified in Part 21 Subpart B. It is not necessary for an example of the aircraft type to have been imported.

An application for a type acceptance certificate is to be made on CAA form 24021/02. This form is available from the [CAA website](#).

Any person or organisation may apply for a type acceptance certificate, including a foreign person or organisation such as the manufacturer or type certificate holder. The support of the foreign type certificate holder will always be required however, due to the nature of the data required to be supplied.

The type acceptance certificate is issued in respect of the aircraft type itself, there is no certificate holder as such. The type acceptance certificate is issued to validate a foreign type certificate in New Zealand. For this reason, an actual certificate is not normally produced. However, where the applicant is the type certificate holder, a certificate can be produced for display purposes.

All charges associated with the issue of the type acceptance certificate will normally be invoiced to the applicant. CAA will invoice another client if it receives a written request and that client has agreed in writing to accept the charges.

Engines and propellers

Part 21 Subpart B provides for type acceptance of products, which includes engines and propellers. A type acceptance application for an aircraft can include the engine and propellers, or they can be the subject of a separate type acceptance application.

Foreign type certificate

Type acceptance in New Zealand is based on the State-of-Design foreign type certificate. The reason for this is so that CAA has the most direct supply of continuing airworthiness data. The State-of-Design national airworthiness authority should also be able to provide the best support of the type certificate.

Product type details

The foreign type certificate and exactly which models the type acceptance certificate is to cover should be carefully specified by the applicant. 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. 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 CAA - Aircraft Certification Unit.

Type acceptance applicability is usually determined by the coverage of the manuals supplied. Therefore, it may be not only model and variant but also serial number specific.

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 give the details of when the data will be available. If the applicant is not the type certificate holder, CAA will contact the type certificate holder and request the data needed. Any costs imposed by the type certificate holder for the provision of type data must be met by the applicant.

The applicant should supply with the application—

- originals or photocopies of the—
 - type certificate
 - type certificate data sheet (except FAA or EASA, which are available on the net)
 - compliance summary documents for airworthiness and environmental certification
 - details of any exemption granted, equivalent safety findings or special conditions applied
- originals of the—
 - flight manual
 - maintenance manual
 - parts catalogue
 - service information

for the aircraft, engine and propeller.

For all data, including aircraft and component manuals, CAA prefers electronic format, or access to a website database.

An inherent part of type acceptance is continued support of the aircraft and component documentation. This will inevitably require the support of the respective type certificate holder. There is a form available on CAA website [CAA form 2171](#) for the use of the respective type certificate holders as an agreement to supply updates of manuals.

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

For larger aircraft certificated under FAR Part 25 *Transport Category* or an equivalent it is desirable to supply additional data that may subsequently be required for other CAA certificates or approvals. Examples of such additional data are included in Appendix 1 to this advisory circular.

Validation visit

In line with CAA policy, in response to the requirements of ICAO Annex 8 *Airworthiness of Aircraft*, a more in-depth review is conducted where either CAA has not had any recent contact with a manufacturer, type certificate holder, or national airworthiness authority of the State-of-Design, or where the type has new or unusual features or a very recent certification basis. It would involve a validation visit by certification specialists from CAA to the type certificate holder and/or manufacturer if different.

This is an opportunity for CAA to become familiar with the aircraft and the approval process and paperwork, as well as establishing contacts with the type certificate holder. CAA has found it essential to have a good working relationship for technical queries and continuing airworthiness information. Such a visit is provided for under sections 3.0.2.1 and 3.0.2.5 of the Implementation Procedures for Airworthiness under *CAA /FAA Bilateral Airworthiness Safety Agreement*.

In accordance with the Civil Aviation Charges Regulations any such work overseas must be paid for by the applicant, including travel and accommodation costs and expenses.

Training

Where a new aircraft type is being introduced into service in New Zealand which will require significant approval action and subsequent regulatory oversight by CAA, then training will be required to be provided to CAA staff who will be involved in approval of the aircraft for air transport operations. This would include—

- a full type-rating course for a flight operations inspector for each type
- a general familiarisation course (typically 1-2 weeks) for a mechanical systems airworthiness inspector
- an avionics familiarisation course for an avionics systems airworthiness inspector.

Ideally this should be provided in advance of the aircraft entering service.

Appendix 1—Additional Data Examples for Large Aircraft Certificated in the Transport Category

DATA	USE
Maintenance, overhaul and repair manuals for airframe, engines, propellers and equipment additional to those required under rule 21.43	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 operator's operations manual and training courses.
Master minimum equipment list (MMEL)	Approval of NZ operator's MELs.
Maintenance planning document (MPD)	Approval of maintenance programmes.
Maintenance review board document (MRB)	Approval of maintenance programmes.
Maintenance schedule	Approval of maintenance programmes.

Appendix 2—Type Certificated and Type Accepted Aircraft Models

Refer advisory circular AC21-1 Appendix 2 *Type Certificates and Type Acceptance Certificates – Appendix 2 to AC21-1* which is published separately to this advisory circular.

Appendix 3—Equivalent Airworthiness Standards

The following paragraphs list the sets of standards accepted by the Director as being equivalent standards for the issue of a standard category type acceptance certificate.

British Civil Airworthiness Requirements

Acceptable British Civil Airworthiness Requirements include—

- BCAR Part 23 – Light Aeroplanes
- BCAR Part 29 – Rotorcraft
- BCAR Part 31 – Manned Free Balloons

BCAR Part 31 supersedes the earlier British Airworthiness Requirements – Hot Air Balloons.

In addition, older superseded BCARs will be accepted for aircraft certificated to those standards at the time—

- Section D – Aeroplanes
- Section E – Gliders
- Section G – Rotorcraft
- Section K – Light Aeroplanes

The British Airworthiness Requirements – Hot Air Balloons, superseded by BCAR Part 31, are accepted by the Director and are published by the—

British Balloon and Airship Club
Artillery Mansions
75 Victoria Street
London SW 1
United Kingdom

British Civil Airworthiness Requirements are published by the—

Civil Aviation Authority
Printing & Publications Service
Greville House
37 Gratton Road, Cheltenham
Gloucester GL50 2BN
United Kingdom

Civil Air Regulations

Acceptable Civil Air Regulations include—

- Part 3 – *Airplane Airworthiness: Normal, Utility and Acrobatic Categories*
- Part 4b – *Airplane Airworthiness: Transport Category*, subject to compliance with the Special Airworthiness Requirements of Federal Aviation Regulations Part 121 Subpart J
- Part 6 – *Rotorcraft Airworthiness: Normal Category*
- Part 7 – *Rotorcraft Airworthiness: Transport Category*

Civil Air Regulations were published by the Federal Aviation Agency of the USA. They have now been superseded by Federal Aviation Regulations. Copies are held by, and may be viewed in, the library of the New Zealand CAA. They are also available on the FAA website at www.faa.gov.

Special Federal Aviation Regulations (SFAR) No. 41

SFAR 41 allowed certain aircraft to have passenger seat numbers increased beyond nine and take-off weights extended beyond 12500 pounds. It applied only to aircraft certified under FAR Part 23 standards in force on or after 13 March 1971. Airworthiness certificates were not issued under SFAR 41 after 17 October 1991.

The standards of SFAR 41 will be accepted by the Director as equivalent standards, for aircraft issued with amended or supplementary type certificates by the FAA under SFAR 41, if—

- airworthiness certificates have been issued to the aircraft by the FAA
- for weights above 12500 pounds, the additional requirements of SFAR 41 section 4(c) are complied with
- the exception of SFAR 41 section 5(b)(1) is not applied
- for weights above 12500 pounds, the applicant provides evidence that FAR 25.853(a) in force on 6 March 1995 is complied with.

The requirements of SFAR 41 section 4(c) are FAR Part 25 standards applied by the FAA unless the airworthiness certificate states that ICAO Annex 8 requirements are not met. The subjects include—

- approach, climb, and take-off performance
- gust load standards
- smoke evacuation design
- engine rotation, restarting, and cooling design

The exception of SFAR 41 section 5(b)(1) was only granted by the FAA for aircraft limited to FAR Part 91 non-commercial operations.

The FAR Part 25.853(a) requirements are applied by FAR 135.170 for aircraft certified under SFAR 41 that are to be used for commercial operations. They are compartment interior requirements.

Special Federal Aviation Regulations are issued by the Department of Transportation, Federal Aviation Administration (FAA) of the United States of America.

SFAR 41 is published by the—

Superintendent of Documents
US Government Printing Office
Washington, DC 20402
United States of America

Joint Airworthiness Requirements

Acceptable Joint Airworthiness Requirements include—

- JAR-22 – Sailplanes and Powered Sailplanes
- JAR-23 – Small Aeroplanes
- JAR-25 – Large Aeroplanes
- JAR-E – Engines
- JAR-P – Propellers
- JAR-VLA – Very Light Aeroplanes

JAR-VLA applies to aeroplanes with a maximum certified take-off weight of not more than 750 kg and a stalling speed, in the landing configuration, of not more than 45 knots.

The acceptable means of compliance and interpretations of JAR-VLA Section 2 will also be accepted.

Aircraft type certified under these standards will generally be limited to privileges applicable under the original design standard. JAR-VLA aircraft are limited to Part 91 operations and in many cases day-VFR flight.

Joint Airworthiness Requirements are published, for the Airworthiness Authorities Steering Committee, by—

Civil Aviation Authority
Printing and Publication Services
Greville House
37 Gratton Road, Cheltenham
Gloucester GL50 2BN
United Kingdom

EASA Certification Specifications

Acceptable EASA Certification Specifications include—

- CS-22 (Sailplanes and Powered Sailplanes)
- CS-23 (Normal, Utility, Aerobatic and Commuter Aeroplanes)
- CS-25 (Large Aeroplanes)
- CS-27 (Small Rotorcraft)
- CS-29 (Large Rotorcraft)
- CS-31HB (Hot Air Balloons)
- CS-E (Engines)
- CS-P (Propellers)
- CS-VLA (Very Light Aeroplanes)
- CS-VLR (Very Light Rotorcraft)

EASA Certification Specifications are published by—

European Aviation Safety Agency
Postfach 10 12 53
D-50452 Cologne
Germany

They are also available on their website at <http://www.easa.europa.eu/> .

Other equivalent standards

Other sets of standards may be accepted by the Director as equivalent airworthiness standards if they meet the criteria of Part 21 Appendix C (a)(2). To provide evidence that the criteria are met, the Director may require an applicant to supply—

- a copy of the set of standards and a certified English translation if required
- evidence of the effective date
- evidence that the standards apply, in the country of origin, to operations equivalent to the air transport operations as defined in the Civil Aviation Rules
- evidence that the standards are accepted as meeting the requirements of ICAO Annex 8
- a comparison of the requirements with those of the basic standards that apply for the class of aircraft, engine, or propeller at the same effective date
- accident data relating to the class of aircraft, engine, or propeller complying with the standards

At an early stage, the Director should be advised of any intentions to use a set of other equivalent standards. The Director may already hold the necessary evidence or may have accepted the set as equivalent. In other cases the Director may have previously decided that a set of standards does not meet the requirements for acceptance in the standard category.

For example, Eastern European and Soviet airworthiness standards pre-1990 have never been accepted as equivalent by any of the recognised western national airworthiness authorities.

Restricted Category

For the issue of a type acceptance certificate in the restricted category an applicant should show that the aircraft complies with a set of acceptable airworthiness standards. Part 21 Appendix C (b) prescribes acceptable airworthiness standards for the restricted category as—

- any of the Federal Aviation Regulations prescribed in Appendix C (a)(1) excluding those requirements that the Director finds inappropriate for the purpose for which the aircraft is to be used; or
- a set of airworthiness design standards that the Director finds appropriate for the purpose for which the aircraft is to be used.

Restricted category type acceptance certificates may be issued for the following purposes—

- operations under Part 91
- agricultural aircraft operations under Part 137
- special purpose operations, such as helicopter external load operations under Part 133

Aircraft with a restricted category type acceptance certificate will only be eligible for the issue of an airworthiness certificate in the restricted category for the purpose the type acceptance certificate was issued. This may include the above but may not include air transport operations under Parts 121 and 135.

The following paragraphs list the sets of standards accepted by the Director as being equivalent standards for the issue of a restricted category type acceptance certificate. The standards are identified by the type of operation to be carried out. When an applicant applies under each of these standards the flight manual requirements of Part 21, Appendix C (c) should also be applied.

Operations under Part 91

The following paragraphs list the sets of standards accepted by the Director as being equivalent standards for operations under Part 91.

British Civil Airworthiness Requirements

Acceptable British Civil Airworthiness Requirements include—

- BCAR Section S – Small Light Aeroplanes

BCAR Section S applies to aeroplanes with—

- a maximum total weight of 390 kg
- a wing loading at maximum total weight not exceeding 25 kg per square metre
- a maximum fuel capacity of 50 litres
- a maximum of two occupants

Aircraft certificated under this standard are only certificated for Day-VFR non-aerobatic operations as specified in the flight manual, and will be limited to non-hire or reward operations under Part 91 as will be specified on the airworthiness certificate.

BCAR are published by:

Civil Aviation Authority
Printing and Publication Services
Greville House
37 Gratton Road, Cheltenham
Gloucester GL50 2BN
United Kingdom

Australian Civil Aviation Order (CAO)

Acceptable Australian Civil Aviation Orders include—

- CAO Section 101.55 – aircraft certification requirements for aeroplanes with a maximum weight not exceeding 450 kilograms and a stalling speed in the landing configuration of not more than 40 knots

In particular, the accepted sets of standards are those of CAO 101.55 except—

- paragraph 3.3(d)
- the noise certification requirements of paragraph 9

Aircraft type certificated under this standard are only certificated for Day-VFR operation as specified in the flight manual, and will be limited to non-hire or reward operations under Part 91 as

will be specified on the airworthiness certificate. The limitations may be reduced if the aircraft is fitted with a type certificated engine and propeller combination.

CAO are published by—

CASA Publications Centre
607 Swanston St
PO Box 1986
Carlton, Victoria 3053
Australia

Other standards

Other sets of standards may be accepted by the Director under Part 21 Appendix C (b)(2) if the standards are appropriate for the purpose for which the aircraft is to be used. To provide evidence that the standards are appropriate, the Director may require the applicant to provide any of the following—

- a copy of the set of standards and, if they are written in a foreign language, a certified English translation
- evidence of the effective date of the design standard
- for standards issued by a foreign authority a statement of any conditions relating to the standards applied by the foreign authority
- a comparison of the standards with those for standard type certificates for the same class of aircraft
- safety records of the aircraft for which the certificate has been applied for or for other aircraft of a similar type complying with the set of standards

Operational limitations may be applied by the Director to ensure an adequate level of safety is maintained.

Sets of standards that may be accepted for operations under Part 91 include—

- standards accepted for standard type certification with exceptions that do not reduce the level of safety significantly
- standards that applied before being replaced by standards accepted for standard type certification
- military airworthiness design standards that closely relate to civil airworthiness design standards
- standards that are not shown to fully comply with ICAO Annex 8
- standards limited by foreign authorities to purposes equivalent to those listed in the restricted category section of this advisory circular

To be acceptable to the Director, standards should include instructions for continuing airworthiness, as required by Part 21.

The level of safety provided for the occupants will be assessed when applying limitations on a restricted category aircraft. A principle to be applied will be that a higher degree of protection should be provided when operating under Part 91, for hire or reward than when operating under

Part 91 for other purposes. How closely the aircraft meets a Part 21 Appendix C (a)(1) standard will also be considered.

Depending on the degree of non-compliance with a Part 21 Appendix C (a)(1) standard – the reason for classification in the restricted category – the airworthiness certificate may either be limited to flight within New Zealand or may be endorsed.

This aircraft does not meet the airworthiness requirements of ICAO, as prescribed by Annex 8 of the Convention on International Civil Aviation. For this reason special permission to operate must be obtained from each country over whose territory the aircraft is to be flown.

Agricultural aircraft operations

Although Part 26 Appendix B.2 calls up some sections of Civil Aeronautics Manual 8 (CAM 8) as additional requirements for agricultural aircraft, CAM 8 in its entirety has never been accepted in New Zealand as an appropriate overall standard for an agricultural aircraft. This is because the structural and handling provisions are considerably abbreviated from the standard category airworthiness requirements for that class of aircraft. Aircraft certificated to CAM 8 have only been accepted in New Zealand where the aircraft has also been shown to meet the structural requirements of FAR Part 23, or an equivalent set of standards, either by a statement on the type certificate or a certified statement from the type certificate holder. In addition the overall level of non-compliance with a Part 21 Appendix C (a)(1) standard shall be assessed.