

# Special Emphasis Item (SEI) list for Import of Chinese Products

Revision 1 dated July 13, 2018

This list is the FAA Small Airplane Standards Branch (SASB) required SEI list for the Chinese Implementation Procedures for Airworthiness (IPA) rev 0 or later for FAA import validation. This list not only covers 14 CFR part 23 products, but also some special class products per 14 CFR part 21.17(b) and manned free balloons per 14 CFR part 31, which the SASB has policy responsibility for oversight.

Common terms on this list:

FCAA – means any foreign certification aviation authority (CAAC in this case) that is the certifying authority (CA) {state of design (SOD)} on the incoming (import) products where the FAA is the validating authority VA {state of registry (SOR)}.

SSD -Significant Standards Differences are a comparison—at a specific amendment level—of the FAA product airworthiness standards to the CAAC airworthiness standards. As of this date, there are no required SSD pairings between the FAR 23 and CCAR 23 or FAR 31 and CCAR 31.

*Note -The below listed published FAA Advisory Circulars, Policy, and guidance are located on RGL at the following link:*

**<https://rgl.faa.gov/>**

*Note - The SEI List number does not indicate priority and is for reference only.*

## 1 Non Developed Significant Standards Differences (SSD) - CAAC - 14 CFR part 23 vs. CCAR 23

Currently there are not any Significant Standards Differences (SSD) lists available for 14 CFR part 23 pairing to the CAAC CCAR 23 since no harmonization efforts have taken place yet.

**Regulatory Reference:** 14 CFR part 21.29, 14 CFR part 23

## 2 Significant Standards Differences (SSDs) and Non-SSDs - manned free balloons - 14 CFR part 31

The Small Airplane Standards Branch has not developed a list of Significant Standards Differences (SSDs) for manned free balloons (14 CFR part 31, any amendment) with any Foreign Civil Aviation Authority (FCAA) including EASA.

The Small Airplane Standards Branch, using an issue paper, will develop an SSD list applicable to the product for FCCAs not using part 31 as their certification basis for a manned free balloon.

**Regulatory Reference:** 14 CFR part 21.29, 14 CFR part 31

### 3 Airships, Gliders (Sailplanes), Very Light Aircraft, 21.17(b) Special Class Products

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.

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:

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,

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,

AC 21.17-1A, *Type Certification—Airships*, and FAA-P-8110-2, *Airship Design Criteria* and additional policy memos.

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.

Changes to existing special class products that modify the established airworthiness criteria or deviate from the FAA accepted MOC are subjected to Technical Validation (either Full Technical Validation (FTV) or Limited Technical Validation (LTV)).

Any new product proposed to be certificated under 14 CFR 21.17(b) special class are subjected to Technical Validation (either Full Technical Validation (FTV) or Limited Technical Validation (LTV)).

**Regulatory Reference:** 14 CFR 21.17(b)

FAA Advisory Circulars 21.17-1A, 21.17-2A, and 21.17-3

4 Type Certificates (TC), design changes, or Supplemental Type Certificates (STC) using 14 CFR part 23 amendment 23-62 - addressing the errors

14 CFR part 23, amendment 23-62, contains various errors. Therefore, when an applicant is using part 23, amendment 23-62, for new products or product changes including STCs, the Small Airplane Standards Branch must determine whether an equivalent level of safety (ELOS) finding is necessary.

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.

Applicants using part 23 amendment 23-62 as the Means of Compliance (MOC) to Amdt 23-64 must also address these errors.

ACOs and applicants should review the Project Specific Policy Memo for the most accurate list of regulations with errors. As of 3/13/18, the known errors exist in the following regulations:

- 23.45, amendment 23-62 General (Performance)
- 23.51, amendment 23-62 Takeoff speeds
- 23.63, amendment 23-62 Climb:General
- 23.67, amendment 23-62 Climb:One engine inoperative
- 23.73, amendment 23-62 Reference landing approach speed
- 23.77, amendment 23-62 Balked landing
- 23.161, amendment 23-50 Trim
- 23.181, amendment 23-62 Dynamic Stability
- 23.221, amendment 23-50 Spinning
- 23.251, amendment 23-62 Vibration and buffeting
- 23.253, amendment 23-62 High speed characteristics
- 23.571, amendment 23-62 Metallic pressurized cabin structures
- 23.785, amendment 23-49 Seats, berths, litters, safety belts, and shoulder harnesses
- 23.831, amendment 23-62 Ventilation
- 23.1195, amendment 23-62 Fire extinguishing systems
- 23.1197, amendment 23-62 Fire extinguishing agents
- 23.1199, amendment 23-62 Fire extinguishing characteristics
- 23.1201, amendment 23-62 Fire extinguishing materials
- 23.1527, amendment 23-45 Maximum Operating Altitude
- 23.1545, amendment 23-62 Airspeed indicator
- 23.1583, amendment 23-62 Operating limitations

Note: This is also Small Airplane Issues List (SAIL) item.

**Regulatory Reference:** 14 CFR 21.21(b)  
14 CFR part 23, at amendment 23-62.

## 5 Using FAA 14 CFR part 23 at Amendment 64 or later - 23.2010

If an applicant is using a Means of Compliance (MOC) not previously accepted by the FAA Administrator when complying with 14 CFR part 23 at amendment 23-64 or higher, this project will be conducted under Technical Validation (either Full Technical Validation (FTV) or Limited Technical Validation (LTV)).

See below link for the MOC accepted by the FAA Administrator for part 23, amendment 23-64 or later.

**Note 1:** Amendment 23-63 provides acceptable MOC to part 23, amendment 23-64 with some exceptions. See link below.

FAA accepted MOC are located at:

[https://www.faa.gov/aircraft/air\\_cert/design\\_approvals/small\\_airplanes/small\\_airplanes\\_regs/](https://www.faa.gov/aircraft/air_cert/design_approvals/small_airplanes/small_airplanes_regs/)

**Regulatory Reference:** 14 CFR 23.2010 amendment 23-64 and after.

## 6 Airplane Flight Manual/Pilot Operational Handbook including AFM or POH changes

The FAA must review every Aircraft Flight Manual (AFM) or Pilot Operational Handbook (POH) and AFM Supplements (AFMS) for operational acceptability. After the FAA's acceptance of the AFM, including the limitation sections, the FAA may request CAAC to approve the limitations on behalf of the FAA. This also includes corresponding changes to these manuals. *However, changes deemed minor per the CAAC part 21 procedures may be deemed FAA accepted and will not require FAA review.*

Operational regulations are not harmonized with the CAAC or other Foreign Civil Aviation Authorities. It is imperative that the FAA Aircraft Certification Office and Airplane Evaluation Group (AEG) evaluate products seeking U.S. validation to ensure the AFM, AFMS, and corresponding changes to them meet the requirements of the U.S. operational regulations.

**Regulatory Reference:** 14 CFR 23.1581, 23.1583, 23.1585, 23.1587, 23.1589 at amendment 23-63 and prior.  
14 CFR 23.2010, 23.2620 at amendment 23-64 and after.

## 7 Instructions for Continued Airworthiness (ICA) including Limitations

The FAA retains the acceptance of the complete Instructions for Continued Airworthiness (ICAs), including the Airworthiness Limitation Section (ALS). After the FAA's acceptance of the ICAs and ALS, the FAA may request CAAC to approve the ALS on behalf of the FAA. The above also includes corresponding changes to these ICA manuals. *However, changes deemed minor per the CAAC part 21 procedures can be deemed FAA accepted and may not require FAA review.*

The maintenance regulations are not harmonized and the FAA's requirements to accept the ICAs is a Significant Standards Difference (SSD) with other Foreign Civil Aviation Authorities (FCAAs).

**Regulatory Reference:** 14 CFR 21.31, 21.50, and 23.1529 (both pre and post amendment 23-64)

## 8 Validation Flight Testing (evaluation flights)

For all new Type Certificates (TCs), the FAA will conduct validation flights (evaluation flight program). In addition, the FAA will evaluate and determine the need to conduct validation flight(s) for any of the following type design changes including STCs that:

- Significantly change the general airplane configuration that affects flying characteristics;
- Change operational usage;
- Affect human factors, flight deck or flight characteristics, including—
  - new FAA ELOS, Special Condition or Exemption; or
  - new means of compliance (MOC) that have not been previously accepted by the FAA Administrator;
  - new touchscreen with multi-function controls
- Affects areas that were previously FAA validation items
- Adds novel or unique features; or
- Affects an area that is subject to possible continued operational safety issues.

These projects will be classified as Technical Validation (either Full Technical Validation (FTV) or Limited Technical Validation (LTV)).

**Regulatory Reference:** 14 CFR 21.17(b) and 21.29

## 9 Requires FAA Specialized flight training - Flight Standardization Board (FSB) involvement or affects existing FAA FSB

When a product requires a special or specific flight-training program, or authorization requirements to operate per 14 CFR 61.31, the FAA requires a Flight Standardization Board to determine if there is a need for a type rating, additional or special training, or a need for authorization requirements. The Small Airplane Standards Branch (SASB) will coordinate with the Airplane Evaluation Group for the FSB.

If there is a change to a product that has an existing FAA type rating, or special or specific flight training, the SASB and AEG will determine their involvement.

**Regulatory Reference:** 14 CFR 61.31

## 10 Change affects an existing Airworthiness Directive (AD) (either the FCCA's or FAA's)

At the time of application for validation, the Foreign Civil Aviation Authority (FCCA) must document existing airworthiness directives (ADs) issued by the FCCA and if known, by the FAA, in the affected areas of change or applicable to new models for derivative products.

The Small Airplane Standards Branch (SASB) must also identify any corresponding or other ADs issued for the product and determine the effects of the AD(s) to the validation project as well as to the existing U.S. fleet. The SASB will also determine if a new FAA AD is needed, the existing FAA AD(s) need revised, whether an alternate means of compliance is required, or any other FAA State of Registry actions are needed.

**Regulatory Reference:** 14 CFR part 39

## 11 Additive Manufacturing (AM)

Projects that incorporate Additive Manufacturing may be considered Non-Basic and maybe subjected to Technical Validation. Applicant's proposing to use Additive Manufacturing must coordinate their proposals with the Small Airplane Standards Branch to determine the level of involvement the FAA requires with respect to policy or guidance.

AM is a relatively new manufacturing process and describes the process of joining materials to make objects from three dimensional (3D) model data using layer upon layer technique/method, as opposed to subtractive manufacturing methodologies. 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 Laser Powder Bed Fusion (LPBF), Electron Beam Powder Bed Fusion (EBPBF), and Directed Energy Deposition (DED) just to name a few. Some of these sub-categories of AM may even employ technologies that differ and have their own unique considerations for certification.

The FAA is actively working on draft policy and guidance for the use of this new and novel technology.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No rule at 14 CFR 23 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 12 Unlimited Acrobatic Stability Special Conditions/Mean of Compliance

Applicant's seeking to show compliance to stability regulations for unlimited acrobatic airplanes may need a special condition for Amdt 23-63 or earlier.

At Amdt 23-64 and after, applicants should incorporate the requirements of the special condition into their certification planning as an FAA accepted Means of Compliance (MOC) in lieu of a special condition.

Applicants, through their certificating authority, should coordinate with the the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No rule at 14 CFR 23 amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

### 13 Envelope Protection and Emergency Descent Mode

Applicants proposing to install new control and autopilot functions on a new or existing avionics system which provides automatic stability augmentation and envelope protection or the addition of an emergency descent mode must obtain an FAA accepted Means of Compliance (MOC).

Applicants, through their certificating authority, should coordinate with the the Small Airplane Standards Branch in order to obtain the latest guidance and determination of FAA involvement.

**Regulatory Reference:** 14 CFR 21.17(b), 21.21(b)(3)

14 CFR §23.207, 23.672, 23.691, 23.1301, 23.1309, 23.1322,  
23.1329, 23.1335 and 23.1541 at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

### 14 Flight into Known Icing (FIKI) approval

The Small Airplane Standards Branch will be involved with any project seeking flight into known icing (FIKI) approval. The Small Airplane Standards Branch may also be involved with changes to existing FIKI approvals.

The FAA wants to ensure the Foreign Civil Aviation Authority (FCAA) and applicant understands all the 14 CFR part 23 FIKI approval requirements because they are more stringent than other bilateral partners' requirements.

**Regulatory Reference:** 14 CFR 23.929, 23.1416, 23.1419 at amendment 23-63 and prior.

14 CFR 23.2010, 23.2165, 23.2415, 23.2540 at amendment 23-64 and after.

### 15 Icing - Low Airspeed Awareness for Autopilot

Applicants may need to obtain an FAA accepted Means of Compliance (MOC) if proposing compliance with 14 CFR 23.1419 for certain autopilot modifications such as showing adequate low airspeed awareness in icing conditions at any amendment up to and including Amdt 23-43.

Applicants, through their certificating authority, should coordinate with the the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1419 at any amendment 23-43 and prior.

**16** Deice fluids: Approval of Use of Type II, III, and IV Deicing/Anti-Icing Fluids on Airplanes

Applicants must assess the impact of using Type II, III, or IV deicing/anti-icing fluids on the type design before operational use of such fluids is authorized.

Policy Statement, PS-ACE-23-05, provides an FAA accepted Means of Compliance for using Type II, III, or IV deicing/anti-icing fluids.

Applicants, through their certificating authority, should coordinate with the the Small Airplane Standards Branch in order to obtain the latest guidance if they plan to deviate from this guidance.

**Regulatory Reference:** 14 CFR 23.143, 23.251, 23.1529, 23.1581, 23.1585, 23.1587 at amendment 23-63 and prior  
14 CFR 23.2010, 23.2135, 23.2160, 23.2620 at amendment 23-64 and after.

**17** Engine operation in ice crystal conditions

If Electronic Engine Control (EEC) logic is used to determine if the airplane is operating in ice crystal conditions, the Small Airplane Standards Branch will be involved. For example, blockage of the Tt0 probe by ice crystals has resulted in engine thrust rollbacks in ice crystal environments. This will make this project Non-Basic.

**Regulatory Reference:** 14 CFR 23.903(a)(2) at amendment 23-63 and prior.  
14 CFR 23.2010, 23.2400 at amendment 23-64 and after.

**18** Icing - Propeller Ice Ingestion

Applicants should be aware that the ice shedding requirement for pusher propellers, 14 CFR 23.905(e), was added on May 10, 1993 to ensure that ice shed into the propeller from the forward fuselage and wings does not cause a hazardous condition. The 23.905(e) requirement does not include the words “for which the airplane is certificated.” The intent was to include ice shed during an inadvertent ice encounter for airplanes NOT certificated for flight in icing.

**Regulatory Reference:** 14 CFR 23.905(e) at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

**19** Electric Propulsion

Applicants proposing to install electric or hybrid-electric propulsion systems may require equivalent level of safety (ELOS) findings or special conditions (SC) to address design features not envisioned.

The need for any specific SC or ELOS must be determined on a case-by-case basis for each installation. Specific Policy does not exist at this time. Projects with electric propulsion are considered non-basic.

**Regulatory Reference:** No rule at 14 CFR part 23 amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

## 20 Damage tolerance and fatigue evaluation of structure

Foreign Civil Aviation Authorities (FCAA) have 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 Small Airplane Standards Branch may be involved with these projects.

In addition, the FAA does not allow switching the certification basis on existing 14 CFR part 23 model airplanes from a safe-life philosophy to damage tolerance. This item is also listed on the Small Airplane Issues List (SAIL). See SAIL for details.

**Regulatory Reference:** 14 CFR 23.573 (pre amendment 23-64), 23.2240 (amendment 23-64 amendment or later)  
Advisory Circular 21.101-1B

## 21 Fire protection of flight controls, engine mounts, and other flight structure

Specific means of compliance for composite airplanes or materials not previously accepted as fire proof may be required. Testing is usually required to validate the performance of these materials.

**Regulatory Reference:** 14 CFR 23.865 at amendment 23-63 and prior.  
14 CFR 23.2010, 23.2330 at amendment 23-64 and after.

## 22 Firewalls and nacelle areas behind firewalls

Specific means of compliance for composite airplanes or composite firewalls may be required. Testing is typically necessary to establish the performance of the materials and the potential for out-gassing.

Applicants must obtain and incorporate FAA accepted Means of Compliance (MOC) to ensure their proposed test and evaluation will be adequate to show compliance with fire protection requirements for any firewall constructed with composite material.

While Advisory Circular AC 20-135 is an FAA accepted MOC that contains general guidance about the use of firewall materials, specific guidance is necessary to ensure a compliant design. Firewalls constructed with composite materials require consideration of unique fire threats, safety concerns and acceptance criteria that differs from those used to address firewalls constructed from traditional metallic materials.

Applicants seeking to ensure that proposed test and evaluation will be adequate to show compliance with fire protection requirements for any firewall constructed with composite material should contact the Small Airplane Standards Branch for additional guidance from the policy staff.

**Regulatory Reference:** 14 CFR 23.1182, 23.1191 at amendment 23-63 and prior.  
14 CFR 23.2010, 23.2440 at amendment 23-64 and after.

**23** Metallic damage tolerance (DTA) and fatigue evaluation of commuter category or (level 4 at amendment 23-64 or higher) airplanes

Some Foreign Civil Aviation Authorities (FCAA) differ in the application of damage tolerance for 14 CFR part 23 airframes and vary from the FAA's accepted means of compliance (MOC). The Small Airplane Standards Branch maybe involved to assist the applicant in developing a means of compliance that is agreeable to the FAA Administrator.

**Regulatory Reference:** 14 CFR 23.574 (pre amendment 23-64) and 23.2240 (amendment 23-64 or later)

**24** Fire protection of flight controls, engine mounts, and other flight structure

Specific means of compliance for composite airplanes or materials not previously accepted as fire proof maybe required. Testing is usually required to validate the performance of these materials.

**Regulatory Reference:** 14 CFR 23.865 (pre amendment 23-64) and 23.2330 (amendment 23-64 or later)

**25** Propeller blade pitch control system

14 CFR §23.905(d) requires the propeller control system to meet the requirements of §§ 35.21 *Variable and reversible pitch propellers*, 35.23 *Propeller control system*, 35.42 *Components of the propeller control system* and 35.43 *Propeller hydraulic components*. CS-23.905(d) requires the propeller control system to meet the requirements of CS-P 210 *Variable and Reversible Pitch Propellers* which is adequate for §35.21, but does not reference requirements adequate for §§ 35.23, 35.42 and 35.43.

**Regulatory Reference:** 14 CFR 23.905(d) at amendment 23-59.

**26** Engine operation in ice crystal conditions

If Full Authority Digital Engine Control (FADEC) logic is used to determine if the airplane is operating in ice crystal conditions, the Small Airplane Standards Branch will be involved. For example, blockage of the TtO probe by ice crystals has resulted in engine thrust rollbacks in ice crystal environments.

**Regulatory Reference:** 14 CFR 23.903(a)(2) (pre amendment 23-64) and 23.2400 (amendment 23-64 or later)

## 27 Fuel System - lightning protection and hot weather operation

If the applicant does not use the below means of compliance, the FAA will need to be involved.

Acceptable methods of compliance for fuel system lightning protection and fuel system hot weather operations have been problematic in the past and need to be coordinated with the Small Airplane Standards Branch.

For compliance with the fuel system hot weather requirements, if methods other than FAA Advisory Circular (AC) 23-16A, *Powerplant Guide for Certification of Part 23 Airplanes and Airships*, or European Aviation Safety Agency (EASA) Acceptable Means of Compliance (AMC) Subpart E, section 23.961 are used/proposed, the Small Airplane Standards Branch involvement is required.

For compliance with the fuel system lightning protection requirements, if any method of compliance other than FAA AC 20-53B, *Protection of Aircraft Fuel Systems Against Fuel Vapor Ignition Caused by Lightning*, is used/proposed, FAA involvement will be required.

**Regulatory Reference:** 14 CFR 23.954, 23.961 at amendment 23-63 and prior.  
14 CFR 23.2010, 23.2430 at amendment 23-64 and after.

## 28 Fuel System - lightning protection and hot weather operation

Acceptable methods of compliance for fuel system lightning protection and fuel system hot weather operations have been problematic in the past and need to be coordinated with the Small Airplane Standards Branch.

For compliance with the fuel system hot weather requirements, if methods other than FAA Advisory Circular (AC) 23-16A, *Powerplant Guide for Certification of Part 23 Airplanes and Airships*, or European Aviation Safety Agency (EASA) Acceptable Means of Compliance (AMC) Subpart E, section 23.961 are used/proposed, the Small Airplane Standards Branch involvement is required.

For compliance with the fuel system lightning protection requirements, if any method of compliance other than FAA AC 20-53B, *Protection of Aircraft Fuel Systems Against Fuel Vapor Ignition Caused by Lightning*, is used/proposed, FAA involvement will be required.

**Regulatory Reference:** 14 CFR 23.954, 23.961 (pre amendment 23-64), and 23.2430 (amendment 23-64 or later)

## 29 Required evaluation for all part 23 diesel engine installations

Applicants may require special conditions or may require an Equivalent Level of Safety (ELOS) finding to address design features of diesel engine installations not envisioned when part 23 was created. All part 23 diesel engine installations must be evaluated per FAA Policy PS-ACE100-2002-004, Diesel Engine Installation, this policy statement identifies areas of regulatory compliance. The need for any specific ELOS findings or special conditions must be determined on a case-by-case basis for each installation. Diesel engine installations are considered non-basic.

Installations being certificated to amendment 23-64 or later must include the evaluations contained in FAA Policy PS-ACE100-2002-004. Under amendment 23-64 or later, the necessary ELOS findings or SC requirements determined from the evaluation should be included as means of compliance per 14 CFR 23.2010.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No rule at 14 CFR 23 amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 30 Autothrust (Autothrust) System

Applicants may be required to apply special conditions to establish adequate requirements if they are proposing to install an autothrust (autothrottle) system at any amendment up to and including Amdt 23-63 based on the requirements of 14 CFR 25.1329.

At Amdt 23-64 and after, applicants must incorporate the requirements of the special condition into their certification planning as FAA accepted Means of Compliance (MOC) in lieu of a special condition.

Applicants, through their certificating authority, should coordinate with the the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No rule at 14 CFR part 23 amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 31 Firewalls and nacelle areas behind firewalls

Specific means of compliance for composite airplanes or firewalls maybe required. Testing is typically necessary to establish the performance of the materials and the potential for out-gassing.

This item is listed on the Small Airplane Issues List (SAIL).

**Regulatory Reference:** 14 CFR 23.1182, 23.1191 (pre amendment 23-64), and 23.2440 (amendment 23-64 or later)

**32** Engine Controls - Certification Requirements for Installation of a Full Authority or Supervisor Electronic Engine Control System (EEC/FADEC)

Applicants may be required to apply special conditions to establish adequate requirements for installation of a full authority or supervisory electronic engine control system (EEC/FADEC) at any amendment up to and including Amdt 23-63.

At Amdt 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.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No rule at 14 CFR part 23 amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

**33** Miscellaneous Equipment - kinds of operation

The type of airplane operations and the maximum altitude allowance are not harmonized requirements between the FAA and Foreign Civil Aviation Authorities. This may affect the required equipment to meet these kinds of operations, so the Small Airplane Standards Branch may be involved in compliance determinations for these items for products that are seeking FAA validation.

**Regulatory Reference:** 14 CFR part 23.1307 (pre amendment 23-64), and 23.2500 and 23.2610 (amendment 23-64 or later)

**34** Fire Protection - Turbine Engine Oil Systems Without a Shutoff Valve

The applicant may need to obtain an FAA accepted Means of Compliance (MOC) to 14 CFR 23.1013(e) and 23.1189(b) if all parts of an installed turbine engine oil system are not shown to be fireproof when a shutoff valve is not incorporated into the system.

Demonstration of compliance to the requirements of 14 CFR 23.1013(e) and 23.1189(b) has proven problematic in the past.

At any amendment, including Amdt 23-64 and after, applicants should incorporate FAA accepted Means of Compliance (MOC) into their certification planning.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1013(e) and 23.1189(b) at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

### 35 Functional Hazard Analysis/System Safety Assessment

Functional hazard analysis and System Safety Assessment is a potential validation item for unique installations and applicants or Foreign Civil Aviation Authorities that have not shown compliance to this regulatory requirement on previous FAA validation projects.

*(Example: If an applicant has done this for a glider, but is now wanting to validate a new turbine-powered airplane under part 23, the Small Airplane Standards Branch will likely be involved)*

**Regulatory Reference:** 14 CFR 23.1309 (pre amendment 23-64) and 23.2510 (amendment 23-64 or later)

### 36 Airspeed Indicating System

Applicability requirements for ice crystals and engine rain ingestion differ between the FAA and some Foreign Civil Aviation Authorities. The Small Airplane Standards Branch may evaluate the applicant's method of compliance.

**Regulatory Reference:** 14 CFR part 23.1323(d) (pre amendment 23-64) and 23.2250 (amendment 23-64 or later)

### 37 Turbine Engines Shutdown

The applicant may need to obtain an FAA accepted Means of Compliance (MOC) to 14 CFR 23.1141(e) if the turbine engine control system only includes a single means to shutdown the engine.

The installation requirements of 14 CFR 23.1141(e) require that no single failure of a turbine engine control system cause 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 any amendment, including Amdt 23-64 and after, applicants should incorporate FAA accepted Means of Compliance (MOC) into their certification planning.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1141(e) at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

### 38 Fuel- Approval of New Fuel

Applicant's seeking approval of new fuel must coordinate their proposal with the FAA. Across the aviation industry, there is considerable activity and energy behind the introduction of new aviation fuels. These efforts are highly visible and potentially controversial.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to determine the level of FAA involvement.

**Regulatory Reference:** 14 CFR 21.17(b)

14 CFR 23 at any amendment.

### 39 Powerplant Indications - Use of Digital Only Indications

Applicant's installing digital only display(s) in lieu of analog display(s) may require an Equivalent Level Of Safety (ELOS) finding for any amendment up to and including Amdt 23-63 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.

At Amdt 23-64 and after, applicants should incorporate FAA accepted Means of Compliance (MOC) into their certification planning in lieu of an ELOS finding.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1305 and 23.1549 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

### 40 Engine Cooling - Reciprocating Engine Installations 14 CFR 23.1047 Using Cooling Climb Speeds Greater than those defined in 14 CFR 23.65(a) and 23.77(a) (best rate of climb speed Vy and balked landing climb speed (VREF))

The applicant may need to obtain an FAA accepted Means of Compliance (MOC) if proposing compliance with 14 CFR 23.1047 cooling test procedures for reciprocating engine powered airplanes using an airspeed greater than the best rate of climb speed (Vy) traditionally used to comply with §23.65(a). This proposed speed may also be greater than V(REF) required by §23.77(a), balked landing climb. 14 CFR 23.63(a)(2) requires both the §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 through §23.1047).

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1047 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

#### 41 Engine Cooling - Liquid Coolant Tank Capacity Requirements

An Equivalent Level of Safety (ELOS) finding to 14 CFR 23.1061(b) may be required for applicants installing liquid cooled reciprocating engines at any amendment up to and including Amdt 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 Amdt 23-64 and after, applicants should incorporate FAA accepted Means of Compliance (MOC) into their certification planning in lieu of an ELOS finding.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1061(b) at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

#### 42 Fuel System - Pressure Defueling

Applicants may be required to apply special conditions to establish adequate requirements for to install a pressure defueling system at any amendment up to and including Amdt 23-63 based on the requirements of 14 CFR 25.979(e).

At Amdt 23-64 and after, applicants should incorporate the requirements of the most recent special condition into their certification planning as FAA accepted Means of Compliance (MOC) in lieu of a special condition.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No rule at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

#### 43 Damage tolerance and fatigue evaluation of structure

Foreign Civil Aviation Authorities (FCAA) have 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 Small Airplane Standards Branch may be involved with these projects.

Fatigue management programs are addressed in FAA advisory circular AC 91-82.

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".

**Regulatory Reference:** 14 CFR 23.573 at amendment 23-63 and prior.

14 CFR 23.2010, 23.2240 at amendment 23-64 and after.

**44** Metallic damage tolerance (DTA) and fatigue evaluation of commuter category or (level 4 at amendment 23-64 or higher) airplanes

Some Foreign Civil Aviation Authorities (FCAA) differ in the application of damage tolerance for 14 CFR part 23 airframes and vary from the FAA's accepted means of compliance (MOC). The Small Airplane Standards Branch may be involved to assist the applicant in developing a means of compliance that is acceptable to the FAA Administrator.

**Regulatory Reference:** 14 CFR 23.574 at amendment 23-63 and prior.  
14 CFR 23.2010, 23.2240 at amendment 23-64 and after.

**45** Fatigue Management Programs (FMP)

Applicants may need to obtain an FAA accepted Means of Compliance (MOC) if they are proposing to incorporate a Fatigue Management Program (FMP) into an existing product and to determine the certification basis. 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 Small Airplane Standards Branch 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".

Applicants, through their certifying authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23 at any amendment.

#### 46 Vinyl Covering Shrink Wraps on Exterior of Part 23 Airplanes, Gliders, Airships

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 cowling/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 wrap installation. How long before mandatory removal.
14. Effects of de-ice fluids on the film.

**Regulatory Reference:** 14 CFR 23.629, 23.659, 23.773, 23.775, 23.805, 23.807, 23.811, 23.865, 23.867, 23.975, 23.1301, 23.1309, 23.1323, 23.1325, and 23.1529 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

FAA Airship Design Criteria.

EASA JAR 22/CS 22.

**47** Emergency Exits - unobstructed path

Part 23 requires an unobstructed path to emergency exits. The FAA has allowed exemptions or ELOS where a seatback could be pushed out of the path without any additional actions, while other FCAA permits additional actions on seatbacks and climbing over seats with lowered seatbacks based on an evacuation test.

**Regulatory Reference:** 14 CFR part 23.807(b) at amendment 23-63 and prior.

**48** Airbags

Applicants seeking to install airbags onto the airframe may require a special condition at amendment 23-63 or prior or an FAA accepted Means of Compliance at amendment 23-64 and after. Projects incorporating airbags into the airframe are non-basic.

Applicants, through their certifying authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No rule at 14 CFR 23 at amendment 23-63 and prior.

14 CFR part 23.2010 at amendment 23-64 and after.

#### 49 Composite Floats - durability/fatigue

Applicants seeking to install composite floats may need to obtain an FAA accepted Means of Compliance (MOC) to address fatigue and durability requirements per 14 CFR 23.573. The addition of floats is deemed a significant change per §21.101 and therefore requires applicants to apply the latest §23.573 requirements unless they can show that compliance with a later requirement does not materially improve the level of safety or is impractical. (See FAA AC 21.101-1B).

NOTE: TSO-C27 and National Aircraft Standards (NAS) 807 provide minimum test requirements to obtain a TSO for floats but the TSO is deemed inadequate for installation approval of composite floats with respect to fatigue and durability.

The FAA is recommending that the applicant does not need to comply with §23.573 for the composite floats themselves as long as they comply with §23.603 using the guidance of AC 23-19A sections 201 through 207. The applicant should also comply with §23.613 for their composite float design. In order to substantiate the certification approach in the guidance of the AC, the FAA will likely require material testing or other testing.

The guidance in AC-23-19A closely approximates requirements per §23.573. If the applicant's design dictates that using § 23.573 for the composite floats would be more expedient or address any short falls not adequately addressed by the above regulations, then special condition may be required for certification basis at amendment 23-63 and prior.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.573 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

#### 50 High Elevation Airfield Operations

EASA MOC CRI O-06 "high elevation airfield operations" can lead to non-compliance to FAA regulations, specifically 23.1447 (e).

**Regulatory Reference:** 14 CFR part 23.1447(e) at amendment 23-63 and prior.  
14 CFR part 23.2010 at amendment 23-64 and after.

#### 51 Operation above 41,000 feet

EASA Novel & Unusual Special Condition CRI D-09 "operations above 41,000 ft" introduces differences between CS-23 and Part 23 requirements that may create non-compliance to the U.S. 14 CFR 23 requirements.

Note: SSDs #34-#37 on EASA list

**Regulatory Reference:** 14 CFR part 23.841 at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

## 52 Replacement of Vacuum Driven Attitude Indicators in 14 CFR Part 23/CAR 3 Airplanes.

Applicants proposing to replace vacuum-driven attitude instruments with electronically-driven indicators in CAR 3 and Part 23 airplanes must use FAA accepted Means of Compliance (MOC). Electronically-driven attitude indicators include indicators that use electrical power in place of vacuum to (1) excite an internal gyro, or (2) replace the operation of the gyro with microelectronics. Electronically-driven attitude indicators may replace the existing attitude indicators in airplanes including those approved for IFR operations.

Policy Statement, PS-ACE-23-08-R1, is an FAA accepted MOC.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1311 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 53 Non-TSO Electronic Flight Instrument Systems and Avionics

Applicants seeking to install non-TSO avionics may need to verify the level of involvement the FAA will have 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.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1301, 23.1306, 23.1308, 23.1309, 23.1311 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

#### 54 HIRF/Lightning Test Levels and Compliance Methods for 14 CFR Part 23 Class I, II, and III Airplanes

The FAA has issued a policy statement, PS-ACE-23-10, as an accepted Means of Compliance (MOC) that may be used lieu of the MOC described in AC 20-136B and AC 20-158A for level A systems in showing compliance to 14 CFR 23.1306 and 23.1308 (§§ 23.2515 and 23.2520). The intent of PS-ACE-23-10 is to define an alternate means of demonstrating compliance with level A systems for HIRF and the indirect effects of lightning requirements for small airplanes without the need to perform full airplane test.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1306, 23.1308 at amendment 23-63 and prior.

14 CFR 23.2515, 23.2520 at amendment 23-64 and after.

#### 55 System level verification of software and airborne electronic hardware (AEH)

Applicants seeking alternative means of compliance (MOC) for system level verification that could be used in place of RTCA/DO-178B/C and 254 for 14 CFR Part 23 Airplanes (or predecessor regulation such as CAR 3) should contact the Small Airplane Standards Branch to determine the availability and level of involvement of the FAA in their project.

The FAA is currently coordinating a policy statement (PS) PS-ACE-23-09. This policy is in draft format.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1301 and 23.1309 at amendment 23-63 and prior.

14 CFR Part 23.2010 at amendment 23-64 and after.

#### 56 Artificial Intelligence Software

The introduction of artificial intelligence (AI) software requires FAA involvement. AI projects are considered non-basic.

References: FAA Advisory Circular (AC) 20-115D, DO-178C.

**Regulatory Reference:** 14 CFR part 23.1301, 23.1309 at amendment 23-63 and prior.

14 CFR part 23.2010, 23.2505, 23.2510 at amendment 23-64 and after.

## 57 Electronic Flight Instrument Systems (EFIS)

Applicants proposing to install an electronic flight instrument system (EFIS) that has not been previously evaluated by the FAA Small Airplane Standards Branch, may require a FAA 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.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1309(d), 23.1311, 23.1321, 23.1322 at any amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 58 Use of Speech Recognition or Voice Activated Technology for Avionics Data Entry in Part 23 Airplanes

Applicants proposing to install speech recognition or voice activated technology for avionics data entry may need to obtain an FAA accepted Means of Compliance (MOC) to 14 CFR 23.1301 and 23.1309; or 23.2500, 23.2505, and 23.2510 at any amendment up to and including Amdt 23-64.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1301 and 23.1309 at amendment 23-63 or prior.

14 CFR 23.2010, 23.2500, 23.2505, and 23.2510 at any amendment 23-64 and after.

## 59 Touch Screens

Applicants proposing to installing touch screen technology (multi-function controls) must incorporate FAA accepted means of compliance (MOC). If the touchscreen has not previously evaluated by the FAA, the FAA must evaluate their level of involvement in the project. These projects may therefore be non-basic.

FAA accepted MOC are contained in the applicable chapters of FAA Advisory Circular AC 20-175, "Controls for Flight Deck Systems."

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.671, 23.771, 23.777, 23.1301, 23.1322, 23.1381, 23.1523 and 23.1555 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 60 Synthetic Vision Systems (SVS)

Applicants proposing to install Synthetic Vision Systems (SVS) must incorporate FAA accepted Means of Compliance (MOC).

FAA Advisory Circulars AC 20-167A, AC 23-26 and AC 20-138 are FAA accepted MOC.

Synthetic Vision Systems (SVS) typically use terrain data from a database to display "synthetic vision" information to the pilot. Guidance on SVS is in place.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.773 at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

## 61 Enhanced Vision System (EVS)

Applicants proposing to install Enhanced Vision Systems (EVS) must incorporate FAA accepted Means of Compliance (MOC).

FAA Advisory Circular, AC 20-167 is an FAA accepted MOC.

EVS is an electronic means to provide a display of the forward external scene topography through the use of imaging sensors, such as forward looking infrared (FLIR), millimeter wave (MMW) radiometry, MMW radar, and/or low-light-level image intensifying.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.773 at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after

## 62 Vision Systems - Night Vision Imaging Systems (NVIS)

Applicants installing night vision (NVIS) compatible lighting systems into part 23 airplanes must incorporate an FAA accepted Means of Compliance (MOC) at any part 23 amendment.

The FAA accepted NVIS MOC is currently available as a DRAFT Project Specific Policy Memo (revision A). This MOC defines an acceptable MOC for aided flight operations and aided takeoff and landing operations. This MOC does not address operational authorization.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.561, 23.771, 23.773, 23.777, 23.807, 23.1301, 23.1311, 23.1321, 23.1322, 23.1351, 23.1381, 23.1383, 23.1401, 23.1501, 23.1523, 23.1525, 23.1543, 23.1581, 23.1583, 23.1585 and any amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 63 ADS-B Out System Installation (NEXTGEN)

The applicant may need to obtain an FAA accepted Means of Compliance (MOC) for initial airworthiness approval of their proposed ADS-B Out System if the ADS-B Out pairing is not already on the list of approved sources.

This link has the list of previously approved (see APPROVED PAIRING LIST:  
<https://www.faa.gov/nextgen/equipadsb/installation/equipment/> )

FAA Advisory Circular 20-165B is an FAA accepted MOC.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1301 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

14 CFR 91.227, amendment 91-314

14 CFR part 91.225

#### 64 Airseed Indicator Markings

Applicant's installing digital avionics (glass cockpit) may require an Equivalent Level Of Safety (ELOS) finding when complying with 14 CFR 23.1545 Airspeed indicator at any amendment up to and including Amdt 23-63.

At Amdt 23-64 and after, applicants should incorporate FAA accepted Means of Compliance (MOC) into their certification planning in lieu of an ELOS finding.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1545 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

#### 65 Data Link System supporting Air Traffic Services (ATS) Communications (NEXTGEN)

Applicants must incorporate FAA accepted Means of Compliance (MOC) to install aircraft Data Communication Systems used for air traffic services (ATS) communication. Advisory Circular AC 20-140C is an FAA accepted MOC.

Additionally, policy memorandum, AIR-6B0-17-6B0-DM281, dated Dec 08, 2017, provides clarification on FANS 1/A+, associated viable sub-networks, and use of operating limitations in the Airplane Flight Manual (AFM). Examples of ATS data communication systems are Controller Pilot Data Link Communications (CPDLC), Automatic Dependent Surveillance-Contract (ADS-C), Aircraft Communications Addressing and Reporting System (ACARS). AC 20-140C covers different types of data link systems and interoperability criteria respectively.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1301(a) at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

#### 66 Wireless LAN Installation

Applicants must incorporate FAA accepted Means of Compliance (MOC) to install wireless LAN.

Policy Statement, PS-ACE-23-2, is an FAA accepted MOC.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.831, 23.1301, 23.1309, 23.1351, 23.1353, 23.1357, 23.1359, 23.1431, 23.1529, 23.1581 at amendment 23-63 and prior.

14 CFR 23.2010 at amendment 23-64 and after.

## 67 Databases and Wireless security

EASA has been issuing GM CRIs F-78 (Databases) and F-15 (wireless security) that has guidance that has not been harmonized with FAA AC 20-156 "Aviation databus assurance". Until the guidance is harmonized, applicants need to ensure that they also meet AC 20-156 as required for US products.

**Regulatory Reference:** 14 CFR 23.1301, 23.1309 at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

## 68 Installation of Rechargeable Lithium Battery and Battery Systems on Airplanes

Applicants may be required to apply special conditions to establish the minimum level of safety expected in order to install rechargeable lithium batteries and battery systems at any amendment up to and including Amdt 23-63.

At Amdt 23-64 and after, applicants should incorporate the requirements of the most recent special condition language into their certification planning as an FAA accepted Means of Compliance (MOC) in lieu of a special condition.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** No Rule at 14 CFR 23 at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

## 69 Multi-Core Processors

Applicants may need to obtain an FAA accepted Means of Compliance (MOC) for software-based aircraft systems that utilize multi-core microprocessors (i.e., without disabling unused cores, etc.).

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 23.1301, 23.1309 at amendment 23-63 and prior.  
14 CFR 23.2010 at amendment 23-64 and after.

## 70 Determination of Substantiality - Changing Lifting Envelope on Balloon

Applicants proposing to replace the lifting envelope of a balloon will need to coordinate with the FAA to determine the need for a substantial change determination under 14 CFR 21.19.

While Advisory Circular AC 21.101-1B is an FAA accepted MOC, the appendix examples of AC 21.101-1B do not include a complete list of product changes that might be considered a substantial change under 14 CFR part 21.19 for a balloon, glider, or airship.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 21.19

14 CFR 31

## 71 Balloon Control Force Guidance - Emergency Deflation System Control Forces

Applicants must consider this clarifying guidance when complying with 14 CFR 31.49 for balloon control forces. A copy of the original policy memo is available upon request. However the guidance is placed here for convenience.

Balloon control forces are currently addressed in 14 CFR 31.49, Control Systems, which states in paragraph (a): "Each control must operate easily, smoothly, and positively enough to allow proper performance of its functions. Controls must be arranged and identified to provide for convenience of operation and to prevent the possibility of confusion and subsequent inadvertent operation."

The rules go on to define force limits for the emergency deflation ripcord in 31.57(b) of "not less than 25, or more than 75 pounds." Although the term "rip cord" is not specifically used in 31.55, both sections address the emergency deflation systems. The Small Airplane Standards Branch believes that in the absence of other rational approaches, the control force guidelines in 31.55 should reflect the same force values as in 31.57.

Applicants, through their certificating authority, should coordinate with the Small Airplane Standards Branch in order to obtain the latest guidance.

**Regulatory Reference:** 14 CFR 31.49, 31.55, 31.57 at any amendment.