QinetiQ Australia

QinetiQ’s Experience with the DASRs

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Outline

1. Overview of QinetiQ’s Support to Defence
2. Significant Features of EMARs/DASRs
3. DASR Implications – QinetiQ Support to Defence
4. Challenges in the Transition Period
5. Post-Transition and Maturing the System
01 Overview of QinetiQ’s Support to Defence
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• Current state for Tamm-governed engineering
  – Aircraft Structural Integrity (ASI), Design (mods/repairs), Explosive Ordnance, Ranges, some bespoke manufacturing
  – AEO since 2003 … DAC before that!
• Future state (post-DASRs)
  – ASI and aircraft designs under DASRs
  – EO engineering governed by new regs (in work) + DASRs (clearance onto platform)
  – Range systems - ground equipment affecting safe operations
  – Manufacturing – subcontracted by CAMO, Part 145 or Part 21G
• QinetiQ UK – aircraft tasks under MAA
  – DAOS, MAOS (incl. UAV)
  – Aircraft Test and Evaluation Centre and QinetiQ Flying Organisation
Significant Features of EMARs/DASRs

- Definition of airworthiness – it’s about the aircraft.
- Initial and Continuing Airworthiness
- Type Certificate Management
  - Holder responsibilities and rights
- Outcome based regulation and less prescriptive
- Volume and depth of guidance material and interpretation
- Common regulatory ground with international organisations and businesses
  - Greater alignment with QinetiQ UK and organisations they do business with
03 DASR Implications – QinetiQ Support to Defence

- AEO vs Part 21 vs Part M products
  - AEO approved vs Part 21 Approved
  - Majors and minors
  - Software implementing Airworthiness Limitations data
- Acceptance vs Authority Oversight?
- Type Certificate Management
  - MTCH vs TCH roles
  - Management of STCs – roll into MTC?
- Contracting and subcontracting - accountability
  - Use of own quality system (esp. CAMO products)
03 DASR Implications (Contin.)
Case Study – F/A-18A/B FINAL

- Revised ICA and Airworthiness Limitations for F/A-18 A/B structure (SRP2)
  - Interpretation of new fatigue test and analysis data using new methods
- Organisations: TFSPO, ASI-DGTA, DSTG, QinetiQ
03 DASR Implications (Contin.) - Case Study
03 DASR Implications (Contin.) - Implementation

- Accountable roles defined without reorg
  - CENGR (HoD) direct reporting to MD
  - CENGR owns engineering system
  - Delegated authorities in all engineering roles
- DCENGR (Aero) performs role of Chief of Office of Airworthiness
- Existing Quality Audit function performs role of Chief of Independent System Monitoring
- Compliance Verification Engineers
  - Recommended by DCENGR (Aero) and approved by CENGR
  - Typically QinetiQ’s “Approvers” (DSDEs)
- Engineering system
  - Minor changes required to show compliance, though longer term changes planned to streamline, and strengthen intent and language
  - Procedures: Major/Minor, Occurrence Reporting, Release
Challenges in the Transition Period

- Transition period will be lengthy
- Delivery of AEO Approved products to a CAMO
  - Matters of language and translation – AEO Approved could be Part 21 or M
  - Major repairs and Authority approval
- One engineering system
  - Staff working Part 21 vs Part M
  - Other domains (EO, non-aircraft engineering)
- Initial airworthiness vs continuing airworthiness functions – more generally
  - Technical substitutions and minor design changes requiring very minor showing of compliance
  - Fabrication of parts to be used in the course of maintenance
  - Reliability analysis and maintenance policy
  - Clarity of publications – ICA and airworthiness limitations
- Shift from AEO to DASR paradigm and “two hattedness”
- Transition models, lessons learned - opportunities for “standardisation” and efficiencies
05 Post-Transition and Maturing the System

- Successful transition for QinetiQ will be dependent on:
  - Clarity and consistency of regulations and interpretation
  - Engagement with regulator and other regulated entities – regulator resources?
  - Training – both in regulations and our maturing systems of work
  - Staff exercising and challenging the new system and accountable roles

- What does a mature system look like?
  - Europe is not yet an example of a mature military system
    - Individual areas such as Part 145 are well developed but Australia is likely to have all 4 EMAR areas up and running before the EDA.

- What will be important about maturing QinetiQ’s system and taking advantage of what the new regs have to offer?
  - Adoption of civil practices into the military system
  - Relationship between military and civil regulators (eg. CASA and DASA) noting that CASR’s do differ from EASA regs due to national legislative differences.
  - There will be a greater opportunity to leverage the cost efficiencies developed to support the civil sector.
06 General Observations on the Regulatory System and the Future

- EMARs adoption, ongoing development and incorporation of EASA rulemaking – premise for adopting EMARs
- Civil registered aircraft in military roles
- Safety Management Systems
- Operational Suitability Data
- Emergent and additional requirements - analogous to Part 90
  - Ageing Aircraft rulemaking – NPA 2013-07
    - Analogous to amendments to FAA Part 25, 91, 120 arising from Aging Airplane Safety Act and Airworthiness Assurance Working Group
- UAVs will be a challenge
  - Original basis for certification (and acquisition) not consistent with ADF operational intent
  - Operation in civil airspace