



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

BULLETIN
AWB-160
26 January 2022
(supersedes AWB-1009)

United States Air Force Airworthiness Bulletin (AWB)-160

Subject: Airworthiness Approvals

Attachments: (1) References and Supporting Information
(2) Airworthiness Approval Numbering System

1. **Purpose.** This bulletin provides direction, templates, and instructions for issuance or rescission of airworthiness (AW) approvals (formerly termed “authorizations”).
2. **Office of Primary Responsibility (OPR).** United States Air Force (USAF) AW Office, AFLCMC/EZZ (USAF.Airworthiness.Office@us.af.mil).
3. **Applicability.** This bulletin applies to all air systems subject to and all personnel executing the USAF Airworthiness process.
4. **Policy.** AFD 62-6, *USAF Airworthiness*, and AFI 62-601, *USAF Airworthiness*, requires the USAF Technical Airworthiness Authority (TAA) to issue AW approvals, when appropriate.
5. **Approvals.** An AW approval, issued by the TAA or Delegated Technical Authority (DTA) (ref. AWB-225, *Airworthiness Delegated Technical Authorities*), affirms that the appropriate tenets of the airworthiness process have been completed, the TAA assessed compliance of the air system against airworthiness standards, and, if necessary, the appropriate authority accepted any residual risk to the air system, aircrew, ground crew, passengers, or third parties. The AW approval documents the restrictions necessary to mitigate hazards to acceptable levels.
 - 5.1 AW approvals identify all elements included in the airworthiness assessment necessary to operate the air system. In the case of Unmanned Aircraft Systems (UASs), typically comprised of an Air Vehicle and Control Station(s), the AW approval will cover both the Air Vehicle and the Control Station(s).
 - 5.2 All USAF air systems undergoing airworthiness-related modifications require an AW assessment and approval. An AW approval may cover multiple configurations if those configurations are included in the supporting airworthiness assessment(s).
 - 5.3 The TAA issues an AW approval for civil owned aircraft performing Public Aircraft Operations (PAO) or a Civil Aircraft Operations (CAO). See AWB-340, *USAF Airworthiness (AW) Requirements for Contractor-Owned and Contractor-Operated (COCO) Systems* for additional guidance.
 - 5.4 For Security Cooperation Programs, including Foreign Military Sales (FMS) air systems, the TAA issues AW approvals for flight testing and limited operational flights only when the air system is operated under the authority of the USAF before the point of foreign partner country acceptance of the air system. See AWB-345, *USAF Airworthiness (AW) Policy for Security Cooperation (SC) Programs* for additional AW approval guidance. TAA issued AW approvals are valid only for air systems under the authority of the USAF.
 - 5.5 AW approvals reference the supporting documents that provide justification and configuration data for the AW approval. The AW approval, at minimum, references:
 - 5.5.1 The approved AW assessment(s) for all configurations in the AW approval.
 - 5.5.2 AW risk acceptance by the appropriate authority(s).

- 5.5.3 A document or documents that identifies all the configurations covered by the AW approval, and a description of the intended usage for each.
 - 5.5.4 Operator and Maintenance Technical Data.
 - 5.5.5 Additional restrictions if not documented elsewhere.
 - 5.5.6 Flight test plans (if applicable).
6. **AW Approval Types.** The two types of USAF AW approvals are the Military Type Certificate (MTC) and Military Flight Release (MFR). These are described below.
- 6.1 **MTC.** The TAA issues an MTC for an air system design found to be substantially in compliance with its certification basis. PMs should obtain an MTC prior to entering dedicated operational testing and evaluation or delivery of air system for first operational use. Existence of Serious or High level risks (catastrophic or critical severity) is evidence the air system is not substantially in compliance. Issuing or retaining an MTC in this circumstance is at the discretion of the TAA. The MTC defines the configuration and service life for which each air system is eligible for a Military Certificate of AW. The service life includes actual flight hours, equivalent flight hours, and time in service.
- 6.2 **MFR.** The TAA issues an MFR for an air system design configuration that is not substantially in compliance with its certification basis. PMs must obtain an MFR for flight test and prior to entering dedicated operational testing and evaluation or delivery of air system for first operational use. An MFR has an expiration defined by time and/or event and defines restrictions that must be observed.
- 6.2.1 **Flight Test.** Programs require an MFR to conduct flight test of the air system's developmental configuration. An MFR is used for developmental flight test regardless of whether the baseline design configuration already has an operational MFR or MTC. The MFR typically limits flight activity to approved test plans, test pilot familiarization/training, and ferry operations to support flight tests, as requested.
- 6.2.2 **Operational.** If an air system is not eligible for, or if the TAA has not granted an MTC, the TAA may issue an MFR for dedicated operational testing and evaluation, operational use, or flight activity not covered in Paragraph 6.2.1. The Operational MFR defines the configuration and service life for which each air system is eligible for a Military Certificate of AW under that MFR. The service life includes actual flight hours, equivalent flight hours, and time in service.
- 6.2.3 **Special.** A Special MFR applies in cases when compliance with an approved certification basis for an entire air system has not been determined. Note: Without a TAA-approved certification basis, the quantity and quality of data available directly impacts the assessed operational risk, operating restrictions, and environment.
- 6.2.3.1 The issuance of a Special MFR is allowed by the TAA on a "by exception" basis when a standard AW assessment cannot reasonably be accomplished, a compelling military need to operate the air system exists, and the risks have been accepted.
 - 6.2.3.2 Special MFRs are issued for either Flight Test or Operational purposes.
 - 6.2.3.3 One-Time Flight approvals may be issued as a Special MFR by DTAs when authorized in their delegation.
- 6.2.4 **MFR Expiration:** The TAA will determine the appropriate MFR expiration date or alternate expiration criteria.
- 6.2.4.1 The expiration should consider the risk assessment, time necessary to complete outstanding verification activities leading to issuance of an MTC, completion of the flight

test program, required operational activities, next risk re-acceptance date (ref. AWB-150, *Airworthiness Risk Assessment and Acceptance*), or contract expiration, if applicable.

- 6.2.4.2 Alternate expiration criteria may include flight hours, flight test completion, or delivery to FMS customer. A Program Office (PO) may propose alternate expiration criteria for approval by the TAA.

7. **Propulsion Design Approval (DA).** See AWB-330, *Propulsion Type Certification*.
8. **AW Approval Hierarchy.** AW approvals may be issued as a System or Supplemental AW approval. This hierarchy shows traceability to the original TAA issued approval.
 - 8.1 System AW Approvals. Standalone AW approvals that do not reference any other existing AW approval. System AW approvals must reference all applicable supporting data (e.g. compliance reports) supporting the defined air system configuration in accordance with Paragraph 5.5. Multiple System AW approvals may exist to support multiple configurations for a particular air system.
 - 8.2 Supplemental AW Approvals. AW approvals that are subordinate to an existing AW approval (system or supplement). The following conditions apply when issuing supplemental AW approvals.
 - 8.2.1 Supplemental AW approvals are only issued against valid superior AW approvals for which they are determined to be compatible.
 - 8.2.2 The supplemental AW approval must identify applicable superior AW approvals and reference applicable supporting data (e.g. compliance reports) for aspects not covered by superior AW approvals.
 - 8.2.3 The superior AW approval for a supplemental MTC must be an MTC.
 - 8.2.4 Supplemental approvals may be consolidated into and superseded by a new system approval, if desired. When consolidating, provide a synopsis of the modifications incorporated into, and superseded by, the new approval as part of the request.
 - 8.2.5 Reissuance of a supplemental AW approval due to an administrative change to its superior is not required.
 - 8.2.6 The supplemental AW approval expiration date cannot exceed the current expiration date of its superior AW approval. Supplemental approval expirations may be defined as "concurrent with superior approval".
9. **AW Approval Updates.** Updates to the documented configuration, restrictions, intended usage, or accepted risks constitute a change to the baseline and require a new AW approval. Restrictions may be removed or updated after evidence of appropriate risk mitigation (e.g., results of mitigation validation, updated risk assessments) is provided. Approval authority of an updated AW approval remains with the original issuing authority, or higher.
 - 9.1 **MFR Extension.** The PO is responsible for tracking its MFR expirations. To extend a TAA issued MFR, the requestor will provide the AW Office a written request and a draft of the new MFR no later than thirty (30) days prior to the expiration of the TAA-issued MFR. Provide the following information in the request.
 - 9.1.1 If consolidation of supplemental approvals is desired, see 10.2.4.
 - 9.1.2 Updated supporting documentation, including that from incorporated supplemental approvals (e.g., compliance reports and technical data), IAW para. 5.5 herein. (Note: This information should appear on the draft of the new MFR.)

9.1.3 Fleet flight hours conducted under the expiring MFR and a list of any aircraft approaching or exceeding the flight hour restrictions or service life limit if listed on the expiring MFR.

9.1.4 A list of air system Class A mishaps since the issuance of the expiring MFR.

9.1.4.1 Summary/Description of each event.

9.1.4.2 Results of accident investigation to include root cause findings.

9.1.4.3 Any corrective actions resulting from investigation results and the status of their implementation.

9.1.5 Current AW risk acceptance documentation from the appropriate Risk Acceptance Authorities and identification of any new risks identified since the issuance of the expiring MFR. Risk acceptances must be valid for the duration of the requested extension.

9.2 Changes to AW Risks after AW Approval Issuance. AW approvals must be updated to reflect new or changed AW risks identified during operations (e.g., system safety group finding, fielded aircraft inspection finding, or mishap investigation). The PO must notify the TAA if it becomes aware of a new Serious or High airworthiness risk that impacts existing AW approvals. The AW Risk Assessments (AWRA) prescribed by AWB-150 document the new or changed AW risk and amends the previously approved AW assessment(s) for the applicable air system configuration. Upon completion of the AWB-150 process, the PO provides the USAF AW Office and/or DTA a draft of the new AW approval, AWRA, and risk acceptance documentation. The PO should update the compliance report to reflect the new risk.

9.3 Changes to AW Approval Restrictions.

9.3.1 Removal of, or updates to, restrictions must be approved by the original approving authority (or higher) of each restriction by updating the originating compliance report. The PO is responsible to maintain traceability of each restriction's approving authority.

9.3.1.1 If a restriction was approved by the DTA, the restriction may be changed/removed with a non-reportable assessment if the change/removal does not result in a Serious or High risk.

9.3.1.2 For TAA approved restrictions, changes/removals of restrictions related to a Serious or High risk, or AW approvals originating with the TAA, the requestor must provide the AW Office a written request and a draft of the new AW approval. The AW Office may require a Technical Interchange Meeting depending on the complexity of the change. The following information should be included or attached to the request:

(a) Requested changes to restriction(s)

(b) Acceptances for risks associated with restriction removals or changes.

(c) Updated AW assessment associated with the TAA-issued MFR.

9.4 Administrative Change. Administrative changes are not allowed for changes to the configuration for which the MTC or MFR was initially approved. Supplemental AW approvals referencing a superior AW approval with an administrative change do not require updating the reference. Acceptable administrative change examples include:

9.4.1 Typographical errors

9.4.2 Nomenclature changes (e.g., changes to organizational names/titles of officials)

9.4.3 Changes to citations or references (e.g., technical publications) unrelated to AW

9.4.4 Extension of expiration dates and clarifications that do not alter restrictions, configuration, operations, or usage

9.4.5 Changes to tail/serial numbers (for flight testing and special MFRs only)

10. **AW Approval Templates.** MTC and MFR templates and instructions for their completion are available on the USAF AW Office SharePoint website (see AWB-100 for website link).
11. **AW Approval Numbering.** MTCs and MFRs issued following the publication of this bulletin must be numbered IAW Attachment 2. Programs may choose to administratively re-number previously issued MTCs and MFRs. POs may amend additional components onto the end of an AW approval number, but must provide rationale and rules for numbering to the AWO for approval prior to implementation.
12. **AW Approval Configuration Management.** The PO is responsible for managing and showing traceability of all AW approvals for its associated system configurations, including all modifications and AW approval updates. The DTA is required, IAW AWB-225, to submit annual reports to the TAA that include all issued AW approvals.
13. **Rescission of AW Approvals.**
 - 13.1 If rescission of an AW approval becomes necessary, the TAA or DTA will do so by using an AW Directive.
 - 13.2 For air systems possessing a Military Type Certificate (MTC), if a new Serious or High risk is identified, the TAA may rescind the MTC and replace it with a Military Flight Release. The TAA reinstates the MTC when the conditions for an MTC are met.

JACQUELINE S. JANNING-LASK, SES
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
AFI 91-202, The US Air Force Mishap Prevention Program
AWB-100, Airworthiness Process Overview and Terminology
AWB-120, Modification Airworthiness, Relatedness and Reportability Determination
AWB-150, Airworthiness Risk Assessment and Acceptance
AWB-225, Airworthiness Delegated Technical Authorities
AWB-330, Propulsion Type Certification
AWB-340, USAF Airworthiness (AW) Requirements for Contractor-Owned and Contractor-Operated (COCO) Aircraft
AWB-345, USAF Airworthiness (AW) Policy for Security Cooperation (SC) Programs
DoDD 5030.61, DoD Airworthiness Policy
 USAF AW Office SharePoint: <https://cs2.eis.af.mil/sites/23230/Airworthiness/SitePages/Home.aspx>

Abbreviations and Acronyms


AFI – Air Force Instruction
AW – Airworthiness
AWB – Airworthiness Bulletin
AWRA – Airworthiness Risk Assessments
CAO – Civil Aircraft Operations
COCO – Contractor-Owned, Contractor-Operated
DoDD – Department of Defense Directive
DTA – Delegated Technical Authority
FMS – Foreign Military Sales
IAW – In Accordance With
MDS – Mission Design Series
MFR – Military Flight Release
MTC – Military Type Certificate
OPR – Office of Primary Responsibility
PAO – Public Aircraft Operations
PO – Program Office
TAA – Technical Airworthiness Authority
UAS – Unmanned Aircraft System
USAF – United States Air Force

Attachment 2

AIRWORTHINESS APPROVAL NUMBERING SYSTEM

1. AW Approvals for Air Systems Other Than COCO

- a. Air Systems are to be numbered using the following format:



System
Supplement

- i. **[ID]** = Unique system and/or program identifier. For USAF air systems, this is often the mission design series (e.g., F-16). Append the country code for foreign military sales air systems (e.g., F-16(IQ)).
 - ii. **[T]** = C for MTC, R for MFR, or S for Special MFR.
 - iii. **[NNN]** = Three (3) digit sequential number (e.g., 001).
 - iv. **[SS]** = NR if non-reportable. Blank if TAA issues.
 - v. **[t]** = C for MTC or R for MFR
 - vi. **[XXX]** = Three (3) digit sequential number assigned by PO CM
 - vii. **[DTA]** = DTA office symbol if not the primary DTA (“AFLCMC” need not be included from office symbol) (e.g., AFRL, AFTC, WA, WI, EZZ, etc.). Omit if TAA-issued or issued by primary system DTA.
 - viii. **[A]** = A to identify an administrative update. Omit if no administrative updates exist. Supplemental AW approval numbers are not required to reflect administrative updates to the associated system AW approval.
 - ix. **[YY]** = Two (2) digit sequential number for administrative updates.
- b. Table 1 contains examples.

2. AW Approvals for COCO Air Systems.

- a. **MFR Number = COCO-[CTR]-[Type]-[T]-[NNN]-[DTA] –[A][YY]**
 - b. **CAO Verification Letter Number = COCO-CAO-[CTR]-[Type]-[NNN]-[DTA] – [A][YY]**
 - c. The following apply to both MFR and CAO Verification Letter Numbers:
 - i. **[CTR]** = Contractor operating the aircraft. Use commonly known acronyms or abbreviation if possible. Insert “-” for spaces. (e.g., Acme-Aviation).
 - ii. **[Type]** = Aircraft type (MDS or manufacture model). Insert “-” for spaces.
 - iii. **[T]** = R for MFR, or S for Special MFR.
 - iv. **[NNN]** = Three (3) digit sequential number (e.g., 001). Note: each DTA-issued AW approval employs its own sequence.
 - v. **[DTA]** = DTA office symbol (“AFLCMC” need not be included) (e.g., AFRL, AFTC, WA, WI, EZZ, etc.). Omit if TAA-issued.
 - vi. **[A]** = A to identify an administrative update. Omit if no administrative updates exist.
 - vii. **[YY]** = Two (2) digit sequential number for administrative updates.
 - d. Table 2 contains examples.
3. **AW Approval Numbering Management.** The USAF AW Office Configuration Manager issues and tracks the numbering for TAA-issued AW approvals. The DTA or designated configuration manager issues and tracks the numbering for DTA-issued AW approvals.

Table 1. Non-COCO Air System AW Approval Numbering Examples

Examples	AW Approval 1	AW Approval 2	AW Approval 3	AW Approval 4
MFR Baseline	TAA-issued System	DTA-issued Supp. for Mod 1	TAA-issued Admin Change	DTA-issued Supp. for Mod 2
	MQ-9A-R001	MQ-9A-R001-NRR001	MQ-9A-R001-A001	MQ-9A-R001-NRR002
MFR Baseline FMS (Iraq)	TAA-issued System	DTA-issued Supp. for Mod 1	Admin Change to Mod 1	DTA-issued Supp. for Mod 2
	F-16(IQ)-R001	F-16(IQ)-R001-NRR001	F-16(IQ)-R001-NRR001-A001	F-16(IQ)-R001-NRR002
MTC Baseline	TAA-issued System	DTA-issued Supp. for Mod 1 Flight Test Phase 1	AFTC DTA-issued Supp. Mod AFTC Flight Test	DTA-issued Mod 1 Operational Use
	F-22A-C001	F-22A-C001-NRR001	F-22A-C001-NRR001AFTC	F-22A-C001-NRC001
Special MFR Baseline	TAA-issued System	DTA-issued Supplement for Mod 1	TAA-issued Supplement for Mod 2	DTA-issued Supp. for Mod 3
	E-11A-S001	E-11A-S001-NRR001	E-11A-S001-R001	E-11A-S001-NRR002

Table 2. COCO Air System AW Approval Numbering Examples

Examples	AW Approval
TAA-Issued CAO Verification Letter	COCO-CAO-Acme-Aviation-CL-600-2C10-001
DTA-Issued CAO Verification Letter	COCO-CAO-Acme-Aviation-CL-600-2C10-001EZZ
TAA-Issued MFR (Category 1)	COCO-Acme-Aviation-F-16A-R001
DTA-Issued MFR (Category 1)	COCO-Acme-Aviation-SAAB340B-R001AFRL
TAA-Issued Special MFR (Category 2 or 3)	COCO-Acme-Aviation-F-1-S001
DTA-Issued Special MFR (Category 2 or 3)	COCO-Acme-Aviation-F-1-S001EZZ