



Ministry of Defence

DEFENCE ENVIRONMENT AND SAFETY BOARD

SAFETY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

REPORT 2008

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STATEMENT OF ASSURANCE FOR SAFETY, ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT

1. A policy statement by Des Browne, Secretary of State on Safety, Health, Environmental Protection and Sustainable Development was issued in March 2008 and an updated version signed by John Hutton in December 2008. In April 2008, the Defence Board reaffirmed their commitment to safety by issuing a message to all staff.
2. As a result of changes agreed by 2nd PUS, a revised Governance Structure and Assurance Strategy for Safety, Environmental Protection and Sustainable Development¹ has been introduced. Assurance to the DESB is now provided by the Functional Safety Boards, whose processes also take inputs from TLBs amongst other sources of information. TLBs report performance against these areas directly through the Defence Balanced Scorecard.
3. All Functional Safety Board Chairmen are personally appointed by Letter of Delegation from 2nd PUS; their boards comprise key stakeholders from across the Department. Recognising the significant risks associated with the control of major accident hazards, a new Defence Fuels and Gases Safety Board has been created and reports here for the first time. In addition, the Sustainable Development and Environment Board report covers both sustainable development and sustainable procurement issues.
4. Key issues from 2007 were included in the DESB action plan for 2008, which was updated to include actions arising from the recommendations of the DE&S Safety Improvement Working Group report. Good progress has been made in some areas but others remain subject to resource constraints.
5. Although the Land Systems Safety Board, the Defence Ordnance Safety Board and the Defence Nuclear Environment and Safety Board report Substantial Assurance, the majority of contributors report Limited Assurance against effective management of safety risks and compliance with safety management systems. Specific concerns with potential for high impact on operational capability are recorded, particularly in areas of aviation safety, where five of the MOD Aviation and Regulatory Safety Board's eight reported 'strategic' risks concern resources or aspects of operations in theatre, and in Navy Command's ageing fleet of single-hull tankers.
6. As last year, when SIGNIFICANT WEAKNESS was reported, providing an overall assessment of assurance continues to be difficult and, on balance, the DESB reports:

LIMITED ASSURANCE

against the management of Safety, Environmental Protection and Sustainable Development in 2008.

¹ DSC-02-03-01 / RTM-11-08, dated 15 Jul 08

SUMMARY OF FUNCTIONAL SAFETY BOARD REPORTS

7. Assurance ratings given in this report are in accordance with DIA Classifications (shown at Annex A).

Defence Land Systems Safety Board – SUBSTANTIAL ASSURANCE

8. The LSSB report provides Substantial Assurance of Land Systems, but recognises that failure to implement either the controls identified in the LSSB Risk Register and/or audit findings may adversely affect the achievement of Board's and TLB objectives and put S&EP management systems at further risk. Key areas of concern to the LSSB being addressed include: eliminating RTAs and workplace transport fatalities; promulgating lessons learned; and, ensuring the safe use of equipment on operations.

9. In HQ LF significant efforts have been made this year to improve its performance in Land Systems safety. In Apr 08, LF published their new O&A Statement for managing safety, and followed this by: strengthening safety delegations within the Command; establishing new safety posts in Arms and Service Directorates; providing training and road shows across the UK; and, improving the engagement with theatre in managing equipment safety when on operations. A growing engagement by the chain of command in road safety, and a highly acclaimed post op tour campaign, has seen a dramatic fall in the number of RTAs both on and off duty. In 2009, HQ LF will lead in developing better ways of ensuring cross-FLC engagement in Land Systems safety.

Defence Ordnance Safety Board – SUBSTANTIAL ASSURANCE

10. Although offering Substantial Assurance on Ordnance Munitions and Explosives (OME) safety and environmental management, the DOSB report that, for the Explosive estate, the residual risk remains as a significant weakness, with the potential for the risk to impact on operational capability as well as safety. Key areas for attention in 2009 are: the condition of the explosives estate; pressure on equipment funding; behavioural issues; and, the challenges of providing OME assurance to some aspects of operations.

11. Noting CJO's responsibilities as an 'owner' of operational risk, PJHQ has established an OME Safety Committee which will provide regular reports to the DOSB and provide a key focus for in-theatre operational risk management. In 2009, the DOSB will continue to develop and implement the end-to-end assurance regime and reporting framework. From Autumn 2009, National Occupational Standards (NOS) will be used by the MOD civilian community in lieu of the OME functional competence framework. Work will continue to develop and implement an effective process for assessing and managing effects of OME on the environment.

Defence Nuclear Environment and Safety Board – SUBSTANTIAL ASSURANCE

12. The DNESB Chairman reports that an acceptable standard of nuclear and radiological safety and environmental protection has been maintained in the operation and delivery of the defence nuclear programmes. None of the DNESB's issues reflect an immediate safety or environmental concern but, taken together they pose the risk that it will become increasingly difficult to maintain that the defence nuclear programmes are being managed with due regard for the protection of the workforce, the public and the environment. The key area of concern is the maintenance of a sustainable cadre of suitably qualified and experienced staff, encompassing RN engineers, MOD civil servants and industry partners. A significant cause of this concern is the inadequacy of resources (ie funding) available to Duty Holders, coupled with poor justification of organisations responsible for delivery, making them vulnerable to arbitrary reductions.

13. Duty Holders have generally improved compliance with control of change requirements and have maintained continued progress in the development and use of safety case methodologies applicable to all aspects of work in the nuclear propulsion programme.

Ship Safety Board – LIMITED ASSURANCE

14. This opinion is built on an evidence-based, end-to-end assurance, structured to follow the SSB's end-to-end safety argument. Key issues of concern to the SSB include: the shortage of Suitably Qualified and Experienced Personnel (SQEP) across the business; the continuing need to improve reporting of and learning from accidents and incidents, in particular the need for improvements to the Incident Reporting and Information System (IRIS); and, that change management initiatives across the maritime domain have been insufficiently cohered to ensure no reduction in safety status.

15. The SSB reports continued implementation of safety system improvements following the conclusion of the key DE&S Safety Improvement Working Group (SIWG) study in Apr 08. Improved governance and management processes in DG Ships and DG Submarines have been established, leading to closer working between DE&S and NCHQ; and the Maritime Environmental Steering Group has been re-established, with a renewed focus on delivering environmental policy.

MOD Aviation Regulatory and Safety Board – LIMITED ASSURANCE

16. As reported last year, the impact of operations on helicopter safety, with major Human Factors elements and a strong read-across to fixed wing operations, remains the MARSB's highest concern. Key areas of concern are: insufficient aircraft availability affecting both sustained operational

commitments and the necessary associated training; Brownout² (added this year as a major operating hazard for helicopters in Iraq and Afghanistan); inadequate protection and facilities in operational accommodation; and, risks of aerial collision.

17. Recommendations from a Study into Flight Safety in Operational Theatres are being actioned and there has been a concerted effort by Release to Service Authorities to reduce the risk inherent in temporary aircraft clearances such as Service Deviations, Clearances of Limited Evidence and Urgent Operational Requirements. DARS are leading an initiative to harmonise military and civil flying display regulations and the existing comprehensive system of assurance within the Defence Aviation Safety Management System has been expanded to ensure its compliance with the requirements to provide end-to-end assurance.

Defence Fuels and Gases Safety Board – LIMITED ASSURANCE

18. The DFGSB reports that, across the estate, MOD cannot demonstrate compliance with relevant HSE/EA/SEPA legislation, notably the Dangerous Substances and Explosives Atmospheres Regulations 2002 (DSEAR), since hazardous areas are ill defined and appropriate risk assessments have not been completed. Furthermore, this year's licensing inspections show that there has been no improvement in the condition of the fuel and gas related infrastructure and there have been a number of gas related incidents this year which have raised concern about the management of gas safety.

19. The DFGSB reports that concerns over the contractorisation of operating facilities overseas are only mitigated by the ability to reprovision with military staff, although they consider that this capability is at a critical point. The increased use of a variety of different gases on operations has resulted in an increase in the number of significant incidents; this is being addressed through the introduction of appropriate training courses.

Occupational Health and Safety Board – LIMITED ASSURANCE

20. The amount of assurance evidence provided to the OHSB by TLBs and TFAs over the last year has increased, with reports from all areas at each OHSB meeting. Issues such as the inability to learn lessons and specific problems with management of asbestos and noise show that implementation and corrective action still require improvement in many areas; hence these have been allocated amber rating for assurance in the OHSB Risk Table. Taken together with the number of HSE interventions the overall level of assurance remains as Limited.

21. A common approach to improving asbestos management on the MOD estate has been agreed with TLB CEStO, CESO and DE industry partners; coherence in the management of asbestos across RPCs will be in place by

² Brownout: loss of aircrew visual references in final phase of landing due to recirculation of sand (Whiteout if caused by snow).

Oct 09. DMSD report action being taken on Noise Induced Hearing Loss, the incidence of which is rising; as an interim solution, dual ended hearing protection was introduced in Oct 07 and the Defence Hearing Working Group (DHWG) will coordinate further actions on assessment, monitoring and occupational consequences.

Sustainable Development and Environment Board – LIMITED ASSURANCE

22. This report also includes input from the Sustainable Procurement Programme Board (SPPB). The SDEB reports concerns about data quality, particularly for waste management which is preventing the establishment of a baseline against which to measure reductions. There are differing views amongst SDEB members over what constitute the key risks but these include: the funding priority of work to reduce CO2 emissions across the estate and on improving the condition of Sites of Special Scientific Interest; embedding SD and Sustainable Procurement (SP) principles in acquisition processes, including whole life costing, and relationships with suppliers; and, our failure to react to emerging environmental legislation which could constrain our operational capability.

23. Considerable effort has gone into putting in place firm foundations for sustainable development; the SD Report and Action Plan, Sustainable Development Strategy and Climate Change Strategy were all approved by the Secretary of State and published in December 2008. Sustainable procurement concerns are being addressed by the SPPB.

AREAS OF CONCERN

Progress Made Against 2007 Concerns

24. Last year for the first time concerns were included in a DESB Action Plan. A commentary on the Action Plan is at Annex B. The topics listed below are now being addressed and managed as normal business, but in some instances may still have high residual risk:

- a. Safety and Management System weaknesses.
- b. Land contamination and infrastructure concerns

25. Other issues reported by the DESB in the 2007 report remained as concerns during 2008, and are included in the discussion below.

Outline of 2008 Concerns

26. Improvements in management and reporting systems are revealing a greater number of areas for improvement than had previously been recorded. For 2008, FSBs report the following issues with significant or greater residual risk:

- a. Lack of suitably qualified and experienced personnel.
- b. Failure to comply with legislation.
- c. Failure to learn from accidents/incidents.
- d. Failure to eliminate RTAs and Workplace Transport fatalities.
- e. Aircraft availability in the current ongoing operational climate.
- f. Structures and manning levels not meeting requirements of operational commitments.
- g. Inadequate protection and facilities in operational accommodation.
- h. Risk of Fast Jet/Commercial Air Traffic aerial collision.
- i. Contractorisation of operating facilities.
- j. Poor condition of the explosives and fuels estate.
- k. Gas explosion due to inappropriate use, storage and handling.
- l. Poor data quality for sustainable development.

Of these, the most significant [as agreed by the DESB Working Group of FSB and TLB reps] cross cutting concerns are discussed below, together with other specific yet significant areas of concern.

Cross Cutting Concerns

27. Lack of Suitably Qualified and Experienced Personnel. This is of highest concern and, as last year, is exacerbated by funding constraints and organisational change. Business change programmes that have either been ineffective or that have failed to take the necessary affirmative action to promote specialist skills have impacted on SQEP. A shortage of SQEP is reported across DG Ships, DG SM (including a 14% shortfall in MOD civilian nuclear SQEP), in AT/ATO manning levels within Land Command and in other areas, both in safety management and technical. In the assurance community and against an expanding defence nuclear programme, DNSR's resource remains unchanged; enhancements proposed to address this during 2008 have been unsuccessful, and the Chairman of the DNESB considers it essential that this is addressed in 2009 in order to meet the IAEA safety requirement that nuclear regulatory bodies shall have adequate staffing and financial resources.

28. Failure to Comply with Legislation. There is an overarching need to demonstrate coherent management of compliance with legislation. Concerns arise from failure to track new and emerging legislation, non-compliance with

existing legislation and failure of the Department to provide appropriate and effective guidance on the implementation of legislation.

29. Failure to learn from accidents/incidents. Many separate incident reporting routes exist, resulting in ineffective distribution of information. At present IRIS does not replace all these systems and is not currently capable of providing incident feedback for safety improvement. Actions already in hand by TLBs and others will be informed by the DESB Accident Investigation Working Group which aims to draw up a protocol (possibly a model against which to test existing investigation practices) which takes into account all stakeholders in the lessons learned process. The way forward should allow for more general safety lessons to be learned, such as by taking issues that fall out of accident reports and End of Tour reports and feeding them into Capability Integration Working Groups.

Specific Concerns

30. Failure to eliminate RTAs and Workplace Transport Fatalities. The LSSB reports that there have been four fatalities related to Land Systems during 2008 involving vehicles in either RTAs or a workplace setting. Three deaths were due to vehicle rollovers on operations or in training and comprehensive vehicle training is now provided on drop down, rollover and evacuation drills. Further work is in hand to update policy and instructions on workplace transport safety. Despite these tragic losses, deaths using Land Systems equipment have significantly reduced from last year. RTA fatality statistics are included in the data in Annex C.

31. Aircraft availability in the current ongoing operational climate. The MARSB report a real concern that insufficient aircraft are available to achieve the high levels of sustained operational commitments as well as the UK based training requirements, including pre-deployment and continuation training. UOR work on aircraft, lack of available technicians and pre-deployment leave further aggravates aircraft availability levels. All of the above significantly impacts in-theatre aviation safety.

32. Structures and manning levels not meeting requirements of operational commitments. The MARSB report that Planning Assumptions are at variance with the pattern of current operations and the structures and manning levels are insufficient to meet the commitment on a long term basis. This is exacerbated by a reduction in 2nd line respite tours for air and ground crews.

33. Rotary Wing environmental training. The MARSB report insufficient opportunities to conduct realistic pre deployment environmental training to meet the challenging aviation conditions on current operations. The provision of environmental training is a core issue both for flight and safety and operational capability.

34. Risk of Fast Jet/Commercial Air Traffic aerial collision. The MARSB continue to report concern over actions to mitigate the likelihood of aerial collision between a fast jet and commercial air traffic (CAT). A higher

percentage of fast jet activity is now being flown at medium altitudes and, with changed patterns of CAT flying, the fast jet AIRPROX rate against CAT is at best remaining steady despite reducing overall military flying hours. Without further mitigation, the risk is likely to increase in line with forecast civilian traffic levels. The CAA also view this as a top risk. A funded programme sponsored by DEC TA to develop a collision warning system on Tornado GR4 is currently in its assessment phase, with Main Gate planned for 2010 and ISD for 2014.

35. Poor condition of the explosives and fuels estate. The condition of the explosives and fuels estate, largely due to significant under-investment, is of primary concern to both the DOSB and the DFGSB. The aging estate, associated infrastructure and its contracted out maintenance responsibility is putting MOD at an increase risk of liability to regulatory enforcement. A number of MACR explosive establishments are working under Action Plans (comparable to HSE Improvement Notices) and two have yet to be certified as meeting the requirements of JSP 498. Some establishments are effectively at the end of their useful life and, if licences are removed and buildings are closed with a resultant reduction in storage, the impact will result in a loss of operational capability.

36. Poor data quality for Sustainable Development. The SDEB reports concerns about data quality, in particular for waste management where poor quality data is preventing the establishment of a baseline against which to measure reductions. Work is in hand to rectify this, but it will take time to amend the legacy contracts across the estate to provide the data.

Performance Data to Support Assurance

37. Fatalities and Accident rates.

a. Reporting. Fatality statistics up to Q3, including for RTAs, already reported separately and directly to the Defence Board are shown at Annex C.

b. Air Accidents. The MARSB report that the headline 3-year rolling average accident rate across all aircraft types has increased slightly during this period, driven by an increased rate for all aircraft categories with the exception of helicopters. There were fewer accidents in-theatre in 2008 than 2007, but the in-theatre accident rate for helicopters is over twice that for non-operational flying. There are a number of factors responsible for the helicopter accidents in theatre, including the highly demanding terrain, climate, operational environment and the routine requirement for aircraft to operate to the limits of their performance envelopes. Much effort has already been applied, with some success, to reducing risks to helicopter operations in theatre.

38. Enforcement. There were no Crown Censures in 2008. Details of Improvement Notices, Prohibitions, Enforcement Notices and Internal Regulator Action are given at Annex D.
39. Pollution Incidents. Details of pollution incidents are given at Annex D.
40. Scientific Risk. The Science Innovation and Technology (SIT) TLB has abolished the Scientific Risk management cell as part of their 'streamlining' process this year. While this does not mean that scientific risk is wholly ignored, it does mean that there is no central focus and hence that no consolidated report is available.

ASSURANCE SUMMARY

41. Building on last year, there have been encouraging improvements in a number of areas where previous concerns are now being managed as routine business. Visibility of safety and environmental concerns at senior management level has continued to improve, and the Defence Board published its own message on Health and Safety to all staff in Apr 08.
42. Inputs to this report cover the activities of FSB and their sub committees, TLBs,(including their assurance functions), and draw upon FSB plans and risk registers. Concerns at TFAs are covered only by exception.
43. FSBs have established end-to-end assurance frameworks in order to report assurance against Safety and Environmental Management Systems across all Defence Lines of Development; however, for most, evidence provided by leading performance indicators is still lacking. Some assurance reporting is more mature than others and work will continue in 2009 to further develop and implement end-to-end frameworks. Improvements in management and reporting systems, reinforced by the findings of DE&S's SIWG and other studies, are revealing a greater number of areas for improvement than had previously been recorded. These are magnified by ongoing pressure for resources and on head count.
44. An SD Strategy, Climate Change Strategy and SD Report and Action Plan were published in Dec 08, but work must continue to establish better quality and baseline data and to embed SD and Sustainable Procurement principles in acquisition processes. Work is ongoing to ensure that the implementation of SD policies and strategies does not constrain future Departmental aspirations for operational capability. A DIA audit of SD in MOD to be undertaken in 2009 will provide further assurance.
45. Although last year we reported that the majority of contributors reported Substantial assurance of effective management of health and safety risks, increased transparency of safety and safety-related concerns (and a change to the reporting process) has resulted in some reductions in the level of assurance reported by FSB Chairmen this year. Perhaps unsurprisingly, in some areas, the enduring nature of current sustained operations has brought safety concerns into sharper focus.

46. Cross cutting concerns reported for 2008 are:
- a. Lack of Suitably Qualified and Experienced Personnel and the resources for them.
 - b. Failure to comply with legislation.
 - c. Failure to learn from accidents/incidents.

Impacts on operational capability arising from these concerns are largely being addressed, but some reported specific maritime and air safety concerns already have the potential to affect operational capability in the very near term and carry reputational risk. Until critical, the effects of inadequate funding of safety and safety-related concerns are typically less visible than manpower shortages but should nevertheless be taken into account in the planning round.

47. Once again, providing an overall assurance assessment has proved particularly difficult and carries the risk that vital details will be lost. Cross cutting concerns remain unchanged and many of last year's specific areas of concern are repeated this time round. On balance, the DESB reports:

LIMITED ASSURANCE

against the management of Safety, Environmental Protection and Sustainable Development in 2008.

PRIORITIES FOR 2009

48. The DESB agreed that:
- a. The following would be added to the existing Action Plan as priorities for 2009:
 - Further to embed and resource SQEP within people programmes.
 - To improve the way in which we learn from accidents/incidents.

And that, as a priority, further work would be undertaken to prioritise specific actions in the following broad areas:

- The need to reduce the risks to safety by the provision of adequate equipment for training for operations;
 - The need for infrastructure and estate across MOD (particularly for Explosives and Fuels) to meet statutory safety requirements.
- b. The SDEB should take forward the issue of better data quality, particularly for waste.