



Standard Specification for Required Product Information to be Provided with Lighter- Than-Air Light Sport Aircraft¹

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1. Scope

1.1 This specification covers the manufacture of lighter-than-air light sport aircraft.

1.1.1 This specification covers the minimum requirements for information that shall be provided by the manufacturer or seller of new lighter-than-air aircraft as a part of the initial sale or transfer to the first end user.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.*

2. Terminology

2.1 Definitions:

2.1.1 *airship*—engine-driven lighter-than-air aircraft that can be steered.

2.1.2 *AOI*—Aircraft Operating Instructions.

2.1.3 *balloon*—lighter-than-air aircraft that is not engine-driven, and that sustains flight through the use of either gas buoyancy or an airborne heater.

2.1.4 *lighter-than-air aircraft*—aircraft that can rise and remain suspended by using contained gas weighing less than the air that is displaced by the gas.

2.1.4.1 *Discussion*—Aircraft may include dynamic lift that derive as much as 30 % lift from other than buoyancy.

2.1.5 *thermal airship*—airship using heated air for a portion of its lift, incorporating design features to prevent nose collapse due to dynamic pressure and exempt from specific pressurized envelope requirements.

2.1.6 *vectored thrust balloon*—thermal balloon with thrust capability that does not have design features to prevent forward envelope collapse due to dynamic pressure and is therefore limited in its lateral speed capability.

¹ This specification is under the jurisdiction of ASTM Committee F37 on Light Sport Aircraft and is the direct responsibility of Subcommittee F37.60 on Lighter than Air.

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3. Information Requirements

3.1 The manufacturer shall provide critical information for each aircraft. This information shall include, but not be limited to, the information plate attached to the aircraft, the placard notice, Aircraft Operating Instructions, the maintenance manual, and the manufacturer's statement of compliance, as defined in the following paragraphs. Additional aircraft type specific requirements are provided in the annexes.

3.2 *Information Plate*—A manufacturer-issued stainless steel information plate, printed in English, shall be permanently affixed to the aircraft in a visible location and shall be designed to remain legible for the expected life of the aircraft. The information plate shall have the required information either stamped or engraved into the plate.

3.2.1 *Serial Number*—A manufacturer-issued unique identifying number or code.

3.2.2 *Name and Manufacturer*, shall include the aircraft name, the manufacturer's name, and the manufacturer's main location including, city, state, and country.

3.2.3 *Model Number*—A manufacturer-issued unique identifying number or code assigned to each manufactured type of aircraft having the same structural design or components.

3.2.4 *Date of Manufacture*—The date (month and year) determined by the manufacturer that the aircraft met his required design and manufacturing specifications.

4. Placard Notice

4.1 The following placard notice shall be posted in the aircraft passenger area so that it is visible to both the pilot and passenger upon entry or while seated in the aircraft. The lettering shall be a minimum of 3.1 mm ($\frac{1}{8}$ in.) high.

4.1.1 **PASSENGER NOTICE:** This aircraft conforms to ASTM Consensus Standards of airworthiness developed and maintained by the aviation community under ASTM Technical Committee F37.

5. Aircraft Operating Instructions (see Annex)

5.1 General.

5.2 Limitations.

5.3 Emergency procedures.

5.4 Normal procedures.

- 5.5 Performance.
- 5.6 Weight and balance.
- 5.7 Description of the aircraft and its systems.
- 5.8 Handling, servicing, and maintenance.
- 5.9 Supplements.
- 5.10 Data location.
- 5.11 Passenger warning.

6. Maintenance Manual

6.1 The manual shall provide, but not be limited to, the minimum maintenance requirements as defined by the aircraft manufacturer and instructions and forms for owners of aircraft to report service issues, difficulties, malfunctions, or failures to the manufacturer.

6.2 The manufacturer shall identify, as a minimum, the following areas of service issues, difficulties, malfunctions, or failures as requiring owner/operator reporting:

- 6.2.1 Failure of flight (or ground) load-bearing structure,
- 6.2.2 Failure of ability to maintain control of the aircraft,
- 6.2.3 Structure failures that might injure the aircraft occupants,

6.2.4 Events whose occurrence might damage the aircraft so that a safe completion of the flight is not likely,

6.2.5 Possible fire, and

6.2.6 Loss of information needed to safely fly the aircraft.

7. Manufacturer's Statement of Compliance

7.1 The statement shall include a statement identifying the ASTM standards used for the design, quality control, continued maintenance, and production acceptance testing of the aircraft and attesting to the fact that the aircraft is in compliance with the provisions of those specifications.

8. Significance and Use

8.1 The purpose of this specification is to require provision of the minimum information necessary for the proper identification, maintenance, and operation of light sport aircraft.

9. Keywords

9.1 Aircraft Operating Instructions; airplane; airship; balloon; light sport aircraft; lighter-than-air; special airworthiness certificate

ANNEX

(Mandatory Information)

A1. REQUIREMENTS FOR LIGHTER-THAN-AIR AIRCRAFT OPERATING INSTRUCTIONS

A1.1 *General Requirements*—These shall include, but not be limited to, illustrations of aircraft, list of the approved engine(s), propeller(s), fuel, and oil, and any definitions of abbreviations and terminology. Performance specifications and limitations shall be given at least two weights and density altitudes.

A1.2 *Operating Limitations*—These shall include, but not be limited to, listing the following limitations:

- A1.2.1 Maximum maneuvering speed (V_a),
- A1.2.2 Never exceed speed (V_{ne}),
- A1.2.3 Service ceiling,
- A1.2.4 Load factors, and
- A1.2.5 Prohibited maneuvers.

A1.3 *Emergency Procedures*—Emergency procedures shall be provided, including, but not limited to, engine failure, air restart, fire, and flat tires.

A1.4 *Normal Procedures*—The manufacturer's recommended procedures for normal operations shall be provided, such as, but not limited to:

A1.4.1 Loading procedures (occupants, baggage, fuel, ballast, weight, and CG as required) and limitations,

A1.4.2 Preflight check,

A1.4.3 Engine starting,

A1.4.4 Taxiing,

A1.4.5 Normal takeoff,

A1.4.6 Best angle of climb speed (V_x),

A1.4.7 Best rate of climb speed (V_y),

A1.4.8 Cruise,

A1.4.9 Approach,

A1.4.10 Normal landing,

A1.4.11 Crosswind and wind limitations,

A1.4.12 Short field takeoff and landing procedures, if any,

A1.4.13 Balked landing procedures,

A1.4.14 Other useful pilot information,

A1.4.15 Tie-down instructions, and

A1.4.16 Emergency procedures

A1.5 *Required Placards and Markings*:

A1.5.1 Airspeed indicator marks,

A1.5.2 Operating limitations on instrument panel, if any, and

A1.5.3 Miscellaneous placards and markings.

A1.6 *Performance*—Information related to the performance of the aircraft shall be provided, such as, but not limited to, takeoff and landing distances, rate of climb, cruise speeds, RPM, and fuel consumption.

A1.7 *Weight and Balance*—Information shall be provided related to, but not limited to, weight and center of gravity requirements for the safe operation of the aircraft.

A1.8 *Description of the Aircraft and its Systems*—Information shall be provided, related to, but not be limited to, a general description of the aircraft, controls, instruments, engine, and optional equipment.

A1.9 *Handling, Servicing, and Maintenance*—Information shall be provided that is related to, but not be limited to, the approved maintenance procedures, manuals, and approved sources for information or maintenance, or both.

A1.10 *Supplements*—This section shall include any additional information from the manufacturer, including familiarization flight procedures and pilot operating advisories, if any.

A1.11 *Data Location*—Data location and contact information for certification documentation.

A1.12 Participant's Responsibility

A1.12.1 The following statement shall be included in the Aircraft Operating Instructions: There are inherent risks in participating in aviation activities, these risks are significant, up to and potentially including death. Operators and passengers of recreational aviation aircraft, by participation, accept the risks inherent in such participation of which the ordinary prudent person is or should be aware. Pilots and passengers have a duty to exercise good judgment and act in a responsible manner while using the aircraft and to obey all oral or written warnings, or both, prior to or during use of the aircraft, or both.

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