DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE LIFE CYCLE MANAGEMENT CENTER
WRIGHT-PATTERSON AIR FORCE BASE OHIO

BULLETIN
AWB–130
2 June 2021
supersedes AWB-004A

United States Air Force Airworthiness Bulletin-130

Subject: Certification Basis

Attachments: (1) References and Supporting Information

1. **Purpose.** This bulletin provides instructions and processes for establishing and approving the Certification Basis (CB).

2. **Office of Primary Responsibility (OPR).** United States Air Force (USAF) Airworthiness (AW) Office, AFLCMC/EZZ (USAF.Airworthiness.Office@us.af.mil)

3. **Applicability.** All air systems that the USAF owns, leases, operates, uses, designs, or modifies.

4. **Policy.** AFPD 62-6 requires that the USAF design and/or modify air systems to comply with airworthiness criteria appropriate for the air system type and intended use (when applicable, using MIL-HDBK-516, *Airworthiness Certification Criteria*).

5. **Background.** The CB provides the measure of merit against which a design is assessed for airworthiness by establishing the set of AW criteria applicable to new air systems or modifications. When appropriate, the CB may use criteria from other sources or new criteria may be developed for a specific program.

5.1 The content of the CB includes the set of approved AW certification criteria, standards, and methods of compliance that apply to a specific air system design. The criteria are measured against the standards. The methods of compliance are the expected means to meet the standards and show compliance with the criteria.

5.2 The Program Office (PO) should integrate the CB into the system requirements, verification management processes, and tools early in the development process. Ideally, a CB is drafted before contract award and is typically updated prior to the System Requirement Review or equivalent. This facilitates the management of AW as part of the systems engineering process.

6. **Required Content.** The CB contains the following for a given air system's configuration, usage, and environment (CUE):

6.1 **System Description.** Provide the current and end state description of the air system's CUE, including airframe identifier, engine type(s) and quantity, crew, passenger capabilities, and missions, etc., to be assessed for certification. The system description must describe each configuration of an air system required to support different integration requirements or additional capabilities. This description is typically developed as part of the planning phase but should be updated, as required, prior to development of the CB.

6.2 **Airworthiness Criteria.** New air systems must utilize the current version of MIL-HDBK-516, *Airworthiness Certification Criteria,* and its approved Change Notices. The use

of current requirements from MIL-HDBK-516 for modifications to existing systems is strongly encouraged, reference EZZ Template 130-1 as a CB option.

6.2.1 For reportable modifications, POs that wish to use AW criteria other than those in the current version of MIL-HDBK-516 should justify their request in the form of an issue paper. Issue papers concerning the certification basis should be completed and approved prior to initiation of the CB review.

6.2.2 Non-reportable modifications may utilize a subset of the criteria and standards from the previously Technical Airworthiness Authority (TAA) approved certification basis.

6.3 **Applicable Criteria.** Identify the criteria from MIL-HDBK-516, *Airworthiness Certification Criteria,* including approved Change Notices applicable to the design. If a portion of a considered criterion applies, identify it as applicable. Program Office responsible engineers are encouraged to informally discuss the draft CB with TAA AW Engineering experts (Technical Directors, Technical Advisors, Technical Experts) as appropriate.

6.3.1 The ability of an air system design to meet a specific criterion has no bearing on the determination of applicability of that criterion. Establishment of the CB is independent of compliance determination and program plans to accomplish verification activities.

6.3.2 The wording of criteria may not be tailored.

6.3.3 For new air systems and reportable modifications, document the specific rationale for all criteria deemed not applicable to the CB. Typically, this is a statement regarding configuration of the air systems (e.g., “This criterion is not applicable as this aircraft has no propellers.”). This must be a technical/design-based justification. The same approach is encouraged to be used for non-reportable modifications.

6.4 **Standards.** Identify the specific standards associated with each applicable criteria. A standard is a specific requirement to be met to satisfy a criterion. Tailoring of standards is permitted only for new air systems and reportable modifications, unless previously approved (ref. paragraph 6.2.2). Tailoring is typically limited to eliminating references to design aspects not associated with the assessed air system or mission (e.g., eliminating rotorcraft unique language for fixed wing designs). If a standard contains multiple parts, of which a subset does not apply to the design, it should be tailored. Any tailoring of a standard must be supported by technical rationale and should result in a level of safety equivalent to the untailored standard.

6.5 **Methods of Compliance (MoC).** Identify the specific MoC associated with each applicable criterion. Methods of compliance may be tailored. Tailoring generally should be limited to specific options of the MoC that are not appropriate, based on the type of air system, its mission, or scope of the modification. Any tailoring of a MoC must be supported by technical rationale and should ensure that standards are met with the same level of confidence as the untailored MoC.

6.6 **Project Unique Criteria.** For air systems employing new technologies and capabilities, suitable criteria may not exist in MIL-HDBK-516 for the airworthiness assessment. In these cases, program unique criteria may need to be developed as part of the certification

basis development. For new criteria, the associated standards and methods of compliance shall be included.

7. **Pre-contract award CB.** The program office engineering staff should develop a pre-contract award CB. The program office engineering staff should work with the AW Office to obtain TAA approval of a pre-contract award CB for new air systems or reportable modifications. The pre-contract award CB should be provided in the Request for Proposal (RFP) solicitation package along with appropriate CB-related instructions to offerors, and evaluation criteria.

7.1 The pre-contract award CB provides the offeror an understanding of the scope of effort expected in the proposal, helps the PO understand the budget to achieve certification, and may be used in source selection when assessing ability to meet RFP requirements.

7.2 The final design configuration definition is not required. It is understood that the design will continue to be further refined throughout the development process since the CB is not typically finalized by the PO until the air system design is locked down as an output of the system Critical Design Review.

8. **Certification Basis for a Coupled Pair of Aircraft during Aerial Refueling**. For aerial refueling operations, the AW of both the individual aircraft and the coupled tanker/receiver pair must be assessed. The assessment relies upon CBs for each individual aircraft as well as a CB for the coupled tanker/receiver pair. Refer to AWB-320, *Aerial Refueling (AR)*, for additional details.

9. **CB Updates.** Changes to the design may occur during the development and verification phases of a program that could drive changes to the CB. The PO should consider planning for CB updates after program events such as contract award, system requirements review, preliminary design review (PDR), critical design review (CDR), and equivalent events. The AW Office should be consulted to determine if a revised AW Plan or CB is required before proceeding into the compliance phase.

10. **Other Airworthiness Authorities**

10.1 **Military Certified Air System from Other Department of Defense (DoD) Services**. When the certification of an air system's design from another service is accepted by the TAA, and the planned USAF CUE is consistent with the originating service's CUE, the CB will be that of the originating service.

10.2 **AW Certification in Jointly Managed Acquisition Programs**. The USAF may participate in jointly managed air system programs with one or more of the other United States military services either as the lead service or as a member. Regardless of the program's lead service, the TAA approves the CB following the procedures in this AWB for all USAF-operated variants.

10.3 **AW Certification of a Commercial Derivative Aircraft (CDA)**. See AWB-360, *Commercial Derivative Aircraft Airworthiness,* for details on a CB for a CDA.

11. **Format.** A CB template is available from the USAF AW SharePoint site (see AWB-100 for a link to the site). The Airworthiness Certification Tool (ACT) should be utilized for all new air systems and reportable modifications. POs should contact the USAF AW Office to obtain concurrence on alternate formats.

12. **CB Approval.** POs shall obtain coordination and approval of the CB in accordance with AWB-225. Contact the USAF AW Office to obtain TAA approval. For organizations without a Delegated Technical Authority (DTA), contact the USAF AW Office to obtain approval.

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Director, Engineering and Technical
Management/Services (AFLCMC/EN-EZ)
USAF Technical Airworthiness Authority

Attachment 1

REFERENCES AND SUPPORTING INFORMATION

References

AFPD 62-6, *USAF Airworthiness*

AFI 62-601, *USAF Airworthiness*

USAF AWB-100, *Airworthiness Process Overview and Terminology*

USAF AWB-110, *Airworthiness Planning*

USAF AWB-225, *Airworthiness Delegated Technical Authorities*

USAF AWB-320, *Aerial Refueling (AR)*

USAF AWB-360, *Commercial Derivative Aircraft Airworthiness*

MIL-HDBK-516, *Airworthiness Certification Criteria*

Abbreviations and Acronyms

ACT – Airworthiness Certification Tool
AFPD – Air Force Policy Directive
AR – Aerial Refueling
AW – Airworthiness
AWB – Airworthiness Bulletin
CB – Certification Basis
CDA – Commercial Derivative Aircraft
CDR – Critical Design Review
CUE – Configuration, Usage, and Environment
DoD – Department of Defense
DTA – Delegated Technical Authority
FAA – Federal Aviation Administration
MoC – Methods of Compliance
OPR – Office of Primary Responsibility
PDR – Preliminary Design Review
PO – Program Office
RFP – Request for Proposal
TAA – Technical Airworthiness Authority
USAF – United States Air Force