USAF AIRWORTHINESS NEWSLETTER

No. 4, Winter 2016

EXECUTIVE SUMMARY

This is the 4th edition of the Airworthiness (AW) Newsletter. My apologies for the delays with the Newsletter, but the AW office continues to see growth in new responsibilities and execution of current processes. This newsletter provides insight into our successes and highlights new areas of work. It is a little longer than usual due to the delays. As we begin this New Year, I'd like to thank you for your support of the AW process over the last year, and look forward to continued success. We are **one** team!

POLICY

DODD 5030.61, *DoD Airworthiness Policy* Change 1 issued, effective date 25 June 2015. This policy, initially published in 2013, was updated; it establishes top level responsibilities for the Services and DoD Agencies. This update makes mandatory the previous DoD guidance for assessment of foreign Military Airworthiness Authorities (MAAs) and addresses flight on other U.S. Gov't agency aircraft. The remaining changes are administrative in nature, e.g., "airworthiness approvals" replaces "airworthiness certifications".

Under Secretary of Defense Memorandum on Flight in Foreign-Owned Aircraft Implementation Guidance, dated 26 Oct 2014. While this has existed for over a year, it seems pertinent to share, as it is a direct product of the DODD 5030.61. This memorandum standardizes guidance for the Services on the steps to address AW for flight, as a passenger or aircrew, on a foreign owned military aircraft. Ideally, US Military AW offices will be funded to assess Foreign MAA processes for equivalency to US. However, if an MAA isn't assessed, but flight is necessary, the operating command will make a request to one of the AW offices. In turn, the operational command will receive a letter (stating that the MAA has not been evaluated and an independent assessment can't be accomplished in the desired timeframe); along with an operational appraisal checklist. Completion of the operational appraisal provides insight into the AW risks of flight with that nation; and the results are factored into the command's operational risk assessment. Note: The Tri-Service AW Authorities have collaborated on the AW package, so responses are common for all Services.

Air Force Policy Directive (AFPD) 62-6 and Air Force Instruction (AFI) 62-601, both titled *USAF Airworthiness* — SAF/AQR has created an update which is under review with Senior Leadership. The critical changes surround enhancing the scope of AW and identification of an AW Authority, both addressed in DODD 5030.61. While the update is being worked, DODD 5030.61 requirements are enacted through the TAA component.

Inside this issue:

Policy	1
Bulletins & Advisories	2
Change Notices	3
Tools	3
Process & Metrics	4
New Efforts	5
Training	6
Outside Agencies	6
Personnel	6
Programs	7
Upcoming Meetings	7
Contacts	8
Abbreviations	8

Approved for public release, case number 88ABW-2016-0563; distribution is unlimited.

BULLETINS & ADVISORIES

Published Bulletins:

AWB-1012 Contractor Owned Contractor Operated (COCO), is the guidance document for "public aircraft operations" and process for determination when "leased" or "contracted" COCO aircraft services are used. If determined to be "public aircraft operations", the USAF must issue a flight authorization after an AW assessment is completed. **Note–** only a delegated AW authority can make the public/civil operations determination.

AWB-1015, *AW Process for Deploying New or Substitute Materials, Processes, and Product Forms*, describes the reviewing process for deploying new /substitute materials, processes, and product form(s) on "operational" weapon systems. This involves early process assessment, allows for determination of broader applicability to other air systems, and assists in identifying needed verification activities. Early engagement will save resources.

AWB-516, *MIL-HDBK-516 Change Notices*, this establishes the process for identifying, reviewing and approving a USAF change to MIL-HDBK-516. Page 3 of this Newsletter documents the approved Change Notices, to date.

Published Advisories:

AA-15-02, Fatty Acid Methyl Ester (FAME) Contamination Limit Change for Commercial Jet Fuel (Jet A/Jet A-1), assessed the impact of a change in permissible FAME content from 5ppm to 50ppm in Jet A fuel in commercial specifications. The advisory describes the evaluation by a standing technical team, and concludes that there are no adverse airworthiness impacts from increased FAME.

AA-15-03, New or Modified Stores on Mission Design Series (MDS), clarifies the tools to facilitate AW flight authorizations for stores (particularly armament) on MDSs. This Advisory does not change the overall AW process, but improves initial communication between Store and MDS programs to ensure efficiency in AW flight authorizations during Stores development while maintaining the desired level of safety.

Bulletins in Adjudication:

1. Flight Authorization — discusses the issuance of the two types of flight authorizations ; Military Type Certificate and Military Flight Release. It defines differences between the authorizations, how they are obtained, and the numbering schema to address reportable/non-reportable/administrative changes.

2. Military Certificate of AW – updates AWB 018A providing PMs the newest guidance for the certificate of AW.

Advisories in Progress:

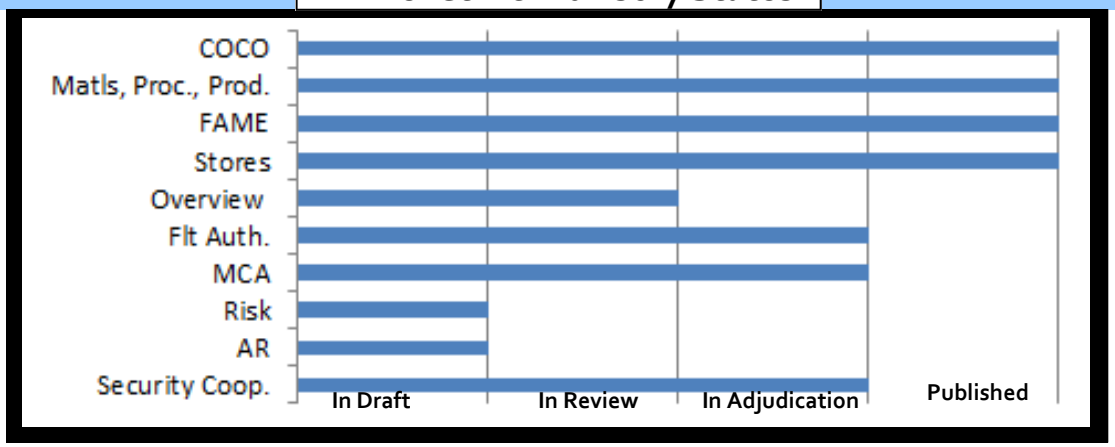
1. AW Overview — provides the layout of the AW process and products from Plan to Flight Authorization.

2. Risk Assessment Methodology — aligns AW with Mil-Std -882E, System Safety. Rewrite is still in progress

3. Aerial Refueling — lays out the process for Aerial refueling (new systems & mods). Key is communications with coupling aircraft and Aerial Refueling experts.

4. Security Cooperation/ FMS Programs —addresses the AW process for Foreign Military Sales, in particular when a flight authorization is needed. AFSAC will incorporate contracting needs in their handbook update.

AW Bulletin & Advisory Status



CHANGE NOTICES

As described in AWB-516, Change Notices (CNs) provide an interim way to agilely update MIL-HDBK-516 criteria when safety concerns or clarifications drive a revision. The TAA has directed that DTAs apply approved CNs whenever a new Certification Basis is developed. Four CNs are approved and two are in review.

Approved CNs are:

- **516CN1, Control of Safety Related Items**, adds paragraph 4.4.6 to ensure controls are in place for production of safety-related components by the prime contractor or supplier of the item.
- **516CN2, Service Life Limit**, adds five paragraphs under Section 5.7 to establish and execute the requirement for service life limit as documented in the MTC or MFR.
- **516CN3, Trainer Sink Rates**, clarifies the language in 5.1.8 to distinguish the applicability for a primary, basic, and advanced trainer with associated sink speed requirements.
- **516CN4, Flying Qualities,** clarifies the Methods of Compliance for Section 6.1, ensuring that the verification methods are understood.
- **In review are:** Ejection and Fixed Seating clarification.

At the AW SharePoint site there are more details on each CN, as well as the updated Certification Basis template (which includes approved CN language). As always, feel free to ask the AW Office any related questions.

TOOLS (Available on Share Point)

MIL-HDBK-516C is released and should be used for all new contracts and modifications. If a modification or program is in the AW process using MIL-HDBK-516B expanded, then the process will be completed with the version of MIL-HDBK-516 accepted by the TAA.

AFLCMC OI 62-601, AW Determination Form has updated templates for both Mil-Hdbk-516B & C language.

Updated Templates

Certification Basis: Both MIL-HDBK 516 B and C are available. Only the C version includes the approved CNs. As the Change notices are approved, the template for C is updated. Consequently, the current versioning of MIL-HDBK-516C will be used for new programs.

Briefing Templates: Template updates are available for Kickoff meetings, Certification Basis AW Boards, and Compliance Report AW Boards to provide the desired focus for these meetings.

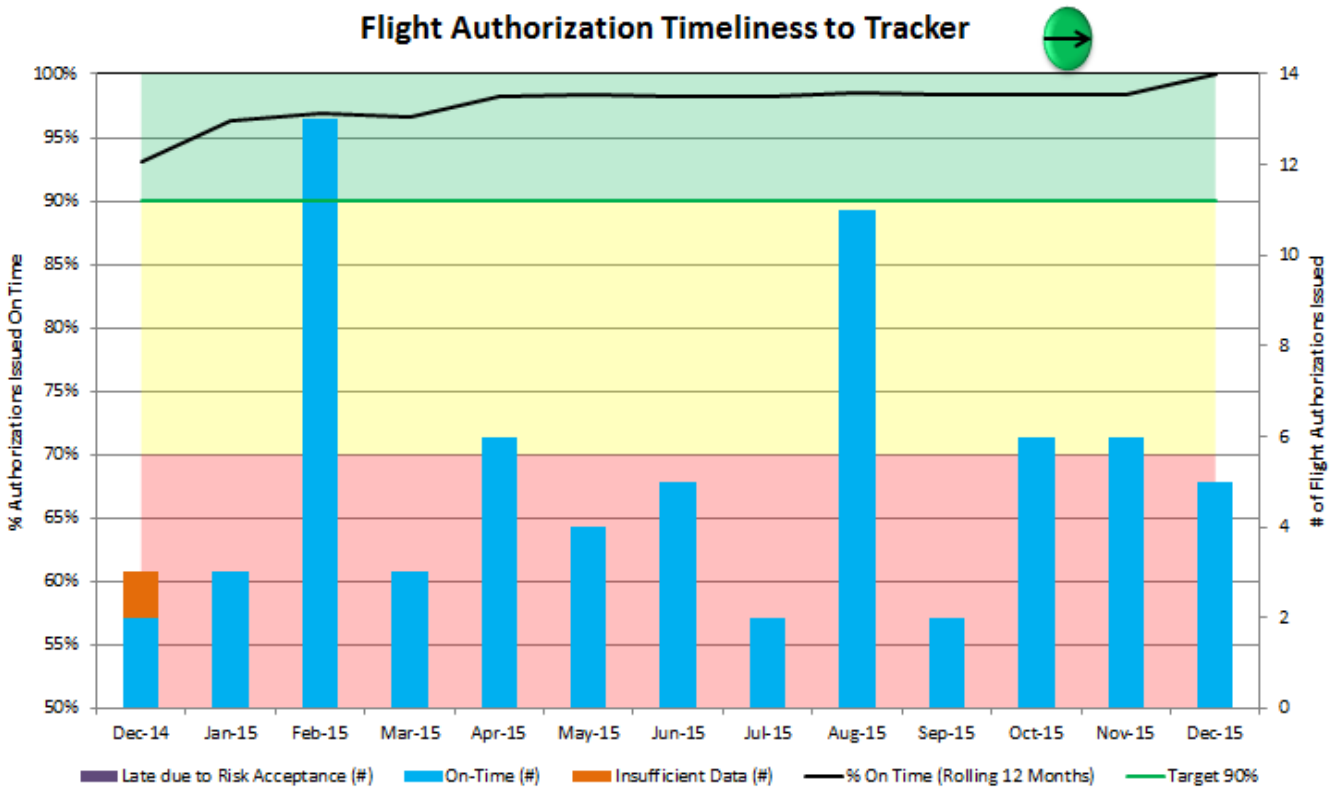
Compliance Report: Please be aware that the Compliance Report contains fields which will compile the risks by Section of MIL-HDBK-516. Do not remove these columns and do not remove or add columns without speaking with the AW Office. Also, there is a new tab within the Compliance Report, identified as Initial and Final Compliance. These Tab will provide an overview of the level of compliance and residual risk for all applicable paragraphs, first accomplished by the Program Office and then upon final TAA review.

Project Trackers: The project trackers are updated as well. The significant change is ensuring that the flight authorization process is consistent with the AFLCMC standard.

Automated Tool

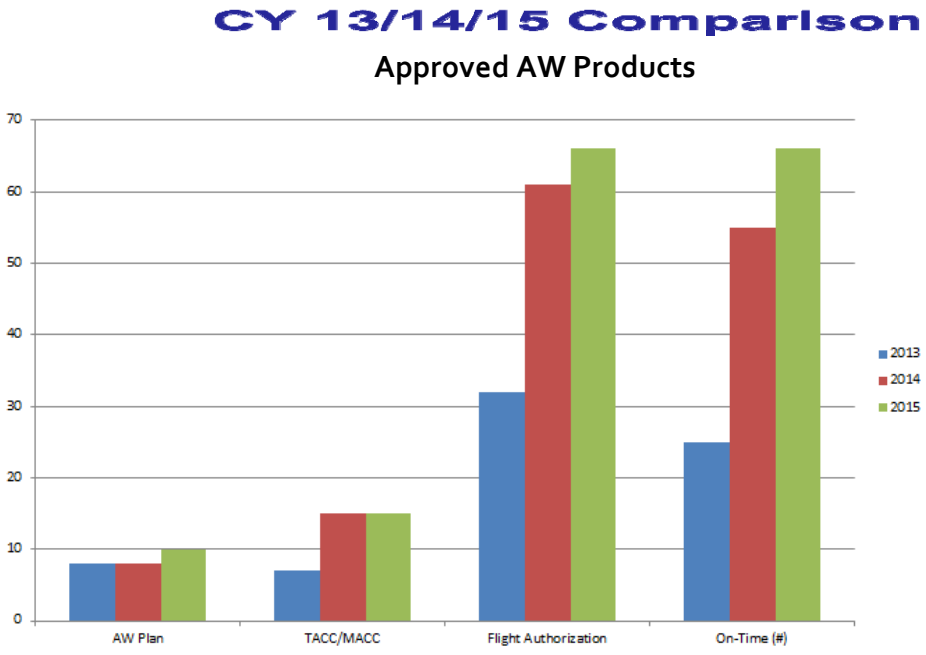
The Automated tool is still a desire; but there is no immediate tool on the horizon. For approx. 2 years, the AW Office was working with an AFMC project to be a Beta tester to generate automated standards, work hand offs, and metrics. The product fell short of these desires. So we have gone back to create a requirements document; and are working with AFLCMC IT to re-attack this desire.

PROCESS & METRICS



Both of these charts are on the AFLCMC Flight Authorization Standard Process Dashboard. The metric above shows for the last 12 months: 1. total number of TAA issued AW flight authorizations, 2 whether the authorization process completed within the AFLCMC timeline, 3 the cause when exceeded, and 4. the timeliness of the TAA's office by percentage. The timeliness in Dec 14 was at 92% for a 12 month period; and we have now reached 100% looking back 12 months. The goal is to remain above 90%.

The chart to the right shows the number of AW products approved by TAA during CY 13, 14 and 15. CYs 14 & 15 look fairly similar; but there was an improvement in authorization timeliness for CY 15.Task specific metrics are also available on the Share point site.



You can find more information on USAF Airworthiness at the Share Point site:
https://cs.eis.afmc.af.mil/sites/AeroEngDisciplines/Systems/Airworthiness/default.aspx

NEW EFFORTS

Non-DoD Military Aircraft (NDMA)

The USAF was approached to consider assessing NDMA for compliance with MIL-HDBK-516 through an Accreditation process. The office has been exploring how this process might work. We engaged with industry to determine their level of interest; and found that there is a gap which a USAF Accreditation process might be useful to industry. So let's address a few questions.

1. What is an NDMA? It is a civilly developed aircraft intended for a military application; but the US Services are not currently contracting or purchasing the air system. This might be a Direct Commercial Sale to an overseas buyer.
2. What is an AW Accreditation? It is an Airworthiness assessment of a design for compliance utilizing MIL-HDBK-516. The assessment would follow the current USAF process by working with industry to define an applicable certification basis to a design, have industry provide applicable artifacts, and then perform an independent USAF Technical Airworthiness Office evaluation of compliance and identify hazards associated with any non-compliance. This accreditation process would be wholly reimbursed by the industry partner.
3. Will the USAF issue a flight authorization (MFR or MTC)? No, these systems are governed by the FAA for civil flying within the National Air Space. Therefore the FAA remains the sole authority to sanction flights.
4. Are manufacturers interested? Yes, the USAF sent out a Request for Information and received back favorable responses.

At this time, efforts are ongoing to establish processes and resources for execution.

Contractor Owned-Contractor Operated (COCO)

When USAF hires COCO air systems, the Technical AW Authority is required to issue a flight authorization if the operations are public; and the contracting group must address necessary maintenance and operational oversight for these flights. These aren't new rules, they are now receiving the required attention. Here are the general steps identified by the AW Office (but please ask for help):

1. A Delegated Technical authority will determine if operations are public/civil.

   Note: For Civil ops, the system must be operating fully within the limits and conditions of its FAA AW Certificate and applicable operating regulations under 14 CFR. If the COCO has an FAA Special AW certificate it generally has significant restrictions to be cognizant of.
2. If operations are deemed public, the DTA will issue a letter of public operations; and the contractor will notify the FAA of the public operations.
3. The DTA will perform an AW assessment and identify the risk of operations.
4. The hiring authority will need to accept the risk of operations at the appropriate level.
5. The DTA will issue a Military Flight Release after the risk acceptance.

TRAINING

SYS 316, MIL-HDBK-516C

The SYS 316 AFIT course continues to evolve and ensures the material is relevant to AW lessons learned. The course offerings, all at WPAFB, are:

23 Feb- 3 Mar, 2016

12– 21 July, 2016

Sign ups will occur thru AFIT, see Share point

AW Policy and Implementation

Please look on the AW site for the other offerings: Plans are being made to go to Eglin, Hill, Edwards and Hanscom AFB. Approximately every 6 week the class is offered at WPAFB.

COCO course

10-11 Mar, Edwards AFB is sponsoring a class. Call for AW Office for information

OUTSIDE AGENCIES

ADIAG

Meetings have focused on USAF updates: MIL-HDBK-516C significant changes, bulletins, policies, and new business. ADIAG member have helped in reviewing USAF updates.
A joint meeting will be held with the NAC representatives during the AW and Sustainment Conference (See upcoming meetings). ADIAG members will also participate in an AW panel discussion.

FAA

The AW Office has routine meetings with the Military Certification Office. We jointly hosted a meeting supporting existing and future USAF CDA platforms to highlight issues and best practices. Additionally, the FAA provided their 101 course. A near-term focus for the AW office is documenting AW product requirements for fully certified FAA modifications during flight testing and release to operations. The intent is to take advantage of the USAF's recognition of the FAA

NAC/INTERNATIONAL ACTIVITIES

Several face-to-face NAC Meeting have occurred with discussions on AA recognitions, COCO, Unmanned Air Systems, International Standards, NDMA, Updates to DoD Policies, Electronic Flight Bags, Cyber Security, Critical Safety Items, Manufacturing Issues, Harmonizing Processes, and Focusing Teams on resolving common concerns.

Members of the NAC AW Offices in 2015 completed Level 1 MAA recognitions (applicable to operational assessments) for France, Norway, Sweden, and Canada; and Germany is in progress.
Additional recognitions are beginning. For the full list of recognized authorities, contact the AW Office.

PERSONNEL

Farewell:

Terrell Allen — Retired
Maureen O'Brien — Joined HC/MC– 130
Jennifer Stuckey — Went to Helicopters programs
Ray Vater — Is working C-130 programs
Andrew Wendeln — Part of F-15SA program

Hails:

Ramon Rodriguez — Came from T-6
Calenia Franklin — Previously in ENR

PROGRAMS

Audits

Eight programs have been audited since the last update.
AC-130J, B-1, B-2, B-52, C-5, C-17, C-130, USAF fleet of Commercial Derivative Aircraft , F-15, F-15SA, F-22, HC/MC 130J, MQ-1/MQ-9,T-6, and Special Operations aircraft. There are 17 areas evaluated for compliance with AFI 62-601. The audit is primarily focused on execution in accordance with standards, applying processes that validate the TAA approved configuration throughout the life cycle, and maintaining access to documentation. A few general findings are as follows:

- Process compliance is strong, particularly in regard to AFLCMC OI 62-601
- 91% Compliance on Audit Evaluation Checklist!
- Documentation and accessibility is outstanding
- Identified best practices in nearly every program (Work to adopt thru OI update)
- Some common issues
  - Inconsistent Flight authorization nomenclature (addressing in bulletin update)
  - Incomplete Military Certificates of AW (addressing in bulletin update)
  - Lack of FMS usage documentation (requires bulletin/AFSAC update)
  - Non-reportable Certification Bases must include rationale for tailoring

Upcoming Meetings

21– 24 Mar: AW & Sustainment Conference, including a NAC and ADIAG meeting

Additional NAC and ADIAG meetings on a quarterly basis

Quarterly meetings on Unmanned Air Systems with International Partners

Ongoing AW Projects

The following MDS's have sought, or are in the process of obtaining, approval of plans, certification basis or Flight Authorizations

AFIT	F-15	MC-130J
AFRL	F-15SA	KC-46
A-10C	F-16	MQ-9
A-29	E-3	QF-16
AC-130J	EC-130H	RQ-4
AC-130W	F-22	T-6D
B-2	F-35	TH-1H
COCOs	HH-60G	VC-25
C-17	MC-130H	USAFA

CONTACTS



Supporting Airmen Through Responsive, Preeminent Aviation Engineering Expertise

U.S. Air Force Airworthiness Office

Points of Contact:

William Mejias , Technical Director, EZS
937-656-9931

Dawn McGarvey-Buchwalder, Branch Chief, EZSA
937-656-6615

USAF.Airworthiness.Office@us.af.mil

Thanks for reading. If you have comments or suggestions for the next Newsletter, please let us know.

EZSA Airworthiness Branch

ABBREVIATIONS

AA	Airworthiness Authority
ADIAG	Airworthiness Defense Industry Advisory Group
ARCA	Aerial Refueling Certification Activity
ATTLA	Air Transportability Test Loading Activity
AW	Airworthiness
AWB	Airworthiness Bulletin
CB	Certification Basis
CE	Chief Engineer
CN	Change Notice
COCO	Contractor Owned Contractor Operated
DoE	Director of Engineering
DTA	Delegated Technical Authority
ECD	Expected Completion Date
EFB	Electronic Flight Bags
FAA	Federal Aviation Authority
FMS	Foreign Military Sale
LCMC	Life Cycle Management Center
MAA	Military Airworthiness Authority
MFR	Military Flight Release
MCA	Military Certificate of Airworthiness
MDS	Mission Design Series
MOA	Memorandum of Agreement
MTC	Military Type Certificate
NAC	National Airworthiness Council
NDMA	Non-DoD Military Aircraft
SME	Subject Matter Expert
SUAS	Small Unmanned Air Systems
TA	Technical Advisor
TAA	Technical Airworthiness Authority
TD	Technical Director