International Military Airworthiness Regulation Conference

Evaluation of the DND/CAF Airworthiness Programme

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Outline

• Royal Canadian Air Force (RCAF) Fleets
• DND/CAF Airworthiness Programme
• Independent Evaluation of the Airworthiness Programme
• TAA Results
• Strengthening of the Airworthiness Programme
• Conclusion
Royal Canadian Air Force (RCAF) Fleets

**CC-177 Globemaster (5)**

**CC-150 Polaris (5)**

**CC-130J Hercules (17)**

**CC-130H Hercules (12)**

**CC-144 Challenger (4)**

**Bell 206 Jet Ranger (10)**

**Bell 412 Outlaw (9)**

**B200 King Air (9)**

**Grob 120A (11)**

**CF-188 Hornet (77)**

**CP-140 Aurora (15)**

**CH-124 Sea King (22)**

**CH-148 Cyclone (6 of 28)**

**CH-147F Chinook (15)**

**CH-124 Cyclone (6 of 28)**

**CH-149 Cormorant (14)**

**CH-146 Griffon (85)**

**CH-148 Cyclone (6 of 28)**

**CC-138 Twin Otter (4)**

**CH-146 Griffon (85)**

**CT-142 Dash-8 (4)**

**CT-156 Harvard II (23)**

**CT-155 Hawk (17)**

**CF-188 Hornet (77)**

**CT-114 Tutor (25)**

**CH-149 Cormorant (14)**

**CH-146 Griffon (85)**

**CT-142 Dash-8 (4)**

**CT-156 Harvard II (23)**

**CT-155 Hawk (17)**

* Asterisk denotes leased or contracted
The Aeronautics Act (R.S.C, 1985, c. A-2)

- An Act of Parliament – the authoritative document for all aviation in Canada
- The main objective is to achieve an acceptable level of aviation safety
- Identifies the ‘Authorities’ for ‘regulation and supervision’ of civil and military aeronautics in Canada
- Civil Aviation – Minister of Transport – Transport Canada
- Military – Minister of National Defence & Chief of the Defence Staff

The implementation of the provision of the Aeronautics Act is not optional; it is a legal responsibility for DND/CAF.
A standard of safety for an aeronautical product, demonstrating that it is safe for flight in its intended role, in conformance with its type design, manufacturing and maintenance standards and operated within its design limits.
Independent Evaluation of the Programme

Proposed Final
Evaluation of DND/CAF Airworthiness Programme
Pre-publication copy—not for external distribution

Departmental Evaluation Committee Meeting
March 2016

1258-220 (ADM/RS1)
Background to the Evaluation

- 1993: Chief Review Services (CRS) Audit of DND/CAF airworthiness policy
- 1998: MND directed the implementation of the Airworthiness Program
- 2008: Chief of Air Force issues formal request for Evaluation
- 2008: CRS Completes Review of Airworthiness of Risk Management Process
- 2014 – CRS Evaluation commenced
Scope of Evaluation

- Roles & Responsibilities of the regulators and the investigators and their interface
- Methods used to assure airworthiness
- Governance and management of the Programme
- Allocated resources
- Capacity to adapt
- Overall Program performance
**Evaluation Approach**

- **Assessed according to Authority**
  - Airworthiness Authority (Governance)
  - Technical Airworthiness Authority
  - Operational Airworthiness Authority
  - Airworthiness Investigative Authority

- **Evaluation Criteria**
  - Scope of Authority / Organizational Structure
  - Processes / Risk Management
  - Documentation / Training
  - Performance Measurement Framework / Resources
# Overview

<table>
<thead>
<tr>
<th></th>
<th>TAA</th>
<th>OAA</th>
<th>AIA</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope of Authority</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processes</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Risk Management</td>
<td></td>
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<tr>
<td>Documentation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Training</td>
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<td>Resources</td>
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### Definitions

- **Strong**
- **Acceptable**
- **Nascent**
- **No capability**
Evaluation - Main Recommendations

- Oversight Independent from Chain of Command (AA)
- Minimum Airworthiness Training Requirements (AA)
- Performance Measurement of the airworthiness programme (AA)
- Manning of airworthiness support section (AA)
- Audits and oversight of UAS, contracted Aviation and Foreign Military A/C Ops (OAA)
TAA Results

- **Scope of Authority**
  - The TAA has a clearly defined Scope of Authority and exercises this span.

- **Organizational Structure**
  - Overall, the TAA has developed and embodied in its program the instruments necessary to successfully manage its regulatory functions and implementation portion of the AWP.

- **Risk Management**
  - The TAA has a rigorous, well-defined process for quantifying and accepting AW risks.
• **Processes**
  – The TAA has rigorous, well-documented airworthiness processes which reflect accepted worldwide practices. Improved communications with project offices would strengthen the process.

• **Documentation**
  – The TAA has comprehensive documentation that has grown considerably in recent years. Completing and formalizing timely updates to these documents would improve overall effectiveness.
• **Performance Measurement**
  – The TA program has developed an strong performance measurement tool (the balanced score card) to monitor the regulatory aspects, however measures to evaluate and monitor the entire TA program could be improved.

• **Resources**
  – The TA program is adequately structured and staffed to perform its regulatory functions but has limited capacity to address issues and process improvements
  - Training
  - Succession Planning
  - Mutual Recognition w/ allied countries (certification)

• **Performance Measurement**

• **Risk Management Database**
Training

Although a training plan exists, TAA has opportunity for improvement by identifying and implementing minimum airworthiness training requirements for all personnel involved with the technical airworthiness program.
Strengthening the DND/CAF Airworthiness Programme

• Participation in International MAA forums
  – Air & Space Interoperability Council (ASIC)
  – NATO Airworthiness Advisory Group (AWAG)
  – EDA Military Airworthiness MAWA Conference

• Mutual Recognition Activities

• The value of using a global convention
  – Military Authorities Recognition Question Set
  – ASIC Air Standard AW 2003 Ed 1
  – European Military Airworthiness Regulations (EMARs)
EMAR – TAM Comparison

Basic Framework Document
EMAR / TAM (Pt 1 / A-GA-005 / OAM /)

Initial Airworthiness
TAM Pt 2

EMAR 21 – Certification of Aircraft
TAM Pt 2, Ch. 1/5/6

Continuing Airworthiness
TAM Pt 3/5

Certification Arrangements
EMACC Handbook/ Certification Guidebook
ADSM- Mil-Hdbk-516 / FARs/CARs

EMAR 145 / TAM Pt 5, Ch 3 – Maintenance Orgs
EMAR 147 / OAA – Training Org Approval
EMAR 66 / TAM Pt 1, Ch. 4 - Licensed Engineers
Part M – TAM Pt 3 / 5 - Continuing AW Management

EMAD R – TAM Pt 2 Ch 5/ TAA Adv – Recognition
EMAD 1 – TAM Glossary - Definitions
Conclusion

- The importance on International Cooperation for strengthening of our respective programmes
- Mutual Recognition activities also serve the purpose of baselining against best practices
- DND/CAF Programme documentation needs to keep pace with the development of global conventions