Challenges for MoD ISAs

Rhys David
Presentation Overview

- Introduction
- Haddon-Cave & the Nimrod ISA
- MoD DE&S Safety Improvement
- Challenges for MoD ISAs
Ministry of Defence

- Large (330,000 people, 240,000 hectares, £35bn budget)
- Diverse
  - Nuclear reactors - railways - airfields - dockyards - bridges - workshops - explosives stores - satellites - warfighting - ……
- Geographically dispersed
- Subject to Health & Safety Law
  - But self-regulating in several High Hazard areas
- Long History
  - Hierarchical
  - Divided by ‘Domain’, with own concerns, terminology, processes
  - Subject to frequent reorganisations
Defence Equipment & Support (DE&S)

- Provides & Supports Equipment & Services for Armed Forces
  - Current & future Operations
  - Through-life Management (CADMID lifecycle)
- Large (21,000 people, £14bn budget, ~1,900 projects)
- Diverse
  - Military systems (e.g. ships, aircraft, vehicles, weapons, comms. etc)
  - Food, clothing, medical equipment & supplies
  - HM Naval Bases
- Safety Management for Military Systems
  - On behalf of the Army, RN, RAF
  - Project-Oriented Safety Management System (POSMS)
- Works closely with Industry
  - Def Stan 00-56 for Safety Management
MoD ISA Role

- **Independent Safety Auditor** according to Def Stan 00-56 & JSPs 430, 454, 520
- **Independent Safety Assessor** according to ISA WG
- **Independent Audit**
- **Independent Assessment**
- **Independent Nuclear Safety Assessor** according to JSPs 518 & 538
- **External Safety Adviser**
  - **Advice**
    - General Advice
    - Project-specific Advice

- Usually an ISA Team
- Authority & Responsibility rests with ISA’s customer
- **Should** cover Supplier, Acquirer & User
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Haddon-Cave & Nimrod ISA (1)

- Loss of Nimrod XV230 in Afghanistan on 2 September 2006
  - Catastrophic mid-air fire
  - Death of all 12 crew and 2 mission specialists
- Investigation by Charles Haddon-Cave QC for SofS Defence
  - Examine arrangements for Nimrod airworthiness since 1979
  - Assess where responsibility lies
  - Assess process for compiling safety cases
  - Make recommendations
- Report on 28 October 2009
  - Physical & Organisational causes
  - Nimrod Safety Case
  - Lessons & 84 Recommendations
Haddon-Cave & Nimrod ISA (2)

- Nimrod Safety Case developed 2001 to 2005
  - BAE Systems (Phases 1 & 2)
  - MoD Nimrod Integrated Project Team (Phase 3)
  - QinetiQ acting as ISA (but not formally as Auditor, de facto Adviser)
    - Tension in relationship with IPT [H-C 10A.99]
    - QinetiQ anxious to remain on good relations with IPT & not lose business [H-C 10A.102]

- ISA Lessons from Haddon-Cave
  - Nimrod ISA role unclear
  - Inadequacies in conduct of ‘independent adviser’ role
    - Checking Risk sentencing
    - Briefing of staff sent to critical meeting
    - Reading safety reports & checking safety work
    - Advising Customer
    - ‘Signing off’ work when not appropriate
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DE&S Safety Improvement

- Safety Improvement Working Group set up Dec. 2007
  - Examined recommendations & lessons from Nimrod & other Inquiries
  - Reviewed the Management of ‘Military Systems’ Safety
  - Reported 15 April 2008 with Safety Improvement Plan (22 Actions)

- DE&S Safety Improvement Group
  - One workstream was on SIWG Action A3
    
    Examine the role of ISAs supporting DE&S and consider issues associated with their roles, funding, appointment, reporting and monitoring their effectiveness
    
    - Outputs
      - ISA FAQs
      - Example ISA Terms of Reference & Example Statement of Requirement for ISAs
      - Revised Project Audit question on ISAs
      - Sharing significant ISA findings via Safety Managers & Specialists Group
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Challenges for MoD ISAs
1: Changes to MoD

- Budgetary Pressures
- Establishment of Military Aviation Authority
- Defence Safety & Environment Authority
- Audit Regime on MoD Projects Themed & Targeted
  - Based on Risk Profile
- Risk Referral up Management chain
- ‘Duty Holder’ Constructs defined
  - ‘Owning’ activities that impose Risk to Life
  - Implications for budget holding & Safety Case ownership
  - Possible future implications for ISAs?
Challenges for MoD ISAs
2: Competence

- Competence of ISAs
  - Comply with ISA WG Code
  - Competence Management Framework (e.g. ISA WG)
  - Appreciation of Military Risk & ALARP

- Competence of MoD Project Staff
  - Guidance on ISA issues
  - Competence definitions
  - New e-Learning Courses & Workshops
    - Professional Affiliation
MoD Safety Roles & Training

- System Safety Manager
- System Safety Officer
- Executive
- Stakeholder
- Advisor/Regulator/Engineer

Modules:
- Awareness
- Practitioner
- Expert
Developing Safety Competence

Experience, Mentoring & CPD

Functional Competences
(Engineering, Project Management etc.)

Core System Safety Training
System Safety CPD

Air – e.g. MSc Airworthiness

Weapons – e.g. MSc Guided Weapons

Nuclear – e.g. Nuclear Introductory Course

Land – e.g. Land Systems Engineering

Maritime – e.g. SSMO Course

Personal Competences
(Communication, Ethics etc.)

Timeline

February 12
Challenges for MoD ISAs

3: Maintaining Independence

- Nimrod & Haddon-Cave show it can be difficult
- “He who pays the piper calls the tune”?
- ISA acts for potential future victims
- ISA Senior Management must value independence
- Mechanisms to resolve conflict
  - Role of Safety Management Office / DSEA
  - Avoiding “my expert versus your expert”
- MoD expectation of ‘Hard Questions’ from ISAs
  - ISA contracts terminated where not seen as challenging
Challenges for MoD ISAs
4: MoD Standards

- Defence Standards (Contractual documents)
  - Def Stan 00-56 (Safety Management)
    - Non-prescriptive
    - Under review for update 2012
  - Software Safety Standard
    - Def Stan 00-55 is obsolescent but still in use
    - New document being produced for 2012

- Joint Services Publications (MoD Policy & Guidance)
  - Impacts of Defence Safety & Environment Authority ?
  - Acquisition Safety & Environmental Management System
    - Recently updated
  + Lots of Guidance Information (general & domain-specific)
Challenges for MoD ISAs
5: System of Systems

- ‘System of Systems’ means different things!
- Which authority is responsible for Integration?
- Who makes an ALARP justification?
- Integrity of Data and Information
- Complexity of:
  - Battlefield
  - Reconfigurable Systems
  - Interaction with Systems owned by others (e.g. allies)
Challenges for MoD ISAs
6: Coverage

- Stakeholders’ Management Systems
  - Prime Contractor
  - Supply Chain
  - DE&S Project Team
  - Users

- Lifecycle
  - Involvement at earliest stage (but in what role ?)
  - Safety issues in Military Operations

- Safety Risk
  - Risk to Life (person-centric)
  - Appreciation of Overall (Aggregated) Risk
Conclusion

- MoD has learnt from past experience
- MoD’s Duty Holder Construct has implications for how Safety will be managed in future
- MoD upping its game:
  - Safety Management
  - Safety Competence
- The same is expected from:
  - MoD’s suppliers
  - ISAs
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