

Q2 2024 Small Airplane Issues List 06/27/2024

Applicable to Domestic Certification Projects. Refer to the applicable bilateral agreement to determine if these items apply to your International Validation Project.

	Product Type	Issue ID#	Category	Subject	Description
1	Small Airplane	A-0101	Airframe Loads and Flutter	Vinyl Covering Shrink Wraps on Exterior of Part 23 Airplanes, Gliders, and Airships	Applicants should be aware that the FAA has issued a memo stating there are safety issues with the installation of vinyl covering shrink wraps on the exterior of airplanes, gliders, and airships that are not present with other exteriors such as paint and deicing boots. These issues include hazards that are major to catastrophic, so the installation by FAA Field Approval is not acceptable. Only Federal Aviation Administration (FAA) Type Certificate (TC), Amended Type Certificate (ATC), and Supplemental Type Certificate (STC) are acceptable for this installation. This memorandum is not applicable to vinyl decals or logos that are placed on limited areas of the fuselage or empennage. The following are safety concerns with the installation of vinyl shrink wrap coverings that must be evaluated by the applicant for any TC/ ATC/STC application: 1. Without proper engineering evaluation and/or tests, vinyl shrink wrap cannot be placed on any control surface or control surface tab: a. without consideration of the effect on the flutter characteristics (whether the surface is mass balanced or not) and b. where that installation would change the existing clearance between adjacent surfaces with and without loading. 2. Scoring the skin of aircraft when cutting the vinyl sheets to fit, which can start cracks, particularly in pressurized aircraft. 3. Blocking of fuel vents, static ports, hinges, drain holes etc., making them inoperative or changing the airflow over static ports. 4. Use of an open flame from a blowtorch to apply the material. This is a concern around fuel tanks and vents, sensitive antennas, and especially on composite parts, which have cure temperatures well below the temperature of a blowtorch. 5. Covering required exterior aircraft markings and emergency exits. 6. Vinyl sheets losing adhesion on the surface or on rotating parts and jamming control surfaces or compromising engines. 7. Static build-up causing electrical discharges in or around fuel tanks and causing radio/navigation interference. 8. Tinting of windows and windshields with transparent vinyl, which compromises the view of pilots. 9. The impact on removal of ice build-up on critical surfaces. 10. Flammability of the material, including lightning strikes, and especially near engine exhausts and around engine nacelles. Flammability test specimens should be built-up from the cowlings/nacelle with the vinyl shrink wrap applied. 11. Peeling of the wrap from rain or hail. 12. Masking of cracks and corrosion in structure and skin. 13. Lifetime of a vinyl shrink w/Tap installation. How long before mandatory removal. 14. Effects of de-ice fluids on the film. The policy memo is available upon request.
2	Small Airplane	A-0201	Structures	Additive Manufacturing Design & Construction (Materials, Fabrication Methods)	Additive Manufacturing (AM) is a relatively new manufacturing process and describes the process of joining materials to make objects from three dimensional (3D) model data using a sequential layering process. This manufacturing technique is sometimes referred to as 3D printing. AM is a generic term that spans a diverse range of techniques using a wide range of machines and technologies, such as Powder Bed Fusion (PBF), Directed Energy Deposition (DED), and Material Extrusion using energy sources such as lasers, electron beams, or thermal energy. Each of these AM process may have unique considerations. If the use of AM is proposed, then the applicant (through the appropriate validation or certification office) should provide the information defined in the AM Applicant Specific Guidance Memorandum to AIR-622, Materials and Structural Properties Section, for awareness and to support certification projects. An Issue Paper may be required based on the applicant's response to the memorandum. Applicants can request the memorandum from their certification or validation branch.
3	Small Airplane	A-0202	Structures	Fatigue Management Programs	If the applicant is proposing to incorporate a Fatigue Management Program (FMP) into an existing product, then the FAA may need to be consulted to determine the certification basis and the accepted means of compliance (MOC). FMPs cannot be mandated on existing products in the U.S. except through an Airworthiness Directive. FAA Advisory Circular AC 91-82 is considered an accepted MOC. There are varying approaches to the application of fatigue requirements to derivative model airplanes when the original model did not have fatigue requirements at initial certification. The SASB may be involved with these projects. In addition, the FAA does not typically allow use of an inspection program in lieu of the safe life design limits already established. Reference AC 21.101-1B, Appendix Table A-2, Example 23, "Conversion from a safe-life design to a damage tolerance-based design".
4	Small Airplane	A-0203	Structures	Load Relief/Alleviation Systems	If the applicant proposes to use load relief or load alleviation systems for aircraft structure, then they may require a special condition at amendment 23-63 or earlier to address the effect of such systems on aircraft structure. In addition, current regulations do not take into account the effects of system failures on aircraft loads. At amendment 23-64 and after, applicants should coordinate with the SASB to incorporate the requirements of the special conditions into their certification planning as FAA accepted means of compliance (MOC) in lieu of a special condition.
5	Small Airplane	A-0204	Structures	Composite Floats	If an applicant is seeking installation approval for composite floats that have not been approved to TSO C-27a, then they may need to obtain an FAA accepted means of compliance to address fatigue and durability requirements unique to composites as detailed in AC 23-19A Sections 201 through 207. The guidance in AC-23-19A closely approximates requirements per §23.573 for composite structure. The use of composites also requires compliance methods that may require additional work to satisfy §23.603, §23.609 and §23.613 that are typically more onerous than that required for a metallic float. At amendment 23-64 and after, the applicant should coordinate an FAA accepted means of compliance with the SASB to incorporate elements of TSO-C27a, NAS 807 r2, and/or AC-23-19A.
6	Small Airplane	A-0205	Structures	Life Limits - Damage Tolerance Inspections	If the applicant is proposing to eliminate or extend existing life limits, they must contact the SASB. Small airplanes may have structural life limits on certain components imposed by the airplane's certification basis. Type design holders or STC applicants may propose eliminating the existing life limits and replacing them with damage tolerance based inspection programs, especially as the fleet approaches the life limits. The FAA believes that it is impractical to develop an adequate inspection program, incorporate damage tolerant design features and materials, and provide sufficient residual strength in an airplane designed and tested for the life limit approach. There exists an unacceptable risk of fatigue cracking beyond the original life limit and an inspection program has limited capability of detecting what may be a relatively large number of cracks as the fleet ages past the original life limit. The FAA position is that an inspection program cannot eliminate a life limit but it can be used to extend an existing life limit. The FAA may approve an initial life extension of the original life limit with an FAA accepted inspection program.
7	Small Airplane	A-0206	Structures	Material Design Values	If the applicant proposes to use material that does not meet 14 CFR 23.613 at amendment 23-63 or prior, then they may require an Equivalent Level of Safety (ELOS) finding. The use of S-Basis design values (material allowables) do not comply with probability requirements of 14 CFR 23.613(a), (b), and (e), amendment 23-45. This requires that material strength properties be based on a sufficient number of tests to establish a statistical basis for the design values. For single load path structure, 14 CFR 23.613 further requires the design values must be established with a 99 % probability and 95 % confidence ("A" basis) value. For multiple load path structure, the design values must be established with a 90 % probability and a 95 % confidence ("B" basis) value. However, S-Basis design values have an unknown statistical assurance. Currently, there is no alternate allowed for structure to use statistically determined minimum design values other than "A" or "B" basis. In addition, there is no option to utilize a procurement specification value as a design value verified with receiving inspection test sampling processes. At amendment 23-64 and after, applicants should incorporate FAA accepted means of compliance (MOC) into their certification planning in lieu of an ELOS finding.
8	Small Airplane	A-0207	Structures	Life Limits - Safe Life Airplanes and Significant Change	Significant Change under 14 CFR 21.101 requires the applicant comply with all applicable rules for the product being changed that are effective on their date of application for the proposed change UNLESS it is determined that compliance to the later requirement is (1) Not in an area affected by the change, (2) Does not significantly contribute the Level of Safety or (3) Is impractical. Damage Tolerance is part of the latest certification basis for structural changes. However, airplanes that have been originally certificated to Safe Life or Fail Safe requirements need to be reviewed to determine if they can be certificated to Damage Tolerance requirements at the latest rule.
9	Small Airplane	A-0301	Avionics	Non-TSO Electronic Flight Instrument Systems and Avionics	If the applicant is seeking to install non-TSO avionics, then they may need to verify the level of FAA involvement in their project. Many avionics manufacturers have developed lower cost integrated display systems specifically for the Experimental and Amateur-built airplane markets. Although these systems have many or all of the same functions, they generally do not follow the design assurance processes specified in the TSOs. The TSOs only specify a minimum performance, and they often outline the design assurance requirements as well as environmental standards in addition to general operating requirements. TSO authorization indicates that the article manufacturer has provided a statement of compliance with the TSO requirements and the article is produced under an FAA approved quality system. For non-TSO equipment, the installer bears responsibility for supplier control of the type design and the production of the article. The FAA has issued several project-by-project policies that support the integration of such EFIS into part 23 airplanes. The FAA will determine their involvement for any EFIS that has not been certificated before.
10	Small Airplane	A-0302	Avionics	Relief from 14 CFR 23.1311(a)(5)	If the applicant is seeking relief from 14 CFR part 23.1311(a)(5) at amendment 23-49 for installation approval of electronic displays in part 23 airplanes limited to VFR, then they may require an Equivalent Level of Safety (ELOS) finding. The Small Airplanes Standards Branch have developed policy designed to reduce the burden of processing multiple ELOS requests and communicates the intent of 23.1311(a)(5).
11	Small Airplane	A-0303	Avionics	Speech Recognition or Voice Activated Technology	If the applicant proposes to install speech recognition or voice activated technology for avionics data entry, then they may need to obtain an FAA accepted means of compliance (MOC) to 14 CFR 23.1301 and 23.1309 at amendment 23-63 and prior. At amendment 23-64 and after, applicants should incorporate FAA accepted means of compliance (MOC) into their certification planning.
12	Small Airplane	A-0305	Avionics	Vision Systems - Night Vision Imaging Systems	If the applicant is seeking to install night vision compatible lighting systems into part 23 airplanes, then they must obtain an FAA accepted means of compliance (MOC) at all amendment levels. The FAA accepted NVIS MOC is currently available as a Project Specific Policy Memo that may be obtained from the SASB. This MOC defines an acceptable MOC for aided flight operations and aided takeoff and landing operations. This MOC does not address operational authorization. The project specific policy memo does not currently allow for agricultural application operations and therefore an issue paper will be required. Similarly, aided seaplanes operations are also not covered and will require an issue paper.
13	Small Airplane	A-0307	Avionics	Airspeed Indicator Markings	If the applicant is installing digital avionics (glass cockpit), then they may require an Equivalent Level Of Safety (ELOS) finding when complying with 14 CFR 23.1545 Airspeed Indicator at amendment 23-63 and prior. At amendment 23-64 and after, applicants should incorporate FAA accepted means of compliance (MOC) into their certification planning in lieu of an ELOS finding.
14	Small Airplane	A-0308	Avionics	Radio Altimeters	Emerging Technology/Issue. The deployment of the new 5G C-Band services prompted the FAA to address the risks posed by radio frequency interference to radio altimeters domestically. Retrofit solutions that add external filters to the radar altimeter circuit aboard small category airplanes will have an MOC issue paper. New or reworked LRUs with TSO authorizations generally do not need them. In addition to certification of the aircraft and radio (or radar) altimeter change, unrestricted flight operations in the US still require showing compliance to airworthiness directives. Policy Statement PS-AIR-600-39-01 (or later) provides guidance for operators and manufacturers to demonstrate that an aircraft is a "radio altimeter tolerant airplane" as defined in paragraph (g)(1) of FAA Airworthiness Directive (AD) 2023-10-02 using a method approved by the FAA. The applicant may use the method provided in this policy statement to support requests for an approved method of compliance in accordance with the referenced ADs when applying for design approvals that include radio altimeters. Compliance with an FAA AD does not establish compatibility with the radio frequency environment outside of the US where 5G C-Band services have been deployed because specific 5G C-band frequencies, signal characteristics, and deployments vary.
15	Small Airplane	A-0309	Avionics	Nonconformal Heads up Display	If the applicant is seeking to install a nonconformal heads up display, then they must obtain an accepted means of compliance (MOC). Nonconformal heads-up displays do not take into account external reference information. They act as a repeater to the electrical flight instrument system. They are not considered required equipment but have safety enhancing capability.
16	Small Airplane	A-0310	Avionics	Simple Autopilots	If the applicant is seeking to install simple autopilots, then they should contact the SASB for additional guidance.
17	Small Airplane	A-0311	Avionics Flight Controls Human Factors	Envelope Protection and Emergency Descent Mode	If the applicant is proposing to install new control functions within the autopilot on a new or existing avionics system which provides automatic stability augmentation and envelope protection or the addition of an emergency descent mode, then they must obtain an FAA accepted means of compliance (MOC). At amendment 23-64 and after, applicants should incorporate FAA accepted means of compliance (MOC) into their certification planning.

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36	Small Airplane	A-0902	Fuel System	Fuel System - Pressure Defueling	If the applicant is seeking to install a pressure defueling system in accordance with 14 CFR 25.979(e), then they may require special conditions at amendment 23-63 and earlier to establish adequate requirements. At amendment 23-64 and after, applicants should coordinate 23.2400(c) and 23.2430(c) with the SASB to incorporate the requirements of the special condition into their certification planning as FAA accepted means of compliance (MOC) in lieu of a special condition.
37	Small Airplane	A-0903	Fuel System	Fuel System - Temperature	If the applicant is seeking to establish the minimum level of safety expected for the effect of elevated fuel system temperatures on the airplane, then they may require special conditions at amendment 23-63 and earlier. Fuel systems configured to reject engine heat through the airplane fuel tanks by use of an engine oil/fuel heat exchanger or other means may result in fuel tank temperatures above the critical temperature test requirements of 14 CFR 23.961 and 23.965(d). At amendment 23-64 and after, applicants should coordinate 23.2430(a)(3) and (b)(1) with the SASB to incorporate the requirements of the special condition into their certification planning as FAA accepted means of compliance (MOC) in lieu of a special condition.
38	Small Airplane	A-1001	Human Factors	Electronic Flight Instrument Systems	If the applicant is proposing to install an electronic flight instrument system (EFIS) that has not been previously evaluated by the SASB, then the FAA may require a multi-pilot usability and human factors evaluation. This evaluation (on past EFIS) have resulted in the need for Equivalent Level of Safety (ELOS) finding(s) or additional FAA accepted means of compliance (MOC) to 14 CFR 23.1309(d), 23.1311, 23.1321 and 23.1322 at amendment 23-63 and prior. At amendment 23-64 and after, applicants should incorporate FAA accepted means of compliance (MOC) into their certification planning in lieu of an ELOS finding.
39	Small Airplane	A-1002	Human Factors	Touch Screens	If the applicant is seeking to install touch screens (multi-function controls), then they should follow the FAA accepted means of compliance (MOC) contained in the applicable chapters of FAA Advisory Circular AC 20-175, "Controls for Flight Deck Systems." If the touchscreen has not previously evaluated by the FAA, then the FAA will evaluate their level of involvement in the project.
40	Small Airplane	A-1101	Icing	Flight Into Known Icing (FIKI)	Applicants must coordinate with FAA Policy and Standards, Performance and Environment (AIR-621A) if they are: Seeking FIKI approvals, or Proposing changes that affect or could affect existing FIKI approvals, or Proposing to modify an aircraft that has icing related airworthiness directives (AD), or Proposing to make autopilot modifications on an airplane certificated for icing prior to Amendment 23-43. Section 23.2540(b) may be required in the certification basis for certain modifications, consult Annex A3 of ASTM F3120-20 "Standard Specification for Ice Protection for General Aviation Aircraft".
41	Small Airplane	A-1103	Icing	Engine Operation in Ice Crystal Conditions	If the applicant is using Electronic Engine Control (EEC) logic on an icing certified airplane to determine if the airplane is operating in ice crystal conditions, then the SASB will be involved in the project. For example, blockage of the T10 probe by ice crystals has resulted in engine thrust rollbacks in ice crystal environments.
42	Small Airplane	A-1401	Propulsion	Dual Electronic Ignition Systems	If the applicant is seeking to replace both traditional magnetos with a dual electronic ignition system, then they may be required to address the relevant topics in Policy Memo PS-ACE100-2004-10024 in a means of compliance issue paper for §23.1165 for all installations and §23.903(c) for multi-engine installations at amendment 23-63 or earlier. At amendment 23-64 and after, applicants should address the relevant topics in Policy Memo PS-ACE100-2004-10024 in a means of compliance issue paper for §23.2410 until the appropriate ASTM standards can be revised.
43	Small Airplane	A-1402	Propulsion	Electric or Hybrid Electric Propulsion Systems	If the applicant is proposing to install electric or hybrid-electric propulsion systems, then they may require equivalent level of safety (ELOS) findings, special conditions (SC), or additional design criteria to address features not envisioned. The need for SC, ELOS, design criteria and corresponding means of compliance (MOC) must be determined on a case-by-case basis for each installation. Specific policy does not exist at this time. Projects with electric propulsion or hybrid electric will require SASB involvement.
44	Small Airplane	A-1404	Propulsion	Autothrust System	If the applicant is seeking to install an autothrust (autothrottle) system, then they may be required to apply special conditions to establish adequate requirements at amendment 23-63 or earlier based on the requirements of 14 CFR 25.1329. At amendment 23-64 and after, applicants should coordinate with the SASB and incorporate the requirements of the special conditions into their certification planning for 14 CFR 23.2500, 23.2505, 23.2510, 23.2605 as FAA accepted means of compliance (MOC) in lieu of a special condition.
45	Small Airplane	A-1405	Propulsion	Engine Control System	If the applicant is seeking to install a full authority or supervisory engine control system (EEC/FADEC), then they may be required to apply special conditions to establish adequate requirements at amendment 23-63 or earlier. At amendment 23-64 and after, applicants should incorporate the requirements of the special condition into their certification planning as FAA accepted means of compliance (MOC) in lieu of a special condition.
46	Small Airplane	A-1406	Propulsion	Turbine Engines Shutdown	If the applicants turbine engine control system only includes a single means to shutdown the engine, then the applicant may require an FAA accepted means of compliance (MOC) to 14 CFR 23.1141(e) at amendment 23-63 and prior. The installation requirements of § 23.1141(e) require that no single failure of a turbine-engine control system causes failure of any powerplant function necessary for safety. Most engine control systems provide a redundant means for engine shutdown. For example, if the installed engine control system only provides a single means for shutting off fuel to the engine, then redundant means for engine shutdown must be provided to ensure a simple, quick, and safe shutdown if the primary means of shutdown fails. At amendment 23-64 and after, applicants should coordinate 23.2410(a) with the SASB to incorporate an FAA accepted MOC into their certification planning.
47	Small Airplane	A-1407	Propulsion	Powerplant Indications - Use of Digital Only Indications	If the applicant is seeking to install digital only display(s) in lieu of analog displays for powerplant instruments when complying with 14 CFR 23.1305 (where the term "indicator" is included in the regulation) and § 23.1549, since digital only indicators do not provide for arc, line, or radial markings, then they may require an Equivalent Level of Safety (ELOS) finding for §23.1301, 23.1305, 23.1311, 23.1321 and 23.1549 at amendment 23-63 or earlier. At amendment 23-64 and after, applicants should coordinate 23.2500, 23.2505, 23.2606, 23.2615, 23.2610 with the SASB to incorporate FAA accepted means of compliance (MOC) into their certification planning in lieu of an ELOS finding.
48	Small Airplane	A-1408	Propulsion	Engine Cooling - Climb Speeds	If the applicant is proposing compliance with 14 CFR 23.1047, amendment 23-51, "Cooling test procedures for reciprocating engine powered airplanes", using an airspeed greater than the best rate of climb speed (Vy) or balked landing climb (VREF) speeds, then they may need to obtain an FAA accepted means of compliance (MOC). Section 23.63(a)(2), amendment 23-62, requires §§ 23.65 Climb: All engines operating; and 23.77, Balked landing, to use speeds not less than the speed used to demonstrate compliance with the powerplant cooling requirements (§§ 23.1041, amendment 23-51, through 23.1047). Applicants proposing to use an airspeed greater than those used to show compliance to §§ 23.65 or 23.77 to demonstrate compliance with § 23.1047 should propose a method of compliance that will ensure adequate engine cooling during all expected operating conditions. Applicants should coordinate with the SASB to determine an appropriate MOC and incorporate the FAA accepted MOC into their certification planning.
49	Small Airplane	A-1409	Propulsion	Engine Cooling - Coolant Tank Capacity Requirements	If the applicant is seeking to install liquid cooled reciprocating engines, then an Equivalent Level of Safety (ELOS) finding to 14 CFR 23.1061(b) may be required at any amendment up to and including amendment 23-63. Some 14 CFR part 33 approved reciprocating engines include a self-contained cooling system that may not meet the installation coolant tank capacity and expansion space requirements of 14 CFR 23.1061(b). At amendment 23-64 and after, applicants should incorporate FAA accepted means of compliance (MOC) into their certification planning in lieu of an ELOS finding.
50	Small Airplane	A-1410	Propulsion	Energy/Thrust Management Systems/Displays for Electronic Propulsion	If the applicant proposes to use Energy and/or Thrust Management Systems, then they must coordinate their proposals with the SASB to determine the level of FAA involvement with respect to policy or guidance. Aircraft designed to incorporate electric propulsion systems, distributed propulsion systems, or operate in different flight modes (vertical, transitory, forward flight) may be required to utilize energy and/or thrust management systems which are new to the Part 23 fleet. Considerations include the monitoring of battery states, individual thrust vectors (magnitude and direction) as well as malfunction annunciations. The FAA is actively working on draft policy and guidance for the use of this new and novel technology.
51	Small Airplane	A-1411	Propulsion	Distributed Propulsion Systems	If the applicant proposes to use distributed propulsion systems, then they must coordinate their proposals with the SASB to determine the level of FAA involvement with respect to policy or guidance. Highly-augmented, distributed propulsion systems are new to the Part 23 fleet. They are typically defined as a highly-augmented propulsion system consisting of a single throttle controlling a multi- motor system. The FAA is actively working on draft policy and guidance for the use of this new and novel technology.
52	Small Airplane	A-1412	Propulsion	Propulsion as a Flight Control Effector	If the applicant is proposing to use propulsion as a flight control effector, then they must coordinate their proposals with the SASB to determine the level of FAA involvement with respect to policy and guidance. The use of propulsion as a flight control effector is new to the Part 23 fleet. Examples of this unique type of control may be found in a distributed propulsion system or with an aircraft designed to operate in multiple flight modes. The FAA is actively working on draft policy and guidance for the use of this new and novel technology.
53	Small Airplane	A-1502	Security	Security Considerations (Cybersecurity)	If the applicant proposes to use a wireless connectivity for data transfers to onboard avionics, then they may need to obtain an FAA accepted means of compliance (MOC). The applicant should incorporate Amendment 64 rules 14 CFR 23.2500, 23.2500 and 23.2510 and the MOC to their certification planning for any system or item that may require a cybersecurity assessment. Applicants should contact AIR-622 for additional guidance.
54	Small Airplane	A-1601	Software/Airborne Electronic Hardware	Artificial Intelligence Software	If the applicant is proposing to use artificial intelligence (AI) software, then this will require FAA involvement. References: FAA Advisory Circular (AC) 20-115D, DO-178C. Applicants should contact the SASB for additional guidance.
55	Small Airplane	A-1602	Software/Airborne Electronic Hardware	Multi-Core Processors	If the applicant proposes to use software-based aircraft systems that utilize multi-core microprocessors (i.e., without disabling unused cores, etc.), then they must use or obtain an FAA accepted means of compliance (MOC).
56	Small Airplane	A-1603	Software/Airborne Electronic Hardware	Unmanned Aircraft Systems - Software and Hardware Design Assurance	If the applicant is seeking to establish the software and airborne electronic hardware (AEH) design assurance airworthiness criteria in accordance with 14 CFR 21.17(b), then they must use or obtain an FAA accepted means of compliance (MOC). The requirements currently established for Software and AEH design assurance may not be appropriate depending on the Unmanned Aircraft System (UAS) design and concept of operations (CONOPS).
57	Small Airplane	A-1701	Systems and Equipment	Application of 23.1309/23.2510 to Oxygen Systems on Unpressurized Airplanes With a Single Pilot	If the applicant is installing a conventional oxygen system in unpressurized airplanes, then the FAA may be involved to ensure a consistent and standardized approach to the applicability of 14 CFR 23.1309 at amendment 23-41 through 23-62/14 CFR 23.2510 at amendment 23-64 and after for conventional airplanes that operate up to 25,000 feet with a single pilot. Prior to amendment 23-41 oxygen systems were not evaluated as part of the system safety process for 23.1309. On some recent projects that installed conventional oxygen systems in unpressurized airplanes 23.1309/23.2510 were applied inconsistently because different assumptions were made about the severity of oxygen failure conditions and different approaches were used for the applicability of 23.1309/23.2510. Oxygen system failure during unpressurized flight at 25,000 feet could be potentially catastrophic, but could also be less severe, depending on the pilot's ability to recognize the failure and respond before becoming excessively impaired by hypoxia. 23.1309/23.2510 are not applied when specific requirements adequately address failure or abnormal operation, and determining the applicability is not always clear. An issue paper has been developed to improve standardization for classifying oxygen failure conditions and for standardizing the applicability of 23.1309/23.2510 for conventional oxygen equipment on unpressurized airplanes that operate up to 25,000 ft with a single pilot.
58	Small Airplane	A-1703	Systems and Equipment	Data Link System Supporting Air Traffic Services (ATS) Communications (NEXTGEN)	If the applicant is seeking to install aircraft data communication systems used for air traffic services (ATS), then they must incorporate FAA accepted means of compliance (MOC). Advisory Circular AC 20-140C,"Guidelines for Design Approval of Aircraft Data Link Communication Systems Supporting Air Traffic Services (ATS)", covers different types of data link systems and interoperability criteria, respectively, is an FAA accepted MOC. Additionally, policy memorandum, AIR-680-17-680-DM281, AC 20-140C General Memo, dated December 08, 2017, provides clarification on FANS 1/A+, associated viable sub-networks, and use of operating limitations in the Airplane Flight Manual. Examples of ATS data communication systems are controller pilot data link communications, Automatic Dependent Surveillance-Contract, and Aircraft Communications Addressing and Reporting System. AC 20-140C covers different types of data link systems and interoperability criteria respectively. Applicants should incorporate FAA accepted means of compliance (MOC) into their certification planning and coordinate with the SASB of their intent to propose an alternative FAA accepted MOC in accordance with AC 23.2010-1, FAA Accepted Means of Compliance Process for 14 CFR Part 23, that can be incorporated into their certification planning.

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59	Small Airplane	A-1707	Systems and Equipment	Remotely Piloted Systems/ Command & Control (C2) Systems	If the applicant proposes to use Remotely Piloted Systems, then they must coordinate their proposals with the SASB to determine the level of FAA involvement with respect to policy and guidance. Remotely piloted aircraft are found in the Unmanned Aircraft Systems (UAS) community and are new to the Part 23 fleet. There is UAS guidance for remotely piloted vehicles that includes definitions, specifications and testing requirements for command and control systems but this may have to be modified to adapt it to Part 23 aircraft. Additional considerations include where and how this aircraft is to be operated and whether or not it is carrying passengers. The FAA is actively working on draft policy and guidance for the use of this new and novel technology.
60	Small Airplane	A-1708	Systems and Equipment	Airbags	If the applicant is seeking to install airbags on the airframe, then they may need to obtain an FAA accepted means of compliance (MOC) or may be required to apply a special condition. Applicants should contact the SASB for any updated information or guidance.
61	Small Airplane	A-1709	Systems and Equipment	Run Time Assurance/Health Monitoring Executive Systems	If the applicant proposes to use Run-Time Assurance/Health Monitoring Executive Systems, then they must coordinate their proposals with the SASB to determine the level of FAA involvement with respect to policy and guidance. Run-Time Assurance/Health Monitoring Executive Systems are high-level monitoring and protection systems and are new to the Part 23 fleet. The FAA is actively working on draft policy and guidance for the use of this new and novel technology.
62	Small Airplane	A-1710	Systems and Equipment	Real Time Parameter Identification Systems	If the applicant proposes to use Real-Time Parameter Identification Systems, then they must coordinate their proposals with the SASB to determine the level of FAA involvement with respect to policy and guidance. Real-Time Parameter Identification Systems are non-deterministic systems used to mathematically model something in real-time and are new to the Part 23 fleet. The FAA is actively working on draft policy and guidance for the use of this new and novel technology.
63	Airships Gliders (Sailplanes) Very Light Airplanes	A-1801	Other	Special Class Products	<p>Airships, Gliders (Sailplanes), and Very Light Airplanes are certificated by the FAA under 14 CFR 21.17(b) as "special class" products. These special class products use airworthiness design criteria as their certification basis rather than the airworthiness standards under Title 14, Code of Federal Regulations (14 CFR), part 23 etc.</p> <p>The FAA has published accepted means of compliance (MOC) that establish the airworthiness criteria for Gliders (Sailplanes), Very Light Airplanes, and Airships. The FAA published Advisory Circulars (AC) are:</p> <p>AC 21.17-2A, Type Certification-Fixed Wing Gliders (Sailplanes) establishes European Aviation Safety Agency (EASA) CS-22 and Joint Airworthiness Requirements (JAR-22) sailplane regulations as acceptable airworthiness criteria,</p> <p>AC 21.17-3, Type Certification of Very Light Airplanes under FAR 21.17(b), establishes EASA CS-Very Light Airplanes (CS-VLA) and JAR-VLA regulations as acceptable airworthiness criteria,</p> <p>AC 21.17-1A, Type Certification—Airships, and FAA-P-8110-2, Airship Design Criteria and additional policy memos.</p> <p>The FAA must provide a public notice and respond to public comments when changes to airworthiness criteria are proposed or when newly established airworthiness criteria are proposed to be applied to a new product.</p> <p>Any new products proposed to be certificated under 14 CFR 21.17 (b) special class and any changes to existing special class products that modify the established airworthiness criteria or deviate from the FAA accepted MOC will require Policy and Innovation involvement.</p>
64	Balloon	A-1802	Other	Balloon - Lifting Envelope Changes	If an applicant is proposing to replace the lifting envelope of a type certificated balloon with another lifting envelope (i.e. via Supplemental Type Certificate), they must retain and reinstall the original data plate and install an additional supplemental data plate as close as physically possible to the original data plate. This information is provided to communicate the requirements of FAA data plate removal and installation of a supplemental data plate for balloon envelope changes as the data plate is typically attached to the lifting envelope. Deviations from this guidance will necessitate SASSB review of the applicant's proposed changes. This communication is provided due to confusion primarily seen among STC applicants about the appropriate handling of the data plate installed by the original equipment manufacturer and the need for a supplemental data plate. FAA Order 8130.2J, Section 2.3, paragraph e(2)(c) states: "When an aircraft has been modified to conform to another make/model, verify the supplemental ID plate contains the information specified in 14 CFR part 43.13." FAA Advisory Circular, AC 45-2E paragraph 6.7 Notes: "When an aircraft has been modified to conform to another model of the same make, a new ID plate is required to be attached as close as physically possible to the original ID plate. The original ID plate is not to be removed or altered in any manner."
65	Balloon Space	A-1806	Other	Aircraft in Low Earth Orbit (LEO)	If the applicant is seeking to operate an aircraft that will reach low-Earth orbit (LEO) or build a vehicle to operate in LEO, then they are under the jurisdiction of Title 51 U.S.C. Chapter 509, and, depending on their proposed operations, may also be subject to Title 49 U.S.C. and its accompanying regulations as well. On September 26, 2013, FAA legal counsel issued an interpretation under FAA's aviation and space statutes to determine which law applies to a potential balloon applicant for a commercial space tourism vehicle (51 U.S.C. or 49 U.S.C.). The balloon applicant in question was determined to be entirely under the jurisdiction of 51 U.S.C. Chapter 509 "partly" because the vehicle would make a rapid transit of and exit from controlled airspace and will not loiter. However... the interpretation only applied to the altitudes being proposed by the specific applicant. When not operating as a launch vehicle, the appliance would be required to operate under the appropriate aviation provision of Title 49 U.S.C. and its accompanying regulations. NOTE: The legal interpretation rendered no opinion on what constitutes outer space but used 30 kilometers because at 30 kilometers (98,425 feet), water and blood boil, and an unprotected person would rapidly experience fatal decompression. Regardless of whether 30 kilometers constitutes outer space and the FAA renders no opinion on that question—a person would experience the same physiological responses at 30 kilometers as if exposed to the environment of low-Earth orbit (LEO).
66	Small Airplane	A-1807	Other	Amendment 23-62 Errors	<p>If an applicant is using part 23, amendment 23-62, for new products or product changes including STCs, then the SASB must determine whether an equivalent level of safety (ELOS) finding is necessary due to 14 CFR part 23, amendment 23-62 containing various errors.</p> <p>The FAA develops/issues ELOS findings per 14 CFR 21.21(b). However, the FAA will likely delegate the compliance finding to the Foreign Civil Aviation Authority for the part 23, amendment 23-62, errors ELOS finding memorandum. A copy of these errors and their corrections is available upon request.</p> <p>Applicants using part 23 amendment 23-62 as the Means of Compliance (MOC) to amendment 23-64 must also address these errors.</p> <p>ACOs and applicants should review the Project Specific Policy Memo for the most accurate list of regulations with errors.</p> <p>As of 3/13/18, the known errors exist in the following regulations:</p> <p>23.45, amendment 23-62 General (Performance)</p> <p>23.51, amendment 23-62 Takeoff speeds</p> <p>23.63, amendment 23-62 Climb:General</p> <p>23.67, amendment 23-62 Climb:One engine inoperative</p> <p>23.73, amendment 23-62 Reference landing approach speed</p> <p>23.77, amendment 23-62 Balked landing</p> <p>23.161, amendment 23-50 Trim</p> <p>23.181, amendment 23-62 Dynamic Stability</p> <p>23.221, amendment 23-50 Spinning</p> <p>23.251, amendment 23-62 Vibration and buffeting</p> <p>23.253, amendment 23-62 High speed characteristics</p> <p>23.571, amendment 23-62 Metallic pressurized cabin structures</p> <p>23.785, amendment 23-49 Seats, berths, litters, safety belts, and shoulder harnesses</p> <p>23.831, amendment 23-62 Ventilation</p> <p>23.1195, amendment 23-62 Fire extinguishing systems</p> <p>23.1197, amendment 23-62 Fire extinguishing agents</p> <p>23.1199, amendment 23-62 Fire extinguishing characteristics</p> <p>23.1201, amendment 23-62 Fire extinguishing materials</p> <p>23.1445, amendment 23-62 Oxygen distribution system</p> <p>23.1527, amendment 23-45 Maximum Operating Altitude</p> <p>23.1545, amendment 23-62 Airspeed indicator</p> <p>23.1583, amendment 23-62 Operating limitations</p>
67	Small Airplane	A-1808	Other	Required Navigation Performance Authorization Required (RNP AR) Coordination	FAA headquarters retains oversight of all applications for operations approval to conduct Required Navigation Performance Authorization Required (RNP AR) operations. To avoid delays in processing these operations applications and confirming aircraft qualification, Aircraft Certification field offices should coordinate all RNP AR aircraft qualification airworthiness applications with the Navigation and Flight Technologies section (AIR-6B1) at FAA headquarters. Coordinating the application with AIR-6B1 will ensure the aircraft qualification requirements are met and documented in a manner facilitating an applicant's expeditious RNP AR operations approval.
68	Balloon	A-1810	Other	Aircraft in Low Earth Orbit (LEO)	If the applicant is seeking to operate an aircraft that will reach low-Earth orbit (LEO) or build a vehicle to operate in LEO, then they are under the jurisdiction of Title 51 U.S.C. Chapter 509, and, depending on their proposed operations may also be subject to Title 49 U.S.C. and its accompanying regulations as well. On September 26, 2013, FAA legal counsel issued an interpretation under FAA's aviation and space statutes to determine which law applies to a potential balloon applicant for a commercial space tourism vehicle (51 U.S.C. or 49 U.S.C.). The balloon applicant in question was determined to be entirely under the jurisdiction of 51 U.S.C. Chapter 509 "partly" because the vehicle would make a rapid transit of and exit from controlled airspace and will not loiter. However... the interpretation only applied to the altitudes being proposed by the specific applicant. When not operating as a launch vehicle, the appliance would be required to operate under the appropriate aviation provision of Title 49 U.S.C. and its accompanying regulations. NOTE: The legal interpretation rendered no opinion on what constitutes outer space but used 30 kilometers because at 30 kilometers (98,425 feet), water and blood boil, and an unprotected person would rapidly experience fatal decompression. Regardless of whether 30 kilometers constitutes outer space and the FAA renders no opinion on that question—a person would experience the same physiological responses at 30 kilometers as if exposed to the environment of low-Earth orbit (LEO).
69	Small Airplane	A-1811	Other	Aircraft With Different Flight Modes (Vertical, POC, Schaller, Ross Transition, Forward Flight) [eVTOL]	If the applicant proposes to design an aircraft to operate in different flight modes (vertical, transitory, and forward flight), then they must coordinate their proposals with the SASB to determine the level of FAA involvement with respect to policy or guidance. Aircraft like the new class of Vertical Takeoff and Landing (VTOL) vehicles are capable of flying in different modes of flight (vertical, transitory, and forward) and are new to the Part 23 fleet. There are many considerations not currently addressed in our requirements including new pilot vehicle interfaces, new displays for energy and thrust management, handling qualities, and unique malfunction scenarios. The FAA is actively working on draft policy and guidance for the use of this new and novel technology. The FAA is currently deciding if these vehicles will be 14 CFR 21.17(b) (special class) or 14 CFR 23 with special conditions.
70	Small Airplane	A-1812	Other	Basic Med Operations	If the applicant is seeking to allow 14 CFR part 68 basic med operations in some 14 CFR part 23 airplanes, then they may need to apply for type certificate action either through an amended type certificate or supplemental type certificate (STC) if their airplane is certificated above 6000 pounds maximum take-off weight and/or have seat counts greater than 6. The FAA has issued a policy memo that addresses these expectations more clearly and that memo is available upon request.

	Product Type	Issue ID#	Category	Subject	Description
71	Small Airplane	A-1813	Other	Novel, Unique, or Unusual Design Features	If a technology or product change is novel, unique, or has unusual design features, then applicants and ACO staff should contact the applicable standards branch. Special Conditions are issued if the existing applicable airworthiness standards do not contain adequate or appropriate safety standards for the airplane, airplane engine, or propeller because of novel, unique or unusual design features of the product to be type certificated (refer to 14 CFR 11.19, 21.16, and 21.101(d)). Equivalent Level of Safety (ELOS) findings may also be applicable when literal compliance with an airworthiness standard cannot be shown and compensating factors exist that can be shown to provide an ELOS to the regulation in which an ELOS is sought. (refer to § 21.21(b)(1)). Novel, unique, or unusual design features may include but are not limited to the following issues(s): 1) Materials; 2) Processes; 3) Design feature(s) that would produce an unsafe condition; 4) Significant technology issues that are of controversial design; 5) Unique operational consideration(s); and 6) Other. When proposing changes to small airplane products certificated prior to amendment 23-64, applicants are encouraged to comply with later provisions of amendment 23-64 when doing so eliminates the need for special conditions or ELOS findings. Complying with amendment 23-64 performance-based requirements, special conditions and ELOS findings formerly required in its prescriptive predecessors—amendment 23-63 or earlier—could be potentially converted to means of compliance (MOC). The provisions and details of those former special conditions and ELOS could be incorporated into the applicant's certification planning as an FAA accepted MOC under the provisions of § 23.2010; FAA Accepted Means of Compliance Process for 14 CFR Part 23, thereby, potentially saving a significant amount of time and administrative effort for both the applicant and the FAA.
72	Small Airplane	A-1815	Other	Restricted Category Airplanes - Airplanes Already Certificated Commuter	Per 14 CFR 23.3(e), An airplane cannot have both Commuter Category Certification and one or more of Normal, Utility, Acrobatic certification.
73	Small Airplane	A-1816	Other	Significant Change - No Policy and Innovation Division Involvement	If the applicant is seeking to comply with an amendment earlier than that established on their date of application, then they must provide an argument per AC21.101-1A and this may be documented in their certification plan. The applicant's certification plan must be reviewed along with a determination on whether the applicant is complying with the latest regulations for the areas of change and if not, then they must provide an argument as to whether the level of safety is not materially improved or that compliance to the latest amendment is impractical. If a change is considered significant but with NO Policy and Innovation involvement, then the ACO should follow AC21.101-1A to ensure the process is followed. Please also see Part 23 Amendment 23-62 Errors corrections to see how to incorporate the challenges associated with the errors discovered in amendment 62 in dealing with amended TCs and new and amended STCs.
74	Small Airplane	A-1817	Cabin Safety	Additive Manufacturing - Flammability of Parts	Additive Manufacturing (also known as 3D printing) may allow for variability in the production process that, while still producing the same part in accordance with the drawings, might not control flammability characteristics. Coordinate with the Policy & Standards Division, Cabin Safety Section (AIR-624) to determine if a method of compliance issue paper is needed for additive manufactured parts that must meet part 23 flammability requirements. Coordination with AIR-624 and an issue paper is not needed for parts constructed with Ultem 9085 or that produce a Fire Growth Capacity (FGC) less than 70 J/gk in a microscale combustion calorimeter test conducted per ASTM D7309-21. Note that this Product Issues List also contains a separate item for Additive Manufacturing Design & Construction (Materials, Fabrication Methods).
75	Small Airplane	A-1818	Flight Test	Vibration and Buffeting Requirements for External Modifications	If the applicant is seeking to install antennas or other external modifications on an aircraft that is pressurized, has VNE/VNO greater than 225 knots, or both, then a Means of Compliance issue paper may be required to establish adequate requirements at amendment 23-63 or earlier. At amendment 23-64 or later, applicants should coordinate with the Policy and Standards Division and incorporate the requirements of the issue paper into their certification planning for 14 CFR 23.2160 as an FAA accepted means of compliance (MOC). In lieu of an issue paper the applicant may follow and cite Certification Position Paper CPP-23.251-1 in their project specific certification plan.
76	D&R UAS	D&R-1		D&R Unmanned Aircraft Airworthiness Criteria	Special class airworthiness criteria may need to be established. Certification Position Paper (CPP) No. CPP-D&R-1.1 provides acceptable proposed airworthiness criteria for certain unmanned aircraft that qualify to be certificated using the durability and reliability testing approach (D&R UAs). CPP No. CPP-D&R-1.1 is not applicable to all D&R UAs such as those with reciprocating engines. When applicable, applicants may use the CPP by referring to it in their project specific certification plan. A G-1 issue paper is needed if CPP No. CPP-D&R-1.1 is not applicable or if an applicant proposes alternate proposed airworthiness criteria.
77	D&R UAS	D&R-2		Means of Compliance with D&R Unmanned Airworthiness Criteria	Certification Position Paper (CPP) No. CPP-D&R-2.1 provides acceptable means of compliance (MOC) with the proposed airworthiness criteria in CPP-D&R-1.1 for certain D&R UAs. This MOC is not complete for UAs that conduct certain operations (e.g., operations into adverse weather conditions). If CPP No. CPP-D&R-2.1 is not applicable or an applicant proposes an alternate MOC, a G-2 MOC issue paper is needed.
78	D&R UAS	D&R-3		Operation in Adverse Weather Conditions	An issue paper may be needed to establish a method of compliance with D&R.130(c)(2) for operation in rain, snow or ice.
79	D&R UAS	D&R-4		Detect and Avoid Other Aircraft and Obstacles	An issue paper may be needed to establish a method of compliance with D&R.130(b)(5) for demonstrating the capability to detect and avoid other aircraft and obstacles.
80	D&R UAS	D&R-5		Environmental Certification Basis	A G-3 issue paper must establish the environmental certification basis (i.e., noise standards, and fuel venting and exhaust emissions standards).
81	D&R UAS	D&R-6		Noise Control Act of 1972	An N-1 issue paper may be created to request certain information from the applicant so the FAA can satisfy its statutory responsibility of a Noise Control Act (NCA) determination in accordance with the environmental provisions cited in Title 49 U.S.C. Section 44715 (Noise Control Act). This determination is required before issuing any original TC for an aircraft of any category except for experimental.

Standardization Item – Highlights existing guidance or requests contact with Policy and Standards Division (P&S).

Emerging Technology/Issue -Requests contact with P&S. No standards or guidance in place yet.

Engine-Aircraft Interface Item - May affect the engine or engine installation. Recommend engine manufacturer coordination.

Q2 2024 Small Airplane Release Notes

1	Issue ID#	Category	Subject	Change Description
	A-1817	Cabin Safety	Additive Manufacturing -	Updated description