



# Advisory Circular

AC 21.1(1)

DECEMBER 2000

## AIRCRAFT AIRWORTHINESS CERTIFICATION CATEGORIES AND DESIGNATIONS EXPLAINED

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### 1 REFERENCES

Civil Aviation Safety Regulations, (CASRs) Parts 21 to 35, and Civil Aviation Regulation (CAR) 262AA to 262AJ.  
Note: CASRs referred to above are currently enacted as CAR, 1998.

### 2 PURPOSE

This Advisory Circular (AC) is promulgated in order to explain the system of civil aircraft airworthiness categorisation and designation introduced into Australia subsequent to the issue of the CARs, and specifically CASR Part 21 Subpart H, "Certificates of Airworthiness".

### 3 STATUS OF THIS AC

This AC has been amended to include minor corrections.

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*Advisory Circulars (ACs) are advisory only. ACs provide recommendations and guidance to illustrate a method, or several methods, not necessarily being the only method by which legislative requirements may be met. They also provide a means of illustrating the meaning of certain requirements by offering interpretive and explanatory guidance. ACs should always be read in conjunction with the referenced regulations.*

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## **4 BACKGROUND**

**4.1** Aircraft certification is the whole process of assessing an aircraft type against its type design and the aircraft's condition for safe operation, which culminates in issue of a Certificate of Airworthiness (CoA) for an individual aircraft. Type Certification is a part-process of aircraft certification which leads to issue of a Type Certificate or equivalent document. This is necessary before the first of type or first of model CoAs can be issued.

**4.2** The obligation for Contracting States of the International Civil Aviation Organisation (ICAO), of which Australia is a member, to issue CoAs, is laid down in Part II, Section 3 of ICAO Annex 8, "Airworthiness of Aircraft". A CoA may be issued on the basis of satisfactory evidence that an individual aircraft complies with the appropriate airworthiness requirements, and that the aircraft has been constructed and assembled satisfactorily. A category block is always contained in a CoA format.

**4.3** Aircraft are categorised in two discrete areas — operational and airworthiness. The former applies to the manner in which the aircraft is to be operated, i.e. Transport, Aerial Work or Private, and is referred to as its Classification of Operation. It is towards the airworthiness categorisation of civil aircraft that this AC is directed.

**4.4** Readers should note that the detailed procedures for application and issue of CoAs, in particular categories, and the operating restrictions associated with those CoAs, are explained in succeeding Part 21 ACs, as follows:

- AC 21.2 "Standard Certificates of Airworthiness"
- AC 21.3 "Special Certificates of Airworthiness"
- AC 21.4 "Amateur-Built Experimental Aircraft - Certification"
- AC 21.5 "Limited Category Aircraft - Certification"
- AC 21.6 "Restricted Category Aircraft - Certification"
- AC 21.7 "Primary Category Aircraft - Certification"
- AC 21.8 "Intermediate Category Aircraft - Certification"
- AC 21.10 "Experimental Certificates"
- AC 21.11 "Amateur-Built (ABAA) Aircraft - Certification"
- AC 21.30 "Type Acceptance Certificates for Imported Aircraft"
- AC 21.31 "Type Certificates for Imported Aircraft"

## **5 DEFINITION OF CATEGORY**

An aircraft airworthiness category is essentially a homogeneous grouping of aircraft types and models of generally similar characteristics, based on the proposed or intended use of the aircraft, and their operating limitations.

## **6 STANDARD CERTIFICATES OF AIRWORTHINESS**

A standard CoA may be issued in the following categories:

- Transport
- Normal
- Utility
- Acrobatic
- Commuter
- Manned free balloons
- Special class

## **7 SPECIAL CERTIFICATES OF AIRWORTHINESS**

**7.1** A special CoA is issued to an aircraft which does not meet the requirements of an applicable comprehensive and detailed airworthiness code as required for standard category aircraft.

**7.2** A special CoA may be issued in the following categories:

- Primary
- Intermediate
- Restricted
- Limited
- Amateur Built (Accepted under an Amateur Built Aircraft Acceptance, ABAA)

**7.3** Although not categories per se, the following are discussed in this AC:

- Experimental aircraft
- Gliders
- Ultralights
- Exemption aircraft

**7.4** Note that experimental aircraft are not type-certificated; such aircraft may be issued an experimental certificate for one or more of a number of specific recognised purposes, as follows:

- research and development
- showing compliance with regulations
- training the applicant's flight crew
- exhibition
- air racing
- market surveys
- operating amateur-built aircraft
- operating kit-built aircraft
- private operations of aircraft previously used for research and development or showing compliance with regulations

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7.5 An experimental certificate is classified as a special certificate of airworthiness.

## 8 BRIEF SPECIFIC CATEGORY AND DESIGNATION INFORMATION

(See paragraph 4.4 above).

### 8.1 Transport Category:

- (a) transport category applies to multi-engined aircraft primarily intended for the regular public transport of passengers and/or cargo for hire or reward;
- (b) transport category generally applies to aircraft with a maximum take-off weight (MTOW) in excess of 5700 kg. Such aircraft must meet the airworthiness standards of CASR Part 25 (for aeroplanes) or CASR Part 29 (for rotorcraft), or be automatically accepted from a CASA-recognised country, or comply with the predecessors or equivalents of these standards. It also includes aircraft which comply with the requirements of Civil Aviation Order (CAO) 101.4, and the now-repealed CAOs 101.2, 101.5, 101.6, 101.8 or 101.10;
- (c) there are some exceptions to the requirements outlined in (b) above:
  - (i) nothing precludes a multi-engined aircraft of less than 5700kg MTOW being certificated in the transport category, if that is the election of a manufacturer. However, the aircraft type must still meet CASRs Part 25 or Part 29;
  - (ii) commuter category aircraft may be in excess of 5700 kg MTOW;
  - (iii) some normal category types may be in excess of 5700 kg MTOW e.g. aircraft certificated under Special FAR (SFAR) Part 41;
- (d) the Australian airworthiness standards include a transport category of aircraft based on FAR Part 23 (normal) certification, as long as certain minimum design features (such as multi-engined configuration) are met. This is allowed for under CAO 101.4 (“Airworthiness Certification Requirements — Imported Aeroplanes Not above 5700 kg in the Transport Category”).

### 8.2 Normal Category:

- (a) normal category applies to aircraft which are intended for non-acrobatic operation, having a seating configuration (excluding pilot seats) of nine seats or less, and a MTOW of 5700 kg or less, or 2750 kg or less for rotorcraft;
- (b) normal category aircraft must meet the airworthiness standards of CASR Part 23 (for aeroplanes), or Part 27 (for rotorcraft), or be automatically accepted from a CASA-recognised country, or comply with the predecessors or equivalents of these standards. It also includes aircraft which complied with the requirements of the now-repealed CAOs 101.22 or 101.24;
- (c) note that normal category aeroplanes which have been type-certificated under the JAR-VLA design requirements carry more design restrictions than the broad category specified in (a) above:
  - (i) single, non-turbine engine only;
  - (ii) two seats or less;
  - (iii) MTOW of 750 kg or less;

- (iv) stall speed of 45 knots or less, in the landing configuration;  
operating restrictions are also placed on JAR-VLA types fitted with an engine certificated under CASR Part 32;
- (d) notwithstanding the nine seat maximum limitation expressed in (a) above, normal category includes aircraft certificated under SFAR 41 and SFAR 23 (with weight and seating limitation extensions). The now-repealed CAO 101.22 allowed for more than nine passenger seats;
- (e) non-acrobatic operation includes:
  - (i) any manoeuvre incidental to normal flying;
  - (ii) stalls, other than flick stalls;
  - (iii) lazy eights, chandelles and steep turns, in which the angle of bank does not exceed 60°.

### **8.3 Utility Category:**

- (a) utility category applies to aeroplanes, gliders and powered sailplanes which can be used for limited acrobatic operations, having a seating configuration (excluding pilot seats) of nine seats or less, and an MTOW of 5700 kg or less. Utility category aircraft can be considered as normal category “plus” aircraft, and can thus, for example, provide more operational flexibility as a basic training aircraft;
- (b) utility category aircraft must meet the design requirements of CASRs Part 22 or 23, or be automatically accepted from a CASA-recognised country, or comply with the predecessors or equivalents of these standards. Design requirements additional to those required for normal category include increased structural load and design dive speed factors. It also includes aircraft which complied with the requirements of the now-repealed CAOs 101.22 or 101.26;
- (c) limited acrobatic operation includes:
  - (i) spins (if approved for the particular type);
  - (ii) lazy eights, chandelles, and steep turns, or similar manoeuvres, in which the angle of bank is more than 60°, but not more than 90°.

### **8.4 Acrobatic Category:**

- (a) acrobatic category (aerobatic category has exactly the same meaning) applies to aeroplanes, gliders and powered sailplanes which can be used for acrobatic operations, having a seating configuration (excluding pilot seats) of nine seats or less, and a MTOW of 5700 kg or less. Acrobatic aircraft can be flown without restrictions, other than those shown to be necessary as a result of certification flight testing;
- (b) acrobatic category aircraft must meet the design requirements of CASR Parts 22 or 23, or be automatically accepted from a CASA-recognised country, or are aircraft which complied with the predecessors or equivalents of these standards. It also includes aircraft which complied with the requirements of the now-repealed CAO 101.22.

### **8.5 Commuter Category:**

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- (a) commuter category applies to aircraft which are intended for non-acrobatic operation, and which are multi-engined, propeller-driven aeroplanes having a seating configuration (excluding pilot seats) of 19 seats or less, and a MTOW of 8618 kg or less;
  - (b) commuter category aircraft must meet the design requirements of CASR Part 23, or be automatically accepted from a CASA-recognised country. The design code (from a specified amendment onwards) calls up a number of design requirements for commuter category additional to those specified for normal category, in areas such as performance, structural, control and powerplant certification, and thus confer a higher level of safety than is intrinsic to the normal category. In this sense, the commuter category design code is often referred to as “FAR 23 plus”.

### **8.6 Manned Free Balloon:**

- (a) manned free balloon designation applies to non-power-driven, lighter-than-air aircraft, where lift may be derived by systems such as hot air or trapped light gas;
- (b) manned free balloons must meet the design requirements of CASR Part 31. The designation also includes balloons which comply with the requirements of CAO 101.54.

### **8.7 Special Classes of Aircraft:**

- (a) an example of a special class of aircraft which would be entitled to the issue of a standard CoA is an airship. An airship is defined as an engine-driven, lighter-than-air aircraft that can be steered; it may be of rigid or flexible hull construction. Such aircraft include those which complied with the requirements of the now-repealed CAO 101.56. Hot air airships were also required to comply with the applicable requirements for the manned balloon category. A tiltrotor aircraft is another example of a unique type of design that would qualify as a special class;
- (b) a certification basis for any particular special class of aircraft will be negotiated between CASA and an applicant for issue of a standard CoA on a case-by-case basis. In this case, certification basis means an airworthiness design standard, plus any special conditions applied by CASA to that code.

### **8.8 Primary Category:**

- (a) a primary category aircraft (which may be an aeroplane, glider or powered sailplane, rotorcraft, manned free balloon or other class of aircraft) is of simple design and is intended for pleasure and personal use. The aircraft must:
  - (i) be unpowered, or powered by a single, naturally-aspirated engine;
  - (ii) have a stall speed of 61 knots or less in the landing configuration (or for a rotorcraft, have a maximum main rotor disc loading of 29.3 kg/sq. metre, under sea level ISA conditions);
  - (iii) have a MTOW of 1225 kg or less (1530 kg for seaplanes);
  - (iv) have a maximum seating capacity of not more than four persons, including the pilot; and
  - (v) have an unpressurised cabin, if applicable;

- (b) the aircraft must meet the airworthiness standards of CASR Part 26 which may include the applicable standards of CASRs Parts 22, 23, 27, 31, 32, 33 and/or 35, and/or such other airworthiness design criteria that CASA considers appropriate, which may include standards proposed by the applicant for type certification, and agreed with and promulgated by CASA. It is important to note that primary category aircraft are not amateur-built aircraft;
- (c) an aircraft which has been issued with a standard CoA, e.g. a normal category aircraft, can undergo a conversion process to allow it to be issued with a special CoA in the primary category; this would usually be done to realise relaxation in maintenance commitments and costs. If this process is followed, subsequent reversion to a standard CoA category may be difficult;
- (d) a primary category aircraft cannot be operated for most commercial purposes; however, if maintained by a LAME or an approved maintenance organisation, the aircraft can be used for certain types of pilot training (day/VMC only) or can be rented out for non-commercial operations.

### **8.9 Intermediate Category:**

- (a) the intermediate category is essentially an extension of primary category, and is one unique to Australia. The aircraft must:
  - (i) be powered by engines for which there are no limits in regard to type and numbers;
  - (ii) have a stall speed of 61 knots or less in the landing configuration (or for a rotorcraft have a maximum main rotor disc loading of 29.3 kg/sq. metre, under sea level ISA conditions);
  - (iii) have a MTOW of 1750 kg or less;
  - (iv) have a maximum seating capacity of no more than four persons, including the pilot; and
  - (v) have an unpressurised cabin, if applicable;
- (b) airworthiness design standards are as per those for primary category described above. Again, the aircraft cannot be amateur-built;
- (c) an intermediate category aircraft can be used for certain aerial work commercial operations, as determined by the aircraft certification basis and equipment fit, but only if maintained by a LAME or an approved maintenance organisation.

### **8.10 Restricted Category:**

- (a) restricted category applies to aircraft which may carry out certain special purpose operations, usually for hire or reward. Aircraft types which may be eligible for issue of a special CoA in the restricted category include:
  - (i) those designed and type certificated specifically as restricted category e.g. specialist water bombers, agricultural aircraft;
  - (ii) ex-military aircraft of:
    - (A) the Australian Defence Force; and/or
    - (B) an armed force of Canada, the USA, and/or the UK;

- (iii) aircraft which may have been standard category, but have been modified for special purpose operations; noting that, under certain conditions, such aircraft can be transferred from restricted to a standard CoA category, and back. This is discussed in detail at paragraph 12;
- (b) restricted category aircraft may not carry passengers or cargo for hire or reward. Essential crew required for the particular special purpose operation, or needed to accomplish the work activity directly associated with the special purpose, may be carried. Particular limitations on operation may be placed on the CoA. Special purpose operations that may be carried out are:
  - (i) agricultural operations for example, spraying, dusting, and seeding, and livestock and feral animal control; or
  - (ii) forest and wildlife conservation; or
  - (iii) firefighting; or
  - (iv) aerial surveying and scientific research for example, photography, mapping, and oil and mineral exploration; or
  - (v) patrolling for example, pipelines, power lines, or canals; or
  - (vi) weather control and atmospheric research for example, cloud seeding; or
  - (vii) aerial advertising for example, skywriting, banner towing, airborne signs and public address systems; or
  - (viii) glider towing; or
  - (ix) target towing; or
  - (x) target designation; or
  - (xi) any other similar operation;
- (c) the restricted category can therefore include a vast range of aircraft classes and types, e.g. multi-engined ex-military bombers or patrol aircraft, used for forest firefighting, or large, purpose-designed aircraft used for the same mission; high-performance, corporate jet aircraft modified for high-speed target towing, commuter category aircraft extensively modified for geophysical survey etc.

### **8.11 Limited Category:**

- (a) the limited category is unique to Australia. It differs markedly from the limited category prescribed by the US FAA in the FARs. A type certificate is not issued in the limited category because a limited category aircraft is not required to comply with any specific civil airworthiness or design standards. However, CASA must be satisfied that the aircraft meets airworthiness requirements consistent with its special purpose use. If it has been manufactured in accordance with the requirements of and accepted by an armed force, then it must have had a demonstrated history of safe operation. For other than ex-military aircraft e.g. replica aircraft, the aircraft must meet airworthiness standards and requirements that are satisfactory to CASA;
- (b) the limited category caters for operation of ex-military aircraft, which are not restricted to sources listed in paragraph 8.10 (a) above. For these types, the applicant for CoA issue restores, or has the aircraft restored under a set of recommended practices and procedures. CASA or an authorised person inspects the aircraft to determine that the aircraft has been properly restored using

acceptable workmanship methods, techniques and practices, and is in a condition for safe operation;

- (c) limited category aircraft can only be operated for one or more special purposes for which the CoA is in force, and these are specifically included on the CoA. They are:
  - (i) parachute jumping; or
  - (ii) acrobatic flights; or
  - (iii) acrobatic training; or
  - (iv) mock combat; or
  - (v) operating historic and ex-military aircraft in adventure type operations; or
  - (vi) operating replica aircraft; or
  - (vii) exhibition flights; or
  - (viii) any purpose in which the sole usage of the aircraft is the carriage of persons where that carriage of persons occurs as an integral part of engaging in a recreational pursuit that is intrinsically dangerous;

additionally, a limited category aircraft can be used for other specific operations in support of the special purpose operations, e.g. flying an aircraft to and from airshows; maintenance test flying etc.;

- (d) finally, limited category aircraft may carry passengers for hire or reward, subject to risk warning requirements. The aircraft can be of any shape, weight or size, but are limited to the carriage of six occupants or less (including passengers and crew), unless approved by CASA or an authorised person to carry more. CASA is exempted from liabilities in regard to operation of this category of aircraft, as set out in CASR 201.3.

### **8.12 Amateur-Built (ABAA) Category:**

- (a) amateur-built (ABAA) category applies to aircraft for which:
  - (i) the major portion (i.e. greater than 50%) is fabricated and assembled by a person or persons who undertake the construction project solely for their own education or recreation; and
  - (ii) an Amateur Built Aircraft Acceptance (ABAA) has been issued by CASA or its predecessors, or is issued in response to an application submitted to CASA before 1 October 2000; and
  - (iii) MTOW is not greater than 1500 kg, and not more than four seats are fitted;
- (b) there is a qualification in the case of aeroplanes within this category that the stall speed in the landing configuration cannot exceed 61 knots if the aircraft is fitted with type certificated engine(s) or 55 knots in any other case;
- (c) the ABAA would have been issued in respect to aeroplanes which meet CAO 101.28, or had an approved record of safe history of operations; in the case of rotorcraft, the aircraft would have had to meet FAR Part 27, or a lesser standard as prescribed by CASA;

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- (d) ABAA control is coordinated between CASA and other approved organisations. The aircraft must be constructed in approved premises, and stage inspections throughout the construction period are involved. i.e. a continuation of the CAO 100.18 concept. Finally, this category should not be confused with amateur-built aircraft covered by the experimental certificate.

### 8.13 Provisional CoA

The Provisional CoA follows from provisional type certification, and is not therefore a subject for discussion in this AC.

### 8.14 Special Flight Permit:

- (a) the special flight permit replaces the Permit to Fly previously issued by CASA or its predecessors, or authorised persons, under CAR 134 “Permission for Certain Flights”;
- (b) a special flight permit may be issued where an aircraft does not meet the applicable airworthiness requirements, but can be reasonably expected to be capable of safe flight for the intended purposes, which may include one or more of the following:
- (i) flying the aircraft to a base where repairs, alterations, or maintenance are to be performed, or to a point of storage;
  - (ii) delivering or exporting the aircraft;
  - (iii) production flight testing new production aircraft;
  - (iv) evacuating the aircraft from an area of impending danger;
  - (v) conducting customer demonstration flights in new production aircraft that have satisfactorily completed production flight tests;
  - (vi) assisting in searching for, bringing aid to or rescuing persons in danger on a particular occasion;
  - (vii) assisting in dealing with a state of emergency;
  - (viii) operations at a weight in excess of MTOW;
- (c) a special flight permit normally contains, on that permit, the specific conditions and limitations pertaining to the permit operations. CASA or an authorised person may also relax certain regulatory requirements for operations under the permit e.g. the aircraft need not necessarily be registered or the aircraft may be flown without a maintenance release;
- (d) unlike the CAR 134 Permit to Fly, a special flight permit allows operation of an aircraft outside Australian territory, so long as it is operated for the intended purpose, and within the timeframe specified on the permit (normally for delivery or export purposes). The permit does not authorise flight over countries other than Australia without permission of those countries.

### 8.15 Experimental Aircraft:

- (a) experimental aircraft are, by their very nature, not type-certificated. “Experimental” is not a category per se, rather, it is a designation. It is also important to note that an experimental certificate does not attest to an aircraft being fully airworthy, despite being grouped under the special CoA. The experimental certificate system

replaces some elements of airworthiness control previously covered by the CAR 134 Permit to Fly, and the CAO 101.31 developmental category CoA;

- (b) the experimental certificate system allows any person or commercial concern to construct an aircraft of any size and seating capacity, and with any number and type of engines. Experimental certificates can be issued for one or more of a number of specific recognised purposes as follows (note: no passenger-carrying experimental aircraft operations can be undertaken for hire or reward):
  - (i) **research and development.** For example - testing new aircraft design concepts, new aircraft equipment, new aircraft installations, new aircraft operating techniques, or new uses for aircraft:
    - (A) this purpose is primarily intended for operations which lead to subsequent issue of a type certificate, including proof-of-concept flying, or for operations which may be pure research and development (R & D) in nature, such as determining whether an idea warrants further investigation;
    - (B) both commercially-built and amateur-built aircraft are eligible for issue of an experimental certificate under this purpose. Operations are limited to genuine research and development activities. An experimental certificate is valid only for the period of time specified on the certificate, normally one year, and for the number of flights necessary to complete the R & D program;
    - (C) thus the R & D purpose is essentially a transitory one, and indefinite operation under this purpose is not intended. Any other aircraft necessary to support the R & D project (such as a chase plane etc.) are also eligible for certification under this purpose;
  - (ii) **showing compliance with regulations.** For example - conducting flight tests and other operations to show compliance with the airworthiness regulations including flights to show compliance for issue of Type and Supplemental Type Certificates, flights to substantiate major design changes, and flights to show compliance with the function and reliability requirements of the regulations:
    - (A) this purpose provides for operations to show compliance with the CASRs or other relevant design code after completion of testing under the R & D purpose, where the Type Certificate holder has revised the relevant design data, or where a person has applied for approval of a major modification or design change under a Supplemental Type Certificate. It also provides for test flying undertaken by CASA as part of a type certification program;
    - (B) an experimental certificate for this purpose is valid only for the period of time specified on the certificate, normally one year, and for the number of flights necessary to accomplish the purpose;
  - (iii) **training the applicant's flight crew.**
    - (A) operations under this purpose are limited to flight crews (normally the aircraft manufacturer's employees) for whom training in the

- experimental aircraft is necessary for subsequent operations of the aircraft in type certification programs or for production flight testing;
- (B) an experimental certificate for this purpose is valid only for the period of time specified on the certificate, normally one year, and for the number of flights necessary to accomplish the training;
- (iv) **exhibition.** For example - exhibiting the aircraft's flight capabilities, performance, or unusual characteristics at air shows, motion picture and television productions, and the maintenance of exhibition flight proficiency, including flying to and from such air shows and productions (for persons exhibiting aircraft):
- (A) operations covered under this purpose are for valid exhibition purposes only, as described immediately above. Also included are:
- the exhibition of historic and ex-military aircraft which do not have a standard CoA in a standard category, or a special CoA in the limited category, and
  - operations for the purpose of training for the exhibition or maintaining proficiency;
- (B) an experimental certificate for this purpose is normally valid for an unlimited period of time. However, operations under this purpose are normally limited to a specified area in the vicinity of the airport at which the aircraft is permanently based, or at the venue of the intended exhibition, including flying to and from the venue, and are based on a submitted list of events to be attended;
- (v) **air racing.** For example - participating in air races, including (for participants) practising for air races, and flying to and from racing events:
- (A) an experimental certificate for this purpose is normally valid for one year. Operations under this purpose are normally limited to a specified area in the vicinity of the airport at which the aircraft is permanently based, or at the venue of the intended race, and are based on a submitted list of events to be attended.
- (vi) **market surveys.** For example - use of aircraft for purposes of conducting market surveys, sales demonstrations, and customer crew training:
- (A) issue of experimental certificates for this purpose are confined to:
- a manufacturer of an aircraft manufactured within Australia that is to be used for market surveys, sales demonstrations, or customer crew training;
  - a manufacturer of aircraft engines who has altered a type-certificated aircraft by installing different engines, manufactured by the manufacturer within Australia, who may apply for an experimental certificate for market surveys if the basic aircraft, before alteration, was type-certificated in the normal, utility, acrobatic, commuter, or transport category;

- a person who has altered the design of a type-certificated aircraft to be used for market surveys if the basic aircraft, before alteration, was type-certificated in the normal, utility, acrobatic, commuter, or transport category;
- (B) an experimental certificate for this purpose is normally limited to the time needed for the prescribed operations, and normally does not exceed one year. The applicant must have established an inspection and maintenance program and have flown for at least 50 hours, or at least 5 hours if it is a type-certificated aircraft which has been modified;
- (vii) **operating amateur-built aircraft:**
- (A) this purpose allows an amateur builder to construct an aircraft using the same basic guidelines as for an ABAA-supported type (see paragraph.8.12.(a) above), but without an ABAA being available. On the other hand, an amateur builder can still elect to operate his or her aircraft on an experimental certificate even if an ABAA for the type involved is available;
- (B) there are no prescribed design standards for amateur-built aircraft to be operated under experimental certificates. If an amateur-built (experimental) aircraft is to be moved to the amateur-built (ABAA) category, then it must be shown to comply with the requirements of paragraph 8.12 (c) above, and a review carried out of the maintenance undertaken during the period of the experimental certificate operation;
- (C) amateur-built experimental certificates may also be issued to aircraft which are built from a kit manufactured by a person who may not hold a Production Certificate (PC) for the kit, as long as the major portion rule is observed;
- (D) no CASA approval is required before construction of this class of amateur-built aircraft is commenced, nor are stage inspections required. Prospective builders should contact an approved organisation before project commencement. Any choice of engine, propeller, wheels, etc., and any choice of materials may be used in the construction of the aircraft. The use of used or salvaged major assemblies e.g. wings, fuselage, empennage, undercarriage assemblies from type-certificated aircraft is permitted, as long as they are individually in a condition for safe operation. These assemblies will be considered in determining the “major portion”, but no credit for fabrication and assembly will be given to the builder;
- (E) a construction log must be kept by the amateur builder. The approval process will consist of a general inspection of the aircraft, and a construction documentation check, prior to the issue of the experimental certificate;
- (F) an experimental certificate for this purpose is normally valid for an unlimited period of time;

- (G) aircraft which are manufactured and completely assembled as a business for sale to other persons are not considered to be bona fide amateur-built aircraft, regardless of the status of the builder. Further, amateur-built kit owner(s) will jeopardise eligibility for experimental certificate issue if another person or persons build the aircraft;
- (viii) **operating kit-built aircraft:**
- (A) this purpose provides for operation of kit-built aircraft where the kit is manufactured by a person holding a Production Certificate (PC) for the kit, and the kit aircraft is type certificated in the primary category, but the kit is assembled without the benefit of the PC holder's supervision and quality control. The major portion rule as discussed above in 8.12 (a) (i) does not apply;
- (B) an experimental certificate for this purpose is normally valid for an unlimited period of time;
- (ix) **private operations of prototype aircraft previously issued with experimental certificates for the purposes of R & D, showing compliance with regulations, and exhibition:**
- (A) this purpose provides for limited private use of prototype aircraft subsequent to operations for purposes as per the heading above. Note that there can be only one prototype in any series of an aircraft type;
- (B) operations are confined to the carriage of six occupants maximum (unless otherwise approved by CASA or an authorised person), and not for hire or reward. The aircraft is subject to the same limitations and conditions as amateur-built experimental aircraft. A prototype may be eligible for subsequent certification, as a standard category aircraft, if the aircraft has been shown to comply with the applicable airworthiness standards for the category sought, and conformance has been demonstrated throughout the aircraft's construction period;
- (C) an experimental certificate for this purpose is normally valid for an unlimited period of time.

## 9 GLIDERS AND POWERED SAILPLANES

**9.1** Gliders and powered sailplanes are not categories for the purposes of airworthiness certification. Rather, these classes of aircraft are placed in categories which reflect their capabilities, mode of construction and degree of development, i.e.:

- primary
- utility
- acrobatic
- amateur-built (ABAA)
- amateur-built (experimental)
- kit-built (experimental)

**9.2** In the past, gliders and powered sailplanes were required to meet the design requirements of CAO 101.26, “Aircraft Certification Requirements - Gliders and Powered Sailplanes”, which in turn called up the basic design standards of JAR Part 22, BCAR Section E, OSTIV (a Dutch standard) or LFSM (a German standard). CAO 101.26 has now been repealed. These classes of aircraft must now meet the requirements of CASR Part 22, which is included in the above design standards.

**9.3** All CoA activities for these classes of aircraft in Australia are undertaken by the Gliding Federation of Australia (GFA), and applicants should always approach the GFA in the first instance.

## **10 ULTRALIGHT AIRCRAFT**

**10.1** Again, ultralight aircraft is not a category for the purposes of airworthiness certification. In Australia, an ultralight is currently considered to be a single-engined aircraft with a MTOW not exceeding 544 kg.

**10.2** There are currently a number of different classes of ultralight aircraft in Australia, and they are governed by different standards e.g. CAO 101.55, “Aircraft Certification Requirements - Aeroplanes with a Maximum Weight Not Exceeding 450 kg”, or by CAO 95-series exemption orders specifying particular configuration, weight and performance limitations etc. (for instance CAO 95.10 covering privately built single place ultralight aeroplanes).

**10.3** Some ultralight aircraft may operate as normally registered civil aircraft, or under the umbrella of a relevant sport aviation organisation.

**10.4** Ultralight aircraft per se are not reflected as a category in either standard or special CoA. However, depending on their registration status, design standards and modes of construction, certain ultralight aircraft could be issued with a CoA in the amateur-built (ABAA), amateur-built or kit-built (experimental), primary or intermediate categories.

## **11 EXEMPTION AIRCRAFT**

**11.1** “Exemption” aircraft are those specified in the CAOs 95-series, and by their very nature are not generally eligible for a CoA, and are not classified as categories in the airworthiness sense, e.g.:

- Hang gliders (CAO 95.8)
- Single place gyroplanes with empty weight not exceeding 250 kg (CAO 95.12)
- Two place gyroplanes with empty weight not exceeding 300 kg (CAO 95.12.1)
- Tethered balloons, kites, parasails or gyrogliders (CAO 95.14)
- Weight shift controlled aeroplanes and powered parachutes (CAO 95.32)
- Unmanned free balloons (CAO 95.15)
- Ultralight aeroplanes (CAO 95.55)

**11.2** It should be noted that a number of the above classes of aircraft can also be classified “ultralights” as already discussed in paragraph 10 above.

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**12 MULTIPLE AIRWORTHINESS CERTIFICATION**

**12.1** “Multiple certification” can be viewed in two contexts:

- (a) the granting of certification in two categories, on the one standard CoA, e.g. normal and utility typed in as two categories for the one aircraft on its standard CoA, if the relevant design standards are met;
- (b) the multiple certification procedure is directed at the capability for certain categories of aircraft to be eligible for multiple CoAs if they can be converted to restricted category and back under certain prescribed conditions.

**12.2** The procedure at (b) above is allowed for under CASR 21.187. It allows two CoAs (one to cover the restricted category operation, and one to cover the other relevant category) to be issued for the one aircraft. The combination of limited and restricted categories is not precluded. The only categories excluded from this arrangement are primary and intermediate. An applicant for multiple CoAs is entitled to them if compliance is shown with the requirements of each category when the aircraft is in the configuration for that category. Additionally, the applicant must show that the aircraft can be converted from one category to the other by removing or adding equipment using simple mechanical means.

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Richard G. Yates  
Assistant Director  
Aviation Safety Standards