

Revision 3

27 April 2007

Product certification - airworthiness certificates in the *Standard* and *Restricted* categories

General

Civil Aviation Authority advisory circulars (AC) contain information about standards, practices and procedures that the Authority has found to be acceptable for compliance with the associated rule.

Consideration will be given to other methods of compliance that may be presented to the Authority.

When new standards, practices or procedures are found to be acceptable they will be added to the appropriate advisory circular.

In addressing a subject the use of the imperative *must* or *is to*, terms not normally welcome in an AC, is because it is associated with mandatory provisions of the Rule itself.

Each reference to a number in this AC, such as 21.15, is a reference to a specific rule within Part 21.

Purpose

This Advisory Circular (AC) provides methods acceptable to the Authority for showing compliance with the special category airworthiness certification rules set out in Part 21, Subpart H.

Focus

This material is intended to assist organisations and persons in gaining certification for aircraft in New Zealand.

Related Rules

This AC relates specifically to Part 21, Subpart H – Airworthiness Certificates.

Published by
Civil Aviation Authority
PO Box 31441
Lower Hutt

Authorised by
Manager Rules Development

Change Notice

Revision 3 re-numbers this advisory circular from AC 21-2B to AC 21-2 as part of a project to standardise the numbering of all ACs.

Introduction

To be eligible to operate in New Zealand under Part 91 an aircraft must have been issued with an airworthiness certificate.

Civil Aviation Rule Part 21 Subpart H prescribes the requirements for the issue of airworthiness certificates to aircraft. Airworthiness certificates are issued in three categories; Standard, Restricted, and Special.

Aircraft are only eligible for 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. Only aircraft in the standard or restricted category are eligible for hire or reward operations under Part 91 and only aircraft in the standard category are eligible for air transport operations under Parts 121 or 135.

This advisory circular gives guidance for applicants wishing to apply for the issue of an airworthiness certificate in the standard or restricted categories only.

For the purposes of Part 21 the following advisory circulars are available—

AC21-1	Product certification – type certificates and type acceptance certificates
AC21-1 Appendix 2	List of type certificated and type accepted aircraft models (Appendix 2 to AC21-1)
AC21-2	Product certification – airworthiness certificates in the <i>Standard</i> and <i>Restricted</i> category
AC21-3	Product certification – airworthiness certificates in the <i>Special</i> category
AC21-4	Product certification - <i>Amateur-built</i> aircraft

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General

Rule 91.101 requires all aircraft to have a current airworthiness certificate to be eligible for operations under Part 91. The exception to this requirement is for the operation of an aircraft for the purpose of demonstrating the eligibility of the aircraft for the issue, renewal, or reinstatement of an airworthiness certificate. The conditions of applying this exception are stated in 91.101(c).

Airworthiness certificates are issued under Part 21, Subpart H and in one of three categories—

- standard
- restricted
- special

This advisory circular provides information to applicants for airworthiness certificates in the standard or restricted category only.

Requirement for certificate

An aircraft to be used for hire or reward operations under Part 91 is required to have been issued a standard or restricted category airworthiness certificate.

An aircraft to be used for air transport operations under Part 121 or Part 135 is required to have been issued a standard category airworthiness certificate.

Eligibility

To be eligible for the issue of an airworthiness certificate in the standard or restricted category an applicant should provide evidence that the aircraft conforms to a type certificate or type acceptance certificate issued under Part 21. Specifically, the applicant should ensure that, for the aircraft—

- a type certificate or type acceptance certificate has been issued
- a statement of conformity has been issued

Type certification and type acceptance

Aircraft models that have been type certificated or type accepted in New Zealand and that are eligible for the issue of a standard or restricted category airworthiness certificate are listed in AC21-1 Appendix 2.

If an aircraft model is not already covered by a type acceptance certificate one will have to be issued under Part 21, Subpart B. See AC21-1 and later amendments thereto for guidance on this subject.

Recent additions may not be shown in AC21-1 Appendix 2 and the aircraft certification unit of the CAA should be contacted if—

- the model is not listed
- the model is similar to but not identical to a model listed
- the serial number of the aircraft is outside the serial number range listed as eligible

The Aircraft Certification Unit can be contacted at—

Aircraft Certification Unit
Civil Aviation Authority
PO Box 31-441
LOWER HUTT 6315

Evidence of conformity

*It is an applicant's responsibility
to provide evidence of an aircraft's conformity*

The applicant for an airworthiness certificate is required to provide the Director with evidence of conformity of an aircraft to the type design approved by the issue of a type certificate or type acceptance certificate. This evidence is required to confirm that the aircraft conforms to the applicable type design.

Documents that are accepted by the CAA as evidence of conformity for imported aircraft are—

- a statement of conformity issued by the aircraft manufacturer
- an export airworthiness certificate or equivalent document issued by the airworthiness authority of an exporting country
- a foreign domestic airworthiness certificate that—
 - includes evidence that a conformity inspection was required as part of the issue of the document
 - was issued within 60 days of the date of export
- a statement of conformity issued by a person or organisation authorised to make such a statement by the Airworthiness Authority of the exporting country

Applicants for airworthiness certification that do not possess one of the acceptable documents must provide evidence of conformity by other means. This requirement may apply to—

- an aircraft imported from a country that does not issue an acceptable document
- an aircraft that is incomplete or otherwise non-airworthy was imported from a country that will not issue an acceptable document to such aircraft
- an aircraft imported under circumstances where it was not reasonably possible to obtain an export airworthiness certificate
- a New Zealand aircraft that is being returned to service after some period without an airworthiness certificate
- a New Zealand aircraft that is being returned to service after some period without a certificate of registration

Acceptable documents in the case of imported aircraft provide evidence of conformity to a type design and are normally in the form of an export airworthiness certificate.

The aim of having an alternative method of providing evidence of conformity is to achieve a similar assurance as to the aircraft's conformity to its type design as is provided by an export airworthiness certificate or similar document.

A statement of conformity that is acceptable to the CAA provides this evidence. Following the issue of an acceptable statement of conformity, the aircraft would be at the same stage as an aircraft which initially possessed acceptable evidence of conformity, such as an export airworthiness certificate, and the certification process would continue in the usual manner.

Appendix 1 describes the process for the certification of an aircraft, particular an aircraft without the acceptable statement of conformity. The method involves the CAA undertaking an eligibility

investigation to determine if the applicant will eventually be able to provide a statement of conformity in a manner acceptable to the CAA for the issue of the airworthiness certificate.

Eligibility investigation

The eligibility investigation is not an acceptance by the CAA of the aircraft, nor is it any guarantee that the aircraft can conform to its type certificate. The eligibility investigation will inform the applicant of whether the information provided will support the eventual issue of an airworthiness certificate. The eligibility investigation will also indicate the acceptable form of the statement of conformity that must eventually be provided.

Importers should be aware that some aircraft may not be considered eligible for the eventual issue of an airworthiness certificate. In other cases the required standard for a statement of conformity required by the CAA may be difficult to achieve by the applicant.

The eligibility investigation will provide the CAA a known starting point for the assessment of the applicant's evidence of conformity. It will also provide the applicant an indication of who will be acceptable to the CAA for certifying a statement of conformity.

Application

To initiate the eligibility investigation the application for an airworthiness certificate should be made—

- for imported aircraft, before, or as soon as practicable after, the aircraft arrives in the country
- for New Zealand aircraft, before, or as soon as practicable after, the decision to rebuild or return the aircraft to service is made

For aircraft already in New Zealand at the date of publication of this Advisory Circular an application should be made immediately

In both cases the application should be made before any work on the aircraft is carried out. Failure to do this deprives the CAA of the opportunity to determine a starting point for assessing the applicant's evidence of conformity. If the application is delayed the applicant may have no acceptable means of providing the evidence of conformity.

Investigation

The eligibility investigation has two procedures to determine the eligibility status of the aircraft. The combination of these procedures may be varied according to the amount of information provided by the applicant. For example, a complete and serviceable aircraft would normally only require an examination of the documentation and not a physical inspection.

- **Documentation:** A review of the supporting documentation supplied by the applicant as part of the initial application

The documentation should be as complete as possible and may include—

- evidence of why an export airworthiness certificate was not reasonably obtainable
- the aircraft logbooks and maintenance records
- the last valid domestic airworthiness certificate
- a certified history of the aircraft since it was last airworthy—

and for damaged or incomplete aircraft—

- a complete assessment by a licensed aircraft maintenance engineer of any damage to the aircraft and missing components
- a copy of any accident report
- **Inspection:** A physical inspection of the aircraft

Inspection of the aircraft provides an assurance of the condition of the aircraft at the time of import or return to service, including an opportunity to—

- inspect the aircraft against the supporting documentation to ascertain the authenticity of the documentation
- estimate the work required to return the aircraft to conformity
- determine the acceptable or approved data to be used to return the aircraft to conformity
- determine the acceptable evidence of conformity to be provided by the applicant

Statement of conformity

At the completion of any required work to return the aircraft to conformity, a statement of conformity will be required. Who is acceptable to certify such a statement will be determined during the eligibility investigation.

The holder of an Inspection Authorisation issued under Part 66 who is rated on the aircraft type will be acceptable to issue a statement of conformity for an aircraft found during the eligibility investigation—

- to be complete, airworthy, and accompanied by a full maintenance history
- to be expected to be returned to conformity using manufacturer's data and acceptable methods, techniques, and practices

A design organisation certificated under Part 146 or the manufacturer may be required to issue the statement of conformity for an aircraft found during the eligibility investigation to be unairworthy and that the deviation from type conformity was significant, or significant components were missing, or the maintenance records were incomplete.

Applicants should note that life limited parts without appropriate supporting documentation will not be acceptable and evidence of their removal and replacement would be expected to be seen in any conformity report.

Aircraft whose model or identity is uncertain, such as when a manufacturer's data plate is missing, will not be eligible.

Airworthiness certification

Following the issue of an acceptable statement of conformity the aircraft is now at the same point as an aircraft which initially possessed acceptable evidence of conformity, and is ready for the normal airworthiness certification process.

Certificate categories and purposes

General

An aircraft will be eligible for an airworthiness certificate in the category identified on the type certificate or type acceptance certificate—

- standard
- restricted

A certificate may be issued in both the standard and restricted categories if—

- the aircraft meets the certification requirements for each category when in the configuration for that category
- the aircraft can be converted from one configuration to the other by removing or adding equipment by simple mechanical means

Rule 21.173(b) states that the Director may prescribe purposes on an airworthiness certificate. If an application has been made for an airworthiness certificate for a specific operation or purpose, this purpose will be prescribed on the airworthiness certificate.

Standard category certificates

The issue of a standard category airworthiness certificate indicates the acceptability of the aircraft for all types of operations, subject to any operational rule requirements.

Restricted category certificates

An aircraft that is otherwise eligible for standard category may have its airworthiness certificate classified in the restricted category when—

- the design approval for any modifications incorporated in the aircraft limits the aircraft to the restricted category, including—
 - special purpose operations, such as agricultural operations
 - long-range ferry flights
- the certification information able to be provided by the applicant is inadequate to support the granting of a standard category certificate

For example:

An imported aircraft for which the exporting state issued the equivalent of a restricted airworthiness certificate.

For the issue of a restricted category airworthiness certificate, the applicant should identify the types of operations to be undertaken, including general operations under Part 91. These types of operation will be those prescribed during type certification or type acceptance.

The types of operation will be prescribed on the airworthiness certificate and may be amended if design changes are incorporated on the aircraft.

For an aircraft issued with a type certificate or type acceptance certificate in the standard category, but only accepted for a restricted category airworthiness certificate, the CAA will prescribe appropriate purposes on the certificate taking into account—

- the airworthiness standards complied with
- any limitations imposed by design change approvals

There may be situations where the effect of design changes on a particular type of operation has not previously been fully assessed. The CAA should be contacted if the applicant is in doubt.

Agricultural operations. An aeroplane that is to be used to conduct agricultural operations under Part 137 using internal dispensing equipment requires a restricted airworthiness certificate.

Long distance ferry flights. A restricted category airworthiness certificate may be issued for the purpose of conducting a long distance ferry flight, including—

- where the aircraft is to operate at weights above the maximum certificated take-off weight or maximum zero fuel weight, or both
- where a design change is installed that does not fully meet the airworthiness standards applicable for the standard category, such as a temporary ferry fuel tank system

The granting of a restricted category airworthiness certificate for the purpose of a ferry flight will be subject to compliance with an approved design change for any modification. The design change will be required to meet standards accepted by the Director as providing an adequate level of safety for the operation.

Before flying an aircraft having a restricted airworthiness certificate in or over a foreign country, the operator should determine whether operating requirements may be imposed by that country, and any other country on the route of flight, because of the condition of the aircraft.

A request for permission to operate over or within the foreign country should include a statement describing the deviations from the standard category airworthiness certificate standards. Such deviations, in effect, would also be deviations from the airworthiness standards of Annex 8 to the Convention on International Civil Aviation (ICAO).

In the case of an aircraft otherwise eligible for a standard category airworthiness certificate, the statement describing the deviations from the standard category airworthiness certificate requirements may be worded as follows—

This aircraft does not comply with the International Airworthiness Standards of Annex 8 to the Convention on International Civil Aviation when operated at a weight in excess of its maximum certificated take-off weight and at a weight in excess of its maximum zero fuel weight because of the additional fuel, fuel carrying facilities, associated equipment, and navigation equipment installed in the aircraft.

The words—

- *when operated at a weight in excess of its maximum certificated take-off weight*
- and
- *at a weight in excess of its maximum zero fuel weight—*

will not be used if the aircraft is not being operated above its maximum certificated take-off weight or its maximum zero fuel weight.

The words—

- *and navigation equipment—*

will not be used if such additional equipment is not required for the flight.

Certificate limitations and duration

Limitations

Limitations will normally only be placed on restricted category certificates, and only where the special purpose operations the aircraft is to be used for require additional limitations not already given in the applicable flight manual or flight manual supplements.

Aircraft with a restricted category airworthiness certificate are subject to the additional operational restrictions specified in 91.103, including no flight instruction operations except—

- conversion instruction
- instruction for an agricultural rating
- instruction for the specific purpose for which the aircraft has been certificated

In all cases the Director may impose limitations to ensure the safe operation of the aircraft.

Appendix 2 to this AC is a general list of operations, limitations, and restrictions relating to airworthiness certificate categories.

Duration

Airworthiness certificates in the standard or restricted category will normally be issued as non-terminating documents.

Certificates with an expiry date may be issued where it is appropriate for the circumstances, such as where a certificate is issued in the restricted category for a special purpose, such as an international ferry flight, that is to be of a short duration.

Airworthiness certificate – application

General

An application for an airworthiness certificate in the standard or restricted category is to be made on CAA Form 24021/05. This form is available from the CAA at—

Civil Aviation Authority
P.O. Box 31-441
Lower Hutt

or on the CAA web page at—

<http://www.caa.govt.nz>

The completed application form, together with the prescribed application fee, must be submitted to the CAA—

- for aircraft with acceptable evidence of conformity, not less than 28 days prior to the date requested for the inspection of the aircraft
- for aircraft without acceptable evidence of conformity, immediately the aircraft is imported, or the decision is taken to rebuild, restore, and return the aircraft to service

All charges associated with the issue of the airworthiness certificate will normally be invoiced to the aircraft's registered owner. The CAA will invoice another client if it receives a written request and that client has agreed in writing to accept the charges.

If any required information is not available, this should be advised separately, with reasons, in a covering letter with the application.

Aircraft description

The applicant should ensure correct model designations are used.

The data plate should be checked to ensure that the information corresponds to references in the aircraft's documentation. If differences are found then the reasons for them should be determined and the CAA advised.

Many aircraft have popular names that are sometimes incorrectly considered as the model designation. Examples are—

- Cessna Skymaster (correct model designation T337G)
- Piper Tomahawk (correct model designation PA-38-112)

Evidence of conformity

A copy of the statement of conformity as defined earlier in this AC should be supplied. If the aircraft is newly manufactured by an aircraft manufacturing organisation certificated under Part 148 the statement of conformity may be supplied at the time of the inspection of the aircraft.

For aircraft that do not have acceptable evidence of conformity all information that will assist the eligibility investigation should be supplied. Examples of this is provided earlier in this AC and on the application form. For further advice the Aircraft Certification Unit of the CAA should be contacted.

Design changes

All modifications that have been carried out should conform with design changes approved for the type. The applicant will be required to provide evidence of the approval of the design changes.

Evidence that design changes were approved by the exporting State's Airworthiness Authority against the applicable type certification standards will be acceptable for the issue of an Airworthiness Certificate. A foreign authority's approval may be shown by—

- the issue of an Export Certificate of Airworthiness or equivalent
- copies of the applicable approval certificates

Temporary alterations made for an import ferry flight should be removed before inspection of the aircraft. Such alterations may be listed in the Export Certificate of Airworthiness. Any design changes made after the issue of the Export Certificate of Airworthiness should be identified as such and separate evidence of the relevant approval provided.

The issue of an airworthiness certificate for an imported aircraft will accept any listed design changes that have not otherwise been approved. The acceptance will be limited to that individual aircraft but will normally only apply to modifications installed overseas for which there are certified entries in the aircraft's maintenance records. In all cases there must be sufficient evidence the modification meets the applicable airworthiness requirements.

Maintenance records

Maintenance records should consist of logbooks or equivalent documentation that show the maintenance history of the airframe, engines, propellers and all installed equipment.

The compliance with the applicable airworthiness directives issued under Part 39 should be recorded in the maintenance records and certified.

For an imported aircraft issued with an Export Certificate of Airworthiness, the maintenance records for the aircraft will usually show that the airworthiness directives of the exporting country

have been complied with. The applicant should confirm this. The applicant should also determine if any additional airworthiness directives, applicable to the aircraft model and serial number, or its equipment, have been issued by the New Zealand CAA and whether they have been complied with.

Additional airworthiness requirements

The additional airworthiness requirements of Part 26 are required to be met. For aircraft type certificated or type accepted after 1 April 1997 this compliance will have been shown at the time of the issue of the type certificate or type acceptance certificate. For other aircraft this will have to be determined on a case by case basis.

Maintenance inspection

The aircraft should have undergone an 100 hour / Annual inspection within 60 days conducted under Part 43, or an equivalent inspection accepted by the CAA. An equivalent inspection could be an annual or 100-hour inspection performed under the Federal Aviation Administration FAR 43. Other types of inspections may be accepted if there is evidence that they provide an assurance of the condition of the aircraft and a level of inspection equivalent to Part 43.

Flight manual

The flight manual should be the one accepted by the CAA for the aircraft model. This flight manual may differ from the one carried in the aircraft, either by revision state or origin. The aircraft certification unit of the CAA will advise the correct manual at the time of the application.

Aircraft Inspection

All aircraft are required to be inspected by the CAA prior to the issue of an airworthiness certificate.

Newly manufactured hot-air balloons may be inspected by a person to whom the Director has delegated this function.

This inspection ensures that the aircraft—

- conforms to its approved type design
- complies with the applicable rules
- is in a condition for safe operation

The applicant should be prepared to furnish the following to the CAA inspector—

- an aircraft complete and ready to fly except for cowlings, fairings, and panels opened for inspection
- an aircraft that has had the following carried out, as required—
 - weight and balance measurements
 - rigging checks
 - retraction tests
 - aircraft and engine duplicate control checks
 - fuel flow checks
 - full power engine runs
 - taxi tests

- a compass swing
- an aircraft certificate of registration
- a logbook of the aircraft, engine, propeller, and Airworthiness Directives to allow for the review of servicing records and the recording of the inspection and certification by the CAA inspector
- evidence that the minimum of a 100-hour / Annual inspection in accordance with Part 43 has been carried out

The applicant should arrange for the aircraft and all required documentation to be available for inspection by the CAA in a well lit and sheltered place. This could be an aircraft hangar where there is adequate room for inspection. All work on the aircraft should have been completed. Personnel should be available to open cowlings, fairings, and panels for inspection purposes.

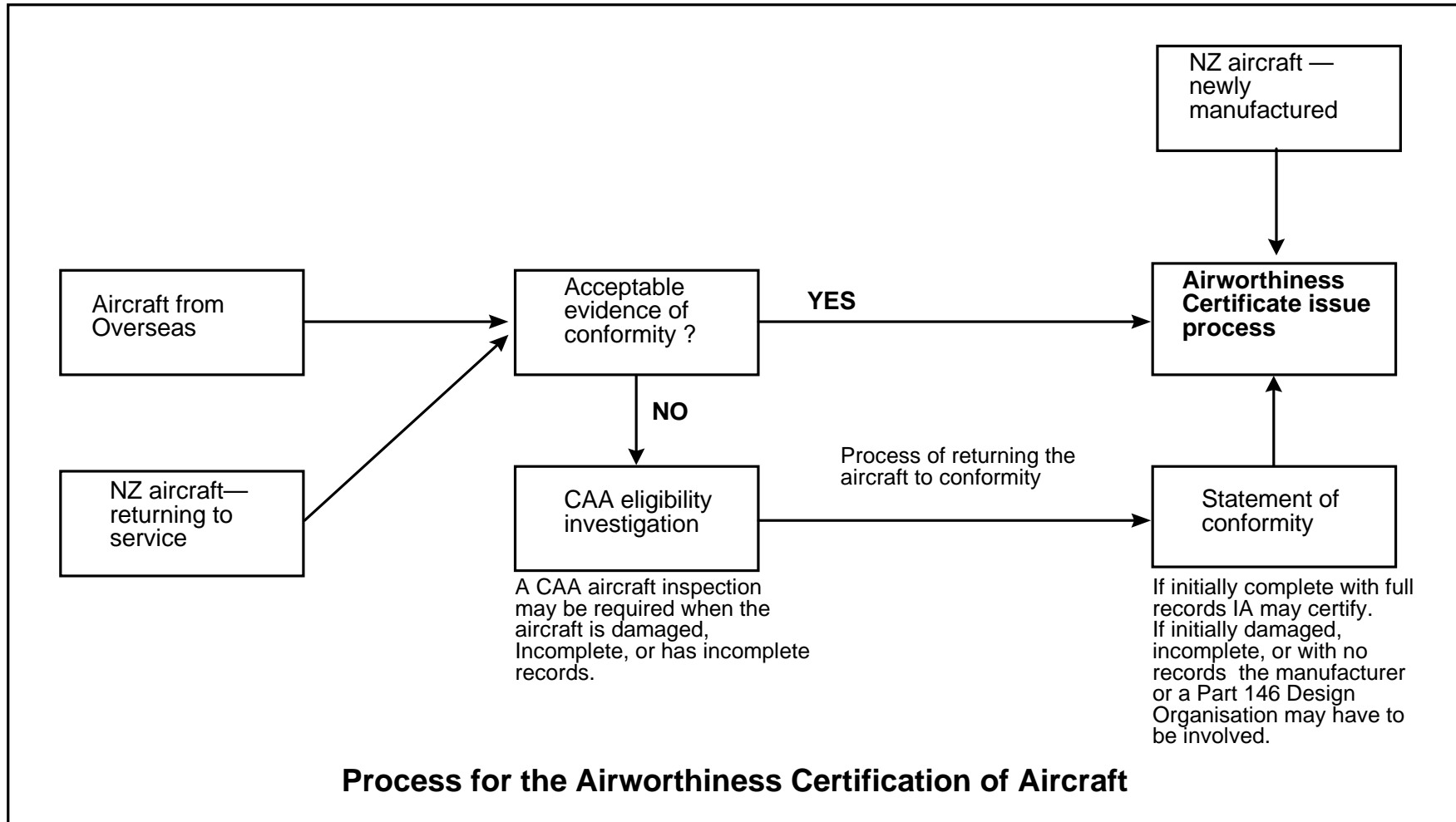
The CAA regards the initial inspection date specified in the application as provisional for planning purposes only. On receipt of an application the CAA will reply with a letter detailing the requirements to be met for the issue of the certificate. This letter finishes by requesting the applicant to advise the CAA in writing at least seven days in advance of a firm date requested for the inspection.

The CAA will issue airworthiness certificates outside New Zealand but in addition to the normal charges all travel costs and expenses are payable by the applicant, including air fares, travel time, accommodation, meals, incidentals, and taxes.

A written agreement to meet these costs is required before the commencement of any travel.

APPENDIX 1

Airworthiness Certificate Issue



APPENDIX 2

Operations for Airworthiness Certificate Categories

NEW ZEALAND AIRWORTHINESS CERTIFICATION					
NZ Manufactured Aircraft - Type Certificate Imported Aircraft - Type Acceptance Certificate		Non-Type Certificated or non-Type Accepted			
Airworthiness Design Standards iaw Part 21, Appendix C or Accepted Equivalents (see AC21-1)	Other Equivalent Airworthiness Design Standards to be Accepted by the Director	Full Type Design → Minimum One Test Flight Some Type Design → Short Flight Test Programme No Type Design → Full Flight Test Programme	No Flight Test Programme	Limitations or Restrictions (Minimum)	
STANDARD				Nil	
	RESTRICTED				- No Air Transport Operations
		SPECIAL			
		<u>Experimental</u> Part 91 Operations	- Ex-Military & Historic - Amateur Built - Other Aircraft that do not qualify in the Standard or Restricted Airworthiness Categories		- Non-Hire or Reward Ops - Limited Area
		Specific Purposes	- Research and Development - Showing Compliance with Rules		- Limited Area - Limited Hrs - Crew Only
		NOTE Excludes	- Microlight Aircraft - Hang Gliders	<u>Special Flight Permits</u> - Ferry Flight - Flight Testing - Aircraft Evacuation - Customer Demo	- Specific Flights Only