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Standard Specification for Production Acceptance Testing System for Powered Parachute Aircraft[1]

This standard is issued under the fixed designation F2242; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 The following requirements apply for the manufacture powered parachute aircraft. This specification includes the production acceptance test requirements for powered parachute aircraft.

1.2 This specification applies to powered parachute aircraft seeking civil aviation authority approval, in the form of flight certificates, flight permits, or other like documentation.

1.3 *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 determine the applicability of regulatory requirements prior to use.*

2. Terminology

2.1 *Definitions:*

2.1.1 *powered parachute, n*—aircraft comprised of a flexible or semi-rigid wing connected to a fuselage in such a way that the wing is not in position for flight until the aircraft is in motion. This aircraft has a fuselage with seats, engine, and wheels (or floats), such that the wing and engine cannot be flown without the wheels (or floats) and seat(s). Unique to the powered parachute is the large displacement between the center of lift (high) and the center of gravity (low), which is pendulum effect. Pendulum effect limits angle of attach changes, provides stall resistance and maintains flight stability.

3. Significance and Use

3.1 The purpose of this specification is to provide the minimum requirements for the establishment of a ground and flight test program for verifying the initial (first run) production aircraft meets certain operational performance requirements that have been set forth by the manufacturer in its Aircraft Operating Instructions.

3.2 In addition, this specification provides minimum requirements to verify that each subsequent production airplane has no obvious defects that would prevent the safe operation of the airplane.

4. Production Acceptance Testing, Ground Testing

4.1 *Inspection Verification*—There shall be a written procedure in effect to verify all top-level inspections have been completed and no discrepancies remain open.

4.2 *Engine Break-In*—There shall be a written procedure in effect to perform the engine break-in. This procedure may include all engine gage verification of operation. All engine readings shall achieve the normal accepted range of readings commensurate with a new engine. If not performed during engine break-in, then this verification must be performed under separate procedures. All engine gages shall be verified to be operating.

5. Production Acceptance Testing, Flight Testing

5.1 Every production aircraft shall be flight tested to the following minimums:

5.1.1 *Powered Parachutes*—Fifteen minutes flight time, including at least one takeoff and landing, trimming of flight controls, and verification of control for left turn, right turn, and flare (flare only if so equipped).

5.2 *Instrument Verification*—There shall be a written procedure in effect to verify that all other instruments are operating within normal ranges. If equipped with a compass, the compass variation card data shall be developed with the engine running.

6. Post Flight Acceptance

6.1 There shall be a written procedure in effect to perform post flight inspection that will review all flight critical attachments and structures.

6.2 The reviewing personnel shall sign all post flight review documents.

7. Documentation:

7.1 There shall be a written procedure in effect to properly document and store the production acceptance test results such that they are correlated to the specific aircraft for future reference.

[1] This specification is under the jurisdiction of ASTM Committee F37 on Light Sport Aircraft and is the direct responsibility of Subcommittee F37.30 on Power Parachute.

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7.2 *Test Failures:*

7.2.1 There shall be a written procedure in effect to review the causes for any aircraft failures in the production acceptance tests phases. Aircraft may only be released for retest after manufacturing review of the discrepant articles and written release for retest.

8. Keywords

8.1 light sport aircraft; powered parachute aircraft; special airworthiness certificate