Australian Government

Civil Aviation Safety Authority

I, MARK ALAN SKIDMORE, Director of Aviation Safety, on behalf of CASA, make this instrument under regulation 21.010D of the *Civil Aviation Safety Regulations 1998*.

[Signed M. Skidmore]
Mark Skidmore AM
Director of Aviation Safety

31 May 2016

Part 21 Manual of Standards Instrument 2016

Part 1 — Preliminary

1.1 Name of instrument

(1) This instrument is the *Part 21 Manual of Standards Instrument 2016*.

(2) This instrument may be cited as the *Part 21 Manual of Standards*.

1.5 Commencement

(1) This instrument commences on 1 June 2016.

(2) Section 8.5 and section 13.1 of this instrument are repealed at the end of 31 May 2017.

1.10 Definitions

In this instrument:

Australian Sport Rotorcraft Association Gyroplane Specifications means the specifications for gyroplanes published by the Australian Sport Rotorcraft Association and as in force from time to time.

BCAR Part 31 – balloons (Britain) means Part 31 of the British Civil Airworthiness Requirements published by the Civil Aviation Authority of the United Kingdom and as in force from time to time.

BCAR Q – airships (Britain) means Section Q of the British Civil Airworthiness Requirements published by the Civil Aviation Authority of the United Kingdom and as in force from time to time.

BCAR Section S (Britain) means Section S of the British Civil Airworthiness Requirements published by the Civil Aviation Authority of the United Kingdom and as in force from time to time.

BCAR Section T (Britain) means Section T of the British Civil Airworthiness Requirements published by the Civil Aviation Authority of the United Kingdom and as in force from time to time.

BFU-95 (Germany) means the standard for ultralight aircraft published by German Aero Club e. V. as in force from time to time.

CAO 101.54 means Civil Aviation Order 101.54 as in force from time to time.

CS-LSA (EASA) means the Certification Specifications for Light Sport Aeroplanes published by EASA and as in force from time to time.

CS-VLA (EASA) means the Certification Specifications for Very Light Aeroplanes published by EASA and as in force from time to time.

DS 1014E (Canada) means the Design Standards for Advanced Ultra-light Aeroplanes published by the Light Aircraft Manufacturers Association of Canada and as in force from time to time.

FAA AC 21.17-1A – airships (USA) means the advisory circular AC 21.17-1A – Type Certification – Airships published by the Federal Aviation Authority of the United States of America on 25 September 1992 and as in force from time to time.

FAR Part 31 – balloons (USA) means Part 31 of the FARs as in force from time to time.

JAR-VLA means the Joint Aviation Requirements for Very Light Airplanes published by the Joint Aviation Authorities of Europe and as in force from time to time.

LFT-UL (Germany) means the German standard LTF-UL for microlight aircraft issued by Luftfahrt-Bundesamt and as in force from time to time.

PICA 26 (Australia) means the PICA 26 design criteria published by CASA and as in force from time to time.

UL/2-PT (Czech Republic) means the design standards for aerodynamically controlled mircrolight aircraft published by Light Aircraft Association of the Czech Republic and as in force from time to time.

Part 2 — Type certificates and type acceptance certificates

Note This Part and Part heading are reserved for future use.

Part 3 — Provisional type certificates

Note This Part and Part heading are reserved for future use.

Part 4 — Changes to type certificates

Note This Part and Part heading are reserved for future use.

Part 5 — Supplemental type certificates

Note This Part and Part heading are reserved for future use.

Part 6 — Production under type certificates

Note This Part and Part heading are reserved for future use.

Part 7 — Production certificates

Note This Part and Part heading are reserved for future use.

Part 8 — Certificates of airworthiness (except provisional certificates of airworthiness) and special flight permits

8.1 Light sport aircraft — standards for design, performance or continuing airworthiness

(1) For the definition of ***LSA standards*** in paragraph 21.172 (b) of CASR, a standard for the design, performance or continuing airworthiness of a class of light sport aircraft mentioned in column 2 of an item of the table to subsection (2) is prescribed for the class of light sport aircraft mentioned in column 3 of the item.

(2) A standard for the design, performance or continuing airworthiness of a class of light sport aircraft mentioned in column 2 of item 2 of the table is prescribed for the class of light sport aircraft mentioned in column 3 of the item, only if the standard is used for the modification or repair of a light sport aircraft constructed to the standard.

Item	Standard	Class of aircraft
1	BCAR Section S (Britain) CS-VLA (EASA) CS-LSA (EASA) LFT-UL (Germany) UL/2 PT2 (Czech Republic) DS 10141E (Canada)	Fixed wing
2	BFU-95 (Germany) PICA26 (Australia) JAR VLA (Joint Aviation Authorities)	Fixed wing
3	Nil	Gliders
4	BCAR Section T (Britain) Australian Sport Rotorcraft Association Gyroplane Specifications (Australia)	Gyroplanes
5	BCAR Part 31 – balloons (Britain) FAR Part 31 – balloons (USA) CAO 101.54 – balloons (Australia) BCAR Q – airships (Britain) FAA AC 21.17-1A – airships (USA)	Lighter-Than-Air
6	BCAR Section S (Britain) DS 10141E (Canada)	Powered parachutes
7	BCAR Section S (Britain) DS 1014E (Canada)	Weight shift control

8.5 Special certificate of airworthiness — particular kinds of primary and intermediate aircraft

For subparagraphs 21.184 (4) (a) (ii) and 21.184A (2) (a) (ii) of CASR, the requirements mentioned in Schedule 1 to the *Civil Aviation Amendment Order (No. R94) 2004* as in force immediately before 1 June 2016 are prescribed.

Part 9 — Provisional certificates of airworthiness

Note This Part and Part heading are reserved for future use.

Part 10 — Approved design organisations

10.1 Purpose

For subregulation 21.263 (2) of CASR, this Part prescribes requirements that:

(a) must be contained in the exposition for an approved design organisation; and

(b) are for the qualifications, knowledge and experience for each position mentioned in paragraph 21.263 (1) (d) of CASR.

Note The positions mentioned in paragraph 21.263 (1) (d) are the accountable manager, head of design, each other managerial position, and each position held by a person who carries out a design activity for an approved design organisation.

10.2 Accountable manager — knowledge requirements

The exposition for the approved design organisation must include the requirement that a person appointed by the organisation as the accountable manager for the organisation understands:

(a) the responsibilities of the accountable manager for the organisation; and

(b) the scope of the organisation's approval, including its obligations under its approval certificate; and

(c) the organisation's structure and high level operational arrangements.

10.3 Head of design — knowledge, qualifications and experience requirements

(1) The exposition for the approved design organisation must include the requirement that a person appointed by the organisation as the head of design for the organisation:

(a) has comprehensive knowledge of the following:

(i) the responsibilities of the position of head of design for the organisation;

(ii) the civil aviation legislation applicable to the organisation;

(iii) the exposition and design assurance system manual for the organisation; and

(b) has good working knowledge of the civil aviation legislation applicable to the design activities carried out by the organisation under its approval certificate; and

(c) has tertiary qualifications in an engineering discipline at least equivalent to a 4 year bachelor degree in engineering under an Australian accredited or recognised program and relevant to the design activities carried out under the organisation's approval certificate; and

(d) has appropriate experience to enable the head of design to ensure that the organisation complies with its exposition and design assurance system manual and CASR in carrying out design activities, including a broad range of management experience working in 1 or more technical disciplines relevant to the design activities carried out by the organisation under its approval certificate;

(e) has at least 8 years' experience in an engineering discipline working on increasingly complex engineering projects relevant to the design activities carried out by the organisation under its approval certificate and including either:

(i) at least 2 years' experience carrying out design activities the same as, or similar to, the design activities carried out by the organisation, either for an organisation under Subpart 21.J of CASR or as an authorised person; or

(ii) at least 5 years' experience working in CASA or for the national aviation authority of another Contracting State carrying out activities the same as, or similar to, the design activities carried out by the organisation.

(2) A person who has held the position of head of design (however described) in a design organisation approved under regulation 30 of CAR 1988 is taken to meet the requirements mentioned in paragraphs (c), (d) and (e).

10.4 Person carrying out design activity — knowledge requirements

The exposition for the approved design organisation must include the following requirements for a person carrying out a design activity for the organisation in accordance with the organisation's approval certificate:

(a) the person must have comprehensive knowledge of:

(i) the responsibilities required of the position; and

(ii) the technical subject matter applicable to carrying out the design activity; and

(iii) the organisation's exposition and design assurance system manual applying to the design activity; and

(b) the person must have a good working knowledge of the organisation's exposition and design assurance system manual.

10.5 Person carrying out design activity — qualifications and experience requirements

(1) The section applies if a person carries out a design activity for an approved design organisation in accordance with the organisation's approval certificate and the design activity is not:

(a) approving a defect in an Australian aircraft as permissible unserviceability for the aircraft under regulation 21.007 of CASR; or

(b) approving technical data under regulation 21.009 of CASR; or

(c) approving a major change in a type design under regulation 21.098 of CASR.

(2) The exposition for the organisation must require that the person has:

(a) tertiary qualifications in an engineering discipline that are:

(i) at least equivalent to a 4 year Bachelor of Engineering degree under an Australian accredited or recognised program; and

(ii) relevant to the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR; and

(b) at least 6 years' experience in an engineering discipline working on increasingly complex projects relevant to the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR; and

(c) at least 12 months' experience in a civil aviation environment in an engineering discipline relevant to the design activity and to the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR; and

(d) experience carrying out certification processes relevant to the design activity; and

(e) experience working with other persons working in other engineering disciplines; and

(f) a good working knowledge of the civil aviation legislation and standards applicable to the design activity and approved design organisations.

(3) A person authorised by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR to carry out a design activity under Part 21 of CASR is taken to meet the requirements mentioned in subsection (2), if the person has been authorised to carry out an equivalent design activity, either for an organisation under Subpart 21.J of CASR or as an authorised person.

10.6 Person approving defect that is permissible unserviceability — experience requirements

(1) This section applies if a person approves a defect in an Australian aircraft that is a permissible unserviceability under regulation 21.007 of CASR for the approved design organisation.

(2) The exposition for the approved design organisation must require that the person has:

(a) at least 8 years' experience in an engineering discipline working on increasingly complex projects and that is relevant to:

(i) the person's capacity to approve a defect in an aircraft that is a permissible unserviceability; and

(ii) the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR; and

(b) at least 2 years' experience carrying out design activities the same as, or similar to, the design activity mentioned in regulation 21.007 either under Subpart 21.J of CASR or as an authorised person; and

(c) experience in carrying out certification processes relevant to issuing approvals under regulation 21.007 of CASR.

(3) A person authorised by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR to carry out a design activity under regulation 21.007 of CASR is taken to meet the requirements mentioned in subsection (2), if the person has been authorised to carry out an equivalent design activity, either for an organisation under Subpart 21.J of CASR or as an authorised person.

10.7 Person authorised to approve technical data — experience requirements

(1) The exposition for the approved design organisation must require that a person who approves technical data under regulation 21.009 of CASR for the approved design organisation has:

(a) at least 4 years' experience in an engineering discipline that is relevant to approving the technical data and to the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR; and

(b) at least 12 months' experience in a civil aviation environment in an engineering discipline that is relevant to approving technical data and to the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (a) of CASR; and

(c) experience carrying out certification processes relevant to issuing approvals under regulation 21.009 of CASR.

(2) A person authorised by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR to carry out a design activity under regulation 21.009 of CASR is taken to meet the requirements mentioned in subsection (1), if the person has been authorised

to carry out an equivalent design activity, either for an organisation under Subpart 21.J of CASR or as an authorised person.

10.8 Person approving major change in type design — experience requirements

(1) The exposition for the approved design organisation must require that a person who approves a major change in a type design under regulation 21.098 of CASR for the organisation has:

(a) at least 8 years' experience in an engineering discipline relevant to the person's capacity to approve a major change in type design of an aircraft, aircraft engine or propeller and to the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR; and

(b) at least 2 years' current or previous experience as a person carrying out design activities under Subpart 21.J of CASR and to the authorisation issued to the person by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR; and

(c) experience in certification processes relevant to approving a major change in a type design of an aircraft, aircraft engine or propeller.

(2) A person, who is authorised by the organisation as mentioned in paragraph 21.237 (3) (c) of CASR to carry out a design activity under regulation 21.098 of CASR, is taken to meet the requirements mentioned in subsection (1) if the person has been authorised to carry out an equivalent design activity, either for an organisation under Subpart 21.J of CASR or as an authorised person.

Part 11 — Approval of materials, parts, processes and appliances

Note This Part and Part heading are reserved for future use.

Part 12 — Approval of engines, propellers, materials, parts and appliances

Note This Part and Part heading are reserved for future use.

Part 13 — Australian Technical Standard Order Authorisations

13.1 Minimum performance standard

For the definition of ***Australian Technical Standard Order*** (***ATSO***) in paragraph 21.601 (2) (a) of CASR, the minimum performance standard mentioned in column 3 of an item of the following table is prescribed for the specified article used on civil aircraft mentioned in column 2 of the table.

Item	Specified article used on civil aircraft	Minimum performance standard
1	Life preservers	ATSO-1C13 — Life preservers as in force immediately before 1 June 2016
2	Airborne ATC transponder equipment	ATSO-1C74c — Airborne ATC transponder equipment as in force immediately before 1 June 2016
3	Air traffic control radar beacon system/mode select (ATCRBS/MODE S) airborne equipment	ATSO-1C112 — Air traffic control radar beacon system/mode select (ATCRBS/MODE S) airborne equipment as in force immediately before 1 June 2016
4	Dispatcher's restraint strap	ATSO-C1001 — Dispatcher's restraint strap as in force immediately before 1 June 2016
5	Refrigerated cargo unit load container	ATSO-C1002 — Refrigerated cargo unit load container as in force immediately before 1 June 2016
6	Helicopter external personnel lifting devices	ATSO-C1003 — Helicopter external personnel lifting devices as in force immediately before 1 June 2016
7	Airborne mode A/C transponder equipment with extended squitter automatic dependent surveillance – broadcast (ADS-B) transmission capability	ATSO-C1004a — Airborne mode A/C transponder equipment with extended squitter automatic dependent surveillance – broadcast (ADS-B) transmission capability as in force immediately before 1 June 2016
8	Airborne stand-alone equipment with extended squitter ADS-B transmit only equipment	ATSO-C1005a — Airborne stand-alone equipment with extended Squitter ADS-B transmit only equipment as in force immediately before 1 June 2016
9	Restraint system automated release device	ATSO-C1006 — Restraint system automated release device as in force immediately before 1 June 2016
10	Flight data recorder interface unit	ATSO-C1007ba — Flight data recorder interface unit as in force immediately before 1 June 2016