



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AERONAUTICAL SYSTEMS CENTER (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE OHIO

BULLETIN
AWB-005
27 SEPTEMBER 2010

United States Air Force (USAF) Airworthiness Bulletin (AWB)-005

Subject: Tailored Airworthiness Certification Criteria/Modification Airworthiness Certification Criteria (TACC/MACC) Document Construction and Format

Attachments: (1) Glossary of References and Supporting Information
(2) TACC/MACC Format Example

- 1. Purpose:** This bulletin describes the acceptable format for tailored airworthiness certification criteria/ (TACC)/modification airworthiness certification criteria (MACC) documents submitted to the Technical Airworthiness Authority (TAA) or the Chief Engineer (CE)/Delegated Technical Authority (DTA) (non-reportable modifications only) for review and approval.
- 2. Office of Primary Responsibility:** ASC/ENSI. Comments, suggestions, or questions on this bulletin should be emailed to the ASC/ENSI Mailbox (ASC.ESNI.Mailbox@wpafb.af.mil).
- 3. Policy: Air Force Instruction (AFI) 62-601, USAF Airworthiness**, requires all USAF aircraft programs which follow the design-based airworthiness assessment process to develop a TACC document. Modifications to aircraft systems that impact airworthiness shall develop a MACC document. **AFI 62-601** differentiates TACC/MACC documents as either *Draft* or *Final* and defines their content as follows:
 - a. Draft TACC and MACC Documents.** Draft TACC/MACC documents include the proposed (i.e., draft) certification basis (see USAF AWB-004, *Development of an Airworthiness Certification Basis*), a description of the air system covered, and for a MACC document the draft includes a description of the covered modifications.
 - b. Final TACC and MACC Documents.** Final TACC/MACC documents include the approved certification basis, the system description, document identifiers needed to maintain configuration control, references to operating limitations or restrictions that apply to the air system (these are typically included in operating manuals), a summary of the “show compliance” results, references to the source of “show compliance” data for each criterion in the certification basis, and identification of any noncompliance with applicable airworthiness criteria along with associated risk(s) and the justification for requested exemptions.

c. **TACC and MACC Documents for Federal Aviation Administration (FAA) Certified Aircraft.** All TACC/MACC documents for FAA type certified air systems will comply with the content requirements described in paragraph 3.b above. The certification basis shall be as listed on the FAA type certification data sheet. However, if the program planning does not include maintaining of the FAA type certification under continued airworthiness practices, the certification basis shall be constructed in accordance with direction contained in USAF AWB-004, *Development of an Airworthiness Certification Basis*.

4. General Information: A TACC/MACC document is an evolving document that follows the development of an aircraft or modification design. As noted in paragraph 3 above, AFI 62-601 refers to TACC/MACC documents as either *Draft* or *Final* – the only difference being additional data reflecting the stage of the airworthiness certification effort. As outlined in paragraph 4 of USAF AWB-003, *TACC/MACC Submittal and Review Process*, a new naming convention has been adopted for referring to TACC/MACC documents: *Model*, *Draft*, *Initial*, and *Final* (see attachment 1). Applicability of a single TACC to multiple Mission Design Series (MDS) aircraft should be evaluated on a case-by-case basis, utilizing a technical manual effectively as a guide. If multiple MDS are covered by a single set of aircraft technical manuals then it is likely that a single TACC will suffice. Consultation with your assigned airworthiness project support team (or appointed ASC/ENSI point of contact) is highly encouraged in this decision process. The TACC/MACC format described in this bulletin should be used to document the experimental flight release basis utilized to conduct a first flight assessment. However, there may be some aspects of the aircraft system that are not exercised during the early flight test program and while applicable in the MACC or TACC these criteria may not be applicable for first flight. The first flight applicable criteria may also have differing standards and methods of compliance than the TACC or MACC as is appropriate for the level of compliance required for achieving safe first flight (see USAF AWB-008, *First Flight Assessment*).

5. TACC/MACC Coordination and Approval: TACC/MACC documents will be submitted for TAA approval at the various stages of a program identified in USAF AWB-003. For example, the certification basis contained in the Draft TACC/MACC document is approved by the TAA no later than Critical Design Review or equivalent (e.g., prior to the start of system level design verification activities).

6. TACC/MACC Document Template and Format Definition: The document will be in spreadsheet (i.e., Microsoft Excel) format.

There will be a cover sheet, a system description sheet (may print as more than one sheet), and sheets for each major section of MIL-HDBK-516. The specific entries are detailed below with sub-paragraph numbers corresponding to circled numbers on the attached TACC/MACC format example.

TACC/MACC document templates can be found in the USAF Airworthiness SharePoint website or Air Force Knowledge Now (AFKN) Community of Practice (CoP) (see attachment 1). Other formats may be accepted by the TAA on a case-by-case basis; do not assume that your existing format is acceptable. The filename of the TACC/MACC document shall include the MDS; modification name (if applicable); block or increment number; Model, Draft, Initial, or Final (as appropriate); followed by TACC or MACC. Example: “C-130J Block 30 Initial MACC.xlsx”.

a. Cover Page Detail (see attachment 2, sheet 1):

- (1) **MDS** – Enter the Mission Design Series (MDS) for the platform (e.g. B-52H).
- (2) **Title** – Either “Tailored Airworthiness Certification Criteria” or “Modification Airworthiness Certification Criteria for the ABC Modification.”
- (3) **Supporting** – Enter MEFR, MRFR or MTC to indicate the type of document that the TACC/MACC supports. Additional information may also be added indicating blocks or specific aircraft.
- (4) **Version** – Enter a document identifier needed to maintain configuration control. This would typically be a number that increases sequentially with each submission of this TACC/MACC.
- (5) **Date** – Enter the date that this TACC/MACC is submitted
- (6) **Managing Office** – Enter identification and contact information for the Program Manager (PM). Add signature blocks as needed for the CE and other coordinating offices.
- (7) **TAA Signature** – The block for TAA signature must appear at the bottom of the page for those activities identified in USAF AWB-003 as requiring TAA approval.

b. System Information Page Detail (see attachment 2, sheet 2):

- (1) **System Description** – Enter a summary description of the system configuration, including airframe identifier, engine types and quantity, crew, and passenger capabilities. The description includes any differences between configurations and how those configurations are identified. List specific tail numbers and configurations, as appropriate.
- (2) **Certification Basis Source** – Enter the exact version of MIL-HDBK-516 used as the starting point for tailoring criteria for the system. Legacy systems may consider other versions of MIL-HDBK-516 but will require TAA approval.

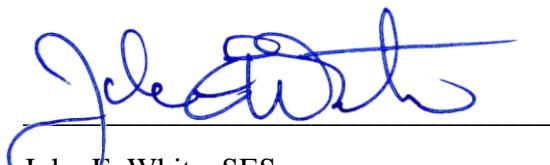
For Commercial Derivative Aircraft (CDA), this section will also include the FAA Type Certification Data Sheet (TCDS) and any applicable Supplemental Type Certificates (STC), and the division between FAA and Department of Defense (DoD) certification.

- (3) **Limitations** – Enter the location of limits, temporary restrictions, and procedures that the operator must use and observe to safely operate the system. This section will include a reference to the Risk Hazard assessment required for any unsatisfied criteria and a listing of the non-compliances with their associated risk(s) and mitigations. These criteria are also flagged within the compliance matrix. This section will also reference exemptions to applicable airworthiness criteria (see USAF AWB-019, *Exemption and Waiver Process*).

c. **Compliance Matrix Pages Detail** (see attachment 2, sheet 3): The “Paragraph Number” and “Certification Criteria” are given in the template and shall not be changed. Where criteria, in addition to that in MIL-HDBK-516, are used they can be added to these columns, either in the section most closely related or collected separately.

- (1) **Applicable? (Y/N)** – The “Applicable” column is to identify those criteria that apply to the aircraft platform for a TACC or those criteria applicable to modification for a MACC.
- (2) **Rationale for Non-Applicable Criteria** – Enter a reason for non-applicability for each criterion determined to be not applicable.
- (3) **Standard** – Enter the specific requirements that must be met that directly satisfy the intent of the criteria. See USAF AWB-004 for instructions on establishing the standard(s).
- (4) **Method of Compliance (MOC)** – Enter the specific activities to show compliance with each standard. See USAF AWB-004 for instructions on establishing the method of compliance(s).
- (5) **Data Artifacts** – Enter references to the source of “show compliance” data for each criterion. This should include the appropriate lists of specific data artifacts (title, version, section, dates, etc.) that support the “show compliance” of each criterion. If non-compliant with the criterion, include references to waivers, exemptions and risk assessments with acceptance (when available).
- (6) **Compliance? (Y/N)** – Mark “No” until the criteria and standard are fully met. List a Risk Hazard assessment for each unsatisfied criteria in the Limitations section of the System Description Page.
- (7) **Risk Assessment Level for Non-Compliance** – This column will identify the risk level associated with non compliant criteria.

7. Entire Section Tailoring: Depending on the program, entire sections of MIL-HDBK-516 may be non-applicable. In this case, it is acceptable to mark the top of the section as “Not Applicable” or “N/A” and include rationale that captures the entire section. CDA platforms may have entire sections completely covered by FAA certification. In these cases, it is acceptable to note this in the System Description (see paragraph 6.b.(1)) on sheet 2 (see attachment 2) and mark the entire MIL-HDBK-516 section appropriately. The PM or CE should verify the intent of each criterion is indeed covered by the FAA certification.



John E. White, SES
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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 62-601, *USAF Airworthiness*

USAF AWB-003, *TACC/MACC Document Submittal and Review Process*

USAF AWB-004, *Development of an Airworthiness Certification Basis*

USAF AWB-008, *First Flight Assessment*

USAF AWB-019, *Exemption and Waiver Process*

MIL-HDBK-516, Airworthiness Certification Criteria

MIL-HDBK-516B, ASC/EN Airworthiness Certification Criteria Expanded Version

USAF Airworthiness SharePoint website:

<https://cs.eis.afmc.af.mil/sites/AeroEngDisciplines/Systems/Airworthiness/default.aspx>

AFKN Airworthiness Certification (USAF) Community of Practice (CoP) website:

<https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO-EN-KO-11>

Abbreviations and Acronyms

AFKN— Air Force Knowledge Now

CE – Chief Engineer

CoP – Community of Practice

CDA – Commercial Derivative Aircraft

DoD – Department of Defense

DTA – Delegated Technical Authority

FAA – Federal Aviation Administration

MACC – Modification Airworthiness Certification Criteria document

MDS – Mission Design Series

MOC – Method of Compliance

N/A – Not Applicable

PM – Program Manager

STC – Supplemental Type Certificate

TACC – Tailored Airworthiness Certification Criteria document

TCDS – Type Certification Data Sheet

Terms

Certification Basis – The set of approved airworthiness certification criteria, standards, methods of compliance, and exemptions that apply to a specific air system. It is typically derived from *MIL-HDBK-516*.

Commercial Derivative Aircraft (CDA) - Any fixed- or rotary-wing aircraft procured as a commercial, FAA type certified, off-the-shelf nondevelopmental item, and whose serial number is listed on an FAA Type Certificate Data Sheet.

Draft TACC/MACC – The working version of a TACC or MACC document that captures the certification basis during the design phase of a system prior to approval of the certification basis. This version of the TACC/MACC has been developed by the contractor. The change from *Model* to *Draft* occurs when the contract is awarded.

Final TACC/MACC – The version of a TACC/MACC document that defines the approved certification basis and lists the artifacts that show compliance with the certification basis. This is an update to the *Initial* TACC/MACC that is approved by the TAA as part of formal military airworthiness certification. The change from *Initial* to *Final* occurs when the TACC/MACC is submitted for final TAA approval.

Initial TACC/MACC – The version of a TACC or MACC document that defines the certification basis approved by the TAA. The change from *Draft* to *Initial* occurs when the TACC/MACC is submitted for initial TAA approval.

Model TACC/MACC – A government document created during the solicitation phase of a contracted development or modification. It is provided to potential offerors as a “notional” document to help them understand government requirements for airworthiness certification.

Modification Airworthiness Certification Criteria (MACC) Document—A document comprised of the certification basis for the modification, a description of the aircraft covered, a description of the modification, operating limitations or restrictions that apply to the modified aircraft, references to “show compliance” data, and a summary of any noncompliance with an applicable airworthiness criteria, to include exemptions, waivers, and risk assessments.

Tailored Airworthiness Certification Criteria (TACC) Document—It is comprised of a description of the aircraft system; the certification basis; any operational limitations or restrictions that must be implemented in order to ensure airworthiness of the aircraft; references to “show compliance” data; and a summary of any noncompliance with applicable airworthiness criterion in the certification basis, to include exemptions, waivers, and risk assessments.

Technical Airworthiness Authority (TAA) – The USAF official authorized to define airworthiness standards, approve the certification basis, issue findings of compliance, and issue Military Type Certificates and other flight releases (see AFI 62-601).

Attachment 2
TACC/MACC COVER PAGE TEMPLATE, SHEET 1

1

MDS: {Program}

2

TITLE: {Tailored/Modification Airworthiness Certification Criteria}

3

Supporting: {MEFR, MRFR or MTC} for {block or specific aircraft}

4

Version: {Identifier needed to maintain configuration control}

5

Date: {Date of Submission}

6

Insert Managing Office person name here
Insert Managing Office person title here
Insert Managing Office here

Date

{Additional offices as needed}

7

Insert TAA name here
Director, Engineering
Aeronautical Systems Center
USAF Technical Airworthiness Authority

Date

TACC/MACC SYSTEM INFORMATION PAGE TEMPLATE, SHEET 2

System Information

1

System Description: {Paragraph describing aircraft system}

2

Certification Basis Source: {Version of MIL-HDBK-516 used to derive the criteria/ standards and methods of compliance}

3

Limitations: {Limitations}

Page 1 of 1

TACC/MACCCOMPLIANCE MATRIC PAGES EXAMPLE, SHEET 3

A	B	C	D	E	F	G	H	I
Para #	Certification Criteria	Applicable? (Y/N)	Rationale for Non-Applicable Criteria	Standard	Method of Compliance (MOC)	Data Artifacts	Compliance? (Y/N)	Risk Assessment Level for Non-Compliances
#.#.#		1		2	3	4	5	7
			Identify those criteria applicable at the aircraft system level	Provide Explanation for Non-applicability of Criteria	State the Standard per MIL-HDBK-516 B Expanded; Tailor as appropriate and provide justification;	State the MOC per MIL-HDBK-516 B Expanded; Tailor as appropriate and provide justification;	Verification Evidence	Risk Assessment Level
								Identify if criteria and standard are fully met. A Risk Hazard assessment will be required for each unsatisfied criteria.