



Advisory Circular

Subject: FAA Accepted Means of Compliance
Process for 14 CFR Part 23

Date: 03/27/17

AC No: 23.2010-1

Initiated by: ACE-100

1 **PURPOSE.**

This advisory circular (AC) provides guidance on how to submit a proposed means of compliance to Title 14, Code of Federal Regulations (14 CFR) part 23 for acceptance by the Administrator in accordance with § 23.2010, Accepted means of compliance. This guidance provides information to applicants seeking approval for a type certificate (TC), an amended TC, a supplemental type certificate (STC), an amended STC, type design changes, or parts manufacturer approval (PMA) that require use of the airworthiness standards contained in part 23.

2 **APPLICABILITY.**

- 2.1 This AC applies to applicants seeking approval for a TC, an amended TC, an STC, an amended STC, type design changes, or PMAs that require use of the airworthiness standards contained in part 23. This AC is intended for use by Design Approval Holders and persons seeking design approvals to the part 23 amendment 23-64 or later. However, an applicant may elect to use previous amendment levels of part 23 and its corresponding guidance material provided the highest amendment level, or latest amendment level of the existing TC/STC, is used.
- 2.2 This AC is not mandatory and does not constitute a regulation. This AC describes an acceptable means, but not the only means, to comply with § 23.2010. An applicant may also use previous amendment levels of part 23 and its corresponding guidance material as means of compliance;¹ however, if an applicant chooses to use the means of compliance described in this AC, all important aspects of the means of compliance must be followed.

¹ Provided the highest amendment level, or latest amendment level of the existing TC/STC, is used.

3 **DEFINITIONS.**

3.1 *Accepted* – Refers to the Administrator’s acceptance of a means of compliance. This acceptance is documented by—

3.1.1 FAA formal acceptance of consensus standards;

3.1.2 References to consensus standards in published FAA ACs;

3.1.3 Published ACs;

3.1.4 Means of compliance issue papers;

3.1.5 Policy statements; or

3.1.6 Other FAA documentation that shows the Administrator has accepted the means of compliance for showing compliance to part 23 regulations (e.g., special conditions).

Acceptance of a means of compliance is also dependent on the appropriateness of its use in the approval being sought for the particular airplane or technology.

3.2 *Consensus Standards* – For the purposes of this AC, consensus standards are Industry developed standards the Administrator has accepted for use as a means of compliance to the part 23 regulations. Consensus standards include, but are not limited to, the Radio Technical Commission for Aeronautics (RTCA), SAE International (SAE), ASTM International (ASTM), and the European Organization for Civil Aviation Equipment (EUROCAE). This definition differs from the Light Sport Aircraft definition of consensus standards.

3.3 *Means of Compliance* – A detailed design standard that, if met, accomplishes the safety intent of the regulation, is used by an applicant to show compliance with part 23 airworthiness standards, and accepted by the Administrator. A means of compliance is one method, but not the only method, to show compliance with a regulatory requirement.

3.4 *Method of Compliance* – A description of how compliance will be shown (e.g., ground test, flight test, analysis, similarity, etc.). The description of the method of compliance should be sufficient to determine that all necessary compliance-related data will be collected and all findings can be made.

4 BACKGROUND

- 4.1 On February 1, 2012, Congress passed the Federal Aviation Modernization and Reform Act of 2012² (Public Law 112-95; 49 USC 40101 note), which requires the Administrator, in consultation with the aviation industry, to assess the aircraft certification and approval process. On November 12, 2013, Congress passed the Small Airplane Revitalization Act of 2013³ (Public Law 113-53; 49 USC 44704 note), which requires, among other things, that the FAA—
- 4.1.1 Create a regulatory regime for small airplanes that will improve safety and decrease certification costs;
 - 4.1.2 Set safety objectives that will spur innovation and technology adoption;
 - 4.1.3 Replace prescriptive rules with performance-based regulations; and
 - 4.1.4 Use consensus standards to clarify how safety objectives may be met by specific designs and technologies.
- 4.2 In the effort to meet these objectives, the FAA revised part 23⁴ by removing most of the prescriptive regulations found in that part and replaced them with performance-based regulations. These regulations capture the safety intent of the earlier prescriptive regulations. The detailed design standards and methods of compliance contained in earlier versions of the rule will be specified in industry consensus standards or other means of compliance documents accepted by the Administrator. The use of consensus standards, while clarifying how safety objectives may be met for specific designs and technologies, are also intended to support quicker development of new standards needed to support installation of rapidly developing safety-enhancing technology into airplanes certificated under part 23 and to spur innovation and the adoption of new technologies.

5 CONSENSUS STANDARDS.

- 5.1 Section 12(d) of the National Technology Transfer and Advancement Act of 1996⁵ (Public Law 104-113; 15 USC 3701 note) directs Federal agencies to use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical. The Office of Management and Budget Circular A-119⁶, *Federal Participation in the Development and Use of Voluntary Consensus Standards and Conformity Assessment Activities*, provides guidance to Executive agencies in implementing the requirements of the National Technology Transfer and

² <https://www.gpo.gov/fdsys/pkg/PLAW-112publ95/content-detail.html>

³ <https://www.gpo.gov/fdsys/pkg/PLAW-113publ53/content-detail.html>

⁴ Amendment 23-64, December 30, 2016 (81 FR 96572)

⁵ <https://www.gpo.gov/fdsys/pkg/PLAW-104publ113/content-detail.html>

⁶ https://www.whitehouse.gov/omb/circulars_a119/

Advancement Act of 1996. Additionally, § 3(c) of the Small Airplane Revitalization Act of 2013⁷ (Public Law 113-53; 49 USC 44704 note) requires the Administrator, when prescribing regulations, to use consensus standards as described in § 12(d) of the National Technology Transfer and Advancement Act of 1996 to the extent practicable while continuing traditional methods for meeting part 23.

- 5.2 The FAA intends to rely increasingly on consensus standards as a means of compliance beginning with amendment 23-64⁸ (81 FR 96572, December 30, 2016). The existing part 23 ACs remain in effect with the transition to amendment 23-64. However, the FAA expects that consensus standards will eventually supersede these advisory materials.
- 5.3 Using consensus standards accepted by the Administrator is considered to be the most expeditious path to show compliance to amendment 23-64 and later amendments to part 23 regulations. Means of compliance previously accepted by the Administrator will continue to be accepted, if appropriate, for the airplane and technology.
- 5.4 In addition to ACs, the FAA has accepted consensus standards or industry standards developed by industry groups such as RTCA, SAE, ASTM, and the EUROCAE. ACs and TSOs list many of these standards. The FAA maintains a partial list of accepted standards on the Small Airplane Directorate website⁹. This list is not all inclusive because there are so many consensus and industry standards used over the years that the FAA cannot capture all of them on one site.
- 5.5 ASTM's F44 General Aviation Aircraft committee provides a set of standards intended to support the part 23 performance-based regulations. The FAA will publish a notice of availability in the Federal Register when the Administrator has accepted a standard. Additionally, a partial list of standards accepted by the Administrator can be found on the Small Airplane Directorate website.

6 MEANS OF COMPLIANCE.

- 6.1 A means of compliance must set forth an acceptable manner by which an applicant can comply with specific provisions of part 23. The means of compliance must, as a minimum, meet the safety intent of the specific regulation(s) it references and maintain the level of safety established in part 23. In addition to ACs, the prescriptive provisions within previous amendments of part 23, where applicable, may be used as one means of compliance with the part 23 performance-based regulations.

⁷ <https://www.gpo.gov/fdsys/pkg/PLAW-113publ53/content-detail.html>

⁸ Amendment 23-64 transitioned part 23 from a prescriptive-based to a performance-based regulation.

⁹ http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/air/directorates/field/small_airplanes/

- 6.2 Applicants should list the means of compliance they intend to use to show compliance to part 23 regulations in a certification plan or compliance checklist. The current edition of Order 8110.4, *Type Certification*, describes certification plans and compliance checklists.
- 6.3 When seeking acceptance of a means of compliance to all of part 23 or just one section, an applicant should propose to the Project Aircraft Certification Office (PACO) a means of compliance that meets the intent of each applicable amendment 23-64 or subsequent performance-based regulation. The proposal should be presented in the certification plan or compliance checklist as described in the latest revision of Order 8110.4.
- 6.4 The FAA does not provide new or alternative means of compliance documents provided by applicants to third parties unless specifically authorized by the applicant. The applicant may wish to consider offering its new or alternative means of compliance to a consensus standards body for inclusion as part of an industry developed consensus standard.
- 6.5 If new or alternative means of compliance are proposed, applicants should carefully consider the additional time and effort that could be necessary to coordinate a new or alternative means of compliance when scheduling their projects. FAA coordination may require the efforts of FAA technical specialists, Chief Scientific Technical Advisors, and other governmental agencies. The use of existing accepted means of compliance may be more expeditious.
- 6.6 An applicant may propose a new or alternative means of compliance to an existing accepted means of compliance. In such cases:
- 6.6.1 The applicant's proposal should identify the portions of the means of compliance from which it will deviate and provide an alternative means along with the rationale as to why it demonstrates compliance with the intent of the part 23 performance-based regulation.
- 6.6.2 The PACO will review the applicant's proposal to determine if the proposal should be presented to the Small Airplane Directorate for standardization purposes. The PACO should review and address the Small Airplane Issues List (previously known as the Significant Project List or SPL) for aspects or technology that may necessitate directorate involvement. In determining whether an issue paper is necessary, the PACO should consider—
- 6.6.2.1 Past engineering practices;
 - 6.6.2.2 The technical quality of the proposal to demonstrate compliance with the intent of the part 23 regulations;
 - 6.6.2.3 The technical ability of the applicant;
 - 6.6.2.4 Controversial aspects;

- 6.6.2.5 The technically challenging or confusing aspects of the method proposed;
 - 6.6.2.6 The safety risk of the proposal;
 - 6.6.2.7 Best practice history; and
 - 6.6.2.8 Consultation with the Small Airplane Directorate project officer or technical specialists for additional guidance.
- 6.6.3 The PACO should note any new or alternative methods of compliance being proposed by an applicant in the certification project notification (CPN) description to alert the Small Airplane Directorate during the project notification process. The CPN is described in the current edition of Order 8110.112.
- 6.7 The FAA will use the issue paper process, as described in the current editions of FAA AC 20-166, *Issue Paper Process*, and Order 8110.112, *Standardized Procedures for Usage of Issue Papers and Development of Equivalent Levels of Safety Memorandums*, to process requests for acceptance of a new or alternative means of compliance. The applicant should describe the technology to the PACO and propose the means of compliance it will use to show compliance to the specific amendment 23-64 or later performance-based regulation(s). The applicant may present this proposal in the certification plan or other method agreed with the PACO or may forward the proposal to the PACO using a draft issue paper. The PACO will then coordinate the applicant's proposal with the Small Airplane Directorate as described in the current edition of Order 8110.112.

7 REFERENCES.

- AC 20-166, *Issue Paper Process*, current edition.
- U.S. Department of Transportation, Federal Aviation Administration, Order 8110.112, *Standardized Procedures for Usage of Issue Papers and Development of Equivalent Levels of Safety Memorandums*, current edition.
- U.S. Department of Transportation, Federal Aviation Administration, Order 8110.4C, *Type Certification*, current edition.
- U.S. Department of Transportation, Federal Aviation Administration, Order 8110.115, *Certification Project Initiation and Certification Project Notification*, current edition.

- 8 If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.

ORIGINAL SIGNED by

Melvin Johnson
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Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) completing the form online at to <https://ksn2.faa.gov/avs/dfs/Pages/Home.aspx> or (2) emailing this form to 9-AWA-AVS-AIR-DMO@faa.gov.

Subject: AC 23.2010

Date:

Please check all appropriate line items:

- An error (procedural or typographical) has been noted in paragraph on page .
- Recommend paragraph on page be changed as follows:
- In a future change to this AC, please cover the following subject:
(*Briefly describe what you want added.*)
- Other comments:
- I would like to discuss the above. Please contact me.

Submitted by: _____

Date: _____