Military Aviation Authority

MAA

DIRECTOR GENERAL MILITARY AVIATION AUTHORITY

DEFENCE AIR SAFETY ANNUAL REPORT

JUL 12 - AUG 13

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INTRODUCTION

1. The past year has seen a period of consolidation for the Military Aviation Authority (MAA) and the Defence Air Environment (DAE), both of which have matured significantly since the inception of the MAA in Apr 10. However, the period of this Annual Report has witnessed significant turbulence across the regulated community. This has included legacy aircraft being replaced by new platforms at an unprecedented rate compared to recent years and the concurrent post SDSR downsizing of some existing fleets. In addition, operational pressures from Afghanistan, Mali and the support to Op OLYMPICS tested the Duty Holders (DHs) at a time when most were recuperating from the Libya campaign. Inevitably, this has produced tension for aviation decision makers at all levels, which has contributed to some of the issues identified in this report. There is little doubt that the lack of Suitably Qualified and Experienced Personnel (SQEP) is restricting progress at every level across the DAE and is a strategic risk to a self-sustaining safety system and culture. Overall, despite some significant issues, the Single Service aviation DHs and wider operational communities should be congratulated on their extensive work and resilience in placing safety at the heart of the delivery of our operational capability.

2. The year ahead will see many of these challenges persist and become magnified by the Op HERRICK redeployment. Indeed, redeployment will bring new Air Safety challenges (changes to airspace, coalition footprint, dangerous cargo, etc), against which I have committed the MAA to assist CJO, his operational commanders and the DHs, to ensure effective and safe air-system delivery. Moreover, the potential reform of the DE&S under the Materiel Strategy will impact on our airworthiness structures and process, all of which will require careful attention, as this lies close to the heart of the issues that the Haddon-Cave report[1] identified (leadership, accountability, simplicity and risk with contracted airworthiness).

3. A fully engaged Air Safety culture is our best counter to practises that could otherwise result in intolerable risk. This culture should influence all aviation decisions to ensure that Air Safety risks are driven As Low As Reasonably Practicable (ALARP). Embedding a self-sustaining Air Safety culture is the primary strategic outcome for the MAA and is a central theme of this report. Finally, having established our independence, greater MAA engagement with the regulated and wider defence communities is now appropriate, consulting on regulatory change, identifying safety threats and supporting the development of a generative safety culture.

4. Our mission statement requires the MAA to **'enhance the delivery of operational capability'**; therefore we must demonstrate to the regulated community and wider senior leadership that the benefits we deliver justify the Air Safety standards that we mandate and of course our resource bill. These benefits are detailed throughout this report and, at the higher level, include:

   a. Empowered operational commanders able to make Air Safety decisions supported by an established DH construct and understanding of Risk to Life (RtL).

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[1] Mr Haddon-Cave QC, '*The Nimrod Review*', 28 October 2009, The Stationery Office.

b. Safeguarding the Department's status as a self-regulating Department of State. This ensures regulation is tailored to military operations by judicious application of risk-based exemptions and waivers. Self regulation also delivers procurement cost avoidance through timely certification advice appropriate to military needs and reduces the loss of capability through accidents.

c. Adding value to UK Defence Industry exports through our safety reputation and assurance activities; and collaborating with other nations' MAAs bringing potential savings with collaborative programmes and airworthiness standards (A400M).

STRATEGIC AIR SAFETY RISKS

5. The DH community have well established and ever maturing risk registers which contain a number of significant risks that are currently being held at the Operating Duty Holder (ODH) level. The risk of Mid-Air Collision (MAC) and the shortage of SQEP are well documented across the DAE and are receiving much attention. The other 2 risks which I will highlight, namely the effect of defence change initiatives and Op HERRICK re-deployment, represent either an aggregate of current risk, or risk which may materialise in the next period. The ODHs will of course continue to monitor risk and elevate to SDH level and beyond should they no longer be able to tolerate. I believe the following risks can be considered to be strategic in nature for the DAE with the selection criteria based on the likelihood of occurrence and propensity for multiple fatalities, operational impact and societal concern:

a. **MAC Risk**. MAC is recognized as the highest operating risk and is the only RtL included in the top level risk register of all 5 aviation ODHs; indeed, MAC is rated as the number one risk by 4 of the 5 ODHs. The last MAC (3 Jul 12) over the Moray Firth sadly resulted in the loss of 3 crew members and 2 Tornado GR4 aircraft. The Service Inquiry (SI) is due to complete in Oct 13 and will potentially lead to a Scottish Fatal Accident Inquiry, [redacted]. The risk of MAC is prevalent in Afghanistan where the intensity of operations, multiple aircraft types, national operating standards, language issues, Remotely Piloted Air Systems (RPAS) and ad hoc airspace brings well documented challenges. Further, MAC risk extends outside of defence with circa 30% of reported UK Air Proximity (Airprox), or near-miss reports, involving a mix of military and civil aircraft[2]. This poses societal and reputational risks to the Department with unquantifiable consequences in the case of a collision between, for example, a fast-jet and an airliner potentially resulting in significant loss of life. The MOD has made considerable progress in reducing the MAC risk with procedural, human factor and technical mitigation. In particular, CWS has achieved Main Gate on Tornado GR4 and is included in the Rotary Wing Safety Enhancement Package for most helicopter platforms. Despite this significant step forward, MAC is likely to remain a strategic risk for some time. The redeployment from Afghanistan will increase military flying in UK airspace; RPAS are becoming more prevalent; and although vitally important, CWS only protect against other aircraft with transponders (not mandated by the CAA for all types). I concur with the aviation DHs that the risk of MAC is significant and could have difficult consequences for the Department. Along with the leaders and risk owners in the DAE, I will continue to pay close attention to this risk and its mitigations over the coming year.

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[2] Of the 792 airprox investigations conducted by the UK Airprox Board between 1 Jan 08 and 31 Dec 12, 380 involved military aircraft; of these, 245 involved airprox between military and civilian aircraft and the remaining 135 only involved military aircraft.

b. **Shortfalls in SQEP**. The shortfall in SQEP is well documented in DE&S, however, we have uncovered prevalence across all disciplines and commands that is of more concern than previously understood. While the shortfall persists, Air Safety is being undermined by: safety work that is left incomplete; safety modification work not being progressed; poor supervision; latent risks that remain unqualified and inappropriate normalisation of low standards and behaviours. We can do little about the national shortage of aviation SQEP but we must ensure that we are making best use of the talent we have and developing it to best effect. I cannot see this situation changing in the near term without a coordinated intervention across the Military and Civil Service. I have initiated work that will seek to quantify the situation during the coming year.

c. **Cumulative Effect of Defence Change Initiatives**. Over the next 2 years, Defence will need to handle a range of pressures including the redeployment from Afghanistan, return to contingency, pressures from SDSR 2015, the implementation of the Materiel Strategy, and the potential creation of a single pan-Defence safety organization, which could coincide to undermine current levels of Air Safety. The risk is threefold: Firstly, leadership at all levels may lack capacity to adequately identify and manage challenges to Air Safety in simultaneous initiatives. Secondly, assumptions made in one initiative may be unknowingly undermined in another. Thirdly, and most significant, RtL that are acceptable in isolation may aggregate to intolerable levels. A focused commitment to Air Safety amongst leaders will be critical throughout this period and I will engage with my colleagues accordingly and ensure my oversight activities remain focussed and alert to aggregated risk.

d. **Op HERRICK Redeployment**. The redeployment from Op HERRICK poses a number of challenges to Air Safety that will require attention at all levels of command if we are to manage risk effectively. Changes to airspace management and procedures, Coalition footprint, RPAS, reduction of supervisory posts, and inappropriately handled dangerous air cargo will present additional risk to the aviation community. In particular, as mentioned earlier, the risk of MAC in Afghanistan is a key concern for the DHs and this risk is likely to increase during redeployment. Helpfully, and of note, our recent operational Air Safety audit of Op HERRICK confirmed that the PJHQ and the respective DHs have a firm understanding of the current risk to Air Safety. The MAA will continue to support CJO's risk management over the months ahead as his plans progress.

ASSURANCE STATEMENT

6. Air Safety continues to develop in the right direction with the 5 ODHs largely compliant with the MAA Regulatory Publications (MRP). The expansion of oversight into the DH-facing organizations[3], including the Op HERRICK operational theatre, provides a firmer basis for my assessment of Air Safety across the DAE. Whilst Air Safety in the DH community has matured rapidly over the period, I am concerned about the DH-facing organisations which show a varying maturity and attitude towards Air Safety. I currently assess that these organizations will take a long time to progress with many of them facing their own significant challenges. The previous estimate that Substantial Assurance was achievable remains well founded but the shortfall in SQEP is more significant, long term and wider spread than previously realised and is closely linked to lack of maturity within the DH-facing community. SQEP shortfalls compromise Air Safety to such an extent that, despite significant progress in a number of other areas, I judge that Air Safety remains at

[3] Organizations actively supporting DHs in their management of Air Safety, eg DE&S, and DIO.

Limited Assurance[4]. In addition, remaining weaknesses in some Air Safety Management Systems (ASMS), together with continued organizational change, leave me currently unable to predict when we will reach Substantial Assurance.

ASSURANCE AND OVERSIGHT

7. The MAA Assurance Plan has continued to mature with the content of individual audits being driven increasingly by our understanding of RtL. Our assessment of a specific organization combines the hazards inherent in its activities with our assessment of their current performance based on a range of sources. Oversight activities are now expanding beyond the DHs to encompass DH-facing organizations where there is much work to be done. Within the core operating DH community, I am pleased to report that our audit campaign finds that the DHs are fundamentally compliant with the MRP, that any 'corrective actions' required are predominantly minor and that actions are mostly addressed rapidly. The ever developing Air Safety culture among DHs is evidenced by the maturing conversation that characterizes many of our audits and topics covered are now moving beyond 'the basics' that featured in our audits 18 months ago. Also, our more recent audit reports show an improving picture in DH risk management which in many areas is quite mature. This is in contrast to last year where shortcomings of some ASMSs was one of the significant weaknesses that led to an assessment of Limited Assurance. It is clear that the pressure we have applied to all organizations and their hard work has now paid dividends and most DH Air Safety Management Plans (ASMP) are now of a good standard.

8. Despite progress in some areas, MAA audits of DE&S continue to find a significant number of serious failures to meet regulations, each of which could lead to a major risk to Air Safety. Our focus this year has been the Type Airworthiness Authorities (TAAs), several of whom continue to struggle with compliance issues and will receive significant attention in our audit programme over the next year. Performance in industry remains patchy, generally holding the middle ground between DH and DE&S compliance levels. It is therefore appropriate that we also continue to press for further improvements through our assurance activities in this area.

Duty Holder Oversight

9. DH oversight activity continues to be one of the MAA's core outputs with formal audits of Air Command, 1 Gp, 2 Gp, 22 Gp and the JHC taking place within the reporting period. Audit activity has shown that Air Safety is now well embraced by the DHs and is seen as a fundamental building block for the delivery of operational capability. The quality of the DHs' ASMS and rapidly improving Air Safety culture, combined with the highly successful implementation this year of the Continuing Air Maintenance Organizations (CAMOs), reflects the growing maturity of the DH community. The provision of SQEP personnel, change management (both organization and platform) plus the understandably embryonic nature of the disaggregated FinMilCap organizations provides a constant challenge for the DHs with many of the levers being outside of their direct control, leading to a reliance on other DH-facing organisations.

10. The maturity of the ASMS, growth of Air Safety culture and the utility of the nascent CAMOs are evidenced by ODH decisions to temporarily cease flying Tucano, Tutor, Gazelle, Wildcat, Watchkeeper and T-Hawk while RtL was reassessed following an incident or when it was no longer demonstrably tolerable and ALARP. Operations were

[4] System of internal control operating effectively, except for some areas where significant weaknesses have been identified. DIA Assurance Classifications (Oct 10).

also paused in 206 (Heavy Test) Sqn due to concerns over aircrew currency. Further, of significance, the Officer Commanding 12 (B) Squadron (Tornado) ceased flying activity for 2 days due to safety concerns raised at a junior level (engineer of corporal rank), which resulted in many significant safety recommendations; an example of both the developing safety culture and impressive leadership. This unprecedented number of operating pauses where routine flying is temporarily suspended is perhaps the clearest example of Air Safety risk management in action. Clearly, this needs careful messaging; Air Safety is not about grounding aircraft, it is about recognizing and taking action when risk has become unacceptable. Such pauses do not stop flying when the operational imperative justifies continued acceptance of elevated risk. For example, operational flying in Afghanistan has continued while the same aircraft type has been grounded in the UK.

11. **DH Level SQEP**. Further improvement in Air Safety is proving challenging with the availability of SQEP manpower a major threat. Most DHs are reporting significant shortfalls in engineering personnel qualified on aircraft types. Additionally, for C-130, Tornado GR4, Chinook and Apache, the day-to-day tension between operational demands and resource is tauter and requires closer management than I would consider reasonable. The DHs are actively managing this risk in concert with DE&S, PJHQ and MOD, but the situation remains fragile. Furthermore, allowing this situation to persist risks normalizing the use of under qualified and inadequately experienced personnel on safety related tasks. It is noted that poor supervision continues to be a recurring trend in Service Inquiries (SIs) and is unlikely to change while SQEP levels remains under such pressure.

12. **Equipment Programme**. The replacement and modification of numerous platforms within many of the DHs' areas of responsibility, coincident with the shift in operational stance in Afghanistan and the return to contingent operations, may present a substantial aggregated risk. JHC are managing significant change to their RW and RPAS fleets. ACNS are updating their RW fleet while introducing Maritime RPAS and Lightning II. 1 Gp is preparing to introduce Airseeker and Lightning II, 2 Gp is introducing Voyager and A400M while the Army (JHC) brings Watchkeeper into service. The significant pressures across the Defence Lines of Development (particularly training) are not in themselves unmanageable but they do underline the need for robust SQEP manning to manage the risk within tolerable levels.

13. **RPAS**. The use of RPAS is continuing to increase, with T-Hawk, Desert Hawk, Hermes 450 and Reaper already in the inventory and Watchkeeper, Maritime RPAS and other requirements maturing. The welcome action by the Army DH chain to quickly address SI recommendations relating to Hermes 450 operations has brought significant Air Safety improvements, and the decision to better align Army RPAS Operating Authority responsibilities with Commander JHC (ODH) is very positive.

14. **Continuing Airworthiness Maintenance Organizations (CAMOs)**. We reported last year on the introduction of CAMO as recommended by the Haddon-Cave report. I am pleased to report that most of the Delivery DHs (DDH) are now compliant with the requirement for their CAMOs to be fully established and have applied to the MAA for CAMO approval. We have pursued the non-compliant DDHs (who were all in a single Air Group) and have a team of MAA engineers ready to audit and approve the new organizations. In addition, we have issued the first 3 CAMO Approval Certificates to RN Sea King, Chinook and C-17. A high level plan for the remaining 41 CAMO approvals has been established and we are confident that the initial round will be completed by Aug 14. I consider the implementation of CAMO to be a major step forward in the management of Continuing Airworthiness and essential to providing a joined up approach to the quality management of individual airframes.

DE&S Oversight

15. Over the period covered by this report, the MAA Oversight Team have conducted 23 audits of PTs ranging from air platforms to those providing Air Traffic Management (ATM) equipment. It is accepted that DE&S is making good progress on Air Safety, particularly over the past few months but there remains a stark difference in the number of MAA Corrective Action Requirements raised against DE&S[5] when compared to all other areas that the MAA regulates. Of the 5 Advisory Letters[6] issued by the MAA to MOD organizations this year, 3 were sent to DE&S Project Teams (PTs), one was sent to industry and the final letter was directed to a joint DH / DE&S PT partnership. The MAA Annual Report last year cited lack of corrective action by DE&S to address MAA findings. This year's results are better but still mixed, with only some teams dealing with all of their highlighted issues prior to their next audit. The MAA has enforced the requirement for action plans and has held teams to account against their agreed milestones; while I am not yet satisfied with their efforts, the trend is improving.

16. PTs are mandated to include compliance with the MRP in all new and amended contracts. For legacy contracts they are to identify and mitigate the risk associated with the delta between the MRP and the regulations they have contracted against. Two years on from the publication of the MRP, I am concerned that there are still too many significant contracts where the MRP is not the contractual baseline, nor is there any evidence of a corrective plan or understanding of the associated risk. Of note, some teams have let new contracts without reference to the MRP. I have directed the Oversight team to look critically at the issue of contract status during forthcoming audits. With regard to internal assurance, this remains a major problem with many PTs having no effective internal audit and in some cases an Independent Safety Auditor is not on contract. This has been compounded by the prolonged lack of a contracting arrangement for specialist technical support[7]. I am increasingly concerned that a lack of internal assurance within DE&S is allowing problems to go undetected and action to address this will be a priority for them over the next 12 months. Whilst there is much to do, the improvements in some areas have been significant against a background of a critical shortage of SQEP. The organizational and leadership aspects of these issues will be probed during the MAA's audit of the DE&S high level management in Sep 13 where we expect to note significant progress in this regard.

17. **SQEP and Prioritization**. The low availability of SQEP remains a significant issue within DE&S and we have, perhaps not surprisingly, observed a correlation between SQEP manning levels and failures to keep up with airworthiness tasks. Furthermore, organizational design in multi-platform PTs[8] has led to TAAs managing an excessive span of responsibility with inadequate levels of resource. DE&S acknowledges this and some recruitment activity is underway, though it remains to be seen whether this will be sufficient to address the overall SQEP-to-task requirement. Where there are low SQEP levels, my concern is the risk to decision making regarding the prioritization of Air Safety related tasks. In the short term, the DE&S will not have the sufficient SQEP to complete the enormous task placed upon it and it might well be necessary for the ODH community to

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[5] As of 31 Aug 13, the DE&S has 67 Level 1 CARs and 93 Level 2 CARs extant. As a comparative example, the 5 ODHs (including subordinate DDHs) have a combined total of 37 open CARs raised against them.

[6] The second level of enforcement action for non-compliance with the regulations (MAA 01 - Military Aviation Authority Regulatory Policy).

[7] The Framework Agreement for Technical Support (FATS) 4 Lot 2 has been suspended for more than a year which has made it difficult to quickly let simple contracts for specialist technical support.

[8] [redacted]

assist with prioritisation of work and carry increased risk where appropriate. I will continue to focus and report on this issue until it is resolved.

18. **Materiel Strategy**. As an independent regulator, I deliberately remain neutral regarding CDM's plans to overhaul DE&S. At this stage, it is unclear how the Government Owned Contractor Operated (GOCO) proposal will affect the MAA Regulatory position and our ability to assure Air Safety on the Secretary of State's behalf. The Materiel Strategy Team have taken legal advice regarding the current Crown Servant status of the TAA, a role pivotal to maintaining and assuring Airworthiness in DE&S. Whilst no statutory requirement exists for the TAA to be a Crown Servant, there are a number of legal drivers (such as the non-delegable duty of care) which underpin the policy decision. Further work is required to fully understand the legal, practical, regulatory and organizational challenges that would be associated with any change in policy whereby functions previously undertaken by Crown Servants were transferred to contracted staff. I am grateful for the Materiel Strategy team's full engagement of the MAA in their deliberations.

DH-Facing Oversight

19. **Operational Command**. I have made a commitment to CJO that Air Safety activity will not constrain his operational freedoms. There are now some excellent examples of trades between 'operating' and 'operational' risk across our theatres where risk owners and operational commanders have had well informed discussion allowing correct risk ownership and the operational imperative to proceed. The MAA team have recently returned from the first operational audit in Afghanistan. Significantly, commanders displayed a mature grasp of regulatory requirements, understood their role as a DH-facing organization and maintained close linkages back to the DH construct in the UK. It was evident that Expeditionary Air Groups and Wings had developed effective and continually improving ASMSs. Commanders and DHs are alive to the ever evolving Air Safety challenges that redeployment will present and are planning accordingly. In particular, Airspace Management will need careful attention. It is currently managed via complex procedural control augmented by a radar service where available. The hand back of airspace to the Afghan National Authority/contractors and any consequent change in control procedures will require careful assessment to ensure the MAC risk is contained.

20. More generally, the current positive situation and command arrangements for Air Safety in Afghanistan has developed after a considerable time on an enduring operation. It is important that this ability to manage Air Safety on operations is not lost when we return to contingency and I welcome CJO's recent invitation to assist in developing their Air Safety Structures. However, it is equally important that future commanders of Expeditionary Air Groups and Wings do not revert unthinkingly to the Afghanistan Air Safety model. Future contingency will no doubt require fast and agile thinking and decision making outside of the mature Afghan environment that we have become accustomed to.

21. **Departmental Policy and Resource**.

a. **Defence Transformation**. The disaggregation of FinMilCap functions from the MOD Centre to the Front Line Commands (FLCs) has included notable reductions in manpower levels, especially for JHC and Navy Command. Although broad responsibilities appear to be agreed, very late decisions in areas such as C4ISR[9] added to the difficulty. The FLC Capability areas have new target operating models

[9] Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance.

of varying complexity, with some lacking clarity on how DHs are to pursue safety options. Additionally, they have yet to fully agree how to treat genesis safety options and, as of Aug 13, none of them had produced their ASMP, albeit against the backdrop of understandable priorities. The lack of ASMPs is indicative of a wider threat to Safety Assurance during periods of organizational change that I covered under Strategic Risks. There has been a continued effort to rectify this shortfall, with direction and assistance from MAA staffs, which we will continue to pursue. The FLC Capability DH-facing arrangements will be tested through MAA audits over the next year.

b. **ABC 13**. ABC 13 was conducted with ever increasing recognition of the Department's DH-facing responsibilities. While the SICPL[10] process complicated the assessment of some safety options, activity was broadly positive. Although CAP staff behaviours were notably forward leaning, the MAA had to apply pressure on DE&S to deliver the underpinning evidence. For example, responsibility for funding the Underwater Escape Training Unit (UETU) was subject to drawn out debate between DE&S and DIO. Although the final ABC 13 outcome included UETU, continued monitoring will be required to ensure funding is secured within the core programme. Similar monitoring will be required for the high-g training centrifuge capability that was recovered in ABC 13[11] to ensure RtL reduction is delivered in a timely manner. Finally, Navy Command derived a funding solution for Merlin Mk 2 Night Vision Goggles that overcame an initial block to multi-year projects at Decision Point 2. Looking forward, it is highly encouraging to see that FinMilCap has included a specific section on Air Safety in the ABC 14 instructions and that they produced a comprehensive ASMP.

Industry Oversight and Approval

22. There is an overall positive trend to audit findings across industry. A number of companies have demonstrated proactive commitment to meet MRP requirements ahead of required timescales, at their own cost. The inevitable problems with adoption and adherence to the MRP for some contracted organizations are being solved by appropriate engagement with the MAA. Our graduated Sanction process has proved effective at encouraging senior management to react in the small minority of organizations that have continuously fallen short of the required standards. In the worst example, we restricted the scope of military flying the company was allowed to perform until it could demonstrate competence for more challenging activities and develop a satisfactory governance regime.

23. **Maintenance Approved Organization Scheme (MAOS)**. MAOS ensures the management, technical resources and quality assurance arrangements of contracting organizations maintaining MOD aircraft on Government property are demonstrably adequate to provide the required output to performance, time and cost. Assessments of the 47 approved MAOS organizations were generally positive with some weaknesses. All findings were categorised as minor. Trend analysis revealed that common weaknesses were in: the acceptance of components, policies for safety and quality and the failure to employ root cause analysis when attempting to close audit findings. MAA desk officers are engaged with contractors to ensure that the situation improves and that compliant and considered responses are provided against audit findings.

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[10] Single Integrated Capability Priority List (SICPL).

[11] The centrifuge capability was put at risk by the PR12 de-scoping of the Defence Operational Training Capability (Air), of which it was part.

24. **Design Approved Organization Scheme (DAOS)**. DAOS assesses commercial and MOD organization's competence to design military aircraft, repair schemes and components and issue a Certificate of Design. An increased level of audit scrutiny of Design Organization SMS identified that some PTs have accepted industry Certificates of Design without adequate supporting safety assessments. My staff are working with the PTs to address this issue. That aside, all findings from audit of the 72 approved DAOS organizations were minor with some weakness. Trend analysis identified a lack of adherence to internal processes and poor management of records, albeit the latter has generally improved over the past year. There has also been an improvement in the timeliness and completeness of responses. The majority of DE&S TAAs continue to push to have their design organizations DAOS approved where appropriate, although some have required 'encouragement' through our audit corrective action process. The commodities PTs in particular have increasingly recognized their need to comply in this respect and have engaged with the MAA to establish criteria to better identify when DAOS approvals are required.

25. **Flying Organization Approval**. Implementation of ASMSs across the defence flying contractor community has been inconsistent. Some forward leaning contractors are in an advanced stage of maturity, but others have made little attempt to implement functioning ASMS. The concept of ASMS has been misconceived by some as merely an evolution of Maintenance Quality Systems, and they have sometimes struggled to delineate Operating risks. Creating Air Safety linkages across boundaries with adjoining organizations has been a key challenge for Industry Flying organizations and will remain a focus of MAA activity. Despite these criticisms, contractor flying in the DAE is significantly ahead of a similar initiative in the UK and European civil domain. An interview programme at 2* level is now well underway to ensure that the Accountable Managers (Military Flying) (AM(MF)s)[12] nominated by companies are able to discharge their responsibilities. They are expected to demonstrate progress in establishing a robust Air Safety governance structure and have clear accountabilities for their flying organizations. The first candidates have been endorsed and the programme should complete towards the end of 2013 subject to industry engagement. Where endorsement has been given, the maturity of ASMS has been the critical factor in determining their ability to meet their responsibilities as specified in the regulations. The personal responsibility for Air Safety held by the AM(MF)s has been made more explicit and clear in the updated regulations.

AIR SYSTEMS CERTIFICATION

26. **Type Certification**. The Military Air Systems Certification Process (MACP) has matured during its second year and has been applied to a further 4 projects bringing the total to 8. Despite some reservations about the additional workload on DE&S, MAA scrutiny has identified a number of potential risks that otherwise might have passed undetected. An example is Avenger, which now limits its maximum speed to meet the military standard for resilience against windscreen bird strikes. The MAA has issued its first Statement of Type Design Assurance (STDA)[13], pointing to an increased level of assurance to the Release to Service Authority[14]. I anticipate that the first full Type Certificate will be issued in early 2014[15]. Good equipment investment dating back over

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[12] The Accountable Manager (Military Flying) regulation was introduced in Aug 12.

[13] Tailored application of the MACP will normally result in the issue of a STDA and is underpinned by a TCR. The STDA will identify the extent to which the MAA has been able to assure the certification evidence provided and detail any areas where the evidence is unavailable, incomplete or inadequate.

[14] STDA issued for Merlin Mk2 and BAe 146QC.

[15] Most likely to be A400M.

recent years has led to an unprecedented number of new platforms requiring certification which has put both the DE&S and MAA Certification resource under pressure. Work to improve the Design Requirement Defence Standards (00-970, etc) and harmonize them with their European equivalents should deliver benefits from FY 15/16.

27. **Type Certification Since Last Report**. Since last year's report, one new air system and 5 major modification were certified:

a. **Wildcat HMA**. Certification of this Royal Navy variant of Wildcat drew heavily on evidence and experience from the certification of the Army variant and, as such, proved relatively straightforward.

b. **Merlin HM Mk 2**. The Merlin Mk 2 constitutes a Major Change[16] to the original design replacing most of the Avionics and Mission Systems as an obsolescence capability sustainment measure. It presented few problems and, as a result of the positive engagement with DE&S, the MAA was able to issue its first STDA.

c. **BAe146 C Mk 3**. This aircraft was introduced through the Urgent Operational Requirement (UOR) process. MAA resource supported a Release to Service (RTS) in compressed UOR timescales without compromising the levels of assurance associated with conventional procurements.

d. **Voyager KC Mk 2 (2-Point Air-to-Air Refuelling)**. Voyager is a military certified version of the Airbus 330-200, which can be operated on the civil register when the military role fits are removed. The KC Mk 2 variant was certified in the air transport and AeroMed roles last year and in the 2-point Air-to-Air Refuelling[17] (AAR) role in May 13. Disappointingly, despite the commendable efforts of the relatively small DE&S Voyager team, previous recommendations raised by my staff remained unresolved for 12 months, contributing to a 3-month delay in the RTS of Mk 2 AAR.

e. **Voyager KC Mk 3 (3-Point Air-to-Air Refuelling)**. The Voyager KC Mk 3 variant introduces a third refuelling point that will enable it to support large aircraft and alleviate the strain on the ageing Tristar and VC10 fleets. The PT produced a comprehensive safety argument to support Certification and overcome previous concern regarding the ability of the fuselage refuelling system (the third refuelling point) to meet UK Military design requirements. The RTS for Voyager KC Mk 3 was authorised in Aug 13 although a number of low-level recommendations, generated by the RTS assurance activities, will need to be addressed over the coming months.

f. **Puma HC Mk 2**. The Puma Mk 2 will extend the life and improve the capability of the aircraft. This modification replaces the power plant, introduces a new flying control system and a more modern suite of avionics in a glass cockpit. Certification was delayed initially because of the need to develop more evidence on the integrity of the new flying control systems but concluded satisfactorily and led to RTS of the aircraft in Aug 13.

28. **Future Certification**. New Air Systems and Major Changes undergoing certification in the coming period include:

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[16] Design changes that have significant potential to affect air safety must be categorised as Major by the TAA and notified to the MAA who will carry out independent certification of the change using the MACP.

[17] 2-point AAR uses drogues suspended from the wings and is suitable for small aircraft such as Tornado and Typhoon. 3 point AAR adds a drogue suspended from the tail which can be accessed by much larger aircraft.

a. **Airseeker**. Airseeker was procured as a Foreign Military Sales (FMS) case at risk against the then UK Certification procedures (Dec 2009). Indeed, due to the age of the design [redacted] on the RC-135W aircraft, the risk identified at the time of the Main Gate Business Case (MGBC) has now been realised. Accordingly, as it will not be possible for the aircraft to comply with the current MACP (or the pre-MAA Certification regulations), an alternative Airworthiness Strategy was agreed between the MAA and DE&S in Dec 2011. This alternative means of demonstrating safety of the aircraft based on a comprehensive safety argument will need to be shown by DE&S and the RTS authority. MAA staff will provide assurance of the safety case and subsequent RTS. It is likely that the Secretary of State will be approached to release DE&S from compliance with the MACP.

b. **Watchkeeper RPAS**. Type Certification has been a challenge, largely because of difficulty in demonstrating compliance with recognised and approved design standards, particularly for the aircraft software. The evidence for Certification has now been submitted to the MAA and it is expected that a Type Certification recommendation (TCR) will be provided in due course. This will enable the programme to proceed to the next stage with the issue of the Release to Service recommendation.

c. **A400M**. Preparatory work towards the Military Type Certification of this aircraft has progressed well and notably the aircraft achieved EASA Civil Type Certification in Mar 13. MAA scrutiny will focus on the Military 'deltas' from the civil certification that allow, for example, parachuting and operating from unprepared airfields. It is likely that A400M will be the first UK Air System to receive a full Military Type Certificate.

d. **Lightning II**. I have no particular concerns about Type Certification of the design at present [redacted]. Additionally, the complexity of the case may offer some challenges during the next period as we progress towards a RTS around 15/16.

e. **Maritime Aviation**. The MAA Maritime Aviation team deliver independent assurance to DHs that aviation hazards and safety risks are managed to a level compliant with JSP 430 (Management of Ship Safety and Environmental Protection)[18]. This activity is focussed on Ship-Air Integration and considers the design, construction, maintenance and operation of aviation capable warships and Royal Fleet Auxiliary platforms. We have issued 'Certificates of Safety – Aviation' to 21 platforms this year. We are developing regulations with the Maritime Regulator to codify maritime and aviation DH responsibilities, and better frame the release statements for ship-air operating combinations and DE&S processes.

REGULATION

29. The initial publication of the MRP removed much of the 'byzantine complexity' cited in the Haddon-Cave report and started the process of removing duplication and making regulation easier to read. Further review aims to ensure that each regulation is articulated in full, bringing together content from legacy Regulatory Articles and other publications to aid comprehension and remove any ambiguity. Work to separate regulations from guidance material, manuals and acceptable means of compliance is well advanced. This

[18] Through delegated authority from the Naval Authority.

next round of restructuring will run parallel with continuous improvement activity to produce new and amended regulation that mitigates RtL. Greater levels of consultation with the regulated community will be the watchword for going forward. Improvements to the MRP made this year are below:

a. **Accountable Manager (Military Flying) (AM(MF))**. The introduction of the AM(MF) regulation in Aug 12 marked a significant forward step in MAA regulation. It mandated the identification of an accountable individual at the appropriate level within industry flying organizations to take personal responsibility for RtL.

b. **Military Airworthiness Review Certificates (MARC)**. The MARC is an annual review that will provide assurance to the DH of the configuration control and the material state of individual aircraft; failures of which contributed to the loss of Nimrod XV230.

c. **Continuing Airworthiness Regulations**. The Continuing Airworthiness regulations have been re-written to remove the duplication and contradictions between articles written for military organizations and those for contractor organizations.

d. **Aerodrome Operator and Defence Airfield Manual**. Regulation has been developed to identify responsibility for the provision and assurance of Defence aerodromes. This regulation completes the triumvirate of Senior Operator, Chief Air Engineer and Aerodrome Operator that collectively support the aviation DH.

e. **Air Traffic Management (ATM) Equipment Regulation**. Safety analysis and SIs have exposed potential for RtL caused by faulty and inappropriately designed ATM equipment. In response, regulations have been developed to 'certify' new ATM equipment.

International Regulation

30. The MAA's role in international aviation regulation enhances Defence reputation and ensures we are able to exploit worldwide best practice and seek opportunity for the Department. In Europe, the MAA plays a leading role in the Military Airworthiness Authorities (MAWA) Forum as agreed by Ministers. Engagement in the MAWA European Military Airworthiness Requirements (EMAR) delivers harmonization, enhances collaboration and protects national regulatory sovereignty. Harmonization of regulations through mutual recognition of other nations MAAs offers the potential for significant financial savings and reduces programme risk with collaborative projects (such as A400M).

31. **Recognition**. We are using the EMAR process to achieve formal 'recognition' with a number of countries, enabling us to rely on evidence produced by their regulatory and assurance activity to reduce procurement costs and avoid programme delays. Recent recognition of the French Continuing Airworthiness regulator (DSAÉ[19]) will enable the A400M team to share a common spares pool, without which the programme would have been considerably more expensive. Recognition will also simplify the process and reduce the resources required to approve contracted maintenance organizations in Europe. Further approvals in support of A400M are planned with DGAM[20] in Spain in Oct 13. The

[19] Direction de la Sécurité Aéronautique d'État / French Directorate of the State of Aviation Security (DSAE), which cover all military and other government aircraft (e.g. Police).

[20] Dirección General de Armamento` y Material / Directorate-General of Armament and Equipment.

ASIC[21] agreed in Jun 13 to use the European Recognition process in principle. Work to recognize the US Army Airworthiness Authority will assist future procurement programmes and help the US Army exercise their duty of care to US troops flying in UK helicopters and transport aircraft.

32. **Licensing of Technicians**. The EMAR work is scheduled to introduce licensing for aviation technicians[22] from mid 2014 and the UK has already agreed in principle[23] to implement this requirement in the MRP. The introduction of a clearly defined and common minimum competence standard for all maintainers working on military aircraft will remove the current uncertainty, and ensure that all levels are suitably qualified and experienced. The intent is to introduce a system tailored to meet the needs of the MOD rather than bring civilian licensing into the military environment. There may be a degree of commonality and this overlap has the potential to bring benefits for both the MOD, UK Defence Industry and individual maintainers.

33. **Approving Training Organizations**. The requirement for maintenance training organizations to be approved[24] will be reflected in the MRP, bringing UK technical training into the 'controlled environment' of Continuing Airworthiness regulation over the medium term. Close liaison with the Single Services and DE&S will be key to delivering value and efficiency from the introduction of technician licensing and training organization approval.

34. **Added Value to Defence Sales**. A welcome outcome of our continued international engagement, and the reputation we have earned, is the significant dividend it provides to UK defence industries. Robust Air Safety assurance, applied through UK Military regulation, is viewed as adding value to exported UK Defence aviation products. For example, the MAA having provided support and advice in the case of recent helicopter exports and on the ship air interface of Naval corvettes. Furthermore, our participation in EMAR development and our mutual recognition work to support the introduction of aircraft into UK service will directly reduce the costs of our exports making them more attractive to foreign customers.

AIR SAFETY CULTURE

35. As part of the strategy to develop our Air Safety culture we have built upon the ideas expressed in the Haddon-Cave report with the help of industry and academia. The measurement of effectiveness of culture has always been a difficult, subjective and potentially emotive issue, though doing so assists in establishing a meaningful picture of Air Safety in the DAE. The conditions set by the MAA have encouraged the strongest growth in the DH organizations where effective, and in some cases exceptional, leadership has driven down the number and significance of non-compliance against regulations. However, more needs to be done to ensure complete cultural penetration to the lowest levels and in some specialised areas. While our Junior Officers, NCOs, airmen, sailors and soldiers are as good as they have ever been, the expanding demands on their time are leading to normalized acceptance of practices that are not always challenged. Therefore, progress is more sporadic at this level and considerable work is required to replicate success seen at the more senior DH level. As mentioned previously, progress at

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[21] Air and Space Interoperability Council comprising Australia, Canada, UK, New Zealand and USA. It was established in 1947 to improve interoperability of military aviation forces (Navy, Army and Air Force) of those countries.

[22] Military Aircraft Maintenance Licence (MAML), introduced under EMAR Part 66 (Licensing). This licensing will be extended across Europe.

[23] Through agreement to the Basic Framework Document and its Roadmap.

[24] EMAR Part 147 - Aircraft Maintenance Training Organisations.

all levels in the DH-facing organizations is highly variable and will require concentrated effort to improve.

36. My assessment shows a continuing improvement, but I do not yet have a sense that a positive and engaged Air Safety culture is either universal or self sustaining. Without constant pressure, the trajectory could quickly reverse for 2 interrelated reasons. Firstly, while many individuals have bought into Air Safety, it is competing with other pressures and all too often they simply do not have the capacity to do what is needed. Secondly, and perhaps more significantly, some have yet to make the 'leap' to recognize that capability and safety are inextricably linked rather than separate and competing activities. Air Safety must instinctively lie at the heart of our operational capability. This is particularly important with today's small fleets which need to be carefully preserved; long gone are the days of large fleets backed by significant attrition buys. For example, if one of the 3 Airseeker aircraft is damaged, even on a temporary basis, there will be no means to regain the shortfall in capability which will be significant. Accordingly, I have much left to do to sell the message that Air Safety does not constrain but enhances and preserves operational capability.

AIR SAFETY TRAINING

37. The demand for Air Safety training suggests a positive attitude by those destined for Air Safety appointments. Furthermore, there is a constant need to evolve the courses, driven by the increasing level of awareness and knowledge across the community. The MAA is now responsible for 50 independent lines of training activity, including DH courses, the supervision and authorization of flying training, a comprehensive suite of technical courses, and Human Factors (HF) and Defence Aviation Error Management System (DAEMS) training. As an example, the MAA has developed an Accountable Managers course for industry to help them comply with the new AM(MF) regulations. Accountable Managers have similar responsibilities to DHs and, as such, will become pivotal in assuring Air Safety in this part of the regulated community. Industry's appetite for this course is evidence of how seriously they take their responsibilities, which bodes well for their continuing development of Air Safety culture. Delivery of training is beyond the scope of many regulators, but continuing negotiations with the Defence Academy have repeatedly confirmed that using in-house MAA resource and ensuring senior MAA engagement is the most cost effective and productive solution.

AVIATION SERVICE INQUIRIES

38. Two aviation SIs have been convened during this reporting period. The first involved a MAC between 2 Tornado GR4s over the Moray Firth on 3 Jul 12, where 3 of the 4 aircrew were sadly killed. The second SI involved a crash landing of a Tucano Mk 1 at RAF Linton-on-Ouse on 8 Jan 13, where both crew members escaped without injury. There has been one Coroner's Inquest into the fatal accident involving the Royal Air Force Aerobatic Team (RAFAT) the Red Arrow's Hawk at Bournemouth on 20 Aug 11. The Coroner made specific mention regarding the thoroughness of the MAA's SI report. In addition, the Lincolnshire Coroner has now set a date of early Jan 14 for his Inquest into the death of a second RAFAT pilot following an ejection seat incident at RAF Scampton. The MAA has completed the SI into this accident and the report is going through the final staffing process and will remain on limited circulation until after the Inquest. We are also assisting the Principal Procurator Fiscal for the Scottish Fatalities Investigation Unit - North as he investigates the death of the 3 Tornado crew members. The SI Panel is expecting to

complete its report by the end of Oct 13 and it is possible that this accident may lead to a Scottish Fatal Accident Inquiry.

39. **SIs Published this Year**.

a. **Puma Mk 1 (05 Jul 11)**. The aircraft was damaged beyond repair following an emergency landing after an engine cowling, that had not been secured correctly, came loose in flight and damaged the rotors. The crew escaped with minor injuries. The most significant recommendations related to aircrew training and authorizations, documentation and organizational risk management.

b. **Falklands Fuel Contamination (between 25 Jun and 05 Aug 11)**. Various failings led to a contamination of fuel supplied to military and civilian passenger carrying aircraft at Mount Pleasant. It was only by chance that the particular contaminant did not result in the loss of an aircraft. The 53 recommendations, primarily relate to supply chain management, process, regulation, testing, training and risk management.

c. **Red Arrows Hawk (20 Aug 11)**. The pilot was killed following a crash caused by g-induced impairment. A range of contributory factors included short-comings in techniques, procedures, reporting, design, training and risk management. The recommendations related mainly to training and facilities to reduce the probability of another death due to g-impairment.

d. **Hermes 450 (2 Oct 11)**. This RPAS crashed due to a technical fault but the SI uncovered 13 contributory factors and made 68 recommendations, mainly relating to competency, qualifications, training, currency, airmanship and captaincy. As reported under the DH Oversight section, the Army have made significant improvements to address the recommendations.

e. **Lynx Mk 7 (1 Dec 11)**. A catastrophic engine failure and subsequent fire led to loss of the aircraft but fortunately the crew escaped with no more than minor injury. The most significant aggravating factor was a failure to prioritise a modification as a 'safety mod'. Consequently, the modification that could have prevented the fire and loss of aircraft had not been embodied on this aircraft. Recommendations included SQEP manning levels and qualifications.

f. **Chinook Mk 2 (7 Apr 12)**. An excessive rate of decent during a practice dust landing in the US led to the loss of the aircraft. Fortunately, the crew escaped with no more than minor injury. The most significant of the 14 contributory factors and 26 recommendations related to aircrew currency, supervision and authorization.

g. **Squirrel Mk 1 (12 Apr 12)**. A trainee pilot badly damaged his aircraft in a heavy impact with the ground while practising quick stop procedures. The panel found 10 contributory factors and made 22 recommendations relating to training, supervision and aircrew guidance.

40. **SI Themes**. The 7 SIs published this year have resulted in 223 recommendations and corrective action has been both positive and productive. Recommendations are only closed by the MAA when actions have been completed with auditable evidence. I have also refined our accident investigation processes, with the aim of enhancing the timely flow of information and engagement between the MAA and DHs. One such initiative is specifically examining ways to provide maximum assistance to the DH with regard to any

'return to fly' decision. I am also looking at timescales for the completion of SIs which are, in my view, taking too long to conclude. Finally, the same pan-platform themes identified last year feature just as strongly in the 7 SIs published this year, namely: supervision, standards, training and risk management:

a. **Currency**. Eight SIs found poor management of currency which allowed aircrew to conduct sorties that were inappropriate.

b. **SI Recommendations**. Of particular concern, 5 SIs identified factors that had been the subject of previous SI recommendations that had not been addressed adequately. These recommendations will now be tracked to conclusion by the Military Air Accident Investigation Branch who will make them visible to the whole community in a dedicated section of Air Safety Information Management System (ASIMS).

c. **Risk Registers**. Contributory factors in 9 SIs were known risks that had not been communicated to the relevant DH. In the majority of cases this related to a lack of resources or SQEP.

d. **Authorization of Flights**. Six SIs cited the lack of due care and attention during flight authorization. The FLCs are addressing this risk and I will ensure it features in our oversight activity.

e. **Fatigue**. Five SIs found that poor supervision and planning of crew rest allowed fatigue to contribute to the accident.

f. **Engineering SQEP**. Three SIs found lack of engineering SQEP to be a factor. This is further evidence of the SQEP shortfall strategic risk I have already discussed.

g. **Aircrew and Engineering Documentation**. Poor documentation of aircrew training and engineering, compounded by inadequate supervision featured in 7 SIs. In addition to ensuring MAA oversight activity reinforces its focus on the standard of documentation, I will encourage the FLCs to do the same in their 1st and 2nd party assurance activities.

KNOWLEDGE EXPLOITATION

41. Ability to exploit available knowledge was a founding principle of the MAA operating model. This was reinforced in the MAA External Audit Panel report, which highlighted the potential danger of not making best use of available data. Our campaign to develop and populate various knowledge exploitation tools makes us more effective at generating Air Safety knowledge from disparate information sources. This creates synergy between the various regulating activities and informs the targeted selection and timing of audits. Individual audits are preceded by a comprehensive briefing process to identify the most likely areas of non-compliance enabling early and appropriate intervention. Our latest area of work looks at the maturity of Human Factors analysis within the regulated community, to identify best practice and increase the effectiveness of this important activity across the environment.

42. **Air Safety Dashboard (ASD)**. The ASD sits front and centre of our knowledge exploitation campaign. This tool, used for the identification of areas of concern across the regulated community, has developed significantly since our last report. The pilot version of the ASD was time consuming to populate and has now been replaced by a web-based

version that automates the production of reports and escalates areas of concern against agreed criteria. It also provides improved analysis functionality and a more robust decision audit trail. The scope of the ASD has been expanded to include Type Airworthiness and DH-facing organizations, in addition to DHs, PTs, and industry flying, maintenance and design organizations. As well as providing an overview of RtL across the DAE, the output of the ASD is a key influencing factor in the development of the risk-based assurance plan. While still maturing, the ASD has already proven to be a powerful tool that identifies risks that cut across the DAE and ensures internal MAA Divisions are aware of issues outside their main area of responsibility. The net effect has been greater coordination of regulating activity and a more efficient assurance strategy that focuses resources on the areas that carry the greatest RtL.

43. **Air Safety Information Management System (ASIMS)**. The continued growth of occurrence and accident reporting is a key indication of the strong reporting culture across the DAE; 800 reports per month are added to the 38,000 already in the ASIMS database. Occurrence reporting is nothing new in aviation, but ASIMS has transformed the value of reporting by: providing coherence across aircraft types and reporting domains; enhancing the analysis of data; and reducing the administrative burden associated with submitting and managing reports. The net result is a virtuous circle of improved reporting that is one of the most significant enhancements to Air Safety in recent years. The tool has been so successful that I would commend a similar approach to other areas of Defence. It is clear to me that we have only begun to scratch the surface of the potential for analysis of the data collected by ASIMS. My staff will continue to seek ever more imaginative and innovative ways to exploit this wealth of data to enhance Air Safety assurance. Analysis during this reporting period has enabled a quantification of the risks associated with MAC, highlighting the high level of risk, particularly in Afghanistan and especially around Camp Bastion. [redacted]

44. **MAA Website**. The MAA website has continued to enhance the regulated community's access to the MRP and other key information. Importantly, the Rich Site Summary (RSS) functionality introduced in Jan 13 ensures subscribed users are alerted immediately to changes in the MRP. The analytics service on the website is able to provide detailed statistics regarding the number of users accessing the website in terms of numbers, and global location of the users. This has allowed a better understanding of the international interest in the MAA, and supports our aspirations to be recognized as a worldwide exemplar. For example there has been significant foreign interest coming from the United States, France, Chile, Canada, Germany, Saudi Arabia and Denmark. The website is now sustaining over 5000 visits per month and is a useful indicator on the health of interest from the regulated community. Although the time span of the website usage statistics precludes substantive trend analysis, the analytics tool will, in time, allow for detailed study of website visitor activity with a view to influencing future prioritization of regulation re-write and review. The website will continue to develop as a vehicle to highlight Air Safety issues and will become an important capability for use in 'nudging' the regulated community towards safer practices.

MAA ORGANIZATION AND RESOURCES

45. Current Departmental financial pressures are likely to result in the MAA military headcount reducing by 10% in 2015, with further civilian reductions in 2018. The MAA Operating Model is maturing[25] and our activity is increasingly being prioritized against our

[25] Achieved 90% Manning in Dec 12.

understanding of RtL in the regulated community. Prioritization may drive greater efficiencies allowing the MAA to maintain its current level of assurance at this reduced headcount. However, given the potential reach of the strategic risks I have identified, the need for vigilance in Air Safety is clear and further reductions could recreate the conditions of which the Haddon-Cave report was so critical.[26]

46. **DG Safety**. There has been debate within the Department over the organization that could best offer oversight of the entire MOD safety regulatory areas. The 2012 Scholefield Study concluded that the Department's safety regulators should come together under the concept of DG Safety by Apr 13 – this was rejected by stakeholders but they acknowledged that, providing the aviation environment had matured sufficiently, DG MAA's post could potentially provide 3* oversight of the wider community in Oct 14. As indicated earlier in this report, the end of 2014 will provide a perfect storm for regulation including the reform of DE&S, redeployment from Afghanistan and return to contingency. This would be a demanding period to make the transition to a DG Safety regime, particularly as the maturity of the air domain is still somewhat fragile. Nonetheless, and timing aside, there are likely to be benefits for the MOD from moving to a single safety organization. It might be that a single management solution could be pursued in Apr 15, without providing significant disturbance or distraction to the Department's safety regulators. Beyond this first move, Defence could identify its final regulatory solution when other defence change initiatives become clearer.

SUMMARY

47. In summary, Air Safety across Defence has made substantial progress over the last 12 months, particularly across the DH community who, through much hard work and leadership, are largely compliant with the MRP. Indeed, despite the shortage of SQEP, the DHs are now realising the benefits of their own work and there are numerous examples where RtL has been driven down. However, much remains to be done, largely but not exclusively among the DH-facing organisations where a lack of SQEP and other priorities is preventing significant progress. Indeed, the widespread shortfalls in SQEP lead me to making an overall assessment of **Limited Assurance**, while recognising that much is being done to ease this issue. During the coming period, I will ensure that the MAA provides engagement and support to the operational community as they ensure RtL is made tolerable and ALARP. In particular, I will pay close attention to the risk of MAC, the aggregated effect of defence change initiatives, shortfalls in SQEP and the Op HERRICK redeployment. I will also contribute to the evolution of the Materiel Strategy and the DG Safety organization. Of importance, I will encourage the DH-facing organizations to play their full role in Air Safety. There is little doubt that the combination of operational and organizational change over the next year or so will require much vigilance if we are to drive down and sustain low accident rates. Finally, I restate my pledge to CJO that air safety will not get in the way of his operational freedoms but will contribute and enhance our operational capability.

[26] 'Airworthiness in the MOD became the casualty of the process of cuts, change, dilution and distraction commenced by the 1998 Strategic Defence Review.' – Mr Haddon-Cave QC (now Hon. Mr Justice Haddon-Cave) The Nimrod Review, 28 October 2009, The Stationary Office. Chapter 13.