



Ministry of Defence

## **MINISTRY OF DEFENCE**

### **DEFENCE ENVIRONMENT AND SAFETY BOARD**

### **SAFETY, ENVIRONMENT AND SCIENTIFIC RISK**

### **REPORT 2006**

20 February 2007

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## **EXECUTIVE SUMMARY**

The Defence Environment and Safety Board (DESB) Annual Report provides a summary of significant safety and environmental management risks, using inputs from Duty Holders in the TLBs and TFAs, and from the Functional Safety Boards. It also includes performance data on fatalities, regulatory interventions, and significant pollution incidents, as well as a summary of the process for identifying scientific risks related to safety or environmental protection.

The quality of the reports from duty holders and FSBs is improving, reflecting increased awareness of risk management principles and practice. Taken together there are clear improvements in management of some of the risks, but the underlying safety and EP culture still remains weak, except in the high hazard areas such as nuclear and aviation safety. An effective safety culture underpins the mitigation of many of the risks listed in this report, and continues to pose the greatest challenge to improving safety and environmental performance.

Overall, the management of safety and environmental protection is assessed as “minor weakness”.

## **INTRODUCTION**

1. The DESB Annual Report provides formal assurance to the Defence Audit Committee (DAC) that the Department is adequately managing its safety and environmental risks, and provides a short summary of significant emerging scientific risks in relation to safety and environmental management. In turn, this enables PUS to sign off this area of management in his Statement of Internal Control.
2. The Report also provides assurance on the extent to which the Department is achieving effective safety and environmental protection and highlights areas of specific concern by identifying common themes and risks. It encompasses contributions from the Duty Holders responsible for implementing safety and environmental policy and standards, and from the Chairmen of the 7 policy-making Functional Safety Boards (FSBs). These contributions form an audit trail for the conclusions in this report, which itself necessarily includes only limited detailed evidence.
3. Reporting is risk-based, with the risks discussed and agreed by a Risk Tracking Group (RTG) consisting of stakeholder representatives from the Duty Holders (including Trading Fund Agencies), FSBs, and Scientific Risk. The RTG has met three times in the past year, developing and refining the risk evaluation process to allow a more quantitative analysis of the risks.
4. The improved methodology of the process for evaluating the risks has resulted in some changes to those reported this year. These are explained further below, but of most importance is the realisation by Duty Holders and FSBs that lack of an effective safety culture in many areas of the Department is not, in itself, a risk - it is a fact. Moreover, an effective safety culture, enabled by several initiatives currently underway, would be a major mitigation for many of the risks listed below. Further development of the risk evaluation process will concentrate on clearer articulation of the risks, improvements to the process for quantifying risks, and linking the risks to high level objectives in the Departmental Plan.
5. To provide a strategic view of the Department's performance on safety and environmental management, an external consultant was commissioned to undertake a Strategic Gap Analysis (SGA). The work was undertaken in 2006 and involved data gathering, interviews with senior staff and workshops to determine current performance. Though the risks listed in this DESB report take no account of the SGA work, there are clear similarities in the overall conclusions from the two reports. This provides additional confidence that the risks identified are broadly right in terms of their significance and priority. The findings of the SGA were published in Jan 07.

## **KEY ISSUES/RISKS**

6. The top 10 safety and environmental risks and issues, as identified and prioritised by the RTG, are discussed below.

### **RISK 1: Leadership/commitment to Safety & Environmental Protection**

7. Leaders, both Service and civilian, need to afford sufficient and demonstrable importance to safety and environmental protection (EP); unless they do, there is a significant risk that there will be only limited improvement in performance. For example, there were 26 deaths due to accidents (17 of which were RTAs) in 2005/06<sup>1</sup>. There have been 17 Crown Censures since 1995, with two more due in 2007 related to incidents in 2003 and 2004. Senior managers must demonstrate commitment by managing the delivery of safety and EP with the same rigour as they do other outputs, including placing and resourcing SMART objectives; regularly reviewing progress; and taking firm action before targets are missed.

8. There are examples of good practice in demonstrating commitment in specific areas which could be spread across the Department. These include: addressing and supporting relevant conferences and training events; supporting improvement initiatives; increasing exposure of safety and environmental issues at senior management meetings; and, discussing such issues with civilian and military personnel during visits. Additionally, recent initiatives through TLB Boards in the CTLB, RN and Army to raise awareness amongst senior management of their safety responsibilities should be applied more widely. These should be supplemented by a dedicated safety briefing for one Stars and above, to be rolled out from mid-2007. This will explain what senior managers need to do, how to do it, and what risks they face by failing to act.

### **RISK 2: Safety & EP Management Systems Weaknesses**

9. There are two elements to this risk:

- Inadequacies in the overall management system (such as measuring and reviewing performance), and
- Failure adequately to implement the systems and processes which are already in place (such as risk assessments, control of contractors and environmental management).

There has been some progress in producing and reporting performance metrics in the Defence Balanced Scorecard, and these are being further developed over the next year by inclusion of metrics for Sustainable Development.

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<sup>1</sup> Health and Safety Incidents among MOD Personnel 2005/06. DASA

10. In some areas, implementation of key policies and standards remains poor. Lessons learned from Crown Censures have identified missing or inadequate risk assessments and lack of supervision as root causes of accidents, and audits consistently identify inadequate control over contractors operating on the Defence Estate as a risk. An example of where both the system and its implementation are weak is in the management of workplace transport, demonstrated in incidents leading to impending Crown Censures. There have also been three workplace transport fatalities in the last 9 months: a RLC soldier crushed beneath a Saxon vehicle and a RAC soldier crushed beneath CVR(T), both on Op HERRICK, and a RLC driver crushed beneath a DROPS vehicle on Salisbury Plain. This problem is being addressed, in part, by clearer definitions of roles and responsibilities, particularly at Junior Officer and NCO level.

11. In addition, Director Royal Armoured Corps (DRAC) is revising AFV Standing Orders to improve safety, and Defence Supply Chain Operations and Movement (DSCOM) is reviewing the governance of workplace transport safety. Separately, DGS&S is reviewing high level management arrangements for safety, including looking at the relationship and interfaces between the FSBs and those areas of the Department responsible for delivery (including the new Defence Equipment & Support organisation).

### **RISK 3: Road Traffic Accidents (RTAs)**

12. RTAs remain a significant cause for concern, principally for the Army. In 2006 there were 9 on-duty fatalities from RTAs<sup>2</sup>; of these, 7 were in the Army. Overall, in 2006, there were 59 (subject to further scrutiny and possible revision) vehicle related fatalities, including 20 whilst using privately owned motorcycles – up from 14 in 2005. There is a possibility that increased risk-taking by Service personnel returning from operational tours could be responsible for some of these fatalities.

13. HQ Land has been actively pursuing solutions to reduce RTAs, including targeted radio and TV advertisements, and road safety campaigns. DASA are undertaking more detailed analysis of causation and human factors behind RTAs, to enable action to be targeted at areas of highest concern. This work will focus particularly on the pattern of RTA fatalities among personnel returning from operational tours. Additionally, CESO(A) has requested DD Science and DAPS to undertake a study to look at the circumstances behind RTAs, including the degree to which 'operational service' had weighted perceptions of risk of personal injury.

14. In 2005, MOD Road Traffic Accidents (RTAs) were down by 685 – an 8% reduction on our 2004 total (see Table 1). On-duty RTA fatalities reduced from 13 in 2004 to 11 in 2005, and off-duty fatalities declined from 49 to 41 during the same period. However, during 2005 RTAs accounted for 33% of all Service deaths.

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<sup>2</sup> Provisional figures from Vehicle Accident Trend Investigator, DLO.

**Table 1. Summary of Defence Road Traffic Accident Statistics 2005<sup>3</sup>**

	2004	2005	% Change	5 Yr Average	% Change
Road Traffic Accidents	8,466	7,781	-8.09%	8,418	-7.57%
RTA rate per 100K miles	2.46	2.36	-4.07%	2.25	+4.89%
Fatalities On-Duty	13	11	- 15.38%	13	-15.38%
Fatalities Off-Duty	49	41	- 16.33%	46	-10.87%
On-Duty Injuries Serious	81	58	- 28.40%	70	-17.14%
On-Duty Injuries Slight	631	471	- 25.36%	663	-28.96%
Invaliding (Medical Discharge)	75	77	+2.67%	78	-1.28%
Actual Costs of Insurance Claims	£11.98M	£12.95M	+8.10%	£10.11M	+28.09%
Estimated Cost of MOD Vehicle Repairs	£5.01M	£4.88M	- 34.94%	£5.58M	-12.54%
Estimated Total Losses	£135.92M	£142.80M	+5.06%	£125.52M	+13.77M

The number of reported injuries for 2005 is also below the 2004 figure; however, the number of medical discharges resulting from RTAs actually rose from 75 in 2004 to 77 in 2005, an increase of 2.7%.

#### **RISK 4: Lack of Suitably Qualified and Experienced Personnel**

15. This risk concerns the shortage of adequately experienced and trained safety and environmental advisers, and the need to retain skills and experience in engineering management posts where safety or environment-related decisions need to be made. The risk was reported by at least six of the twenty stakeholder areas, with little apparent progress from last year.

16. The effect of this skills gap is to weaken the capability and capacity to deliver safety and environmental policies and standards. In some cases, safety and environmental tasks are put out to contract, and there is a lack of intelligent customer input to ensure that effort is proportionate to risk and that key issues are adequately addressed. Efforts are under way in specific areas (Ship Safety, Nuclear Safety/Radiation Protection, Ordnance Safety) to define the total population of relevant posts and to produce metrics illustrating gaps in both quality and quantity. For example, the DNESB has identified that, even with a steady state demand, MOD must recruit several hundred civilian staff into the nuclear programme over the next 10 years – of the order of 5 times the current recruitment rate. Meanwhile, DPA continue to deliver specific training courses for IPT Leaders, safety specialists, and safety-related team members to mitigate the risk as far as possible in the short term.

<sup>3</sup> JSP 485 Edition 2005.

## **RISK 5: Land Contamination**

17. Land contamination continues to be reported by many stakeholders as a significant risk in terms of potential financial liability for remediation, and associated reputational damage. The risk, and hence the cost, is hard to quantify as there is incomplete information on the nature and extent of the contamination. However, indicative costs for the remediation of RAF Portreath, for example, are between £12M and £25M, depending on the nature of the contamination found. Additionally, SIT currently funds work to investigate novel scientific methods for land remediation, which amounts to £20k-£40k per year.

18. The process of undertaking Land Quality Assessments (LQAs) on the MOD estate continues, and DE are developing metrics to improve their understanding of the risk. Over the last two years, LQAs commissioned by DE have cost around £4M. DE are also assessing possible chemical weapon (CW) contamination at 11 high priority sites, using desk-top studies and intrusive sampling. Resources will need to be identified and allocated as appropriate if progress is to be made.

## **RISK 6: Infrastructure**

19. Though there have been improvements in some areas of the Defence Estate (eg Single Living Accommodation), the condition of some of MOD's explosive facilities at Longtown, Easttriggs and Kineton remains a cause for concern. There is a risk that their condition could result in reduced use, or even loss, of these facilities due to safety and environmental failings. Medium term and long term strategies have been produced by the Defence Storage and Distribution Agency (DSDA), but adequate funding will be required for upgraded or new facilities<sup>4</sup>. Additionally, the lack of adequate facilities for the decommissioning and disposal of nuclear submarines remains a reputational risk, though the actual safety and environmental risks are very low.

20. There are other examples of infrastructure problems. There is the possibility that the range complex at Lydd will be lost as a result of rising sea levels. The cost of re-provisioning facilities at Lydd, should the ranges be lost, would amount to around £180M. The Defence Training Estate has articulated the importance of the Lydd Range as part of the consultation process on an Options Paper produced by the Environment Agency (EA) - a decision is expected in 2007 on the preferred option. Also, there is a health risk related to staff potentially exposed to asbestos at RAF Akrotiri on Cyprus. CJO has taken action to mitigate the risks.

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<sup>4</sup> The necessary remedial action for Longtown and Easttriggs has been estimated at a cost of £124M; within EP STP07, £31M has already been allocated and a case has been made to the DMB for the balance of funding to be available over the next 3-4 years.



## **RISK 7: Sustainable Development**

21. The Government has made a firm commitment to deliver Sustainable Development (SD) and expects the public sector to lead by example, particularly in its procurement processes. There is a risk that if MOD fails to take necessary action to embed sustainable development into policy making, planning and resource allocation, procurement and people management, it will fail to deliver on its SD targets, with reputational damage to the Department and more widely across Government. There may also be missed opportunities for financial savings from reducing carbon emissions by investing in energy savings measures and waste recycling. The implications of climate change for the Defence Estate (the example of Lydd range above has already shown potential costs) is also a long term, but significant risk to MOD's training capability.

22. To mitigate these risks, responsibility for delivery of SD will be placed on TLB holders through targets in the Defence Balanced Scorecard. The MOD's SD "Champion" is 2<sup>nd</sup> PUS, who chairs the Interdepartmental Sustainable Procurement and Operations Board, tasked with taking forward the revised targets on *Sustainable Operations on the Government Estate* and sustainable procurement in Government. He also currently chairs the MOD's own Sustainable Procurement Steering Group.

## **RISK 8: Failure to Learn from Incidents/Accidents**

23. This has two underlying causes:

- The first is a failure to report and record incidents (including near misses) and to fully analyse the resulting data. There is evidence from DASA statistics that there remains extensive under-reporting in some areas, though the new incident notification cells in some TLBs are going some way to addressing this issue.
- Secondly, accident investigations do not always identify the real or root causes of accidents and incidents.

Taken together, there is a risk that lessons are not being learned and that an accident in one management area will be repeated elsewhere. One example where the same types of incidents are continuing to occur is environmental injuries, specifically cold-related. During the winter of 2005/6 there were approximately 300 new cases seen in the Cold Injury Clinic at the Institute of Naval Medicine and it can be expected that 30-40 of these cases will proceed to medical discharge. Action to mitigate this has been completed in the form of reviewing, re-issuing and re-communicating guidance. Recent figures for 2006/7 suggest that the situation this winter is significantly improved, but it is too early to be certain that cold injury is now under control. Moreover, failure to learn from accidents may be significant in the context of emerging Corporate Manslaughter legislation, as it could be argued that inability to learn lessons is a systemic and corporate failure.

24. The new Incident Recording and Information System (IRIS) will, subject to affordability, allow incident records and their accompanying investigation to be electronically co-located and linked to other data such as claims. A process to improve the quality and consistency of accident investigation, in line with Health and Safety Executive (HSE) guidance, has been produced and further work is underway more clearly to define roles and responsibilities.

25. At present, there are at least four separate sources of health and safety data: accidents and incidents on the Central Health and Safety Project (CHASP) database, service and civilian absence data from Joint Personnel Administration (JPA) and Human Resources Management System (HRMS) respectively, and health data from Surgeon General. There is currently very limited sharing or linking of this data to improve the quality of the analysis, and thereby learn lessons.

### **RISK 9: Lack of Clarity on Roles and Responsibilities**

26. Many Heads of Establishment and Commanding Officers still express concern about the lack of clarity with regard to their roles and responsibilities in respect of safety and EP. On many sites a '4Cs Duty Holder' has still not been appointed as required by MOD policy. Advice and guidance has been issued by DS&C and DE, but implementation is patchy. The lack of clarity at site level is being addressed by further seminars, workshops and on-site training by DE staff, already successfully trialled in Scotland. However, some Duty Holders and FSBs have identified that the problem goes wider than multi-occupier sites, with uncertainty extending to those responsible for wider market initiatives and Public Private Partnership (PPP) arrangements. Furthermore the HSE have identified lack of clarity of roles and responsibilities as a contributing factor in the incidents which have led to impending Crown Censures. Separately, as mentioned in Risk 2, DGS&S is leading on work to clarify interfaces and responsibilities at the strategic level.

### **RISK 10: Increased Operational Tempo Resulting in Air Accidents**

27. The Defence Aviation Safety Board (DASB) has identified concerns that aircraft (particularly helicopters) and their crews are at risk in high tempo operational theatres due to pressures arising from the enduring nature of these tasks and the level of resources available to support them. The effects of this are beginning to be felt in preparing for operations, returning from operations and in the operational training environment. This risk has already prompted an in-depth study into helicopter accidents on operations. Emerging findings, with strong read-across to fixed wing operations, point to a requirement for a re-examination of the level of resources required for deployed forces on what are, essentially, enduring operations.

## **GRAPHICAL SUMMARY OF RISKS**

28. Annex A shows, diagrammatically, how these risks impact capability or safety and environmental protection, together with an indication of the probable trend over the next 12 months.

## **SCIENTIFIC RISK**

29. The Science Innovation and Technology (SIT) contribution to Safety, Health and Environmental Management is at Annex B. It provides a summary of the process for identifying scientific risks and highlights significant issues.

## **PROGRESS MADE AGAINST RISKS**

30. Risks which have been removed from last year's list are as follows:

**(a) Safety Culture** As already explained, safety culture itself is not a risk and it has been removed from the Risk Table. However, the lack of an effective safety culture underpins most of the risks listed. It remains the greatest challenge for the medium to long term.

**(b) Equipment Safety.**

Specific risks reported last year (Bowman communications system, insensitive munitions, and aerial collision avoidance systems) have been reported as largely under control by those responsible for management of the risks.

**(c) Non-Compliance with Specific Legislation and Regulations**

Whilst several stakeholders reported this as a general risk, the Risk Tracking Group agreed that the risk elements of this issue were adequately covered within the more specific risks listed above.

**(d) Environmental Noise**

This risk has been discussed by the DESB Policy and Management Committee (PMC) during the reporting year and, whilst there has been limited progress in its mitigation, the overall view is that it does not currently pose a serious threat to capability. It should therefore be positioned just below the top risks, but would be a significant concern if developments in the civil sector (from either public or regulatory pressure) restricted training activities, such as the use of tank and artillery ranges and low flying of fixed and rotary wing airframes.

## PERFORMANCE

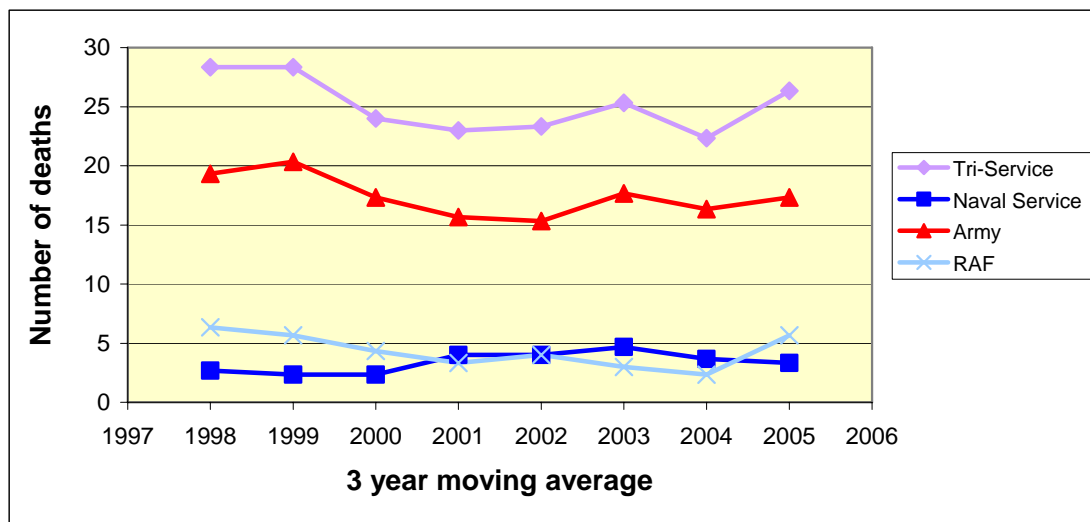
### Fatalities

31. Figure 1 shows data from DASA up to the end of 2006 for non-combat, injury-related, on-duty fatalities<sup>5</sup>. Figures 2 and 3 provide a breakdown of these fatalities on deployed operations (Fig 2) and excluding deployed operations (Fig 3).

32. The general upward trend in Fig 2 is due to a variety of causes. However, of 29 non-combat fatalities on operations from 2002 – 2004, 13 were due to RTAs. The sharp increase from 2004 – 2006 is due to the Nimrod MR2 crash in Afghanistan in September 2006, where 12 RAF, one Royal Marine and one Army personnel died.

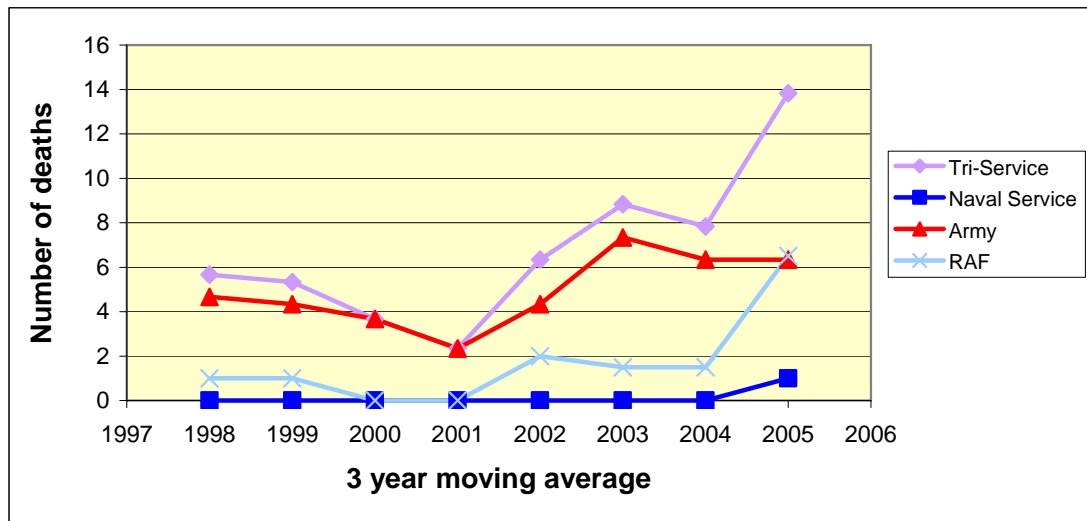
33. Figure 3 shows that the number of on-duty, injury-related deaths outside of operational deployments has been reducing steadily since 1999.

**Figure 1: Number of non-combat, injury-related deaths on duty (3 yr moving averages) (excluding suicides)**

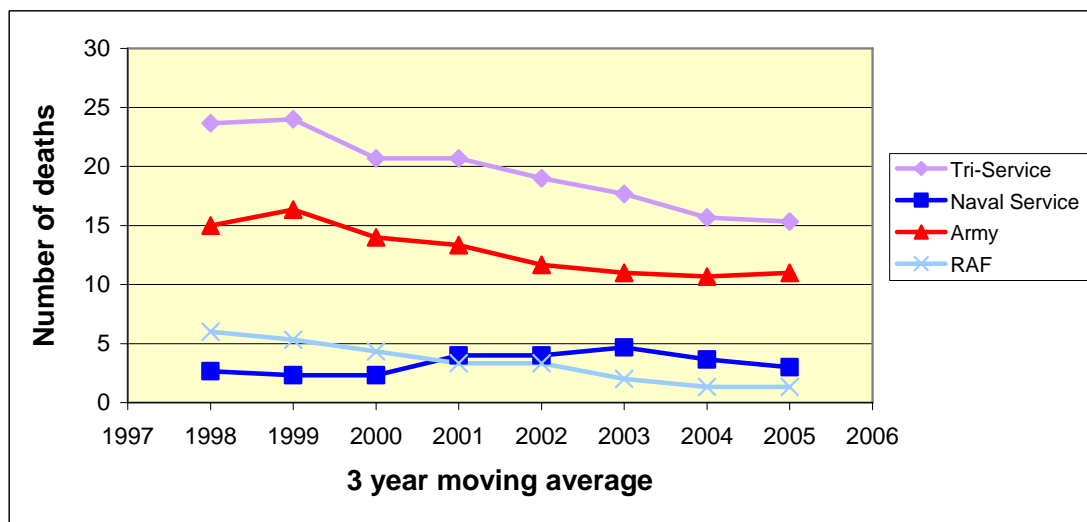


<sup>5</sup> Data for 2006 has not yet been validated; the fully validated data will be available from 30 Mar 07 when DASA publish the National Statistic release 'Deaths in the UK regular Armed Forces, 2006'.

**Figure 2: Number of non-combat, injury-related deaths on duty on deployed operations (3-yr moving average)**



**Figure 3: Number of injury-related deaths on duty excluding operational deployments (3-yr moving average)**



**Suicides**

34. The number of suicides and open verdicts recorded for Regular Service<sup>6</sup> personnel in 2006 was 6, half the number recorded for 2003. This figure also represents a reduction from the 9 recorded in both 2004 and 2005.

**Friendly Fire**

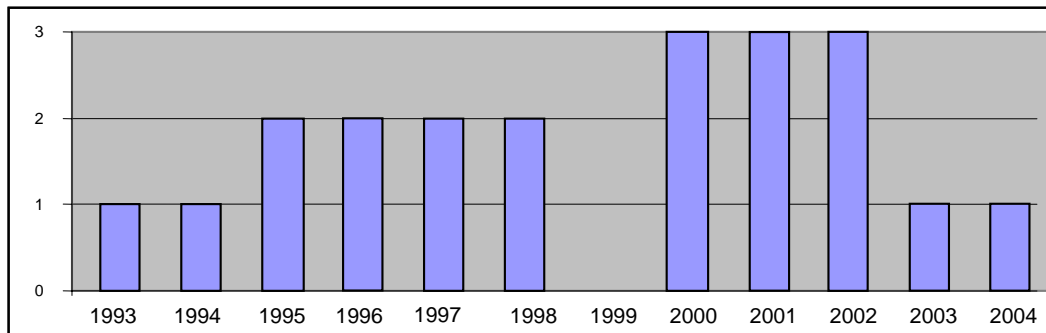
<sup>6</sup> Source: DASA.

35. Over the last five years there have been seven friendly fire fatalities in Iraq, all occurring in March 2003.

### **Crown Censures**

36. One Crown Censure was taken by the Department in 2006 (details are in Annex C, together with Improvement and Prohibition Notices), reflecting an incident 2001. Two further Crown Censures (from incidents in 2003 and 2004) will be the subject of a hearing in March 2007. Figure 4 shows the dates of incidents that led to Crown Censures over the last 12 years.

**Figure 4: Dates of Incidents that led to Crown Censure.**



### **Pollution**

37. A summary of pollution incidents is included in Annex C

## **ASSURANCE SUMMARY**

38. Four TLB level audits and one functional audit (Land Range Safety) were conducted by DS&C during this reporting period. The first two TLB level audits were conducted using a pure risk-based methodology, whilst the second two used a hybrid of risk and systems approach, developed to provide a comprehensive assurance assessment. The audits showed substantial assurance of effective management of health and safety risks and compliance with health and safety management systems, but that environmental management is less well developed, and the extent and impact of environmental risks not always well understood.

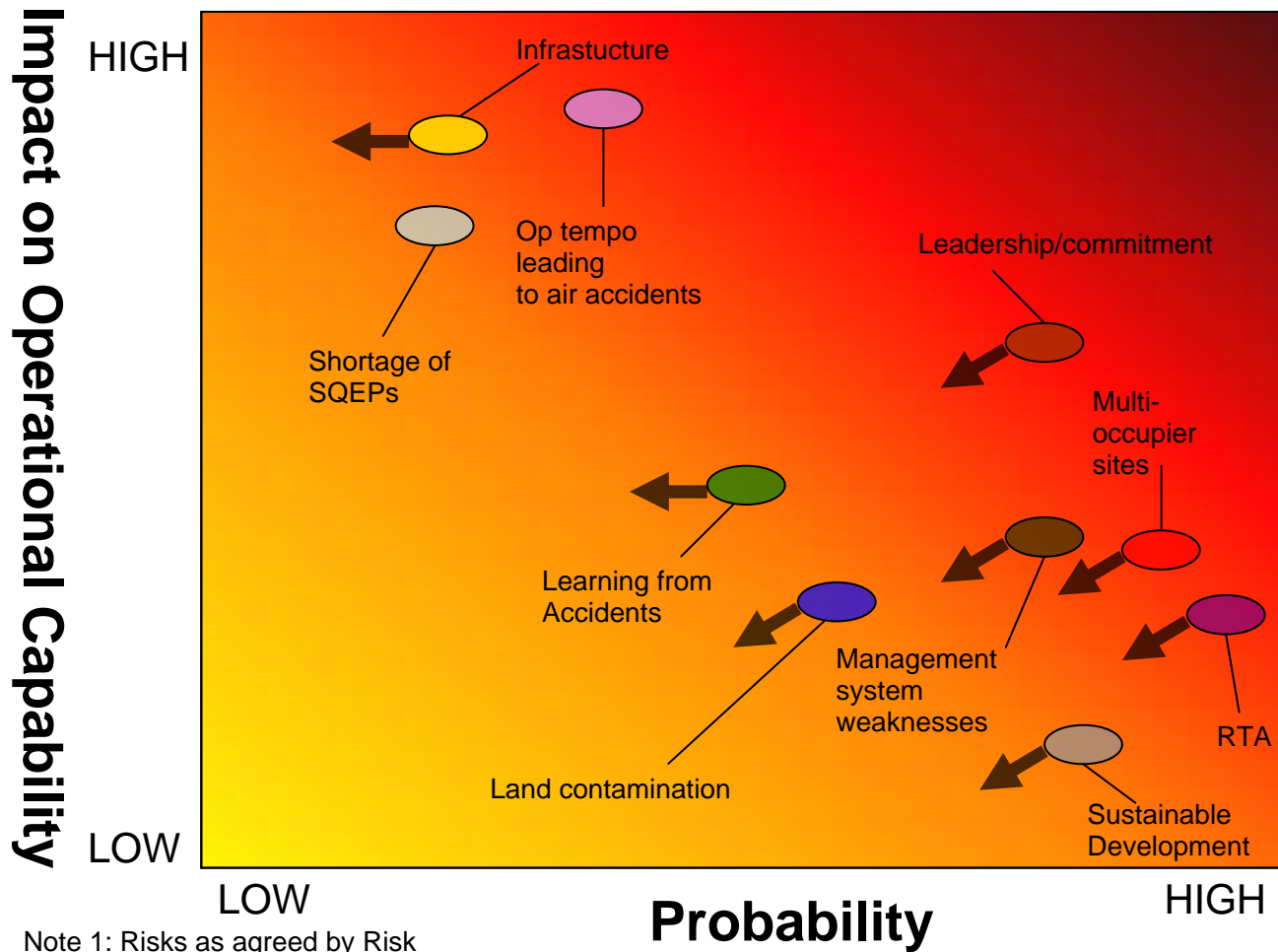
39. Annex D sets out the DS&C Audit programme for the next three years.

## CONCLUSIONS

40. The quality of the reports from Duty Holders and FSBs is improving, reflecting increased awareness of risk management principles. Taken together, they show improvements in management of some of the risks, but there is still scope for further improvement in the underlying safety and EP culture. An effective safety culture underpins the mitigation for many of the risks listed in this report, and continues to pose the greatest challenge to improving safety and environmental performance. Overall, we assess that management of safety and EP is at minor weakness (see below for definition). For the purpose of the definitions, the target would be a fully effective safety and environmental management system, with all risks under full control.

<b>GREEN</b>	Satisfactory	Performance on target
<b>YELLOW</b>	Minor Weakness	Small variation from target
<b>AMBER</b>	Significant Weakness	Significant variation from target
<b>RED</b>	Critical Weakness	Major variation from target

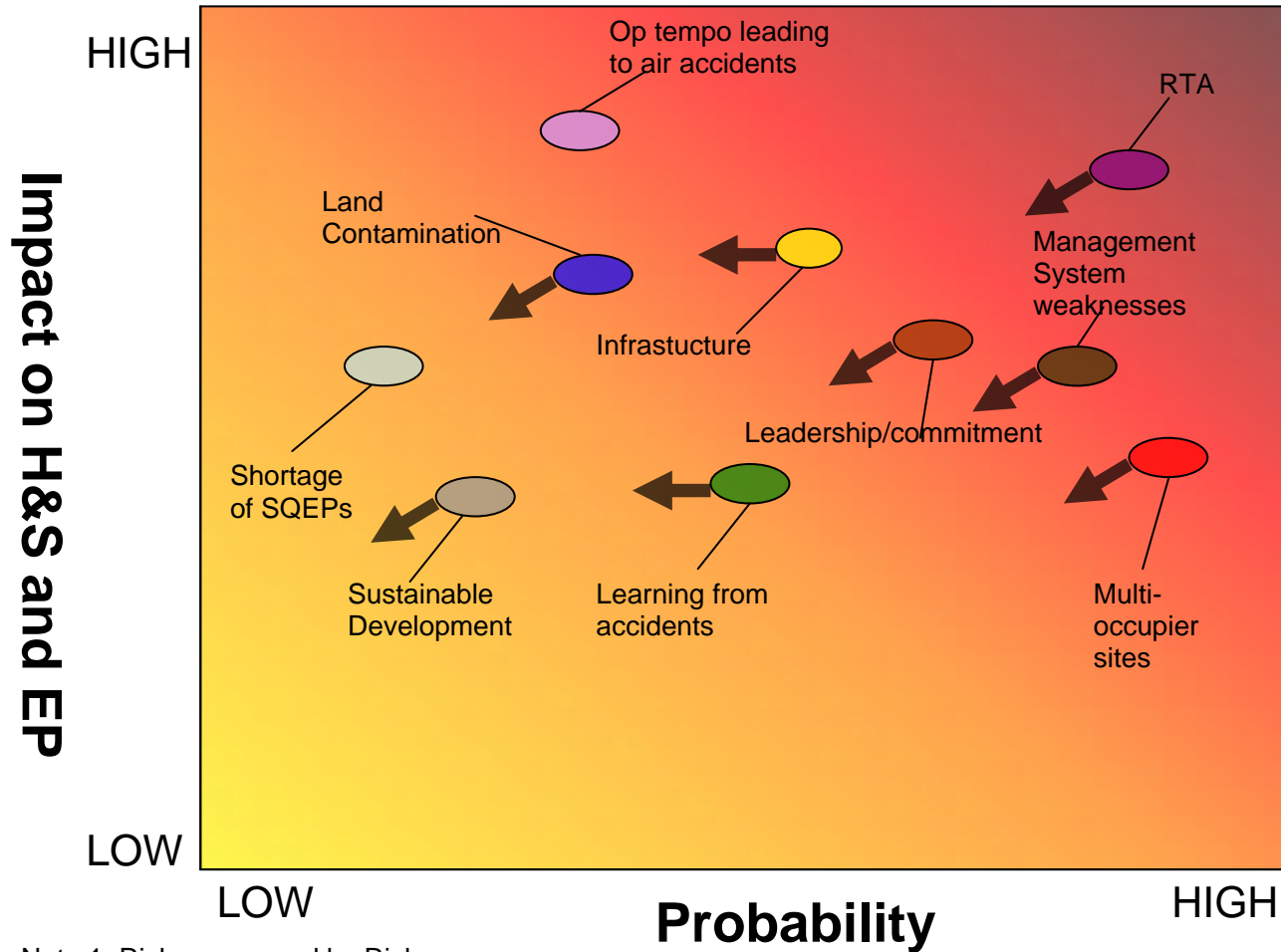
## Top Risks<sup>1</sup> to Capability – 2006 DESB Inputs



Note 1: Risks as agreed by Risk Tracking Group



# Top Risks<sup>1</sup> to Safety and EP – 2006 DESB Inputs



Note 1: Risks as agreed by Risk Tracking Group

### **SIT contribution to Safety, Health and Environmental Management.**

SIT supports Safety, Health and Environment management through the Research Programme, as directed by Output Owners, and specifically through the Scientific Risk management team. This latter team had previously reported directly to the DAC, but the DAC has directed that Scientific Risk should be reported through the DESB report.

The process for safety, health and environmental research does not differ from that for other research. If an Output Owner agrees the need for such research then, subject to prioritisation, it can be funded. Functional Safety boards are able to review whether they are suitably supported and this year, for instance, the DASB has taken a paper on this.

The process for Scientific Risk management is a more proactive element. It seeks emerging problems or potential problems and endeavours to address them early. It also seeks to encourage a wider culture of concern about these potential risks as it will often be impossible to identify or manage them centrally.

This has been reported to the DAC in the past. Significant issues highlighted or monitored by the above process are :

- a. Tungsten and its Alloys. Used in some munitions, tungsten alloys are an alternative to depleted uranium. Tungsten alloy fragments have caused aggressive tumours in laboratory rats but UK mainly uses a different alloy to that tested and other species have not been tested.
- b. Nanotechnology. An emerging technology with unknown health, safety and environmental effects. SIT are seeking to expand knowledge and awareness in this area. There will be an open 'science session' on nanotechnology risks in main building this year.
- c. Cetaceans and Sonar. Scientific research is supporting projects to improve understanding in order to minimise the effects of sonars on marine life.

There is only one fundamental problem with the process worth highlighting. For future problems the issue is almost always one of decision making under significant uncertainty. Such decision making is difficult because it often requires investment against an unlikely or at least unproven contingency. This is exemplified by the work on Tungsten-alloy munitions. A particular alloy has shown dramatic cancers when fragments were embedded in rats. At present there is no proven effect in man; nor is it clear whether different alloys will behave in the same manner. MOD barely uses the alloy at present,

but is beginning to adopt it (or others that may, or may not, be similar) and exposure to the risk is increasing rapidly. SIT are working to improve our knowledge in this area, but without a wholly precautionary stance we are moving towards a greater risk. It must be understood that while uncertainty remains there will be risk.

## **CROWN CENSURES, IMPROVEMENT NOTICES, PROHIBITIONS AND POLLUTION INCIDENTS – 2006**

### **Crown Censures**

- Army. HSE gave notice on 7 Feb 06 of two Crown Censures in respect of workplace transport accidents: Cpl Rees at Teesport on 22 May 03 and LBdr Wilson at Albemarle Barracks on 1 May 04.
- RAF. One Crown Censure was received by Air Officer Training PTC relating to the death of a Flt Lt in 2001. At the Censure hearing, the HSE acknowledged the full cooperation of the MOD/RAF and noted that they were pleased with the actions taken to prevent a reoccurrence.

### **Crown Improvement Notices**

- Army. HQ NI was served an Improvement Notice by HSE NI on 24 Feb 06 as the result of inadequate provision of appropriate cold weather clothing for staff at Aldergrove. HQNI rectified the situation in Mar 06.
- DLO. Four Crown Improvement Notices have been served on the DLO during this reporting period: one on DSDC Bicester as a result of a manual handling accident; two on DSDC Ashchurch regarding management of asbestos and '4Cs'; and, one on DSDC Donnington relating to the enforcement of the traffic/pedestrian interface. The Crown Improvement Notice served last year on Ashchurch regarding traffic management issues has been lifted following discussions with the HSE and its acceptance of the Unit's action plan.

### **Crown Prohibitions**

Nil.

### **Pollution**

- RN.
  - Land Based Pollution Incidents. Of the 6 Tier 1 environmental incidents recorded, only 2 were significant and the Environment Agency (EA) was involved on both occasions as surrounding land and a local water course were contaminated. They both occurred at RNAS Yeovilton, a site owned and maintained by the Project Aquatrine Service Provider, Brey. The first was a fuel leak breaching an Oil Water Interceptor and the second was overflow of sewage from a Sewage Treatment Plant.
  - Land Remediation Action. Remediation of the Tier 2 spill at the Institute of Naval Medicine in 2002 (6,000 litres of Fuel Oil) is ongoing and under the current method is not likely to achieve full remediation before 2011. A major sustainable bio remediation project of the silt under the Hornsea

Island lagoon is currently being discussed with HMS Excellent, DLO Environmental Science Group, Natural England and the EA. External funding is being sought for this project to potentially start in spring 2007.

- Marine Pollution Incidents for RN Ships and Submarines. There have been 39 reported discharges of oil based products from RN vessels, breaching MARPOL Regulations during this period; a current total of 13,247 litres and an increase of 300%. Two incidents in 2 different T22 frigates accounted for 9,200 litres (70%) of the current total annual discharge. Both involved F76 Dieso fuel being discharged overboard during harbour fuelling operations in Devonport, caused by defective water compensating system valves. A working party has been set up to identify the root causes to prevent a reoccurrence of such spillages. Of the 39 incidents reported, 22 were less than 10 litres and 50% of these were less than 5 litres.
- Marine Pollution Incidents for RFA Ships. There have been 25 pollution incidents reports raised during this reporting period. Ten incidents involved oil being discharged to the environment from RFA Vessels, with an approximate total spillage of 460 litres. Six of these incidents were caused by equipment failure, with the remaining four attributed to operator error.
- Army. There have been 28 environmental incidents recorded this year which were attributable to Army activity. Only one was considered to be in the major category and this involved live ammunition being found in a waste skip at a waste transfer station. The HSE is dealing with this incident and the outcome of its investigations is awaited. The other incidents were classed as minor and include:
  - Buckley Barracks, Hullavington - Mar 06. Sewage back-flowed out of the drainage system and covered an area of approximately three quarters of a square mile. Due to efficient action by the unit, the EA, though informed, did not feel it necessary to become involved.
  - Queen Elizabeth Barracks, Pirbright – May 06. Unofficial waste compounds extending to approximately 2 acres. The situation has now been greatly improved, with clear-up being arranged through the Disposal Services Agency. Due to sensible and co-operative action by the unit, the EA has decided not to take any further action. However, the EA does wish to be informed when the site has been cleared.
  - Salisbury Plain Training Area. In Sep 06, a three pod UBRE leaked 980 litres of diesel on to what is regarded as a generally contaminated area (historically speaking). The spillage was cleared up very quickly by SPTA staff and contaminated absorbents disposed of appropriately. The EA was informed but judged that the spill did not warrant a site visit.
- RAF. The RAF's pollution incidents recorded for the period of the report are summarised below:
  - Tier 1. 51 minor spills involving Avtur, hydraulic oil, diesel, heating oil and soiled oil/water mix.

- Tier 2. Nil.
- Tier 3. Three spills required the attendance of an outside contractor and the involvement of the EA; these involved spills of diesel (200 litres) and Avtur (100 and 200 litres).
- Two other notable incidents were reported. The loss of approximately 2,500 litres of transformer oil, released as a result of thieves stealing copper has led to contaminated soil being removed in a phased approach; the EA were informed at the time of the incident and are aware of the planned remediation programme. Some of the fuel spilt on the mudflats in the Wash due to an aircraft crash was removed from the aircraft but, under the direction of the EA and English Nature, no further remediation took place.

All recorded incidents were cleaned up satisfactorily using local spill plan procedures and/or outside specialist contractors.

- PJHQ. Two significant spillage incidents were reported, involving 1000 Litres of FFO and 1000 litres Diesel. Both were contained, the areas cleaned and spoil disposed of. In all instances spill plans were activated and post incident investigations conducted.
- CTLB. Two pollution incidents were reported by CTLB. At Fort Blockhouse, Minor spillage due to equipment failure led to some 100 litres of fuel oil supplying the Main Boiler House escaping. Dealt with by on site personnel, EA fully involved. At Chicksands, 20 litres of fuel oil entered the drainage system and the river Flit, which runs through the site. A programme is underway to replace all above and below ground oil tanks with those that comply with current legal requirements by March 2007.
- DSTL. Two pollution incidents were reported at Porton Down, both of which were reported to the EA. The first, involving the incinerator drainage system, necessitated sealing the drains but must be considered a breach of Pollution Prevention Control (PPC) regulations. Remedial corrective action has been initiated. In the second, discharge limits for disposal of radio-active waste (4 GBq per calendar year per waste type) to an external incinerator were exceeded by 1.7 GBq. This was reported to the EA and as a consequence Dstl received a visit from a specialist Radiation inspector on 20<sup>th</sup> June. The EA were satisfied with radio-active source accountancy and security.

**Annex D to DESB P(07)1**

**DS&C AUDIT PROGRAMME – 2007/8 to 2009/10**

**a) TLB/TFA Audits:**

FY 07/08	FY 08/09	FY 09/10
DE&S	Land Command	DE
CJO	Hydrographic Office	Fleet
RAF	Dstl	SIT
ABRO	DARA	CTLB
Met Office		

**b) Functional Audits in FY07/08:**

- (i) Best practice review of Accident Investigation