

The UK Military Aviation Authority (MAA)



UK MAA

- MAA created on 1 Apr 2010 as a result of The Nimrod Review Report (Oct 2009) surrounding the loss of Nimrod XV230 in Afghanistan (Sep 2006)
- **To regulate UK Military registered aircraft**
- MAA comprises:



- 3-Star Director General (Royal Air Force)
- Accountable to the Secretary of State for Defence
- 250 personnel Military (Tri-Service) 60%, Civilian 40%





The Nimrod Review – UK Govt Response



- All 84 Nimrod Review recommendations were considered. (Government Response to Nimrod Review 16 December 2009).
 - 80 accepted by then SofS.
 - 4 rejected:
 - Release To Service Authority function to be undertaken by the MAA
 - Renaming of DG Change post
 - Professional body for safety experts
 - Safety cases to be renamed as 'Risk Cases'





A world class military Air Safety regulatory and assurance model that is proactive, innovative, modern, efficient and effective

MAA Mission

Enhancing the delivery of operational capability through continual improvement in military Air Safety, appropriate culture, regulation and practice

Military Aviation Authority

MAA Oversight of UK Defence Air Environment

Secretary of State Permanent Under Secretary



Service Chiefs - CNS, CGS, CAS



MoD

Duty Holders

Front Line Commands – Air Stations/Sqns (Air Traffic Management, Aircrew, Engineers)

Duty Holder facing

Capability Development Procurement Finance Infrastructure Personnel

Industry

Designers Manufacturers Suppliers Operators Maintainers





External Relationships



- Very close interaction with UK CAA
 - Mutual exchange of personnel
- Awareness of emerging European initiatives
 - ICAO, MAWA, EUMAA, FAA, SESAR, EUROCONTROL
 - Mutual recognition
 - DSAÉ (Fr), AMRDEC (US Army)
 - Future DGAM (Es), US NavAir, USAF
 - Benefits for new Air Systems (Time, cost)
 - **3rd Party Assurance**
 - Collaborative programmes (Remotely Piloted Air Systems)



MAA Governance







Duty Holders



"The objective is for MOD to establish a <u>clear</u> Duty Holder chain on <u>Senior Operators</u> who bear personal legal responsibility for the safe and airworthy operation of platforms."

The Duty Holder is a bespoke arrangement with a specific supporting mechanism to allow <u>clear</u> <u>accountability, responsibility, ownership and</u> <u>management of risk to life</u>







Aim of the Duty Holder (DH) Construct



- Empower DHs to manage Air Safety in their defined Area of Responsibility
- Establish these key individuals with personal, legal responsibility and accountability
- Place ownership of Air Safety risk with the right people
- Generate a DH-facing 'support' environment to manage issues surrounding Risk to Life and Safety



Key Areas of Responsibility for the DH



- Risk Management, Control and Escalation
- Internal and external assurance and audit
- Continuing Airworthiness
- Awareness of DH-facing interactions
- Operating v Operational Risk "The Operational Handshake"
- Air System Safety Cases (Safety Statement)
- Air Safety Management System



Risk Management



Previous state:

 "....There is a fundamental lack of ownership of 'Air Safety'"......
"There is a bias towards equipment risks".... "Risk is poorly assessed across the various Defence organisations"...."There is a lack of consistency across all three Services"...."There is a lack of alignment of duty, responsibility, resources and expertise"....."Operators have not taken charge of 'Air Safety'"

Current state:

• Nominated Duty Holders are personally responsible and accountable for Risk to Life within their Area of Responsibility.



Risk Boundaries and Risk Management



Overall risk of death to population at risk per annum for 1st & 2nd Parties Based on UK Health and Safety Executive Guidance



Air Safety Management Systems (ASMS) -Legacy Approach

- Safety Cases gave a false sense of security where risks may be deposited and forgotten about (book shelf document)
- The mere fact of a Safety Case led to a perception that the platform was "safe"
- Exponential growth of "the Safety Case industry" led to a culture of "paper safety" at the expense of real safety.



Air Safety Management System -New Approach



- One of the tools to help a Duty Holder in decision making concerning Risk to Life will be the new approach to a dynamic safety case/statement eg:
 - A Safety Statement issued personally by the Operating Duty Holder
 - A through-life Safety Case managed through an effective and auditable ASMS
- A Safety Statement is a formal declaration by the relevant Operating Duty Holder that, based on its Safety Case, all Risk to Life associated with a specific System are at least tolerable and ALARP
- Absence or withdrawal of the Safety Statement will result in the cessation of flying





Safety Culture



- An Engaged Safety Culture is that set of enduring values and attitudes, regarding Safety issues, shared by every member, at every level, of an organisation.
- It refers to the extent to which each individual and each group of the organisation:
 - seeks to be aware of the risks induced by its activities
 - is continually behaving so as to preserve and enhance safety
 - is willing and able to adapt when facing safety issues
 - is willing to communicate safety issues
 - and continually evaluates safety related behaviour.
 - Leadership, Communication, Decision making



Heinrich's Iceberg



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Air Safety Assurance Activity



- Risk Based approach determines Oversight, Surveillance and Assurance visit programme
 - Internal planning defines broad scope of activity
 - Compliance with regulation
 - Assessment of Air Safety Culture
 - Strengths and weaknesses
 - Good practise
- Detailed post visit report
- Follow up action as necessary



Air Safety Assurance -Sanctions



- Enforcement action may be taken in the event of regulatory noncompliance
 - The MAA will provide guidance and information, and will encourage early engagement
 - Full details of the nature of noncompliance will be given
 - There is an appeal process



Air Safety Assurance - Sanctions



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Aircraft Certification



- Inadequately designed and certified modifications were at the root of the Nimrod XV230 accident
- The MAA will now assure the Release to Service for all new platforms, major modifications and will set the regulations for initial certification, as well as for the continued airworthiness of the platform.
 - Assures that air system is designed and built to a defined and recognised standard and by a competent organisation (Design Approved Organisation)
 - Assures that lessons from history are applied to new systems (Risk Based Air Safety Assurance)
 - Provides independent assurance to the Operating Community that the air system is fit for the intended purpose.
 - Supporting equipment element of the Air System Safety Case



Aircraft Airworthiness



- **Type Aircraft Fleet; Continuing Individual tail no.**
- MAA approves Maintenance Organisations (Both Civil and Military) and Military Continuing Airworthiness Management Organisations
 - Based on Suitably Qualified and Experienced Person (SQEP), Competency, Safety Management Systems, Organisational structures and demonstration of path to compliance.
- The ability of an Air System to operate without significant hazard or understood risks which are suitably mitigated



Contractor Flying Operations



- MAA approves contractors to operate Military registered aircraft as part of production and maintenance activities
- Accountable Managers (Military Flying) are accountable for Risk to Life during activity within their defined area of responsibility
- All military registered aircraft will be under the direct Air Safety responsibility and accountability of either a Duty Holder or an Accountable Manager (Military Flying)



"In 1909 the chief engineer was almost always the chief test pilot as well. That had the fortunate result of eliminating poor engineering early in aviation" – Igor Sikorsky

Service Inquiries



- Director General MAA is the convening authority for aviation related Service Inquiries (SI). SI president appointed from outside of the MAA
- The Military Air Accident Investigation Branch and SI panel work together as a team, led by the President. If MAA regulation is considered contributory, then the President will report directly to PUS
- SI does not apportion guilt or blame
- MilAAIB and SI panel should positively consider and investigate organisational causes or failures.





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Challenges



- Establishing Cultural and behavioural change
- Acceptance and value of assurance process (not one-off box ticking)
- Prevent potential reversion to previous habits
- Application of common standards across Military and Contractor communities
- Acknowledgement of the benefits of independent regulation (opportunity not threat)
- Increased engagement to build trust and utility without losing hard regulatory edge (beyond compliance)



MAA Identified Top Risks

- Mid Air Collision
- SQEP Shortfalls
- Afghanistan Redeployment
- Cumulative Change



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The Scale of the Challenge

- 17 Accountable Managers (Military Flying)
- 25 Aircraft undergoing certification
- **35 Duty Holders**
- 42 Continuing Airworthiness Management Organisations
- 76 Aircraft Types
- 87 Maintenance Approved Organisation Scheme
- 133 Design Approved Organisation Scheme
- 363 DH-facing Organisations
- 1876 Mil Reg Aircraft
- 104216 Regulated community







Discussion Points?

