

AIRWORTHINESS QUARTERLY NEWSLETTER

No. 3, WINTER 2015

EXECUTIVE SUMMARY

This is the third edition of the Airworthiness (AW) Newsletter. The focus will be on the updates we have made in Airworthiness this quarter; we'll share some of our successes, where we have uncovered weaknesses, and identify improvements. From a Tri-Service perspective Airworthiness has made great progress. Please let us know what you think.

KUDOs

After 3 years the Air Force, Army and Navy completed the joint update of MIL-HDBK-516 C; this reflects 100s of engineers' effort to update, and was last agreed to in 2005. MIL-HDBK-516C is a Tri-Service agreed best practice military design requirement tool; and provides transparency to our customers and contractors in design expectations. To assist our users, the AW Office has reviewed the changes between earlier versions of MIL-HDBK-516 and documented this comparison. And most specifically, the changes between B expanded and C are weighted in terms of severity from no change, to minor, to significant.

POLICY

DODD 5030.61: In response to issuance of DODD5030.61, the USAF is still working the necessary updates to align AFPD 62-6, AFI 62-601, and supplements. However, Under Sec Def has issued a memo to the commands, better amplifying how to satisfy Airworthiness Assessments for operations on foreign owned aircraft (For USAF: either TAA assessment of nation, if time permits, or NAC operational checklist through TAA). Country assessments are addressed later in the newsletter.

Safety: During the AW Audit process, it was uncovered that Program Offices were handling non-compliance associated with MIL-HDBK-516 in many fashions: within the Safety program, within an AW database, or each independently. Held an AW & Safety Summit (AFSEC, AFMC, AFLCMC representation) to focus on alignment for risk identification & ownership and Mishap investigation reporting.

Primary determination: All AW risks are System Safety Risks.

Actions: 1) The AW risk matrix needs to align to MIL-STD 882E for life effect. 2) The safety community will accept, monitor and mitigate risks in accordance with policy. 3) For Flight authorization non-compliances, AW will ensure that the Hazard statements are written appropriately for a safety risk. 4) All DTAs were notified that for mishaps, the TAA will be debriefed on findings to ensure that no AW risks underlie the findings of the Safety Review Board.

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Published : *AWB516, Change Notices (CN) for MIL-HDBK-516*, captures the process to allow the USAF to update MIL-HDBK-516 with time-critical changes. 3 CNs are being executed in accordance with this bulletin (Control of Prime and Supplier Safety-Related Articles, Seat Crash Loads for Side Facing Seats, and Service Life Limits); if approved they will be on AW Share Point site and rolled into the 516C template.

AA-15-01, Airworthiness Impacts of Electronic Flight Bags, outlines AW process for assessment of an unapproved electronic flight bag on an MDS, including no AW impact; and a generic certification basis is given. This advisory was briefed to a multi-user conference and to the A3 community.

AA-14-01, Non-Conforming Self Locking Nuts, find and replace MS21042 and NAS1291 self locking nuts due to hydrogen embrittlement and latent manufacturing defects.

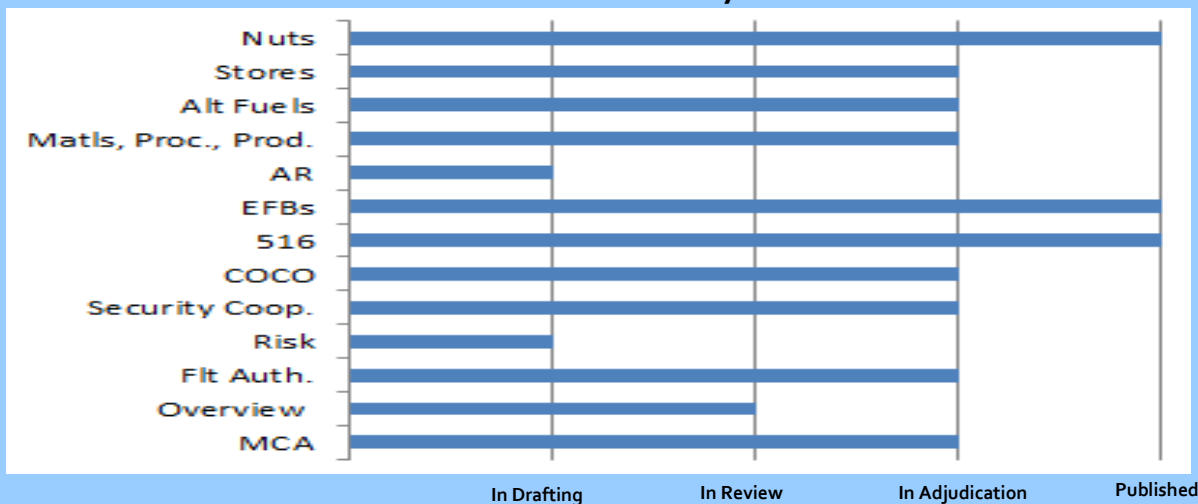
Bulletins in Progress:

1. **AW Overview** — provides the layout of the AW process and products from Plan to Flight Authorization
2. **Flight Authorization** — Discusses the issuance of the two types of flight authorizations ; Military Type Certificate and Military Flight Release. It identifies the differences between authorizations, what could change an authorization, the appropriate numbering schema.
3. **Military Certificate of AW** – an update to AWB 018A providing the newest guidance for the PMs.
4. **Risk Assessment Methodology** — aligns AW with Mil-Std -882E, System Safety. Rewrite is still in progress
5. **Aerial Refueling** — lays out the process for dealing with Aerial refueling modifications and how coupling aircraft are notified and assessed for AW affect.
6. **Contractor Owned Contractor Operated (COCO)** - guidance document for “public use” determination when “leased” or “directed” COCO aircraft services are used. For public use, the USAF must issue a flight authorization after data is gathered for an AW assessment.

Advisories in Progress

1. **Materials, Processes, Product Forms** — describes the process for deploying new or substitute materials, processes, and product forms impacting Airworthiness on currently certified weapon systems/ mission design series.
2. **FAME Contamination Limit Change for Commercial Jet Fuel** – Permissible Fatty Acid Methyl Ester content is increasing in Jet A fuel. An independent technical team assessed its use for generic effect on MDSs; and found no adverse impact.
3. **Deploying New/Modified Stores on MDS** – Clarifies the tools to facilitate AW flight authorizations for stores (armament) on MDSs. Ensures that efficiencies are found in allowing maximum flight test activities without reassessment.
4. **Security Cooperation (FMS Programs)** – addresses the AW process for international work. AFSAC will be incorporating most of the content into their handbook; and expectation is AW will point to the handbook.

AW Bulletin & Advisory Status



TOOLS

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 finished with that document. The Certification Basis Template is on Share point, along with a comparison of changes from MIL-HDBK-516B Expanded to C

AFLCMC OI 62-601, AW Determination Form will need to be updated to comply with agreements made at the Safety Summit – specifically removing risk/hazard language before design is defined

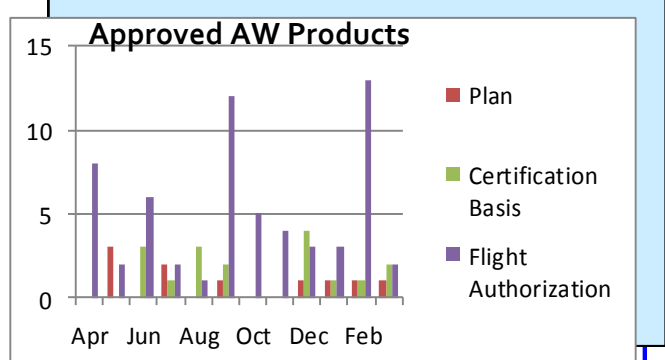
Automated Flight Authorization Tool: The AFLCMC sponsored creation of an automated tool is frustrating the AW Office, both in time and quality. We completed a Beta test recently and identified numerous deficiencies which may not be easily fixed. Assessing way forward.

PROCESS & METRICS

Through the AFLCMC Flight Authorization Standard Process, Dashboard everyone can see metrics on the process. They can be found at: <https://cs4.eis.afmc.af.mil/sites/1749/appV11/MetricReporting.aspx>. A key item to look at within the dashboard is the increase in the number of programs

obtaining flight authorization from 2012-2014, with a faster completion for authorizations than called out in the Standard Process guide, 60 days in lieu of 72 days. The entire Center has effectively met this Standard and reduced prior timelines.

The chart here shows a 1 year look at AW products completed. During the holidays the office processed more than 20 flight authorizations. All products are now seeing an upturn.



TRAINING

SYS 316, MIL-HDBK-516C

The first official SYS 316 AFIT course was given in Dec 2014. It was rated well by the 25 participants with a 5.6 out of 6 rating. We are actively going to be looking at how to maximize the training and ensure it is relevant to AW lessons learned.

The next course offerings are:

6-17 April 2015

10-21 August 2015

October 2015

Sign up will occur thru AFIT and course instruction is located at WPAFB

AW Policy and Implementation

This class will be offered during focus week, 21 April. Familiarization is improving all of the AW products coming through the system– the class is focusing less on the governing AW policy; and more on the process to execute, including the AW Determination Form. Please look on the AW site for the other offerings: Plans are being made to go to Hill, Tinker and Warner Robins AFBs.

Bulletin/Advisory Updates

A 4 hour class is being offered at the Aircraft Airworthiness and Sustainment Conference. It will be offered again during focus week.

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>

OUTSIDE AGENCIES

ADIAG This quarter we held a virtual Telecom updating Industry on USAF training and bulletins. We have also had the opportunity to host several of the members and learn more about AW within their companies. The upcoming meeting in April will focus on MIL-HDBK-516C significant changes, as well as the most recent policy updates, to include future release information.

NAC/INTERNATIONAL ACTIVITIES Several face-to-face NAC Meeting have occurred in the last quarter: Tri-service meeting, focused on SUAS AW within each service and flight releases, Contractor Owned/Contractor Operated process application and lessons learned, and International recognition process discussions.

Additionally during this quarter the NAC completed bi-lateral recognitions with Sweden and Italy, and work is nearing completion for Canada. These recognitions assert that these MAAs have comparable AW policies/processes to the US AW Authorities. More recognitions are being initiated. For the full list of recognized authorities, contact the AW Office.

ADDITIONAL CERTIFICATIONS UNDER AW

AIR TRANSPORTABILITY TEST LOADING ACTIVITY (ATTLA):

The ATTLA engineering team is organized under the Technical AW Authority and the certifications and approvals that this team provides for Air Transportability and Air Drop Tests are recognized as an aspect of the AW process. This is appropriate as transport on USAF Mission aircraft is a modification to an approved design; and the criteria/standards/methods of compliance laid out within MIL-HDBK-516 will continue to govern their decisions. Also be assured that the same highly qualified team will continue to provide these assessments for the USAF, with TAA concurrence.

AERIAL REFUELING CERTIFICATION ACTIVITY (ARCA)

USAF Aerial Refueling certifications are, and have been addressed, by an engineering team within the Technical AW Authority's organization; but formally tying AW to the coupling of two aircraft during aerial refueling was only recognized within the last year. As discussed earlier in this Newsletter, an AW bulletin is being written to formally document the standardized AW process and function of this team. This bulletin will be applicable to the coupling of USAF weapon systems with USAF, Sister Service or International weapon systems. The level of safety of design when coupling will be assessed through the lens of MIL-HDBK-516. The bulletin will also address the USTRAM-SCOM requirements for notification of the acceptability of Aerial Refueling. The ARCA team certifications are an extension of the TAA's AW concurrence.

PERSONNEL

Hail & Welcome:

Deken Keil joins us from RQ-4 to become the new Foreign Military Sales TE
Eduardo Santiago Montaldo comes from NASA to PAR as the new AW rep
Steven Deal comes from the contractor world to join the T-X AW office
Leisa Lemaster has joined the Configuration Team to support AW from WI
SSgt Alicia Hall is working for the AW and Configuration Offices

Congratulations

Doug Ivey has left his AW role in Config for a promotion in WI

Graham Burdette has a new daughter, Madeline Rose

PROGRAMS

Ongoing AW Projects

The following MDS's have sought, or are in the process to obtain, approval of plans, certification basis or Flight Authorizations through the TAA AW Office during this last quarter.

AFRL, AFIT, A-10C, AC-130J, A-29, B-52H, C-130J, F-16, F-15, E-3, E-8, E-11, EC-130H, F-15SA, F-15 C & E , F-16, F-22, F-35, JSTARS Recap, MC-130J, KC-46, MQ-9, PAR, QF-16, & RQ-4, USAFA, Contractor Test Jet

Upcoming Meetings

The TAA and AW Office are supporting the upcoming Aircraft Airworthiness and Sustainment Conference in Baltimore. At that meeting, the NAC will host an AW meeting and Sweden will receive the AW recognition certificates. We are currently having meetings with the FAA to discuss our approach to Unmanned Aircraft Systems. Later in April, we will have a meeting with the ADIAG membership in Dayton. Reengagement with System Safety, to status completion of action items will be scheduled before the next newsletter

Audits

In this next quarter, we are planning to conduct approximately 7 audits on MDSs with Program Offices at WPAFB.

All audited POs have done well.

Please utilize the checklist on the AW Share point site to assess your MDSs readiness for an audit. Perform your own self assessment before we call an audit.

Remember, as stated on Page 1, all AW risks are Safety risks and should be integrated into the PO's Safety Program.

Feel free to call if you have any questions.

Mishap Notification

E-mails were sent to all DTAs stating, AW Office shall be notified within 24 hours of any significant design issues that pertain to the safety of the aircraft or fleet. This includes, but is not limited to, an urgent action, stand-down, grounding or mishap. For mishaps, the DTA shall de-brief the TAA on design or AW issues identified in Safety Investigation Board (SIB) findings and recommendations not later than three weeks after the release of the SIB final message.

Please assist your DTAs in satisfying this requirement.

CONTACTS



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

EZSA Airworthiness Branch

ABBREVIATIONS

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