



Completion guidelines to the qualified manufacturer

This document provides guidance for completion of CASA Form 681 – Light Sport Aircraft Statement of Compliance and is to be read in conjunction with AC 21-42.

For application and policy advice, contact CASA's Self Administering Sport Aviation Organisations Section by e-mail: sport@casa.gov.au or telephone: 131 757.

1. Introduction

- 1.1** The CASA Form 681 is the approved form for a light sport aircraft manufacturer's statement of compliance (SOC) which is required for the issue of a special certificate of airworthiness for a light sport aircraft under regulation 21.186 of the Civil Aviation Safety Regulations 1998 (CASR) or an experimental certificate under paragraph 21.191(j) of CASR.
- 1.2** Form 681 should only be completed and signed by the qualified manufacturer of the aircraft/kit or its authorised representative. Authorisation for a representative's signature must be in writing from the manufacturer and the process must be specified within the manufacturer's quality assurance system procedures. By signing form 681, the signatory makes a declaration that the aircraft and manufacturer comply with the requirements as stipulated in section 6 of the form.
- 1.3** For kit-built aircraft, not all requirements of the form are applicable. The manufacturer of the kit is to complete the form in so far as the statements and information relate to the kit and is to line-through or enter the letters "N/A" for those items or sections not applicable to the kit.

2. Definition of a Light Sport Aircraft

- 2.1** An LSA is a small, simple-to-operate, low-performance aircraft. In relation to the requirements of the regulations, an LSA is defined as an aircraft other than a helicopter that
 - a. has
 - i. if the aircraft is not intended for operation on water, a maximum take-off weight of 600 kg or less; or
 - ii. if the aircraft is intended for operation on water, a maximum take-off weight of 650 kg or less; or
 - iii. if the aircraft is a lighter-than-air aircraft, a maximum gross weight of 560 kg or less
 - b. if the aircraft is a powered aircraft, has a single, non-turbine engine fitted with a propeller
 - c. has a maximum stall speed in the landing configuration (V_{so}) of 45 knots calibrated air speed
 - d. if the aircraft is a glider, has a maximum never-exceed speed (V_{ne}) of 135 knots calibrated air speed
 - e. if the aircraft has a cabin, has an un-pressurised cabin

- f. if the aircraft is designed to be equipped with seating — has a maximum seating capacity of 2 persons, including the pilot
- g. if the aircraft is a manned free balloon that is not designed to be equipped with seating, can carry no more than 2 persons
- h. has
 - i. in the case of an amphibian, repositionable landing gear; or
 - ii. in the case of a glider, fixed landing gear or retractable landing gear; or
 - iii. in any other case, fixed landing gear.

3. Purpose and scope of the SOC

3.1 Subregulation 21.186(2) of CASR requires a manufacturer to issue a SOC which includes at least the following statements:

3.2 a statement setting out the aircraft's make and model, serial number and date of manufacture;

3.3 a statement specifying which of the LSA standards apply to the design of the aircraft, including a statement to the effect that the design of the aircraft complies with the specified standards;

3.4 a statement specifying that the manufacturer has a quality system that complies with the LSA standards; and based on that system, the aircraft conforms to the manufacturer's design data;

3.5 a statement to the effect that the manufacturer will make the statements, documents and information referred to in paragraph 21.186(1)(b) of CASR available to any person who asks the manufacturer for them;

3.6 a statement to the effect that the manufacturer will monitor the continuing airworthiness of the aircraft and will issue directions or requirements that comply with the LSA standards to correct any unsafe condition;

3.7 a statement to the effect that, in accordance with a production acceptance test procedure that complies with the LSA standards, the manufacturer has ground-tested and flight-tested the aircraft; and the manufacturer found the aircraft's performance during ground and flight testing acceptable; and the aircraft is in a condition for safe operation.
Note: This statement is not applicable to kit built LSA aircraft.

4. Completion guidelines

Form 681 is divided into 6 sections. The following sections provide guidance on how to complete each section of the form.

4.1 Section 1: Aircraft Details

4.1.1 **Manufacturer's Name:** the name of the qualified manufacturer (ref. regulation 21.172, paragraph 21.186(1)(a) and subparagraph 21.193(e)(ii) of the CASR). In this context, the manufacturer is that entity who certifies on the statement of compliance that the aircraft or kit meets the specified LSA standards and that it (the manufacturer) meets the requirements of a qualified manufacturer as defined by regulation 21.172 of CASR. Refer to item 4.6.7 below for clarification.

4.1.2 **Manufacturer's Address:** the address of the qualified manufacturer as defined by regulation 21.172 of CASR, detailed in para 4.6.7 below. This should be that entity who can certify that the aircraft and manufacturer comply with the relevant LSA standards.

- 4.1.3 Aircraft Serial No: the serial number assigned by the qualified manufacturer to the airframe.
- 4.1.4 Date of Manufacture: the date that the aircraft or kit was certified as completed by the qualified manufacturer.
- 4.1.5 Aircraft Make: the make of aircraft assigned by the qualified manufacturer.
- 4.1.6 Aircraft Model: the model of aircraft assigned by the qualified manufacturer.
- 4.1.7 MTOW (kg): the maximum take-off weight of the aircraft specified by the qualified manufacturer at which the aircraft meets the relevant LSA standards and CASR 1998 dictionary definition for an LSA as detailed in section 2.
- 4.1.8 Engine Make & Model: the make and model of the engine installed in or supplied with the aircraft in the case of a kit.
- 4.1.9 Propeller Make & Model: the make and model of the propeller installed on or supplied with the aircraft in the case of a kit.
- 4.1.10 V_{so} : minimum stall speed of the aircraft in the landing configuration specified by the qualified manufacturer in knots calibrated airspeed.
- 4.1.11 V_{ne} : maximum never-exceed speed of the glider specified by the qualified manufacturer in knots calibrated airspeed. This block is only required for gliders (unpowered).

4.2 Section 2: Class of Light Sport Aircraft

- 4.2.1 Specify only one of the following classes for the aircraft. In those cases where the aircraft has shown compliance to both the aeroplane and glider standards, the form must be completed for one class only.
 - a. Aeroplane
 - b. Powered Parachute
 - c. Weight-Shift-Controlled
 - d. Glider
 - e. Gyroplane
 - f. Lighter-Than-Air
- 4.2.2 Specify whether the aircraft is a production built aircraft under regulation 21.186 of CASR or a kit under paragraph 21.191(j) of CASR.
- 4.2.3 Specify whether the aircraft is an Amphibian.

4.3 Section 3: Applicable Standards

- 4.3.1 Specify the standard with which the aircraft/kit complies. For ASTM standards, the complete standard should be quoted e.g. F2245-13b. Note that ASTM standards do not have separate revision levels or issue dates. For any other standards the revision level and/or issue date of the specified standard should be quoted.
- 4.3.2 Design and Performance: required for all classes of aircraft and kits.
- 4.3.3 Required Equipment: required for all classes of aircraft and kits.
- 4.3.4 Quality Assurance: required for all classes of aircraft and kits. Note: Depending on the quality assurance standard, kit aircraft may not fully meet this standard in terms of post-production ground and flight testing. In this case the manufacturer is still required to have a quality assurance system for manufacture of a kit and is required to show compliance to the specified quality assurance standard in so far as it applies to the production and inspection of the aircraft kit.

- 4.3.5 Production Acceptance Tests: required for all classes of aircraft and kits. Note: As stated in 4.3.4 above, kit aircraft may not fully comply with the entire standard for post-production testing where it relates to ground and flight testing but should nevertheless comply with those post production acceptance tests in so far that they apply to post production inspection of the aircraft kit.
- 4.3.6 Aircraft Operating Instructions: required for all classes of aircraft and kits.
- 4.3.7 Continued Airworthiness: required for all classes of aircraft and kits.
- 4.3.8 Maintenance and Inspection Procedures: required for all classes of aircraft and kits.
- 4.3.9 Wing Interface: only required for powered parachutes and their kits.
- 4.3.10 Engine: required for all powered aircraft and kits.
- 4.3.11 Propeller: required for all propeller driven aircraft and kits.
- 4.3.12 Other: any other applicable standard not specifically covered by the above descriptors.

4.4 Section 4: Documents Supplied with Aircraft

- 4.4.1 Specify the associated documents/manuals against each of the following criterion, including the document number, revision number and/or issue date of each document.
- 4.4.2 aircraft operating instructions;
- 4.4.3 maintenance and inspection procedures;
- 4.4.4 flight training supplement if applicable;
- 4.4.5 kit assembly instructions if applicable;
- 4.4.6 manufacturer's safety directions if applicable; and
- 4.4.7 any other manufacturer supplied information which is pertinent to the operation, maintenance, construction or any other applicable documentation.

4.5 Section 5: Imported Light Sport Aircraft

- 4.5.1 If the aircraft/kit is imported, specify:
- 4.5.2 the ICAO Contracting State where the aircraft/kit was manufactured; and
- 4.5.3 whether the aircraft is eligible for a certificate of airworthiness or similar document in its country of manufacture. Details of the document should be specified, and a copy of the relevant certificate supplied with the completed form.

4.6 Section 6: Manufacturer's Certification

- 4.6.1 This section must be signed by the qualified manufacturer of the aircraft/kit. By signing this section, the manufacturer certifies that:
- 4.6.2 The design of the aircraft complies with the standards listed under section 4.3 above;
- 4.6.3 The manufacturer has a quality system that complies with the LSA standards and based on that system, the aircraft conforms to the manufacturer's design data;
- 4.6.4 The manufacturer will make the following documentation available to any person who asks for them:
 - (i) the statement of compliance;
 - (ii) copies of the aircraft operating instructions, aircraft maintenance and inspection procedures, and aircraft flight training supplement, issued for the aircraft by the manufacturer;

- (iii) in the case of a light sport aircraft manufactured outside Australia — written information showing that: the aircraft was manufactured in a Contracting State; and the aircraft is eligible for a certificate of airworthiness, or another document of similar effect, in the country of manufacture;

4.6.5 The manufacturer will monitor the continuing airworthiness of the aircraft and will issue directions or requirements that comply with the LSA standards to correct any unsafe condition;

4.6.6 The manufacturer has ground and flight tested the aircraft in accordance with a production acceptance test procedure that complies with the LSA standards and found the aircraft's performance acceptable and the aircraft is in a condition for safe operation. Note: This requirement is only applicable to a completed aircraft, not a kit. For a kit aircraft, this statement is to be lined through.

4.6.7 The manufacturer is a qualified manufacturer as defined in regulation 21.172 of CASR and defined as follows:

4.6.7.1 a manufacturer who, at the time the light sport aircraft was manufactured, held a current production certificate for an aircraft; or

4.6.7.2 a manufacturer who has made a written declaration that, at the time the light sport aircraft was manufactured, it had:

- (i) contracted engineering personnel with experience in ultralight or light aircraft design to ensure compliance with LSA standards referred to in paragraph 21.186(2)(b) of CASR; and
- (ii) facilities and tools suitable for the production of the aircraft in accordance with the applicable LSA standards; and
- (iii) competent personnel, with appropriate training, skills and experience, to perform work that affects product quality.