Aim

• Present an overview of US Services’ Military Airworthiness Authorities (MAA) approach to foreign MAA “Recognitions”
  – In view of US Department of Defense Directive (DoDD) 5030.61 Airworthiness Policy
  – In view of on-going International activities
    • European Defence Agency (EDA) Military Airworthiness Authorities (MAWA)
    • Air and Space Interoperability Council (ASIC)
    • NATO Airworthiness Executive (NAE)
• Present lessons learned from real-life experience conducting Recognition Assessments
Presentation Overview

- Motivation for Recognitions
- US Services’ MAA Recognition Process
- Recognition Progress to Date
  - ASIC and US Services
- Lessons Learned
Each Nation or Service has its own motivation for MAA Recognition

- Policy / Regulatory requirements
- Increased number of multi-nation projects
- Need to reduce bureaucracy and improve economic efficiency
Benefits of Recognition

• **Why Should US Services Recognize Another Nation’s AW Authority?**
  – Allows a resource-efficient way to comply with DoD Policy requirements
    • Flight of US personnel on Foreign A/C (DoDD 5030.61)

• **Why Should Other Nations Recognize US Service AW Authorities?**
  – Enables an efficient AW certification mechanism for US-certified products
    • Informed recognition of prior acceptance for partner or sales cases

• **Mutual Benefits**
  – Facilitates exchange of Lessons Learned & Best Practices across MAAs
    • Exchange of independently-assessed risk and safety information
    • Working arrangements and agreements for technical cooperation
    • Forcing function for continual improvement – learning organizations

• **Initial PRIMARY Driver**
  – Due diligence approach to ensure safety of personnel
    • Aircrew and Troops utilizing other Nations’ aircraft
    • Other Nations’ aircraft operating in your home national airspace
• Promulgated May 2013 to resolve two major issues
  – Differences in US Service airworthiness policy, especially for flight in foreign-owned aircraft
  – Airworthiness policy harmonization across DoD, particularly non-Service specific AW organizations
• All aircraft and air systems owned, leased, operated, used, designed or modified by DoD must have completed an airworthiness assessment in accordance with Military Department policy
  – Applicable to uniformed Service members, civil service employees and DoD contractors
  – Includes DoD passengers or aircrew operating aboard Foreign-owned aircraft

• So, what does this mean?
Flight in non-DoD Aircraft

• Civil use
  – Civilian Airworthiness Authority is responsible for AW
  – Foreign civil air carriers may be used for transport of cargo and passengers if on Commercial Aviation Review Board approved air carrier list

• Civil aircraft operated / used by DoD
  – DoD Airworthiness Authority is responsible for AW
  – Civil airworthiness certification accepted as DoD basis provided:
    • Configuration, flight profile, operating environment and continuing airworthiness program are the same as for civil use
    • Any differences in above must be assessed and certified by the DoD airworthiness authority

• State aircraft operated / used by DoD
  – Foreign MAA airworthiness authority oversight is sufficient provided:
    • Foreign MAA has been assessed and recognized by a DoD airworthiness authority
Recognition

• A cooperative activity between participating Nations – one to another
  – A National responsibility and decision

• Requires understanding and confidence in each others organization and regulatory framework
How Complicated Can It Be?

\[
\frac{n!}{2(n-2)!} = 946 \text{ bi-lateral agreements (n=44 MAAs)}
\]
US Services’ Approach to Recognition

• US Service MAAs agree to:
  – Support and abide by a common recognition process
    • Codified in a Standard Work Package (SWP) and Standard Skill Package (SSP)
  – Collaborate on and reconcile the findings of an empowered assessment team
  – Agree on and adhere to the resultant Recognition Certificate
3 Tiered Recognition Definition

**Tier 1 Goal**
Gain confidence in the life cycle AW governance of a MAA, including:
- Existence of & adherence to policy
- Empowerment of qualified people
- Execution of processes
- Appropriateness & availability of tools

*In other words, gather sufficient evidence to conclude that a responsible MAA is indeed responsible*

- Due diligence -

**What Tier 1 Recognition does do**
- Satisfies DoDD 5030.61 requirement for
  - DoD passenger carriage on non-DoD aircraft
  - Aircrew operations for properly trained DoD personnel on non-DoD aircraft

**What Tier 1 Recognition doesn’t do**
- Allow carte blanche acceptance of other AA’s AW certifications for DoD use
- Allow maintenance, design, or production organization approvals
  These would be Tier 2 or 3 recognitions
  - Process to be determined
  - Requires a deeper examination of specific specs / standards / criteria

Focus of current US efforts
“Necessity is the mother of invention” – Plato

“Imitation is the sincerest form of flattery” – Charles Caleb Colton

“Why reinvent the wheel, when you can steal it?” – Internet
Primary Objective of EDA AW Harmonization Activity:

Certification or Approval of any product or organization, based on EMARs, by one pMS can therefore be recognized by another pMS’ Authority

- regulate once and use the outcome many times

• Recognition must first be achieved of one Authority by another Authority
  – Three types: Mutual, Internal, External

• Document - Recognition (EMAD-R) & Military Authorities Recognition Question-set (MARQ)
  – Derived from International Civil Aviation Organization safety goals
  – Standardizes the method to enable recognition
  – Reduces the recurring workload for assessment
Recognition Process

- Defined in the European Military Airworthiness Document – Recognition (EMAD R)
- Three phase process

Phase One
- Common Need
  - Identify benefits
  - Cost Benefit Analysis
  - Initial Recognition

Phase Two
- Review
  - Sustainment of recognition
  - Assessment of NMAA changes

Phase Three
- Benefits
  - Approvals
  - Certification
  - Shared maintenance

EMARs
US Services’ SWP Contents

- **Assessment Steps**
  - Triage AW Assessment Request
  - Select and Assemble a Team
  - Make Initial Contact with AA
  - Research the Nation’s AA
  - Determine the Project Funding Requirements
  - **Follow the EMAD–R Process**
    - *External – bi-lateral or uni-lateral*
    - *Mutual – bi-lateral or multi-lateral*
  - Conduct Face-to-Face Discussions
  - Write Assessment Findings Report
  - Recognition Decision
  - Recognition Certificate Signing
  - Recognition Assessment Activity Record Keeping
  - Close-Out AW Assessment Request
• Understanding the recognition context
  – No EMARs to base recognition upon
  – *Identify common need – extra communication*
    • 3 Service MAAs trying to work together!
    • Self-coordinated (no coordinating support function)

• Establishing baselines
  – Need a comparative presentation for understanding AW system, organization, regulatory framework, responsibilities, etc.
    • Range of responsibilities vary by MAA

• Determine *sufficiency* of response
  – MARQs – *no right or wrong answer*
    • Decision informed by a mixture of qualitative and quantitative evidence
  – Produce a recognition report
    • Justification of scope and level of recognition
# Current ASIC Recognitions

The table below lists the current ASIC Recognitions.

<table>
<thead>
<tr>
<th>Recognition Schedule</th>
<th>Recognized MAA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAA</td>
<td>AU</td>
</tr>
<tr>
<td>CA</td>
<td>Transitive - through US</td>
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<tr>
<td>NZ</td>
<td>Oct 14</td>
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<tr>
<td>UK</td>
<td>TBA</td>
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<tr>
<td>US (Army)</td>
<td>Oct 14</td>
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<tr>
<td>US (USAF)</td>
<td>Oct 14</td>
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<tr>
<td>US (USN)</td>
<td>Oct 14</td>
</tr>
</tbody>
</table>

**Key:**
- **TBA:** In Work
- **Signed:** Published
- **Transitive:**

Represents 42 agreements worth of work.
## Current US Services Recognitions

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<tr>
<td></td>
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<tr>
<td>US (Army)</td>
<td>Israel</td>
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<td>Aug 14</td>
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<td></td>
<td>Report in-work</td>
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<tr>
<td>US (USAF)</td>
<td>Singapore</td>
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<td></td>
<td>Report in-work</td>
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<tr>
<td>US (USN)</td>
<td>Czech Rep</td>
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<td></td>
<td>MARQs exchanged</td>
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<td></td>
<td>F2F next week</td>
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<td></td>
<td>Sweden</td>
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<td></td>
<td>CA</td>
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<td></td>
<td>TBA</td>
</tr>
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<td></td>
<td>20+ Others</td>
</tr>
</tbody>
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Recognition Assessments since April, additional Assessments planned
Lessons Learned

• “Recognition” familiarity, value, and processes is still maturing
  – Knowledge-gap in why and how-to
    • Need to build “Recognition” expertise within MAAs
    • EMAD-R is adaptable for non-European nations
• MARQ responses require significant investment in time
  – Motivation to keep MARQs stable vice frequent change
  – Plan for self-discovery of deficiencies, public release, etc.
• MARQ responses alone do not enable organizational understanding
  – A complementary presentation of MAA’s system, structure, regulatory framework, relationship with other organizations is required
• A written report, not just a Certificate, is imperative
  – Provides substantiation, enables sustainment of agreements, eases transitive recognition
• Decision to recognize involves assessors’ judgment
  – A mixture of qualitative and quantitative content to the decision
  – Requires experienced assessors
RECOGNITION

Having Your Moment in the Sun Isn’t Always A Good Thing!